Lawrence Snell retired from the post of Editor of the Transactions in March 1983. Members will no doubt wish to join me in expressing their appreciation of his work for the Society during his long term of service as Honorary Editor since 1967.

Hugh Chapman

Hon. Editor:
Hugh Chapman, B.A., Ph.D., F.S.A., A.M.A.
c/o Museum of London
London Wall, London EC2Y 5HN
Telephone: 01-600 3699

Editor's Note:
The Editor will be glad to consider papers for publication. New contributors should obtain a copy of 'Notes for Contributors' from the Editor before submitting a paper.

Front cover: Badges commemorating the Black Prince, late 14th-early 15th century: upper from British Museum; lower from Trig Lane. (scale 1:1)
Transactions of the
London & Middlesex
Archaeological Society
incorporating the
Middlesex Local History Council

Volume 33

1982

The Society is grateful to the Museum of London for help with the publication of several papers in this volume.
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London & Middlesex Archaeological Society

incorporating Middlesex Local History Council

ESTABLISHED IN 1855

Patrons:
The Most Rev. The ARCHBISHOP OF CANTERBURY
The Right Rev. The BISHOP OF LONDON
The Right Hon. The LORD MAYOR OF LONDON
H.M. LIEUTENANT FOR GREATER LONDON AND CUSTOS ROTULORUM
H.M. ASSISTANT LIEUTENANT for the MIDDLESEX AREA of GREATER LONDON
The Very Rev. The DEAN OF ST. PAUL'S COUNCIL AS AT 5th MARCH, 1982

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Honorary Auditors:

Mrs. C. H. ALLEN, F.C.A.

R. R. P. SMITH
Although publication of Volume 31 of Transactions was delayed, the Society's Special Paper No. 4, on Excavations at Billingsgate Buildings, Lower Thames Street, London, 1974, was published, together with the usual three issues of the Newsletter.

In addition to the Annual General Meeting on 27th February, seven lecture meetings were held during the year. At the Annual General Meeting the Chairman of Council, Cecil Farthing, gave an Address on Historic Buildings in the Post-War Period; a Personal Reminiscence. London topics covered at lecture meetings were The Social and Economic Study of Medieval London by Derek Keene and Vanessa Harding on 12th December, The History of the London Charterhouse by Oliver Van Oss on 30th January and Spirited Away—17th-century Londoners Sold into Slavery by W. J. Smith at the Symposium meeting on 27th March. The second talk on 27th March was Burgundian Romanesque; fusion point for styles from the north and east by Edward Biffin, who continued the French theme by talking on The Castles of the Loire, 950 to 1550 on 25th September. Prehistory was represented by The Archaeology of the Somerset Levels by Veryan Heal on 21st November, transport and economics by Medieval Ships by Ian Friel on 24th October, and post-medieval architecture by Baroque and Rococo Architecture by Ian Jones on 24th April.

The address at the Stow Commemoration Service at St. Andrew Undershaft on 8th April was given by Dr. G. D. Ramsey, that at the Pepys Service on 4th June by L. G. D. Baker.

Some thirteen visits and longer excursions were made during the year, with a distinct London and Middlesex bias. The eight visits to London started with Chiswick House and Area on 4th October and continued with The Cuming and Livesey Museums on 29th November, Fulham on 13th December, Some 18th and 19th-century churches in Westminster and Camden on 14th February, Southwark on 21st March, two visits to Charterhouse on 16th May and 6th June, and ended with Deptford, Greenwich and Blackheath on 30th May. The two visits to Middlesex were to Harrow on the Hill on 8th November and Osterley House on 11th April. Day coach trips were made to Essex—East Ham, Tilbury, Hadleigh and Rayleigh on 2nd May—and to Sussex—Winchelsea and Rye on 20th June. Finally the now regular long weekend in September made for Ludlow and studied the Welsh Borders from Leominster to Montgomery over the four days from 11th September to 14th September. Notes or guides were produced for five of the visits. The one disappointment of the visits programme was that cuts in Borough expenditure mean that the Society was unable to visit the interior of the palace at Fulham on 13th December.

Archaeological Research Committee

The Society’s Archaeological Research Committee met three times during the year—in October, January and July. Much of the Committee's time was spent in discussions surrounding the proposed reorganisation of archaeological coverage of Greater London by the Greater London Council.

The Eighteenth Annual Conference of London Archaeologists was held in the Museum of London on Saturday, 21st March. The morning session covered various aspects of current work undertaken in London, while the afternoon session was devoted to the theme Some Perspectives on the Pre-history of the Thames Valley, though the unfortunate absence of one speaker led to difficulties with the programme. In all the Conference was attended by 192 LAMAS Members and 45 non-members, and the Society gained 14 new Members as a result.

Inner London (North) Archaeological Unit

Excavations were carried out in 1981 at the medieval nunnery of St. Mary, Clerkenwell and
also in Northwold Road, Stoke Newington where Palaeolithic deposits were investigated, while post-exavation work continued on a number of projects.

At Clerkenwell, the Unit excavated an area on the west side of Newcastle Row, known to occupy the north side of the nunnery claustral range. Two phases of medieval occupation were identified in the excavation, including a chalk cellar or undercroft, possibly 15th-century. The remains have been provisionally interpreted as being part of the building referred to as the ‘Nun’s Hall’ in the 18th century and may have formed part of the infirmary.

At 55 Northwold Road, Stoke Newington a site was excavated in an area in which many discoveries of Lower Palaeolithic flint hand axes were made in the 19th century. The site was crossed by a Palaeolithic river channel from which large amounts of pollen were recovered for analysis. In addition a complete Acheulian-type hand axe was found together with the tip of another and considerable quantities of flint waste. It is hoped that analysis of the flints and the samples will help place the 19th-century finds into geological, environmental and archaeological context.

**Historic Buildings and Conservation Committee**

During the year 89 cases were considered, nearly all applications for listed building consent for alteration or demolition. After investigation it was agreed that 73 of these were acceptable. Of the 16 of which comments were made, 6 were refused by the planning authorities: in 5 cases permission was granted and 5 are still unresolved.

Good contacts continued with the four national amenity societies and with the Docklands History Group.

**Local History Committee**

This was an active and successful year for the Committee, thanks to the efforts of a strengthened membership. There were both innovations and developments of previous activities. The Fifteenth Annual Conference in November 1980 featured talks on *Middlesex for Sin* by David Avery, *The History and Development of Covent Garden* by John Richardson and *The Docklands History Project* by Dr. R. J. M. Carr. These were supported by the usual galaxy of displays and publications.

In December a meeting was held for local society editors, at which ways of continuing an active publications programme in the face of soaring costs were discussed. A list of reasonable and adaptable printers was subsequently circulated to local societies.

The Committee’s fourth analysis of local historical research in the London area was issued during the year, part of its objective of fostering co-operation between local societies and individual research workers.

Another seminar was held at the Museum of London, this time on the application of computers to local history. Although the meeting was not as well attended as it should have been, given the increasing importance of computers of all kinds in processing local data, there was a useful and thought-provoking exchange of views. Subjects covered were Pinner census returns, 16th/17th-century parish registers and the Wandsworth street/building survey.

It is pleasing to report also that a further informal grouping of local societies—in west and south-west London—has been formed, and has held its first successful one-day conference.

**Youth Section**

Summer 1981 saw another of the Youth Section’s three and four day events (‘Summer Specials’). It included a visit to a Southwark archaeological site, with potwashing and microscope work, while to show that recent history requires research and study, a small project was carried out on Little Britain, now being pulled down, with the use of trade directories, maps and historic guide books of the area. A visit to Brentford and the West London Archaeological Unit provided an insight into the work carried out in the large outer London boroughs by a very small but professional and enthusiastic team; a visit in the afternoon to Syon House ended with ice-cream on the lawn.

During the year other day events were organised at the Museum of London, including a Walkabout, films on Arms and Armour, and a study of some of the Museum’s own collections.
The now regular annual joint meeting with Young Rescue (now the Young Archaeologists Club) was held in June and a visit to the Pudding Lane site in the City was made. Three newsletters were issued during this period, full of articles, comments, reports and quizzes.

**Membership and Finance**

Though membership figures are satisfactory, total membership remained almost static, new members serving only to make up the number of those who resigned or failed to renew their subscriptions during the year. Total membership at 30th September 1981 was 896, made up of 668 Ordinary Members, 49 Life Members, 7 Honorary Members and 23 Student Members, together with 109 Institutional Members and 40 Affiliated Societies.

The accounts which accompany this report show a slight decrease in subscriptions which is expected to be remedied when the publication programme returns to normal. Interest earned was higher than in the previous year and, after providing for the anticipated cost to the Society of the *Transactions*, a further sum of £1,050 has been transferred to contingency reserve leaving a small surplus. It seems likely that the present annual subscription rates can be continued for 1982/83, but an increase may be necessary thereafter.

Council wishes to place on record its thanks to the Honorary Officers and to the chairmen and members of the Committees for their work on behalf of the Society during the year.

By direction of Council

Chairman of Council

J. A. CLARK, M.A., F.S.A., A.M.A.
Honorary Secretary
LONDON & MIDDLESEX ARCHAEOLOGICAL SOCIETY
INCOME AND EXPENDITURE ACCOUNT for the year ended 30th September 1981

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<td>15,971</td>
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<td>Lectures and Visits</td>
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<td>91</td>
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<td>16,643</td>
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£18,656  £16,643
### London & Middlesex Archaeological Society

**Balance Sheet as at 30th September 1981**

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<th>1980</th>
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<tr>
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<tr>
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<td>76</td>
<td>Expenditure this year</td>
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<td>Wheatley Bequest</td>
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<td>9,167</td>
<td>Sundry Creditors</td>
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<td>£60,053</td>
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</table>

I have examined the above Balance Sheet and attached Income and Expenditure Accounts with the books and vouchers of the Society as submitted by the Honorary Treasurer. I have verified the Bank Balances and Securities with the Society’s Bankers. In my opinion and to the best of my knowledge, these Accounts together with the Notes, are correct and in accordance with the books and records of the Society.

 *(Signed) O. T. ALLEN, F.C.A.*

*Honorary Auditor*
EXCAVATIONS AT QUEEN STREET, CITY OF LONDON, 1953 and 1960, AND ROMAN TIMBER-LINED WELLS IN LONDON

TONY WILMOTT

SUMMARY
Excavations at Aldermary House and the Bank of London and South America, Queen Street, revealed a number of wells and pits of all periods. Most important among these were the Roman wells which throw valuable light on sources of domestic water, and some knowledge of contemporary geology and hydrology. An examination of the techniques of construction of these wells, and their chronology, shows a gradual development and sophistication in the use of timber lining. This is particularly evident in the use of corner bracing, and in the more effective combination of joints. The dates of barrel-lined wells have implications in determining the period during which wine was imported in barrels. Because of the waterlogged conditions in these wells, leather, wood and organic finds survived in an exceptionally fine state of preservation.

1. INTRODUCTION
The purpose of this paper is twofold; firstly to present the results of two investigations by the Guildhall Museum, and secondly to reconsider the evidence for the timber-lined wells of London, over half of which were found on these Queen Street sites.

In 1953–54 the laying of the foundations of the new Bank of London and South America building (now Lloyds Bank International), 40–66 Queen Victoria Street (TQ 3250 8106), necessitated site watching and salvage excavation which was carried out by Mr Ivor Nöel Hume of the then Guildhall Museum. In 1960, Mr Nöel Hume’s successor, Mrs Eve Harris undertook observations across the street at Aldermary House (TQ 3249 8106), 61–62 Queen Street (Fig. 1). The difficulties faced by the archaeological staff of the Guildhall Museum in these years were manifold, and have recently been described by Mr Nöel Hume. There was a lack of both money and manpower for archaeological work, and staff had to spread their efforts over several sites simultaneously. These problems were further exacerbated by the fact that all site investigations were salvage operations, undertaken during the course of redevelopment.

Both Queen Street sites were excavated by the contractors down to the level of the natural subsoil, so that the overlying archaeological strata were almost totally removed. Despite this, many features were recorded, mainly wells and pits, which cut into the natural layers. Given the constraints mentioned above it was obviously impossible to make a thorough examination of the whole site. The following limitations on the available evidence should be borne in mind.

1. The site plans (Figs. 5 and 6) are by no means full reflections of the total evidence for occupation from the sites and show only the features cut into natural layers. The need for the archaeologists to divide their time between many building developments, and the limited time available meant that not all, even of these features, were fully recorded. This was particularly true of the eastern end of the Bank of London and South America site as, when this was being developed, Mr Nöel
Hume’s efforts had to be concentrated at Bucklersbury House.

2. The second limitation concerns dating, and is of vital importance in interpretation. All dates have been derived from the study of the pottery recovered (see introductions to finds and pottery reports below. For dating see Figs. 22, 23, 27, 42). No dating evidence was recovered from the construction layers of features, and consequently all dates relate to their filling. Most fills were removed as single homogeneous waterlogged deposits and, as a result, finds from the earliest and latest layers were intermixed. Thus the earliest pottery might be from the primary fill, but might also be residual. This means that in most cases dates quoted represent the maximum period during which a feature might have been open. Basic guidelines can, however, be laid down. The lack of pre-Roman material in those features filled during the earlier Roman period indicates that they were not constructed or dug before c. AD 43. Within the early group of wells the consistent absence of pottery post-dating c. AD 150 may be taken to indicate that the group had been completely filled by c. AD 150. However, greater difficulties arise with the dating of the later wells, the fills of which are likely to contain large quantities of material of a residual nature. Where the internal stratification of a feature was distinguished in excavation, this is specified.

The following format has been adopted for this report. After a discussion of the geology of the sites the features are described in a series of tables, supplemented where necessary by additional discussion in the text. Tabulation is particularly useful here as it shows graphically the amount of data recorded compared with what was unavoidably lost. All
tables are based on more detailed information which is stored in the archaeological site archive at the Department of Urban Archaeology of the Museum of London. The discussion of the sites in relation to other contemporary features in the vicinity is included after the description of the archaeological evidence for each period. This report is followed by an analysis of the timber linings of the wells at Queen Street and elsewhere in London, and the paper concludes with a report on the finds from Queen Street.

II. THE GEOLOGY OF THE SITES

The underlying geology is of special importance for two reasons, in evaluating the nature of the ground surface on which the earliest Roman activity took place, and in suggesting an explanation for the large number of wells found on these sites. The geology of London comprises thick river gravels overlying London Clay and capped in turn by a layer of brickearth. This has already been considered more generally, and a map showing the levels of the natural surface, so far as it is known, has recently been published. The Queen Street sites lie on the plateau or terrace of the westernmost of the two 'hills' on which the Roman city developed. On the top of this hill, brickearth reaches a thickness of 1–2m. About 50m to the east of the site lay the Walbrook stream, which had eroded through the natural deposits, while to the north-east lay a tributary of the Walbrook. The spot levels in Fig. 2a show the recorded top of the natural ground surface in the Queen Street area. It is clear from this that the ground sloped eastwards from the hill into the valley of the Walbrook and its tributaries. Though comparatively thick at the top of the hill, the brickearth became progressively less so on the hill slope towards the Walbrook valley, until at Watling Court a maximum of 150mm was recorded. No brickearth at all was observed at Well Court and Aldermary House. The top of the brickearth on the Bank of London and South America site was recorded at 8.20m O.D. but its thickness is unknown; it may merely have been a residual lens overlying the gravel as it sloped into the stream valleys to the east and north. Thus the ground surface on the Queen Street site would appear to have been of gravel overlain by thin deposits of brickearth with a gentle slope downwards to the east.

The reason for the exceptionally high number of wells on the sites is a more complex question relating to the underlying geology, and is explained by a study of borehole records and observations from deep commercial excavations, and also from Roman and later wells. The impermeable London Clay causes a reservoir of ground water to form in the gravels above. Fig. 2b is a section through part of the City showing the natural layers revealed in boreholes at Watling Court, Aldermary House (see also Fig. 3) and trial excavations at Bucklersbury House, together with archaeological observations at the Bank of London and South America. From a level of 5.03m O.D. under Cannon Street the London Clay slopes upwards to c.7.00m O.D. at Watling Court. There is then a steep drop to 0.35m O.D. at the western limit of the Aldermary House site, before the London Clay rises to 5.23m O.D. in the centre of the site, a gradient of 1:2. Though it slopes down sharply to the south east at Aldermary House (Fig. 4) the London Clay was observed at a level of approximately 4.10m O.D. at the Bank of London and South America, indicating the continuation eastwards of the high ridge which starts in the middle of the Aldermary House site. At Bucklersbury House, the level of the top of the London Clay was established at between −1.82 and −6.09m O.D. representing a steep drop from Queen Street. Thus the Queen...
Fig. 2. Queen Street 1953 & 1960: Reconstructed section through the geology of the area.
Street sites are situated in an area where the London Clay is substantially higher than at any nearby point, and this would cause the water table in the overlying gravels to be similarly high. The gravels were less thick at Queen Street than on sites to the west; at Watling Court they lay at 10.02–10.34m O.D. and at Aldermary House, between 8.50m and 9.50m O.D. At the Bank of London and South America the top of gravel lay between approximately 6.16m and 8.27m O.D. and the downward slope of the gravel surface to the east indicated by these levels appears to have continued into the valley of the Walbrook.

It therefore seems that there were two distinct geological advantages to the siting of wells on the Queen Street sites: the high level of the top of London Clay relative to the immediate area, and the fact that the gravels were 0.50–1.00m less thick than at Watling Court and further to the west. These two factors would cause a locally high water table, and conditions in which it would not be necessary to dig deep wells in order to reach the water. It is noteworthy that only two of the Roman wells at Aldermary House lay to the west of the dip in London Clay which occurred in the middle of that site, the rest were concentrated to the east (compare Figs. 4 and 6). Furthermore, a well such as Well 22 (Fig. 11) could be dug through the gravel cap into London Clay such that water springing from the gravel would fill the deep hole and provide a substantial quantity of clear water at all times, while the lower part of this well would also not need to be lined beyond the point where it penetrated the London Clay. Well 22 was, however, exceptional, and it appears that in general it was the high water table rather than the advantage gained by digging into clay, that was being exploited at Queen Street.
III. CHRONOLOGICAL ANALYSIS OF FEATURES

In the following analysis the features from both Aldermary House and the Bank of London and South America are included in a single numerical sequence shown in Figs. 5, 6 and 7. The basic information on the features are tabulated in Figs. 9, 10, 14, 15, and 17. The Roman features are grouped according to date,
Excavations at Queen Street and Roman Wells in London

Fig. 5. Queen Street 1953 & 1960: Site plan: Bank of London and South America.
and whether they are wells or pits. A summary of date is given in tabular form in Fig. 22. Any additional information necessary has been included in the text which follows.

A. 1st–2nd CENTURIES

1. FEATURES OVERLYING NATURAL

Feature 21. Timber piles (Pl.1) placed in two parallel lines 3.13m apart. The context
of one of these pits is shown in section (Figs. 5 and 8). Pit 40 (12 in section) was filled at the same time as the piles were set up. This was demonstrated by the redeposited brick-earth, Layer 11, which was laid down in a continuous layer filling Pit 40 and packing the post pit (0). It is possible that Pit 41 (No. 14 on section) was filled at the same time as it is filled with similar material at the same level. Above these fills, clay layers 9, and 10, appear to have been laid down while the pile remained in situ. Perhaps these layers represent the footings, or collapse, of clay walls forming part of a building supported by the timber posts. If so this would suggest a 1st–2nd-century date, the period when most of the dated clay-founded buildings in London were erected. The only stratigraphic dating evidence was pottery of Roman date from Layer 6 (Fig. 22).

2. WELLS

1st–2nd-century wells are summarised in Fig. 9. Additional information is given below:

Well 22. A section through this well is shown in Fig. 11. Layers 5 and 6 contained two finds of interest, a ladder (No. 84) and a wooden dipper (No. 92). Layer 4 was an organic deposit rich in finds, and was dated not later than the Flavian period (Figs. 22 and 23). The ladder and dipper could be associated with the use of the well, for maintenance and for the extraction of water. As finds in Layer 4 have no such connection it is likely that this was the first deposition of rubbish into the well after it had fallen out of use. The clay deposits below can be interpreted as silt. Above Layer 4 two organic layers (2 and 4) alternated with clay deposits (1 and 3). There are two possible interpretations for this. Either continued silting represented by the clay levels was interrupted by occasional rubbish dumping, or a series of dumps of different types were deposited. The former may be the more likely as the preservation of the timber lining of the well was presumably due to the continued presence of water which could have been the agency by which further silting took place. Finds from layers above 4 dated from the 1st–3rd century (Figs. 22 and 23) suggesting a long period of silting or back-filling.

The human skull in Layer 2 does not, as has been suggested, appear to have been pushed into the heavy clayey silt of the well with the timber that lay above it, as this would have caused greater fragmentation of the dentition. It is more likely that the timber was dropped subsequently, breaking the top of the skull (see Appendix p. 75). The timbers from the upper frames of the well rested in its top filling.

3. PITS

Pits are summarised in Fig. 10.

4. GENERAL DISCUSSION

A more coherent picture of the Queen Street area in this period can be estab-
Fig. 7. Queen Street 1953 & 1960: Dated 1st–2nd-century features.

Fig. 8. Queen Street 1953 & 1960: Section A–B (see Fig. 5).
<table>
<thead>
<tr>
<th>Feature number</th>
<th>Lining type</th>
<th>Description of jointing and timbers</th>
<th>Layers in fill</th>
<th>Description of fill</th>
<th>Length (metres)</th>
<th>Breadth (metres)</th>
<th>Diameter of circular (metres)</th>
<th>Depth (metres)</th>
<th>Height of base + O.D. (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>barrels</td>
<td>(2 survive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>box-frames</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>barrels</td>
<td>(2 survive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>barrels</td>
<td>(2 survive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>barrels</td>
<td>(2 survive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>barrels</td>
<td>(1 survives)</td>
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<td></td>
</tr>
<tr>
<td>20</td>
<td>box-frames</td>
<td>Half-lap joints (Pl. 3)</td>
<td></td>
<td></td>
<td>0.68</td>
<td>0.68</td>
<td>1.19</td>
<td>1.19</td>
<td>6.08</td>
</tr>
<tr>
<td>22</td>
<td>box-frames</td>
<td>Half-lap joints (reconstruction, Fig. 19)</td>
<td></td>
<td></td>
<td>1.30</td>
<td>1.07</td>
<td>6.25</td>
<td>0.97</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>timber-lined</td>
<td>Timbers vertically placed, edge-to-edge with 4 corner posts. Planking held in place with struts morticed into corner posts (Fig. 18)</td>
<td></td>
<td></td>
<td>0.99</td>
<td>0.99</td>
<td></td>
<td></td>
<td>6.15</td>
</tr>
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<td>31</td>
<td>box-frames</td>
<td>Half-lap joints (reconstruction, Fig. 19)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>barrel</td>
<td>bottom not lined</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>box-frames</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>barrels</td>
<td>(2 survive)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Fig. 9. Queen Street 1953 & 1960: Description of 1st–2nd-century wells.


Plate 5. Queen Street, 1953 & 1960: Barrel Well 37 with staves in situ.

lahished by reference to other sites in the vicinity, and to Roman London as a whole. Fig. 12 shows the location of the present sites in relation to other Roman features in the area. Though this plan covers features over the whole Roman period it does illustrate the following points. Excavations at Well Court, to the west of Aldermary House, revealed a north-south road, the Roman forerunner of Bow Lane. Immediately to the west of this road was found an area of intensive building development, dating from the 1st–2nd centuries. At Watling Court, to the south of Well Court, more extensive indications of this development were located. On this site, buildings were closely packed, and were separated only by lanes. There was no garden or yard space and no evidence that the excavation of wells and pits had taken place. East of Bow Lane, however, on the part of Well Court adjacent to Aldermary House, there was no evidence of activity until c. AD 100, when only pits are recorded. Limited building did occur during the first half of the 2nd century, attested by the post and clay feature (Fig. 8), burnt daub in Pit 29 and burnt material including painted wall plaster, and lead water pipes in Well 31. This activity, however, cannot have been as intensive in scale here as that to the west of Bow Lane which left no room for the sinking of wells and pits in large numbers. This observation remains valid despite the deficiencies in the recording at Queen Street. Though it is possible that wells and pits were situated in the yards of scattered buildings, as occurred at Milk Street, it would seem that the Bow Lane road may have separated two distinct zones of activity; to the west a heavily built up area, and to the east an area of well and pit-digging with only occasional buildings. Such a state of affairs has not appeared in any other Romano-British town where extensive excavation has taken place, e.g. Verulamium, or Silchester. This may be because these towns

<table>
<thead>
<tr>
<th>Feature number</th>
<th>Layer in fill</th>
<th>Description of fill</th>
<th>Length (metres)</th>
<th>Breadth (metres)</th>
<th>Diameter if circular (metres)</th>
<th>Depth (metres)</th>
<th>Height of base + O.D. (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>25</td>
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<td>26</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>complete fill</td>
<td>Silty material containing burnt daub and plaster</td>
<td>0.73</td>
<td>0.73</td>
<td></td>
<td></td>
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<tr>
<td>38</td>
<td>filling and sealing layer</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>39</td>
<td>complete fill</td>
<td>Burnt daub.</td>
<td></td>
<td></td>
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<tr>
<td>40</td>
<td>complete fill</td>
<td>Redeposited brickearth</td>
<td>Fig. 8</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>41</td>
<td>complete fill</td>
<td>Redeposited brickearth</td>
<td>Fig. 8</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

N.B. Nos. 40–60 unplanned.

Fig. 10. Queen Street 1953 & 1960: Description of 1st–2nd-century pits.
Excavations at Queen Street and Roman Wells in London

Base of gravel?

London Clay

Well bottom 0.97m. above O.D.

Fig. 11. Queen Street 1953 & 1960: Section through Well 22.

1 Brown clay
2 Organic material
3 Grey Clay
4 Organic material
5 Grey brown clay
6 Clay and stones
were served by aqueducts and this area of London at least was not.

It is clear that the concentration of wells at Queen Street, was due to the particularly advantageous geological conditions described above. A recent paper on the water supply of Roman London suggested that the Queen Street wells may have been used either for industry or for public water supply. There is no evidence from the finds to support the former suggestion, and the fact that many water using industries were concentrated along the banks of the nearby Walbrook, where running water was available in some quantity is probably significant. It is very likely that due to this industrial usage, and also because of rubbish disposal indicated by the large number of objects, including industrial waste found in the Walbrook, such streams would quickly have become polluted. Thus the possibility that the wells were sources of domestic fresh water appears far more likely.

This may well be the reason why wells were sunk at Queen Street despite the streams which were situated to the north, west, and east (Fig. 12). The intensive, and presumably quite heavily populated, development at Watling Court (Fig. 12) apparently had no water supply provided on site. It is probable therefore that the Queen Street wells, which would have been the nearest available source of fresh water, served the inhabitants of this adjacent development. It is likely also that the quantity of water available at Queen Street was quite considerably greater than would be required for the number of scattered buildings that appear to have occupied the small areas between the pits and the wells.

It seems reasonable to suggest that water was provided at Queen Street for the inhabitants of Watling Court at least, and possibly also for those living further afield. The idea that a public water supply was provided at Queen Street has wider implications, suggesting civic authority involvement in the development and planning of the area. If it was known that geological conditions were favourable to the extraction of water at Queen Street, the area may have been deliberately set aside for this purpose while intensive development of housing went on on adjacent plots, possibly encouraged by the existence of a ready water supply. The great depth of silt in Well 22 predating the Flavian dumps demonstrates that this policy was put into action well before the erection of the Flavian public buildings.

The wider question of the supply of water for Roman London has recently been discussed by Wacher, who suggests that at least some of the water supplied to London was brought in from outside the City by aqueducts. This suggestion requires further examination.

In a previous work Wacher suggested that aqueducts were used to supply large consumers such as bath houses, with a subsidiary service for domestic properties, supplementing the water available in wells. He also points out that the presence of water pipes and sewers intended for running water should reflect the presence of an aqueduct. The large water consumers in London, however, can all be related to available supplies of ground water. The bath houses at Billingsgate and Huggin Hill, together with the Palace and its large ornamental pool were sited on the Thames river front, or on the spring-line between the gravel and the London Clay, while the Cheapside bath-house was constructed in an area where the water table was high. Thus in none of these cases was there any need for, or indeed any evidence of, aqueduct supply. In view of the fact that running stream water was used for industry (see above), and domestic supply was catered
Excavations at Queen Street and Roman Wells in London

for by the sinking of wells, it appears unlikely that aqueducts, which, as Wacher himself points out, would have to be carried on a raised structure or in closed channels by pumping, would be required. Large drains such as those at Cannon Street and that recently found at Pudding Lane are more likely to have been intended for draining off excess rain water, or for tapping from, or drainage of the spring line rather than for waste water from running aqueducts. Water pipes such as those found at the Bank of England and on the Queen Street sites themselves, could, with the use of a pump such as that found at Silchester, have channelled ground water on site, and it is at least possible that the closed water pipes at the Bank of England were used for channelling rivulets of water into the Walbrook Stream, and for draining a very damp area; such pipes were shown to have been used for this purpose at Bucklersbury House.

The building developments at Watling Court and Well Court were destroyed in the Hadrianic fire of London, and the burnt daub in Pit 39, and burnt building debris in Well 31 may also be evidence of this conflagration, as the dating evidence from both features is quite consistent. Subsequent small scale buildings at Well Court and Watling Court were also destroyed by another fire in the Antonine period.

Fig. 12. Queen Street 1953 & 1960: Location of Roman features in the area of the sites.
Fig. 13. Queen Street 1953 & 1960: Dated 3rd–4th-century features.

<table>
<thead>
<tr>
<th>Feature number</th>
<th>Lining type</th>
<th>Description of jointing and timbers</th>
<th>Layer in fill</th>
<th>Description of fill</th>
<th>Length (metres)</th>
<th>Breadth (metres)</th>
<th>Diameter if circular (metres)</th>
<th>Depth (metres)</th>
<th>Heights of base + O.D. (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>box-frames</td>
<td>?Dovetailed</td>
<td>bottom (d)</td>
<td>Grey clay</td>
<td>0.86</td>
<td>0.84</td>
<td></td>
<td>0.79</td>
<td>5.33</td>
</tr>
<tr>
<td>19</td>
<td>box-frames</td>
<td>Top frame half-lap, other frames bridled and braced in 2 corners (reconstruction, Fig. 19).</td>
<td>(c), above (d)</td>
<td>Black organic</td>
<td>0.99</td>
<td></td>
<td></td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(b), above (c)</td>
<td>'Horse dung'</td>
<td></td>
<td></td>
<td></td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(a), above (b)</td>
<td>Black organic</td>
<td></td>
<td></td>
<td></td>
<td>2.03</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>box-frames</td>
<td>All frames fastened with bridled joints braced in two corners (reconstruction, Fig. 19)</td>
<td></td>
<td></td>
<td>0.68</td>
<td>0.53</td>
<td>2.44</td>
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<tr>
<td>37</td>
<td>barrel</td>
<td>(1 survived)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.84</td>
<td>6.74</td>
</tr>
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</table>

Fig. 14. Queen Street 1953 & 1960: Description of 3rd–4th-century wells.
Excavations at Queen Street and Roman Wells in London

B. 3rd–4th CENTURIES (Figs. 5, 6, 13)

1. WELLS

Wells of this period are described in Fig. 14.

Well 36. The lowermost timber frame in this well had slipped to the north, leaving an overhang on that side under which buckets may have caught. To rectify this, an additional board was placed beneath the overhang, and was held in place by two squared stakes driven into the bottom of the well (reconstruction: Fig. 19).

Well 37. This was the only barrel well apparently of this period (Figs. 22 and 27). The dating, however, does not rule out the possibility that, like Wells 22 and 33, this was sunk in the early Roman period, to be followed by a long sequence of back-filling.

It is feasible that the seemingly residual 1st–2nd-century finds were from the earliest fill of the feature. This is particularly likely in view of the lack of residual material in other 3rd–4th-century wells (see General Discussion, below).

2. PITS

Pits of this period are described in Fig. 15.

3. GENERAL DISCUSSION

The 3rd–4th centuries at Queen Street saw a marked decline in the number of wells and pits excavated (compare Figs. 7 and 13). At Watling Court, the Antonine fire was followed only by the build-up or deposition of dark earth, while at Well Court there was no building activity after the beginning of the 3rd century, when dark earth also began to accumulate. These sites thus offer no help in the interpretation of the subsequent periods at Queen Street. The decline in the numbers of features on all these sites reflect the recently postulated decline in Roman London as a whole. It is certainly not the case that fewer features of later date penetrated natural due to the build-up of the ground level during the Roman period. As will be shown even post medieval wells were sunk to this level.

The fact that in the post-Roman period the area was still used for well digging shows that the decline in well numbers in the later Roman period was not the result of a change in the availability of water in the area.

The 3rd century at Queen Street is attested by the slow filling of Wells 22 and 33 and in all probability of Well 37 also. The two Wells 36 and 19, filled in the late 3rd–4th century (Figs. 22 and 27) contained very little residual pottery (compare Figs. 23 and 27). This may indicate a date of construction, as well as of filling, in that period. The almost total lack of 1st–2nd-century pottery in the fill of these features, when contrasted with Well 37, precludes their construction in the earlier period. Reinforcing this conclusion there appears, in addition, to have been 3rd–4th-century material in the packing of Well 19 (Fig. 22). The evidence, such as it is, appears to reflect a period of desertion, or at least of a lack of well digging, in the 3rd century followed by some renewal of activity in the area towards the beginning of the 4th century.

---

<table>
<thead>
<tr>
<th>Feature number</th>
<th>Layer in fill</th>
<th>Description of fill</th>
<th>Length (metres)</th>
<th>Breadth (metres)</th>
<th>Diameter if base + O.D. (metres)</th>
<th>Depth (metres)</th>
<th>Height of base + O.D. (metres)</th>
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</thead>
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<tr>
<td>51</td>
<td>complete fill</td>
<td>Wet and black</td>
<td>0.73</td>
<td>0.73</td>
<td>0.73</td>
<td>5.64</td>
<td>0.73</td>
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</table>

N.B. Nos. 61–63 not on plan.

Fig. 15. Queen Street 1953 & 1960: Description of 3rd–4th-century pits.
Plate 7. Queen Street, 1953 & 1960: Timbering of Well 36 from north, showing bronze jug in situ.

Plate 8. Queen Street, 1953 & 1960: Timbering of Well 36 from south.
<table>
<thead>
<tr>
<th>Feature number</th>
<th>Feature type and lining</th>
<th>Description of fill</th>
<th>Diameter if circular (metres)</th>
<th>Depth (metres)</th>
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<tr>
<td>3</td>
<td>Barrel-lined well</td>
<td>Descriptive material of fill</td>
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<td>1.52</td>
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Fig. 16. Queen Street 1953 & 1960: Description of medieval features.

century, rather than continuity throughout the Roman period.

C. OTHER ROMAN FEATURES (Figs. 5, 6)

A miscellaneous group of features could not be more closely dated than to the Roman period on pottery evidence.

Well 1. Box framed well measuring 0.76m × 0.61m at the top.

Feature 4. Ralph Merrifield describes a 'hollow filled with black peaty mud resembling a pond or stream bed, to the north of the Aldermary House site'. The Roman date of this feature is dubious.

Feature 5. Circular pit, 1.20m in diameter.

Feature 6. A double row of stakes, sharpened at both ends, ran E–W. The rows were 1.45m long and 0.35m apart. Though pottery among the stakes was dated to the 3rd–4th centuries, two identical stakes were found in the 1st–2nd century Well 16.

Well 14. Barrel well 0.76m in diameter.

Feature 28. To the west of the site lay a sequence of 3 mortar floors, the lower two separated by a stratum of silt (Pl.9).

Pit 30. Pit, bottomed at 8.75m O.D. which cut floors 28 (Pl.9).

D. MEDIEVAL (Figs. 5 and 6)

The 4 wells and 8 pits of medieval date are described in Fig. 16.

Plate 9. Queen Street, 1953 & 1960: Section through floor and pit sequence, Features 28 and 30.


**Feature number** | **Feature type and lining** | **Description of fill** | **Length (metres)** | **Breadth (metres)** | **Diameter if circular (metres)** | **Depth (metres)** | **Height of base + O.D. (metres)**
--- | --- | --- | --- | --- | --- | --- | ---
10 | Well; lower part brick-lined, top lined with barrel containing chalk blocks | | | | 1.40 | | |
12 | Chalk-lined well | | | | 0.99 | | |
46 | Rectangular rubbish pit | | | | | | |
48 | Pit with irregular shape | 1.22 | | | | 7.32 | |
54 | Cess pit lined with half-brick, 30mm thick timber ring between each 6th and 7th course | | | | 1.82 | | |
55 | Well; circular brick lining rests on wood ring below which 5-sided brick structure rests on 5-sided board structure | Fire debris | | | 1.02 | | |

Fig. 17. Queen Street 1953 & 1960: Description of post-mediterranean features.

**E. POST-MEDIEVAL (Figs. 5 and 6)**

The 3 pits and 3 wells of this period are described in Fig. 17.

**1. POST-ROMAN GENERAL DISCUSSION**

The post-Roman periods are represented only by wells, pits and loose finds. Two sherds from Aldermary House, both unstratified, were the only evidence of Saxon occupation (see Finds report, Medieval Pottery; Saxon Shelly ware). The most important aspect of these periods is the continued use of the site for water supply between the 12th and 18th centuries. It is likely that this tradition gave rise to the name Well Court for the lane to the north of Aldermary House, which is first mentioned on the Ogilby and Morgan map of 1677. It is possible that the dump of burnt material in Well 55 was the result of clearance after the Great Fire of 1666.

**F. UNDATED FEATURES (Figs. 5 and 6)**

Well 7. Stone-lined well 1.42m in diameter. ‘Roman finds’ were recovered by workmen, but a Roman date is unlikely as no other stone-lined Roman wells have been found in London. The stone used was not identified.

Feature 43. N-S construction of concrete walling reinforced by or overlying, piles driven into the made ground, which produced Antonine material.

Feature 45. Pit, 0.84m x 0.86m; 0.54m deep, bottomed at 8.75m O.D.

Feature 47. Ragstone foundation turning westwards at N. end.

Feature 50. Foundation of undated tiles aligned with 47.

Feature 52. Corner of chalk wall foundation. The chalk construction may indicate a medieval date.

Feature 59. Pit 1.22m in diameter, 0.91m deep, bottomed at 7.83m O.D.

Features 64 and 65. ? Post-Roman pits defined in section only (Fig. 8; not on plan).
IV. ROMAN WELL CONSTRUCTION IN LONDON

A. BARREL WELLS

The Queen Street Barrels, as containers, are discussed fully in the Finds Report (pp. 47–9). They were of particular use in well lining both because of their shape, and their ability to withstand external pressure when placed in the well shaft. A well could easily be constructed by lowering barrels down a narrow shaft which could then be backfilled around the completed structure. Of nine barrel wells at Queen Street, eight can certainly be dated to the 1st–2nd centuries, and possibly also the ninth, Well 37 (see p. 19). Further evidence that barrel wells were commonly built during the early period comes from four others found in the city, at Lime Street, the palace site, Bucklersbury House, and the Bank of England. There is a further undated barrel well from the Bank of England. It is suggested in the finds report that the absence of barrel wells later than the 2nd century may be due to the cessation of the import trade in wine at this time.

B. CORNER-POST CONSTRUCTION

This is one of the most common types of well construction used in Britain generally, so that it is remarkable that only one of the 21 Queen Street wells was of this variety.
Plate 11. Queen Street, 1953 & 1960: Lower barrel of medieval Well 44.

Plate 12. Queen Street, 1953 & 1960: Upper barrel of medieval Well 44.
Excavations at Queen Street and Roman Wells in London

Usually these wells were lined with unjointed horizontal planking, retained by square posts set in each corner. In London this simple construction occurs at the Cheapside baths in the 1st–2nd centuries, and at Bucklersbury House in the 3rd–4th centuries. One further undated example occurs at 1–5 Queen Street. Well 24 was filled in the Flavian period, and was a variation of the usual type in that it had vertical timbering which was butted against the sides of the corner posts. The planks were retained by rough-hewn horizontal struts which were let into mortices in the corner-posts (Fig. 18). Another vertically planked well, also undated, was found at Great Swan Alley, where the method of retention of the planks is not recorded. At King Street, a 3rd–4th century horizontally boarded well had horizontal reinforcing struts placed, like the planking, behind the corner post, and were neither jointed nor nailed into place.

Evidence from London indicates a date range over the whole of the Roman period for corner-post wells, and this is confirmed by excavations elsewhere in Britain. There were three wells of this type at St. Thomas St., Southwark dated to the 2nd–3rd centuries, while the bottom four courses of the 2nd–3rd-century well at Skeldergate, York were of corner-post construction, as were two pre-Flavian wells from Colchester.

A common practice in corner-post wells was to include bracing boards at intervals. These boards were laid on their sides, with the corner posts jointed into the corners of two adjacent boards. The effect of this was to form a continuous, square, hollow frame, and it is possible that these should be seen as a form of box-frame (see below). Wells of this type have been found at Scole, Norfolk, and at Chigwell, Essex. It would appear that this was an effective technique: all the boards in the late Saxon well from Billingsgate Build-

Fig. 18. Queen Street 1953 & 1960: Construction of Well 24, showing mortice and tenon joint on corner posts.
ings in London were jointed round the corner-posts.

C. BOX-FRAME WELLS

This term has been adopted to describe wells of coursed timbers. Each course was independent of the others, and consisted of four boards laid on edge and jointed at the corners. There were seven examples of this type of well at Queen Street. These, like those from other parts of the City, appear to demonstrate a gradual development in timber framing techniques, although the earlier techniques remained in use throughout the Roman period.

The simplest possible form of timber box-framing is found in the well at Milk Street dated to the 1st century (reconstruction, Fig. 21). This consisted of two opposite boards let into rebates made in the corners of the two other opposing planks. The structure was not nailed. At Queen Street Wells 22, 31 (reconstructions, Fig. 19) and 20, all dating from the 1st–2nd centuries (Finds Report p. 32), featured the half-lap joint (Fig. 20a) and these too were not nailed. Both the corner-post wells and those utilising rebated or half-lap joints shared a disadvantage. Unlike barrels, these unarticulated frames would not have held together when lowered down a well shaft. The method of construction must have been to build each individual box-frame in situ and then to pack the shaft around the timber members: this was the only way in which these frames, jointed with joints that would not hold together independently, could be kept in position.

These jointed well-frames, however, had a distinct advantage over the corner-post type, in that there was no need to waste timber on internal bracing to counter the external thrust from the packing of the well shaft. With the jointed frames the thrust was utilised to press the joints together, strengthening the resistance of the frames to external force, and thus neutralising it. This was essentially the task performed by the bracing boards in some corner-post wells.

The last dated half-lap well at Queen Street, Well 22 was out of use by the Flavian period (see above p. 16). Its construction may thus have been contemporary with that of two identically constructed wells at Colchester, which date from c. AD 49–61. A further 1st–2nd-century well at Brampton, Norfolk, also featured halfed joints. Though this technique occurred at an early date, it also appears in several later wells, for example in the City at St. Swithins House, Walbrook and at 33–35 Poultry, as well as at Queen Street in the case of Well 19, all of which dated from the 3rd–4th century, and in the well at Chigwell, Essex dated to c AD 270.

The next development in well construction appears to have been the use of the bridled or square dovetail joint. The appearance of this joint (Fig. 20b) seems to have been contemporary with that of the possible true dovetail in Well 13. Two out of three Queen Street wells using this joint also featured corner braces. Well 13, the unbraced, bridled well, was dated to the 4th century, but unbraced joints of this type in London appear much earlier. The earliest known well of this kind from the City with these joints is from 33–35 Poultry (reconstruction, Fig. 21), where bridled frames were placed on a half-lapped base plate.

A coin of Commodus (AD 180–192) in good condition was found in the bottom of this well, suggesting a comparison with a similar well from Union Street, Southwark, dated to the late 2nd–3rd century. Outside London, a bridled well at Northchurch, Herts, and a dovetailed well from Great Dunmow, Essex were also dated to the late 2nd–3rd century: again, neither well had corner-braces. The bridled and dovetailed joints are considerably more efficient than the half-lap for jointing wide boards. In these joints a greater surface area of the end of any one timber is presented to the side of the adjoining board, while at the same time the two units are locked together. Though this would strengthen resistance to external thrust, these frames would still need to be packed round while being assembled in situ.

Wells 19 and 36 at Queen Street (reconstructions Fig. 19, PIs. 6–8) combined bridled joints with corner bracing. In both these cases only two corners were braced, whereas at
Excavations at Queen Street and Roman Wells in London

Fig. 19. Queen Street 1953 & 1960: Reconstructions of Queen Street Roman Wells. Wells 22, 31 half-lap joints, Wells 19, 36 bridled and braced.
76–80 Cheapside\textsuperscript{61} and St. Swithin's House, Walbrook\textsuperscript{62} (reconstruction, Fig. 21) braces were found in all four corners. All these wells were filled in the late 3rd–4th centuries. Most corner-braced wells in Britain, for instance at Wickford, Essex,\textsuperscript{63} and at Skeldergate, York,\textsuperscript{64} date to the 3rd or 4th centuries, though the Skeldergate well may have been constructed in the late 2nd century.

The Skeldergate well is the best recorded of the published box-frame wells in Britain.\textsuperscript{65} The use of all the joints mentioned above, together with a corner-post construction at the bottom, and also the saddle joint which is considered below, suggested that by the 3rd century the Roman carpenter had a considerable range of techniques for well lining. All box-frames in the Skeldergate well were braced at each corner. The question must be asked why, when a means had been found of building strong well linings without internal bracing in the form of corner posts and frameworks (such as that in Queen Street Well 24), bracing still occurred as a feature of these wells. The excavator of the Skeldergate well suggests several explanations.\textsuperscript{66} Firstly, the bracing could have been used as a ladder for access during construction, and subsequently for maintenance. This would certainly dispense with the need to keep a portable ladder, like that from Well 22, for this purpose. Secondly the braces may have served to strengthen the corners against lateral thrust and to provide a true right angle at the corner, thought it is doubtful that this was of primary importance. Finally, and perhaps most plausibly, it has been suggested that they were for attaching ropes with which prefabricated frames could be lowered into position.\textsuperscript{67} Corner braces were used for strengthening in the 1st–2nd century, for example in the tank at the Cheapside Bath house.\textsuperscript{68} Here however, they were small in proportion to the size of the tank (2.50m × 3.30m) and can only have been used for reinforcement. But if strength was a primary reason for the incorporation of corner braces in wells, they might be expected to occur in a large structure like Queen Street Well 22 (1.07m × 1.30m), where they were absent, rather than in a small well such as Well 36 (0.68m × 0.53m).

Well 36 (Fig. 19) at Queen Street demonstrates that frames prefabricated on the surface were lowered down the well shaft, as the bottom frame had become detached, and slipped to the north. This would not have occurred if the frame had been packed into place before subsequent frames were built above it. The difference between this type and the earlier half-lap type is the presence of corner-braces which should probably be seen as intended primarily to join frames firmly.
Excavations at Queen Street and Roman Wells in London

Milk Street

St. Swithins House

Poultry

Fig. 21. Queen Street 1953 & 1960: Box-frame wells from London (in reconstruction).
together so that they could be lowered into a well shaft in the same way that barrels, as free-standing structures, could have been. The other explanations cited above may also have been taken into consideration but were probably secondary to the main purpose of providing an alternative to the dangerous method of constructing frames and packing them round in situ at the bottom of a deep, narrow shaft.

As the London wells were mainly recorded as being cut into the natural subsoil, it is difficult to suggest what form of wellhead existed, or what was the original full depth. Clearly, different types of lining were used throughout the depths of wells. In some, barrels and box-framing were combined. While within a well it is possible to identify several different types of joint, in some cases this may represent repairs or reconstruction, although this could not be assumed from the London evidence. At Skeldergate, however, the width of the well decreased at the bottom, where corner-post lining took over. The well from Lime Street in London had a lining comprising one barrel placed inside the other. Above this, a square base-plate consisting of saddle-jointed beams was constructed, upon which a box-frame was placed. It is not impossible that this was the well head, although it might equally have been a change in the method of the lining, as in the case of Queen Street Well 31. It is interesting that a similar saddle jointed frame also appears in an analogous position at Chigwell, Essex. Only at Skeldergate has any outer shoring been identified, but it is impossible to say whether such shoring was used in London; perhaps the comparatively limited depth of most London wells rendered it unnecessary.

It is not possible to generalise about timber well construction in London because of the paucity of thoroughly examined examples, but some chronological development of techniques can perhaps be identified, although no one method gained any ascendancy. In the analysis of London timber-framed wells, the Queen Street wells must occupy a key position, as they include 21 out of around 40 known examples and are by far the best recorded group.
Excavations at Queen Street and Roman Wells in London

63. D. S. Neal 'Three Roman Buildings in the Bulbourne Valley' Herts. Arch. 4 (1974-76) 13, Fig. IX.
65. Ibid., 15-27.
66. Ibid., 26.
67. Ibid., 25, 26.
72. Apart from those wells mentioned above there are several London wells which were not fully recorded. There is one from Bucklersbury House (Guildhall Museum Excavation Register E.R. 237), a box-frame well from 71-74 Mark Lane (op. cit. in note 34). It is possible that the so-called Liminary deposit at the National Safe Deposit Company's Premises (London 1873) 35-34.

THE FINDS

With contributions and notes by Philip Armitage and Barbara West, Brenda Dickinson, Chris Green, Kay Hartley, Penelope MacConnoran, Geoff Marsh, Frances Pritchard and Alan Vince.

INTRODUCTION

The finds from the Queen Street sites are housed in three collections, at the Museum of London, Lloyds Bank International, and the British Insurance Association, Aldermary House. Material from all these collections is included below.

This report is not a complete list of objects recovered from the site: finds have been subject to selective discarding during the years since their discovery, making pointless any attempt at quantification or statistical work. Some classes of material were neither collected nor kept in a systematic way. These include window glass, building materials, slag and iron nails of all periods, and environmental material of Roman date, consisting of shells of mussel, whelk and oyster, plum and cherry stones, and, in addition to the bones described in the Appendix, bones of sheep, cow, and dog. No formal environmental samples were taken, however.

In all periods the finds represent domestic debris dumped in the wells and pits. In the Roman Well 22 and the post-medieval Well 55 this dumping occurred after fires. Only in Wells 22 and 31 did the finds represent the use of a well as such, rather than its subsidiary function as a rubbish dump. In 31 there was a bucket (No. 78) and in 22 the ladder (No. 92). As well deposits were chiefly random dumps, little information can be gained from their examination as groups. It is, however, possible that there was some ritual significance in the group of four animal skulls, two of which were clumsily butchered, in Well 36 (Appendix). A similar explanation may apply to the human skull in Well 22 (Appendix: Marsh and West, 1981; Neal 1976, 14).

Finds from the whole Roman period are represented, while medieval finds were predominantly 12th–15th century, and post-medieval objects were mainly 17th century in date.

The finds have been studied with particular regard to two factors—the evidence for dating in the absence of an adequate stratigraphic record, and the intrinsic interest of the objects themselves. Figure 22 gives a summary of dating evidence and its reliability. Finds were numbered and grouped according to the Excavation Register (E.R.) system then in use in the Guildhall Museum. E.R. designations are given in column 3 against their feature numbers. Most E.R. numbers are the finds groups from the fill of the feature, but where groups derive from specific layers within the fill of a feature this is stated in Column 2.
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dates attributed to the groups are based on the study of the pottery (see pottery reports, introduction to pottery reports, and Figs. 23, 27 and 42). In the final columns dating material is marked as ‘lost’ where it has not been available for study for this report. Here the excavator’s evaluation of date has been used.

In the catalogue, each find described is given a catalogue number which is reproduced in the illustrations. Descriptions are prefaced by the E.R. group number. At the end of each description the feature number, layer (where relevant) and the date of the object as determined in Fig. 22 are given. In some cases a Museum of London Accession Number (M.O.L. Acc. No.) is given. Objects in private hands at the Bank of London and South America (now Lloyds International) are given as B.O.L.S.A. and those at the British Insurance Association as B.I.A.

INTRODUCTION TO THE POTTERY REPORTS
Pottery has been studied chiefly as a means of dating features. Tables showing the contents of groups by Common Name are given as Figs. 23, 27 and 42. The reports and comments accompanying these tables describe pieces of particular interest, or forms not previously published from London. These are also illustrated. The reports and comments give reference to other publications where full descriptions of Common Name fabrics can be found.

Fig. 23 shows pottery types (recovered from the site) representing dates of 1st century to mid 2nd-century date. Fig. 27 likewise covers the late 2nd–4th centuries, and Fig. 42 the medieval and post-medieval periods. In these tables, an ‘x’ marked against a group E.R. number indicates the presence of a type in that group. A number indicates the catalogue number of a fully described and illustrated sherd. Dates in the tables are those allocated to groups by Chris Green (Roman) and Alan Vince (medieval and post-medieval) on the grounds of the proportions of types and fabrics present.
Pottery reports have been prepared in accordance with the system used in the Department of Urban Archaeology (Orton 1978; see also remarks in Orton 1979a). Pottery names in italics are Common Names (Orton 1979a, 29).

1. ROMAN

(a) POTTERY

Compiled from notes and identification by Chris Green, notes on mortaria by Kay Hartley, identification of stamps on samian ware by Brenda Dickinson, and notes on the other samian ware by Geoff Marsh.

(i) 1st–2nd CENTURIES (Fig. 23)

FINEWARES

(Figs. 24 and 25).

South Gaulish Samian. Fragments of most common forms:

Drag. 15/17, 18, 18R, 24/5, 27, 29, 30, 33, 36, 37. Ritt. 12 including one semi-complete from E.R. 85 (Well 24).

Brenda Dickinson makes the following comments on the stamped sherds:

CRESTIO; Die 15a on Ritt. 8 (La Graufesenque). Used frequently on forms 24 and Ritt. 8, noted at Kingisholm, Gloucester, and in Period I at Zwammerdam (c. AD 45–65). E.R. 603 (unstratified).

MARTI; Martialis, Die i. Incomplete 3 on Drag. 18R (La Graufesenque). Though this stamp has not previously been noted, the style of lettering indicates this potter. His stamps occur in a Claudio-Neronian group at Narbonne and on a Drag. 30 from Boudican burning at Verulamium. His decorated ware suggests a date c. AD 50–65. E.R. 603 (unstratified).

OF.MODE; Modestus, Die i, 6a on Drag. 15/17 or 18 (La Graufesenque). This particular stamp has no site dating, though his wares from Colchester, Cirencester, and Narbonne suggest a date range c. AD 45–65. E.R. 603 (unstratified).

OTNS; Scoonus, 5a on Drag. 15/17 or 18 (La Graufesenque). This particular stamp has no site dating, though his wares from Colchester, Cirencester, and Narbonne suggest a date range c. AD 45–65. E.R. 603 (unstratified).

MOM; Mommo, Die 14a (La Graufesenque). The die in its original form was used on form Ritt. 8, but stamps from the broken die appear consistently at Flavian foundations. There is one from Aislingen c.AD 70–90. E.R. 618 (unstratified).

SEVERI; Severus, Die 24d on Drag. 33 (La Graufesenque). There is no date for this stamp, but Severus' range is c. AD 65–95. Many of his stamps occur at Domitianic foundations like Gansstatt, and the main site at Corbridge. E.R. 595 (unstratified).

IV on Drag. 27g. 1st century. E.R. 108 (Pit. 34).

1. E.R. 81D (22). Complete bowl. Stamp of CRESTIO on Drag. 29. Simple design, with winding scroll ending in rosettes and stylised leaf tips above a lower zone of gadroons c.AD 55–75. B.O.L.S.A.

2. E.R. 607 (unstratified). Drag. 29. Upper zone has winding scroll ending in well moulded rosettes and leaf. The lower zone shows a fine vine scroll with a small bird (Oswald 2206 sim.), not dissimilar to that used by Senicio, see Knorr (1919, Taf. 76c) c.AD 50–65. A very close parallel is provided by the decoration on a Drag. 30 from Vindonissa stamped OF.MO see Knorr (1952, Taf. 77D). (illustrated).

3. E.R. 85 (24). Sherd in a very pale fabric. A poorly finished bowl with an upper zone showing panels of alternating arrowheads and animals, lion and deer (Oswald 1614). The lower zone has panels of latticing alternating with medallions containing an eagle (Oswald 2247 var.) and a bird (Oswald 2174). The general design indicates a date at the end of the range of the stamp FMATU; Matugenus ii, 4a, Drag. 29. The site record for this stamp includes Aislingen and Zwammerdam c. AD 50–70. (illustrated).

4. E.R. 607 (unstratified). Drag. 29. Upper zone has winding scroll ending in a small leaf. The lower zone also shows a winding scroll ending in a fine leaf and cigar twist c.AD 50–65. Extremely fine bowl with excellent silky slip.

5. E.R. 603 (unstratified). Drag. 30. A medallion containing a figure of Mercury (Oswald 517) used by Modestus c. AD 55–70 (illustrated).

Terra Nigra

6. E.R. 603 (unstratified). Native copy. Dark grey fabric with well rounded quartz inclusions mainly under 0.5mm diameter. Thin white internal margin below dark grey/black slip. Stamped with illiterate chequer pattern on inside base (illustrated).

Pompeian Red Ware I


Lyons Ware


Ring and Dot Beakers, see Green (1978a).


Lamp


Miscellaneous Finewares

11. E.R. 642 (Well 15). Fineware flagon with feathered decoration. Two vessels represented. Orange-red to orange brown fabric with inclusions of quartz, white mica, ? flint and ironstone averaging 0.1mm diameter. Drab red-brown slip or wash very finely applied. Source unknown (illustrated).
**Excavations at Queen Street and Roman Wells in London**

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**Fig. 23.** Queen Street 1953 & 1960: Summary table of 1st–2nd-century pottery.
Fig. 24. Queen Street 1953 & 1960: Decorated Samian ware, Nos. 1–5, 43, and Amphora stamps Nos. 19–22, 49 (1/2).
Excavations at Queen Street and Roman Wells in London

Fig. 25. Queen Street 1953 & 1960: 1st–2nd-century Roman pottery, Nos. 6–18, 23–24 (1/4). No. 6 stamp 1/2.
Fig. 26. Queen Street 1953 & 1960: 1st–2nd-century Roman pottery, Nos. 25–37 (1/4).
Excavations at Queen Street and Roman Wells in London

12. E.R. 595 (unstratified). Small bowl in an extremely fine light grey fabric with only silt-size white mica, and spherical limestone fragments (? micro-fossils) visible, both 0.05m diameter or less. Dark grey surfaces. Source unknown (illustrated).

13. E.R. 118 (Well 31). Vase neck. Grey fabric with ill-sorted quartz, mica, and iron ore inclusions up to 0.2mm in diameter, occasionally coarse. Inclusions up to 0.2mm in diameter, occasionally coarse. Inclusions are in a silty matrix. From E. England (illustrated).


AMPHORAE
(Figs. 24 and 25)

Rhodian Amphorae

Dressel 2-4 amphorae, see Green (1980, 15-20).

Camulodunum 185a amphorae, see ibid, 4-5.

Camulodunum 185 spp amphorae

Dressel 20 amphorae, see ibid, 1-3.


20. (Bank of London and South American site). Amphora stamp on handle. SEMPER POLY C. M.O.L. Acc. No. 22251 (illustrated). Nos. 19 and 20 are similar to Callender (1965, 472), stamp of C. Semp [ronii] Polyc [liti]. These are found on many sites, chiefly on S. Spanish globular amphorae c. AD 30-90.


22. E.R. 612 (Well 18). Amphora stamp Q.C.R. This stamp is found on many sites mostly on S. Spanish globular amphorae c. AD 60-110, see ibid, 1442.

Black Micaceous Amphora/jar
23. E.R. 642 (Well 15). A thin walled amphora or handled jar, strongly reminiscent of the well known late Roman Micaceous jar B iv (Peacock 1977a, 298) in size, form construction and fabric. The only reservations with this identification concerns the colour, which is grey with darker surfaces, rather than the usual red-brown, and the undoubtedly early (Flavian) date of these sherds are considerably earlier than the usual 3rd–4th-century examples. However a thin-section of the vessel shows the abundant inclusions of white and brown mica, a little angular quartz, and a possible/quartz/mica schist fragment, all 0.1mm or less across, which compare closely with late Roman specimens. The vessel is possibly best regarded, pending further discoveries, as an example from a similar source representing a casual arrival outside the main period of trade.

OTHER COARSEWARES
(Figs. 25, 26 and 28)

Group 1 Mortaria

Imported Mortarium
25. E.R. 113 (Pit 23). Off-white fabric with pink and grey core, subangular and rounded quartz fragments and iron-ore fragments up to 0.5mm diameter in a clear matrix. Beige surfaces with angular quartz and flint grits up to 1.5mm diameter applied on the wheel. Kay Hartley remarks that this is probably 1st century (illustrated).

Brockley Hill/Vernanium White wares. See Green (1980, 53–106: Forms include his 53, 54, 64, 65, 78-80.)


Hoo Ware, see Green (1980, 38).


Other Flagons
30. E.R. 602B (unstratified). Flagon is orange-buff fabric with fairly sparse inclusions largely of quartz 0.1mm–0.2mm in diameter. Source unknown; possibly pre-Flavian (illustrated).

Miscellaneous coarse hand-made greywares

32. E.R. 100 (Pit 27) (illustrated).

33. E.R. 603 (unstratified) (illustrated).

Miscellaneous coarse wheel-made greywares
34–37 E.R. 100 (Pit 27) (illustrated).


Lampholder
41. E.R. 85 (Well 24). Drab brown fabric distinctly streaked with white clay when seen under a lens. Moderate inclusions of sub-angular quartz up to 0.5mm diameter with some very fine iron-ore and ? fine sandstone. Mud stained surfaces, possibly imported (illustrated).

Miscellaneous Coarsewares
42. E.R. 603 (unstratified). Pinched flagon neck (illustrated).
(ii) 2nd–4th CENTURIES

FINEWARES
(Figs. 24 and 28)


East Gaulish Samian. Fragments of forms Drag. 31, 32, 33, 37, 40, 43, Lud Tg. Groups included two stamps: SATURI [. . .]F; Saturio iii, 3d on Drag. 31 (Rheinzabern). Saturio is only datable by his forms which include Drag. 31R, 32 and Lud. Tb. Late 2nd–early 3rd century. E.R. 93 (Well 19).

43. E.R. 109 (B.30) COM[TIAFISF]; Comitialis, Die 5a (retrograde) on Drag. 31 (Rheinzabern). This stamp is noted at Holzhausen after c. AD 180. Comitialis’ decorated ware suggests a late 2nd–early 3rd-century date c. AD 180–220. Decoration consists of a freestyle animal design showing lions, dogs, bears and deer (Oswald 1456, 1918, 1603, 1628, 1721 and 1732). The moulding is inferior (illustrated).

Cologne Fineware. See Green (1980, 72) Forms include a roughcast beaker.


'Colouge' Roughcast, see Green (1980, 316).


Moselkeramik, see Greene (1978).

Hadham ware, see Harden and Green (1978).


Oxfordshire red wares, see Young (1977). Includes his form c 51, c 75, c 72–4, c 100.


Ceramique à l’Éponge, see Raimbault (1973).


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Fig. 27. Queen Street 1953 & 1960: Summary table of 2nd–4th-century pottery.
Fig. 28. Queen Street 1953 & 1960: Roman pottery; 1st–2nd century, Nos. 38–43; 2nd–4th century Nos. 44–48, 50–54 (1/4).
Fig. 29. Queen Street 1953 & 1960: 2nd–4th-century Roman pottery, Nos. 55–64 (1/4).
OTHER MORTARIA
see Howe, Perrin and Mackreth Nene Valley Mortaria,

OTHER COARSEWARES
Colchester Mortaria
Verecundus Mortarium
Excavations at Queen Street and Roman Wells in London see Green (1980, 1-3)


55. E.R. 108 (Pit 34). Cream fabric with pink core and orange surface patches. Abundant inclusions of mainly well-rounded quartz up to 1.5m diameter. Grits similar. Kay Hartley notes that this is from the factory of Verecundus at Yewley in Lower Germany and was made c. AD 150-20 (illustrated). Seller mortaria were found in some quantity at New Fresh Wharf (Hartley 1977, 62).

Other Mortaria
54. E.R. 108 (Pit 34). Mortarium of grey-white fabric with orange-pink surfaces. Moderate to abundant inclusions of sub-angular quartz, and some iron ore 0.1-0.3mm with larger siltstone fragments. Grits lost. This is a slightly different fabric from No. 54, and, though not certainly from the Verecundus factory, is probably a German import, c. AD 150-200.

56. E.R. 93 (Well 19). Mortarium rim in an unusual fabric. Hard, brick red fabric with duller surfaces. Ill-sorted, abundant inclusions of sub-angular and more rounded quartz up to 0.4mm diameter with occasional iron ore. Grits of white and grey coloured flint, sub-angular, up to 5mm diameter. This sherd is from S.E. England, and dates to c. AD 200+, though is more likely to belong to the 3rd-4th century (illustrated).

57. E.R. 109 (Well 33). Mortarium of white fabric with off-white surfaces, moderate to abundant inclusions of sub-angular quartz with occasional more rounded fragments of red ? schist. Inclusions ill-sorted up to 0.7mm in diameter. Grits of more-or-less rounded quartz up to 3mm diameter. This well worn sherd is a Rhineland import of c. AD 150-200 (illustrated).

58. E.R. 109 (Well 33). Stamped mortarium. Pale beige fabric with moderate amounts of sub-angular quartz and sparse iron ore up to 0.2mm diameter. Grits sub-angular up to 3-4mm diameter, and mainly composed of quartz or quartzite with lesser amounts of ferruginous siltstone or very fine ? sandstone, flint limestone and coarser sandstone.

Mrs K. Hartley makes the following comments: ‘Dr. 34cms. The small, neat, herringbone stamps are from the same die as stamps from Fishbourne (Cunliffe 1971, 172, Fig. 82, No. 9), and from a kiln-site at Wiggonholt. A stamp from a die which differs only very slightly and which can be attributed to the same workshop is in the B.M. (provenance unknown). All of these stamps are on similar mortaria and it was his normal practice to impress his die twice close together at each side of the vessel. They were probably all made at Wiggonholt, Sussex (Evans 1974, 45-50). The rim-profiles used would best fit a date within the period A.D. 150-190.’ (illustrated).

Highgate Type Ware, see Green (1980, 115-160).

B.B.1, see Farrar (1973), also Williams (1977b).

B.B.2, see above No. 29.


Colchester Coarsewares, see Green (1980, 377-9).

Alice Holt ware, see Lyne and Jeffries (1979). Includes their forms 3B, 5B5, 6A4.

Portchester ‘D’ ware, see ibid, form 3C11.

Miscellaneous wheel made coarse grey wares
60. E.R. 93 (Well 19). Jar (illustrated).


Miscellaneous coarsewares
63. E.R. 80 (Well 20). Amphora stopper or unguent pot (so-called) (illustrated).

64. E.R. 109 (Well 33). Amphora stopper or unguent pot (so-called) (illustrated).

(b) GLASS
(Fig. 30)


67. E.R. 603 Glass stirring rod 105mm long, 7mm in diameter. Similar rods are found at all dates in the Roman period (Harden and Price 1971, 366). M.O.L. Acc. No. 25118 unstratified.
Fig. 30. Queen Street 1953 & 1960: Roman objects of glass; Nos. 65–66, and copper alloy No. 68, 71 (1/2). No. 68a 1/1.
Excavations at Queen Street and Roman Wells in London

(c) COPPER ALLOY
(Figs. 30 and 31)

68. E.R. 85. Fragments and handle of jug. The footring is thick and heavy, but relieved by a series of deeply cut concentric grooves. The handle is solid cast and was attached to the rim and body by soldering. It is bowed above the mouth of the jug, and includes a thumb spur for pouring. The arms, which are attached to the rim, terminate in rounded finials. The base escutcheon is in the form of a female winged bust. The head is turned to the right, and looks down. Drapery, represented by deep grooves, sweeps over the shoulder and across the bust. The hairstyle is arranged with a parted central crest, from the sides of which the hair sweeps down to cover the ears. The hair, and feathering on the wings, are represented by shallow grooves. The treatment of the base is typical of vessels of the 1st–2nd century which were cast, and then lathe finished by turning, see Brown (1976, 35, Pl. 36) and Eggers (1966, Figs. 57–65). The vessel is from the fill of Well 24, and could therefore be of Flavian date or earlier (illustrated). The winged female bust may be a representation of Victory. The hairstyle on the handle escutcheon appears on cameo representations of Augustus' wife Livia and his sister Octavia from Rome and the Hague respectively (Bardinelli 1970, 213–4). This may suggest an Augustan date for the vessel, which may thus have been a very early import.

69. E.R. 254. Complete jug or flagon. The base of this vessel is of similar thickness to the sides. There are few lathe marks, and the only decorative work is a rouletted band between two lines of the girth. The handle is formed of a metal strip, terminating at the base with a convex disc, and is soldered to the side of the jug. The handle is split at the top into two strips which are half twisted to present a flat face to the side of the neck. The neck and strips were then rivetted together. Fractures around the base, body, and handle were repaired by the application of lead patches. Unlike No. 68, this jug appears to have been lathe spun (Hodges 1965, 75) using the method of manufacture employed on a jug from Grange Road, Winchester, see Toynbee (1967, 240–1). This jug, however, differs greatly from 1st and 2nd century jugs like that from Winchester, and others from Britain (Eggers, 1966), which were often Campanian imports. In particular it lacks the large, symmetrical mouth, and elaborate ornament. An undated parallel was found at Choisy-au-Bac (Oise) in Gaul (Tassinari 1975, 70, Pl. 85). From the fill of Well 36 and therefore 3rd–4th century or possibly earlier. B.O.L.S.A. (illustrated).

70. E.R. 608. Shallow lathe spun dish, with well defined lathe centre-mark and a low footring cf. Tassinari (1975, 48–50, Pls. 84–86). Fracturing around the base was repaired with lead. From the fill of Well 1 and therefore Roman (illustrated).

71. E.R. 589A. Rim fragments of spun bowl. From the fill of Well 7 and therefore not earlier than Neronian (illustrated).


73. E.R. 586. Instrument similar to No. 72. The shank is partly fluted with a probe terminal. Below a triple moulding is a narrow, broken projection. From the fill of Well 2 and therefore 1st century. B.I.A. (illustrated).

74. E.R. 80. Stud in the form of two serpentine pieces placed back-to-back, with outward-turning corners. Back fastening in the form of a projection of rounded section, tapering and notched towards the end. From the bottom fill of Well 20 and therefore not later than Antonine in date. M.O.L. Acc. No. 21488 (illustrated).

75. E.R. 586A. Strip of sheet metal cut in an 'L' shape, with traces of lead on the back possibly for fastening. From the fill of Well 3 and therefore 1st century (illustrated).

76. E.R. 113. Undecorated ring with rounded cruciform section. From Pit 23, and therefore 1st century (illustrated).

(d) IRON
(Figs. 31, 32 and 33).

77. E.R. 81D. Slide-lock key. The handle is pierced with a circular hole. The shaft of the handle is of square section, but the corners are chamfered to an octagon near the wards. The wards consist of four rectangular prongs set in an 'L' shape, with three at right-angles to the handle. From the lower organic layer in Well 22 and therefore Flavian or earlier. B.O.L.S.A. (illustrated).

78. E.R. 118. Bucket handle of square section terminating at each end in a hook. The handle was flattened and dished at the top of the bow. When found the handle was attached to a bucket, described by the excavator as 'a single piece of wood bound round a thick base and rivetted.' From the burnt fill of Well 31 and therefore possibly as late as Hadrianic. M.O.L. Acc. No. 21181 (illustrated).

79. E.R. 254B. Tool shaped in exactly the same way as a modern builders or pointing trowel, with a spiked tang for insertion into a wooden handle made in one piece with the blade. The broken edges of the blade make it impossible to deduce the original shape. M.O.L. Acc. No. 21182 (illustrated).

80. E.R. 254B. Curved and flanged fragment of iron, possibly part of the rim of a bowl, dish or ? helmet (illustrated).

81. E.R. 254B. Single edged, triangular sectioned iron blade with broken tip and edge. The blade seems originally to have been straight backed and curved with a rivet hole at the base (illustrated). 79–81 were from the fill of Well 36 and are therefore 3rd–4th century or earlier.
Fig. 31. Queen Street 1953 & 1960: Roman objects of copper alloy, Nos. 69–70 and iron Nos. 77, 79 (1/3). Objects of copper alloy Nos. 72–76 (2/3).
(e) LEAD
(Fig. 32)
82. Two pieces of lead water pipe, probably both from the same length. The pipe is made from sheet lead 7–10mm thick folded over to form a tube. One edge of the sheet was then folded over the other and heated or soldered to form a joint. One piece retains the thick flange formed when molten lead was applied, to join two pieces of pipe. From the fill of Well 31 and therefore possibly as late as Hadrianic in date. M.O.L. Acc. Nos. 24518–9 (illustrated).

(f) BONE
(Fig. 32)

(g) WOOD
(Figs. 32, 33 and 34)
84. E.R. 81D. Ladder 5.59m long of oak. Recently published in full in these Transactions (Weeks 1978). The dating given by Weeks, 1st century AD, can be further narrowed down to the Flavian period or earlier since it was found below the Flavian dump in Well 22. M.O.L. Acc. No. 21234.

BARRELS: Barrels in well linings are discussed above (p. 23). The following points were recorded on site during excavation, and the barrels themselves do not survive. Well numbers are given in brackets after the E.R. number.

85. E.R. 88 (Well 37). Barrel of 660mm top (raised) diameter, and 840mm diameter at the middle bulge (Pitch). Comprised 36 staves each 50–80mm in width and 10mm thick. The top and base grooves for the heads were 40mm from the ends of the staves. At the base two thin wood bands survived, and the top binding was willow. N. Cook identified the staves as fir (Pl. 5).

86. E.R. 106 (Well 35). 5 staves of a barrel 0.93m in top diameter.

87. E.R. 106 (Well 35). Barrel 1.22m high, with a top diameter 0.68m. Staves were of fir (identified by N. Cook) and hoops were of hazel. Three hoops survived at the top and one at the base.


Nine other barrels were found:
E.R. 586 (Well 2) 1  E.R. 642 (Well 15) 1
E.R. 612 (Well 18) 2  E.R. 644 (Well 14) 2
E.R. 624 (Well 17) 1  E.R. 645 (Well 16) 2

The capacity of No. 85 can be estimated at 363.98–409.14 litres (80–90 gallons), and that of No. 87 at 490.96–545.52 litres (108–120 gallons), using the ratios of dimensions to capacity put forward by Kilby (1971, 63). These capacities are close to 15 amphorae (393.95 litres) and 1 culeus (525.30 litres) (Hultsch 1971, 704), respectively. If the barrels were made to contain a specific capacity, these were the quantities intended. A barrel from the Bank of England was estimated by Kilby as holding approximately 2 culea (1050.60 litres) (Kilby 1971, 100).

It is probable that the fir wood used in the barrels was silver fir albies alba (pers. comm. Vanessa Straker). Though this wood is not indigenous to Britain, it has been found in barrels at Silchester (Boon 1974, 86, 263–6), possibly at Peninsular House, London (pers. comm. V. Straker), and in a bucket made of reused barrel staves from York (Williams 1977a, 332). The elder Pliny (Natural History, cited by White 1975, 141–2) stated that a coniferous soft wood was the best type for use in coopering. It may be the case that, like at Silchester (Boon 1975, 265), only a few staves from Queen Street were examined. This is unfortunate as it is clear that often more than one wood was used in the making of a single barrel. The barrel from Harelbeke in Belgium (Vierin et al. 1961) had staves of both larch and silver fir. The Oberaden barrel (Hopf 1967, 214) had staves made of five different woods, and hoops of four. The majority of the staves, however were silver fir, and most of the hoops were hazel. The Silchester barrels were also made of silver fir and hazel providing a good parallel to the Queen Street vessels. The natural habitat of silver fir is high in the mountains of southern and central Europe, especially in the Alps (McGregor 1978, 33) and most of the barrels found on the Rhine and the Danube, the major riverine trade routes from the Alps, are made of similar materials (Ulbert 1959). It seems likely that the barrels were used for the transport of wine, and tarryates from the barrel from Oberaden have proved this in one case (Hopf 1967, 216), though Kilby (1971, 98) points out that the type of wood would cause wine to deteriorate. Boon (1975, 265) suggests that rough staves were sent to river ports to be made into bar-
Fig. 32. Queen Street 1953 & 1960: Roman objects of iron, Nos. 80–81; lead, No. 82; and wood, Nos. 90–100 (1/3). Bone pin, No. 83 (2/3).
rels, and the discovery of iron stamps (Garbsch 1970, 108), sometimes put on the cross-peins of cooper's axes (Donnheimer 1971) have been found in such places. Most of the epigraphic evidence for the use of barrels shows them being transported by boat (Esperandieu 1907, VII No. 5833, VI Nos. 5184, 5194 and 5198; Pobé and Roubier 1961, 84) and many come from the Rhine. Some reliefs show one or two barrels mounted on wagons (Esperandieu 1907, I No. 4, IV No. 3222, VI No. 5148 etc.) Boon (1975, 266) points out that the weight of laden barrels would often exceed the maximum loads allowed on road transport. Though there are barrels but no recognisable amphorae on Trajan's Column (Boon 1975, 266) it is clear from a relief from Arlon (Esperandieu 1907, V No. 4072) that the two types of bulk containers were not mutually exclusive.

Though the direct trade route up the Rhine to the Thames is the most probable source for the barrels it may be relevant to mention the evidence for coopering in the Bordeaux region. Tombstones of cooperers have been found at Bordeaux and Nantes (Esperandieu 1907, IV Nos. 1112, 1621). The Garonne was, according to Strabo, one of the major rivers from which trade embarked to Britain. This trade is also attested in inscriptions of the 1st century, and more notably in the 3rd-century inscription of M. Aurelius Lunaris (Corteault 1921, 104).

The barrels used to line wells in Queen Street all dated to the 1st–2nd centuries, and the lack of 2nd–4th-century barrels might indicate that by this time the importation of wine in barrels had ceased. The 80 barrels listed by Ulbert, which include other British examples show a similar decline in the later Roman period. All six from Britain are 1st–2nd century in date. Those from Silchester are listed as undated though Boon (1975, 264) suggests an early date for at least one of these. On the continent were 15 undated barrels, 41 of the 1st–2nd century and 11 of the late 2nd–3rd century. The decline of barrel imports in the late 2nd century coincides with the well attested decline in the numbers and range of amphorae imported to Britain generally and, though outside the scope of the present paper raises questions on the continuation of the wine trade to Britain.

69. Writing tablet: most other writing tablets from London are of the wax type (Chapman 1977, 1980b). This specimen is of wood with slightly ribbed edges and is made to carry writing in carbon ink. The tablet closely resembles examples from Chesterholm (Vindolanda), Northumberland (Bowman, Thomas and Wright 1974). The object is fragmentary and is preserved between two sheets of glass. Infra-red photographs of the writing on the tablet were submitted to Dr. A. K. Bowman, but unfortunately the ink writing could not be deciphered. M.O.L. Acc. No. 27734 (unstratified).

All other wooden objects were conserved with alum. This process has caused the wood to go brittle and friable making species identification difficult. Nevertheless, the wooden objects were submitted to Vanessa Straker for identification, and her comments are incorporated below.

90. E.R. 88. Lathe-turned cup in unidentified hard wood. No centre mark is visible, but the base and lower part of the inside are scored with turning marks. The rim is beaded, and there is a shallow foot-ring. From the fill of Well 37, and therefore not later than the 3rd century. B.O.L.S.A. (illustrated).

91. E.R. 80. Lathe turned bowl in hardwood, possibly ash or maple. Deep foot-ring, beaded rim and two narrow beads are cut round the body. From the fill of Well 22 and therefore Antonine or earlier. M.O.L. Acc. No. 21671 (illustrated).

92. E.R. 81D. Lathe-turned handled bowl or dipper in unidentified wood. (See Merrifield 1965, Pl. 11B). The bowl had a stepped rim, and the centre of the base was raised. The straight handle was fixed to the bowl with a wedge-sectioned triangular rivet of iron (Fig. 33). This rivet was hammered through the side of the bowl into the end of the handle. The end of the rivet was then hammered flat against the side of the interior of the bowl. This method of fastening had caused the handle to split. From the lowest fill of Well 22, and therefore Flavian or earlier in date. B.O.L.S.A. (illustrated).

93. E.R. 81D. Scoop or spoon made from a single piece of unidentified softwood. The bowl is 155mm long and the handle is 105mm long. There is a shoulder at the top of the bowl leading into the handle, which terminates in a pierced disc. From the lower organic layer in Well 22 and therefore Flavian or earlier. M.O.L. Acc. No. 21235 (illustrated).

94. E.R. 106. Small flat spoon made from a rectangular piece of unidentified hardwood hollowed out at one end to form the bowl. From the fill of Well 35 and therefore pre-Flavian in date. M.O.L. Acc. No. 21490 (illustrated).


96. Complete spindle in unidentified hardwood. Biconical and tapering towards each end cf. Chapman (1980b, 671–73), and probably lathe turned. From
Fig. 33. Queen Street 1953 & 1960: Roman objects of iron, No. 78; and wood, Nos. 92, 103 (1/4).
Fig. 34. Queen Street 1953 & 1960: Roman wooden objects, Nos. 101–102; and leather shoes, Nos. 106–110 (1/3).
the Bank of London and South America site, no other provenance known. B.O.L.S.A. (illustrated).


98. E.R. 80. Rectangular object in oak. One edge is sharply bevelled. A deep groove is cut parallel to the bevelled edge. Though this may have formed part of a mortice and tenon joint, the function of the object is unknown. From the fill of Well 20 and therefore not later than Antonine. M.O.L. Acc. No. 19874 (illustrated).


100. E.R. 109. Knife worked peg or stake in hardwood (not oak). From the fill of Well 33 and so 3rd century or earlier (illustrated).


104. E.R. 80. Three lengths of oak branch, stripped but not worked. Average length 400mm. They could have been ladder rungs. From the fill of Well 22 and therefore Antonine or earlier.

(h) LEATHER TRUNKS
(Fig. 35)

105. E.R. 81D. Photographs (Cook 1955, 6–7; Merrifield 1965, Pls. 116–117; Marsden, 1980, 63) and a brief description (Waterer 1976 187–8) of this object have been published, but no detailed examination has yet been attempted.

The grain side of the leather was turned outwards, an arrangement which would be more comfortable to the wearer. Each corner of the original shape was reinforced on the inside with two rectangles of leather 44mm × 26mm each cut in one piece with a lace 540mm in length. The reinforcements were stitched to the corner tabs with the stitch Groenman-van Waateringe type 1b (1967, 27). The triple layers of leather thus formed on the corners were pierced with two semi-circular slots 15mm in diameter.

The method of fastening can be reconstructed since the left hip tie remains intact. Each lace was threaded through one of the opposing slots and pulled tight drawing the sides of the garment together. Each pair of laces was then doubled back and tied to the other to secure the trunks.

The trunks are well worn, with deeply defined stretch marks across the front, the pattern of which would appear to preclude a male wearer. No laces survive on the front right-hand corner, and the reinforcements on both right-hand corners had pulled away. The laces on the left side had been tied by the wearer in a ‘granny’ knot. Leaving an allowance of 10% for the shrinkage of the leather, an allowance used in order to estimate footwear sizes (Rhodes 1980, 102), a hip measurement of 790mm (31 in.) is produced, emphasising the likelihood that the wearer was a young woman or a girl.

From the lower organic deposit in Well 22, it was therefore of Flavian date or earlier. M.O.L. Acc. No. 21233. Reconstruction by the late John Waterer in the B.O.L.S.A. collection (illustrated).

The only similar garment to have been found also comes from London, from the probable watchtower at Shadwell, and is 3rd century in date (Johnson 1975, 279). These trunks are more ornate than those from Queen Street. They are decorated with openwork at the front, and were frilled round the legs. They tied with 3 laces at each corner, which were cut out in one piece with the garment, and which were not reinforced.

Other parallels can be found in pictorial and sculptural representations of figures wearing similar trunks, though it is not always
Fig. 35. Queen Street 1953 & 1960: Roman leather trunks, No. 105 (1/3).
Fig. 35a. Queen Street 1953 & 1960: Roman parallels to leather trunks (a) Bronze figurine from Rennes, (b) Bronze figurine from Hamburg, (c) and (d) Terracotta figures from Dougga (c) and (f) Mosaic from Piazza Armerina. (Sketch drawings; not to scale).
possible to say of what material the trunks depicted might have been made. The mosaic in the 3rd-century villa at Piazza Armerina, Sicily (Wheeler 1964, 137, Pl. 11a) shows female figures wearing black, undecorated trunks (Fig. 35a; e,f), which might well be of leather, though other figures on the same mosaic could be wearing either embroidered cloth or painted leather trunks. The figures on this mosaic are all female acrobats or dancers.

The Queen Street trunks were of Flavian or earlier date. The only contemporary representation of trunks which may have been leather is on a marble statuette of Venus from the Villa of Julia Felix, Pompeii (Ward-Perkins and Claridge 1976, 85, No. 218). The "bikini" type costume is gilded on to the marble figure, and it is quite possible that this was intended to represent gilded leather, fragments of which have been found in London (Waterer 1976, 192). The bikini is cut with openwork decoration representing saltires within squares closely resembling the openwork on shoes of the Roman period (Waterer 1976, Fig. 203; Rhodes 1980, Nos. 632-660) and the two halves of the costume are joined with an arrangement of cross-belts. This type of openwork garment is not confined to the 1st century A.D, since a stucco relief from the Cyclops baths at Dougga, Tunisia (pers. comm. R. Erskine) depicts trunks similar to the lower part of the costume from Pompeii (Fig. 35a; c). On this relief the trunks are picked out in clear black paint. The openwork in the trunks from Shadwell may be a variation on this type of garment. A further representation of decorated trunks from Dougga has a scaled pattern which could represent moulded, incised, or slit leather (Fig. 35a; d).

Apart from the somewhat undiagnostic depictions at Piazza Armerina, there are only two representations of undecorated trunks, on very similar bronze figures from Rennes (pers. comm. M. Berhaut, Musée des Beaux Arts, Rennes No. 6196, now lost. Merrifield 1965, Pl. 116: Fig. 35a; a) and Hamburg (pers. comm. A. Kossatz, Museum für Kunst und Gewerbe, Hamburg No. 1917/362: Fig. 35a; b). The figures both represent acrobats, the Rennes figure is holding jumping weights. They are female figures with similar hairstyles, and both are wearing trunks, and kneepads fastened with some form of cross-gartering. These kneepads in themselves show that some form of athletic activity which involved a strain on the legs was being enacted. The trunks on the Rennes figure paralleled the openwork trunks from Dougga, and also one of the Piazza Armerina figures, in having side-rings as provision for fastening, whereas the scaled trunks from Dougga and also the Hamburg figure show simple knotted fastenings of the type attested at Queen Street, and probably also at Shadwell.

It will be noted that all the above representations on which trunks similar to those from Queen Street occur are of women or girls, and all except that from Pompeii show dancers or acrobats. There are other Roman depictions of dancers, acrobats, or actors showing loincloth type garments (Daremberg and Saglio 1887, 592, 6057, 6677, (1426)) but it is not possible to say what material these were made of. The term subligaculum meaning a type of loincloth, is used by both Cicero (De Officiis I, XXXV, 12a) and Juvenal (Satires, VI, 70) with reference to actors and female performers, though whether the Queen Street trunks should be so termed is open to speculation.

The above points would appear to indicate that the Queen Street trunks are an example of a type of garment used throughout the Roman period by female acrobats or other performers.

Hitherto the garment has usually been referred to as a 'bikini'. This however may be a misnomer. Though the representations from Piazza Armerina and Pompeii show two piece costumes, those from Dougga, Rennes and Hamburg are bare-breasted.

(j) LEATHER FOOTWEAR
by Penny MacConnoran
(Figs. 34, 36 and 37).

106. E.R. 93. Right-foot nailed shoe. 198 x 72mm. Child size 13. Bottom unit is complete and consists of insole, middle and sole. Three double thong slots occur along centre line of insole. There is a heel stiffener in situ. The nailing pattern is of Type A with a diamond shape in the forefront; for a list of parallels see Rhodes (1980, 107). This is the only
107. E.R. 93. Right-foot nailed shoe. 243 x 89mm. Adult size 6. Insole only. Central thong slots present. Tunnel stitch holes on the flesh side indicate that the upper had been attached by means of a lasting margin. The nailing pattern is of Type B. The forepart is displaced inwards. A considerable number of excavated shoes from London (M.O.L. Acc. Nos. 3479, 14175, 14177, 79.244/144, 79.244/30, 79.244/90 and 79.244/89; Marsden 1965, Fig. 20, No. 7; Rhodes 1980, Figs. 59 and 60, No. 523) as well as a single example from York (MacGregor, 1978, Fig. 28, No. 33b) are of similar shape. None of the above examples has the circular nailing pattern that is a feature of soles of this shape from Vindonissa, which Gansser-Burckhardt (1942, 68-73) suggests are orthopaedic shoes for people suffering from a foot deformity. However, the sheer abundance of the London examples demands a more plausible explanation for the odd shape, and it may simply represent a whim of fashion. In this respect, the toe shape of 107, E.R. 93 (B12) is markedly rounded. An impressed double line runs around the edge of the insole, making this the only nailed shoe with decoration on the bottom unit. M.O.L. Acc. No. 21193 (illustrated).

108. E.R. 93. Left-foot nailed shoe. 240 x 77mm. Adult size 6. Incomplete bottom unit consists of an insole and a middle composed of two pieces of leather overlapping at the waist. A similar two-piece middle can be seen on a shoe in the Museum of London (M.O.L. Acc. No. 24823), whilst other examples are known from Zugmantel (Busch 1965, Taf. 37, No. 800) and Saalburg (Busch 1965, Taf. 11, No. 211). The central thonging survives in situ. The nailing pattern is of Type A. M.O.L. Acc. No. 21195 (illustrated).

109. E.R. 93. Nailed shoe 192 x 89mm. Of adult proportions but too incomplete to calculate size. Part of the sole survives as well as a tongue-shaped middle. Similar middle parts are known from London (e.g. M.O.L. Acc. No. 24771) and from Zugmantel (Busch 1965, Taf. 37, No. 804). Central thong slots are present. Due to the incompleteness of the shoe, it is difficult to determine the nailing pattern. M.O.L. Acc. No. 21194 (illustrated).

110. E.R. 93. Left-foot nailed shoe. 190 x 72mm. Child size 12. Bottom unit is complete and consists of insole, middle and sole. Central thonging survives. Heel stiffener is in situ. The surviving portion of upper on this shoe is of especial interest. A continuous shallow stretch of upper (average height: 16mm) runs around the bottom unit, slightly overlapping the edges of the heel stiffener. It is attached to the bottom unit by means of a lasting margin inserted between the insole and the middle. Tiny scallops have formed along the top edge which has a row of small stitch holes. Several shoes with a similar type of upper were found at Saalburg (Busch, 1965, Taf. 9, Nos. 194-196). Busch (1965, 184) suggests that uppers made of fabric which has not survived were stitched onto the leather. However, a shoe of similar construction has recently been found in London (NFW 74 220/576) and this demonstrates that the top-stitched stretch of upper was used as a lining for a closed leather upper. It seems likely that the upper surviving on 110, E.R. 93 (B12) served a similar function. The shoe has a Type A nailing pattern with two straight rows in the forepart. M.O.L. Acc. No. 21192 (illustrated).

111. E.R. 93. Right-foot nailed shoe. 274 x 101mm. Of adult proportions but too incomplete to calculate size. Bottom unit consists of fragmentary remains of middle and sole. The middle is composed of three smallish regularly shaped pieces of leather intended to act as a filler between the edges of the lasting margin of the upper. Parallels for middles of this type are known from Hardknott (Charlesworth and Thornton 1973, 141 and 146, and Nos. 1 and 2). A fragment of thonging survives. Upper remains consist of part of side and back quarters with partially surviving lasting margin. There is a Type A nailing pattern with possibly four straight rows in the forepart. M.O.L. Acc. No. 21196.

112. E.R. 93. Left-foot nailed shoe. 226 x 72mm. Adult size 4. Nearly complete bottom unit consists of insole and sole. Forepart has remains of lasting margin of upper in situ. The nailing pattern is of Type A with an S pattern in the forepart. Examples of this pattern are known from London (e.g. M.O.L. Acc. No. 992), while others have occurred at Zugmantel (Busch, 1965, Taf. 35, Nos. 761, 763, 765, 768 and 769; Taf. 9, Nos. 194, 195, 197 and 198). The nails on this shoe are unusually small and must originally have numbered about 112, M.O.L. Acc. No. 21750.

113A. E.R. 93. Moccasin. Length: 25mm. The surviving upper parts have elongated loops through which a thong would have passed to close the shoe over the foot. The moccasin is plain apart from decorative knobs at the base of the ankle strap. There is a seam up the back of the heel. Similar examples are known from London (e.g. M.O.L. Acc. Nos. 14129, 14154; Rhodes 1980, Fig. 69, No. 641) and from Bar Hill (Keppie 1975, Fig. 20, No. 13). M.O.L. Acc. No. 21199 (illustrated).

113B. E.R. 93. Left-foot nailed shoe. 260 x 94mm. Adult size 8. Nearly complete bottom unit consists of insole, middle and sole. Thonging survives in situ. The nailing pattern is of Type C and is similar to that on 114, E.R. 93, M.O.L. Acc. No. 21199B (illustrated).

114. E.R. 93. Left-foot nailed shoe. 260 x 98mm. Adult size 8. Bottom unit is incomplete and consists of insole, middle and sole. Central thonging in situ. Nailing pattern is of Type C and is similar to that on 113B, E.R. 93 (B12). M.O.L. Acc. No. 21197 (illustrated).
Fig. 36. Queen Street 1953 & 1960: Roman leather shoes, Nos. 113–118 (1/3).
115. E.R. 93. Part of the front fastening of an upper. Ten stitch holes run around the scalloped edges indicating that this is a reinforcement which was stitched to the inside of a latchet. A shoe from York (MacGregor 1976, Fig. 29, No. 362) shows a similar reinforcement in situ. Other parallels occur at Zugmantel (Busch 1965, Taf. 34, Nos. 749 and 750) and Saalburg (Ibid. Taf. 26, No. 355) M.O.L. Acc. No. 21197 (illustrated). Nos. 106–115 from the fill of Well 19 and therefore 3rd–4th century or possibly earlier.

116. E.R. 254B. Left-foot nailed shoe. 293 × 95mm. Adult size 12. Bottom unit incomplete and consists of insole, middle and sole. The sole-shaped middle is small and lies within the edges of the lasting margin of the upper. Similar middles are found on nailed shoes from Portchester Castle (Ambrose 1975, Figs. 132 and 133, Nos. 264 and 266). Central thonging is present. There is a small portion of the toe end of the upper in situ. Detached upper parts consist of the back of the quarters with heel stiffener within, also, part of the front. This latter has six tie holes down its front edge and this and the top edge had been folded inwards and stitched. The upper remains suggest that this was a close type of ankle boot, laced up the front. The upper would have been whole cut, (i.e. formed of a single piece of leather) the seam lying at the side of the quarters. Parallels are known from Bar Hill (Keppie 1975, 73 and Fig. 24, No. 44). See also Rhodes (1980, 115). The nailing pattern is of Type A. The sole has three different nailing designs. The elaborate leaf-like pattern occurs on other London specimens (M.O.L. Acc. Nos 15643, 12403, 15634) while parallels are known from Vindolanda (Metcalf and Longmore 1975, 38 and Fig. 1), Saalburg (Busch 1965, Taf. 15, Nos. 223 and 224) and Zugmantel (Ibid. Taf. 34, Nos. 752 and 754). Normally the curving stem of the design lies at the waist end of the sole—the upside-down version on 116 may have been deemed necessary to provide sufficient space for the diamond pattern at the waist. From the fill of Well 36 and therefore 4th century or possibly earlier (illustrated).

117. E.R. 93. Left-foot sandal. 193 × 61mm. Child size 13. The sandal is of standard shape with gently pointed toe. Bottom unit survives complete and is formed of insole, middle and sole. Minimal thong slits are discontinued at waist. Large double thong slot in forepart to hold between toes strap. Nailing pattern is Type A with all S design in the forepart. Decorative markings on the insole include two impressed lines running parallel to the edge of the sole. Similar linear markings, occurring singly or in pairs are commonly found on broad toe sandals (e.g. M.O.L. Acc. Nos. 15635, 14168, 79.246/14, 25888, SM75 258/514, SM75 221/328 and SM75 221/388). Linear ornament on the seat consists of a curved and a zigzag line. The impressed X on the forepart is found on other London shoes (M.O.L. Acc. No. 25888; BM Acc. No. 1935/11-6/8; Rhodes 1981, Fig. 66, No. 631) and may represent some form of trademark. M.O.L. Acc. No. 21191 (illustrated).

119. E.R. 93. Left-foot sandal. 190 × 105mm. Adult size 4. This is a broad sandal cut straight across at the toes end, with a scallop for the big toe. It is of nailed only construction. Incomplete bottom unit consists of a middle with fragmentary sole. The deliberately cut longitudinal slit in the middle layer may be interpreted as a cut and expanded middle, examples of which are known from other excavations in London (Rhodes 1980, Fig. 66, No. 625; M.O.L. Acc. Nos. 14108, 14207 and 990). Goodfellow & Thornton (1966, 17) suggest that flexibility was the main purpose of this type of middle. Nailing pattern is of Type A, with two short rows in the forepart. M.O.L. Acc. No. 21198 (illustrated).

120. E.R. 93. Right-foot sandal. 223 × 73mm. Adult size 4. This is a standard shaped sandal with gently pointed toe. Bottom unit is complete and formed of insole, middle and sole. Usual marginal thong slits are present. Fragment of toe strap in situ in large double thong slot. When this sandal was examined by Ross for her M.A. thesis (1971) it appears that more substantial portions of upper were present and a construction similar to that of a sandal from Saalburg (Busch 1965, Taf. 6) was suggested. Sadly, no features remain on the sandal now to suggest such a construction. The nailing pattern is Type A with a diamond design in the forepart (see p. 59). A large nail at the inner tread of the sole appears to be a replacement. Lying slightly to the inside of centre on the insole is a single impressed line, the purpose of which is not clear. Other examples are known from London (Rhodes 1980, Fig. 66, No. 631; BM Acc. No. 1935/11-6/8) and elsewhere (Busch 1965, Taf. 6, No. 122). M.O.L. Acc. No. 21751 (illustrated).

Nos. 117–120 from the fill of Well 19 and therefore 3rd–4th century or possibly earlier.

**DISCUSSION**

The eleven nailed shoes, four sandals and one moccasin are of 3rd/4th-century date and all but one (116) were found in a single timber lined Well (19). The condition of the leather is poor. It had been treated with sulphonated...
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castor oil—an old method of conservation—and as a result it is now very brittle, its colour is extremely dark, and it has an unpleasant smell. The internal structure of some shoes whose bottom unit layers are still tightly joined by nails could not be examined for fear of damage. Shoe sizes were calculated according to the method used by Rhodes (1980, 101–102). In keeping with earlier findings (e.g. Keppie 1975, 80; Rhodes 1980, 107, 117) the sandal sizes are small, suggesting that the wearers were predominantly women or young people, whilst the heavily nailed shoes are large and indicate adult male wearers.

This small collection of late Roman footwear is of especial importance because it helps to extend the chronology of Romano-British footwear for London. It contrasts in various ways with shoes of earlier date from London (Rhodes 1980, 99–128).

NAILED SHOES

On the Queen Street shoes the central thonging was used to join an insole and separate middle together, the closed upper then being attached by means of a lasting margin. In contrast, Rhodes (ibid. 107) suggests that the thonging on the Billingsgate Buildings shoes served to hold a moccasin type middle in place, indicating not a closed, but an open, upper. It would also seem, in the earlier period, that shoes whose uppers were attached by a lasting margin did not tend to have a separate middle layer of central thonging (ibid. 109). There is a certain amount of continuity between the earlier and later nailed shoes: there is not a great deal of difference between their shapes, and there is also a continuation of the same type of nailing pattern. Ross (1971, 25) has remarked that the diamond nailing pattern occurs in the 2nd-century shoes Nos. 106, 116 and 120 confirm that the design is carried on into the 3rd/4th centuries.

Most of the nailed shoes appear to be calcei with the upper attached to the bottom unit by a lasting margin (Charlesworth and Thornton 1973, 150; Keppie 1975, 68) and it is interesting to note that the surviving uppers indicate different designs (see Fig. 35).

The heavy nailed soles of Nos. 113B and 114 suggests that these shoes were perhaps military caligae (Rhodes 1980, 113).

SANDALS

The sandals provide a strong contrast to those of earlier date. The broad toe sandal (Nos. 118 and 119) is introduced in the 3rd century—it is naturally absent among the earlier Billingsgate Buildings material (Rhodes 1980, Fig. 66), where the trend is very much in favour of a narrow style of sandal with all or most of the toes marked out by scallops. Many broad toe sandals have occurred in London (e.g. M.O.L. Acc. Nos. 21191, 14122, 15637, 15635, 79.246/14) and they are also known at Zugmantel (e.g. Busch 1965, Taf. 32, Nos. 722 and 727). Two of the sandals, Nos. 117 and 120, are of a more standard shape.

There is a major constructional difference between the earlier and later sandals. Earlier sandals, as represented at the Billingsgate Buildings site, have a continuous row of marginal thong slots on the same alignment as the marginal nailing, whereas the row of thong slots on the Queen Street examples is separated from the marginal nails, discontinued at the waist and is more regularly cut. Many sandals with this latter construction are known from London (e.g. M.O.L. Acc. Nos. 990, 992, 62.107/7 and 14168) while good parallels can be found from Saalburg (Busch 1965, Taf. 6) and Zugmantel (ibid., Taf. 32).

The sandals are all likely to have had an upper formed of a between-toes strap and a cross-ankle strap, as the toe thong slots and waist gap in the marginal thonging suggest. A tongue-shaped piece of leather from the Royal Exchange site in London (M.O.L. Acc. No. 1014) may provide some clue to the appearance of the between-toes strap. Goodfellow and Thornton (1966, 16) suggest that the narrow end would have been attached to the pair of thong slots on the forepart of the sandal, the broader end being affixed to a cross-ankle strap. Elaborate versions of this type of upper are known from Vindolanda (Metcalfe and Longmore 1975, 40 and Fig.
Fig. 37. Queen Street 1953 & 1960: Roman leather shoes, Nos. 119–120, and stone objects, Nos. 121–126 (1/3).
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3) and from Saalburg (Busch 1965, Taf. 6, No. 122).

On both nailed shoes and sandals similar patterns of wear can be detected. Generally, the nails to the outside of the sole and those in the thread are flattish whilst those to the inside still tend to retain their conical shape. On the leather itself, the usual signs of wear at the toe-end of the sole and at the back of the heel are present in most cases.

The generally worn condition of the shoes suggests that they were cast-offs and the result of domestic dumping.

(i) WALL PAINTING
(Figs. 38, 39, 40 and 41).

127–164 E.R. 118 (Well 31). Most of the plaster from this context appears to have been from one wall. The material was preserved as part of a redeposited mass of fire debris, and included 13 fragments which were burnt entirely grey. The plaster was originally applied to daub walls. Fragments of daub with clear wattle or keying traces adhere to the back of it. The plaster was applied in three layers. The first was c.15mm thick; the second 5mm thick. Both layers were of the same quality, sandy, with large pebbles. The final layer, to which the paint was applied was a thin skin of fine white plaster 1mm thick.

The wall was divided into two panels by a white stripe 8mm wide, which appeared on eight fragments (5 illustrated; Nos. 129, 131, 132, 133 and 136). The backgrounds to the panels were in red (7.5 4/8) and black (N4).

RED PANEL
This panel (Nos. 141–158) was decorated with vertical white stems, which featured three long leaves at intervals (Nos. 148, 149 and 150). From these spring stems terminating in trefoils, which are foliated in green (7.5 GY 5/2) paint (Nos. 146, 149, 151, 152 and 153). One set of long leaves is enclosed by a circle (No. 147). The blue (7.5B 5/2) compartment encircled by a double white line (No. 150) represents the top of a candelabrum motif, and the white projections on the outer circle on this fragment are the candles. The whole length of the vertical stem is shadowed to the left in black (Nos. 145–157). The lower part of this panel shades into grey, which is a result of fire damage. The only surviving piece of decoration on this burnt area was a curving garland of white leaves on a black band (Nos. 143 and 144).

BLACK PANEL
This panel is more completely preserved than the red (Nos. 127–138, 140). At least two, possibly three, candelabra are represented by the elliptical dark buff-brown (5YR 5/2) top plates, edged in slate blue (7.5B 7/2) with white projecting lights (Nos. 132, 134). These appear to have been included in an overall decoration of vertical and curvilinear foliage in white and green (Nos. 127–140). The long leaves on the stems of the candelabra of the red panel are repeated on the black (No. 139) as in the trefoil green leaf on the white trefoil stem-terminal (No. 139). A berry, shaded in dark green (2.5G 3/4) was also a feature of this design (No. 126). A bird is shown perching on, and surrounded by, the basic green and white foliage design (No. 136; Marsden 1980, 131). The bird is shaded in white and grey, with a slate blue tail.

The two panels are variations on the candelabrum design, a conventional motif in Roman wall decoration, based on freestanding candelabra. The best
Fig. 38. Queen Street 1953 & 1960: Roman wall decoration, Nos. 127–136 (1/2).
Fig. 39. Queen Street 1953 & 1960: Roman wall decoration, Nos. 137–145 (1/2).
Fig. 40. Queen Street 1953 & 1960: Roman wall decoration, Nos. 146–158 (1/2).
British example of this is the 2nd-century plaster from *Verulamium* (Liversidge 1971, Pl. XXVII). It occurs among the 2nd-century plaster from Angel Court, Walbrook, in London, as do the three long leaves on the candelabra stems, and the berry on the black panel (Liversidge 1977, 543-8). The candelabra share some features with foliate strips used as panel dividers in paintings at the Ickleton and Lockleys villas. At Darenth these strips are shaded to one side, much like the red panel candelabrum stems (Liversidge 1969, 142-143). The garland pattern on the burnt part of the red panel occurs in villas at Darenth and Witcombe. It also occurs in London in 2nd-century groups at Huggin Hill (Marsden 1976, 5a), Custom House (Henig 1974, 187), and St. Swithins House, Walbrook. Interestingly in the present context, these garlands appear in swags separating candelabra in the 2nd-century *Verulamium* material, and also at Winchester (Liversidge 1971, 90, Pl. XXVIII). The bird on the black panel is of considerable interest. The 2nd-century Red Wall at *Verulamium* (Liversidge 1971) featured isolated birds on perches in the centre of panels flanked by candelabra.

The bird from Queen Street, however, is not isolated, but is included in the foliage which also appears to have formed the candelabra decoration. It must be concluded that this may be part of an inhabited scroll, similar to that in an elaborate frieze of 2nd-century date from *Verulamium*, Insula XXI (Liversidge 1971, 89, Pls. XXX-XXXII). Four plaster fragments (Nos. 160-164) may have been figured. Only one (No. 162) has not been heavily burnt, and this may represent drapery. It is possible that these were parts of central figures in the panels described above. Colours: Grey-brown (10 YR 6/2), light red (5R 6/4).

The plaster was recovered from the dump of burnt material in the fill of 31. This material may have been burnt in the Hadrianic fire of London, and is dated to the Trajanic period or earlier. M.O.L. Acc. Nos. 21481 (No. 132) 21480, 21482 (No. 137), 21232 (No. 138), 21483 (No. 146), 21485 (No. 149) (illustrated).

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2. MEDIEVAL AND POST-MEDIEVAL

(a) POTTERY

From notes and identifications by Alan Vince. (Figs. 43 and 44)

A general explanation of the criteria employed in the analysis of medieval and post-medieval pottery can be found in the introduction to the pottery reports. The pottery is the main dating evidence for the post-Roman period. Dating and the constituents of groups are tabulated in Fig. 42.

*Saxon Shelly I* (Rhodes 1980a, 140)

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167. E.R. 80. Fragment of burnt daub with well defined wattle impressions. Provenance and date as 166 (illustrated).

168-169. E.R. 626. Fragments of burnt daub with well defined wattle impressions. From the fill of Well 9 and therefore 1st century (illustrated).

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(m) CERAMIC BUILDING MATERIAL

(Fig. 41)

A very small quantity of this material was retained: tegulae, imbrices, and burnt daub were attested in all periods.
Fig. 41. Queen Street 1953 & 1960: Roman wall decoration, Nos. 159–165; flue tile, No. 166; and daub, Nos. 167–169 (1/2).
Fig. 42. Queen Street 1953 & 1960: Summary table of medieval and post-medieval pottery.
Fig. 43. Queen Street 1953 & 1960: Medieval pottery, Nos. 170–176; and post-medieval pottery, Nos. 177–179 (1/4).
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where clear green glaze covers applied strips of white and dark red clay (cf. Orton 1979b, 30) and rim and neck of a baluster jug similar to M.O.L. Acc. No. 22775.

Glazed Cooking Pot

175. E.R. 121 (Pit 53) Complete cooking pot. Hard fabric with irregular fracture and smooth feel. Inclusions are moderate, very coarse, ill-sorted angular flint, and medium sub-angular quartz. Cream or off-white fabric (10 YR 8/1), wheel-thrown. Green glaze was applied to the inside rim. Holes, possibly for suspension, were made in the rim, and the vessel was heavily sooted on the outside. M.O.L. Acc. No. 21175 (illustrated).

Coarse Border Ware (a light sand-tempered fabric from the Farnham region of the Surrey/Hants border)
E.R. 92B (Well 44) Bowl with flat horizontal rim. (Orton and Pearce forthcoming, No. 16).

Post-Medieval Dutch Earthenware (Orton and Pearce forthcoming)

177. E.R. 92B (Well 44) Skillet with handle and pouring lip, red-brown glaze on inside base (illustrated).

Frechen Stoneware (Orton and Pearce forthcoming)

Tudor Brownware (Turner 1971, 105)


Border Ware (Holling 1971)
182. E.R. 122 (Pit 48) Bowl, green glazed on inside, rim and upper surfaces (illustrated).

Tin-glazed Ware (Orton and Pearce forthcoming)

E.R. 122 (Pit 48) Drug-jar base (Orton and Miller forthcoming, 302) and rim (Orton and Pearce forthcoming, No. 302).

Post-Medieval Fine Red Ware (Orton and Pearce forthcoming)

Post-Medieval Coarse Red Ware (Orton and Pearce forthcoming)

Westerwald Stoneware (Orton and Pearce forthcoming)
E.R. 605 (Well 12) Body sherd of bottle decorated with cobalt and manganese.

Black Glazed Red-Ware (Orton and Pearce forthcoming)
E.R. 605 (Well 12) Cup handle.

Staffs Saltglazed White Ware (Orton and Pearce forthcoming)
185. E.R. 605 (Well 12) Small dish with foot (illustrated).

(b) OTHER FINDS

1. MEDIEVAL

(i) WOOD

(Fig. 45)

Barrels were found lining several wells. They were recorded on site as follows, and have not survived for further examination. Wood was identified by Mr N. Cook.

186. E.R. 92B. Barrel 970mm in head diameter and 1.37m high. The barrel comprised 19 staves and was bound with willow (Pl.11).
187. E.R. 92B. Barrel 940mm in head diameter and 1.07m high. Comprised 26 staves, bound with willow (Pl. 12). Nos. 186 and 187 lined Well 44, and these were dated to the 15th century or earlier.
188. E.R. 586. Barrel, 760mm in head diameter, made of staves retained about the middle with a split wood bond. The barrel-lined Well 2 and was thus dated to the late 13th–14th century or earlier.
189. E.R. 606. Barrel 1.39m in head diameter. The barrel lined Well 10 and was therefore post-medieval in date.
190. E.R. 643. Barrel 610mm in head diameter. The barrel lined Well 11, and was therefore 13th century or earlier.

The following wooden objects from group E.R. 92 were all conserved in alum, making wood identification difficult. They were however submitted to Vanessa Straker, who attempted species identification. Her comments are included below.

191. E.R. 92. Chamfered disc of unidentified hardwood. Probably a barrel bung, and possibly from one of the barrels (Nos. 187 and 188) lining the well (illustrated).

192. E.R. 92. Rounded top of object in wood, bored with two holes, one of which is broken across. Possibly part of a roof shingle (illustrated).


(ii) LEATHER

(Fig. 45)

194. E.R. 116. Complete shoe in such poor condition that any attempt at close examination would cause serious damage. The shoe is a left ankle boot of turnshoe construction (Thomas 1980, 8). The quarters are in one piece, notched at the back, and have been stitched to the vamp with a butt seam. Though no fastening survived, it appears that two wings on the
vamp folded over a central tongue, and were tied in position. The tongue was decorated with a series of punched circles within two incised lines. The shoe was from the fill of Pit 57 and therefore 12th century or earlier. M.O.L. Acc. No. 21749 (illustrated).

(iii) TEXTILE by Frances Pritchard.

195. E.R. 92c. One fragment measuring c. 95 × 85mm with four curved edges, cut slightly across the grain of the fabric. Wool, (?) warp; fine, generalised medium, unpigmented; (?) weft: fine, unpigmented (Fig. 46). Spinning: Z, hard spun, combed yarn in one system, (?warp); S, fluffier, carded yarn in the other, (?weft). Weave: Plain, close and even. Count: 12/11 threads per 10mm. Finishing: Fulled and napped and shorn on both faces, obscuring weave. From the fill of Well 44 and therefore not later than the 15th century. This example displays certain characteristics of 14th-century woven cloth in that it exhibits a combination of carefully prepared combed and carded wool for the warp and weft, the use of mixed spinning, plain (tabby) weave and the typical finishing processes of the period associated with the manufacture of broadcloth (Carus-Wilson 1952, 379–381). The close uniformity in thread count between the piece described here and many other
Fig. 45. Queen Street 1953 & 1960: Medieval objects of leather, No. 194; and wood, Nos. 191–193. Post medieval objects of glass, No. 200; copper alloy, Nos. 201–202; lead, No. 204; and wood, Nos. 205–209 (1/3).
(iv) CERAMIC BUILDING MATERIALS

From notes and identifications by Alan Vince)

Several Medieval Peg Tiles (Vince forthcoming) were retained. Floor tiles included the following.

196. E.R. 82. Penn Tile cf. Hohler (1942), 66. From the fill of Well 51 and therefore no later than the late 14th century.


198. E.R. 606. A group of 7 floor tiles measuring 115mm square and 29mm thick. The tiles are moulded, with a bevelled edge and are sanded on the bottom. There are nail holes in all 4 corners. The fabric is hard, with hackly fracture and rough feel. There are abundant inclusions of sub-angular quartz, sparse limestone and iron ore, all medium sized; and sparse fine mica. The upper surface was treated with a quartz-sand tempered white slip 1mm thick, and glazed with clear, yellow glaze (2.5Y 914).

199. E.R. 606. A group of 10 floor tiles 115mm square and 22mm thick. The manufacture of these tiles is identical to No. 189, and the fabric is similar with the addition of a moderate inclusion of very coarse (10mm) sub-angular clay pellets. The upper surface was glazed with clear green-brown glaze (5Y 3/2). Nos. 189 and 190 were found in the same deposit, and may have been from the same floor. Though the fabric appears to be of English origin, the nailed corners are a Flemish technique. The tiles were from the fill of Well 10, which also contained a little post-medieval pottery. They may therefore have been the result of a post-medieval demolition.

11. POST MEDIEVAL

(i) GLASS

(Fig. 45)

200. E.R. 385. Small wine bottle in good condition, made of dark green, almost black, glass. The neck is slightly fluted due to an accident of manufacture. Similar to a bottle from Cannon Street, dated c. 1700-30 (Orton 1979c, 34) Unstratified (illustrated).

(ii) COPPER ALLOY

(Fig. 45)

201. E.R. 120A. Brass pan. Lathe marks are clearly defined on the base, and the vessel appears to have been spun. The beaded rim was made by hammering the edge over and round a length of thick iron wire. An iron handle-escutcheon was attached to the vessel by means of 3 brass-headed iron rivets, the heads of which were hammered flat against the inside of the bowl. The pan was heavily smoke-blackened and had cracked on one side. The crack was repaired by rivetting a thin sheet of brass to the inside of the
Fig. 47. Queen Street 1953 & 1960: Post-medieval wooden objects, Nos. 210–213, and leather shoes, Nos. 214–220 (1/3).
pan with brass rivets hammered flush against the inside and outside surfaces of the pan (illustrated).

202. E.R. 120. Brass dish made in the same way as No. 201. Traces of lathe working are more pronounced on this vessel, and the centre mark pierced the base (illustrated). Vessels 201 and 202 were found together in the same context. They were also of identical manufacture. This might indicate that they formed part of a set of domestic vessels. They were both recovered from the fill of Well 55, and thus date to the early 17th century or before.


(iii) LEAD
(Fig. 45)

204. E.R. 120. Strip of window lead 160mm in length. From the fill of Pit 48 and therefore late 17th–18th century or earlier (illustrated).

(iv) WOOD
(Figs. 45, 47)
The following wooden objects were submitted to Vanessa Straker for species identification. Like the Roman and medieval wood this material was conserved with alum, and was therefore difficult to identify. All of these objects were from the fill of Well 55 and therefore early 17th century at the latest.

205. E.R. 120. Terminal in an unidentified hardwood, with turning marks in the head (illustrated).


207. E.R. 120. Object of triangular section with projecting bored tenon. A support or part of a pegged joint in hardwood, possibly oak or elm. M.O.L. Acc. No. 21476 (illustrated).


211. E.R. 120. Knife-worked bung in hardwood. Sharpened at one end with a bulbous head (illustrated).

212. E.R. 120. Knife sharpened peg in ash (Fraxinus sp.) (illustrated).

213. E.R. 120. Fragment of oak peg of rectangular section (illustrated).

(v) LEATHER
(Fig. 47)

214–218. E.R. 120. Well 55 contained a group of five shoes in varying states of preservation. Though both adults' (Nos. 214, 216) and children's (Nos. 215, 217 and 218) shoes were present all were of the same construction. Vamps were made in one piece, and the quarters in two, with a back seam. The vamp was attached to the quarters by means of a butt-seam. A heel stiffener was inserted in the back. Each of the two halves of the quarters were fitted with latchet ties, which fastened over the instep. The insoles were very narrow at the waist, and had welt-sewing-channels of edge-flesh seam-holes around them (No. 214) (Thornton 1973, 44). After the upper, welt and insole had been stitched together (Nos. 217, 218), the sole was stitched onto the bottom. Construction was identical to that of a shoe from St. Neots (Thornton 1974, Fig. 44). The shoes are of a flat soled brogue type (Barton 1969, 187). The style is consistent with the date of well 55 and is typical of c. 1600–1620 (Jafvert 1938, PI. 2 A-C; Northampton Museum 1975, Pl. 8; Wilson 1969, 129). M.O.L. Acc. Nos. 21512, 21506, 21507, 21515, 21508 (illustrated).

219. E.R. 606A. Narrow waisted insole of welted shoe. From the fill of Well 10 and therefore early 18th century or earlier (illustrated).

220. E.R. 122. Insole, toe cap, and sole of high-heeled shoe. From the fill of Pit 48 and therefore not later than the early 18th century (illustrated).

(vi) PIPE CLAY

221. E.R. 122. Groups of pipes including one stem and five bowl sherds with Atkinson and Oswald (1969) types in the following quantities: type 15:2, type 17:2, type 20:6, type 22:19. The group is dated c. 1680–1720, which is consistent with the pottery date of the fill of Pit 48.


REPORT ON THE MAMMALIAN REMAINS FROM TWO ROMAN WELLS QUEEN STREET 1954, LONDON (E.R. 81 and E.R. 254)

by Philip L. Armitage and Barbara A. West

(1) Human skull from E.R. 81. (Well 22) 1st/2nd century AD.

223. The human skull is complete except for the mandible, zygomatic arches and fragments of the right frontal, parietal and temporal bones. Using the methods listed by Marsh and West (1981, 90) the
Horse *Equus* (domestic)

Animal skulls from E.R. 254. (Well 36) 3rd/4th century AD

Excavations at Queen Street and Roman Wells in London

However, using the criteria for distinguishing possibly dealing with a mule rather than a horse.

These measurements, which were taken according to the method of von den Driesch (1976) are given in Fig. 48. The Queen Street skull is much larger and more robust than the other horse skulls from Roman London that we have come across so far, and this at first led us to believe that we were possibly dealing with a mule rather than a horse. However, using the criteria for distinguishing between the skulls of horses and mules found in the works of Chauveau (1879) and Osborn (1912) and by comparison with modern horses and the two mules (BM(NH) Reg. Nos. 1888.12.3.1 and 1980.414) held in the collections of the BM(NH), the London skull is identified as horse. Furthermore, reference made to the descriptions of the horse and pony skulls from the Roman fort at Newstead, Melrose, published by Ewart (1907) showed that the London skull falls within the size range of Romano-British horses (profile length: 494 to 582mm).

225. Red deer *Cervus elaphus*

The skull, identified as an adult female Red deer, is incomplete with the facial portion (splanchnocranium) missing (broken in antiquity) and the occipital region broken. Although the occipital condyles were probably removed artificially (possibly when the head was severed from the body) there is no clear evidence of chopping, and the jagged edges around the foramen magnum suggest that the

<table>
<thead>
<tr>
<th>Point of measurement</th>
<th>Value</th>
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<tr>
<td>Profile length</td>
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</tr>
<tr>
<td>Basifacial axis</td>
<td>376.0</td>
</tr>
<tr>
<td>Neurocranial length</td>
<td>183.8</td>
</tr>
<tr>
<td>Facial length</td>
<td>378.9</td>
</tr>
<tr>
<td>Median palatal length</td>
<td>270.8</td>
</tr>
<tr>
<td>Length of diastema</td>
<td>111.2</td>
</tr>
<tr>
<td>Length of cheektooth row (right side)</td>
<td>160.9</td>
</tr>
<tr>
<td>Length of molar row (right side)</td>
<td>73.3</td>
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<tr>
<td>Length of premolar row (right side)</td>
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</tr>
<tr>
<td>Max. neurocranial width</td>
<td>108.9</td>
</tr>
<tr>
<td>Min. width between supraorbital foramina</td>
<td>144.5</td>
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<tr>
<td>Max. skull width</td>
<td>213.0</td>
</tr>
<tr>
<td>Min. orbital width</td>
<td>158.7</td>
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<tr>
<td>Facial width</td>
<td>178.0</td>
</tr>
<tr>
<td>‘Snout’ width</td>
<td>71.0</td>
</tr>
<tr>
<td>Min. diastema width</td>
<td>65.0</td>
</tr>
<tr>
<td>Max. palatal width</td>
<td>124.9</td>
</tr>
</tbody>
</table>

**Teeth:**

- **P³** length — 26.5
- **P³** width — 24.2
- **P⁴** length 24.5 24.5
- **P⁴** width 22.8 24.0
- **M¹** length 21.0 20.4
- **M¹** width 23.0 23.0
- **M²** length 22.8 21.8
- **M²** width 22.6 22.1
- **M³** length 27.9 —
- **M³** width 21.4 —

Fig. 48. Queen Street 1953 & 1960: Measurements (mm) of the horse skull.
implement used was somewhat blunt, as in the horse skull.

In Fig. 49 measurements taken from the London specimen are compared with those from the series of skulls of modern Red deer hinds from Inverness-shire, Scotland, held in the collections of the BM(NH) (BM(NH) Reg. Nos. 72.4296-72.4303). From these data, it is seen that whilst the width of the cranium in the London skull falls within the size range of the modern Red deer hinds, the toothrow is longer and the palate slightly wider than the largest in the Scottish animals.

226. Cat Felis (domestic)

In addition to the horse and Red deer skulls, there are two skulls of adult domestic cats from the Well (E.R. 254) at Queen Street. Measurements taken from these two specimens are given in Fig. 50.

(All the mammalian skulls from the Queen Street site are held in store at the Museum of London, where they may be examined on request).

ACKNOWLEDGEMENTS

In their manuscript notes the excavators acknowledge the assistance of the Bank of London and South America, Trolley and Coles Ltd, contractors on both sites, the architects of Aldermary House, Fitzroy Robinson and Partners, and of the Bank of London and South America, Kenneth Lindy and Partners. Between 1954 and the present report several people have contributed comments on the finds. The comments of M. Berhout of Rennes Museum, Prof. J. M. C. Toynbee, Robert Erskine and the late John Waterer have been of particular value.

The writer would like to thank all those who supplied reports or notes on finds: Dr Philip Armitage, Dr Alan Bowman, Brenda Dickinson, Chris Green, Kay Hartley, Mark Hassall, Penny MacConnoran, Geoff Marsh, Frances Pritchard, Vanessa Straker, Alan Vince, and Barbara West. For drawings I am grateful to Chris Green for find No. 23, to Jaqui Pearce for Nos. 178 and 179, and to John Pearson for the Samian ware drawings, all other drawings were done by the writer.

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THE WATERFRONT OF LONDINIUM: THE DATE OF THE QUAYS AT THE CUSTOM HOUSE SITE REASSESSED

JOHN FLETCHER

INTRODUCTION

The Roman waterfront along the River Thames at the ‘Custom House’ site, close to the Tower of London, was the first and most easterly section to be fully excavated. The work, carried out by T. Tatton-Brown in the late summer of 1973 under rescue conditions for a period of three months, was organised by the then Guildhall Museum. Reports on the discovery of both Roman and medieval waterfronts and their associated deposits were published in two successive volumes of Transactions. Two early Roman quays (here called A and B) were identified. The earlier (A) was attributed to the early 2nd century, though the pottery could equally well date from the late 1st century. The later (B) was a massive quay of box construction, in its eastern part some six metres in front of the earlier one; a date in the last quarter of the 2nd century was proposed for it.

DATING BY DENDROCHRONOLOGY

In order to obtain a relatively accurate date for the two Roman quays, slices were cut from oak baulks and posts, and measurements of ring-widths made and published in the first report. They were the first Roman timbers from the London waterfront to be examined by this method. The samples from the three large beams (III 4, III 3 and III 2), which lay on top of one another and formed the front of the box structure of quay B, had relatively long sequences of annual growth rings with patterns that matched one another. At that time, however, there was no contemporary Roman tree-ring sequence, other than that compiled by Hollstein from material from the Roman wells at Wederath, Belgium, with which to match and date them. A tentative match with that sequence supported a late 2nd-century date and this was included in the report.

Since 1973 several other excavations have been carried out along the Roman waterfront to the west and a similar box structure has been found elsewhere. A significant advance was the matching by Ruth Morgan of the sequences of the three large beams of quay B with later, long sequences from New Fresh Wharf and Seal House: this lead to a mean curve (here called MC 12, based on twelve timbers and covering 282 years) for which the ring widths were published. The dates of this curve remained unfixed until in 1980–81 the German chronologies compiled by Hollstein and Becker for Roman times became available and it could then be dated to 282 BC 73 to AD 209. The New Fresh Wharf timbers included not only one long sequence in MC 12 with nearly the full complement of sapwood but at least two others with much sapwood. As a result the likely felling and construction of the Roman quays there must have occurred very soon after the date of the latest ring measured, i.e. very soon after AD 209.

The three long Custom House sequences (from beams III 4, III 3 and...
Fig. 1. Roman waterfront, Custom House site, London. Samples from trenches III and I relevant to quays A and B.

III 2, see Fig. 2) were at that time dated indirectly by being in MC 12, and directly by the two German chronologies. The latest ring of the three is for the year AD 112. That merely implied that quay B with the box structure was built sometime after c. AD 130.

Two recent advances, made through the research at Oxford in the science of dendrochronology, have now enabled the exactitude of the dating of oak from buildings and excavations in southern Britain to approach that already achieved on the Continent (where the full complement of sapwood is often present).

(i) The first has led to the matching and dating of four short sequences measured on samples taken from the Custom House site; one beam (III 1) and another (post I C) has sapwood; all four cases came from pedunculate oaks and had mean widths of the order of 3 to 4 mm.

(ii) The other concerns the likely number of years of sapwood on samples taken in south-eastern England from piles etc. that have few rings and are fast grown, i.e. with annual rings of mean width greater than c. 2.5 mm; this, provided the date of the heartwood or sapwood is known, allows the likely date of construction to be placed hypothetically within a period of a very few years, even if the amount of sapwood is quite small.

Together the advances enable us to conclude that the construction of quay B, hitherto given as ‘after AD 135’, is likely to have occurred within the five-year period AD 137 to 142. The conclusion from this work is that beam III H was first used in an earlier waterfront, probably quay A, that was built sometime after AD 70 and is almost certainly of the 1st, not the 2nd, century. These two results, together with the suggested construction date soon after AD 209 for the waterfront at New Fresh Wharf (see above), appear to form three well-defined stages in the development of the Roman waterfront at London.
THE WATERFRONT OF LONDINIUM

METHODS AND RESULTS

SHORT SEQUENCES

Site chronologies were of considerable value during the early development of dendrochronology in Europe when no zonal reference chronologies had been developed. The latter, based on dozens of values, were made because it was found, for example by Huber and his colleagues, that a higher percentage of samples over a wide area could be dated with them. With panel paintings (material to which a site mean curve is not applicable) the ring-width sequences have been compared now for a number of years with four to six contemporary western European chronologies. This is highly advantageous since as many as 90% of the sequences have thereby been dated (approximately 400 boards on 240 panels).

The same principle has led to the dating of four of the ten Roman samples with under seventy annual rings that were cut at the Custom House site. The agreement values, with three reference chronologies (the only contemporary ones available at the time) for the four (III 1, I F, I D and I C), are given in Fig. 2, while the years spanned by their sequence are shown in Fig. 1. The positions were accepted as correct because the visual comparisons with the indicators on the reference chronologies were also satisfactory.

The beams III 1 and I E are known from their position to have formed an integral part of the box structure of quay B. Hence the likely date of their latest ring is known, to within ten to twenty years, from the results already obtained on the relatively long sequences of III 2, III 3, III 4. However, as Fig. 1 shows visually, to try to match the sequence of III 1 by those sequences singly, or in combination, is not feasible because there is either no overlap or one of less than 20 years.

ALLOWANCE OF YEARS FOR ABSENT SAPWOOD

For dating the construction of oak artefacts, whether excavated or from buildings, this allowance plays an important role. Ideally, knowledge of its value and likely range for trees of different age, different rates of growth in different dendroecological zones is required to enable an accurate allowance to be made. The variation from tree to tree requires systematic research rather than the acceptance of a fixed allowance based on observations in a few parts of the British Isles.

For some time, 20 ± 5 years has been the allowance used on the continent for oaks 100 to 200 years old when felled. Hollstein also found, from a total of about 200 trees, a value of 26 ± 7 years for trees over 200 years old.

<table>
<thead>
<tr>
<th>Trench &amp; Ref. No. of sample</th>
<th>Form</th>
<th>No. of rings</th>
<th>Mean width</th>
<th>London</th>
<th>W. Germany, Hollstein</th>
<th>S. Germany, Becker</th>
<th>Date of latest ring</th>
</tr>
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<tbody>
<tr>
<td>III H</td>
<td>beam</td>
<td>178</td>
<td>1.3mm</td>
<td>4.1*</td>
<td>2.0</td>
<td>1.5</td>
<td>AD 48</td>
</tr>
<tr>
<td>III 4</td>
<td>beam</td>
<td>213</td>
<td>1.7</td>
<td>6.6†</td>
<td>3.2</td>
<td>2.2</td>
<td>107</td>
</tr>
<tr>
<td>III 3</td>
<td>beam</td>
<td>160</td>
<td>1.8</td>
<td>6.0*</td>
<td>3.5</td>
<td>2.9</td>
<td>112</td>
</tr>
<tr>
<td>III 2</td>
<td>beam</td>
<td>99</td>
<td>1.7</td>
<td>3.9‡</td>
<td>0.4</td>
<td>1.0</td>
<td>75</td>
</tr>
<tr>
<td>III 1</td>
<td>beam</td>
<td>39</td>
<td>3.8</td>
<td>2.5</td>
<td>4.1</td>
<td>3.1</td>
<td>134</td>
</tr>
<tr>
<td>I E</td>
<td>beam</td>
<td>45</td>
<td>3.2</td>
<td>4.4</td>
<td>2.5</td>
<td>1.2</td>
<td>112</td>
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<tr>
<td>I D</td>
<td>plank</td>
<td>68</td>
<td>3.2</td>
<td>3.9</td>
<td>4.7</td>
<td>2.8</td>
<td>136</td>
</tr>
<tr>
<td>I C</td>
<td>post</td>
<td>44</td>
<td>2.9</td>
<td>3.9</td>
<td>1.4</td>
<td>1.4</td>
<td>151</td>
</tr>
</tbody>
</table>

Of the other six timbers sampled, one, post G from Trench III was unsuitable for measurements. The others were posts from Trench I, III, VIII, IX and XII respectively. The number of rings measured on these samples ranged from 34 to 67; their mean widths, from 1.9 to 4.4mm. Two timbers had sapwood.

* With the sequence of III 4. III H was also matched (t = 4.4) for us by J. Hillam using her mean curve for Peninsular House, London.
† With the sequence of III 2.
‡ With the sequence of III H.
§ The mean width of these are approximately 1.7mm. The coefficient of fluctuation of the Hollstein chronology is much higher (28%) than the other two (14%).

Fig. 2. Details for samples with tree-ring sequences matched and dated.
This agrees, broadly speaking, with the sapwood of oaks grown and used in the London region in the 16th century for panels.

In the present work it is necessary, however, to make an allowance not only for a few oaks comparable in age to those used for panels, but also for the fast grown oaks with under 70 rings which formed nine of the thirteen samples on which measurements were made. Hollstein found 16 ± 4.5 rings for trees under 100 years old. For 132 oaks with less than 50 heartwood rings, Siebenlist-Giertz found 28 (21%) with under ten sapwood rings, the lowest being six; while Brathen finds the mean is 16 for 67 oaks in the Gotha River area of Sweden. The estimates presented here are based on measurements, admittedly fewer than those by the persons mentioned above, on discs from trees recently felled in southeastern Britain and from trees used in historic times. In the caption to Fig. 3 they are related partly to the age of trees but mainly to the mean width of the latest rings. The uncertainty factor increases from (13 - 8) = 5 years for trees felled when growing fast, to (40 - 25) = 15 years for those felled when very old.

In Fig. 3, the minimum likely total of sapwood rings gives, when added to the date of the latest ring, the terminus post quem for the samples with no sapwood. Much more important, as it provides the period in which the artefact was used, is the allowance, a small number of years, for the two samples (III 1 and I C) with sapwood. That gives, as the likely period of the felling of the tree from which the beam III 1 was made, the years AD 137-142.

RESULTS

As it was the practice to use timber when ‘green’, felling and use are likely to have occurred within a year. The main conclusion of archaeological interest is therefore that quay B was constructed within about 3 years of AD 140. The terminus post quem for beam I E is consistent with it forming part of quay B, while it is not surprising that the results for plank I D and post I C show they are somewhat later as they were both found in front of the quay.

Beam III H when recovered formed part of quay B immediately to the east of III 2, 3 and 4. It had false tenons and dovetailed joints similar to them. The tree-ring work however shows that it was apparently re-used in that position as, on the one hand, its ring-width sequence ended as much as 90 years before quay B was constructed, while on the other hand, its square section, 12ins × 12ins, was unusual for the large members of quay B which were rectangular rather than square. It may well have been used originally in the adjacent and earlier quay A;

<table>
<thead>
<tr>
<th>Timber</th>
<th>Date of latest ring</th>
<th>Mean width of latest rings</th>
<th>Sapwood rings</th>
<th>Likely period of felling and use</th>
<th>Use</th>
</tr>
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<tbody>
<tr>
<td>Beam III H</td>
<td>AD 48</td>
<td>1.3mm</td>
<td>20/32</td>
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<td>Reused in Quay B</td>
</tr>
<tr>
<td>Beam III 4</td>
<td>107</td>
<td>1.7</td>
<td>15/25</td>
<td>nil</td>
<td>After AD 122</td>
</tr>
<tr>
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<td>112</td>
<td>1.2</td>
<td>20/32</td>
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<tr>
<td>Beam III 2</td>
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<td>20/32</td>
<td>nil</td>
<td>After AD 95</td>
</tr>
<tr>
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<td>134</td>
<td>4</td>
<td>7/12</td>
<td>5</td>
<td>AD 137-142</td>
</tr>
<tr>
<td>Beam I E</td>
<td>112</td>
<td>2</td>
<td>12/20</td>
<td>nil</td>
<td>After AD 124</td>
</tr>
<tr>
<td>Plank I D</td>
<td>136</td>
<td>variable</td>
<td>10/25</td>
<td>nil</td>
<td>After AD 146</td>
</tr>
<tr>
<td>Post I C</td>
<td>151</td>
<td>3.5</td>
<td>8/13</td>
<td>10</td>
<td>AD 152-155</td>
</tr>
</tbody>
</table>

Note: For oaks in south-east England, the best estimate of the relation between age, rate of growth shortly before felling and the likely number of rings in the (total) sapwood is as follows:

Mean width of latest rings (mm): 3 to 4.2, 4.2 to 3, 1.8 to 2.3, 1.3 to 1.7, 0.9 to 1.2, 0.8 and under.
Likely number of rings in sapwood: 8 to 13, 10 to 16, 12 to 20, 15 to 25, 20 to 32, 25 to 40.
Likely age when felled: Under 100 years.

Fig. 3. Derivation, by allowing for absent sapwood, of likely period of selling and use.
DISCUSSION
(a) Significance for the dating of excavated material in southern Britain.

This investigation of the Custom House material shows that it is not merely the need for many samples, as recently stressed,\textsuperscript{20} that leads to a close approximation to the date of construction of an artefact. The quality as well as the quantity of the samples is important; here there has been considerable benefit from having some long sequences, readily matched and dated, together with short ones with sapwood from fast grown timber, such as is used for posts. It has been said that samples with under fifty rings should be rejected. Here, as with short sequences from the Somerset levels used to advantage by Morgan, that is far from being the case if they include sapwood.

Recent applications of dendrochronology to excavated Roman material from London have yet to provide a construction date for the Roman riverside defensive wall; and \textit{terminus post quem} dates for samples from Thames Street Tunnel site and Watling Court at London and for the Castle well at Rosemary Lane, Canterbury, have been published with different assessments for sapwood than those argued here.\textsuperscript{21} Samples from timber piles below the Roman riverside wall at Blackfriars have provided a mean curve that might have been datable if compared to Hollstein's chronology. The use of indices rather than ring-widths has perhaps made difficult the recognition of long-term trends, which are important for visual matching.

(b) Significance for the knowledge of late Roman London.\textsuperscript{22}

Examination by excavation of the waterfront zone of the Roman city of London has been intensely pursued since the work at the Custom House site in 1973. When the results of these excavations have been analysed, a fuller picture of the development and operation of this area of the Roman city will be available. Some indications of the chronological stages by which the quays developed are already apparent\textsuperscript{23} and the re-dating of quay B at the Custom House site, argued here, provides further evidence of the diversity of dates that can be suggested for the wooden quay structures discovered on both north and south sides of Upper and Lower Thames Street. Substantial wooden quays to the north of this modern street and with a suggested construction date in the late 1st century AD, have been found on both sides (Miles Lane, Peninsular House, Pudding Lane) of the presumed position of the Roman bridge.\textsuperscript{24} To the south of Upper and Lower Thames Street at the Seal House and New Fresh Wharf sites, further quays have been recorded that have a suggested construction date in the late 2nd century or early 3rd century.\textsuperscript{25} Despite the fact therefore that quay B at Custom House site lies in approximately the same relative position (to the south of Thames Street), the reassessed date argued here for its construction (by AD 140-43) suggests that it did not form part of the same waterfront development as that at the New Fresh Wharf site (or on the western side of the bridge approach at Seal House). Clearly, detailed evidence of coherent development at specific points along the waterfront zone in the Roman period is lacking and further application of the method and principles used at the Custom House site will be of particular value in giving for other sites dates with comparable precision.

Nevertheless it can be suggested at this stage that different sections or individual quays along the waterfront were built as
separate developments and at different times, and that no overall plan at any particular era resulted in a single riparian development along all or any considerable part of the city’s southern boundary. If construction and date differences ultimately prove this to be the case, the role the development of the waterfront played in the economic life of the Roman city will be of even greater importance.

NOTES

2. The earlier waterfront included 3 later timber piles which were driven in later and may relate to the late Roman riverside wall.


5. E. Hollstein Mitteleuropaiscke Eichenchronoiogie (Mainz 1980).


9. Hollstein has dated material from the late Hallstatt barrow at Magdalenenberg in the Black Forest to a single year. K. Christiansen of Copenhagen, the fortress of Trelleborg to AD 891.

10. Fletcher op. cit. in note 7.

11. The principle behind this is that such reference chronologies show the years in which there are consistent changes in the direction of the ring-width curves. Such changes are often called indicators and are marked boldly on the curves to aid visual comparisons.

12. Indicators are explained in note 11. Morgan’s sequences for MC 12, the London Waterfront mean curve were rerun in a slightly modified form by the Mittelbin programme to give a chronology (our MC 11) on which indicators are marked.

13. I am grateful to T. Tatton-Brown for this information and for other helpful comments in the preparation of this paper.

14. J. Hillam see op. cit. in note 7, applies to fast grown trees used in London and Canterbury values for sapwood allowance that relate to slow grown ones in scattered wetish areas of the British Isles; see the application, for example, of the value of 32 ± 9 years to the four trees that formed the Roman well at Canterbury in P. Bennett el al. ‘Excavations at Canterbury Castle’ The Archaeology of Canterbury 1 (1982) 205-9. The samples had 32 to 88 rings and the mean curve ends with widths in the 2.4 to 3mm range, the appropriate (see Fig. 3) allowance would be 10-16 years. ‘The terminus post quern’ would then be after AD 140 rather than ‘after AD 152’; such fast grown trees are incorrectly, in forestry terms, described as ‘immature’.

15. For these results see Hollstein op. cit. in note 5, 36-38.


18. This was given in an earlier form in Fletcher (1980) op. cit. in note 8, 11.36. Details of the measurements are in course of being reported.

19. Hollstein op. cit. in note 5.


22. The author is grateful to Dr H. P. A. Chapman for adding this section.


24. L. Miller ‘Miles Lane: the early Roman Waterfront’ London Archael. 4 No. 6 (Spring 1982) 147.


GEOFFREY PARNELL with contributions by S. A. BUTCHER, F. J. CAMERON, P. E. CURNOW and R. GILYARD-BEER

INTRODUCTION
This article contains the results of a number of excavations carried out along the line of the landward enceinte that protected the south-east corner of the Roman city of London. Most of the reports are solely concerned with the defence itself, though results from work on the east side of the White Tower include the description of an intriguing Roman building accommodated against the city wall and a note on a later medieval structure annexed to the 11th-century keep.

The results from different investigations within the Tower’s Inmost Ward are presented together; many of the excavated trenches were intermixed and combined the information from them provides a more coherent picture. The other sites are reported independently; geographically they are less homogeneous and all were excavated in the modus operandi of the day. A general discussion on the evidence from all the sites is provided at the end.

CONTENTS
Excavations on the north-east corner of the White Tower, 1954.
Excavations at Tower Hill, 1965.
Discussion (i) The dating evidence for the wall.
(ii) Summary and conclusions.

EXCAVATIONS WITHIN THE INMOST WARD, 1955 AND 1976
GEOFFREY PARNELL

The 1955 excavation was carried out by Sarnia Butcher of the then Ministry of Public Buildings and Works in advance of a scheme (subsequently abandoned) to construct a new Jewel House along the south side of the Inmost Ward. The 1976 excavation, undertaken by the Department of the Environment and supervised by the present author, was located in the same area and took place prior to the building of the new History Gallery (opened to the public in 1978).

Most of the trenches investigated in 1955 were situated just north of the extant southern curtain, but additional cuttings were made between the Wardrobe and Lanthorn towers in an attempt to establish the line of the Roman city wall. In the event a 14m (46ft) length of masonry was disclosed in Trenches I and II, taking the course of the wall to a point 36.50m (120ft) south of the Wardrobe (Fig. 1). South of this the line was occupied by a massive wall which formed the east side of a court within the principal office of the Board of Ordnance, built between 1777 and 1780. The eastern end of the subsequent 1976 excavations (Trench V) fell within the confines of the court, and as the underlying archaeological deposits survived better here, reasonably good sections were obtained across the internal bank. These results encouraged the re-examination and enlargement of Trench VII, west of the Lanthorn Tower, where
the crucial southern extent of the bank was located and examined.

It should be emphasised that the methods of excavation employed in 1955 and 1976 were to a large extent determined by the disposition of the large 18th-century Ordnance walls which traversed much of the site. A procedure was thus established whereby after the walls had been located and excavated down to their spread footings trenches were laid out in the available intervening spaces. An exception to this rule was in Trench VII where the need to interpret the southern extent of the internal bank was deemed important enough to have the brickwork removed by machinery. To the north, in Trenches I and II, where the surviving archaeological deposits were much shallower, the foundations were particularly damaging. Virtually all the stratigraphy against the east face of the Roman wall had been destroyed, while the bank against the inner face was in a fragmentary condition. An attempt to locate the bank further west in Trench III was inev-
HISTORICAL BACKGROUND

It is an established fact that the Roman city wall formed the eastern limits of the medieval castle until the middle of the 13th century when the Tower was extended to its present inner circumferal line (Colvin 1963). Thereafter the Roman wall, presumably supporting medieval rebuilds, became an inner curtain protecting the sanctum of the palace ward. A survey of 1597 shows the line of the wall immersed within a range of apartments named the 'Queens Lodgings' (Colvin 1963, Pl. 45). By this time, however, the fortress had ceased to be a royal residence and the palace buildings were being transferred to various official departments who modified them to meet their own needs (Parnell 1980).

Following the Restoration in 1660, the Board of Ordnance acquired control over virtually all the Inmost Ward, and between 1667 and 1675 carried out a complete reconstruction of the area. It seems probable that part of the Roman wall was incorporated into the main office of the Board which stood on ground to the north and west of the Lanthorn Tower (Parnell 1980, Fig. 2) but north of this, as far as the Wardrobe Tower, all visible trace of the wall disappeared.

In 1722, the antiquarian Nathan Bailey wrote 'On the south side of Caesar Chapel [i.e. the Chapel of St. John in the White Tower] a Foundation is now laying for the large Store-Houses; where in digging the workmen met with old foundations of about three yards in breath; which is so hard cemented that they are forced to break it up with Beatles and Wedges; and is thought to have been the Foundation of some ancient Tower standing there' (Bailey 1722, 57). This statement was pursued some one hundred and fifty years later by Loftus Brock after the discovery of part of the Roman city wall during demolition of the 'Great Court' which stood against the east side of the White Tower until 1879 (p. 120). Brock, who identified the work as Roman, pointed out that if the line of the wall was extended southwards it would connect with the discovery made in 1722, but if projected northwards it would not meet with the Roman wall standing on Tower Hill. Since there were also differences in the thickness of the masonry he felt able to conclude that the wall at the Tower was confirmation of a centuries old tradition that the site had once been occupied by a Roman stronghold (Loftus Brock 1882). Whereas the possibility of such an hypothetical enclosure has recently been revived—though for totally different reasons (Parnell 1981, 73)—in the years that followed the discovery at the Tower, Brock's interpretation was superseded by the view that the wall was in fact part of the general city circuit.

In 1904, excavations carried out on behalf of the Society of Antiquaries, sought to establish the line of the wall south of the Wardrobe Tower. They were unsuccessful save for the discovery of a short stretch of the wall's foundation immediately south of the tower. The following account, taken from the report, helps to explain the nature of the site and the desultory results obtained:

The area north of the modern Lanthorn Tower was 'formerly covered by a large warehouse, part of the substructions of which still remain underground. This area was . . . examined, pits and trenches being sunk in it to a level of the basement of the warehouse, far lower than the possible level of the footings of the Roman wall. Trenches were also tried northwards from the modern curtain wall, but without results, the whole site being composed
of a mass of builders’ and other rubbish . . . it can hardly be hoped that any further remains of the Roman wall will ever be found within the Tower’ (Jones 1906, 239).

THE SITE

In addition to the landward defence, the excavations revealed evidence of preceding prehistoric and Roman occupation of the site. Post-wall activity was represented by two phases of late 4th-century river defences with subsequent developments during the medieval and post-medieval periods. These chapters will be discussed in detail elsewhere, (Parnell 1977, 97-99) but in order to place the landward defence in its context a brief summary of the Roman history of the site before and after its construction should be outlined.

During the prehistoric period and 1st century AD, the southern Trenches IV, V, VI, and VII lay within the reach of the Thames—the area forming a noticeable bend in the river bank. Activity along its edge was interrupted by water incursions, but by the late 1st/early 2nd century the area had been reclaimed and a building or buildings resting on timber piles erected over part of the site. This was superseded by a large timber framed residential building which was destroyed by fire, but immediately replaced by a similar structure probably after AD 160 on the evidence of the samian. The reconstruction stood until the raising of the landward wall; the fact that the wall’s internal rampart rested immediately on the floor, with hardly any intervening demolition material present, suggests that the building had been carefully dismantled immediately before the construction of the wall.

Further up the hill, in Trench II, the foundations of the wall cut through an apparent early Roman subsoil of sand and gravel (Layer 16, Fig. 2). No pre-wall structures were identified, but in Trench III, immediately to the west, a large gully running east to west was found to be largely infilled with the tipping for the internal bank (Fig. 2).

Following the construction of the city wall there was no obvious indication of activity until the addition of the first riverside defensive wall between AD 350 and AD 370 (Hillam and Morgan 1979). At some stage after AD 388 this was largely replaced by a second wall founded a short distance to the north (Parnell 1981, 69-73).

THE WALL

A 14m (46ft) stretch of standing masonry was located in Trenches I and II, its north-south alignment being compatible with that part of the wall behind the Wardrobe Tower. North of its broken end the clay and flint...
Fig. 2. Inmost Ward 1955 and 1976: Section A–B across Trenches II and III.
foundation was traced for a distance of 7.60m (25ft), 18th-century cellars and services having completely displaced the main body of the wall. The southern continuation towards the Lanthorn Tower was sought, but its course was found to be occupied by a massive Ordnance brick foundation. 2m (6ft 7in) north of the Lanthorn Tower some flints and clay were found in Trench IV (Fig. 1), but 9m (29ft 6in) north of the tower, in the north-east corner of Trench V, the brickwork appeared to have nothing but soft sand beneath it. The considerable depth to which the brickwork had been taken, suggests that the Ordnance builders made a determined effort to remove all trace of the Roman masonry. In view of the fact that elsewhere they had been prepared to utilise existing work, it might be supposed that the wall at this point was considered structurally unsound. In fact the southern end of the surviving stretch had a severe crack and was leaning to the east (Pl. 2). How much of this can be attributed to the 18th-century builders is difficult to determine, but there can be little doubt that this was a problematic area for the Roman engineers, for just to the south of here the foundations of the wall would have had to transfer from the firm geology of London clay to the relatively soft river silts against the Thames bank.

Circumstantial evidence which might indicate the consequences of an adverse change in the ground surface was provided by a possible Roman buttress let into the internal bank 5.60m (18ft 5in) north of the Lanthorn Tower. This extremely hard piece of trench-poured masonry, composed of ragstone in a dark yellow mortar, was 1.20m (3ft 11in) wide, sur-

Plate 2. Inmost Ward 1955: Western face of Roman wall in Trench II showing decline of tile courses to the south. The foundations on the left are medieval (6ft scale). (Crown copyright reserved)
Fig. 3. Inmost Ward 1955 and 1976: Sections C–D and E–F across Trenches IV–VI.
vived to a depth of 1.50m (4ft 11in) and extended some 2m (6ft 7in) behind the line of the wall (see 27, Section C-D, Fig. 3).

The surviving wall stood to a maximum height of 2.15m (7ft 1in) having regrettably been stripped to its existing level when a concrete floor was laid over the entire site in the late 19th century. Resting on some 60cm (2ft) of flint and clay, the base of the main body of the wall measured 2.35m (7ft 9in) in width. Above the level of the plinth on the exterior east face this was decreased by 15cm (6in) and by a further 7.5cm (3in) above the offset in the triple tile-course on the interior face. The east face continued with four courses of ragstone, the west with three. Next came a triple tile bonding course carried right through the thickness of the wall, followed by two concluding rows of ragstone (PI. 2, Fig. 2). The rag derived from Kent; the chamfered plinth was an oolitic limestone, also of Kentish origin, whereas elsewhere in London a sandstone is normally employed. In Trench II the masons' debris associated with the construction of the wall was represented by a certain amount of chalk (Layer 14, Fig. 2), in Trench V by a layer of ragstone chips and yellow mortar extending back some 2m (6ft 7in) behind the line of the wall (Layer 47, Fig. 3).

One of the most notable features of the wall was the amount of freestanding masonry below the plinth. The plinth is usually regarded as a reflection of the contemporary ground surface, but in Trench II just over 60cm (2ft) of face-built work, represented by four neat courses of ragstone, was found below it (Pl. 1), clay resting against its face might suggest that the ground level had been deliberately raised after the construction of the wall (Layer 15, Fig. 2). The probable explanation for this arrangement was the presence of a large scoop or gully running east to west immediately behind the wall in Trench III. That this was a conspicuous feature at the time of the wall's construction was evidenced by the fact that it was largely infilled with the tipping for the bank (Fig. 2). It seems likely that the wall traversed the gully and that in order to secure a stable footing the masonry was carried down into it.

The natural geology beneath the wall falls steadily from 9.00 O.D. on the gravel terrace 2m (6ft 7in) north of the Wardrobe Tower to 2.50m O.D. on the London clay some 9m (29ft 7in) north of the Lanthorn Tower, where the edge of the prehistoric river is situated. To combat this activity the Roman builders might have been expected to terrace either the hill or the main body of the wall itself. Instead, the wall appears to ascend the slope without any resort to levelling, the coursing in the fabric merely reflecting the behaviour of the underlying ground surface (Pl. 2). The ascent is best illustrated by the external plinth which, over a distance of 41m (134ft 6in) from the southern end of the excavated wall to the section behind the Wardrobe Tower, rises some 5.35m (17ft 7in) at an angle of about 8°.

**THE BANK**

Almost complete running sections through the width of the bank were recorded in Trench V, while to the south, in Trench VII, the limits of the southern continuation were examined. Within this area the bank was clearly tapering, and though the southern extent had been completely cut away (Fig. 4), the angle of the remainder indicated a termination point close to the existing 19th-century Lanthorn Tower. The end of the bank was almost certainly removed because it infringed upon the line of the first 4th-century river wall—similarly directed towards the Lanthorn Tower (Fig. 1). The extant tower obviously prevented any investigation of this critical point, but a bore-hole survey against the north-east corner revealed a considerable 2.75m (9ft) depth of gravel extending over, and probably into, the natural clay. It seems extremely unlikely that this intrusive material could represent the foundation of the medieval Lanthorn Tower since all the medieval towers examined in the castle have been found to rest on massive masonry bases—a prerequisite for supporting such large structures. Moreover, the surface of the gravel, which probably represents the level of its insertion, corresponds exactly with the bottom of the internal bank and thus the level at which the wall was constructed. It is likely, therefore,
Fig. 4. Immost Ward 1955 and 1976: Section G-H across Trenches V and VII.
that if the gravel does represent the foundation of a structure on the corner of the city defences, its origin is more likely Roman than medieval.

Within the centre of Trench V the bank extended continuously for 7m (23ft) behind the rear of the wall before its tail was obscured by a standing section. It did not reappear 1.60m (5ft 3in) to the west in Trench VI, its width, therefore, could not have been more than 8.60m (28ft 3in) at this point (Fig. 3). It must be remembered, however, that the bank was already beginning to taper in this area and therefore a complete profile could only be expected further to the north. An attempt to establish a continuous section behind the wall in Trenches II and III (Fig. 2), was thwarted by 18th-century brickwork, this incomplete section providing a width of 8m (26ft 3in).

The most complete section of standing bank was uncovered in the southern half of Trench V (Section E-F, Fig. 3). Here, subsequent dumping behind the first 4th-century river defence provided a protective sealing, and the sloping surface of the rampart was traced uninterrupted to a maximum height of 1.50m (4ft 11in) over a distance of 5m (16ft 5in). If projected this would have reached about 2.00m (6ft 7in) against the face of the wall. Once again, however, it must be remembered that the bank was diminishing at this point. Further north in Trench II remnants of the bank were recorded to a height of 1.90m (6ft 3in) against the wall, but the original depth must have been greater (Fig. 2).

The bank was composed of a variety of deposits, most, if not all of them, having probably derived from the excavation of the wall and its ditch. In Trench V, for example, dumps of brown earth containing pieces of painted wall plaster, tesserae, tile, mortar, flint, ragstone, chalk and oyster shell, were particularly evident in the lower part of the rampart. Above occurred redeposited London clay and layers of sand and gravel river silts; the latter was predominant in the tail of the bank (Fig. 3).

Many of the deposits were tipping from north-east to south-west, thus indicating the direction in which the bank had been formed. It does not follow that the wall was erected in the same fashion, i.e. down the hill, for if work had progressed northwards from the river, it would have been logical to bring the spoil from the excavated ditch around the section of masonry under construction and tip in a southerly direction.

THE ROAD

West of the bank, in Trench VI, occurred a 30cm (12in) layer of dirty gravel mixed with mortar and occasional pieces of rag, chalk and tile. (Layer 55, Fig. 3). The metalling appeared to be composed of two layers, though it proved difficult to determine whether they represented separate phases or just two deposits laid at the same time. There can be little doubt, however, that the upper surface at least co-existed with the internal bank. Late 2nd/early 3rd-century pottery was recovered from below and within it, while a terminus post quem was afforded by the overlying construction surface of the late 4th-century period II river wall.

Within the narrow confines of Trench VI the gravel could only be traced to a width of 2.10m (6ft 11in). The eastern limit, i.e. that corresponding with the end of the bank, must have occurred just outside the excavated area. The western limit was subsequently extended by a further 1.60m (5ft 3in) during a watching brief in 1977. Once again the actual edge was not seen, but it could not have been more than another 1.60m (5ft 3in) to the west or it would have been detected in an adjacent trench. In summary therefore the overall width of the road could not have exceeded about 5.50m (18ft).

THE DATING

Since the principal source of dating evidence was obtained from the internal bank, it is important that the relationship between wall and bank is understood. Two main observations support the essential interpretation that the dumping was contemporary with the completion of the wall. Firstly: the mortar pointing on the inner face of the wall was so well preserved that it must have been protected immediately after application (Pl. 2). Secondly: the mason’s debris associated with the wall’s construction extended beneath
the bank, thus demonstrating that the bank was not an earlier feature subsequently revetted by the wall. It was sealed directly by the dumping, there was no trace of silting or any other intervening activity, something which might have been expected if the site had remained open for any appreciable period of time.

No coins and very few artifacts were recovered from the bank, and apart from the pottery, the only datable material was a very interesting assemblage of glass, provisionally dated to the first half of the 2nd century. Analysis has shown that much of it is in fact production waste. Since there would be little point in transporting material for the bank over anything other than a short distance, the collection probably derived from a manufacturing operation in the vicinity.

Most of the pottery was recovered from the mixed earth deposits which formed the base of the bank. The fragments were small and scattered. There was nothing recognisably later than late 2nd or early 3rd century, much, as might be expected in scoured deposits, was a good deal earlier.

THE SAMIAN
by JOANNA BIRD

(Fig. 5)

1. Dr 37, La Madeleine. The motifs are all shown on RICKEN 1934, Taf. 9: the beaded circle on No. 9, the bird on No. 13, the beadrow and crossing astragalus motif on No. 14, and the small figure and festoon (as an arcade) on No. 15. Hadrianic-early Antonine.

2. Decorated sherd, South Gaul. Narrow scroll or small medallion. Flavian probably. (Not illustrated).

3. Dr 37 in the style of Cinnamus of Lezoux. His ovolo 5 (S&J Pl. 159, No. 25), astragalus borders, double medallion and circle in the field (Pl. 160, No. 33), ring terminal (Pl. 159, No. 26) and foliage saltire (Pl. 160, No. 41). He used the Venus (D.184: Pl. 159, No. 34) and the feathered motif (Pl. 158, No. 14). The Bacchus is 0.566. C. AD 150–180.

4. Dr 29, South Gaul. Similar festoons and wreath scroll were used by Vitalis (KNORR 1919, Taf. 84, G) and there are general links with the work of such potters as Meddillus and Quintus. C. AD 70–85.

5. Dr 37, Central Gaul, with ovolo R.B77 and perhaps the helmet of a gladiator (cf. D.600). Curmillus is the only potter whose stamps are associated with this ovolo, but Miss Brenda Dickinson adds that his bowls are extremely rare, and that it does occur on bowls in

Fig. 5. Inmost Ward 1955 and 1976: Decorated Samian (1/2). (Centre sherd No. 3).
several distinct styles, mostly unassignable to particular potters (though perhaps including Sissus ii) but all clearly of Hadrianic—early Antonine date, including examples from the Castleford shop destroyed in the 140s. c. AD 130–150.

(Layer 116)

6. Dr 37, Central Gaul. The rosette (R.C177), triple leaf (R.G180) and perhaps the column (?R.P3) were used by Belsa; the bird has no exact parallel, apparently. c. AD 160–195.

7. Dr 37, Central Gaul. The ramshorn (R.G351), leaf (R.J11) and crane (D.1001) were used by Doeccus, the leaf and crane by Casurius. However, the large narrow beads are not in their style but are close to those on a bowl stamped on the rim by Moxius, which has features of Doeccus’ style and shares the crane and horn (S&S Pl. 152, No. 2). The male figure is not certainly identifiable. c. AD 160–195.

(Layer 121)

8. Dr 37, Central Gaul. Bear (0.1574) in a panel of large round beads. Antonine.


Abbreviations:
D: Déchelette 1904 (figure-types in Vol. 2).
O.: Oswald 1936, 1937.

PLAIN SAMIAN

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SAMBAN POTTERS’ STAMPS

by BRENDA DICKINSON

(Fig. 6)


2. Capitus ii, 2a, 15/17 or 18, CAPI.TVI Cajarc.† La Graufesenque. If this stamp and the one recorded from Cajarc belong to the same man, he almost certainly worked at La Graufesenque too, since its distribution is typical for a La Graufesenque potter. It has been noted from the fortresses at Chester and Nijmegen, and from the Ulpia Noviomagus site at the latter. The Cajarc stamp occurs on form 29. The final
letter is never clear, but on some examples it appears to be F rather than I. c. AD 65-85. (Layer 69).

3. Muxtullus, la, 31, .MVXT[ILIM] Lezoux. One of his later stamps, recorded in the Wroxeter forum destruction material and at Chester-le-Street and South Shields. His earlier work occurs in a pottery shop at Castleford destroyed in the 140s. c. AD 150-180. (Layer 32).

4. Secundus ii, 27a, 15/17 or 18, SECV[NDMA] La Graufesenque. The lettering and form of this stamp show that it belongs to the later of the La Graufesenque Secundi. Only three examples of it have been recorded, none in a dated context. Secundus’ stamps belong mainly to the Flavian period and have been noted in Scotland, but his occasional use of forms 24 and Ritt 8 show that he began work under Nero. c. AD 65-90. (Layer 37).

1. Indicates a die of the potter found at the kiln site; 2 a kiln site assumed from fabric, distribution, etc.

THE AMPHORAE

Information from CHRIS GREEN

The majority of the amphorae from the bank are of Dressel 20 type (27.7kg) of the later 1st or 2nd centuries and therefore residual. Also residual are sherds of Camulodunum 186 (0.6kg) of Flavian to early 2nd-century date. There is a small amount (0.1kg) of Dressel 30, of Antonine to early 3rd-century date which is probably contemporary. More unusual, but also contemporary, is a single sherd (25gms) of North African cylindrical amphora (c.f. Peacock 1977) which should be no earlier than the late 2nd century AD. This is an unusually early context for this type and, apart from one other sherd from a gully immediately beneath the road, all other examples in Trenches V, VI and VII, are from late 4th-century levels associated with the river defences.

THE OTHER ROMAN POTTERY

by FIONA CAMERON

TRENCHES V, VI AND VII

The redeposited clay near the top of the bank (Layer 66), as might be expected, contained only four body sherds, two in oxidised and two in reduced fabrics.

The sand and gravel deposits (Layers 49 and 62) contained a proportionately larger amount of material, but still only some thirty or so sherds. Among the fine wares was the base of an imported beaker of the Central Gaulish branch of Rhenish ware dating to c. AD 150-250 (Greene 1978, 18) and a fragment of mica-dusted ware, which was being produced in London up to the middle of the 2nd century AD although it was apparently still being made at Colchester in the late 2nd and early 3rd centuries AD (Hull 1963, Fig. 56, Nos 4, 6-8). The oxidised wares include a flagon rim c.f. Southwark type I B (Fig. 7 No. 2) and a fragment of poppyhead beaker c.f. Southwark type III F, both of which are probably Flavian in date and therefore residual in this context. The majority of the reduced wares are from pie-dishes (e.g. Fig. 7 No. 19) in BB2 fabric or its derivatives, a long lived type which probably starts in the mid to late second century in London c.f. Southwark type IV H but goes on into the 3rd century AD.

The bulk of the material from the mixed earth deposits (Layers 31, 32, 34, 37, 53, 69, 70, 116, 118, 120, 121, 122) at the bottom of the bank is of late 2nd to early 3rd-century date, but also contains a large residual element which is mostly Flavian and presumably reflects the occupation layers which made up the ground surface from which the material for the bank was taken. The fine wares from these deposits consist mainly of fragments of poppyhead beakers or sherds of rough-cast ware. Kevin Greene (1978, 17) points out that rough-cast beakers were being made in Britain in the 2nd century AD but that earlier examples are likely to be imports. In either case, the vessels in question here are likely to be residual. The same is probably true of the poppyhead beakers c.f. Southwark type III F which are usually Flavian. There are also.

![Image](image-url)
Fig. 7. Inmost Ward 1955 and 1976: Roman pottery Nos. 1-33 (1/4).
several sherds of Nene Valley colour-coated ware, including a cornice rim beaker (Fig. 7 No. 9) (cf. Nene Valley Guide No. 30), and a possible hunt cup fragment (cf. Nene Valley Guide No. 26), both of late 2nd-century date. Two lamp fragments also occur in this group, a discus rim with concentric ridges in a buff fabric with orange slip (Layer 121) and part of a base in a pale yellow fabric with a greenish-brown slip (Layer 69). These are also probably residual, as is another piece which may be included with the fine wares, the rim of a flask or flagon (Fig. 7 No. 7) probably in London ware. There is another piece of London ware, part of a bowl of Southwark type IV E 1 and therefore dating to c. AD 90–130 (Southwark p. 536).

The oxidised wares include an ovoid jar rim (Fig. 7 No. 10) cf. Southwark type II J 3 of Antonine date, and a wide-mouthed jar or bowl (Fig. 7 No. 15) which is probably from the Verulamium region (cf. Southwark Fig. 121, No. 679 in a Flavian context). There are a number of flagon rims similarly divided between contemporary and residual, most of which are again probably from the Verulamium area. Of those which are probably contemporary, there is one ring-necked example (Fig. 7 No. 3) cf. Southwark type I B 8/9 dated to AD 130–180/200 and one with a plain rim (Fig. 7 No. 5) cf. Angel Court Fig. 5, No. 54 in a context of AD 140–160 and Southwark No. 935 which is not dated. There is another flagon rim (Fig. 7 No. 4) very similar to Southwark No. 1326, although the latter may be residual in its 3rd-century context. The residual flagons tend to be Flavian or Hadrianic in date and include one example in grey ware (Fig. 7 No. 6) with a parallel at Angel Court (Orton 1977, Fig. 5, No. 19) in a context of AD 100–140 and another (Fig. 7 No. 11) similar to Billingsgate Buildings (Green 1980, Fig. 24, No. 67) in a Flavian context. There is also an example of Southwark type IB dated to the Flavian period also.

The residual types among the reduced wares include several Flavian bead rim jars (Fig. 7 Nos 24, 25 and 27) cf. Southwark II A types, and a grey ware jar, probably from the Highgate Wood kilns and late 1st to early 2nd century in date cf. Southwark type II E and Nos 219–20 and 1413. Most of the contemporary grey ware vessels seem to be BB2 pie-dishes (Fig. 7 Nos 13, 16, 18 and 20–23) cf. Southwark type IV H starting in the mid to late 2nd century AD and going on into the 3rd. There is also a dog-dish (Fig. 7 No. 14) of similar date cf. Southwark type IV J. Also contemporary are two jars in BB2 or derivative fabrics with cavetto rims (Fig. 7 Nos 28 and 30) cf. Southwark No. 1686, and another with an everted rim (Fig. 7 No. 32) cf. Southwark No. 929 and type II F, both of late 2nd to early 3rd-century date. There is also a dish or bowl on BB1 with a slightly flattened rim, probably of mid to late 2nd century AD (Fig. 7 No. 12). In addition there are several rims which may be from poppyhead beakers cf. Southwark type II F 5 of early to mid 2nd century, and a necked jar (Fig. 7 No. 26) of Southwark II C or II D type dated pre-Flavian to early Antonine, or possibly Alice Holt type 1.3 etc of late 1st to early 2nd century.

Finally, there is a mortarium rim (Fig. 7 No. 33) which may be related in form, though not in fabric, to Southwark No. 1822 which is in a late 2nd to early 3rd-century context, and to Angel Court (Orton 1974 Fig. 6, No. 143). It is possible, however, that it may have more in common with 4th-century types manufactured at Colchester and is therefore intrusive, since this context (No. 116) was subjected to some later disturbance during the building of the first riverside wall.

TRENCHES II AND III

The bank material corresponds closely to that from Trenches V, VI and VII although it has not been possible to separate the deposits in the same way. Among the diagnostic pieces, the residual element is fairly high and mainly Flavian in date, although there seem to be some 2nd-century vessels as well. There are three mortaria, probably from South East England, of which two are probably Flavian and a third is 2nd century. The fine wares include sherds of mica-dusted ware not likely to be later than the 2nd century (cf. Southwark p. 536) and of poppyhead beakers, which are usually Flavian (Southwark type III F). There is a bead-rimmed jar, also probably Flavian (cf. Southwark type II A 4).
Fig. 8. White Tower 1956/7: Site plan.
The bulk of the contemporary vessels, like those from Trenches V, VI and VII, are grey ware 'pie-dishes' in BB2 or similar fabrics, dating from the late 2nd century onwards (cf. Southwark type IV H). Among the contemporary fine wares are sherds from bead-rimmed beakers, usually a 3rd-century type (Nene Valley Guide No. 49). There is also a Dressel 30 amphora with a sgraffito on the rim (Layer 12) a type which goes on into the early 3rd century (Green 1980, 42) and may therefore also be contemporary. Mark Hassall adds: the sgraffito was cut after firing, it reads S \uvw, or if inverted \uvw S.

2. Flagon: gritty red-orange fabric with white slip on surfaces (49).
5. Flagon: sandy red-orange fabric with white slip on exterior and upper interior. (121).

Abbreviations:
Alice Holt: Lyne and Jeffries 1979
Southwark: Bird et al. 1978

EXCAVATION OF A ROMAN BUILDING ON THE EAST SIDE OF THE WHITE TOWER 1956–7
S. A. BUTCHER

The excavation was the result of the chance discovery, during work on the plinth of the White Tower, of a fragment of tessellated pavement (Room II Fig. 8). A limited amount of trenching was carried out to establish the extent of the building to which it belonged and the relationship of this to the Roman city defences. Unfortunately a great deal has been destroyed by later building work on the site.

The evidence which survives suggests that by the late second century, if not earlier, there was a substantial building on the site now occupied by the White Tower. The city defences were built immediately to the east of it and subsequently a northern extension was added, which involved cutting into the rampart. Occupation continued into the 4th century, and the building was refurbished late in that century.

The earliest surviving structure is that represented on the plan (Fig. 8) as Rooms I and II. These, with their stout walls and rectangular layout, formed part of a building to
Fig. 9. White Tower 1956/7: Sections H–J and K–L across Trenches III and IV.
which Room IV was later added. It is possible that Room I originally extended further eastwards: its northeast corner shows a straight joint where the north wall was apparently cut and the existing eastern wall built against it. The surviving wall plaster at this corner indicates that the room had a fairly long period of use in its present form: it seals the straight joint and continues below the existing mortar floor.

The line of the Roman city wall runs only some 1.22m (4ft) east of the truncated northeast corner of Room I, and its alteration may be connected with the building of the defences, but direct evidence is lacking. A Board of Ordnance plan of 1754 shows the building known as the ‘Great Court of the Tower’ along the east side of the White Tower and part of it, labelled ‘vaults for unserviceable stores’, lies in the position of the city wall in the area excavated. A large block of rough stone which cuts into the floor and eastern wall of Room I is probably the foundation for the south-western angle of this building. Everything east of this foundation has been swept away and only the bottom of the flints-and-clay foundation of the city wall remains.

Room IV is shown to be a later addition by the presence of a layer (XV 4) containing occupation material which is cut by the foundation of its west wall but which lies against the faces of the north wall of Room I (III 6) (Section Q-R and H-J Figs 9–10). The north wall of Room IV on the other hand is cut into much higher ground (Section M-N Fig. 10) composed of sandy layers very similar to those found by Mr Gilyard Beer in his trench 6.10m (20ft) further north (see below p. 116). This is almost certainly the bank behind the city wall.

The only other information about the relation between the house and the defences comes from the layout itself. The plan (Fig. 8) shows that the east walls of Rooms I and IV would impinge on the line of the city wall if both are projected from their known positions. There is a curious joint in this wall which almost seems designed to avoid the city wall line but it is difficult to accept it as Roman work (though it may, of course, follow an earlier structure). The two lengths of wall, which are faced, are made to join by means of a rough stone and mortar patch, which is not. The yellow mortar of the new wall and the patch continues over the surviving stump of the earlier wall. Presumably it was used as the foundation of some subsequent structure in the medieval period.

There is another feature in the plan of Room IV which may be connected with the awkward placing of the two walls. This is the east-west wall which cuts it into two unequal parts (IV A and B on plan Fig. 8). Much of it had been robbed and the surviving portion was not more than 43cm (17in) thick. It is difficult to see this as more than a partition within the room, in view of its flimsy construction, but from its position it would fit well into the plan as the end wall of the building at an intermediate stage between the building of the town defences and the encroachment upon them of the final northward extension of Room IV. The only apparent difference between the two parts of Room IV is the presence of a mortar floor in the southern part of which there is no trace in the northern. This may be due to the accident of survival however, as the surface upon which it rests is present in both parts.

It will be shown below that the city wall must have been standing when Room IV was built, and so, if no adjustment of line was made, it must be assumed that its north-east corner butted on to the wall itself.

Little can be said of Rooms II and III for the greater part of them was destroyed when the White Tower was built. A red tessellated floor was laid in Room II in the mid 4th century and the narrow north-south width suggests that this is the end of a corridor, where a plain floor is likely.

A date for the construction of the first phase of the building depends on the scanty material from below Room I, which contains nothing definitely later than some Neronian samian (see below p. 106). These layers also contained fragments of stone, mortar and tesserae, indicating that there had probably already been a building of some pretension nearby.
Fig. 10. White Tower 1956/7: Sections M–N, J–P and Q–R across Trenches III, V, and XV.
The excavation of the Roman city wall at the Tower and Tower Hill, 1954–76

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The pottery suggests a late 2nd-century date for the addition of Room IV A, if this can be regarded as an intermediate building stage. The north wall of Room IV B is dated later by the pottery from its construction trench, cut into the city bank, which contains some sherds thought to be late third century. The filling of Room IV up to the top of the surviving wall stumps contains mainly pottery of the late 2nd and early 3rd centuries. However this filling was not a straightforward destruction level: it contained little stone but much mortar, wall plaster and fragments of tile and the pottery may have been brought in with soil intended to raise the level. This filling was sealed by a layer of debris (III 4) which overlay the stump of the west wall and contained later material (including fourth century, p. 109). Above this there was material dumped when the recent stone plinth was added to the base of the White Tower.

There is evidence for later reconstruction and use in Rooms I and II, where new floors were laid in the mid to late 4th century.

The building was therefore in existence for a considerable period after the building of the city wall. Although the bank appears to have been dispensable at this point the wall must have remained standing throughout the Roman period since it survived to be incorporated in the defences of the Tower of London and is still visible at the Wardrobe Tower a short distance to the south.

There is no direct evidence that the building was in existence before the defences were built but this seems likely. Room I is probably datable to the late 1st century. The slight alteration in the alignment of the city wall at this point may have been made to accommodate it.

Although the part excavated does not suggest a building of any great pretension it must have been important in some way for the regular course of the defences to be interrupted. This fragment may be only a minor domestic appendage of a structure occupying the dominating terrace on which the White Tower now stands.

THE ROMAN CITY WALL AND AN INTERNAL TURRET NORTH OF THE WARDROBE TOWER

The piece of city wall and added bastion which were incorporated into the medieval Wardrobe Tower were uncovered in 1879 (p. 87). When Mr Gilyard-Beer located the city wall about 29.25m (96ft) to the north in 1954 it was apparent that some change in alignment must exist between the two points. The 1956–7 excavations were extended eastwards in an attempt to find this change and to relate the Roman building to the city wall. The general plan (Fig. 8) shows that the angle (a very shallow one) came north of the Wardrobe Tower and that it was covered by a small internal turret.

Only the foundations of the city wall survived on this site, everything above this level having been cleared when the ‘Vaults for unserviceable stores’ were built (p. 103). Section H-L is typical (Fig. 9). Where the full width was excavated it was found that a deeper recent foundation cuts the eastern edge but the Roman foundation is already 2.44m (8ft) wide here, almost the width found by Mr Gilyard-Beer. In each cut it was found to consist of coursed flints in stiff yellow clay, to a maximum depth of 61cm (2ft).

The turret foundations were of the same material and must have been made at the same time as those of the wall: the southern return is of continuous build with it. There is a gap of about 5cm (2in) at the junction with the northern foundation but the superstructure was probably bonded in. The overall width of the turret (parallel with the wall) is only 5.48m (18ft); its full depth is not known because this side is masked by a drain set in concrete, but was probably about 2.44m (8ft) judging by the inner edge. The northern foundation is only 91cm (3ft) thick, the southern is 1.83m (6ft); the interior space is about 1.22 × 2.74m (4 × 9ft). It is irregular in shape for it spans the change in the wall alignment, and none of the corners are right angles.
THE COINS
by P. E. CURNOW

1. CLAUDIUS I (AD 41–54)
   As. Irregular.
   Reverse: Minerva type.
   1957 SF 12. Trench XV, layer 7. Soil over natural, below Room IV A.

   Obverse: type of Sept Sev of AD 200–201.
   Reverse: type of Caracalla of AD 200.
   1956 SF 3, Square III, layer 4. Amongst RB building debris, in a layer which runs over the west wall of Room IV.

3. Radiate c. AD 270. Illegible, Tetricus I type.
   1957 SF 4. Trench XIV, layer 5. In filling of depression in mortar floor of Room I.

THE SAMIAN
by BRENDA DICKINSON and BRIAN HARTLEY

(Fig. 11)

FROM BELOW ROOM I
Two small flakes of form 29, in pre-Flavian South Gaulish fabric. Form 33, the early variety, with fluting at the junction of base and wall, in South Gaulish fabric. Probably pre-Flavian.
Form 15/17, South Gaulish. Probably Neronian.

FROM BELOW ROOM IV
Form 15/17, South Gaulish. The glaze is characteristic of the Neronian period.

Form 18 or 15/17, South Gaulish. Neronian or early Flavian.
Form 18/31, probably from Lezoux rather than Les Martres-de-Veyre.
Hadrianic or early Antonine.
Two fragments, not joining, from the same large example of Ritterling form 8, South Gaulish. Pre-Flavian.

FROM CUT FOR NORTH WALL OF ROOM IV
Form 15/17, South Gaulish. Pre-Flavian.
Form 37, Central Gaulish, with the beginning, DQ[, of a stamp of Doecuss. The ovolo is one of his regular ones; the Victory (0.809) and the other decorative details are all recorded on his work. Doecuss belongs to the period AD 160–190, and he was probably at work soon after AD 160, since a bowl comes from a primary deposit in the Antonine reoccupation of the fort at Bainbridge (Fig. 11 No. 1).
Form 33, Central Gaulish. Antonine.

FROM THE FILL WITHIN ROOM IV
Form 33. This is another stamp from the same die as one from the Jewel House (S.46) c. AD 160–190.
Form 31, Central Gaulish. This is the deep variety of the form typical of such late Antonine groups as the Pudding Pan Rock deposit. c. AD 160–200.
A small fragment of uncertain form coated with mortar. The fabric appears to be South Gaulish, and so 1st-century.
Form 31, Central Gaulish. A thick example, with heavy rim. Another Pudding Pan rock type.
Form 18/31 (two different dishes), in the fabric of Les Martres-de-Veyre. The larger piece is almost certainly Hadrianic, the smaller one cannot be dated closely, but it could be Hadrianic.
Form 37, Central Gaulish. This has a large winding-scroll, with two vine-tendrils springing from the main stem, as often on bowls of Cinnamvus. He also used the small leaf, but the large leaf is not recorded on his signed bowls, nor, indeed, in the work of any other

Fig. 11. White Tower 1956/7: Decorated Samian (1/2).
potter. This piece is certainly Antonine, but not necessarily later than AD 150 (Fig. 11 No. 2).

FROM TOP OF FILL IN ROOM IV
Form 37, East Gaulish. Both the ovolo and the arrangement of decorative detail are characteristic of Attillvs of Rheinzabern (Ludowici-Ricken, Vol. VI, Tafelband p. 298, No. 11, for the ovolo, and Textband p. 180, No. 7, for the trifids in and between double medallions).

There is no adequate site-dating for this potter, though the style suggests a date after AD 160, at the very earliest (Fig. 11 No. 3).

The lower wall of an East Gaulish form 37, possibly the same vessel as the last, though the piece is perhaps a little too thin.

Form 37, burnt, Central Gaulish. The style of this piece is reminiscent of Servus of Lezoux (S&S Pl. 131), but the ovolo seems to be rather different from his recorded ones, and the piece may have been made by one of his associates. Evidence for similar bowls at Lezoux suggests a date in the region of AD 170–200 for these products. The only figure-type is a stag (D. 860) (Fig. 11 No. 4).

Form 45, Central Gaulish ware. Late Antonine.
A small fragment of uncertain form, in Central Gaulish fabric. 2nd century.
A flat plate, approximating in form to Bushe-Fox 84 (cf. Oswald and Pryce 1920, Pl. LXVI, Nos 2 and 4). This is in standard Central Gaulish fabric, and was almost certainly made in the Antonine period.

THE OTHER ROMAN POTTERY

by FIONA CAMERON

(Figs 12–14)

1. The pottery from the Roman building falls into six main phases:
   (i) Activity on the site before the building was erected.
   (ii) The original building i.e. Rooms I and II and associated occupation, mainly the layers ante-dating Room IV.
   (iii) Evidence for the construction of Room IV.
   (iv) The infilling of Room IV.
   (v) Later occupation, i.e. the laying of new floors in Rooms I and II.
   (vi) Later disturbance.

(i) PRE-BUILDING ACTIVITY
The pottery which is associated with what appears to be the earliest phase of occupation of the site is mostly from the layers below Room I–XI 7, XIV 9, and XIII 10, but it is scarce and difficult to date. The coarse pottery consists solely of a few fragments of amphora and flagon, but there is also some pre-Flavian and Neronian samian from these layers. Also ante-dating the building is a depression in the natural (V 6) which contains the rim of a beaker (Fig. 12 No. 1) which is probably 1st century AD cf. Southwark type IV D for the same general type.

(ii) PRE-ROOM IV
The main layers ante-dating Room IV are III 7, IV 7, XV 4, and XV 6 and XV 7. Of these XV 6 and XV 7 have no datable pottery in them but are probably stratigraphically equivalent to III 7. There is, in fact, a coin of Claudius (AD 41–54) from XV 7 which may be related to the earliest activity on the site, but is unlikely to reflect the date of the layer. Layer IV 7 is actually under Room IV A i.e. south of the dividing wall between Rooms IV A and IV B, in a rather disturbed area, and contains a sherd which joins one from layer IV 3 which is above the floor of Room IV. The pottery from layer IV 7 does, however, have a fairly consistent mid to late 2nd-century AD date and includes a necked jar (Fig. 12 No. 6) cf. Southwark type II G 2, ajar with everted rim (Fig. No. 3) which joins one in IV 3, cf. Southwark type II F 2, and a BB2 dog-dish (Fig. 12 No. 4) probably of a late 2nd-century date or later cf. Southwark type IV J.

Layer III 7, apparently the lowest layer, contains a necked jar (Fig. 12 No. 5) of mid to late 2nd century onwards cf. Southwark type IV H. The overall date for the layer must be mid to late 2nd century AD.

Layer XV 4 is immediately below the floor of Room IV but contains little dating evidence. There is an everted jar rim (Fig. 12 No. 7) of probably late 2nd-century date cf. Southwark type II 5 and part of a jar with an open burnished lattice similar to Alice Holt type 3B 9 dated to the 3rd-century AD although in Southwark it may be earlier.

The samian associated with these layers ranges from pre-Flavian to early Antonine and the earliest pieces are likely to be residual.

(iii) CONSTRUCTION OF ROOM IV
There is evidence for the construction of the north wall of Room IV B, but this may be later than Room IV A. Two layers were
Fig. 12. White Tower 1956/7: Roman pottery Nos. 1–19 (1/4).
associated with the cut made into the city bank to build this wall. Of these, layer V 5 is from the bank itself and V 4 is from the bank and the construction trench, and must therefore be considered as belonging to the later feature, i.e. the construction trench.

From layer V 4, the fine wares include pre-Flavian and Antonine samian, as well as a beaker (Fig. 12 No. 8) probably imported from Trier and therefore not likely to be much later than AD 250 (see Greene 1978, 19). Among the coarse wares are a BB1 dog-dish (Fig. 12 No. 13) dated to AD 120-200 in Southwark, c.f. type IV J1, and a BB1 flanged bowl of late 2nd to early 3rd-century type (Fig. 12 No. 12) c.f. Gillam 1976, Fig. 4 No. 66). Also from this layer there is part of a Dressel 20 globular olive oil amphora from the Guadalquivir valley area in southern Spain. The handle is stamped F C C O (?) retrograde and there is a possible parallel from the site of St. Magnus, Lower Thames Street (Museum of London, Department of Urban Archaeology 1975) of F C C V F C N retrograde (S.M.75). This amphora probably dates to the late 2nd or early 3rd century AD (information from Chris Green) which fits in with the dating for the rest of this layer (Fig. 12 No. 9).

From layer V 5 there are two sherds of a colour-coated beaker which may be from the Colchester area and therefore probably post mid 2nd century AD and a BB2 dish with a triangular beading rim of a type which begins in the mid 2nd century in Southwark c.f. type IV H but goes on into the 3rd century. There is also a jar with a cavetto rim (Fig. 12 No. 10) and an obtuse-angled burnished lattice which is likely to be later than AD 250 (Gillam 1976, 63), and the rim of a Dressel 30 amphora (Fig. 12 No. 11) a type which goes on into the 3rd century in London (Green 1980, 42). The presence in this layer of the cavetto rim jar, which is probably as late as the late 3rd century AD, probably indicates that there has been some mingling of the material from the bank with that of the construction trench and that this vessel in fact reflects the date of the construction trench rather than that of the bank.

(iv) FILL OF ROOM IV

The pottery from the fill of Room IV has a fairly wide date range, possibly because there is a certain proportion of later rubbish which has been thrown into it at some point. The relevant layers are III 4a, b, and c, IV 2, IV 3, IV 4, IV 5 and XIV 7, although there is no datable pottery from the last of these.

Layer IV 5, is in fact a layer of ash lying directly on top of the floor and probably the only one which has any direct relevance for the date of the floor. There is little dating evidence for this layer, however, and it comprises simply a rough cast beaker of a type probably imported from the Rhineland in the mid to late 2nd century (Fig. 14 No. 48) c.f. Anderson 1980, Fig. 8 No. 2 for the decoration but Fig. 13 No. 6 for the form, and a BB2 pie-dish (Fig. 14 No. 47) of a type which dates from the mid 2nd century on in Southwark c.f. type IV H4, although in this case it may belong to the early third century AD. The other layers which make up the fill of Room IV are all of very similar dates to IV 5, except for III 4c which is from a rather disturbed area where part of the east-west wall dividing Room IV A from Room IV B is missing. The datable pottery from layer III 4c consists of a BB2 pie-dish of mid to late 2nd century onwards c.f. Southwark type IV H and a small necked jar probably an early Antonine type from Highgate Wood (c.f. Southwark Fig. 201 No. 1612) and may therefore be residual here. Layers II 4a and III 4b must be more or less contemporary as there are several instances of sherds from the same vessel occurring in both layers. In layer III 4a there is a mica-dusted beaker (Fig. 12 No. 15) which also occurs in III 4b, similar to Southwark Fig. 219 No. 1842 (although the rim forms differ) which is in a 3rd-century context where it is probably residual. Mica-dusted wares were not being produced after mid 2nd century AD in London (see Southwark 536) although they were apparently being produced at Colchester up to c. AD 210 (Hull 1963, Fig. 56 Nos 4, 6, 7 and 8). There are several everted jar rims in grey ware similar to Southwark type II F5 later 2nd century onwards, a flat-rimmed bowl in a BB1 type fabric (Fig. 13 No. 32) c.f. Southwark type IV G1 and 2, mid 2nd
Fig. 13. White Tower 1956/7: Roman pottery Nos. 20–34 (1/4).
century onwards, and a BB2 pie-dish (Fig. 13 No. 27) c.f. Southwark type IV H4 mid 2nd century on. It is likely that the bulk of the material is of the early 3rd century and that the mica-dusted beaker is residual. Apart from those sherds already discussed in III 4a, III 4b contains a Nene Valley Hunt Cup (Fig. 12 No. 14) probably of late 2nd to early 3rd-century date (c.f. Nene Valley guide Fig. 3 No. 26), and another sherd from a Hunt Cup (Fig. 12 No. 16) probably imported from the Rhineland and therefore not much later than c. AD 170 (see Anderson 1980, 20). There are two flagons worth noting, one of probable mid to late 2nd century date (Fig. 12 No. 18) c.f. Southwark type I H1 and another unusual type with heavily roller-stamped decoration (Fig. 12 No. 19) of uncertain date. There is also a small cup (Fig. 12 No. 17) which is probably late 2nd century (c.f. Southwark Fig. 164 No. 1252). Among the grey ware jars is one with a beaded rim (Fig. 13 No. 21) which is probably Flavian c.f. Southwark II A types and therefore residual in this context. There are also two jars with everted rims which are probably early 3rd century, one (Fig. 13 No. 20) of Alice Holt type 3B8 and 9, and the other (Fig. 13 No. 22) similar to Southwark type II 5 as well as a necked jar (Fig. 13 No. 23) which is probably c. AD 100–150, c.f. Southwark type II G2; there is also a wide-mouthed jar with a flat rim (Fig. 13 No. 24) similar to a type known in Southwark from pre-Flavian to early Antonine periods and later—type II D1 and some sherds from poppyhead beakers probably made at Highgate c. AD 100–160 (c.f. Southwark type III F). There are a large number of BB2 pie-dish type vessels (e.g. Fig. 13 No. 31) c.f. Southwark type IV H4 mid to late 2nd century onwards, and a flat-rimmed bowl in a BB1 type fabric c.f. Southwark type IV G1 AD 120–150 on. Also in sandy grey fabrics are a plain rimmed bowl with burnished surfaces and a wavy line on the exterior (Fig. 13 No. 28) probably of late 2nd or early 3rd-century date c.f. Southwark Fig. 167 No. 1286 and a dog-dish c.f. Southwark type IV J1 AD 120–180/200. Also from this layer is a handle from a Dressel 20 type amphora of late 2nd to early 3rd-century date. The most likely date for this layer is the early 3rd century although it does contain some residual material.

The pottery from layer IV 2 consists mainly of two jars (e.g. Fig. 13 No. 26) with everted rims in sandy grey fabrics c.f. Southwark type II F 4–12 dated to the late 2nd century onwards and a bead-rimmed bowl (Fig. 13 No. 29) c.f. Southwark type IV H, probably late 2nd century on. It is likely that this layer is also early 3rd century AD.

Layer IV 3 contains a jar with an oval beaded rim probably from the Verulamium area (Fig. 13 No. 25) c.f. Southwark type II J3 of Antonine date and Fig. 165 No. 1264 in a 2nd-century context and Fig. 145 No. 891 in a first half of 2nd-century context. There are also several jars with everted rims in grey fabrics c.f. Southwark type II F 4–12 late 2nd-century date on, and one with a small everted rim c.f. Southwark type II F2 early to mid 2nd century. One of these joins a sherd from layer IV 7 which is one of the levels below the floor so that both may have been deposited at the time the floor was laid. There is also a fine flanged bowl of uncertain date (Fig. 13 No. 30), several dog-dishes (e.g. Fig. 13 No. 33) c.f. Southwark type IV J c. AD 120 onwards and a BB2 pie-dish cf. Southwark type IV H, probably late 2nd century on.

The pottery from layer IV 4 is difficult to date as it consists only of body or base sherds, but it seems to include a Hunt cup of c. mid to late 2nd century AD and a flagon which may be a 2nd-century type from the Verulamium area.

The samian from the fill of Room IV ranges from 1st century to late 2nd century but the majority is mid to late 2nd century.

(v) THE LATER OCCUPATION

The main evidence for the later period of occupation comes from Room I and II.

Room I (Layers XIV 3, XIV 4 and XIV 5).

Layer XIV 5 is below and sealed by the mortar floor of Room I and contains a coin of Tetricus of c. AD 270.

Layer XIV 4 is the make-up of the mortar floor and contains a single sherd of Alice Holt flanged bowl which may well be part of the
bowl in XIV 3 (Fig. 14 No. 50) and is of mid 3rd to mid 4th-century date.

Layer XIV 3 lies immediately above the floor and contains a fair amount of material, all probably 4th century. There are several sherds from a beaker with white painted decoration of a type which occurs in the late 3rd to 4th century in the Nene Valley although in this case the fabric has more in common with Colchester types. Among the coarse wares, there is an Alice Holt flanged bowl type 5B dated mid 3rd to mid 4th century AD and c.f. Southwark Fig. 44 No. 292 in a 4th-century context. There is also the everted rim of a jar in a sandy grey fabric which may also be from Alice Holt c.f. Type 3 C2 dated AD 220–330 and Southwark Fig. 46 No. 344 in a late 4th-century context.

Room II (Layers 0 I, 0 II and 0 III)

The layers in this room are related to a plain red tessellated floor which appears to have been laid in the mid 4th century.

Layer 0 II is below the floor and contains part of a flanged bowl from the Oxford area with the white painted decoration of Young’s (1977) type C 52 AD 350–400+.

Layer 0 III is also from below the floor and contains a sherd of colour-coated ware from the Oxford area which must be mid 3rd century or later, and part of a jar of Overwey type (Fig. 3 No. 49) Alice Holt type 3 C2 dated AD 220–330 and c.f. also Southwark (Fig. 46 No. 344) in a late 4th-century context.

Layer 0 I comes from above the floor and contains a piece of Oxford colour-coated ware of mid 3rd century at the earliest and a piece of a large jar with deep finger-impressions on the interior in Alice Holt fabric, probably type 10.1 possibly a ‘ceramic beehive’ dated AD 180–270 and on into the 4th century.

In the case of both Room I and Room II, the pottery from above and below the respective floors is so similar in date that it must have been deposited very close to, or possibly immediately after the floors were actually laid i.e. mid to late 4th century AD.

(vi) LATER DISTURBANCE

Lying within Room IV and certainly covering its west wall, was layer III 4. This presumably represents the destruction level of the building, though much of the pottery from it was residual and its date is therefore uncertain.

The fine wares include part of a beaker, probably from Trier c. mid 2nd to 3rd century and some sherds from beakers which were probably imported from the Rhineland. There is also a beaker which was probably made at Colchester (Fig. 14 No. 36) and may be late 2nd century (c.f. Anderson 1980 Fig. 13) and several sherds of Nene Valley beakers, one of which is probably 3rd century. Among the oxidised wares there is the rim of a tazza with a frilled cordon (Fig. 3 No. 42) of uncertain date. The reduced wares include a beaker (Fig. 3 No. 35) of uncertain date and a tankard (Fig. 14 No. 37) c.f. Angel Court (Orton 1977 Fig. 7 No. 158) in a late 3rd to 4th-century context. There are several everted jar rims including one in BB1 c.f. Southwark Fig. 148 No. 942 in late 3rd to 4th-century context and Fig. 169 No. 1363 in an early to mid 4th-century context. There is a BB2 pie-dish (Fig. 14 No. 45) c.f. Southwark type IV H mid 2nd century on and several dog-dishes (Fig. 14 Nos 41 and 43) c.f. Southwark Fig. 217 No. 1792 in a second half of the 3rd-century context.

There are also several flanged bowls (Fig. 14 Nos 44 and 46) one of which is in BB1 fabric c.f. Southwark Fig. 219 No. 1806 and Fig. 220 No. 1861, both in second half of the 3rd-century contexts. Finally, there is a bowl (Fig. 14 No. 38) and a large jar (Fig. 14 No. 39) c.f. Alice Holt type 3 C7 dated AD 270–330.

CONCLUSION

Whilst the available evidence does suggest a certain amount of Roman activity on the site before the building was erected, it is too scanty to give any clear indication of the precise nature of this activity. Although there is no pottery directly associated with the building of Rooms I and II, this must have taken place after, or at the time of, the deposition of the Neronian samian, but before the building of the city wall and bank in c. AD 200. It seems likely therefore, that the pre-building activity is of the pre or early Flavian period.
and that the Neronian samian was deposited during the original erection of the building in the late 1st century AD.

The first occupation of Rooms I and II must go on from this period to be contemporary with the layers below Room IV which contain mid to late second century material. Since the structural evidence suggests that Room IV was added after the building of the city wall, the building of the room must have occurred between the deposition of the layers below it and the building of the wall in the early 3rd century AD. The room, however, is split into two parts by a dividing wall and what is true for IV A may not be true for IV B. Most of the fill of both sides is apparently of late 2nd to early 3rd-century date, but it is not clear whether the material is associated with the actual occupation of the room itself or whether it was brought in from elsewhere. Although layer IV 5, the ash layer immediately on the top of the floor in Room IV A, which contains late 2nd to early 3rd-century material, may well be an occupation layer, there appears to be no equivalent evidence on the north side of the wall i.e. in Room IV B. The material from the construction trench for the north wall of Room IV B which cuts the city bank is generally of late second to early third-century and was probably back-filled with the bank material which had been taken out of it. The presence among this material of a late third century vessel may indicate that the construction of this wall took place in the late 3rd century.

It is possible that Room IV B may be part of the later occupation of the site, the evidence for which is otherwise confined to Rooms I and II. In this area at least, there seems to be a certain amount of refurbishing in progress, with both rooms having new floors laid, probably some time around the middle of the 4th century—a mortar floor in Room I and a plain tessellated one in Room II. Rooms I and II at least, seem to have been in occupation from the late 1st or early 2nd century up to the mid 4th and there is no reason to suppose the occupation was not continuous. How much longer the building remained in use is not known, but clearly it was still very much occupied in the 4th century.

The Defences

There are only two relevant sherds and these are from the turret foundations; a jar with a bead rim c.f. Southwark type II A 5–6, which is probably Flavian (Fig. 14 No. 53) and an everted jar rim c.f. Southwark type II F late 2nd to 3rd century AD (Fig. 14 No. 52). The date of the latter accords well with the date usually assigned to the wall and the former is probably residual.

(Fig. 12)

(i) PRE-BUILDING ACTIVITY

(ii) PRE-ROOM IV

(iii) CONSTRUCTION OF ROOM IV

(iv) FILL OF ROOM IV

(Fig. 13)
Fig. 14. White Tower 1956/7: Roman pottery Nos. 35–53 (1/4).
30. Flanged bowl: fine grey fabric, partly burnished on exterior and rim, paler grey slip on flange and inside rim. (IV 3).
34. Mortarium: fine cream fabric with possible grey and white flint grits. (IV 3).

(v) LATER OCCUPATION

(vi) LATER DISTURBANCE
40. Beaker: fine sandy red fabric with grey core and grey surfaces, rouletted and finely burnished exterior. (III 4).
41. Beaker: cornice rim, fine gritty orange fabric with brown colour coat, probably from Colchester. (III 4).
42. Tankard: gritty red fabric with dark grey surfaces, burnished on rim and exterior. (III 4).
44. Large jar: sandy grey fabric with burnished exterior and rim. May be from Alice Holt. (III 4).

THE DEFENCES

SMALL FINDS
(Fig. 15)
1. Fragment of stone moulding, possibly wall panelling. It is rectangular in section with three smooth surfaces probably forming the end of a panel 25mm thick. Both ends are broken. There is a beaded moulding on one angle. Dr F. W. Anderson reports that this is 'a Tertiary Foraminiferal Limestone, almost certainly not British in origin'. 1956 SF No. 12. Square III Layer 4b. Filling of Room IV. (Not illustrated).
2. Bone counter. Diameter 20mm. 1956 SF No. 2. Square III, Layer 4. Rubbish layer over filling of Room IV.
3. Copper alloy belt-plate with curvilinear open-work decoration. Two fragments of thin bronze plate are rivetted to the back of the plain rectangular end of the plate. There is a stout pin on the underside of the small round terminal. 1956 SF No. 4. Square III, Layer 4b. Lower filling of Room IV. Openwork ornament seems to be of Celtic origin, but occurs widely on mainly military sites throughout the Empire in the 2nd and early 3rd centuries AD. A very similar object was found at Ebchester (Archaeol. Aeliana. 5 ser. 3 (1975) 72 No. 16) and a fragment of another at Burghull Mill (Britannia 5 (1974) 162, Fig. 8, 39), a site occupied between c. AD 140–160.
4. Copper alloy. Possibly the foot of a small box. 1956 SF No. 5. Square 3. Layer 4. Rubbish layer over filling of Room IV.
5. Group of iron objects from dump of wall-plaster in corner of Room IV. Presumably discarded when the building was dismantled for its re-usable stone. Iron ring, cramp or door hook, two nails. (AM Laboratory Nos. 570895 and 600379). (Not illustrated).
6. Copper alloy hollow domed stud head. Fig. 15. Diam: 12mm. 1957 SF No. 13. From foundations (flints in clay) of southern return of turret.
7. Part of an iron vessel from dump of wall-plaster in Room IV. (AM Laboratory No. 600378) 1977 SF No. 19. Trench XV layer 2.
EXCAVATIONS ON THE NORTH-EAST CORNER OF THE WHITE TOWER, 1954

R. GILYARD-BEER

The foundation of the Roman wall was encountered 6.50m (21ft 4in) east of the White Tower: it was rectangular in section and consisted of close-set layers of flints set in clay. It was 2.57m (8ft 5in) wide and 60cm (2ft) deep. It cut through a layer of rather more than 30cm (1ft) uniform depth which was composed almost entirely of dark grey refuse. This lay directly on the natural and presumably represents the pre-wall Roman ground surface (Fig. 16). Nothing whatsoever remained of the wall that had been supported by the foundation. In its place was a well-defined robber trench 1.83m (6ft) deep and 3.05m (10ft) wide at the top, tapering to the exact width of the foundation. A few sherds of Roman and medieval pottery, the latter dating up to the second half of the 13th century, were found near the bottom of the robber trench.5

West of the foundation and the robber trench, the material of the Roman rampart extended continuously to the foundations of the White Tower, giving a total width of over 6.10m (20ft) and a maximum depth of 1.67m (5ft 6in). It rested directly on the Roman ground surface and consisted of seven fairly distinct layers of material. All the layers were fairly level to the west where they met the foundations of the White Tower, but sloped upwards at an increasing angle to the east, to a maximum of about 30°. They consisted of sandy, clayey ballast varying in colour from orange through brown to a dirty grey, according to the amount of refuse they contained. In the centre of the rampart there was one layer of black refuse and one layer of clean orange sand. Sherds of Roman pottery occurred throughout practically all the layers, and in the lowest one there were fragments of Roman box tiles, roof tiles, floor tiles, window glass, *opus signinum*, and three rough testae cut from tile.

The trench was extended 2.44m (8ft) east of the wall foundation, but no trace of a ditch was found. The foundations of the ‘Great Court’ prevented a further search to the east.
Fig. 16. White Tower 1954: Site plan and section.
Outside the wall the natural surface dropped in a ragged slope towards the east, and above it there was a homogenous deposit of 2.44m (8ft) of building debris, stones and sticky brownish loam, extending up to a level (some 60cm (2ft) below present turf level) where rampart, robber trench, and all early deposits are cut away almost horizontally by relatively modern disturbance (Fig. 16). The upper part of this deposit contains a few sherds of Surrey white ware belonging to a baluster jug, which can probably be dated to the 14th century.

This indicates that the Roman wall was standing until at least the 14th century, for it was not until that date that the ground level to the east was raised, apparently deliberately. At some stage after this the Roman wall was robbed down to its foundation, but the rampart left standing.

ADDENDUM

GEOFFREY PARNELL

During excavation of a service trench near the north-east corner of the White Tower in December 1973, a standing section of the Roman landwall was observed only 1.50m (5ft) north of where the 1954 investigation recorded its total destruction (Fig. 17). It

Fig. 17. Plan of the Great Court of the Tower and the Roman city wall.
stood to a height of about 1.50m (5ft) above the external chamfered plinth; some 60cm (2ft) above the base, a division appeared to mark the brown earth deposits resting against the wall face. Presumably the upper layer equates with the dumping lying immediately to the south which produced 14th-century pottery. The lower material might be regarded as somewhat earlier, perhaps an accumulation which began in the Roman period, particularly as the plinth appeared well preserved.

Let into these deposits were a number of trench-poured foundations. An east-west footing lay roughly at right-angles to the Roman wall, the west end butted against the wall face, the east limit merged with part of a massive circular feature interpreted as the base of a tower. A further footing returned to the south, the arrangement thus forming an enormous corner (Fig. 17). Neither the full width or depth of the footings could be established, but all were apparently contemporary and evidently incorporated much re-used Roman tile in the basic ragstone and mortar composition.

There can be little doubt that these remains belong to the ‘Great Court of the Tower’ a long building which occupied a position down the east side of the White Tower. Little is known about this structure. It appears on the Haiward and Gascoyne survey of 1597, evidently in much the same form as it is represented between the late 17th and early 19th century—a long, relatively low, stone building enclosing an open court (Pl. 3). Sometime after 1692 and before 1717, a pentice was erected against the interior west wall, thereby greatly reducing the area of the inner court. It is highly probable that further alterations to the existing fabric were carried out during this period. In the mid 19th century a fourth storey was added—a move which greatly obscured the view of the White Tower and
Plate 4. The Record Office [i.e. Great Court] viewed from the south-east shortly before its demolition in 1879. (Guildhall Library)
thus provided the Office of Works with an excuse to demolish the building in 1879 as part of their ruthless ‘remedievalisation’ of the Tower (Pl. 4).

Exactly when the Court was built, and for what purpose, remains obscure. Bailey (1821, 117) attributes it to the reign of Edward III, as does G. T. Clark (1884, 219) sixty years later, though no documentary reference is known. By 1666 the Board of Ordnance had established an ‘Ordinary Proofe howse’ there (Parnell 1980, 150), and by the mid 18th century was using it as a depository for records and a drawing office.7

Its earlier history may well have been associated with the royal Wardrobe. The Wardrobe Tower itself was embedded in the south-east angle of the building and photographs taken during demolition8 show the south wall, which linked the Wardrobe to the apse of the White Tower, supported by two shallow flat pilaster buttresses similar to those surviving on the Wardrobe Tower (Pl. 4). The buttress style is early and perhaps unlikely to date after c. 1200. It does not follow, however, that the Court was of the same date, merely that at this point earlier work was incorporated into its build. In fact, the Court could not have been constructed before the middle of the 13th century at the earliest, since until then the line of the Roman wall (which lay within its plan) marked the eastern limits of the castle (Colvin 1963).

The 1954 excavation demonstrated that the building could not be earlier than the 14th century, as the east foundation cut through deposits containing pottery of that date (Fig. 17). The removal of the Roman wall also post-dates these deposits, though what little pottery was recovered from the construction trench was slightly earlier and therefore residual (p. 118). Significantly, the robbing of the Roman wall stopped just short of the north wall of the Court. Since it is highly unlikely that the Roman wall was removed after the building had been erected, it seems quite possible that it happened during the construction of the Court and that the operation deliberately avoided disturbing an area where it would interfere with the foundations of the new building. It goes without saying that a large and disused feature like the Roman wall would have provided a useful supply of material for the medieval builders, and the presence of re-used Roman material in the Court’s foundations has already been commented upon.

THE SAMIAN

by BRENDA DICKINSON and BRIAN HARTLEY

Form 37, South Gaulish. The ovolo and winding scroll can be paralleled in the work of Germanus (see Karnitsch, Die Reliefsigillata von Ovilava, Taf. 5, Nos. 3 and 4, for the ovolo and scroll, and Knorr, Sudgallische Terrasiligillata-Gefasse von Rottweil, Taf. 39, U. for a signed example with the scroll), c. AD 70–90.

Form 37, Central Gaulish. This is the work of the potter who uses a characteristic straight line under his ovolo. A badly-impressed mould-stamp on a bowl from Great Chesterford, in Saffron Walden Museum, shows that his name was Secundus. The figure-type, a Hercules, is a variant of Dechelette 464 (c.f. Proc. Soc. Antiq. Scot. XCIV, 101, No. 4). These bowls are certainly Antonine, and occur occasionally in forts thought to have been recouped c. AD 160, such as Ilkley or Bainbridge. A general date c. AD 150–180 may be suggested.

Form 38, Central Gaulish. Antonine, probably early in the period.

Form 33, Central Gaulish. Antonine.

Form 31, Central Gaulish. Antonine.

The plain band from a Central Gaulish form 37. Hadrianic or Antonine.

Form 18/31, Central Gaulish. Hadrianic or Antonine.

A small fragment in Central Gaulish fabric, probably form 31. Hadrianic or Antonine.

Form 33, Central Gaulish. This is an extremely thin fragment, and could be Hadrianic or early Antonine.

Form 18 (?), probably South Gaulish, burnt. First-century (?) Form 37, Central Gaulish. Second Century.

Form 37, Central Gaulish, with a groove instead of a ridge below the decoration. The only element of the decoration left is a leaf, probably the one common to Albucius, 1, II and Paternus. The groove below the decoration occurs frequently in the work of the latter, and seems on the whole to be characteristic of late Antonine bowls. Probably later than AD 160.

Form 33, Central Gaulish, with the stamp SIN[. This is from a die reading SINTVRVSF recorded on form 44 at Eccles Villa, Kent, and hence Antonine in date. This dating is confirmed by two examples from the Antonine fort at Camelon.
Fig. 18. White Tower 1954: Roman pottery Nos. 1–16 (1/4).
A samian mortarium, probably form 43 or Curle 21. Late Antonine. Probably form 18/31, Central Gaulish. Hadrianic.

THE OTHER ROMAN POTTERY
by FIONA CAMERON
(Fig. 18)

The fine wares from the bank deposits include part of a rough-cast beaker which may be from Colchester c. mid to late 2nd century c.f. Anderson (1980, Fig. 13), a sherd of Nene Valley colour-coat which must be later than the middle of the 2nd century when production started there and a sherd from a Nene Valley beaker with underslip barbotine decoration, probably of a late 2nd or early 3rd-century date (see Nene Valley Guide, Fig. 3). There are several pieces of mica-dusted ware which are probably not later than 2nd century (see Southwark 1978, 536), and two sherds from a poppyhead beaker probably of late 1st to late 2nd-century date c.f. Southwark type III F, which are probably residual in this context.

Among the coarse wares are a number of BB2 bowls (e.g. Fig. 18 Nos 9, 10, 11, 12, 13, 14, 15 and 16) c.f. Southwark type IV H mid 2nd century onwards, two jars (Fig 18 Nos 7 and 8) of late 2nd to early 3rd-century type c.f. Southwark type II F, and a jar with a small bead rim (Fig. 18 No. 2) c.f. Angel Court Fig. 5 No. 25 in an AD 140–160 context and Southwark type II A17 AD 130–180/200. The jar types also include a small necked jar (Fig. 18 No. 5) c.f. Southwark types II G2 AD 100–150, a small jar of Southwark type II F late 2nd to early 3rd century and a necked jar in a micaceous brown fabric with grey surfaces is present c.f. Southwark Fig. 153 No. 1038 in a first half of 2nd-century context and Fig. 167 No. 1284 in a late 2nd to early 3rd-century context. There is also a flask or jar in London ware type fabric (Fig. 18 No. 4) c.f. Southwark type II R late 1st to mid 2nd century AD and Fig. 197 No. 1480 in a Hadrianic context, and a bead rim jar in a shell-gritted fabric (Fig. 18 No. 1) which is probably Flavian c.f. Southwark type II A4; these two pieces are almost certainly residual.

EXCAVATIONS AT TOWER HILL, 1965
PETER CURNOW and GEOFFREY PARNELL

In advance of the construction of a third platform at Tower Hill Underground Station, the Ministry of Public Buildings and Works, in collaboration with London Transport, carried out excavations to the rear of the Roman city wall at the north end of Trinity Place. Work took place between January and March 1965 and was directed by Peter Curnow. As the principal objective was to investigate any surviving remains of the internal bank, two 1.83m (6ft) trenches were laid out at right-angles to the wall (Trenches I & II, Fig. 19). Of the four sections thus obtained, three were neatly aligned on the tops of 17th/18th-century walls and wells. The fourth and
Fig. 19. Tower Hill 1965: Site plan.
most northerly section, though cut by a large 17th/18th-century pit, revealed the bank extending back 4.85m (16ft) from the wall.

In order to try and establish the full width of the rampart, a cutting, Trench V, was made to the south-west of the main trenches. Two further cuttings (Trenches III & IV) were excavated against the wall on the north side of each of the main trenches to obtain as much dating evidence from the bank as was possible.

THE ROMAN GROUND SURFACE

In Trench I the excavation was carried down below the level of the wall's construction surface to examine the earlier stratigraphy. The natural orange-coloured brickearth, overlying the gravel and sand deposits of the terrace, was encountered at 10.45m O.D (Layer 1, Fig. 20). Above this occurred a fairly even 30cm (12in) layer of dirty brown brick-earth containing small pebbles, flecks of charcoal, shell and a small amount of Roman pottery (Layer 2). This presumably represents the pre-wall accumulation.

THE WALL

The foundations lay within a trench cut to a depth of at least 1-20m (4ft). The lower fill comprised 90cm (3ft) of flints set in a mined clay matrix. Above this was a mass of ragstone set in a hard mortar which formed a rough raft to support the main body of the wall (Fig. 20).

The face of the upstanding part of the wall survives better here than anywhere else in the city. A triple-tile facing course marks the base of the wall in the normal manner. Above are three courses of ragstone followed by a triple-tile bonding course carried right through the thickness of the wall. Next comes six courses of ragstone, a double-tile bonding course, five rows of rag, then another double-tile course and finally three more courses of ragstone. The whole affair stands to a height of some 3.45m (11ft 4in); each tile course is marked by a narrow offset (Fig. 20 and Pl. 5).

Before the northern section of the excavated wall was destroyed by the enlargement of the station tunnel, a view of the exterior (east) face was briefly obtained after a large 19th-century warehouse to the east was demolished. Beneath the level of the mortared raft, the foundations were completely underpinned by modern brickwork, while most of the chamfered plinth had been smashed by the springing for the deep warehouse cellars (Pl. 6). Above this the face survived as four courses of ragstone, a triple-tile course and five rows of rag. In fact, the condition of the wall had altered little since it was illustrated by Roach Smith following the discovery in 1852 of part of the tombstone of Classicianus the Procurator of the province of Britain, re-used in the building of Bastion 2 (Merrifield 1965, 41-42).

Within all the excavated trenches, immediately overlying the Roman ground surface, was a layer of mortar and small rag chippings up to 7.5cm (3in) thick (Layer 3, Fig. 20). This represents the masons' waste associated with the construction of the wall and a number of tile fragments lay directly on it. The same surface, recently encountered in excavations
a short distance to the south, has been interpreted as being deliberately laid (Whipp 1980, 49–50). This view is not shared here. The spread, whilst extensive, was patchy and its thickness quite arbitrary, consistent in fact with accidental spillage during construction work.10

THE BANK
The bank was formed immediately over the construction surface and rested against the wall face. As with the wall at the Tower, the masonry was in a very fine condition, thus indicating that the bank provided protection at an early date. Dumps of dirty brickearth separated by various tip lines of dark earth, pebbles and mortar formed the bank (Layers 4 and 5, Fig. 20). In Trenches II and IV, the seventeenth/eighteenth-century cellars had removed all but the lowest 75cm (2ft 6in) of the feature, but in Trenches I and III deposits survived somewhat better to a height of 1.35m (4ft 6in) below a post-medieval lime floor (Fig. 20).

The tail of the rampart was sought in Trench V. Its base survived to a height of 90cm (3ft) and continued to show tip lines falling from east to west. Clearly its limit lay further to the west and outside the area available to excavation. The recorded width was 6.10m (20ft), but the total was probably nearer to that found on the south side of Trinity Place, where the tipping was traced for a distance of 9.50m (31ft) (Whipp 1980, 50).

SAMIAN FROM THE BANK
Dr 37 Central Gaul. Probably the work of the Cinnamus group c. AD 150–180. (Fig. 21 No. 1)
Dr 31 Stamped by Cintugenus who probably worked at Lezoux c. AD 160–190. (Fig. 21 No. 2)
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The Other Roman Pottery

by Fiona Cameron

(Fig. 22)

Among the handful of sherds from beneath the bank, the only diagnostic sherds are from a Dressel 30 amphora and a BB2 bowl, both of 2nd or 3rd century AD. These were presumably deposited at about the time when the bank was erected.

The material from the bank itself, like that of the excavations in the Tower of London, is largely late 2nd to early 3rd century AD in date, as might be expected, and most of the diagnostic sherds are again from grey ware ‘pie-dishes’.

The amount of fine wares in this group is unusually small. There is one beaker (Fig. 22 No. 3), which may have been imported from the Continent but could equally well have been made at Colchester. The rim form is that of the Nene Valley Guide No. 30, where it is described as ‘late, developed cornice type’.
Fig. 22. Tower Hill 1965: Roman pottery and tile Nos. 1–25 (1/4).
and is dated to late 2nd to early 3rd century AD. There are also two mica-dusted bowls (Fig. 22 Nos. 4 and 5) c.f. Billingsgate Buildings (Green, 1980) Figs. 38 and 39 Nos. 325–353, and the discussion (p. 69) where they are described as ‘coarse, locally made mica-dusted wares’ and dated to the 2nd century in general. It is difficult to say whether or not these vessels are residual.

The oxidised wares include two flagons which are both contemporary. Fig. 22 No. 1 is probably from the Verulamium region c.f. Southwark types 1 B7–9 dated AD 130–180/200. Fig. 22 No. 2 is a more unusual type but c.f. Billingsgate Buildings (Green, 1980 No. 71 and discussion p. 49) again probably from the Verulamium region and unlikely to be pre 2nd century. There are two lid-seated jars in pink fabrics (Fig. 22 Nos. 11 and 12) which also seem to be from the Verulamium region c.f. Southwark type II H and especially No. 1129, dated to the 2nd century AD. Here again it is difficult to say whether or not the vessels are residual. Also in this group are two examples of ‘amphora stoppers’ or incense vessels c.f. Billingsgate Buildings (Green 1980, No. 90) and Southwark No. 1328. Like the material from beneath the bank, this group includes the handle of a Dressel 30 southern French wine amphora, a type which goes on into the third century in London (see Green 1980, 42).

The reduced wares include several grey ware jars of which three are likely to be residual—a bead-rimmed example c.f. Southwark type II A 14, a neckless jar (Fig. 22 No. 13) which may be related to Alice Holt 3 A types, if not from Alice Holt itself, and another jar of Southwark II B1 type (Fig. 22 No. 8). All of these are probably 1st or 2nd century in date. The contemporary grey ware jars comprise necked jars (e.g. Fig. 22 Nos. 9 and 10) in the same tradition as Southwark II G types with a general 2nd or 3rd-century AD date, and jars with everted rims (e.g. Fig. 22 No. 14) c.f. Southwark type II F7 of late 2nd to early 3rd-century AD date. The majority of the contemporary grey wares, however, are examples of vessels of the ‘pie-dish’ type in BB1 or BB2 fabrics or their derivatives, with or without burnished lattice decoration (e.g. Fig. 22 Nos. 15–23). In Southwark these types (IV G and IV H) are thought to begin in the mid 2nd century AD and go on into the 3rd, and in this case a late to early 3rd-century date seems likely.

There is one mortarium (Fig. 22 No. 24) similar to Southwark No. 1820 in form though not in fabric, which is of a late 2nd to early 3rd-century AD date. The provenance of this example is not known, however, and it may be an earlier type from South-East England and therefore residual.

Finally, there are some ten or so sherds from lids whose dates may well vary as much as their forms and fabrics do. Which of these are residual and which contemporary, is impossible to ascertain.

1. Flagon: sandy red fabric with grey core and cream slip on exterior and interior of rim.
25. Fragment of box tile 1.5cm thick with a roller-stamped design from the surface of the Roman wall construction level (Layer 3).

Michael Stone comments:
Fabric: orange/red with inclusions of mainly angular and subangular quartz, black and red ironstone and plates of mica. As Green (1980) has stated the clay source is probably locally derived from the London brick earth. Roller-stamped design: the pattern belongs to Lowther’s group 1 (Lowther 1948) and may be variant of his die 5, examples of which he recorded from the north and south of London. Examinations of tile assemblages from recent excavations in the London area have produced four further tile fragments of this die from two sites. The first, G.P.O. 1975, context 6948, in deposits dated by pottery to post AD 280 the second site, Beddington Bath House 1981, produced three fragments from open layers (L. and R. Adkins pers. comm.) All the fragments of this group discussed are of the same fabric and are residual, again highlighting the problem of obtaining a production date for roller-stamped tiles.

DISCUSSION

(i) THE DATING EVIDENCE FOR THE WALL

by FIONA CAMERON

London is fortunate in having its landward wall securely dated by coin evidence to between about AD 190 and 225 (Marsden 1980, 121). These excavations afford no further numismatic evidence—their main contribution in regard to date comes from pottery found below and within the internal bank. The bank is demonstrably contemporary with the raising of the wall (p. 94) and datable pottery from its composition should provide a *terminus post quem* for construction. The various groups recovered during excavation constitute the largest assemblage as yet available for examination.

Most of the pottery from the bank is made up of mid to late 2nd-century types which occur on all the sites with predictable consistency. The fine wares seem to come mainly from the Nene Valley or Colchester (it has not always proved possible to distinguish between the two) but there are also some examples from Central Gaul. The flagons tend to be from the Verulamium region (c.f. Southwark types I B7–9) as do the mortaria and some jars in oxidised fabrics of Antonine date. Dressel 30 wine amphorae from South Gaul are present on all the sites. Among the reduced wares, ‘dog-dishes’ (Southwark type IV J) and flat-rimmed dishes in BB1 or derivative fabrics (Southwark type IV G) often occur. By far the most common of all the vessel types from the bank are the BB2 ‘pie-dishes’, and the vast majority of these are of Southwark types IV H 4, 5, 6 or 7, i.e. of the later 2nd century rather than the middle. The grey ware jars most in evidence are Southwark types II F and II G.

There is, in addition, a not inconsiderable proportion of first and second century types, again fairly consistent over the various sites. Strictly speaking, both this group and the later second century one, are residual and both reflect the occupation of these areas prior to the construction of the wall and bank. In the case of the Inmost Ward site, Trenches V, VI and VII, this occupation is represented by a residential building found beneath the rampart. The second phase of this building is probably later than AD 160, so that the time lapse between its occupation and the construction of the wall and bank could not have been very great. The pottery from the floor of the building includes several of the mid to late 2nd-century types found in the bank itself. There is also in this area a gulley which lies immediately beneath the road associated with the bank and the pottery from its fill includes the same flagon, mortaria and jar types as the bank except for the absence of BB2 pie-dishes. More significant, perhaps, is that it also contained a sherd of a type of North African cylindrical amphora whose date can only be
late 2nd to early 3rd century at the earliest. Thus, the filling of this gulley would seem to be contemporary with the construction of the wall and bank, and the latest occupation of the building cannot have been much earlier.

In theory, it should be possible to identify those vessels among the bank pottery, which are literally contemporary with its construction (i.e. those pieces which were deposited during the actual building process) but in practice, the study of the chronology of coarse pottery is not sufficiently advanced to allow so fine a distinction to be made with any certainty. There are, however, some sherds of samian from the Inmost Ward excavations which are of the very late 2nd or even 3rd century—two dated to AD 160–195, a third of Antonine to early 3rd-century and a fourth of later 2nd to mid 3rd-century date. There is also the sherd of North African amphora which must at its very earliest be late 2nd century rather than 3rd. Thus, the wall and bank can hardly have been built much before AD 200.

(ii) SUMMARY AND CONCLUSIONS

GEOFFREY PARNELL

The contribution made by these excavations towards our understanding of the landward defences in the south-east corner of the Roman city is considerable. The realignment of the wall north of the Wardrobe Tower, first suggested by Loftus Brock in 1880, was confirmed by the 1954 excavations, while the precise position of the angle was identified in 1956–7, 6m (20ft) north of the tower. The discovery of a turret against the internal face of the wall at this point provides another example of these relatively scarce mural features.

The course of the enceinte may have been partly determined by local geography; the 1954 excavation, which was carried a short distance beyond the wall, revealed the natural geology falling away to the east, while behind the wall it remained fairly level. Perhaps the defence made full use of a fall in the ground surface towards the marshy St. Katherine's area.

That the building discovered near the Wardrobe Tower should have been accommodated right up against the rear of the landwall is without known precedent elsewhere in the city (though evidence for such a plan behind the late 4th-century river wall some 60m (200ft) to the south-west has recently been forthcoming (Parnell 1981, 69–73). Such an arrangement provides a sharp contrast with the situation further down the hill by the Lanthorn Tower, where a timber-framed residential building was demolished to make way for the defences. The excavated part of the masonry building to the north suggests nothing of any great pretention, perhaps then its retention at the time of the raising of the landward defence owed more to the status of the owner.

Although the southern extent of the wall had, with the exception of its foundations, entirely disappeared, the remains of the internal bank indicate that the defence originally terminated close to the Lanthorn Tower, i.e. by the contemporary river front. Since we now know that the river defences were an innovation of the late 4th century, this arrangement appears quite in order (Parnell 1981, 69–73).

Perhaps one of the most striking features recorded in all the excavations, was the considerable width of the internal bank. Only near the river front where it was already beginning to taper were almost complete sections of up to about 8.50m (28ft) obtained. It is difficult to determine exactly how much greater the
width would have been further north, but a total measurement of about 10m (33ft) may be a realistic estimate. This would compare favourably with dimensions recently recorded at Tower Hill (Whipp 1980, 50), but would find little analogy elsewhere in the city. At Cooper’s Row, for example, it was about 4.25m (14ft) (Merrifield 1965, Fig. 14, 109), at Aldgate between 4m (13ft) (Maloney 1979, 204) and 7m (23ft) (Chapman 1973, 10) and at King Edward St (Merrifield 1965, Gazetteer W52) and Central Criminal Court 5m (16ft 6in) (Marsden 1970, 2–6). Clearly the rampart was a variable feature with perhaps concession to existing topography being one of the factors determining its size.

To the rear of the bank near the Lanthorn Tower was evidence for a gravel road, a feature as yet not seen behind the landwall, though it certainly occurred behind the earlier fort wall at Cripplegate (Grimes 1968, Fig. 3, 19) and perhaps the later river wall at Blackfriars (Hill et al. 1980, 37).

The later Roman history of the landward defences remains patchy. Presumably east of the excavated areas, a new wide flat-bottomed ditch was dug when the bastions (including the Wardrobe Tower) were added in the 4th century. This would have provided a clear range of fire for the machines mounted on the bastions and excavations against the Salt Tower in 1976 revealed a mass of late fourth-century dumping lying on the Roman foreshore which may, or may not, have derived from the excavation of such a ditch.11

If we are to believe that the piece of masonry found at right-angles to the wall just north of the Lanthorn Tower was a Roman buttress (p. 90), then it might follow that the disintegration of the southern end of the landwall started at a comparatively early date. The area was after all reclaimed ground and the underlying soft river silts may have encouraged instability. No special tactics appear to have been devised for the foundations of the enceinte and ultimately the condition of the wall here fared badly compared to that further north.

Finally, we have evidence for the alteration and refurbishing of the substantial masonry building just north of the Wardrobe Tower. Occupation continued at least into the mid 4th century when new floors, including a tessellated pavement, were laid. There is no reason to suppose that occupation did not continue until at least the final years of the 4th century when the river defences were remodelled and an adjacent structure to the north laid out. If so, then parts of the building would have been in use for perhaps 300 years or more. The main part of the building, which presumably lies beneath the White Tower, may have been a more imposing affair, and it is interesting to speculate whether or not the remains of a channelled hypocaust and buttressed wall located near the south-west corner of the keep are related. If the general plan of this complex could be established, it might help to explain the location of the White Tower itself. The great keep seems curiously cramped against the city defence and its plan indicates an affinity with the alignment of the excavated part of the building rather than the city wall. In this respect it is worth pointing out that recent work at the White Tower’s great counterpart—Colchester Castle—has shown that the lay-out of the keep, including that of the apse, was determined by the final plan of the underlying Roman temple.12

NOTES
1. It is possible that the chalk was taken from the foundations of the building demolished to make way for the defences.
2. An analysis of mortar samples taken from the wall, by Dr N. Davey, has shown that the aggregate in the mix was derived from river gravel deposits.
3. Information provided by John Shepherd.
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5. The medieval pottery was examined by Stephen Nelson. A catalogue of this small assemblage is lodged with the site records at the Tower of London.
6. Compare WORKS 31/22 with WORKS 31/124 (Public Record Office).
7. WORKS 31/97.
9. It is worth pointing out that the 1879 photograph (Pl. 4) shows the medieval masonry of the Wardrobe Tower surviving to the level of the upper floor of the White Tower, i.e. twice as high as it now appears.
10. The excavator of the 1978 site seems to suggest that the thickness of the spread itself (c. 10cm) rules out accidental spillage. This is difficult to accept; during recent excavation of the second fourth-century wall at the Tower, the mason's waste was encountered up to a depth of 20cm.

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OSWALD (1936, 1937), F. Oswald, Index of Figure-types on Terra Sigillata (Samian Ware) (Liverpool 1936, 1937).
THE ROMAN CEMETERY AT ST. BARTHOLOMEW'S HOSPITAL

DAVID BENTLEY and FRANCES PRITCHARD

SUMMARY
Excavation in advance of redevelopment within St. Bartholomew's Hospital, West Smithfield, in 1979, revealed evidence of at least twenty inhumation burials from a Roman cemetery in use during the 3rd and 4th centuries. The burials were arranged in three clusters, with up to five successive burials in each cluster, and six further individual graves. This implies marked plots, and an ordered layout while reinterment of casually disturbed bones was also found. It is possible that up to eight individuals were buried in wooden coffins, and in two cases were accompanied by grave goods. The skeletons were of adult and juvenile men and women, together with children, which in the case of the clusters probably indicate family plots. In two of the three clusters the final burial showed a relaxation of the previous, formal arrangement; the cemetery deposit was thereafter overlain by 'dark earth'. The present discoveries can be set in a context of the development of cemetery zones to the west and northwest of the Roman city: a distinction is made between mid 1st to mid 2nd-century 'linear' cremations along the main western road to the city and a defined zone of mid 2nd to early 3rd-century 'nuclear' cremations overlapping with 3rd and 4th-century inhumations.

INTRODUCTION
The precinct of St. Bartholomew's Hospital, in the north-west of the City, lies just outside the Roman and medieval city wall, facing West Smithfield to the north (Fig. 1). In March 1979, following the discovery of several skeletons during preliminary work for the reconstruction of part of the former medical school, the Department of Urban Archaeology, Museum of London, took the opportunity to examine part of the known Roman cemetery in the Smithfield area. Efforts were concentrated on an area 18m X 2m (Area A, Fig. 2 below), where observations revealed the survival of stratified archaeological deposits in a northwest-southeast aligned strip beneath a disused 18th-century sewer and also in a 19m long construction trench at right angles to this (Area B, Fig. 2). A five-week watching-brief to proceed in conjunction with redevelopment was envisaged, but during this time it was realized that the evidence merited a more thorough investigation, and as the developers (the Hospital Trustees) proved sympathetic, a two-week excavation was mounted under rescue conditions.

This report describes and discusses the Roman cemetery which constitutes Period IV of the archaeological sequence. The periods before and after the cemetery are mentioned only in outline, and may be the subject of later reports incorporating contemporary sequences from other recently excavated sites. Similarly, only finds from Period IV are given a detailed treatment here.

In what follows, the early, pre-cemetery periods are summarized, the cemetery itself then described in detail, with the finds information incorporated under the individual burials. The cemetery as a whole is then discussed. Other burial sites in the Smithfield area, and the finds derived from them, have been reconsidered and more general discussions on these, the first on the actual burials, the second on the finds and dating of the burials, follow the discussion of the exca-
The Roman Cemetery at St Bartholomew’s Hospital

The specific details of the various sites in the latter discussions are given in an appendix at the end of the report.

NATURAL TOPOGRAPHY
The site (TQ 3188 8151) is situated on the more westerly of the two low hills on which London was established and which form part of the Thames river terraces. To the west, the modern topography drops away sharply, reflecting a fall in the natural topography where it is cut by the valley of the River Fleet. In addition the natural strata on the site, consisting of yellow gravels and coarse sands lying in alternating, well-defined bands, survived to a height of 14.75m O.D. in the north and 14.58m O.D. in the south-east. This southward and eastward slope continues to Newgate Street where the highest point at which brickearth has been recorded in the City occurs at 13.11m O.D. Hence the falling away to the south and east, though less perceptible than to the west, means that the site stands on a plateau in one of the highest parts of the City.

SUMMARY OF THE PRE-BURIAL PERIODS
Period I (1st century)
An extensive horizon of disturbed, silty gravels overlain by less pebbly material of a more trampled, clayey nature sealed the natural gravels, possibly indicating superficial cultivation. Fragmentary evidence was found of four shallow pits cut into the clayey silts, probably for the extraction of gravels. They were subse-
quently backfilled with gravel and included a small quantity of domestic refuse of pre- to early Flavian date. The evidence of cultivation and small-scale quarrying suggests that the area was not extensively developed at this time.

Period II (Late 1st to mid 2nd centuries)

Levelling and gravel make-up in preparation for a building in the centre of Area A represented the first comprehensive development of the site. Traces of three possible walls (Fig. 3) with associated brickearth floors were found, indicating an east-west aligned building of timber frame and sill-beam construction. Subsequent development altered the layout of the rooms, and included the construction of an *opus signinum* floor in the central area and the extension of the building possibly by means of lean-to constructions, to the north and south. Occupation may have taken place any time between the late 1st and mid 2nd century.

Period III (Mid-late 2nd century)

This building was now dismantled and brickearth debris, probably derived from the process, was spread across the site and levelled off, except in the central area where it was absent. Here there was evidence of a posthole (0.18m square) on the line of a former wall, suggesting the re-use of the *opus signinum* surface within a short-lived, timber-framed structure. Small-scale pitting for the disposal of

![Fig. 2. St. Bartholomew's, 1979: Site plan.](image-url)
refuse was also recorded. A lack of datable finds leaves it uncertain whether this activity was contemporary with the destruction of the Period II building, but it is unlikely to have taken place before the end of the 2nd century. This is supported by the evidence of root-channels through the destruction horizon which indicates the presence of trees or shrubs and demonstrates that the site would have been derelict for some time.

There was no direct evidence to indicate the function of the Period II building. However the nature of its construction and of its subsequent destruction during the 2nd century can be compared with Roman building activity in areas to the east, nearer the main centre of the Roman city, at Milk Street, Watling Court and the GPO site, Newgate Street, where commercial and domestic buildings fell out of use by the late 2nd century.¹

THE ROMAN CEMETERY
Period IV (3rd–4th centuries)

Traces of twenty inhumations were found on the St. Bartholomew’s site, together with scattered human remains. It is suggested that they date to the 3rd and 4th centuries.² Grave-cuts were identified in all but five instances and were aligned roughly east-west, cutting through a deposit of silty soil which covered the entire site, sealing the occupation levels of Periods II and III (Fig. 3).

Of the twenty burials (B1–B20), fourteen occurred in three groupings or clusters (A–C) in the centre of Area A. Five individual interments (B15–B19) were located to the south-east of these clusters, while a further individual burial of more doubtful date (B20) was found 8m to the east in Area B.

The similarity in content between the cemetery soil and grave fills, and the disturbance caused by animal and plant penetration, made it impossible to identify the upper level of grave-cuts or horizons of activity within the soil, so that no sequence of interment could be established except where graves intercut.

The cemetery soil

The cemetery soil appeared as a homogenous deposit ranging in thickness between 0.12m and 0.2m over most of the site, with a maximum height of c. 15.60m O.D. An exception was in the area directly overlying Period II and III occupation, where an initial deposit of darker material was identified. This comprised a greyish-brown clayey silt containing quantities of abraded building debris in the form of frequent mortar and plaster fragments, moderate fine and medium pebbles, daub, charcoal, tile and pottery sherds and occasional lumps of brick-earth.³ It is probable that the fragments of building debris were derived from the Period II building, becoming mixed with the introduced soil. This initial deposit was made up to the height of the surrounding Period III brick-earth horizon and probably represents a localized dump above the Period II building to level the area. There is no evidence to suggest that those burials which intruded into this darker deposit were any earlier than the rest.

Other evidence (below p. 138) implies that elsewhere the cemetery soil comprised similar stratified dumps of material, although they could not be distinguished at the time of excavation. The main deposit in which the burials occurred was a mid-grey, clayey, charcoal-flecked silt (becoming browner over the Period II and III occupation), with a distinct greenish hue. Included were small quantities of abraded debris similar to those described above and, as
Fig. 3. St. Bartholomew's, 1979: Site locations of burials in relationship to Period II building.

with the former deposit, such debris occurred more frequently over the area of the Period II building. Occasional fragments of human bone were found scattered throughout the horizon and demonstrated the process of displacement and accumulation of soil and debris that continuous grave-digging involved.

Pathological evidence showed that human skull fragments from an upper level of the cemetery deposit were derived from an underlying burial (B3), although there were two intervening burials (B4 and B5), the first of which had clearly disturbed the initial burial and thus displaced part of its skeleton. Although no grave cuts were found completely intact at their upper extent, three graves (B3, B5 and B17) showed in their profiles a tendency to be rounded off at their upper extremities, but at different levels, suggesting that they were dug from different surfaces. The implied rise in surface levels indicates that as well as reworked
material derived from repeated grave digging, additional soil could have been dumped to provide an increased depth in which graves could be dug. This may have been in order to minimize disturbance to earlier interments, especially around the clusters.

Pottery from the cemetery soil was predominantly abraded 1st–mid 2nd-century material which is clearly residual. The remainder had a 3rd to 4th-century date range, with several sherds of Portchester ‘D’ ware. Small fragments of glass, tile and animal bones were also severely abraded and appear to have had no connection with the use of the area as a cemetery. The only possible exceptions were one worn barbarous minim of the late 3rd century, part of a cast copper alloy object of uncertain use, and the iron nails which are of the same type as those indicative of coffins in some of the burials (p. 144). A group of hobnails was also found and may represent a nailed shoe from a disturbed burial. As a whole the finds suggest that the cemetery was in use at least as early as the mid 3rd century and well into the 4th. The cemetery deposit was overlain by a well defined undisturbed dark soil (Period V), which contained finds of a mainly late Roman date and marked the disuse of the cemetery.

DESCRIPTION OF THE BURIALS

The clusters are described first, starting with the largest (A), followed by individual burials from northwest to southeast. All burials are shown in their east-west alignment (north at the top of the page), cross-sections appear facing east. Associated deposits are shown if they demonstrate a significant feature of the burial.

![Diagram](image)

**Fig. 4. St. Bartholomew’s, 1979: Key to Figs 5-11; 13-15; 18-19; 21-22; 24-25 and 27-30.**

**CLUSTER A: BURIALS 1–7**

The first group of burials (A) was located in the centre of the site in Area A (Fig. 3).

**BURIAL 1**

The earliest and least intact grave, consisting of a cut made into the Period II building, was almost completely cut away by later grave-digging and lacked any skeletal
material (Fig. 5). However, its alignment and surviving fill of light greenish-brown clayey silt was characteristic of overlying graves and its close proximity to them suggested a similar function.

**BURIAL 2**

*Male; aged 35-45 years; 3 teeth lost ante mortem probably due to caries; abscesses in 3 upper molars; caries in 1 of 29 surviving teeth; 1 impacted third molar (wisdom tooth); moderate calculus; slight periodontal disease; moderate hypoplasia.*

Overlying B1 and cutting from a level within the cemetery soil was the west end of an apparently rectangular grave with rounded corners, but otherwise completely cut away (Fig. 6). The first of its two fills, a mid-greenish-brown clayey silt, contained part of the crushed skull of an adult male. The position of this skull at the west end of the grave suggests a primary, east-facing interment disturbed by later intrusions. Traces of a second fill of slightly darker material containing moderate fragments of brickearth, animal bone and Roman pottery sherds of an abraded nature covered the primary fill and also appeared to spread south to seal the primary fill of B1 up to the apparent level from which that cut was made. The slightly concave profile of the primary fills of B1 and B2 suggests possible subsidence, and so the secondary fill with its content of mixed material may represent backfilling of the resultant depression at a later date.

**BURIAL 3**

*Adolescent/adult (sex indeterminate); aged at least 17 years; osteoporosis on frontal skull fragment. Fragments of 12 iron nails distributed around all four corners of grave pit.*

Almost directly over B2 on the same east-west alignment was a third rectangular grave cut from within the cemetery soil and surviving intact except for its east end, cut away by modern foundations (Fig. 7). Within the grave was the articulated skeleton of an adult laid on its back and facing east; legs parallel and outstretched, the right humerus parallel to
the body. The entire torso area, most of the skull including the teeth, left arm and both hands had been removed by intrusive activity, probably disturbance from an overlying burial. Concentrations of iron nails found at either end of the grave suggests that the inhumation was contained within a nailed wooden coffin. The skeleton was covered by a fill of light reddish-brown clayey silt containing frequent flecks of charcoal, daub, mortar and shell, except in the area over the torso where the bones were absent.

![Fig. 7. St. Bartholomew's, 1979: Burial 3.](image)

**BURIAL 4**

Child (sex indeterminate); aged 4½ years; caries in 1 of 14 surviving milk teeth. Corner fragment of red tegula (240 x 168mm) with part of 'signature' mark; both broken edges smoothed; flanged edge placed downwards. Small copper alloy fragment, heavily corroded with dark layer of (?) sulphide on one face, 4 fragments of iron nails.

The primary fill of B3 was overlain by mid-greenish-brown clayey silt containing moderate fragments of disarticulated and broken human bone and two complete femurs of an adult male laid against the south side of the grave. This in turn was overlain by the disarticulated skull of a child of approximately four and half years (Fig. 8), on a level c. 0.25m above the primary burial. The skull, without its lower jaw, was set upright at the west end of the B3 grave-cut and faced an upright fragment of tegula (on the same horizontal plane) 0.38m to the east, which effectively enclosed an area containing a small unidentifiable bronze fragment and four iron nails, all but one of which occurred on the same east-west axis as the other objects. This axis was centred on the B3 grave-cut and suggests that the bones from B4 represent deliberate reinterment, the cut for which disturbed the primary burial and caused the displacement of bones found within the intervening fill. The reinterment of long-bones, as well as that of skulls, has been found at Lankhills Roman cemetery, Winchester. As none of the bones could be derived from B3, however, the site of their original burial is unknown. B4 was overlain by material indistinguishable from its underlying fill up to the highest identified extent of the B3 grave-cut where, cut into the south side of that grave and adjacent to B4, was an area of localized disturbance (not illustrated), resembling B4 grave fill material.

![Fig. 8. St. Bartholomew's, 1979: Burial 4.](image)
as distinct from surrounding soil. It contained several fragments of human arm and leg bone in an upright position. This would seem to be an attempt to dispose of the larger bones derived from the disturbance of other graves (see p. 158).

BURIAL 5
Female; aged 16-18 years; 156.06cm tall (5ft 1.4in). 2 coins within grave fill; (i) Claudius II, antoninianus, AD 268-70 (R.I.C. 15 or 197), worn; (ii) Constantius II, AD 341-346 (L.R.B.C. ? 273), mint of ? Lyons, slightly worn.

At 0.15m above B4 a fifth grave was found in the form of a shallow, irregular cut identified only on its north side as a roughly east-west aligned scoop (Fig. 9). It contained the skeleton of an adolescent female lying on its back and facing east, which was partially cut away by modern intrusions and showed signs of having been crushed. Its legs were slightly bent at the knees towards the south, the right arm and hand over the pelvic region and the left arm tightly flexed over the chest. It was overlain by mid-greenish-brown clayey silt containing moderate quantities of tile fragments and two coins of Claudius II and Constantius II (late third and mid fourth centuries). The difficulty in distinguishing this fill from surrounding deposits and underlying fills accounts for the incomplete grave-cut evidence. It also means that the coins cannot definitely be associated with the burial. The irregular shape of the grave and the flexed form of the skeleton, supported by a general absence of nails, suggests that this burial was not contained within a coffin. The shallow and apparently superficial nature of the B5 burial, almost certainly cut from the latest cemetery levels, shows that little effort was made to locate and inter the body in accordance with earlier burials, which may indicate a changed practice or at least a less formal interment procedure. But although B5 represents the last in a sequence this may not necessarily be a chronological distinction. The burial is paralleled by B13 and B14, the latest Cluster C burials, which also display a lack of formality in burial procedure (see below, p. 150).

BURIAL 6
Adult (sex indeterminate); periostitis in right tibia.

One metre to the south of B5 and cutting into B1 from within the cemetery deposits was the rounded west end of an east-west aligned grave, mostly cut away by modern intrusions but containing within its base the top of an
adult skull, which would, if in situ, imply that
the individual was interred on its back facing
east. The fill of greenish-brown, pebbly silt
with a preponderance of pebbles beneath the
skull fragment suggests a simple form of bed­
ding. Seen in section, about 0.50m further
east, but not excavated, was evidence of a
grave, cut away on all but its south side,
containing within its base the lower half of an
east-facing adult skeleton lying on its back,
legs outstretched, within a primary fill of
greenish-grey pebbly silt. Alignment, base­
levels and the nature of the fill all suggest that
these two features represent the same inter­
ment (Fig. 10).

BURIAL 7

A second deposit of mid-greyish-brown
clayey silt containing moderate mortar, tile
and human bone fragments overlaid the pri­
mary interment at the east end of B6, com­
pletely filling the cut (Fig. 11). It was not
possible to excavate this area by hand but a
disarticulated skull was seen in section within
this second fill, and may have represented
another burial (B7) within the B6 grave.
Bones later retrieved from this fill during
removal by machine could not account for an
entire individual, so that it would seem most
likely that B7 represented a partial reinter­
ment over the position of B6, though not from
that burial which already had a skull.

The consistent positioning of B1–B4, and
to a lesser extent of B5, implies a burial plot
marked in some way (below, p. 157). This
relationship is demonstrated by Fig. 12 which
indicates a burial cluster (A).

The relationship of B6 and B7 to the cluster
is less obvious. It could be fortuitous, but
their peripheral position may indicate a con­tinued practice of locating burials in prox­
imity to earlier graves. Datable evidence from
the fills of Cluster A is mostly late 2nd century,
except for B4 and B5 which produced 4th­
century sherds. This indicates a probable 3rd
to 4th-century usage, although in the case of
the upper two burials intrusive activity
derived from 4th-century disturbance of the
cemetery horizon, such as is suggested by the
small cut feature adjacent to B4, could
account for the late date.
CLUSTER B: BURIALS 8–10

A group of three burials (B) occurred in an area two metres to the north of Cluster A (Fig. 3).

BURIAL 8

Male; adult; 172.41cm tall (5ft 7.8in); 10 upper teeth lost ante mortem, probably due to caries; severe attrition on the 2 surviving premolars; slight osteoarthritis in right wrist. Corroded fragment of copper-alloy within grave fill.\(^{14}\)

The surviving north and east sides of a rectangular grave was set into the Period II levels on an east-west alignment (Fig. 13). It contained within its base an isolated skull of an adult male placed upright without its lower jaw, against the south side of the grave, facing west and overlain by a deposit of greyish-brown clayey silt with a greenish hue. This would suggest that B8 was a partial reinterment, signifying an earlier, unlocated burial, the position of which could have been masked by B9. Although described separately, B8 was possibly inserted at the same time as the adjacent burial (Burial 9, see below) and could therefore be part of it.

BURIAL 9

Adult (sex indeterminate); periostitis in both legs; both Achilles tendons pulled at some time during life. Fragment of iron strip fitting, severely corroded;\(^{15}\) iron fragment with curvilinear forging pattern;\(^{16}\) 2 complete iron nails: (i) length: 102mm (bent); diameter of head 24mm; (ii) length: 77mm (straight), diameter of head 27mm and 30 fragments of iron nails including 13 with heads still partly intact, 6 fragments have shanks in excess of 50mm and 5 have shanks bent at right angles; distributed around the corners and along the one surviving longitudinal edge of grave pit.\(^{17}\) In common with nails from Roman cemetery sites elsewhere in Britain, the coffin nails do not appear to be of a standard size.\(^{18}\)

Burial 9 appeared to be cut into the south side of B8 and had a similar alignment and shape but was cut away at its west end by modern foundations. The partial remains of a skeleton, probably adult, were found within the base of the grave, covered by a deposit resembling the fill of B8 only slightly darker. The surviving outstretched legs, indicating an east-facing interment, were found in proximity to a series of iron nails most of which occurred around the edge of the B9 grave cut; a second group of nails was found on an horizontal plane about 0.2m above the skeleton, in a similar arrangement and indicating the position of a coffin. This coffin would appear to have been larger than was necessary for the individual concerned but is unlikely to be accounted for by the presence of some unarticulated foetal bones within this grave. The coffin may therefore have been reused. Although B9 was interpreted as a separate burial it is possible that B8 forms part of the same grave; that the north side of B9 was not a cut at all but the extent of staining from the decayed B9 coffin (an effect which was not noticed elsewhere on the excavation). The grave cut would then have been considerably wider than the coffin and have provided room for the insertion of the B8 skull beside the coffin.

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David Bentley and Frances Pritchard
BURIAL 10
Adolescent/adult (sex indeterminate); aged at least 17 years. Fragment of iron nail found corroded to left tibia.

Part of the south and east sides of a third rectangular grave, cut away by later activity, was set into the latest Period II deposits, adjacent to B9. Evidence of the original east-facing inhumation was slight and consisted of a single, left tibia of an adolescent resting on a horizontal course of fine and medium pebbles occurring within a greyish-brown clayey silt deposit containing occasional nails but otherwise resembling the fill of B9. The similarity of the pebbles to the bedding found within the base of B11 (below page 146), helps to distinguish the burial and substantiate what would otherwise be limited evidence of an interment.

As with the burials that formed Cluster A, the consistency with which the burials in this second group were positioned (Fig. 16) strongly suggests a marked plot, although all three burials within Cluster B were truncated by a large, shallow feature, probably of 4th-century date (Fig. 17), which masked the relationship between them and the cemetery soil, and was perhaps also responsible for the removal of further burials within the group.

The evidence of abraded late 2nd-century pottery sherds found in the fill of B9 and B10 would suggest a date for Cluster B not earlier than the 3rd century.
CLUSTER C: BURIALS 11–14

The south side of a large, shallow scooped feature was cut into the Period II deposits, sealing Cluster B and extending down for c. 2m to a flattish base on the Period I gravel horizon (Fig. 17). Because it was extensively cut away by modern intrusions the evidence amounts to little more than a broad section through part of one side of the feature. It was consequently impossible to ascertain its relationship with the graveyard soil or its complete extent and form, although it is likely to have been considerably larger. Four similar deposits filled the feature and appeared to rise c. 0.4m above the south edge (and above the latest cemetery horizon), to a level of 15.85m O.D., while still reflecting the profile of the scoop. The four inhumations of a third grouping (Cluster C) occurred within these deposits, and therefore post-dated Cluster B. No grave cuts were identified for the three later burials in Cluster C, and due to the difficult excavation conditions most of the scoop-deposits were not differentiated either in the vicinity of Cluster C, or in a narrow strip to the north-west where the fills might be expected to extend. Thus their exact relationship to the individual burials was not established.

Fig. 17. St. Bartholomew’s, 1979: Section showing relationship of scoop features to Clusters B and C (see also Fig. 3).

BURIAL 11

Male; aged at least 26 years; 166.35cm tall (5ft 5.4in); moderate osteoarthritis in the spinal column. 4 iron nail fragments, maximum surviving length 70mm, distributed along one longitudinal edge of grave pit. Barbarous radiate, late 3rd century, worn, positioned below right knee. 12 hobnails within grave fill.

The first burial of the third grouping, located c. 0.50m north of Cluster B (Fig. 3), represented the articulated skeleton of an adult male found within the base of a roughly rectangular grave (Pl. 1; Fig. 18). The grave was identified where it cut through the Period I activity below the base of the scoop and it may have been cut from a higher level. There is a possibility that, like the Cluster B burials, it was truncated by the scoop, but the relatively deep grave that this would imply
The skeleton was laid on its back and faced east on a bedding of compacted gravel, legs parallel and outstretched, the arms beside the torso with the right hand over the pelvic area. The left hand was absent, probably caused by intrusive activity while the head and some foot bones had been destroyed by modern intrusions. Moderate quantities of broken pottery were arranged in upright positions around the skeleton suggesting a simple form of grave-packing while several iron nails distributed throughout the fill may indicate that the skeleton was contained within a wooden coffin. The inhumation was covered by a deposit of greenish-grey clayey silt containing moderate flecks of charcoal and daub. A late 3rd-century barbarous radiate coin, found beside the skeleton (Fig. 18, 'C'), could have been residual but provides a terminus post quem for this and subsequent burials in the grouping.
BURIAL 12

Female; aged 17-24 years; 171.9cm tall (5ft 7.7in); metopic; no ante mortem tooth loss; caries or calculus in the 29 surviving teeth; slight hypoplasia. 7 bronze bracelets and 2 bronze finger-rings placed in pile on its chest (Fig. 20). There is no evidence that the bracelets interlocked. The bracelets are described from the lowest of the pile followed by the finger-rings, the position of which in the pile could not be determined.

(i) Strip bracelet decorated with zones of oblique grooves separated from central panel of ribbing by single rectangular device; riveted, lapped fastening; internal diameter c. 65mm. The arrangement of a simple central motif flanked by two zones of identical decoration occurs elsewhere in SE England, for example, Richborough, dated c. AD 300 and probably Fulham, dated before c. AD 370.

(ii) Strip bracelet decorated with elaborate central panel of imitation beads bearing ring and dot motifs separated by transverse grooves, flanked by linear groove and notch zones; no fastening survives; internal diameter c. 65cm. Lankhills, type El (a), 4th century or later.

(iii) Strip bracelet decorated with zones of transverse grooves, linear groove and notch pattern and elaborate (?) central panel of imitation beads with ring and dot motifs; no fastening survives; internal diameter c. 65mm. Lankhills, type El (a) (c.f. (ii) above).

(iv) Solid bracelet decorated with small notches along each edge; no pattern discernible due to severe corrosion; butt terminals; internal diameter 58mm. A similar bracelet from Richborough dates to c. AD 300 or later. At Lankhills bracelets with butt terminals were considered to be more characteristic of the late 4th century but an example from Shakenoak is provisionally dated to the late 3rd century.

(v) Strip bracelet decorated with transverse grooves; expanding fastening; internal diameter 60mm. The single repeating pattern is similar to an example recovered from 4th-century destruction rubble at Gadbridge Park.

(vi) Strip bracelet with beaded decoration; lapped fastening; internal diameter c. 65mm. Similar in most respects to Lankhills, type D2(g), 4th century.

(vii) Strip bracelet with cogwheel decoration and a varying number of 6 or 7 transverse grooves between the cogs; (?) lapped fastening; internal diameter c. 60mm. This type is common throughout central and southern England in late 3rd to 5th-century deposits as at Lydney, type S and Lankhills, type D1(e).

(viii) Both finger-rings appear to be continuous circles decorated with a series of ribbed grooves but they are extremely corroded and fragmentary. Such rings are common in late Roman deposits, Lankhills, type A2.

A group of ornaments placed in a pile is not unusual. Graves with similar unworn ornaments appear to date from the 4th century and at Lankhills a date of c. AD 350–370 is suggested.

Fragments of at least 4 iron nails distributed around sides of grave pit. Within the overlying fill were (a) a miniature bronze bell cast in one piece with a polygonal canon and an iron clapper, the method by which the clapper is attached is obscured by corrosion; no evidence of tinning or silvering; height 22mm; diameter 26mm (Fig. 20, ix); similar bells have been recovered from other burials, e.g., an adult grave at Grange Road, Winchester, late 1st century; in a child's grave at Guilden Morden; and in the cemetery soil at Trenholme Drive; (b) fragment of copper alloy (?) bracelet (?) decorated in relief; riveted lapped fastening (Fig. 20, x). Relief decoration is not common on bracelets, one example only occurs at Lankhills, type D2(e), mid 4th century.

Fig. 19. St. Bartholomew's, 1979: Burial 12.

Burial 12, the skeleton of an articulated adult female, occurred 0.3m above B11 and on the same alignment. There was no evidence of a grave-cut, but the skeleton was laid on its back facing east with legs parallel and outstretched arms by its side with the right hand over the pelvis (Pl. 2; Fig. 19). As with B11, the left hand was missing and it is conceivable that both deficiencies could be accounted for by the same (unidentified) intrusive activity, while the lower legs and most of the upper right side were removed by
modern intrusions. Iron nail fragments (not illustrated) distributed around the skeleton indicate that, like B11, it was contained in a wooden coffin. A group of seven late Roman bronze bracelets and two finger-rings (Figs. 19‘R’,20), were placed on the chest and appeared to be in situ, while a small bronze bell and a further fragment of bracelet (Fig. 20), found within the deposit directly over the skeleton may also be in situ, although the bell could have rested on top of the B12 coffin.

The first three deposits within the scooped

Fig. 20. St. Bartholomew’s, 1979: Grave goods and associated finds from B12; i–vii and x—Bronze bracelets; viii—Bronze finger-ring (‘R’, Fig. 19); ix—Bronze and iron bell (1/1).
feature sloped towards the position of B11 and B12. They contained small quantities of refuse in the form of pottery, shell, iron nails including hobnails, animal and human bone and building debris such as mortar, tile, occasional tesserae and ragstone fragments. Pottery suggests a 3rd-century date for the first two fills although the first did contain a small square-sectioned bead of possible 4th-century date.\(^{46}\) The interface between these and the fourth scoop-deposit, identified more clearly than the others, was seen to extend further north effectively sealing B12 within a deposit containing 3rd-century material (Fig. 17).

The fourth scoop-deposit contained similar inclusions and two highly corroded bronze coins,\(^{47}\) a 3rd-century *antoninianus* and a late 3rd-century barbarous radiate. As the pottery from this fill included 4th-century sherds the coins were clearly residual, supporting the evidence of fragmented human bone and hobnails in suggesting that these deposits represented excess material derived from other grave digging in the cemetery.

**BURIAL 13**

*Female; aged 15-18 years; metopic; 6 teeth lost ante mortem, probably due to caries; no caries in 23 surviving, fully erupted teeth; moderate calculus. Fragment of iron (?) nail found corroded to right mandible.*

The third burial in this group occurred about 0.15m above B12 on the same east-west alignment and, though not seen to be sealed by any scoop-fill, must have been cut into the latest of these deposits. It represented the
skeleton of an adolescent female found in close association with a fourth individual (Burial 14), that of an eight year old child. The proximity of the latter makes it difficult to envisage how it could have been interred separately without disturbing B13, and this may imply that the two represent a joint burial.

There was no evidence of a grave-cut and B13 was laid on its back, on a slightly east-sloping plane. The body was aligned generally east-west but the head was twisted to the south; the surviving right humerus was parallel to the torso (Fig. 21), where the entire left side of the body and all the bones below the rib cage were removed by workmen before the burial could be recorded.

BURIAL 14
Child (sex indeterminate); aged 8 years; caries in 2 of 5 surviving milk teeth; slight calculus.

Burial 14 was separated from B13 by a deposit of material c. 0.05m thick which could not otherwise be distinguished from the deposit underlying B13. The skeleton was laid on its back and, like B13, was set on a plane tilting down to the east. The head was raised up and turned to the north, and the surviving right arm lay parallel to the body (Fig. 22). The skeleton was sealed by a deposit of material which was again indistinguishable from the underlying deposits, and contained one sherd of probable 4th-century date which is consistent with dating from the adjacent, fourth scoop-deposit. The distinctive tilt of both interments, the proximity of these two skeletons and an absence of coffin evidence suggest that they were buried together possibly in a casual fashion (similar to the latest burial from Cluster A). The material dividing them probably derived from subsequent decomposition and earth movements.

Although grave-cut evidence was mostly lacking in this group of burials, the relative position of the four individuals showed the same consistency of alignment and accuracy of location (above Fig. 23), as did Cluster B and the early Cluster A burials, supporting the suggestion that this third cluster also represented a group of burials on a marked plot. Although the fills could not be directly related to the burials the cluster was clearly associated with the large scoop-feature by virtue of the absolute levels of B11–B14 compared with those of the four scoop-deposits, and of their late 3rd to mid 4th-century date. The evidence that two burials were sealed by the third deposit, and the implication that Cluster C continued to be marked so that further interments (B13 and B14) could be positioned, argues strongly that the feature was dug for burials. The deposition of quantities of cemetery soil in the depression can be seen not as a piecemeal disposal of excess graveyard material in a convenient depression but as a deliberate sealing of the successive burials of Cluster C.
INDIVIDUALS BURIALS: Burials 15–20
Five individual burials were found in an area to the south-east of Cluster A (Fig. 3).

BURIAL 15
*Child (sex indeterminate); aged 6 years; no caries or calculus in the 23 surviving teeth; recurring hypoplasia. Hadrian, dupondius, AD 118 (R.I.C. 116); relatively unworn within overlying grave fill.*

The nearest to Cluster A, Burial 15, 0.5m to the south, represented the skeleton of a child set into a roughly rectangular, east-west aligned grave. The grave was cut through the initial cemetery deposit (which covered this part of the site), down to a Period II *opus signinum* pavement which formed a base on which the skeleton was placed. It was laid on its back with the head turned to the north, the arms beside the body and the hands placed over the pelvic region. The eastern part of the grave, where the legs should have been, was removed by modern foundations and the spine, finger bones and some ribs were absent and may have decayed, while those bones which had survived were severely crushed, probably as a result of compaction against the hard, *opus signinum* surface. The burial was covered by a greenish-brown clayey silt which showed the same compacted characteristic as the skeleton, and which contained a dupondius of Hadrian (early 2nd century) over the area of the torso. Although the coin occurred above the level at which the grave was identified, its presence close to the inhumation may signify a kind of burial offering placed within the grave fill, as may similarly located coins found near B5 and B11.
BURIAL 16
Child (sex indeterminate); aged 2 years; no caries or calculus on the 16 surviving milk teeth. Placed between both knees were (i) bone counter, lathe turned with bevelled edges, diameter 19mm, worn and (ii) a canine tooth of domestic pig, broken at one end and polished, possibly from handling (Fig. 26). The tooth may have been a plaything and might be compared with a flint pebble from a child's grave at Chichester. There is no evidence to connect it with the pierced teeth worn as pendants or part of necklaces found in some late Roman or Anglo-Saxon cemeteries. Iron nail in one corner of grave pit, surviving length 60mm, diameter of head 18mm. Within overlying fill (iii) fragment of strip bracelet, silver-plated (Fig. 26). The dating of silver-plated bracelets is uncertain. None were found amongst the 174 bracelets excavated at Lankhills cemetery but at least one was present in a group of 15 bronze bracelets found at Upper Upham, Aldbourne, Wiltshire, which otherwise included late 3rd–4th-century types. (iv) 12 hobnails (position not recorded).

Plate 3. St. Bartholomew's, 1979: Burial 16 looking south (the hole in the head represents an unfortunate placing of a grid-post). (Photo. T. Hurst.)

Fig. 25. St. Bartholomew's, 1979: Burial 16.
A second child burial was found 0.30m south of B15 with a rectangular grave, identified only where it cut through the underlying opus signinum pavement and Period III destruction (Pl. 3; Fig. 25 above). The surviving bones were partially articulated and showed that the skeleton was laid on its back with the head turned to the north, the legs parallel and outstretched, the arms in a folded position across the chest; while the spine, ribs and most small bones were absent and had apparently decayed. The fill of greyish-brown clayey silt, with frequent opus signinum fragments and occasional lumps of brick-earth, contained one large nearly complete iron nail close to the skull, which indicates that B16 could have been interred within some form of container. A small bone counter and canine tooth of a pig, placed close together between the knees, may have been associated grave goods (Fig. 26). A fragment of silver-plated bracelet within the fill was probably residual.

BURIAL 17
Female; aged 17–25 years; metopic; caries in 3 of the 9 surviving teeth; slight calculus; moderate periodontal disease; slight hypoplasia.

Seen in section, about 1.5m to the south-east of B16, was the extreme west end of a grave which had originally contained an articulated east-facing skeleton laid on its back, and briefly observed during its removal by machine. Bones retrieved show that it represented an adult female placed within a deposit of what the surviving fill indicated to be greyish-brown clayey silt. This contained moderate charcoal flecks, occasional brick-earth lumps and a preponderance of fine and medium pebbles in the base of the grave, which could signify a simple form of bedding.
BURIAL 18
Adult (sex indeterminate); evidence of a healed wound and resulting periostitis in the right tibia, which may have caused the slight osteoarthritis in the right foot and ankle.

Two metres to the south-east of B17 was a further burial, uncovered and partially destroyed by machine. An examination of those bones still in situ revealed it to be the interment of an east-facing adult laid on its back with legs parallel and outstretched, the right humerus beside the body, surviving within the base of a grave filled with a greenish-grey clayey silt containing occasional fragments of brick earth and pottery, the latter being noticeably less abraded than that from other burials and including a rim sherd of a rare Lezoux bowl.

Fig. 28. St. Bartholomew's, 1979: Burial 18.

BURIAL 19
Male; aged 35-45; 1 tooth lost ante mortem, probably due to caries; caries in 1 of only 2 surviving teeth; slight calculus; severe periodontal disease; advanced osteoarthritis in the lower spinal column, hip joints and both wrists. Fragments of 2 iron nails positioned along one longitudinal edge of grave pit. Part of decorative copper alloy fitting within fill (Fig. 29).

A fifth individual was found lying parallel to B18, 0.5m to the south. The narrow sided grave was cut from within the cemetery soil and contained within its base the articulated skeleton of an adult male. It was laid on its back, aligned east-west with the head turned to the south. The upper arms were parallel to the body and the lower arms were crossed.

Fig. 29. St. Bartholomew’s, 1979: Burial 19 and copper alloy object from grave-fill (1/1).
left over right, in the abdominal region; the right hand was turned in and clasped. All evidence below the pelvis had been destroyed by later intrusions, while the skull and upper, left side of the skeleton were removed by workmen under observation. It was contained within and sealed by a deposit of greenish-grey clayey silt with moderate quantities of pebbly brickearth. There was a slight increase in small pebbles beneath the skeleton which, like B6 and B17, suggests a superficial bedding. Several iron nails located around the skeleton indicate a form of burial container, although the narrowness of the grave implies that it could not have been as large or substantial as those from B3, B9 or B11.

**BURIAL 20**

*Male; adult.*

In Area B, 8m to the east of Cluster A, a sixth isolated burial B20 was seen in section. A small excavation revealed the skull, scapula and left humerus of an adult male skeleton, lying on its back and facing east, within a deposit of grey, clayey silt with moderate fine charcoal and daub fragments. All other bones had been removed by workmen and the difficult lighting conditions in this area (within a basement at the time of excavation), prevented the identification of an associated grave cut or of any horizontal stratigraphy. Area B was particularly cut into by later activity, and although cemetery soil was identified in the vicinity at approximately the same level, the isolated position, limited survival and the unusual content of the burial matrix must raise doubts about its relation to the Roman cemetery.

The first five isolated burials all had similar grave-profiles, but in no instance was a definite grave top found, even though there was no obvious overlying activity to disturb horizons. Hence the level from which each was cut could not be determined. Their fill-content, which included brickearth, was derived from a disturbance of the underlying Period III stratigraphy during the digging of each grave, and helped differentiate the lower part of the burials. But although this material was not seen in the upper levels, its absence is insufficient evidence for concluding that the graves were sealed by any subsequent deposition of cemetery soil.

Five of the burials had similar characteristics in that the individual graves had relatively shallow and narrow profiles and four of them produced sherds of exclusively 2nd-century date, suggesting that, as with the three clusters, burial would not have taken place before the early 3rd century. The extent of the site was however too limited to draw any conclusions as to whether the individual burials represented a type of activity peculiar to this part of the cemetery.

Fig. 30. St. Bartholomew's, 1979: Burial 20.

**DISCUSSION OF BURIALS 1–20**

The evidence of twenty burials presented here consists in the main of the partial remains of inhumations, in some cases reinterred, contained within east-west aligned grave cuts. It shows that at least eight of the individuals (which included men, women and children) were probably buried within wooden coffins, five of them apparently being laid on a superficial gravel bedding, and two of
The Roman Cemetery at St Bartholomew's Hospital

them (a further three when coin evidence is included) were found in association with grave goods. Fourteen burials were grouped together in three clusters (A–C, Figs 12, 16 and 23), whilst the remaining six were found in isolated positions in one part of the site. The evidence is not adequate to date the burials individually but does suggest that none was interred before the 3rd century, and that of the clusters, the largest (A) had a 3rd to 4th-century range, B was probably 3rd century and C, which sealed B, was late 3rd to mid 4th century in date.

The clusters are of considerable interest. Had the burials represented random interment and incidental disturbance, the digging of graves (in the absence of any other known factors) would be expected to occur evenly throughout the area. The presence of clusters, however, implies that they were identifiable in antiquity and were probably marked in some way, perhaps with burial mounds such as may have distinguished individual grave plots at Lankhills cemetery, Winchester.6

Between the clusters were areas free from intrusion, with the exception of B6 and B7 which may represent unintentional, intercutting. The other, individual, burials can also be seen to be isolated from their immediate neighbours and from the clusters. In addition there is a consistency of orientation; with the exception of one west-facing reinterment (B8), all the burials that could be measured showed only a 31° divergence (+18°–13°) from 270° (head due west). The implications, even within so small a group, of an ordered layout—a necessary prerequisite in a formal cemetery—is too strong to be discounted in terms of coincidence.

<table>
<thead>
<tr>
<th>Burial no. (Cluster)</th>
<th>Survival</th>
<th>Orientation</th>
<th>Level</th>
<th>Sex</th>
<th>Age</th>
<th>Bedding</th>
<th>Coffin</th>
<th>Grave Goods</th>
<th>Fig.</th>
<th>Page</th>
</tr>
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<tbody>
<tr>
<td>1(A) D</td>
<td>*</td>
<td>14.90</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>5</td>
<td>139</td>
</tr>
<tr>
<td>2(A) D</td>
<td>*</td>
<td>14.92</td>
<td>m</td>
<td>35–45</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
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<td>*</td>
<td>&gt;16</td>
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<td>*</td>
<td>*</td>
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<td>*</td>
<td>4.5s</td>
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<td>f</td>
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<td>—</td>
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<td>*</td>
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<td>pos</td>
<td>*</td>
<td>*</td>
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<td>276</td>
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<td>—</td>
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<td>280</td>
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<td>*</td>
<td>6</td>
<td>—</td>
<td>—</td>
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<tr>
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Fig. 31. St. Bartholomew's, 1979: Burial data table. *: evidence uncertain; lack of data may reflect only the limitations of survival and observation. Survival: D—disturbance of burial either in antiquity or by modern building activity; I—burial intact; P—surviving evidence only partially observed. Orientation: of burial to true north. Level: lowest recorded point of burial in metres O.D. Age: s—data based on skull alone. pos: possible interpretation of evidence. Grave goods: C—coin; R—bracelet, rings, bell; G—bone counter, pig tooth.
This conclusion is reinforced by an examination of the layout of the much larger burial groups at Lankhills and Poundbury cemeteries. The continued use of a marked plot suggests that the site was owned or reserved by some individual or group. The presence of children might seem to preclude burial associations or guilds, though little is known of the workings of such institutions. The general mixture of males, females and children suggest rather some form of small family group. The close proximity of mixed groups has been taken as evidence of familial association at Lankhills and again at Butt Road, Colchester, but in both instances the examples took a slightly different form. Although there is no direct pathological evidence to indicate such groups, examination of some of the elements within Cluster C (tabulated in Fig. 31) shows that a fair degree of consistency existed between it and the other clusters. This might be expected with family units, despite the imprecise age given for several individuals, the presence of reinterments and the fact that some of the data from Cluster B, which may have included further individuals, is incomplete.

In the case of Cluster C an adult male was buried first and was followed by a female, with a younger female and child probably buried together on top. The cases of A and B, though less complete could, in terms of sex and age, contain similar elements. Although the coffin associated with the second burial in C is unlikely to have been as substantial as that containing the male, the contrasting absence of container evidence in the subsequent burial(s) is clear. The presence of substantial coffins among the first buried might suggest a status commensurate with the person's position within that group, perhaps as a senior member of the family and although it emerges less clearly this pattern can also be seen among one of the first adults in both clusters A and B. However, the lack of a coffin for the latest burials in C (also in A) could suggest a more casual approach to interment, such as has been found in late 4th-century burials at Lankhills. This reduced formality may be the cause of the subsequent disuse of the plot.

An alternative explanation of the clustering could be that, under difficult physical conditions, it might have been quicker and easier to inter an individual on the site of any other conspicuous grave. For example, a skull (B7) had apparently been reinterred within an existing grave (B6), which already cut through the hard opus signinum pavement of Period II. However, consideration of the site evidence in general does not favour this explanation.

Reinterment is usually caused by disturbance of existing graves by subsequent burials and is seen here in the form of three skulls and two long bones from B4, B7 and B8, and, less formally, the collection of broken bones close to B4; all occur within the clusters. Such disturbance contrasts with the organized approach indicated by the clusters which are suggestive of marked plots, though it might have been unavoidable given the relative shallowness of the graves and cemetery soil. The subsequent reinterment could have been a mark of respect or of superstition, despite the original disturbance, or a desire to dispose of disinterred bones lying around the area.

The phenomenon of clustering apart, the number of burials involved with here is too small a sample for their data to be assessed in terms of funerary practice (as emphasized below, page 163). Overall, however, a coherent picture is presented, of a cemetery in use from the 3rd century until sometime in the 4th, covering a derelict area previously occupied by a build-
The excavation has provided evidence of at least twenty burials from a small area on the plateau of the hill on the western side of the Roman settlement. Although this is a relatively small number of burials, repeated interment and the positioning of graves suggests that they represented part of an organized urban cemetery. This discussion considers such a cemetery in terms of its relationship to the development of the settlement by re-examining the chronological and topographical distribution of other recorded evidence.

The St. Bartholomew's Hospital excavation lay within an area near West Smithfield where twenty-two Roman inhumation and cremation or accessory-vessel find-sites occur (Fig. 32), observed mainly in the 18th and 19th centuries but unfortunately often imprecisely located and inadequately recorded. From such data the area was first defined in the Royal Commission's survey of 1928, in which it is described as the 'Newgate-Smithfield-Farringdon Cemetery' extending between the Roman city wall to the south-east, and the river Fleet to the west, and one of four broad zones of burial activity identified outside Roman London. This discussion concentrates on evidence from that part of the area north of Newgate Street (Sites 11–21, Fig. 32 and Appendix pp. 160,166), which includes most of the sites around West Smithfield.

DISTRIBUTION OF BURIALS
Within this area is a variation in burial rite between cremation or funerary vessels, which date from the 1st to early 3rd centuries, and inhumations, which date from the 3rd and 4th centuries. The existence of two distinct rites with a possible 3rd-century overlap is consistent with known burial practice elsewhere in Roman Britain, where they are often found on the same site. But the distribution of cremations within West Smithfield suggests that this practice can be further divided by date. A later sub-division, cremations of the mid 2nd to early 3rd centuries, showed a distinctive arrangement corresponding to the location of the inhumations and they are accordingly discussed together as Sites 13–21.

The early cremations of the mid 1st to mid 2nd centuries, which reveal a different pattern, are considered first. Those which fall within the study area occur on
Fig. 32. St. Bartholomew’s, 1979: Roman burial sites and topography. Numbers refer to find-sites discussed on pages 159–167 and note 61 and listed below. Sites 11–21 lie within the Smithfield area. Roads and walls are based on the Ordnance Survey’s *Londinium* (1981) Crown copyright.

Find Site 1: Old Bailey.
Find Site 2: Warwick Square.
Find Site 3: Newgate Street.
Find Site 4: St. Martins le Grand.
Find Site 5: St. Martins le Grand.
Find Site 6: Vicinity of Holborn Viaduct.
Find Site 7: Holborn Hill.
Find Site 8: St. Andrews, Holborn Circus.
Find Site 9: Newcastle Street/Seacoal Lane.
Find Site 10: Charterhouse Street.
Find Site 11: St. Sepulchre’s, Giltspur Street.
Find Site 12: Underground Railway, Clerkenwell.
Find Site 13: Snow Hill/West Street vicinity.
Find Site 14: ‘West Smithfield area’.
Find Site 15: ‘Near St. Bartholomew’s Hospital’.
Find Site 16: Clothfair.
Find Site 17: Cock Lane.
Find Site 18: The Ram and the Rose public houses, Smithfield Market.
Find Site 19: Hosier Lane.
Find Site 20: St. Bartholomew’s Hospital, Medical School (1878).
Find Site 21: St. Bartholomew’s Hospital, 1979 excavation.
Find Site 22: Well Street/Jewin Street. 65
The Roman Cemetery at St Bartholomew’s Hospital

Sites 11–14, and are broadly contemporary with certain more distant cases (not covered in detail here) which, with some outlying exceptions (Sites 12–14), extend both east and west along Newgate Street, whose Roman predecessor led westwards towards Silchester. Those to the east are found as far as St. Martin’s le Grand (Sites 1–5), and most lie within the Roman defences of c. AD 200. Since burial in the Roman period was legally confined to areas outside the limits of the settlement, this distribution would suggest that the early western boundary of Londinium was well to the east of its successor, perhaps on a line projected south from the western side of the Cripplegate fort. This general area has also produced evidence of industrial activity and buildings of 1st to 2nd-century date at the GPO Newgate Street and, further north, from the St. Bartholomew’s site itself (Period II, p. 136).

Further to the west, evidence of early cremations again occurs close to the road (Sites 6, 7 and 8), although Site 6 is concentrated in the valley of the Fleet; most of it observed during the construction of Holborn Viaduct in the 1860s when precise locations were not recorded. Taken together this group of early sites demonstrates a linear distribution alongside Newgate Street, a common burial pattern since main thoroughfares offered the most accessible and conspicuous places for extramural burial. The few early sites within the area of study should therefore be seen as part of a linear arrangement which continues in both directions outside that area. In this sense the ‘Newgate-Smithfield-Farringdon cemetery’, as defined by the Royal Commission, requires reinterpretation to take account of the early Roman period.

In contrast, the later group of late 2nd to early 3rd-century cremations, and 3rd–4th-century inhumations, suggest a nucleated rather than linear, pattern of distribution in that they concentrate around the city walls, in a broad sweep up to 300m from Newgate. Many of these burial sites are well away from any known thoroughfares of the Roman period (although the possibility of a north-south road bisecting this area cannot be discounted and it is certainly likely that a trackway would have provided access to the burials from near Newgate). But this concentration, together with the evidence of cemetery organization indicated by the excavation at St. Bartholomew’s Hospital, (pages 156–159), suggests that for the later period, the area of study does cover a substantial cemetery.

TOPOGRAPHICAL INFLUENCES

Some of the limits of such a cemetery can be given. To the south-east, the defensive line of the city wall would have been a definite limit of any cemetery development after its construction in c. AD 200 and no inhumation which could be construed as evidence of an organized cemetery has been found within its line. It is interesting that cremations from the mid 2nd to early 3rd century also lie, with one exception (Site 2), outside the line of the wall although at least some of them must ante-date it. This might imply an earlier boundary on this line which the wall subsequently reinforced. It is likely however that the construction of the wall was the main spur to the specific concentration of the cemetery in the Smithfield area.

Other topographical features which perhaps define the limits of a Smithfield cemetery are less easy to identify. Few sites have been found to the south of Newgate Street between the wall and the river Fleet, perhaps because of the restricted area available, while those which have been found (see above and p. 162) lay close to the course of the road.
At the Lankhills cemetery at Winchester it is demonstrated that main thoroughfares could offer well-defined boundaries to cemetery development, and this perhaps was the case with Newgate Street, which may have formed the south-west boundary of the Smithfield cemetery.

To the west the limit of the cemetery is unknown. Here the most significant topographical feature was the steep eastern side of the valley of the River Fleet. Although this represents a considerable physical barrier (possibly accounting for the southern return of the defensive wall further to the east), this does not appear to have prevented burial along its slopes. A group of mostly 2nd century or later vessels (Site 13, Fig. 32) were found on the side of the valley c. 300m north of Newgate Street, and two small groups, one of inhumations, the other of mixed rite, have also been found, also within the valley but beyond the defined area of study. Of these one was located to the south of Newgate Street (Site 9) and the other just west of the river, north of Newgate Street (Site 10) and might represent overspill, a late extension to the nucleated cemetery. But equally, their position close to the thoroughfare could be taken as evidence of the continuity of the linear distribution of the 1st and 2nd century into the 3rd, comparable with a small group of inhumations found beside the Roman road at Notting Hill, 7km further west. These roadside inhumations, like the isolated, early cremations within Smithfield, do however demonstrate that any regulations or conventions which might have governed the distribution of burials were fairly flexible.

The burial sites suggest an eastern limit to the cemetery which would have run north slightly to the east of Newgate, with the St. Bartholomew’s Hospital excavation (Site 21) at its edge. The northern limit is less obvious, and neither side can be associated with any major man-made or natural topographical feature. They may therefore have been demarcated by less substantial boundaries such as ditches or hedges, especially given the organized approach to burial implied by the St. Bartholomew’s excavation.

The area defined above, a relatively open area covering at least 9 hectares and conveniently close to Newgate, was the nearest available space outside the western walls. The natural topography gives the site an elevated position. In fact there is some suggestion that the distribution of the inhumations may be concentrated around a spot which represented the highest point of this hill (at least as identified in the modern contours, see Fig. 32).

In the area to the east of the cemetery which is bisected by the Roman fore-runner of Aldersgate Street no burials have been found except for two adjacent cremations close to the wall of Cripplegate Fort (Site 22); in an area of intensive post-war development it is likely that at least some grave evidence would have been forthcoming had it existed. The gate at Aldersgate itself however was a late Roman addition to the city wall, and was of a lower status throughout its existence. This, and the fact that the nearby cemetery had already been formalized, probably accounts for the absence of burials in this area.

SUMMARY OF EVIDENCE FOR OTHER CEMETERIES IN ROMAN LONDON

Three other areas in London are suggested by the Royal Commission as likely Roman cemeteries: Bishopsgate and Aldgate in the north and east, and Ludgate in the west, south of Newgate Street, though included under a general heading of more remote burials, while further burials have been identified across the
The Roman Cemetery at St Bartholomew’s Hospital

Thames in Southwark. Those in Bishopsgate, Aldgate and Southwark were all of mixed rite, possibly nucleated in the first two cases, and close to the main Roman roads leading away from the settlement in the case of Southwark. Ludgate on the other hand, has produced only cremation evidence and it is noticeable that this was distributed in linear fashion along the course of Fleet Street, west of the river. Further study of these locations is essential to a fuller understanding of the nature of burial practice in London in terms of Roman demography and in distribution of burials according to type and dating. But such an examination must await the production of more data following excavations within the areas concerned as well as further research into vessels already held in museum collections.

PART II
SUPPORTING FINDS EVIDENCE
by Frances Pritchard

The excavations at St. Bartholomew’s Hospital prompted a re-examination of Roman artefacts recorded from the area defined above (p. 159) in order to clarify the extent and development of the Roman cemetery.

Although few in number, most of the objects with a Smithfield provenance are of types likely to be associated specifically with burials. They chiefly consist of complete flagons, platters and cups, which are common as accessory vessels in graves, and large jars, which are likely to have been used as cinerary urns. There are also three complete mortaria, which are rarely found in association with burials elsewhere in Roman Britain. Nevertheless an inhumation observed near West Street is said to have included a mortarium, later described as being ‘bent out of shape when fired’ and therefore presumably a kiln second (Figs. 32 and 33, No. 18). Burials at Cock Lane are also referred to as having mortaria ‘found in conjunction with human remains’ (Figs. 32 and 33, No. 17). Personal ornaments which may also be derived from graves include a jet bead from St. Sepulchre’s Church (Fig. 32, No. 11) and two glass finger-rings, both of which are 4th century types (Figs 32 and 33, No. 14). A third ring with a Smithfield provenance is, however, suspect since it is a Greek signet ring probably not later in date than the 4th century BC.

Another notable find from the area is the ‘Smithfield Buckle’, a type of personal ornament well known from late Roman burials (Figs. 32 and 33, No. 14). The so-called ‘Smithfield altar’, however, may not with certainty be located within the limits defined, since the earliest recorded reference mentions it as being found either at St. Bartholomew’s Hospital or in Noble Street, which would place it within the vicinity of the Roman fort at Cripplegate.

This reassessment, therefore, cannot go further than establish the occurrence of eight definite cremations (as evidenced by the recorded observation of burnt bones); four possible cremations and five inhumations, including two joint burials, in addition to those recovered during the 1979 excavations (Figs. 32 and 33). The
small number and incomplete record of the burials consequently precludes any wider discussion of burial practices or demographic inferences.

**TYPES OF CREMATION**

The cremations date from the 1st to the early 3rd century. Only one cinerary urn contained a second vessel within it. Also mixed with the skeletal remains within the same urn were fragments of an iron nail; part of the sacrum of a small rodent, probably either a field or wood mouse; a cervical vertebra of a field mouse and the vertebra of an eel. No elaborate box or tile burials are recorded from the Smithfield area, although they are known from nearby, for example at St. Andrew’s Church, Holborn, west of the River Fleet and Warwick Square, south of Newgate Street (Fig. 32, Nos. 8 and 2).

**TYPES OF INHUMATION**

In contrast, a more varied range of inhumations has been recorded from this area, including those from the 1979 exca-

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**Burial Site**

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(See Fig. 31, St. Bartholomew’s 1979, burial data table)

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D — definite evidence of cremation or inhumation
C — conjectured cremation, inhumation or grave goods
A — burial evidence based on presence of accessory vessels
* — burial evidence based on particular types of finds

+ — no information available
V — vessels
O — personal ornaments
An — animal remains

Fig. 33. St. Bartholomew’s, 1979: Smithfield Roman Cemetery, burial data table.
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... but this is probably an accident of survival. They include two burials within decorated lead coffins, one of which was encased within a stone sarcophagus; a stone coffin and various wooden coffins as well as burials probably lacking any rigid container (Figs. 32 and 33, Nos. 17–21). This evidence suggests a difference in status between many of the individuals buried within the cemetery.

The disposition of the body in each grave is not fully noted in any of the 18th or 19th-century discoveries while conditions prevented the recovery of any complete skeletons during the 1979 excavations. In only one of nine burials where the position of the legs could be determined were they bent, which may simply reflect the lack of a coffin. The position of the arms varied more widely. However, a recent survey of late Roman inhumations was unable to establish any clear trends with regard to the position in which a body was lain in its grave.¹⁰⁰

Two multiple burials occurred. One consisted of two (?) juveniles buried within a lead coffin, embossed with pecten (shell) motifs,¹⁰¹ and the other a male and female lain at opposite ends to one another within a limestone coffin which was placed beside a further elaborately furnished burial of a female within a lead coffin and stone sarcophagus with part of a moulded stone column nearby¹⁰² (Figs. 32 and 33, Nos. 19–20). Such extravagant burials suggest that the occupants came from wealthy families. It is of interest, therefore, that none of them contained any grave goods.

Indeed, only seven of the inhumations are recorded as having grave goods present. One contained a group of food and drinking vessels—a beaker being placed above the corpse’s head and a platter, flagon and mortarium placed to the left of the body (Figs. 32 and 33, No. 18).¹⁰³ Three had personal ornaments, a child being buried with two playthings¹⁰⁴ and two females with jewellery. In one instance the woman was observed to have been buried in a wooden coffin with bracelets on both of her wrists¹⁰⁵ while in the other a pile of jewellery was placed on top of the woman, who had also been buried in a wooden coffin¹⁰⁶ (Figs. 32 and 33, Nos. 17 and 21).

The remaining grave goods consisted of four coins. One was positioned within the grave of a man below his right knee, while the other two, where the evidence of association was more doubtful, comprised two coins in the grave of a young woman and one coin, which was probably at least two hundred years old at the time of burial, in the grave of a child (Figs. 32 and 33, No. 21).¹⁰⁷

The dating evidence for the inhumations is slight. None of the vessels described in the grave above survive although an unworn coin of Gratian, Gloria type, minted pre AD 375 was recorded from the overlying fill.¹⁰⁸ The other coins date from the late 3rd to mid 4th century with the exception of a dupondius of Hadrian which was probably kept as a talisman for a long period before burial. The bracelets are probably attributable to the 4th century (see p. 148). In addition, the dating of stone and lead coffins is ill-defined, although none seem to occur before the 3rd century. The stone used for the sarcophagus and coffin has recently been identified as Upper Lincolnshire Limestone, probably from Barnack, Northamptonshire,¹⁰⁹ which is a type of stone that does not appear to have been imported to London earlier than the late 2nd century when it was used, for example, in the construction of the monumental arch.¹¹⁰

None of the inhumations are therefore earlier than the 3rd century and probably none occurred until after AD 250. The practice apparently continued in the
locality throughout most of the 4th century.

FUNERARY RITES AND BELIEFS
That funerary rites were practised is clear from the presence of broken and unbroken drinking and eating vessels and animal remains associated here with both cremations and inhumations. A more spiritual note is suggested by the grave goods and decoration on the lead coffins, including pecten motifs, which are peculiar to Roman Britain, and cable moulding in the form of saltires. A lack of precise dating for many of the burials and the small number recorded means, however, that shifts in beliefs and resulting changes in burial practice cannot be closely identified. The predominantly west-east orientation of all the inhumations is not exclusive to any one religion and no positive evidence of Christianity occurred although a mineral substance was encountered in two of the coffins lacking any grave goods which may indicate a Christian burial custom (Figs. 32 and 33, No. 20).

CEMETERY POPULATION
Consideration of the demography or racial affinities of the populace similarly cannot be undertaken in view of the limited numbers involved. In addition to the skeletal details outlined above, recent examination of two of the cremations dated to the late 2nd–early 3rd centuries indicates that they represent a male in his mid-forties and a (?) female in her early twenties (Figs. 32 and 33, No. 15). Further, the stature of the male buried in the stone coffin is estimated to have been 172.81 cm (5ft 8in) (Figs. 32 and 33, No. 20).

The stature, nevertheless, could only be ascertained for three men and two women. The height of one of the females at 171.9 cm (5ft 7in), is however, well above average and the tallest yet recorded from London. The evidence of disease, dentition, congenital abnormalities and age at death is unexceptional although it may be noted that the incidence of tooth decay is higher than that recorded from larger cemetery groups.

APPENDIX—LIST OF COMPLETE VESSELS FROM SMITHFIELD
(Figs 34–35)
Many complete vessels of Roman date have been recorded in the past from within the limits of the cemetery defined above (see p. 159). It is likely that these complete vessels (broken and unbroken) are derived from disturbed burial groups and a preliminary survey of all such vessels from the City reveals a distribution pattern which closely corresponds to that of known burial areas.

Not all the vessels survive; some are known only from a written description and others from a manuscript of watercolour and line drawings compiled in the mid 19th century by John Walker Baily, a well-known local antiquary, whose collection of antiquities, which included certain of the vessels cited below, was bequeathed to the Guildhall Museum. Accordingly, the amount of detail given varies considerably.

Vessels, both ceramic and glass, are listed chronologically in order of find site (see Fig. 22). Vessels with an asterisk are known to have originally contained cremations.

St. Sepulchre’s Church (Fig. 32, No. 11)
1. Beaker; fine greyware; source unknown. Flavian (MOL Acc. No. 420) (Illus.).

Underground railway, Clerkenwell (Fig. 32, No. 12)
3. ‘Cologne’ roughcast beaker with cornice rim. Height: 110 mm (43in). Early–mid-2nd century. (Not illus.).

Snow Hill/West Street (Fig. 32, No. 13)
4. Platter with illiterate stamp; terra nigra imitation, probably Romano-British c. AD 50–80. (MOL Acc. No. 2792) (Illus.).
5. Poppy head beaker; greyware; source unknown, c. mid 2nd century. (MOL Acc. No. 3083) (Illus.).
6–7. Samian cups; form Dr. 44; Central Gaulish, Antonine. (MOL Acc. Nos. 3102 and 3207) (Not illus.).

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8. Samian dish; form Dr. 31R; stamped TINTIRIO; Central Gaulish. Mid–late Antonine. (MOL Acc. No. 3271) (Not illus.).

9. Samian dish; form Dr. 31; Central or East Gaulish. Antonine. (Not illus.).

10. Flanged bowl. Antonine or later. (Not illus.).

11. ‘Cologne’ beaker with barbotine slip decoration. Late 2nd–early 3rd century. (MOL Acc. No. 3036) (Illus.).

12. ‘Rhenish’ ware beaker with beaded rim. Height: 110mm (4 3/8in). Late 2nd–early 3rd century. (Not illus.).

13. Poppy head beaker; Highgate type. Flavian. (MOL Acc. No. 1204) (Illus.).

14. Samian cup; (?) form Dr. 27; rim diameter: 102mm (4in); South Gaulish. 1st century. (MOL Acc. No. 3194; not located) (Not illus.).

15. Samian dish; rim diameter: 153mm (6in), height: 38mm (1 3/8in). 1st–2nd century. (MOL Acc. No. 3272; not located) (Not illus.).

16. Mortarium; Brockley Hill/Verulamium region; stamped SOLLVS F. c. AD 70–100. (MOL Acc. No. A1257) (Illus.).

17. Mortaria; Brockley Hill/Verulamium region; similar to No. 16 above but unstamped, c. AD 60–120. (MOL Acc. Nos A1254 and A1255) (Not illus.).

18. Squat, necked jar; greyware; source unknown; similar to No. 2 above but smaller; height: 90mm (3 1/8in). 1st–early 2nd century. (MOL Acc. No. A1234) (Not illus.).

19. Shouldered jar; greyware; source unknown (not Highgate). Late 1st–mid 2nd century. (MOL Acc. No. A1205) (Illus.).


22. ‘Unguentarium’; (?) Brockley Hill/Verulamium region. First half of 2nd century. (MOL Acc. No. A1717) (Illus.).

23. Flagon with flared rim, short expanding ring neck, pearshaped body and ridged handle; greyware. Probably first half of 2nd century. (Tasmanian Museum and Art Gallery Acc. No. P1939.31) (Not illus.).


25. Jar; BB2; cavetto-rimmed, decorated with 4 line chevron pattern; burnt to a red buff colour. 2nd century (Royal Ontario Museum, Toronto, Acc. No. 839.9.89) (Not illus.).

26. Jar; BB2; decorated with 4 line lattice pattern with 2 intersections per line. Height: 195mm (7 1/4in). Late 2nd century. (MOL Acc. No. 2932; not located) (Not illus.).

27. Jar; BB2; decorated with 4 line lattice pattern with 3 intersections per line. Height: 270mm (10 1/4in). Late 2nd century. (Not illus.).

28. Beaker/jar; greyware. Probably not later than 2nd century. (MOL Acc. No. A1235; not located) (Not illus.).

29. Beaker/jar; greyware. Probably not later than 2nd century. (MOL Acc. No. A1240; not located) (Not illus.).

30. Beaker/jar; greyware with ‘pinched decoration’. Probably not later than 2nd century. (MOL Acc. No. A1736; not located) (Not illus.).

31. Beaker/jar; greyware with ‘indent central band’. Probably not later than 2nd century. (MOL Acc. No. 2937; not located) (Not illus.).

32. Flagon; source unknown. 1st–2nd century. Acquired from the collection of W. Chaffers; provenance doubtful. (MOL Acc. No. 21995) (Not illus.).

33. Flagon; source unknown. Late 2nd century. Acquired from the collection of W. Chaffers; provenance doubtful. (MOL Acc. No. A1736; not located) (Not illus.).

34. Jar; BB2, decorated with intersecting chevron pattern. 2nd century. (MOL Acc. No. 2822) (Illus.).

35. Jar; BB2 with lattice decoration. Late 2nd century. (MOL Acc. No. 2821) (Illus.).

36. Jar; BB2 decorated with groups of 3 vertical lines. Early 3rd century. Found broken within cremation urn No. 33 above. (Not illus.).

37. Jar; BB1; Dorset. Late 2nd–3rd century. (MOL Acc. No. 2818) (Illus.).

38. Jar; BB1; Dorset. Similar to No. 37 above but slightly narrower and taller. Height: 202mm (8in). Late 2nd–3rd century. (MOL Acc. No. 2930) (Not illus.).

39. Jar; (?) 1st–early 3rd century. (Not illus.).


41. Beaker; (?) greyware. (?) Late 1st–mid 2nd century. (Not illus.).

42. Platter; (?) ‘ordinary material’. (?) 1st–2nd century. (Not illus.).

43. Flagon; (?) Flavian or later. (Not illus.).

44. Mortarium; (?) Brockley Hill/Verulamium region; kiln second. (?) Flavian–mid 2nd century. (MOL Acc. No. 3321; not located) (Not illus.).
Fig. 34. St. Bartholomew's, 1979: Smithfield Roman Cemetery, complete vessels Nos. 1–25 (1/4; details No. 4. 1:1, and No. 16, 1/2).
Fig. 35. St. Bartholomew's, 1979: Smithfield Roman Cemetery, complete vessels Nos 34–37 (1/4).
NOTES
3. Marsden, ibid, 16.
4. Similar in construction to examples found at the Watling Court and GPO Newcastle Street sites. A full examination of 1st and 2nd-century buildings, west of the Walbrook is in preparation by D. Perring and S. Roskams.
5. Ibid.
6. Analysis of human skeletal remains was carried out by Deborah Downs and Barbara West. For an interim report see Deborah Downs ‘Archaeology at Barts: The Human Skeletal Remains’, The Barts J. (1980) 20–23.
7. These terms are based on those given in the Department of Urban Archaeology’s Site Manual (copies available from the Museum of London). For the frequency of occurrence of an inclusion within a deposit the terms ‘occasional’, ‘moderate’ or ‘frequent’ are used up to 10% of the total. Where such inclusions are given as a proportion of the layer. Particle size, using the Aurther scale, runs from ‘clay’ and ‘silt’ to ‘coarse sand’, and to ‘fine’, ‘medium’ and ‘large’ pebbles.
8. Registered numbers BAR 79.8 and 36 respectively. Registered numbers equate with MOL Accession numbers except that they have not been entered in the E.R. numerical sequence adopted in previous reports produced by the Department of Urban Archaeology.
10. The material often appeared as a single, homogeneous deposit but the indications of pitting and occasional t-tip lines do not suggest that the site was still occupied in the late and post-Roman period. Macphail identifies various grass-types predominant at different times but states that this was the only instance out of 451 burials found where a direct familial relationship is likely. Similarly the proximity of burial groups with certain shared characteristics is thought to demonstrate such a relationship at the 4th-century Romano-British cemetery at Burt Road, Colchester; Carl Crossan, Colchester Archaeological Trust (pers. comm.). These consist of two types (i) three adjacent, east-west aligned adults contained within their graves similar glass vessels otherwise unique to the site where nearly 700 burials were found, and (ii) a series of boxed grave plots of shallow timber construction, set into the ground with successive burials (tentative) of men and women, inserted into them at different times in the 4th century.
11. Clarke (op. cit. in note 11) 132-4, 142-3, 392-4 demonstrates that graves were becoming shallower and increasingly badly dug towards the end of the 4th century and that the use of coffins prevailing until that time began to fail thereafter.
12. Find-sites are locations where individual or groups of burials may have been found. Where the individual references are particularly vague but represent observations in the same area and at roughly the same time (e.g. Site 6: ‘Holborn Viaduct’. ‘Holborn Valley’. ‘Farringdon Street’ etc., they are grouped together under one find-site number (see pp. 160-161).
13. It is considered likely that some groups of complete vessels derive from burial contexts, despite an absence of associated human remains. The work of Frances Pritchard on the present material (see pp. 163-169) and of Geoff Macdonald on material elsewhere in London (see note 93) has shown that there is a correlation between the distribution and dating of this material and the known areas of burial. The inclusion of these vessels in the discussion does not affect the argument but extends the analysis.
14. Wenham (op. cit. in note 18) 4.
The Roman Cemetery at St Bartholomew's Hospital


70. Demonstrated by J. Liveridge British in the Roman Empire (London 1968) 468. Little of the fabric of this road has actually been found, but burial sites further to the west (beyond the extent of Ext. 52), which follow the line of the present-day High Holborn and Oxford Street, also show a linear disposition and may offer the best evidence of the line of the western approach to the city in the early Roman period.


72. RCHM. 3 (op. cit. in note 11) 153-6.

73. That from a localized site just inside the wall, c. 100 metres south of Newgate Street where a group of eight mid 2nd-century cremations and vessels have been found. Based on the (unpublished) work of Geoff Marsh is not to imply that early on, some of these vessels originally described as of 1st-century date (RCHM. 3 op. cit. in note 1, 154) can now be attributed to the 2nd century. An inhumation dated not later than the 1st century was found together with a 1st-century cremation, on an adjacent site (op. cit. in note 65, 4–6) may represent a contemporary burials, but is too isolated from the Smithfield burials to be considered part of a larger cemetery.

74. Clarke (op. cit. in note 11) 10. Fig. 2.

75. RCHM. 3 (op. cit. in note 1) 163, describes lst to 3rd-century cremations and inhumations along the course of the London to Colchester road from Aldgate.

76. Ibid. 163.

77. Boundary ditches and ditches have been interpreted at Lankhills: Clarke (op. cit. in note 11) 113–14, 183 and 172; C. Green mentions boundary ditches at the large 4th-century Roman-British cemetery at Folly Green, op. cit. in note 57, 93 (1974), 97–100, and 96 (1975) 56, Fig. 13.


79. 'Proceedings' J. Brit. Archaeol. Assoc. 2 (1846) 273. These cremations were of an indeterminate date but their proximity to the wall may indicate an association with the early 2nd-century fort.

80. Unpublished excavations recorded in MS notes, deposited in the Museum of London are summarized in R. Merrifield (op. cit. in note 68).

81. RCHM. 3 (op. cit. in note 1) 153, 137–9, Pl. 51.

82. Martin Dean and Michael Hammerson 'Three inhumation burials from Southwark' London Archaeol. 4 (1988) 17–22 and 'Evidence for more Roman cemeteries in Southwark', ibid., 32–5; discuss the evidence of burial distribution in connection with recent excavations in Southwark and also present the results of Geoff Marsh's re-examination of complete vessels from the area.

83. This is not to imply that any limited number of finds have been recovered. Building and redevelopment of the area over many centuries probably means that the majority of the finds have never been recorded. Indeed, several Victorian antiquaries allude to Smithfield as the site of an extensive Roman cemetery, e.g. J. E. Price (Archaeological intelligence) Archaeol. J. 34 (1877) 197. The surviving finds are now scattered in museum collections throughout the world, including the Royal Ontario Museum, Toronto; the Tasmanian Museum and Art Gallery; the British Museum and the Museum of London.

84. Five of the jars are recorded as containing cremations and a further cremation was discovered inside a vessel during examination; Baily (op. cit. in note 65) 15–26; Appendix Nos. 27, 28, 54, 35, 37 and 40.

85. For example out of some ninety vessels recovered from the Roman cemetery at Lankhills only part of a single mortuary occurred. Clarke (op. cit. in note 11) 234, Cat. No. 469.


88. Price (op. cit. in note 87) 37.

89. MOL Acc. No. 2609.

90. MOL Acc. Nos. A1267 and A1268. London in Roman Times London Museum Catalogue No. 3 (London 1930) 100, Fig. 30, Nos 20–21, 101.

91. Dr Martin Henn pers. comm. MOL Acc. No. A7906. Ibid., 98, Fig. 30, No. 6. 101. This example highlights the caution with which one has to consider 19th and early 20th century acquisitions in museum collections, e.g. G. Marsh. Nineteenth and twentieth century antiquities dealers and artefact sellers were from London: Trans. London Middlesex Archaeol. Soc. 30 (1979) 125–129.


94. This is based on the dating of the cemetery urns and probable accessory vessels, see Appendix.

95. Baily (op. cit. in note 63) 19, Appendix Nos. 35 and 36.

96. The animal and eel remains were identified by Dr Phillip Armitage, British Museum (Natural History) and Mrs Alison Locker, Institute of Archaeology.

97. RCHM 3 (op. cit. in note 1), 164–5.

98. Guildhall Museum (op. cit. in note 65) 4–6.

99. Clarke (op. cit. in note 11) 333.


101. N. Moore 'On two Roman tombs from the foundations of St Bartholomew's Hospital' Trans. London Middlesex Archaeol. Soc. 3 (1880) 293–297; Price (op. cit. in note 84) 197.

102. Price (op. cit. in note 87) 37.


104. Archaeol. Rev. 1, 276.

105. B11, above p. 146.


107. Price (op. cit. in note 87) 37. In Roman Britain generally vessel deposition became less frequent during the 4th century and examples dated to the later part of the century are exceptional. Clarke (op. cit. in note 11) 359.

108. Identified by Martyn Owen, Geological Institute of Sciences.


110. J. M. C. Toynbee Art in Britain under the Romans (Oxford 1964) 347–348.


112. The substance was described as adipocere at the time of discovery but is more likely to have been a form of calcium carbonate. Tollett (op. cit. in note 101) 16.


114. John Cresswell, University College London, examined the cremated remains which are preserved at the Museum of London. The Level III archive report compiled by Mr Cresswell may be consulted at request at the Museum of London: MOL Acc. Nos. 2818 and 2821; Appendix Nos 37 and 35. The cremated remains from within vessel MOL Acc. No. C349, Appendix No. 40, have not yet been analysed.

115. Barbara A. West, Museum of London, pers. comm. The calculation is based on femur and tibia measurements recorded in Moore (op. cit. in note 102) 297.

116. The average height of women was 5ft 1in at Trenchholme Drive Romano-British cemetery, R. Warwick 'The skeletal remains' in Wetham (op. cit. in note 18) 199.

117. C. C. Cooke and T. C. Rowbotham 'A dental report' in ibid., 208.

118. Geoff Marsh pers. comm.

119. The pottery has been identified and dated by Chris Green, Geoff Marsh and Beth Richardson, Museum of London. This includes a revision of the dating of the vessels referred to in the R.C.H.M. 3 (op. cit. in note 1) 161, 163.

120. Baily (op. cit. in note 63) 63.

121. These two vessels probably represent a pair.

122. Baily (op. cit. in note 65) 122.

123. Ibid., 30.

124. Ibid., 65.

125. Ibid., 15.

126. Ibid., 26.

127. The collection of W. Chaffers is known to contain wrongly attributed provenances. Marsh (op. cit. in note 92) 127.

128. R.C.H.M. 3 (op. cit. in note 1) Fig. 66, No. 40.

129. Baily (op. cit. in note 63) 19.

130. R.C.H.M. 3 (op. cit. in note 1) Fig. 66, No. 41.

131. Price (op. cit. in note 87) 37.
ACKNOWLEDGEMENTS

Thanks are due to the following staff of the Department of Urban Archaeology; to Peter Cardiff, Marie Nally, Peter Rowsome, Alan Thompson and Hester White for their assistance with the excavation; to Vanessa Jones and Penny MacConnoran for preparing the finds catalogues; to Deborah Downs and Barbara West for their work on the human remains; to Jon Bailey for photographic coverage; and to John Schofield, Field Officer, for site negotiations. The finds were conserved by Helen Ganiaris, Suzanne Keene and Arthur Trotman. Pottery illustrations are by Chris Green; small finds are illustrated by Nick Griffiths, Sue Mitford and Claire Thorne. All other drawings are by David Bentley. The coins were identified by Jenny Hall, Museum of London; animal bone by Dr Philip Armitage, British Museum (Natural History) and glass by John Shepherd, Institute of Archaeology. John Cresswell, University College, London, generously undertook analysis of the cremations. Guidance and encouragement during the preparation of the archive and published reports were given by Hugh Chapman, Tony Dyson, Geoff Marsh, Clare Midgley, Steve Roskams and John Schofield, to all of whom we are indebted. The Museum is, in addition, grateful to the Trustees of St. Bartholomew’s Hospital for their support and to Bovis Construction Ltd for their cooperation.

The Society is grateful to the Department of the Environment and the Special Trustees for St Bartholomew’s and St Mark’s Hospitals for grants towards the cost of publishing this report.
EXCAVATIONS AT GRIM’S DYKE, HARROW, 1979

ROBERT ELLIS

INTRODUCTION

In November and December 1979 the Inner London Archaeological Unit carried out excavations at the Grim’s Dyke earthwork, Harrow, in the grounds of the Grim’s Dyke Hotel (N.G.R. TQ 14169288). The work was undertaken at the request of the Department of the Environment and took place in advance of the construction of a new annexe and service road for the hotel, which necessitated the levelling of part of the earthwork, a scheduled ancient monument. Previous excavations of the earthwork have failed to produce conclusive dating evidence, although a date of 5th or 6th AD century is generally favoured (Wheeler 1935, 59; Castle 1975, 267). It has been suggested that the earthwork in Pear Wood, approximately 3km E of the present excavations and of post-Roman date, is an eastern extension of Grim’s Dyke (Castle 1975, 267). The purpose of the 1979 excavation was to provide additional dating evidence for the earthwork and to record details of its construction.

LOCATION (Fig. 1)

The site was located on the natural gravel beds of Harrow Weald Common, 25m N of the Grim’s Dyke Hotel, 3km NW of Stanmore, and 5km N of Harrow. The visible remains of the earthwork in the grounds of the hotel consist of a bank running E–W, approximately 15m wide and 2m high. There is a ditch on the S side of the bank 4m wide and 1m deep. The bank and ditch have been planted with shrubs and trees, and for some of its length the bank is revetted on its N side by a small wall 0.50m high. The ditch, which now acts as a drain, has been recut frequently in recent years, making it difficult to assess its original dimensions. Since the construction of the Grim’s Dyke Hotel in 1872, the walled area N of the bank has been used as a vegetable garden. The visible remains of the earthwork extend approximately 160m E of the hotel, and there is no conclusive evidence that it ever extended E of this point. The earthwork extends W of the hotel for 250m, where it turns SW for 700m along the E side of Grim’s Dyke Golf Course. It originally continued in that direction for a further 3km, at least as far as Cuckoo Hill, Pinner, but this section has been largely destroyed by recent housing developments (Stone 1935, 284).

THE EXCAVATION

Trench 1

The first area to be investigated, Trench 1, was to the N of the bank and was intended to establish if the bank had been cut back to accommodate the present footpath and whether there had ever been a ditch on the north side of the bank.

The northern edge of a shallow linear feature, 68, perhaps a gully, was discovered at the south end of the trench. This was 0.70m deep and ran parallel to the bank and had a fill of grey-brown sandy clay and gravel. It was cut by a shallow pit (excavated dimensions 1.65m long, 1m wide, and 0.70m deep). No dating evidence was found in either of these features. Most of Trench 1 was badly disturbed by recent cultivation, and no other features were found.

Trench 2 (Fig. 2).

This took the form of a cross-section through the bank. It could not be extended to include the ditch, which lay another 5m to
Fig. 1. Grim’s Dyke 1979: Site location.
Excavations at Grim's Dyke, Harrow

the N. Beneath the bank and cut into the natural subsoil was a small round-bottomed ditch or gully, 225. This was 1.20m wide and 0.40m deep; it extended E-W across the trench a distance of 1.20m before it was cut by a modern pipe-trench. It was not possible to excavate W of the pipe-trench. No dating evidence was found in this feature.

At the N end of the trench and also underlying the bank was an irregular depression, 220. This was 3.50m long, 1.45m wide, and 0.80m deep. It was filled with wet gravel and clay, and contained no dating evidence; it was possibly of natural occurrence. In general the bank was made up of thin layers of brown gravel mixed with varying amounts of sand and clay, overlying the orange-stained gravel subsoil. No evidence was found for a buried ground surface or turf line. Two layers within the bank, 214 and 215, produced two abraded sherds of pottery, probably of Iron Age date. One layer within the bank, 213, was particularly interesting. It consisted of a dense blue-orange clay mixed with a small quantity of pebbles, and within it was a roughly circular area of burnt red clay, 0.50m diameter and 20mm thick. Overlying this was a layer of small charcoal fragments 10–20mm in depth. It had the appearance of a hearth, although the extent of the burning would suggest only brief use. The bank survived to a maximum height of 1.85m above the natural subsoil, although the upper 0.40m was a topsoil associated with the recent cultivation of trees and shrubs.

INTERPRETATION

Because of the paucity of dating evidence from the site, the dating and interpretation of some features are made difficult. The gully, 68, revealed in Trench 1 ran parallel to the bank and may have been associated with the earthwork. The original N edge of the bank was not discovered, nor was there any evidence for a ditch on its N side. In Trench 2, the gully, 225, probably pre-dated the bank rather than being associated with an early phase of construction. The bank appeared to have been built in one phase, probably

Fig. 2. Grim's Dyke 1979. Section through bank.
incorporating material from the ditch. The function of the hearth, 209, if such
it was, is not known. There was no indica­
tion of trampled earth around it, which,
combined with the limited extent of burn­
ing, would suggest that the hearth was in
use only for a short time during the con­
struction of the bank. It is possible that
the layers to the extreme S of the section,
including 258, have some structural sig­
nificance, although they may be the result
of later disturbance. The condition of the
pottery from the bank was such that it is
not possible to be more specific about its
date. The charcoal from the hearth, 209,
was submitted for radio-carbon exami­
nation, with a resulting date of ad 50 ±
80 (HAR 3747). The results from a single
sample should not be taken as conclusive,
but this date is not inconsistent with the
findings of the 1957 excavations on the
same earthwork at Pinner Green, where
Iron Age and Belgic pottery was discov­
ered. On this evidence it would appear
that the Grim’s Dyke earthwork pre-dates
the Pear Wood earthwork, which is of
post-Roman date, probably 5th or 6th AD
century.

NOTES
1. In 1957 an excavation conducted by Mr P. G. Suggett at Monesele
Playing Fields, Pinner Green, produced a small quantity of Iron Age
and Belgic pottery, which was subsequently lost. No dating evidence was
recovered from an excavation in 1962 at Mill Farm Housing Site, Pinner
Green (Castle, 1975, 276, Note 28).
2. An eastern extension of Grim’s Dyke, and an extension W from Pinner
towards Ruislip have been suggested (Braun 1936, 378, Castle 1975, 267;
Sharpe 1919, 17).

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THE SAXON CEMETERY AT UPPER WEST FIELD, SHEPPERTON

DAVID LONGLEY and ROBERT POULTON

INTRODUCTION

The Saxon cemetery at Upper West Field, Shepperton, was first brought to public attention by the appearance in print of three notes by Manwaring Shurlock in 1868 (Shurlock 1868a, 1868b and 1868c). These described discoveries made in that and previous years in the course of gravel extraction and may be summarised as follows:

A. Inhumations
(i) A group of eight inhumations, all supine and facing east, were discovered at a depth of one metre below ground level, buried without coffins. Three of the skeletons were side by side, one metre apart, the others randomly distributed. Two of the jaw bones were exhibited to the Society of Antiquaries and said to be of a male, the enamel of those teeth were badly worn, and of a female whose jaw had a peculiar symphysis.1
(ii) Within 100 metres of this group a flexed burial with pottery had been found in 1853.2
(iii) A warrior burial (Pl. 1) was excavated late in 1868 by Shurlock himself, with

Plate 1. Upper West Field, Shepperton. Watercolour illustration of a warrior burial. The height of the skeleton is approximately 1.59m.
Fig. 1. The Shepperton area: location map.
some care (Shurlock 1868c). The person buried was c. 1.59m tall and carried a sword and shield with a spear 1.78m long by his side. The finds (items 1, 2, 3, 5, 6; see also 10) are described below.

(iv) Many human bones and skulls, together with the hilt of a sword, an axhead and a dagger were found in 1817 (Anon. 1867, 18). These finds cannot now be located.

B. Cremations
A cremation urn found in 1812 (item 9) was exhibited by Shurlock and a labourer reported that he had destroyed many others, which were all said to contain bones like ‘neck of mutton bones’. Another urn (probably item 7) was reconstructed from fragments and was discovered four metres to the east of the group of inhumations.

Shurlock proposed that a formal excavation should be undertaken, but this was presumably never carried out and no subsequent Saxon discoveries are known. The site has, however, been referred to many times since and, in this process, confusion has arisen principally with regard to its location but also on a number of more minor points. Furthermore, though most of the finds have been described and illustrated in various publications they have never appeared as a group. It is the purpose of this article to redress these shortcomings so as to allow a just appraisal of the significance of this site.

LOCATION OF THE SITE

Some uncertainty exists with regard to the exact location of the discoveries. This has arisen through a misleading approximate siting on the O.S. 1:10, 560 map of this area, perpetuated in later discussions of the site, lending a spurious accuracy to the location (Meaney 1964: TQ 067 673; Celoria and MacDonald 1966, 76: TQ 0675 6711; Longley 1976, 19: TQ 0675 6711). The O.S. siting symbol is in fact at TQ 067 671 and is centrally situated in Upper West Field from where the finds are known to derive. The original reports, however, allow the discoveries to be located with more accuracy.

The finds were ‘with one exception, from Upper West Field in the Parish of Shepperton’ and were made ‘in digging gravel on Shepperton Range on the banks of the Thames between Chertsey and Walton’. Upper West Field ‘was until lately separated on the west by a hedge commonly known by the name of Domesday which hedge continued across Shepperton Range until it reached the bank of the Thames, that river being distant about 150 yards. The field adjoins the high road through Shepperton and is situated midway between Laleham Ferry and Walton Bridge. The Upper West Field and the field adjoining have from time immemorial supplied gravel for the repair of the parish roads’ (Shurlock 1868a). The majority of the Anglo-Saxon material was derived from the vicinity of the Domesday hedge whereas Roman pottery and animal bones seem to have been discovered 50 yards or so to the west. The important points may be conveniently summarised:

(1) The finds were made in Upper West Field
(2) The finds were made in the vicinity of, and on the site of, Domesday Hedge
(3) The finds were made in the course of gravel extraction
(4) Roman pottery was found 50 yards to the west of this point.

Upper West Field was located by the Ordnance Survey from a tithe map of 1843 (O.S. card index TQ 06NE 13; Fig. 2a). This was a very big field however and in view of developments here in the intervening period, the accuracy with which the original discoveries might be located assumes importance.

It is suggested that Domesday Hedge may be equated with the present boundary between the parishes of Shepperton and Littleton. This suggestion finds support in the fact that the continuation of this line across Shepperton Range to the Thames, a distance of 150 yards, corresponds with the published description of 1868 (see above). The discoveries were made somewhere along this line.

The first edition (1816) O.S. 1:63, 360 map (Fig. 2a) indicates two anomalies, one on either side of the Domesday Hedge parish
boundary which may represent gravel pits contemporary with the earliest recorded finds from the area. The first edition (1868–72) O.S. 1:10,560 map (Fig. 2b), may indicate that the pit in Upper West Field was exhausted by the latter part of the nineteenth century although extraction presumably continued to the west of Domesday hedge. Gravel extraction in the first half of the nineteenth century might, therefore, have been restricted to the area ‘in Upper West Field and the field adjoining’ on either side of Domesday hedge and adjacent to the main road. This would be a logical location in view of the application of the gravel in surfacing the parish roads and explains the descriptive emphasis on the adjacent high road and the proximity of the Thames.

Roman pottery was recovered by Frere in 1943 from a pit revealed in the course of gravel extraction at TQ 062 669 (Frere 1943; Fig. 3c). Fig. 3c plots the extent of extraction in the immediate vicinity from an aerial photograph taken in 1949 (HAS/UK/49/215). It is significant that the Roman pottery uncovered in the 1860s was some short distance (50 yards) west of the Domesday Hedge.
On the basis of these considerations it is here suggested that the Saxon cemetery at Upper West Field might more accurately be located in the area TQ 063 668, i.e. immediately north of Chertsey Road (B375) at the point where the parish boundary crosses it. It is of interest to note that while the scale and extent of mineral extraction has increased enormously in the Shepperton area in the last 30 years, a small area to the west of Domeday hedge remains intact (Fig. 3d), while the area across the Chertsey Road has never been quarried. Further examination of this potentially important cemetery site may still be possible.

CATALOGUE

The following catalogue has been compiled from a number of sources of evidence. Its foundation lies in the accounts of the site published by Manwaring Shurlock (1868a, b and c) and it is, therefore, unfortunate that manuscript notes by him, apparently containing additional information, can no longer be located. Subsequent publications, with the exception of remarks by Baldwin-Brown (1915, 219) on item 1, add little information that cannot be deduced from the surviving finds themselves. These are now in Guildford Museum and the Museum of London. The items in Guildford Museum are there on loan from the Surrey Archaeological Society, to which they were presumably given by Manwaring Shurlock or his executors. The artefacts in the Museum of London were acquired with the Layton collection from Brentford Public Library, but how they were originally obtained is unknown.

In view of the disappearance of a number of items mentioned by Shurlock and the sadly decayed condition of the surviving ironwork, it is fortunate that three 19th-century water colours illustrating both lost and surviving finds from the site exist. These illustrations are well executed, often with a note of the size or scale and are probably the work of Manwaring Shurlock since, as well as material obtained at the sites of Upper West Field and Walton Bridge Green, they depict an E.B.A. flat axe from St. Ann's Hill, Chertsey, an area for which he was for many years local secretary of the Surrey Archaeological Society. That the drawings are a careful and accurate record can be demonstrated in two ways.

Firstly, the illustration PDI/14/5 can be compared with the surviving pot (item 12) and found to be in agreement in almost every detail. Secondly, Plate 1 shows items 1, 2 and 6, which all survive and are clearly drawn correctly both as to form and as to proportion one to the other. It is true, however, that this drawing is partially stylised, as shown by the positions of the feet and hands. The following catalogue, therefore, freely uses this illustrative evidence to supplement that of the surviving artefacts.

1. Sword (GM S6686) (Pl. 1 and Fig. 4) Blade 865mm long, maximum width c. 50mm; tang 115mm with ‘pommel’ 37mm wide. This item is now heavily corroded with the point missing, but was apparently intact and quite well preserved on discovery (compare Fig. 4 with Pl. 1), and traces of wood suggestive of a scabbard also adhered to it. In view of this it seems worth reproducing Baldwin-Brown’s (1913, 219 and Pl. XXVI) comments: ‘It is a step in advance [on the sword without any metal pommel] when a separate piece is used as a cap or ‘washer’ the end of the tang perforating it, and this cap may very well have taken a form like that on the sword from Shepperton, Middlesex . . . where the end of the tang passes up through a hole in the iron cap and is fixed by being beaten out . . . This little iron cap is really the beginning of the pommel’. Probably of late 5th-century date.

Additional references: Baldwin-Brown, 1915, PI. XVIII; Shurlock 1868b, 191.

2. Shield Boss (GM S5960) sharply carinated dome 76mm high and 111mm in diameter, with a flange with a maximum surviving diameter of 30mm. The contemporary illustrations suggest that originally it was 43mm all round. The dome is in reasonable condition, but the flange is now badly corroded, though one rivet hole probably survives (Fig. 4). Pl. 1 shows that four rivet holes were originally present. Late 5th or early 6th century.

Additional References: (Fig. 4) As for item 1 and also Evison 1963, 39.

3. Shield Grip (GM S5970). This grip goes with item 2 and is 158mm long, maximum width 31mm. The sides are upturned, presumably to grip a wooden crossbar. Remains of the two rivets still survive, but the decorative curved terminals are broken at one end.

Date and references as for Item 2.

4. Spearhead (GM S5995). (Fig. 4) Socketed (but broken at beginning of socket), surviving length 280mm (point missing), maximum width c. 50mm. Very
badly corroded, original form difficult to determine. 6th to 7th century (if actually Swanton type E3). Additional References: Shurlock 1868a, 118 (possibly the one mentioned there, but difficult to be certain without measurements); Swanton 1974, 80.

5. Butt-Ferrule. This item no longer survives but the drawing (Pl. 1) indicates a corroded iron butt-ferrule with a closed socket (as opposed to the cleft socket of the spearheads 4, 6 and 11). No scale is given for the larger drawing of it but a comparison of its size in the main drawing with that of the sword suggests that it is full size. This gives it dimensions of length 61mm, internal diameter 10mm and an external diameter of 16mm. The ferrule is associated with Item 6 and together they indicate a spear 1.78m in length.

6. Spearhead (GM S5958). (Pl. 1 and Fig. 4) Socketed, length 182mm, maximum width 32mm, with a fullerred blade with a deep groove to the left of the central rib on either side. Latest 5th or early 6th century—Swanton type J. Additional References: As for Item 1 and also Swanton 1973, Fig. 48b; Swanton 1974, 80, where the associated weapons' column erroneously places Items 1 and 2 with Item 4, instead of 6.

7. Pot (PDI/14/3). (Pl. 2) Drawing of sherds from an urn with a reconstructed profile, labelled 'Found at Shepperton Green Gravel Pit, 1868' Full size'. The drawing indicates that the pot is 205mm tall and has a rim diameter of 125mm. It is very probably the large badly broken vessel created and exhibited by Shurlock (1868a, 119). It is an example of Myres' (1969, 182) 'Biconical Linear Ornament with Stamps, I.'

8. Brooch (GM S6995). (Fig. 4) Bronze brooch, in good condition, found with the centre (male) one of the three aligned burials noted above (Shurlock 1868, 118). Length 65mm, maximum width 24mm. First half of the sixth century. Additional References: Baldwin-Brown, 1915, Pl. CLVI, no. 6.

Plate 3. Upper West Field, Shepperton. Watercolour of cremation urn found in 1812 (Item 9).

9. Pot (PDI/14/4). (Pl. 3) Drawing of pot labelled 'Found at Shepperton Gravel Pit, 1812.' Scale 6in to 1ft'. The urn is therefore 230mm tall and has a rim diameter of 88mm. The same urn is reproduced from a woodcut by Shurlock (1868a, 120) who states that it was purchased from a labourer by the Rector of Shepperton and that it originally contained bones. Myres (1969, 144 and Fig. 4) classified this with his Group II Buckelurnen, and it is interesting to note that this is the most southerly example of the type, which is otherwise almost entirely confined to East and Middle Anglia and Humberside. Probably 2nd half of 5th century. Additional References: Shurlock's woodcut is badly reproduced by Baldwin-Brown (1915, 635, Fig. 23) and Vulliamy (1930, 229). The water colour is reproduced by Celoria and MacDonald (1966, 75, No. 4), who erroneously state that the size is uncertain.

10. Pot (Guildford Museum drawing, no reference number). This vessel is depicted in Pl. 1 as a plain round profiled urn, upturned, with very approximate dimensions of 240mm tall, maximum diameter 240mm, and basal diameter 115mm (rim not measurable). Shurlock (1868b, 191) states that it covered a heap of calcined bones and was found 'a little to the north' of the feet of the warrior burial (above). It seems most probable that this represents an entirely separate cremation.

Doubtful Items
11. Spearhead (MOL Acc. No. 0.2062). (Fig. 4) Socketed,
Fig. 4. Metalwork items discovered at Upper West Field. (Scales: 1 = 1/6; 2–4 and 11 = 1/3; 8 = 2/3).
surviving length 238mm (point missing) maximum width c. 40mm, with a fulleried blade with a groove to the left of the central rib on either side. The recorded location is 'Shepperton, Thames 1867 or 1847' which suggests that it is a river find. At all events, even if 1867 were the correct date and given the proximity of Upper West Field to the river, the item must be classified as doubtful.

12. Pot (GM S7038 and PDI/14/5). This pot has until recently been displayed in Guildford Museum as from Shepperton, but the caption to the water colour drawing stated 'found at Walton Bridge Green; height 7in; 1869' and this is almost certainly correct since the museum records suggest that the Shepperton provenance is later guesswork.

Additional Reference: Celoria and MacDonald 1966, 74, Fig. 5.

13. Pot (MOL Acc. No. P307). Myres (1969, 188, Fig. 21, No. 715), describes this as a sub-biconical urn with wide mouth and everted rim in a grey ware. It is decorated with three broad horizontal grooves on the neck above a large three groove Stehende Bogen. The attribution to Shepperton by Myres and Vulliamy (1930, 229) is guesswork since it has no recorded provenance.¹¹

14. Pot (Weybridge Museum L459, 1967). Heptagonal vessel with low footring, conical neck and everted rim, well made in light grey ware and decorated with vertical ridges between each facet (Myres 1969, 196, Fig. 25, No. 2373). This vessel was formerly displayed in Shepperton Public Library and is owned by the Sunbury and Shepperton Archaeological Group and hence it has been suggested (Myres 1969, 196) that it belongs to the Upper West Field site. No records of its provenance exist and even if one could be sure it was a local find, the Walton Bridge Green site is equally likely.

DISCUSSION

The Upper West Field cemetery displays evidence for both cremation and inhumation rites. The relative proportions of these rites cannot be ascertained, but the 19th-century accounts clearly indicate that both were numerous and that the cemetery was large. The surviving finds are too few to afford any indication as to the wealth or status of the community whose burial ground it is. They are too few also to allow dogmatic statements of its date, but it may be significant that nearly all datable material is of the late 5th or early 6th century.¹³ Canham (1979, 110-14) has recently reviewed the evidence for Saxon settlement in the Shepperton area. It is unnecessary here to repeat his discussion, but a number of comments on it may be made as a result of the evidence presented above. The site is now firmly located close to the Thames and close to the Parish Boundary. The early origin of such boundaries is once again emphasised (Bonney 1972) and this makes the precise location of the tessellated pavements 'near Shepperton Saxon cemetery'¹⁶ of some importance. Are they to be associated with the Roman pottery found just over the parish boundary in Littleton (Frere 1943)? Whether the villa lies in Shepperton or in Littleton, the type of positive correlation between Roman villa, Saxon cemetery and parish boundary noted elsewhere is strongly suggested (cf. Fowler 1976). Canham (1979, 11) has raised the question of settlement shift in the Saxon period. The Upper West Field cemetery can now be shown to be separated by about a kilometre from the Shepperton Green site excavated by Canham (1979), which suggests that they are representative of two quite separate settlements. Since no evidence suggests that Upper West Field continued after c. 550, and nothing at Shepperton Green need be earlier than that date,¹⁷ a shift of settlement from the one to the other is possible. Such a view of events in the Shepperton area would enable it to be fitted into the settlement pattern recently suggested for the Saxon period (Arnold and Wardle 1981) of early cemeteries, together with their settlements, located near to parish boundaries on light, well-drained soils which became deserted before the 8th century. Why a move from the Upper West Field site to Shepperton Green should have been made is not clear. Certainly it is not possible to explain it, as elsewhere, in terms of agricultural developments and increasing use of heavier soils, since both sites lie on, or close to, river gravels and brick earth.¹⁸
The Saxon Cemetery at Upper West Field, Shepperton

The explanation may have to be sought in wider terms than that of the local landscape. The cemetery developed at an early date and is situated close to the Thames, like the nearby site at Walton Bridge Green. It is tempting, in the circumstances, to adopt Morris' (1959) suggestion that Mitcham, Croydon and others are the cemeteries of communities placed to guard the approaches to London and view the Shepperton sites as intimately connected with the defence and/or conquest of London. When this strategic role ceased, the substantial settlement implied at Upper West Field may have declined and eventually been replaced by a smaller community, more centrally placed for their fields, at Shepperton Green. But so long as the status of London in this period remains obscure, this must be mere speculation.

NOTES
1. Bone was found immediately above these skeletons and Shurlock (1968c, 127) interpreted these as the remains of a funeral feast.
2. This could be a prehistoric burial.
3. This is the date on the watercolour drawing. Shurlock (1968a, 119) gives 1817 as the date which may suggest it is identical with the site containing bone fragments found by Francis Cook on 27 May 1817 (Anon 1867, 18).
4. See references below and also Meaney, 1964, 170-8.
5. Colour and Macdonald (1966, 76) state that the notes were in Guildford Museum, but belonged to the Surrey Archaeological Society. Neither institution knows their current (May 1982) whereabouts.
6. His executor certainly gave material regarding Chertsey Abbey to the Surrey Archaeological Society (Surrey Archaeol. Collect. 15 (1900) 18).
7. Part of a larger group, all evidently by the same hand, which are in Surrey Archaeological Society's Research Material—PDU/14/1-14. One watercolour (Pl. 1) is held by Guildford Museum (no reference number).
8. He is known as the author of a fine series of illustrations of Chertsey tiles (Shurlock 1885).
9. Slight discrepancies in the appearance of the hill in these illustrations could suggest there was more than one sword. However, the clear implication of Baldwin-Brown's remarks is that there was only one, and the differences are therefore likely to be due to a combination of minor drawing errors and different states of cleaning or corrosion.
10. The dates given are those suggested by the latest reliable study of the subject and are only intended as broad guides.
11. This date has been overwritten by another hand.
12. See footnote 3 above.
13. It is significant that Myres (1969, 111) believed the Walton Bridge site to be on the opposite (Surrey) bank of the Thames to the Upper West Field site.
14. It should be noted that this is a poor illustration, not at the scale stated. See also previous footnote.
15. Only item 4 need be later and in its corroded condition any dating must be guesswork.
17. The earliest finds are a group of stamp decorated sherds, which could be 6th century (Canham, 1979, 115). Canham also suggests that a 5th century date is possible for some of the plain wares, but, as possible earlier material was so sparse and so fragmentary, it may be doubted if it indicates any substantial settlement.
18. Note also the possible site at War Close which is also close to the Thames and lies between Upper West Field and Walton Bridge Green (Meaney 1964, 167 and Canham 1979, Fig. 9).

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1. INTRODUCTION
The modern town of Staines in the Borough of Spelthorne was incorporated into the County of Surrey in 1965. Before that date, Staines and the other parishes of old Spelthorne Hundred had lain within the south-west corner of Middlesex, and the River Thames served as the boundary between the 2 counties. Archaeological research within the town began in 1969 with a series of excavations and site-watching that has continued until the present-day. Of the 3 major excavations, Elmsleigh House (Site Z) has been published (Crouch 1976, 71-134), the Friends Burial Ground (Site Y) report should become available as a monograph in 1984, and post-excavation work on the material from the Central Area Redevelopment (Site W) excavated in 1977/78, is currently in progress.¹

A large corpus of finds was found in stratified deposits of the mid 1st to late 4th century AD Roman small town of Pontes, now below the High Street area. There are however, few finds of the next 700 years until the 12th century, that have been found in securely-dated deposits. Most of the pottery of this period has been found mixed within a thick ‘dark earth’ layer that overlies Roman features in the southern area of the town. Some ditches and other features found below the ‘dark earth’ provide important evidence for the topography and nature of settlement during the Saxon and Saxo-Norman periods.

The purpose of this paper is to consider all these excavated deposits from within the town; and the pottery from them or incorporated into later layers. Some attempt is then made to relate these finds to the documentary evidence for Staines and the surrounding area until the early 13th century. By this time the town was expanding, parts of the High Street area were modified in ground plan to that which still survives today, and mass-produced sandy wares began to monopolize the pottery market during the 13th and 14th centuries.

2. TOPOGRAPHY
Most of the archaeological features described in Part 3 occupy the riverbank of a channel that ceased to flow before surviving maps of the town were compiled. Much of the hydrology of the immediate area of Staines during the medieval and earlier periods may, therefore, have been markedly different from to-day.

The Flood Plain terrace, comprising gravels lying beneath shallow and often eroded brick earths, fills a basin between Windsor in the North-West and Hampton in the South-East (Fig. 1). The Taplow terrace forms its northern edge, and high ground of heaths and woodlands lie to the south and west. The Flood Plain deposits also extend north along the Colne Valley as a delta behind its confluence with the Thames in the area of modern Staines. There was persistent erosion of the terrace by braided channels of both watercourses until the late 18th century when the channel of the modern Thames was embanked. The hydrography of the area was then effectively fossilised except in seasons of exceptionally wet weather when flooding of old watercourses still occurs.

The area of habitable land around Staines (Fig. 2) has always been dictated by the
Fig. 1. Staines: The environs of Staines.
remnants of the Flood Plain terrace rising as a broken surface above the marshland of the alluvium. Where the main channels of the River Thames and Colne met, a series of islands were created by the action of periglacial floodwaters. One such island was the area of the modern High Street, and others included Binbury to the north-west on which the parish church now stands, the Hythe area on the Surrey bank of the Thames; Budbury to the south-east with the common fields of Staines; and in the east, the neck of land defined by the Rivers Colne and Ash and Sweeps Ditch, with the medieval hamlets of Birch Green and Knowle Green.

Within a 2 mile radius from Staines were also the islands of Yeoveney between 2 arms of the Colne; and Tinsey, a part of Bucks, on the S. side of the Thames (see Fig. 1). The obstructive effects of the bridges and causeways connecting these islands would have drastically altered the hydrology of the area during the Roman and later periods. A man-made landscape of ditches and leats may have become necessary to ensure against the worst effects of ground saturation and flooding.

It has become clear from excavations along the southern waterfront in Staines that periods of prolonged flood, during which the islands would have been separated by expanses of water, were relatively infrequent. Although the low-lying ground remained as marsh and moorland pasture, prolonged flooding only occurred during severe phases of climactic deterioration, as during the early 3rd century AD; the later 4th and 5th centuries AD, the early 14th century, and the 2nd quarter of the 15th century. During these periods the Staines High Street area would have become an oval-shaped island, with the rivers Thames and Colne to the west, and Sweeps Ditch, another stream of the Colne, to the north and east. South-east of the town, was once another water-course which may have been an arm of the Thames which joined with Sweeps Ditch at the eastern end of the island; or perhaps waters of the Colne enclosed the town to the north, south and east. Excavations have shown that the maximum ground surface levels during the Roman to early medieval periods were at least 1 to 1.5m lower than at present, through much of the town. Security of settlement against flooding could only have been achieved with ditches that would divert surface water around the town island. Such a watercourse exists as the northern area of Sweeps Ditch, carrying Colne waters both east and west, but its antiquity is not known.

The only known reference to a defensive circuit of Staines is made by Stukeley who, in 1723, described the town as being ‘fenced round with a “ditch.”’ The line of this enclosure may have been along Sweeps Ditch, the Colne, the Thames, and the southern watercourse. During the medieval period, gates were in place, possibly at the bridges over Sweeps Ditch and the Thames at each end of the High Street; West Bar 13th century, and East Bar 1490 (Reynolds 1962, 16). If the settlement of Staines required defences at any time prior to and during the medieval period, then the banks of the watercourses surrounding the High Street area afforded the most effective topographical feature to be exploited.

Streams north of the town would have been used during the medieval period as leats to drive the 2 mills that stood on the Wyrardsbury and Colne rivers between the High Street and Binbury. Six mills were recorded on the manor in 1086 and at least one of them probably stood close to the town. Hale Mill is the earliest to be recorded by name in 1354 and occupied a triangular piece of land between the Colne and Sweeps Ditch. (Reynolds 1962, 21). Maps of the 18th and 19th centuries show that it was supplied with water via a system of leats, some perhaps of great age such as Bonehead or Bourne Head Ditch (a name that implies a control of water flow) which formed part of the eastern parish boundary.

It is not known how long a Thames bridge had existed in Staines before the 13th century, when several grants of trees from Windsor Forest were given by the King for its repair (Turner 1926, 14; Reynolds 1962, 13) Warden’s were responsible for its maintenance from as early as 1228. The causeway from the Hythe on the Surrey bank opposite Staines, to Egham is frequently mentioned in medieval documentary sources together with the
Fig. 2. Staines: General topography. (See Note 9, p. 212).
bridge, and it was repaired with the aid of pontage grants during the early 15th century. (Turner 1926, 17). Earlier, both had been the responsibility of the Abbot of Chertsey although Thomas de Oxenford, a prominent local landowner had been credited with the construction of the causeway during the 13th century. By the middle of the 14th century, and whilst disputing any liability for its repair, the Abbey also claimed that Thomas had built the bridge. (Turner 1926, 15). The inability of the Abbot to trace the history of the bridge before the 13th century may indicate that there was no earlier bridge across the Thames other than the *pons* implied in the name of the Roman town *Pontes*. It seems unlikely that the Abbot of Chertsey would have permitted a bridgehead on his property that would have enabled road traffic to by-pass the Abbey on the western route out of London. No such structure is included as a boundary feature in the descriptions of the extent of the Abbey’s estates before this time (see below). A ‘crossing’ made here by part of a Scandinavian army in 1009 could have been by way of a ford as it seems unlikely that a bridge could have survived raiding, such as occurred in 993 and 1006 (see p. 192).

Other bridges were necessary during the early medieval period to connect the separate parts of Staines. The High Street followed the line of the Roman road to London, and bridges and causeways carried it east across Sweeps Ditch and the Littleton Brook (also known as the River Ash). Binbury and the High-Street were connected by Church Street which crossed the Colne at Longford Bridge. Moor Bridge carried Hale Street over the Wyrardsbury River to connect the mill with Binbury. South from the High Street extended Thames Street by way of bridges or causeways to gain access to Budbury, the common fields, and Laleham parish (Reynolds 1962, 15).

A market in Staines, first mentioned in 1218, probably occupied the High Street between its western extension as Bridge Street (the modern Market Place) and beyond the junctions with Thames and Church Street in the east. Rocque’s map of 1754 shows a middle row of buildings dividing the High Street immediately east of Thames Street and these probably represent more permanent structures that replaced earlier market stalls. An alternative market or fair site lies towards the north-west end of Church Street where it broadens out before entering Binbury Row and St. Mary’s churchyard.

Binbury was a settlement from at least the 14th century, probably extending along what is now Church Street and Binbury Row.² It is possible that the demesne manor of Staines was also sited here close to the church. Speed mentioned in 1613 an enclosure at Binbury measuring 28ft × 83ft but there is no visible remains of this, nor is it shown on the earliest maps of the area. The dimensions of the ‘enclosure’ may indicate that it was, perhaps, the foundations of a large hall or barn rather than a ditched or embanked earthwork enclosure. An alternative site for the manor is Duncroft House standing north of the church. This has traditional associations with the constitutional events of 1215 for the Bishops and Barons are said to have assembled here before the parliament with King John and the signing of Magna Carta (Richardson 1968, 14). St. Mary’s parish church occupies the highest ground of Binbury and was in existence by 1179. The site may be close to that of a small religious cell that probably existed within Staines in the pre-Conquest period (see p. 191).

Another Saxon occupation site nearby may have been the site of Yeoveney Manor, a mile north of the church on slightly elevated ground between two arms of the Colne. The estate was described in the 11th century as lying in the pasture of Staines (Reynolds 1968, 18) and the site of one of the mills of Staines mentioned in the Domesday survey may have been within the vicinity. Most of the estate now lies submerged below the Wraysbury Reservoir.

At the southern end of the Yeoveney high ground between the manor and Binbury, once lay Stern Hill Field. Excavations of a Neolithic causewayed camp here in 1961 also produced some mid Saxon pottery and other indications of settlement (Robertson-Mackay 1961, 132). ‘Stern’, possibly meaning ‘at the back end’, may refer to the boundary between the estates
Saxon and Early Medieval Staines

of Yeoveney and Staines which existed close by.

There is some evidence that during the second half of the 14th century, major changes occurred in the economy of the town. Both of the town mills were abandoned and demesne farming was curtailed. Apart from the site of the church and the probable sites of the bridge and mill, we know very little about the topography of Staines prior to these changes.

3. DOCUMENTARY EVIDENCE

The main sources of historical evidence for Staines prior to the 12th century are several land charters purporting to be of the late Saxon period, entries within the Domesday survey of Middlesex, and inferences to be made from the annals of the Anglo-Saxon Chronicle.

After the collapse of Roman administration in the early 5th century AD, Staines probably lay within the territory of the Middelseaxan which was possibly a regio even before the ascendancy of the Kent and Essex royal houses in the 7th century. Their overlordship extended far to the west of the River Lea. It has also been implied that Staines lay within an early Saxon enclave of the Sunningas lying on both sides of the Thames, from Sunbury to Sonning (Barrow 1976). The antiquity of the similar 'folk name' Staningas or 'men of Staines' implied from the name Staningahagae of the London property of Staines, mentioned in a charter of Edward the Confessor (see below), is unknown but may be of much later date.

South of the Thames, the overlordship of Surrey was in dispute between Wessex and Kent in the 6th century. It was ruled by a subregulus, Frithwald, during the later 7th century when Chertsey was founded by King Egbert of Kent, but Frithwald, who had granted the estate, owed his allegiance to Wulfhere of Mercia, according to the foundation charter of 670 (White 1955, 479–80). By this time both banks of the Thames around Staines lay effectively under Mercian domination.

From the revival of Wessex at the end of the 7th century until the mid 9th century, there began a period of uncertain control over the Thames bank-side settlements. With the onset of Danish raiding from the mid 9th century, the Thames valley became of strategic importance for the Saxons and an organised defence culminated with Alfred's treaty with Guthrum in 886 in which terms were agreed to contain the Danes within the eastern Thames Valley and outside Middlesex. The terms were little observed, and in 893 a force of Danes are said to have crossed the Thames from Surrey 'where there was no ford', and entrenched 4 miles north of Staines at Thornton, then presumably an 'island' within the floodplain of the River Colne. They resisted all English attempts to subdue them and terms were eventually settled that enabled their safe return to their fleet at Benfleet, Essex.

The foundation of new fortified towns and the creation of shires begun by Alfred, was continued by his successor Edward, but it was not until the mid 10th century that equilibrium was reached with the Danes and peace restored to the Thames Valley.

The earliest grant by charter of land at Staines purports to be of this period and is dated 969, but was forged most probably in the post-Conquest period (see below). At least some of its details however, are verified by other sources. King Edgar's charter confirmed Stana and other estates including nearby Ashford, Teddington, Halliford and Feltham to the Abbot of Westminster, and also states that Staines had once been the site of a religious house (cenobium quod Stana vocatur). There is another reference to a pre-Conquest religious house in the Domesday Book entry for East Burnham in Bucks. Three thegns who held the manor before the Conquest were obliged to pay an annual sum to the monasterium of Stanes, most probably Staines in Middlesex (VCH Bucks VIII, 211). East Burnham was one of only two estates in Bucks that belonged also to St Peter's, Westminster in the 11th century. Land held by Staines within London prior to the Conquest was a privilege granted to only a few rural estates, many of which were ecclesiastical foundations. There is therefore a strong possibility of a Saxon minster at Staines that
was abandoned, perhaps as the result of raiding in the 9th century.

By the closing years of the 10th century, renewed Scandinavian attacks penetrated the Thames Valley. The first authentic reference to Staines concerns one of these incursions recorded in the Anglo-Saxon Chronicle. In 1009 a large expeditionary force that included many Vikings, moved through Kent, and having failed to take London, passed on to Oxford which they burnt early in the following year. The army returned on both sides of the Thames until they received warning of vigorous defences planned by the men of London. Those on the north bank are then said to have crossed the river at Staines to regroup and return to Kent in avoidance of the City.

In the first half of the 11th century and possibly before, elements of Scandinavian culture seem to have been absorbed into the fabric of local Saxon society. It is known from various entries in the Domesday Book that many of Edward the Confessor's guard were of Danish stock and held much land within this part of the Colne valley and near to his palace at Old Windsor. At least one customary payment was rendered in Norse currency, to the minster in Staines from East Burnham, and several place-names indicate Scandinavian influence. A field adjacent to the parish boundary of Staines was called Augur Hedge in 1828 and may refer to a burial mound (ON or O Dn haugr a mound, heap, hillock or grave-mound).

There are 4 surviving land-grant or confirmation charters for Staines of the reign of Edward the Confessor. All are considered to be later copies or forgeries perpetrated by Westminster scribes possibly in the late 11th or early 12th century. Sawyer considered that the charters of 1042 and 1053 were based on authentic documents whereas the 2 confirmations of Edward, and the confirmation by Edgar in 969 were of more dubious origin. It is in the 1053 charter that first reference is made to the staningeahagae of London, berewicks, and a soke of 35 hides.4

The Domesday Book entries for Staines further emphasise the importance of the estate during the 11th century. The manor with its 4 berewicks was confirmed to the Abbot of Westminster. The soke of 1053 can be identified from within the Spelthorne Hundred as being Staines, its berewicks (probably the holdings of Teddington, Halliford, Feltham and Ashford mentioned with Staines in the 969 charter), and other estates recorded as having jurisdiction from Staines (2 in Laleham, 1 in Charlton, and another Ashford property). Collectively the assessed Domesday hideage is equal to the 35 hide sokeland of 1053.

The high proportion of bordars (58) to villeins (16) on the manor of 1086 is unusual and Maitland, thought that a grain 'factory' may have been operating, with at least one of the 6 mills of Staines (Maitland 1897, 181). It has been noted however, that a high proportion of bordars may imply that settlement had become fairly widespread throughout the estate (Harvey 1979, 105-109). 46 burgesses were of this manor in 1086 and they provide better evidence that Staines was a marketing centre in the 11th century.

The Staningehagae of Edwards 1053 charter is not recorded in the Domesday Book but Maitland considered that the burgesses of Staines may have formed part of London's mercantile community operating from within its own lands (Maitland 1897, 181). The area within London may approximate to that of the medieval parish of St. Mary Staining with its church (ecclesia de Staningehage 1189), at the top end of Staining Lane (Stanigelane 1206-8) that led south through the City.5

One factor of unknown antiquity is the jurisdiction of London over the Thames as far as Staines and the confluence with the Colne which, from the late 9th century formed the boundary between Bucks and what remained of Middlesex. The earliest reference concerns a dispute over the authorisation of fish-weirs between London and Staines. The wardens of Montfichet and Baynards castles in the 13th century both claimed that jurisdiction to Staines had belonged to their Lords during the previous century (pers. comm. Tony Dyson, Museum of London). It is interesting to note here with reference to a possible military zone west of London, that in 893 and again in 1009 Scandinavian raiders were prevented from
crossing the Colne into Middlesex when returning from expeditions in the west.

Although well placed relative to major road and river routes, and despite its status as having been a Roman town, Staines by the Late Saxon period would have been restricted in its commercial activities by competition from nearby Old Windsor 5.6kms upstream, and Chertsey 4km downstream.

Chertsey (Cerotaesei c 730) had been an important monastery since its foundation, despite the probable ravages by Danes and King Edgar’s expulsion of its canons in the 10th century. The Abbot owned an extensive estate in North-West Surrey and perhaps Southwark. During the 11th century it held sake and soke over London holdings which included at least one hythe (Dyson 1980, 87). The Abbey was, therefore, an active marketing centre to rival Staines.

Across Runnymede from Staines and on the Berkshire banks of the Thames lies Old Windsor (Windlesora 1061). This had become another important trading centre by at least the mid 11th century and the site of a palace of King Edward the Confessor (Astill 1978, 70). Excavations of Saxon features have provided evidence of prosperity and organisation of the manor over 2 centuries earlier, and it has been suggested that the demesne may therefore have been held by a person of high rank as early as the 9th century. (Hope-Taylor 1958, 184). Despite the destruction of at least part of the site, possibly during the Danish Wars, the manor was host to the 3rd largest town in Berkshire by the time of the Domesday Survey with 95 hagae.

Passing north-east/south-west through the southern end of site Y, an old watercourse filled with soft muddy clays since the flooding of c. AD 220, remained uninhabitable until the post-Roman period (Area 19 on Fig. 3). A Saxon-type spearhead had sunk through its upper levels, before the deposit had consolidated into dry land. South from this, a small neck or island was eventually reunited with the main body of land when the muddy clays of the old watercourse had dried out. One or two drainage gullies cutting through the dried surface of the watercourse probably emptied into the main river channel, the bank of which lay further south. This river-bank line has been examined on various sites for over 125 metres through the southern backlands of Staines, and on most of them, an iron-panned clay had been formed along its crest. Later flooding caused this deposit to slump down the side of the bank and onto the beach, and its upper surface had been truncated prior to the formation of ‘dark earth’ layers, except on some areas of site Z. Found within the clay bank and slightly later beach deposits were archaeological features of Saxon to 12th-century date were excavated on the backlands of the southern side of the High Street and were associated with a series of waterfronts facing S.E. over one of the surrounding streams (see Fig. 3). Severe flooding had damaged the southern fringe of the Roman town c. AD 220 and there seems to have been a subsequent decline of domestic activity until the later Roman period when several buildings were in use on sites Z and W.

The rectangular timber buildings found on the north-west part of Z were eventually dismantled and the fill of their beamslots and postholes included a few sherds of rolled mid 4th-century pottery. They had been set at right angles to, and south of the main east-west Roman road, observed on W to be partly underlying the modern High Street.

Despite this competition, Staines was by the 11th century a rural estate of some importance. Its London hagae may date back to the reorganisation of King Alfred in the late 9th century, or else they may once have belonged to the minster at Staines.

4. ARCHAEOLOGY

Apart from a few isolated pits found nearer to the High Street frontage, most of the
Fig. 3. Staines: Location of excavations and Saxon features.
a few sherds of Late Roman pottery. Their rolled condition however, is similar to that of other deposits which also include some rare grass/chaff-tempered (MA1) sherds (see below).

A further phase of erosion and flooding breached the iron-rich clay bank on site Z and deposited a grey/green silt that also filled several partially-filled pits, some of which contained MA1 sherds (Features 15, 16, 17, 18). Subsequently, a series of intersecting, and often interrupted gullies were dug along the crest of the bank and have been found along at least 60 metres of the southern backlands (Features 1–11, 14, Fig. 3). The gullies contained rolled later Roman sherds as well as small amounts of Saxon MA (grass/chaff-tempered) and MB (sandy) sherds that includes a fragment of Early Saxon-type decorated pottery with horizontal zones of rosette stamps between series of linear grooves (Jones in Crouch, forthcoming). The decline of grass/chaff-tempered pottery occurred locally during the 9th century (see below) so it seems reasonable to suggest that these gullies are of Early to Mid-Saxon date.

It is interesting to note the similarities between these parallel gullies and those from Shepperton Green 3 miles south-east of Staines. (Canham 1979, 103–110). Here also was found a series of close-set Saxon gullies north of a watercourse with another and deeper ditch set further back of later Saxon or early medieval date. The early Saxon and Saxo-Norman pottery is similar in form, fabric and decoration, and at both sites was found single examples of a squared and faceted pin head type of Mid to Late Saxon date. There had also been Roman occupation within the immediate vicinity of the site.

North of the waterfront and on both sides of the modern High Street, Early to Mid Saxon occupation is represented by a few pits on sites Y and W, and a ditch aligned north-west/south-east on site R. No surface features were found to have survived below ‘dark earth’ deposits or medieval levelling.

There is little evidence of later Saxon activity apart from a dirty gravelled area on site Z, some lower levels of ‘dark earth’, and Ditches 3 and 14 on site W. Both ditches were frequently re-cut; Ditch 3 and the eastern part of 14 until the 11th century or earlier, but the western part of 14 was not abandoned until the late 12th/early 13th century. Pit 20 which contained Late Saxon pottery was cut through the levelled eastern part of 14.

Saxo-Norman features most probably of post-Conquest date include Pit 16 of 11th/early 12th century date; four wells on Y that span the 12th century (Features 21–24); some dirty gravelled areas; and the lower levels of the ‘dark earth’ formation along the southern waterfront area.

Excavations and site-watching at the western end of the High Street have not revealed any definite evidence of Saxon occupation. Only two grass/chaff-tempered sherds and a handful of late Saxon pottery was found within the ‘dark earth’ on site V, but a number of post and stake-holes that penetrated a Roman hearth area on site H, may possibly be of Saxon or Early Medieval date. A service-trench dug on the north-west side of the Old Town Hall in the Market Square revealed a water channel revetted with wooden posts and aligned roughly north-west/south-east. Muddy silts that accumulated within the channel contained late 12th/early 13th-century pottery.

Other items of interest from Staines include two spearheads of Late Saxon or Viking type recovered during dredging operations along the Thames (Berks. Arch. J. 1958, 54–6), a few sherds of red-painted Pingsdorf-type ware, mica-schist whetstones and some of the numerous fragments of Niedermendig lava quern-stones.

During the early 13th century a series of timber buildings with clay floors and foundations of flint or chalk were built on site H, and on site V there was a similar succession of clay floors on both sides of a gravel alley that led off the High Street. The alignment of these and other features in the High Street as far east as site N suggest that some organised planning was adopted at this time. Between the time of the abandonment of the late Roman buildings on sites Z & Y and the late 12th/early 13th century however, there is no excavated evidence of property boundaries other than the bank and ditch features,
or of any formal planning based on the line of the High Street.

5. THE POTTERY

(i) Introduction

At an early stage of research into the post-Roman archaeology of the town it was decided that all Saxon and medieval pottery recovered from excavations would be examined. This was partly because surviving features were generally found to contain only small groups of pottery that could be closely dated, and most of these were made up of old and newly-broken sherds. The discernment of manufacturing trends could only be made possible by a full analysis of all sherds which greatly increased the sample size. It was also considered possible that some Saxon and Saxo-Norman ditch features constructed perhaps during events documented for Staines up until 1200, could be more accurately dated if the pottery from their infill was compared against the sequence of a pottery form and fabric typology established from all excavated material. Previous work undertaken on the pottery from the Elmsleigh House site (Jones and Shanks 1976, 101-114) was felt to be superficial in comparison with the published results of new methods of analysis undertaken elsewhere.

Within this report, ‘ware-type’ refers to groups of sherds that have a consistent range of characteristics which may perhaps indicate a single source for the pottery. ‘Fabric-type’ sherds show more variable ranges of characteristics that may prove to be divisible into more specific wares at some later stage of research. Method of manufacture is less easily described when a sherd is not obviously hand-made or fast-wheeled. Descriptions such as ‘hand-rotated’ or ‘slow-wheeled’ do not have a place in the working vocabulary of potters that I know, although the latter term has been retained in this report for pots that do not satisfactorily indicate their method of construction. For several ware-types, it was clearly a common practice to ‘finish-off’ the rim of a hand-made vessel on a wheel.

The dating of pottery within this report is based on some generally accepted trends of pot manufacture within the Thames Valley of the Saxon and Early Medieval periods (Hurst 1976, 283-343). Some handmade ‘slow-wheeled’ wares other than those that are typically Early to Mid Saxon, could be of pre-Conquest date but this is by no means certain. In the absence of a succession of assemblages in Staines it is possible that these wares could have been made during a regressive phase of the industry during the latter half of the 11th century.

With reference to the published report on Saxon and medieval pottery from Elmsleigh House, vessels illustrated there as Fig. 17 Nos. 46, 50 and 55 are republished here as Fig. 4 No. 7 and Fig. 6 Nos. 97 and 123 because more of the profiles have been obtained by reconstruction, and their inclusion as significant pieces completes this survey to 1980 of the relevant fabric-types. In addition, opportunity must be taken here to correct some mistaken identifications in the 1976 report. Fig. 17 Nos. 45, 47, 48, 49 are late Roman sherds, Fig. 20 Nos. 157—9 are early Roman sherds, and Fig. 29 No. 160 is more likely to have been a late Iron Age or early Roman pedestal base.

(ii) Method of examination and some general comments

1,500 sherds from Staines were examined with the aid of a binocular microscope (×20). This comprehensive sample included all the Saxon and medieval pottery as well as a number of Roman pottery fabrics that can be confused with certain Saxo-Norman types. Inclusions within the clay body were then quantified using the methods adopted by Peacock and others (Peacock 1977, 26-33).

The main tempering agents used within Saxan and Saxo-Norman pottery from Staines were found to be quartz, quartzite, flint, chalk, shell, fossils, grass/chaff, and ironstone. These had been added in a wide variety of combinations, in marked contrast to the bulk of Roman pottery currently undergoing microscopic analysis, which is far more standardised and generally have a smaller range of variability, with some important exceptions.

It was found possible to distinguish the Roman pottery fabrics from similar Saxo-Nor-
man types and the latter from the products of industries producing fast-wheeled and quartz sand-tempered pottery which probably began during the late 12th century. The emergence of these fabrics (MI) remains unclear. The only recognisably archaic vessel forms in MI ware are of a fabric type that was also made in forms of demonstrably 13th-century date.

It soon became apparent during physical examination that the division of many Saxo-Norman fabrics into concrete groups would not adequately reflect the tempering practices involved and that too much reliance would subsequently be placed on such a classification. Short of submitting each sherd to more scientific methods of physical determination, current methods of visual analysis of these variable fabrics remain highly subjective both in the identification and quantification of inclusions, and the discernment of one ware-type from another. It should be noted therefore that ‘type’ standards in which the inclusions, their characteristics, and method of firing remained constant are a rarity in Staines pottery of the Saxo-Norman period. Generally the fabric-types merge towards the extremes of their variable range, although some are more easily divisible into specific wares. It is probable therefore that examples of both localised wares and more widespread traditions of pot-making are present within the Saxo-Norman pottery of Staines.

Of the pottery fabric-types described below, and especially types MF/MG/MH, some continued in general use well into the 13th century and more specialized products into the Late Medieval period. Pottery fabrics tempered only with quartz sand and ironstone have been largely excluded from the type-series, partly because the emergence of these types locally is not precisely known, and because their ancestry is more relevant to the growth of pottery industries during the 13th and early 14th century.

(iii) Pottery fabric type-series
MA, MB, MC Early to Mid Saxon handmade fabrics.
MD Calcareous-tempered wares of the Late Saxon/Saxo-Norman period, probably still being manufactured up until the late 12th century.
ME Saxo-Norman imports.
MF Handmade, flint-gritted ware of the 11th century or earlier.
MG/MH Variable sand/calcareous/flint-gritted fabrics of the post-Conquest period with some possibly earlier.
MI ‘Early’ forms of Medieval sandy fabrics.

**MA: SAXON HANDMADE AND ORGANICALLY-TEMPERED FABRICS**

The majority of sherds of these fabrics are of standard type MA 1, but there are at least two other fabric types of the more variably tempered MA 2. Other pottery in Staines tempered with organic inclusions include Romano-British coarseware of the 1st century AD, variably tempered with small carbonised segments and grog. Although the vessel forms of these earlier industries are easy to distinguish from Saxon products it is possible to confuse individual sherds with the variable MA 2 types. Sherds of another type of organically-tempered ware, apparently made on a fast-wheel have been found within a large 4th-century well on site V.

MA 1 'STANDARD' CHAFF-TEMPERED WARE

Handmade; fairly hard; smoothed exterior surface or occasionally wiped; burnished on the interior of vessel rims; of variable wall thickness c. 7–10mm. Generally dark grey to black with dull brown surfaces; occasionally red core with redder or blkr surfaces.

Inclusions: ORGANIC—frequent, illsorted, long carbonised skeleta of stalks, glumes and occasionally seeds from cereal grasses. QUARTZ—rare to sparse, illsorted, subrounded c. 0.2–0.5mm. Some very rare accidental inclusions of angular CHALK and FLINT.

Vessel forms: Cooking-pots—27 simple everted rims generally of small diameter (under 15mm). Only 4 flat basal sherds and a gently rounded base angle have been found, so most vessels were probably simple round-based forms. 12 rims from Z were published in 1976 (Crouch 1976, 112–3, Fig. 20 Nos. 145–156), and the 6 rims from Y and 3 from W will be published in the near future.

Bowls—1 large rim sherd of a hemispherical bowl with a broken stub projecting above part of the rim, probably part of a lug, and a straight-sided vessel with everted rim which may also be from a bowl or basin. Both found on site W (Jones in Crouch forthcoming).
Distribution: Small quantities of this fabric-type have been found on all excavations within the Central High Street Area but has only rarely been found at the western end beyond the junctions of Thames and Church Streets. Only two sherds were found on V, and none from any other excavation or service trench in the area.

Several sherds were found within gullies set along a contemporary waterfront at the southern ends of High Street properties (Z23, Z136, C24, C28, C29). Other sherds were found in Saxon pits associated with the gullies, or else sited further N towards the High Street. At least one other gully or ditch containing sherds of this pottery was found on the opposite side of the High Street at site R. Within all the above features, sherds of this Saxon fabric-type were accompanied by rolled sherds of Roman pottery mostly of the 4th century, and sometimes also by other handmade Saxon types (MB and MC fabrics). Of a total of 112 sherds 49 came from Z and 41 from Y. The majority of these were recovered however from residual contexts.

Dating: There are still considerable local difficulties concerning the dating of this and other Saxon organically-tempered wares. Most of such pottery found in Hampshire and the Thames Valley from Oxfordshire to Essex has been dated to the Early and Mid Saxon periods. At both Staines and Shepperton Green, MA fabrics may have been in use by at least the late 5th or 6th century as some sherds have been found associated with decorated pottery typical of this period. At nearby Old Windsor, chaff-tempered wares are dominant within deposits dated prior to the late 8th or 9th century and is found associated with sherds of Ipswich-type sandy ware (Hope-Taylor 1958, 183-185). This Mid Saxon fabric-type with a date range possibly of c. 625-850, has also been found with MA wares at a number of other sites in the Mid-Thames Valley (Moorhouse & Jones 1981, 119). MA fabrics therefore began to be used fairly early within the Saxon period locally and continued as the major potting tradition until the late 8th or early 9th century. Its absence from Oxford, a town established during the 9th century is no surprise (Hassall 1972, 10) but the handful of sherds which is all that has been recovered from excavations in the City of London is puzzling as London was trading by at least the 7th century and was described as a metropolis by Bede writing in the 8th century.

MA 2

These pottery fabrics, whilst of the same manufacturing tradition, are atypical of the standard type MA 1 in Staines. The sherds have been subdivided into three groups based on the amounts of chaff, quartz and flint temper. All other characteristics are similar to those of MA 1. Whilst none of the 24 sherds were found within securely dated Saxon deposits, the rim forms and method of manufacture seem to indicate a date range similar to that of the standard type.

(a) Inclusions: ORGANIC — mod, illsorted. QUARTZ — rare to sparse, illsorted. 5 sherds, 2 each from Z and W and one from Y. None from securely dated Saxon features. A rim from W is a simple everted type like the majority of MA 1 rimsherds.

(b) Inclusions: ORGANIC — mod, illsorted. QUARTZ — mod, illsorted c. 0.02-0.06 mm, subangular. FLINT — sparse, illsorted c. 0.05-0.15, angular.

5 sherds from Y, Z from Z, 1 from V; none from securely dated Saxon contexts. They include a simple everted rim from Y202 and a pierced sherd from Z.

(c) Inclusions: QUARTZ — frequent, wellsorted, c. 0.02-0.04 mm, subrounded, pale grey/brown. ORGANIC — mod to frequent, illsorted. IRONSTONE — sparse, illsorted c. 0.04-0.10 mm, subrounded 1 sherd from Z, 2 from Y and 3 from V. Possibly Romano-British rather than Saxon.

MB: SAXON SANDY WARES

MB 1

Handmade; hard; pimply-surfaces; c. 5/6 mm thickness; Black.

Inclusions: QUARTZ — frequent, wellsorted, c. 0.02-0.05 mm, subrounded, white/opaque. IRONSTONE — moderate, illsorted, c. 0.06-0.15 mm, subrounded, rust-red. 2 sherds found on Y, one with a horizontal stamp series separated by grooved lines, and the other combed and burnished.

MB 2

Handmade; hard; smooth-surface; generally black with patchy oxidised surfaces.

Inclusions: QUARTZ — sparse, mod sorted c. 0.01-0.05, rounded. ORGANIC — sparse, short segments of carbonised stalks. IRONSTONE — very sparse, illsorted c. 0.03-0.10 mm, angular. FLINT — rare, illsorted up to c. 0.15 mm, angular. 4 sherds found towards the southern end of Y, one of which was stratified within the Saxon gully (A5 16W). A jar with 2 burnished grooves on the shoulder may indicate a late or sub-Roman date for this fabric type.

MB 3

Handmade; fairly hard; smooth surfaces; variable thickness occasionally over 10 mm; Black often with dull brown surfaces.

Inclusions: QUARTZ — moderate, mod sorted, c. 0.02-0.06 mm, subangular. IRONSTONE — sparse, illsorted c. 0.02-0.08 mm, subrounded, rust-red. FLINT — rare, illsorted, occasionally over 0.13 mm, angular. 4 sherds found within residual contexts, 2 from Y and 2 from V. Not securely dated to the Saxon period, possibly prehistoric.

MB 4

Handmade; hard; fairly thin walls of even thickness c. 4-6 mm; well-potted; smoothed, often burnished exterior surfaces. Black with occasionally oxidised brown surfaces.

Inclusions: QUARTZ — very frequent, wellsorted c. 0.01-0.03 mm occasionally larger, subrounded, generally
white to pale grey. IRONSTONE—sparse, mod sorted c. 0.01-0.04mm, subrounded. 16 sherds from Y including a rim and sherd decorated with incised lines, and 3 from W.

MC: OTHER SAXON WARES
Several other sherds from handmade pots have been variously gritted with quartz, flint, shell and quartzite. As some of these may be prehistoric or Roman, each individual type will not be described in this survey. There are 4 sherds from Y and 3 from W of which one was found within the Saxon gully C 24.

MD: LATE SAXON/EARLY MEDIEVAL CALCAREOUS—TEMPERED WARES
These include all fabrics and ware-types presumed to have been made from the Late Saxon period to the 12th century, in which the main tempering agent, either singularly or in combination, was of calcareous material. In such pottery from Staines, these inclusions are divisible into the following types:— (i) thin/thick slightly curving platelets of crushed shell, white and with a matt, fine-grained texture, presumed to be either of BIVALVES or BRACHIOPODS; (ii) similar to (i) but of more crystalline fracture with light-refractive surfaces; (iii) fragments of, and occasionally complete GASTROPOD shells; (iv) fossils such as the perforated platelets of BRYOZOA; and (v) subangular fragments of grey/white soft LIMESTONE (probably CHALK in most MD fabrics from Staines).

Research will continue into these inclusions as to the possible identification of MOLLUSCAE and other species. There are doubts in Staines as to the use of fossil or contemporary midden shell in certain MD fabrics, and there also exists the possibility that much was made locally rather than being traded downstream from the Oxford area where most such inclusions are apparently from older LIMESTONES. More precise methods of identification need to be used on these inclusions which can appear very similar when viewed through a low-powered microscope.

Any development of MD fabrics relative to pot forms is not clearly discernible. On grounds of similar fabric, firing, some common rim forms and association, MD 1 and MD 5 may be related, with increasing numbers of the latter being fast-wheeled during the 12th century. The two ware-types that contain gastropod shells MD 3A and MD 4 are however, less similar, for whereas MD 3A is always a heavy, slow-wheeled and variably fired fabric, MD 4 appears as a proficient fast-wheeled product manufactured in controlled kilns. Were it not for the absence of GASTROPODS, MD 2B would be more comparable with MD 4 than to MD 3A. Of all the fabrics of Late Saxon and Early Medieval Staines with calcareous inclusions, it is only the MD 2 wares that are unique in containing CHALK unaccompanied by any SHELL. The identity of CHALK as opposed to other LIMESTONES is perhaps confirmed by the occasional FLINT fragments found in MD 2B. The proficient wheel-thrown MD 2 wares appear fully-developed and other examples have not so far been found outside Staines. Their later development was perhaps as part of the transitional MH fabrics.

MD 1 LATE SAXON SHELL-TEMPERED WARE
(Fig. 4 Nos. 1–2)
Slow-wheeled; fairly hard; slightly ‘soapy’ surfaces horizontally wiped on the exterior; fairly thick-walled c. 8/9mm but even; dark grey with red-brown surfaces but more frequently with a black skin on red/brown margins.
Inclusions: frequent SHELL (illsorted, thick laminated minerals CALCITE and ARAGONITE remain fairly stable as the inorganic component of the skeleton, and there is only some loss of magnesium in chemical diagenesis after the death of the animal (Raup and Stanley 1971, 365). The identification of LIMESTONES is a problem in Staines as there is some evidence of influence in pot styles from the south-west (see MD 1 and MF 1) where CHALK-tempering was fairly common; as well as from the Oxford area where most such inclusions are apparently from older LIMESTONES. More precise methods of identification need to be used on these inclusions which can appear very similar when viewed through a low-powered microscope.

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Fig. 4. Staines: Late Saxon and Saxo-Norman pottery (1/4).
Saxon and Early Medieval Staines

Dating and Association: The simple rim forms of the cooking-pots are typically Late Saxon to Saxo-Norman. The sharp neck and base angles, even wall thickness and occasional internal throwing rings indicate that this is another of the more sophisticated wheel-thrown Saxo-Norman wares and the consistency of firing and make-up of the paste tends to confirm this. The lattice combing of No. 7 from Z99 (Grouch 1976, Fig. 17 No. 50) is similar to that found on vessels from Aldgate, London and Wallingford within the Thames Valley in Saxo-Norman contexts (Chapman and Johnson 1973, Fig. 19 No. 4; Grove 1938, 67, Fig. 1 No. 13), and at Winchester where the motif was employed on some Winchester-ware products as for example a pitcher from pit M31, considered to be of late 11th or early 12th-century date (Guintilli 1964, Fig. 37 No. 4). Cooking pots with slashed rims as No. 7 were found in deposits below Oxford Castle mound erected c. 1070 (Jope 1952–3, Fig. 34 Nos. 37, 38). The finger-impressed cooking-pot rims may indicate a post-Conquest date for these vessels, as at Oxford these are only rarely found before the mid to late 11th century (Mellor 1976, 259, Fig. 12 No. 11).

Sherds of this ware-type were associated with several other Saxo-Norman fabrics in pits and ‘dark earth’ layers in Staines; and No. 7 was associated with several MK vessels of 12th century or earlier date. On the basis of the above, the date for the use of this ware is probably late 11th to 12th century.

MD 2B (Fig. 4 Nos. 24–32, 73)

Fast-wheeled; hard; smooth wiped surfaces; well-fired and potted, c. 5–7mm; generally mid grey with brown margins and mid to dark grey surfaces, only rarely with oxidised brown surfaces.

Inclusions: CHALK frequent; fairly well sorted; c. 3–7mm; subrounded. QUARTZ sparse; well sorted, c. 3–5mm, subrounded. SHELL sparse; ill-sorted, thin plates up to 10mm long; IRONSTONE sparse, FLINT rare to sparse.

Vessel forms: Cooking-pots—Two with simple everted rims (Nos. 30, 31) and 6 with more rounded eversions and a square end to the rim (Nos. 24–29). The shoulderless profile of No. 33 has a simple bulbous rim. One sherd is decorated with horizontal and vertical combed bands (No. 32). There are 6 sherds of angled sagging-bases.

Distribution: A fairly constant small percentage of the total number of Saxo-Norman sherds, found on most excavations within Staines as was MD 2A. A total of 71 sherds.

Dating and Association: The simple everted rims are typically Saxo-Norman but the squared-end type seem comparable to the medieval squared and clubbed rims of for example, Hertfordshire reduced wares. The fabric, decoration and method of manufacture is however better related to that of MD 2A and the probable date of usage is late 11th to 12th century. Over 16 sherds from one vessel (No. 73) may be contemporary with later 12th-century fabrics found within the same Pit on site V. Were it not for fabric and context, No. 73 would have been considered an unusual Roman form and there still remains some doubt, but only for this one jar.
Fig. 5. Staines: Late Saxon and Saxo-Norman pottery (1/4).
MD 3 HANDMADE CHALK AND SHELL-TEMPERED WARES

MD 3A (Fig. 4 Nos. 33-35, 37-40)
Handmade and slow-wheeled; fairly hard; smooth slightly soapy feel; horizontally wiped exterior surfaces; generally quite thick c. 7/8mm; mid to dark grey with patchily oxidised surfaces pink-tinged brown to grey.

Inclusions: SHELL freq., illsorted, long thin curvilinear plates up to 0.20mm, and whole or fragmentary fossil brachiopods. CHALK mod to freq., illsorted, c. 0.03–15mm, subangular. FLINT sparse to mod, illsorted, generally over 0.15mm, angular. IRONSTONE sparse, c. 0.02–0.04mm, subangular. QUARTZ rare to sparse, c. 0.03–0.06mm, subrounded.

Vessel forms: Cooking Pots—6 with rounded or square ended simple everted rims (Nos. 34, 35, 37–40) 3 of which are finger-impressed. A row of circular stamps has been impressed on the internal rim ledge of (No. 37). The stamp may have been more complex, but as it was impressed onto a wet body its internal pattern if any, was obscured. These cooking-pots were globular (as No. 33) and with angled sagging bases, 3 found.

Distribution: A small number of sherds (36), found on most excavations in Staines.

Dating and Association: typical Saxo-Norman rim forms, and the internal stamped decoration of No. 37 is similar to that of several other vessels from Chichester (Down 1978, Fig. 11.3 Nos. 56 and 57; 11.4 Nos. 62 and 64) and Southampton (Platt & Coleman-Smith 1975 Fig. 136 No. 26) found in deposits of the 11th to early 12th century. In Staines, the fabric is possibly earlier than the later 12th century types with which it is generally associated. 11th to early 12th century or earlier.

MD 3B (Fig. 4 Nos. 36, 41)
Slow-wheeled; hard; slightly sandy feel; horizontally wiped exterior; generally quite thick c. 7/8mm; mid to dark grey with patchy oxidised brown to grey exterior surfaces.

Inclusions: CHALK frequent, illsorted, c. 0.08–20, subangular. QUARTZ sparse, illsorted, c. 0.04–10mm, subrounded. SHELL sparse, thin curvilinear plates, up to 0.15mm FLINT sparse, illsorted, angular. IRONSTONE sparse, c. 0.02–0.04mm.

Forms: Cooking-pots—one with simple straight everted rim with rounded end (No. 41). 4 angled sagging bases. Bowl—simple upright sides (No. 36).

Distribution and Dating: much the same as the closely related fabric MD 3A. 19 sherds only.

MD 4 BLACK-FACED SHELLY WARE (Fig. 5 Nos. 51–72, 74)
Fast-wheeled; hard; fairly smooth wiped surfaces, well-made and fired; c. 6–7mm; generally mid grey, pale red/brown margins, black exterior.

Inclusions: QUARTZ moderate, well-sorted, c. 0.03–0.05mm, subrounded, pale pink and grey. SHELL moderate, thin curvilinear plates c. 0.05–15mm and occasional fossil brachiopod. CHALK sparse, illsorted, c. 0.08–12mm, subrounded IRONSTONE sparse, illsorted, sub-angular FLINT rare illsorted, c. 0.05–15mm angular.

Vessel forms: Cooking-pots—5 with simple straight everted rims (Nos. 51–54, 57) and two with more wedge-shaped eversion and similar from a much larger cooking-pot (Nos. 55, 56, 58). Only 1 of these rims had been finger impressed (No. 57). Two other cooking pots with a slight external bead (No. 67) and on the interior of (No. 68). Eight rims with gently curving everted rims and squared external bead at the tip (Nos. 59–65, 71), only one of which was finger-impressed. This last cooking-pot type was globular, and with sharply angled sagging-base, 10 found. One other cooking-pot type is represented, (No. 69), with square clubbed rim and straight walls.

Bowls—3 were found; simple straight-sided (No. 72), one with more rounded walls and an externally-beaded rim (No. 70), and one with a clubbed rim with finger-impressions (No. 66).

Handled vessel—part of a cylindrical handle with small holes c. 0.50mm diameter pierced through from both ends (No. 74) possibly from a bowl.

Two decorated sherds; horizontal combing of the body and stab-marked horizontal rows separated by grooves (not illustrated).

Distribution: Almost half of the sherds were found within 12th-century pits on site V, although nearly as much came from ‘dark-earth’ layers on Z. A total of 133 sherds.

Dating: The similarities of certain cooking-pot forms, general finish and firing conditions, indicate some connection with MD 2B ware, and it is not always easy to distinguish between the two. It seems likely that they were in concurrent use or else MD 4 is a later variety when more black faced wares were in demand. Similar decorated sherds to those described above have been found in Saxo-Norman deposits at Chichester (Down and Rule 1971, Fig. 7.9 No. 24). The deliberate reduction of the pottery at a late stage in firing is as characteristic of the fabric as the fossil brachiopods. Other black faced wares but with less frequent shell (mollusc) inclusions are typical of 12th-century deposits in Aylesbury, Bucks (Farley 1976, 252). Probably 12th century.

MD 5 RED/BROWN-FACED SHELLY WARE (Fig. 6 Nos. 75–95)
Fast-wheeled and occasionally slow-wheeled; hard; fairly smooth surfaces; generally mid grey core and margins with red-brown surfaces.

Inclusions: SHELL frequent, illsorted, thick laminated and curvilinear plates, generally 0.10–20mm and occasionally up to 0.80mm long. IRONSTONE sparse, illsorted, c. 0.03–10mm, subrounded, dull red. QUARTZ—rare to sparse, illsorted, c. 0.04–0.08mm, subrounded.

Vessel forms: 6 rims are developed versions of the form in which cooking-pots of the ancestral fabric MD 1, were manufactured i.e. everted with thickened external bead (Nos. 88–93). 15 other rims, some with simple triangular thickening of the rim-tip or either external or internal beads (Nos. 75–87, 94, 95). 17 angled base sherds. The only decorated sherd has incised lines (not illus.).

Distribution: More than half the sherds came from Z, and a third came from V. None however were found in...
Fig. 6. Staines: Saxo-Norman pottery (1/4).
the 12th-century pits of Y although the fabric was present in similarly-dated pits on Z, V and W. A total of 173 sherds.

Dating: This fabric-type, generally of a homogenous nature although occasionally found with rather more quartz than the Staines examples, is common within this part of the Thames valley. Of sites known to the author, it has been found at Old Windsor, Yeoveny, Wraybury, Chertsey, Apps Court, Shepperton Green and Brooklands along the river and in neighbouring districts at Fulmer, Bucks; Northolt, Middlesex; and Reigate, Surrey.2 Although plentiful at these sites in late 11th and 12th-century contexts, it may have been produced earlier as a development of MD 1 (Staines CAD Pit 20 where associated with sherds of MD 1 and MF 1 fabrics). It is generally more thin-walled than MD 1 and was manufactured occasionally on a fast wheel. Probably late 11th and 12th century.

**ME: SAXO-NORMAN IMPORTED WARES**

**ME 1 RED-PAINTED WARES**

Fast-wheeled; very hard with metallic ring when stuck; clay ground almost fused. Pale buff to cream.

Inclusions: QUARTZ freq., wellsorted, c. 0.01–0.03mm, subrounded, white/opaque. IRONSTONE sparse, well-sorted c. 0.005–0.01mm, subrounded, occasionally larger grains.

Comments: Only 3 sherds positively identified from excavated material, 2 of which have been published from Z (Jones and Shanks 1976, Fig. 20 Nos. 162 and 163), and the other is to be published from Y (Jones in Crouch, forthcoming). Most probably from wine amphorae imported from the Continent.

**ME 2 ‘ST. NEOTS—Type Ware’**

2 rim-sherds were described in the Elmsleigh House report as being of ‘Developed St. Neots-type’ (Jones and Shanks 1976, 102-3, Fig. 17 Nos. 45 and 47) based on similarities with examples so described at Northolt (Hurst 1961, 253).

Microscopic examination of these rims however, has shown an even closer visual match with St. Neots-type ware itself as described by Hunter (Hunter 1979, 230–240) and from my own analyses of examples from Hertford and Aylesbury Museums. More examples have been found since 1975 in Staines and share with St. Neots-type ware similarities of manufacture, finish, texture, colour, and frequent inclusions of crushed shell and less common fossil Bryozoa. There is in addition the form of cooking-pot/jar with everted rims and externally-beaded rim typical of St. Neots-Type ware assemblages.

Despite all these similarities it is probable that most, if not all sherds of this fabric-type in Staines were manufactured in the Late Roman period. Where found securely stratified it has always been accompanied by other Roman coarsewares and never with any Saxon sherds. The range of forms is limited to the cooking-pot/jar which is also typical of Late Roman shelly wares locally, and none of the inturned-rim bowls that characterise St. Neots-type ware assemblages have so far been found in Staines. Of at least 5 or 6 late to sub-Roman shelly ware fabrics identified within the town, this type was probably introduced via the Thames from a manufacturing area somewhere above Oxford, from where derives the fossil bryozoa fragments. St. Neots-type ware vessels from a similar source or from the north-East via Hertford and St. Albans may eventually be found in Staines as examples have been identified within Middlesex at Northolt and London. Where the evidence is solely based on body sherds these will be difficult to distinguish from the earlier Roman fabric. Several excavated Saxons sites around Staines were also occupied during the late Roman period and caution should therefore be expressed over future identification of St. Neots-type ware when the evidence is insubstantial.

**MF AND MG: LATE SAXON/EARLY MEDIEVAL GRIT-TEMPERED WARES**

The only common characteristic of these fabrics is the abundance of coarse flint temper. Whereas MF 1 may be regarded as a specific ware-type with little variability in the proportions of its inclusions, MG fabrics are much more diverse and seem similar to the transitional MH fabrics.

**MF 1 LATE SAXON GRITTY WARE** (Fig. 5 Nos. 42–50)

Handmade and slow-wheeled; hard; coarse-textured; shiny pimpled surfaces; variable thickness; dark grey with black or oxidised muddy brown surfaces.

Inclusions: FLINT frequent, illsorted, up to 0.50mm, angular. QUARTZ frequent, illsorted, c. 0.03–0.15mm (average 0.05–0.08mm) subrounded. QUARTZ sparse, illsorted, up to 0.15mm, angular. CHALK sparse, illsorted, c. 0.02–0.06mm, subrounded. SHELL rare to sparse, illsorted, long curvilinear plates. IRONSTONE rare to sparse.

Vessel forms: Cooking pots—5 with gently curving everted rims (Nos. 43, 45–47, 49), one of which has a fairly long and thin collar with an external step at the neck (No. 43). A similar rim has a thickened rim tip and internal bevel (No. 45) and another has an external bevel (No. 44) 2 rims have an unusual lenticular cross-section (Nos. 42, 48). These vessels have strong neck angles with little or no shoulder, and angled sagging bases. Decoration included diagonal combing down the body from below the neck, or rough horizontal scratch-marking of the same area (Nos. 42, 45, 50).

Distribution: A total of 42 sherds positively identified from amongst the similar gritty fabrics MG A and MH 2. Small quantities found in several 12th century and later features within the town, but on CAD associated with other fabrics of possible late Saxon type in Pit F2.

Dating: Diagonal combing down the body is a typical 12th century decorative trait within the southern Chil-terns (Hinton 1973, 183) with Staines here presented as the extreme south and east point of distribution. Scratch-marking was commonly employed in Hampshire
Fig. 7. Staines: Early medieval pottery (1/4).
MG SAXO-NORMAN AND MEDIEVAL FLINT TEMPERED FABRICS

MG A (Fig. 7 Nos 168–75)

Slow and fast-wheeled; hard; coarse gritty feel; variable thickness, fabric and colour. Generally dark grey with patchily oxidised brown external surfaces, occasionally wholly grey.

Inclusions: QUARTZ frequent, illsorted, c. 0.03–0.07 mm, subrounded, greys/black/browns. FLINT mod to frequent, illsorted, generally over 0.15 mm, angular. IRONSTONE rare to sparse, illsorted, c. 0.03–0.08 mm, subrounded.

Vessel forms: Cooking-pots—1 simple everted and thumb-impressed rim (No. 170), 1 everted rim with external bead and a stepped angle at the neck (No. 174) and other beaded and everted rims (Nos. 171–173).

Jugs—several sherds forming the upper part of a jug with a cordon on the collar, thumb-impressed handle and diagonal combing of the body (No. 169). A smaller jug (No. 175) was predominantly tempered with crushed FLINT.

Curfew—Rimsherd with horizontal thumb-impressed strip immediately above the squared rim. Soot-blackened interior (No. 168).

Gistern—A tubular bunghole prepared for insertion into the wall of a large vessel (not illus.).

Distribution: Found in late 12th and 13th century or later deposits from most excavations in Staines. A total of 66 sherds.

Dating: A number of different wares are included within MG A that are similar only in that they contain frequent FLINT but no calcareous inclusions. The cooking-pot fabrics may only represent the extremes of other variably tempered pottery such as MF and MH types. The stepped neck of (No. 174) was used in Hampshire and Sussex during the late 11th and early 12th century, as at Chichester (Down 1978, Fig 11.1 Nos. 11–14) and Southampton (Platt and Coleman-Smith 1975, Fig. 136 No. 21), on coarse flint-gritted types of cooking-pot. On the basis of their finish and firing, the 2 jugs each represent a different ware-type. The squat shape and impressed handle of (No. 169) would seem to indicate a late 12th/13th-century date and the decoration of the body by diagonal combing continues the tradition of an 11th/12th-century cooking-pot fabric (MF 1). The cistern and curfew could be specialised products manufactured in this coarse fabric much later in the medieval period, possibly as late as the 14th century.

MG B (Fig. 7 Nos. 144–164)

Generally fast-wheeled; hard; coarse feel. Three possible sub-divisions:— (i) as MG A, gritty texture, dark grey and patchily oxidised for external surfaces; but now more often fast-wheeled. (ii) Black, glossy surfaces with occasional red exterior patches (iii) red-brown with black surface skin, generally fast-wheeled.

Inclusions: QUARTZ frequent, illsorted, c. 0.03–0.07 mm, subrounded, greys/dark browns. FLINT sparse, illsorted, generally over 0.10 mm, angular. IRONSTONE rare to sparse.

Vessel Forms: Cooking-pots—3 simple everted rims, 1 with rounded tip in subtype ii (No. 144); one with squared-end (No. 146) and another slightly wedge-shaped (No. 148) both in subtype i. 11 everted and thickened rims with beads (Nos. 147, 149–159) of which 5 were finger-impressed, both subtypes (i) and (iii) represented. 6 squared-club rims (Nos. 139–164) most of which were in subtype (iii).

Bowls—2 with slightly curved walls and beaded rim, both in fabric subtype (i).

Decorated sherds—one with a curvilinear applied and finger-impressed cordon in subtype (iii); 2 sherds with diagonal combing in subtypes i and ii; and a scratch-marked sherd in subtype (i).

Jugs—part of a centrally-depressed handle pierced at intervals along its spine. Subtype (iii) fabric.

Distribution: commonly found within deposits of the 12th and 13th century. A total of 146 sherds of which more than half were of the variable subtype (i) fabric. All but 26 of these sherds came from Y and Z.

Dating: As with MG A this fabric-type probably includes several different wares, which for the moment can only be divisible into 3 sub-groups according to kiln-firing techniques and similarity of cooking-pot forms. Sub-group (i) includes all sherds that do not fall within the 2 other, more easily recognisable sub-groups. They seem closest to MG A and have the same simple everted, or everted and beaded rims with occasionally, finger-pressed edges. It is variously fired but is more often fast-wheeled than MG A; 12th to early 13th century. Sub-group (ii) is part of what was once called ‘Early Medieval ware’ (Hurst 1961, 259) exemplified by MG B, MHA and MF 1 fabrics with characteristic glossy, pimpled surfaces, black fabric, simple everted rims, and of hand or slow-wheel manufacture. These may have been produced during a relapse period of south-east English pottery that probably occurred towards the end of the 11th century, or else represent later aspects of Late Saxon MF ware. Both share the use of scratch-marking and diagonal combing.

Sub-group iii is almost certainly the product of a local 13th-century industry. The rim forms, fast-wheeled manufacture and constant firing procedure are typical of the period.
MH: SAXO-NORMAN TRANSITIONAL FABRICS

Of these fabric-types, a number of different wares may eventually be recognised. They are described here only as 2 extremes MH A and MH B of a loose tradition of pottery manufacture, and several forms suggest that this was a long-lived phenomenon that probably continued in use until the 13th century at least.

The more calcareous examples of MH A may be the sandier sherd of fabrics MD 2B, MD 3B and MD 4 or vice versa. MH A is arbitrarily separated from MH B on the basis that the amount of sand and calcareous filler is roughly equal in the former, whereas quartz sand becomes the dominant inclusion in MH B. The more coarse and flinty types of MH B probably include at least some sherd of MG fabric, with the only apparent difference being an absence of calcareous inclusions.

The fabrics MH A, MH B and MF 1 are linked by the common use of diagonal combing of the body although in MH B this style of decoration was only employed on jugs. Scratch-marking, occasionally found on MH B sherds, was more commonly used on MF 1 pottery. There was therefore a continuum in the pottery manufacturing trends of Staines between calcareous, flint-gritted and sand tempered wares that merge towards the extremes of their fabric range. In addition, the common potters' practice of preparing clay mixes for those parts that require strength such as bases and handles, should induce caution about the possibility of defining 'type series'—of pottery fabrics when the sample is of a mixed tradition rather than specific and easily identifiable wares.

MH A (Fig. 6 Nos. 96–143)
Generally fast-wheeled, occasionally slow-wheeled; hard; sandy feel variable colour, generally grey with patchy oxidised and reduced surfaces although more of the former. Some glazed sherds.

Inclusions: QUARTZ moderate amounts, illsorted, 0.03–10mm (average 0.04–0.06mm) subrounded. CHALK sparse to mod; c. 0.02–0.08mm, angular, illsorted. SHELL sparse to mod; c. 0.05–10mm. IRONSTONE sparse; c. 0.03–0.08mm subrounded, illsorted. FLINT rare to sparse; c. 0.05–20mm, angular, illsorted.

Vessel forms: Cooking pots—14 with simple straight-everted rims, 4 of which are finger-impressed (Nos. 96–108); 4 everted and externally beaded rims, 1 of which was finger impressed (Nos. 109–112); 5 everted and clubbed rims, 1 of which was finger impressed (Nos. 113–117); and 2 squared-club rims (Nos. 118, 119). 25 angled-sagging bases were found of these and other vessels.

Bowls—3 simple and straight-sided, 2 of which were finger-impressed (Nos. 122, 123, 127); 1 with squared and finger-impressed rim (No. 124) and 2 with slightly inturned rims (Nos. 126, 128).

Jugs—1 with simple squared-end rim and corrugations of the neck (No. 143) and sherds from a similar vessel (No. 142). Both of these were externally green-glazed. Other jug sherds have white slip decoration of the body probably of lattice-work design, covered with a thin, clear to green glaze, rendering the stripes yellow (No. 140).

Pitchers—a short tubular spout from the upper part of a vessel with curvilinear incised decoration of the body (No. 139).

Pitcher/Cooking-pot—a rim and body sherds of the same vessel, both with horizontal series of square rouletting extending over the collar and down the body. The everted rim is slightly bulbous (No. 129).

Other decoration of unglazed sherds include diagonal combing down the body (5 sherds mostly from J and C including Nos. 131, 135), horizontal zones of stab-marks separated by grooved lines (No. 134), other horizontally grooved lines (5 sherds including Nos. 132, 133, 136, 141) or curvilinear and intersecting grooves and combed curvilinear designs (No. 130). 1 body sherd has a horizontally applied strip with regular and rounded finger-impressions (No. 138).

Distribution: commonly found within deposits of the 12th/early 13th century within Staines. A total of 241 sherds of which 10 were glazed, and four were slip-decorated and glazed.

Dating: the predominance of Saxo-Norman forms and decoration suggest that most of these fabrics were in decline by the early 13th century. Spouted pitchers and jugs were made, and of the former, at least 2 vessels have the rilling of the neck that is characteristic of 12th-century tripod pitches as found in more western parts of the Thames Valley (Biddle 1961–2, 142–149, Figs. 19 and 20). Other sherds with slip decoration recall 'West-Kent'—style jugs. (Thorn 1975, 118). Rouletted decoration of the type displayed on the cooking-pot or wide-mouthed pitcher No. 129, is a common Saxo-Norman trait over SE England in the 11th and 12th century, and is frequently seen on tall pitcher forms in the Upper Thames Valley (Jope 1947, 56). The probable date for most vessels of these fabric-types is from the 11th to the 13th century.

MH B (Fig. 7 Nos. 176–216)

Much the same characteristics as for MH A. Generally fast-wheeled; hard; sandy feel. Variable in colour but generally grey with patchy oxidised and reduced surfaces. Most of the jug sherds are grey with red/brown surfaces.

Inclusions: QUARTZ frequent, illsorted, c. 0.03–10mm (average size 0.03–0.05mm) subrounded. FLINT moderate, illsorted, c. 0.03–15mm, angular. IRONSTONE sparse,
Saxon and Early Medieval Staines

Vessel forms: Cooking-pots—8 with simple straight-everted rims (Nos. 176-182, 194) and one similar with slightly thickened end (No. 185). 10 everted rims with external bead (Nos. 183, 184, 186-193) and 1 similar with finger-impressed rim (No. 195). Four squared-club rims, 3 of which are inward-sloping (Nos. 196-198) and 1 is flat-topped (No. 199). Decorated sherds probably from cooking-pots include a stepped neck with scratch-marking of the shoulder (No. 202); combed curvilinear and horizontal patterns (No. 204); and diagonal combing of the body (No. 205) which is also present on some jug sherds.

Jugs—35 glazed sherds probably from jugs, nearly all in a red-brown fabric with a grey core. The green or clear glaze is usually thin and so the sandy feel of the underlying surface inclusions is retained. Some sherds, like MH A, were decorated with cream-slip trellis-work on the body rendered yellow by the glaze cover (5 sherds including Nos. 209 and 214) or more rarely have overall cream-slip (2 sherds not illustrated). There are 4 strap-handles; one with slashed decoration and a white slip dribble down the centre, and thin green glaze on the upper surface (No. 200); another with thumb-impressed decoration down each side of the handle, a diagonally-combed body and thick clear glaze (No. 201); a flatter strap handle unglazed (No. 203); and the stub of another with deep impressed decoration on the body and overall green glaze (No. 213). Similar deeply impressed rows are present on sherds (No. 207) with a thin green glaze and (No. 208) also with grooved horizontal lines and a green glaze that shows orange due to the surface colour. Other decorated sherds include one with a grooved wavy line below a pitted green glaze (No. 206); and two sherds with combed wavy line zones below a thin pale green glaze (Nos. 210, 211). 1 sherd from V may be a waster and has a green glaze spot (not illustrated).

Curfews—1 rim fragment with interior sooting (No. 215). Another sherd, thick, with a vertical thumb-impressed strip may be from a curfew or a storage-jar (No. 212).

Pancheon—a large rim fragment from a vessel with an external rim diameter of c. 52cms. Wavy line grooved decoration on the interior, exterior and top of the rim and on the shoulder (No. 216).

Distribution: common within deposits of late 12th/early 13th century and later within Staines. A total of 132 sherds of which 27 were glazed and a further 8 were slipped and glazed.

Dating: Although the cooking-pot rims are similar to those of MH A, most could have been produced during the later 12th and 13th centuries to be sold alongside the more closely-datable jug forms also in these pottery fabrics. These included glazed and unglazed jugs with either plain, thumb-impressed, or slashed strap handles and sometimes a combed body; ‘West Kent’—style slipped and glazed wares; and others with horizontally combed zigzag patterns or impressed rows. All of these types may have been in concurrent use until superseded by the products of the Surrey white-ware industry.

Curfews, pancheons and storage jars are vessels which would always have required a coarser (more refractive) mix of temper to withstand stress during firing and use, so these may be of much later date.

Considered overall, the date for most of these fabrics is probably later 12th and early 13th century, whilst some specialised forms may have been manufactured as late as the 14th century.

6. CONCLUSIONS

Most of the reasons for the growth of the Roman small town of Pontes during the 1st and 2nd centuries AD can also be cited for the marketing centre of Staines which came to occupy the same site during the Saxo-Norman period. The site is at the confluence of 2 rivers where a major road to the south-west could best cross the Thames. The brickearth and loams provided good arable land and there was abundant pasture. The town would only decline if the holders of the land on both sides of the Thames were in conflict; during raids by foreign aggressors; or in times of flood. Evidence from both literary sources and excavation suggest that all of these threats were realised at various times between the later Roman period and the 11th century.9

There was serious flooding in the period after c. AD 400 at a time when it is at least possible to conjecture a British survival in the Staines area10, and further flooding during the early years of Saxon settlement which was perhaps as early as the late 5th or 6th century on the evidence of an early Saxon spearhead and typically decorated pottery from stratified deposits. Some of the ditches dug along the southern riverbank could date to this or a later period up to the 9th century. Their abandonment may coincide with Danish raiding and the demise of the minster. There is, however, no definite evidence that these features were part of a defensive circuit and a high bank would have been unattainable in the gap between the ditch lines on sites W and Z. A rampart of box construction however would have been
quite feasible. The narrow, inclined ramp on site Z between 2 lines of curving gullies may have served as a beaching-point for craft in the channel.

There is no evidence of Saxon settlement on the far west of the town island, and it seems likely that the central area was the focus of occupation during the Early to Mid Saxon periods. It should be noted however, that no features can definitely be dated to the Mid Saxon period. In the rare contexts where grass/chaff-tempered sherds (MA 1) have been found in association with other post-Roman pottery, it has been of early Saxon types, and there is none of the more sophisticated grass/chaff-tempered wares found in late 8th or early 9th-century deposits at Old Windsor. This would seem to suggest that the abandonment of most, if not all of the waterfront features containing this pottery is likely to have occurred during the period of contested lordship of these Thameside settlements that began in the mid 6th century and continued throughout the Mid Saxon period. If however, the grass/chaff-tempered pottery tradition in Staines continued to be crudely-made through the Mid Saxon period, then a later abandonment of the gullies is possible.

The minster at Staines alluded to in later documents seems to have been abandoned either before or during the first Danish incursions. Its authority, and probably that of its successor church, over a manor in South Buckinghamshire suggests that it held an important ecclesiastical role within the western area of ancient Middlesex even after the creation of Buckinghamshire in the late 9th/early 10th century. If St. Mary's parish church stands on the site of the pre-conquest religious foundation, then an area of settlement during the Mid Saxon period may have focussed on Binbury.

During the events of the Danish Wars and until the peace of the mid 10th century Staines would have been of strategic importance. It lay on the Thames at its confluence with the Colne whose headwaters to the north lay within Danelaw; and at a major crossing point. From the late 9th century King Alfred and his successors embarked on an interlinked programme of defensive and commercial development across southern England. Riverborne trade was encouraged along the Thames by Alfred with grants of foreshore in London to important ecclesiastics and major river-crossings were fortified by Æthelred, Aethelfleda and Edward the Elder in the early 10th century. It seems likely that Staines gained its trading facilities in London at this time in return for playing its part in the defence of the realm. It is not unreasonable to assume that a specific aspect of this would have been the defence of the river-crossing but only further excavations on the High Street and Hythe banks would provide proof of this supposition. Saxon, Viking and Carolingian-type weapons found in the River Thames at Staines may indicate that some skirmishes took place here. In the late 9th century, Edward and Æthelred, in laying siege to the Danes at Thorney, may well have disposed troops to guard the southern flank through Staines by which the Danes could have escaped back across the Thames in avoidance of London.

In addition to its strategic position and minster, Staines was also the centre of a royal estate until the latter part of the 10th century, as was nearby Old Windsor which may have been a palace site even before that of Edward the Confessor.

During the renewal of Scandinavian hostilities in the late 10th and early 11th century, a Peace-Gild established throughout Middlesex partly for reasons of defence, may have had some effect on raiders. The area was avoided by the
Viking army of 1009 and although they are said to have crossed the Thames at Staines, it is possible that the town was held as a western bulwark of London and the Peace-Gild. Jurisdiction over the river to Staines when first recorded in the early 12th century resided in the Castles Barnard and Montfichet in London. Whether or not Staines was involved in the defence of the Thames Valley in the late Saxon period, there is no evidence of military dispositions on the town island or indeed of much occupation at all. The King’s Manor or that of his reeve probably stood on Binbury, which may have continued as a settlement during this period.

During the early 11th century many members of the Royal Court who were of Danish stock, but there is little evidence for the settlement of Scandinavian peasantry in the Windsor-Staines area. The pottery of this period from Staines does not reflect obvious influence from products made within Danelaw, and continued for the most part as handmade wares of shelly (MD 1) and gritty (MF 1) fabrics although some of the fast-wheeled calcareous-tempered pottery (MD 2) may have been in production before the Norman Conquest.

Through the Kings’ generosity to Westminster Abbey, Staines by the middle of the 11th century had become the focus of an important rural estate with sokeland and berewicks, London properties, burgesses and a reeve. A marketing centre had been established on the town island and goods were traded from as far as Northern Europe.

Until the late 12th century, Staines was probably affected by the growth of Old and New Windsor and Chertsey operating within its potential marketing area. A bridge at Staines was perhaps the advantage that secured its prosperity during the 13th and early 14th centuries. An earlier bridge seems unlikely as the commercial interests of Chertsey Abbey and the King would have been seriously affected, but it probably remained an important crossing-point.

Large amounts of pottery discarded on the town island during the later 11th to early 13th century have been found in excavations. They show a diversity of fabric and decorative traits that have similarities with pottery of the Upper Thames (Oxford region) and the Hampshire/Old Berkshire chalklands. The production of fast-wheeled sandy wares came to dominate the market by the beginning of the 13th century, culminating in the near-monopoly of the Surrey white-ware industry from as early as 1250. At this time some parts of the town underwent some replanning, a market and fair were granted, and the bridge was definitely in use prior to 1222.

Staines became the focus of the affairs of the Kingdom in the summer of 1215, for it was here that the Barons and Bishops awaited their parliament with King John, and it may also have been here that Magna Carta was signed, according to the medieval author of the ‘History of the Kings of England’ (Richardson 1968). At this important event when Staines was for a few brief months centre-stage of English history, this summary is concluded.

NOTES

1. Archaeological work in Staines began in 1969 with a series of small excavations undertaken by Maureen Rendell for the London and Middlesex Archaeological Society. Since 1974 a small professional team funded by the Department of the Environment have excavated a series of sites in the Central Area Development of the town with the assistance of the Spelthorne Archaeological Field Group. In 1980 the administrative responsibility for archaeological work in Staines passed to Surrey County Council which was already responsible for the rest of Spelthorne Borough since local governmental reorganisation in 1965.

2. There remains some doubt as to the derivation of the place-names Binbury, first recorded in the 14th century, and Budbury south of the town, transcribed as Budbury Hill Field on maps of the 19th century. The suffix ‘-bury’ may originally have described either a fortified enclosure (OE beorg) or a hill or mound (OE haga). The prefixes ‘Bin’ and ‘Bud’ may be abbreviated forms of personal names although another possible derivation may better accord with the topography of Staines. ‘Bin’ may have come from OE binnan meaning ‘within’ and ‘Bud’ from OE buan meaning ‘without’, for whereas the former was part of the demesne farm, Budbury lay in the common fields.
Several local place-names such as Chertsey, Walton, Bedfont, Biddle (1961/2), M. Biddle 'The Deserted Medieval Village of Seacourt, Berkshire' (1976).


4. Sawyer 1968, No. 774 Edgars charter of 969; No. 1141 King Edward


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JOPE (1947), E. M. Jope: 'The Excavation at Aldermanbury, and partly within the area of the Saxon palace site of Aldermanbury, and partly within the area of the early 19th-century map (M.R.O. 809/Misc/58), roads and causeways may be earlier. Although there are broad similarities with both MF and MG fabrics, we must await detailed analysis of the finds from excavations directed by Mr. Farley.'

Fig. 2. The topography of Staines: watercourses are as shown on an early 19th-century map (M.R.O. 809/Misc/58), roads and causeways are those most probably extant in the 11th and 12th centuries and were most likely in existence during the Roman period. Land liable to flooding is shown stippled and the remaining areas are the more permanent land surfaces of brickearth overlying gravels which is the Fland Plain Terrace. Their mapping is from the R.S. Geological Survey (Deft) Sheet 269 with some alterations in the Staines area as a result of recent excavations and site-watching. The watercourse running north of, and roughly parallel with the High Street is Sweeps Ditch which is fed from a stream by Hale Mill so that it runs both west to rejoin the Colne, and east then south to the Thames.

Several local place-names such as Chertsey, Walton, Bedfont, Winkesham, Winkesley, Winkesham and Lodderlake attest to the survival of sub-Roman elements in place-names of the area. In addition, there seems to have been some continuity in the use of settlement sites by Romans and Saxons as for example at Staines, Hythe, Yeovensley Lodge, Wraysbury, Old Windsor, Egham, Chertsey, Thorpe, Shepperton and Shepperton Green.

ELTHAM PALACE 1975-79 SITE LOCATION PLANS

ELTHAM PALACE circa 1650
Area of 1975-79 excavation shown thus ■

Fig. 1. Eltham Palace: Overall plan, with location of site and of excavation.
EXCAVATIONS AT ELTHAM PALACE, 1975–9

HUMPHREY WOODS

SUMMARY
The earliest structure on the site was built of timber and belonged to the late Saxon period. There were two further phases of timber building before the earliest phase of stone building, a fortified manor house belonging to Antony Bek, Bishop of Durham: the Hall and Chapel of this establishment were found during the excavations. In 1305 Bek granted the reversion of the property to Edward, Prince of Wales. Four phases of building were identified during the subsequent life of the site as a royal palace between 1311 and the Civil War, when it was demolished. These years saw the construction by Edward IV of a range of apartments bordering the moat at the west side and the replacement of Bek’s chapel by one built for Henry VIII in 1518–28.

HISTORY OF THE PROPERTY OF ELTHAM

Before the Conquest Eltham (Alteham) was a property of Edward the Confessor. The Domesday entry begins as follows: ‘Haimo holds Alteham of the bishop. It was assessed at one sulung. There is land for 12 ploughs. In demesne are 2 ploughs, and 42 villeins with 12 bordars have 11 ploughs. There are 9 serfs and 22 acres of meadow. Wood for 50 pigs . . .’ Haimo was Sheriff of Kent, and he held Eltham on behalf of Odo, Bishop of Bayeux and Earl of Kent.

After the exile of Odo in 1088 the estate became part of the honour of Gloucester upon the marriage of Haimo’s niece to Robert Fitz Roy, Earl of Gloucester. The Fitz Roy line failed for want of a male heir and in 1216 Eltham passed to Gilbert de Clare, the son of Richard de Clare by Amicia, youngest daughter of William Fitz Roy. In 1278 Gilbert de Clare granted the Eltham estate to John de Vesci, and in 1295 his heir, William, conveyed the manor in fee to Antony Bek, Bishop of Durham.

In the words of John of Graystanes, a contemporary chronicler, Bishop Bek ‘curiosissime aedificavit Manerium de Eltham’ (‘most curiously built the manor of Eltham’), but in 1305 the bishop granted the reversion of the property together with the newly built manor house to Edward Prince of Wales, son of Edward I (Strong 1958). From 1311 onwards Eltham was a royal palace and expenditure on it is thoroughly documented in the royal exchequer accounts, now preserved in the Public Record Office (Brown et al. 1963, 930–7; 1980, 78–86).

During the Commonwealth era following the Civil War the manor and palace of Eltham was sold to Colonel Nathaniel Rich for £2,754. Colonel Rich razed all the buildings to the ground, with the exception of the great hall built by Edward IV. In 1931 Stephen Courtauld leased the site, restored the Hall and built the present house, the drive of which borders the area excavated in 1975–9. The Courtauld House is now occupied by the Ministry of Defence: the Great Hall and moat walls are in the care of the Department of the Environment.

PREVIOUS EXCAVATIONS AT ELTHAM PALACE

Excavations at Eltham Palace were first begun by the late Dr Donald Strong and Mr Maurice Craig in 1952 for the (then) Ministry of Works. These excavations
concentrated on the two perimeter walls on the western side of the Great Court: the moat-retaining wall built c. 1300 by Antony Bek, with its corner towers at each end, and the later retaining wall built 5.3m further west by Edward II's queen, Isabella. These investigations were concluded in 1953. A little further work was done in 1957 by Mr Peter Curnow, who located the eastern face of Bek's retaining wall and established its width.

The only records of these excavations to have survived Dr Strong's early death are a number of photographs and two drawings. However, a plan of the excavations was published in *The History of the King's Works* (Brown et al. 1963, 932, Fig. 70) and the wall footings have been consolidated and put on permanent display to the public. During the preparation of this report the author attempted to integrate the information contained in this archive into an overall interpretation of the building sequence in the Great Court, but unfortunately this proved impossible. Nevertheless, during the excavations described below all the footings excavated by Dr Strong and Mr Craig were resurveyed, together with those excavated by the author, and drawn up at a scale of 1:50 on a single plan. This drawing is available for consultation at the offices of the Inspectorate of Ancient Monuments, Fortress House, 23 Savile Row, London W1X 2HE.

In 1975 the present writer was invited to continue excavations in the Great Court (Fig. 1). The work was undertaken in four seasons: 15 December 1975 to 4 April 1976; 4 January 1977 to 4 March

Plate 1. Eltham Palace: The beam slots, D258 and D269, representing one corner of the late 11th-century timber building sealed beneath the Henrican chaplain's house (*Photo: Derek Craig*).
THE 1975–9 EXCAVATIONS

1. THE PRE-BEK SEQUENCE

The earliest structure to be found was represented by two beam slots (D258 and D269) exposed in the extreme north-eastern part of the area excavated (Pl. 1). These clearly formed one corner of a timber building, but the dimensions and purpose of the building could not be ascertained. It can be dated to the late 11th century on the basis of the pottery recovered from beam slot D258.

Although it is known from Domesday Book that Eltham (Alteham) was a property of Edward the Confessor before the Conquest, when it was held by Alfwood (Aluuold), the pottery suggests a date later than the Confessor’s reign. However, it must be said that few closely-dated groups of 11th-century pottery have been recovered from excavations in West Kent, and this attribution to the late 11th century must therefore be regarded as provisional. On balance it seems probable that the structure was one of the buildings of the manor when Haimo, the Sheriff of Kent, held it on behalf of Odo, Bishop of Bayeux and Earl of Kent.
The next structure was a sub-rectangular building (D163) with walls of turf supported by upright stakes (Pl. 2). This dated from the late 12th century. It had only a short life, for its filling yielded pottery of the early 13th century.

This filling was cut by a pit (D159) for one of the posts of what must have been a very large building, possibly a barn. Only one of these posts had stood within the area of excavation. When the building went out of use this post-pit was re-used as a rubbish pit. The pottery which was recovered from this rubbish-pit was of the early 13th century, suggesting that this structure, too, had only a short life. After this building had been taken down, the area was cultivated, and a thick layer of soil mixed with ash and charcoal (layer D124) accumulated over its site. A considerable quantity of pottery was recovered from this soil, suggesting a date in the period AD 1250–1280.

Overlying this layer of cultivated soil, and cut by the later construction trenches of Bishop Bek’s cellar, was a layer of blue West Country roof-slates, many of which still retained their peg-holes. The slates presumably came from buildings which had been taken down immediately prior to the building of Bek’s manor house. These buildings may have been the home of John de Vesci, to whom the Eltham estate was granted by Gilbert de Clare in AD 1278. It can be presumed that they lay immediately to the north of the limit of excavation.

In 1295 John de Vesci’s heir, William, conveyed the manor of Eltham in fee to Antony Bek, Bishop of Durham, and it was Bek who constructed the substantial stone manor house described below.

2. BISHOP BEK’S MANOR HOUSE
(Masonry Phase I—see Fig. 2)

A plan of the excavations conducted between 1952 and 1957 has been published in The History of the King’s Works (Brown et al. 1963, Fig. 70). These revealed the western perimeter wall of Bishop Bek’s manor complex, together with the towers at its north-west and south-west corners. The excavations carried out by the present author exposed two large structures lying to the east of this perimeter wall; a building with a barrel-vaulted cellar (probably a chapel) and a hall. Almost the whole of the cellared building lay within the area of excavation. However, its south-east corner, like the north-east corner of the hall, was covered by the circular drive of the Courtauld mansion and could not be investigated. The south wall of the hall lay below the Great Hall built by Edward IV and for this reason it, too, could not be investigated.

The Cellared Building

The cellar was 19.7m long by 7.2m wide. The east wall had been destroyed during later building works; a stub of the destroyed wall was found protruding from the buttress at the north-east corner of the building. The north
Excavations at Eltham Palace, 1975-9

The west wall (feature A8) is illustrated in Fig. 3, though the doorway shown in this figure is not primary. The two relieving arches had been dug into natural sand below the level of the cellar floor and their construction trenches were investigated only as far as the water table allowed. The wall was constructed of Kentish ragstone. On either side of the cellar was the springing, also of rag, for a chalk barrel vault, the outline of which survived on the inner face of the west wall. This vault would seem to have terminated some 5.3m from the east end of the cellar, since in the south wall at least the springing was replaced at this point by a vertical wall 2m high (Pl. 4 and Fig. 2). Unfortunately only a 1.9m stretch of this could be exposed as the remainder lay under the circular driveway of the Courtauld mansion.

On the north side of the cellar three buttresses projected from the outer face of the wall. The central buttress was bonded into the wall and would seem to have been part of the original structure, as were the corner buttresses. The buttresses to either side of this central buttress were butt-jointed onto the wall and may thus have been later additions. The central buttress against the south wall would appear to have been original. To the west a second buttress was added, as on the north wall.

The design of the building would seem to have been modified during building. An extra

Fig. 2. Eltham Palace: Phase One.
footing or buttress (BC36) was constructed against the south wall to the east of the central buttress (Figs. 2 and 4). This was apparently built while work on the wall was still in progress, but after the central buttress had been started. A similar footing was added at the corresponding point on the north wall, though this could not be examined in detail owing to the presence of a pear tree growing directly above it.

Half-way along the south wall of the cellar, opposite the central buttress was a relieving arch similar to those in the west wall (Pl. 4). Further west, in the thickness of the same wall, was a ventilation shaft. The top of a second ventilation shaft was found in the north wall: unfortunately, it was largely obscured by the footing for Henry VIII's chapel, which here encased the wall of Bek’s building.

In the westernmost part of the cellar the later infilling was excavated down to the underlying subsoil. The removal of the earliest infill exposed the line of a robbed-out drain running axially east-west along the cellar. The mouth of this drain was located below the sill of the altered doorway in the west wall of the cellar (Fig. 3). The capping stone of the drain, where it passed through the west wall, must thus represent the level of the primary floor of the cellar.

Immediately south of the cellar, and ante-dating its construction, was a layer of refuse containing pottery of the 1260s and 1270s and a penny of Henry III which should not have been lost later than the 1270s—the issue was in any case demonetized at the end of 1280.

The Hall

A detail plan of the hall is given in Fig. 5.

Plate 4. Eltham Palace: Detail of south wall of Bishop Bek’s cellar, showing the change in vaulting (left) at the east end, the central relieving arch, and (next to the far ranging pole) the ventilation shaft (Photo: Derek Craig).
Fig. 3. Eltham Palace: Elevations of west end of Bishop Bek’s cellar and relieving arch A81.

Plate 5. Eltham Palace: West end of Bishop Bek’s cellar, showing the springers of the barrel vault, and the relieving arches. The doorway and brick drains are not primary (Photo: Jenny Tinker).
ELTHAM PALACE 1975-79

Section from north gable of Bishop Bek's Great Hall to south wall of cellar

S
Concrete pipe bed
Pipe

Footing cut away by construction of

\[ ^•^ \]
Ash & charcoal (midden)

\[ ^•^ \]
Mortar

\[ \]
Crushed greensand

\[ \]
Clay

\[ \]
Tile

\[ \]
Brick

\[ \]
Stone

\[ \]
Pebble

Mid brown soil

Dark brown soil

Chocolate brown soil

Fig. 4. Eltham Palace: Section from north gable wall of Bishop Bek's great hall to south wall of cellar.

Plate 6. Eltham Palace: Area I of the tile pavement in Bishop Bek's great hall, and the octagonal stone fireplace F39 (Photo: Derek Craig).
Excavations at Eltham Palace, 1975-9

Fig. 5. Eltham Palace: Detail plan of Bishop Bek's great hall.
Fig. 6. Eltham Palace: Pavement Area I in Bishop Bck's great hall.
This drawing, however, shows the hall after its demolition, and consequently illustrates features such as lead-melting pits which were constructed at the time of demolition. It omits features of the primary phase which had disappeared before the demolition. It is necessary here, therefore, to describe the features of the primary phase. An interpretive plan of the hall in its primary phase, showing its relationship to the Cellared Building, appears in Fig. 2.

The hall was 10.8m wide and more than 22m long. The footing for the north gable wall (BC27) was found to have been partially cut away by the footing for the south wall of Henry VIII’s chapel. Running south from the gable wall, the west wall of the hall (B12) survived for almost its entire length: at the southern end it had been very much damaged by 20th-century buildings, but a stump of it survived in the section which marked the limit of excavation, showing that it continued beyond this point, below Edward IV’s Great Hall.

The line of the east wall of the hall was represented initially by a robber-trench (G125) some 1.1m wide. Removal of the uppermost filling of this trench exposed flint masonry bonded with a very hard off-white mortar. Along the east side of the hall there was apparently a pentise. This was represented by a second, shallower, robber-trench parallel to the first and 3m away from it (G156). At the bottom of this second trench was a layer of crushed chalk, suggesting that this was the material of which the wall-footing had been made. Given the narrow width and shallowness of this footing, it can never have been intended to support a major load-bearing wall. Between the two walls was a layer of pounded greensand chippings, presumably the bedding for the floor of the pentise.

Within the body of the hall five areas of tiled floor were found, together with other
areas of mortar bedding (some with tile impressions) from which the tiles had been removed when the hall was demolished. This floor is described and illustrated in extenso below (pp. 238–244, Figs. 5, 6 and 12, Pls. 6 and 8). The tiling was found to have settled by as much as 0.19m in some places, and in the process to have been pulled away from the west wall of the hall by some 0.12m, such was the instability of the made-up ground on which the hall was built.

The north wall of the hall was much damaged, but it would appear to have been about 4m wide. Within the thickness of this wall was a recess 1.5m deep set on the central axis of the building. Here an area of mortar survived which differed from the areas of mortar within the body of the hall. It contained roof tiles and was set off from the tiled pavement by a straight line defining its southern limit. The presence of roof tiles within the mortar suggests that it was the bedding for something heavier than floor tiles, most probably flagstones, and the straight line defining its southern limit probably marks the riser of a step. This was clearly the position of the dais.

South of the dais was an octagonal stone fireplace (F39) of pitched yellow bricks 150mm long by 110mm thick, surrounded by slabs of Reigate stone with a kerb of half-round moulding. It seems likely that a metal brazier would have stood over the brickwork, and that the stonework was for the raking-out of hot ashes. Presumably there would have been a louvre above in the roof of the hall to let out the smoke.

On the west side of the hall was a porch, on the northern side of which there was a rebate for a door and a socket for a bolt. The porch was floored with flagstones of Upper Greensand. These had split along the line of the porch footing and subsided by 0.23m, giving further evidence of the instability of the underlying strata. The flagstones were laid on a matrix of pounded greensand chippings similar to that in the pentise attached to the east side of the hall.

The Moat Wall

A trench was dug against the inner face of the wall (G218) identified by Dr Strong and Mr Craig in 1952–3 as having been built by Bishop Bek to retain the moat round his new manor house. This trench was some 19m south of that dug by Mr Curnow in 1957.

The inner face of the moat wall was built of chalk, with two offset courses. In the lower part of the wall was a somewhat crudely constructed relieving arch (Fig. 7). The infilling behind the wall had apparently been added as the building work progressed, the surfaces of the various dumps of clay corresponding to stages in the construction of the wall. Much of this clay may have come from digging the moat, but there was an admixture of mason’s waste, mostly fragments of chalk.

The infilling of the area to the east of this wall formed part of the plateau upon which Bek’s hall was built. It can never have been

![Plate 8. Eltham Palace: The porch of Bishop Bek’s great hall, 1979 season, with Areas II and III of the tile pavement. The view is from the south (Photo: Christopher Guy).]
very stable, as shown by the slumping of the floor of the hall. On the surface of this plateau was a coin of John I of Brabant as Duke of Limburg (1288–94), which had been rejected some time around AD 1300.

3. REPAIRS TO THE HALL (Masonry Phase II—see Fig. 8)

The trench described above which was dug against Bishop Bek’s perimeter wall exposed the north-east corner of a structure built against it (G217). The footing of this structure was of chalk and was butt-jointed onto the perimeter wall, part of the face of the latter having been removed to facilitate the joint. Running north from the building was a wall (F112) made of loosely-bonded chalk blocks with some crudely-made red bricks. There were three pilasters of red brick built against the west face of this wall.

During this phase the pentise along the east side of the hall was demolished, and buttresses were added against the east and west walls.

One buttress (B12A) was added at the west side of the hall, butt-jointed onto wall B12. A second buttress on the east side of the hall was represented only by a robber trench (G154). There were no ‘tuskers’ projecting from the face of the wall of the hall to suggest that the buttress had been bonded into the wall, and it seems likely that this buttress, like the first, was an addition. Presumably these buttresses were two of a series built at 6m intervals, the porch at the west side of the hall taking the place of two such buttresses.

No major alterations to the cellared building were noted during this phase.
4. THE BUILDING OF THE ROYAL APARTMENTS (Masonry Phase III—see Fig. 9)

In Phase III the hall and the building adjoining the perimeter wall were demolished and modifications were made to the cellared building. A new range of royal apartments was built close to the edge of the moat.

_The Hall_

The first features associated with the demolition of the hall were two pits (F139 and G173) for melting the lead flashings from the roof and the lead window cames. In each was a substantial mass of molten lead mixed with charcoal. It was presumably because charcoal had become mixed with the lead during the melting process that the lead was not saleable and so was left in the ground.

When found, all the tiles in the hall floor were cracked, and there were areas of intensive burning, giving the impression that when the hall was demolished its roof timbers were thrown down and burnt where they lay on the floor. There were runnels of melted lead between many of the tiles and the same phenomenon was observed in the small cracks between the brickwork and the stone slabs of the fireplace. Overlying the fragmentary remains of the tiles was a layer of ash, topped by a layer of broken red roof tiles. Within this layer was a large quantity of molten window glass, some fragments of floor tile, a penny of Henry VI and some pottery dating from the second half of the 15th century.
Over the ash layer was a thick layer of dumped clay from which more pottery of the same period was recovered. This layer appeared to represent deliberate levelling-up after the demolition of the hall. Only after this had been done, and perhaps some considerable time later, do the walls appear to have been robbed for their stone.

The Royal Apartments

A brick-built range superseded the structures built against the retaining wall of the moat during Phase II. The footing of the west wall of this range (G212) straddled the chalk footings of the earlier building.

From the east wall of the new range projected a five-sided bay window (F47) and the five-sided chimney-breast of a fireplace (G64). Within this fireplace the bricks were blackened by burning, and there was a fireback of Reigate stone 0.15m thick. Immediately south of the bay window was a brick footing with the seating for a timber partition, dividing this part of the new building into two rooms of unequal sizes.

The east wall of a second brick-built range, to the north of the first, was found butted onto the north-west buttress of the cellared building. The remainder of this range lay beyond the limits of excavation (see Fig. 9).
The Cellared Building

The original door was replaced during this phase by an angled entrance from which a vaulted passage led westwards to a flight of steps ascending to the ground floor of the new apartments. Only the entrance and passageway were within the writer’s area of excavation, the steps having been excavated by Dr Strong in 1952. At the same time two chalk-built relieving arches were inserted against the west gable wall, supporting the two corner buttresses. The northernmost of these arches is illustrated in Fig. 3.

The primary floor of the cellar, and the central drain beneath it, were removed and replaced by a new floor of compacted pebbles with drains running along the sides of the cellar. The drains were of red brick, and met in front of the more southerly of the two primary relieving arches on the eastern (inner) face of the gable. The chute for these drains, also of brick, was led under this arch and through the gable wall.

Overlying the pebble floor was a layer of ash. From this layer a group of pottery dating from the late 15th and early 16th centuries was recovered.

5. CONSTRUCTION OF THE NEW CHAPEL (Masonry Phase IV—see Fig. 10)

During this phase the cellared building was demolished and a larger building, identified as a chapel, erected on its site; the west part of the cellar itself, however, was kept in use beyond the gable wall of the new building. Attached to the north side of the new chapel
was a house. A pentise with an oriel containing a seat was added along the eastern side of the range of royal apartments to the south-west of the new chapel.

The New Chapel

That part of the old cellared building which underlay the site chosen for the new chapel was filled up with clay tipped in by the cartload. This filling, which contained pottery dating from the early 16th century, was carried up high enough for the floor of the new building to clear the slighted walls of its predecessor. Unfortunately, nothing survived of this floor.

The western part of the old building protruded some 4m beyond the gable wall of the new chapel. Although the building itself was demolished, the cellar below it at this point was apparently kept in use, since the debris

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**Excavations at Eltham Palace, 1975-9**

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**ELTHAM PALACE 1975-79**

**PHASE FOUR**

1528+

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**Fig. 10. Eltham Palace: Phase Four.**
which filled it contained material datable to
the final phase of the life of the palace. Among
this debris was a remarkable group of frag­
ments from a stucco frieze.

The new chapel was 33.7m long by 11.9m
wide. The west wall (C13) was built of Reigate
stone, but it incorporated a large number of
painted and moulded stones re-used from the
earlier cellared building; where it encountered
the ventilation shaft in the thickness of the
south wall of the cellared building it was
carried over the shaft on a brick arch (Pls. 3
and 4). The footing for the north wall (C124)
was considerably thicker than that of the
south wall. This was because it had to encase
the springing of the destroyed vault on the
north side of the earlier cellar; the inner face
of the footing was carried down clear of the
springing, through the pebble floor of the
cellar. Incorporated into the wall were a large
number of painted and moulded stones from
the earlier building. The east wall of the ear­
ier cellar had been removed, though a stub
of it was left protruding from the buttress at
the north-east corner. The north wall of the
new chapel was carried across this stub on a
brick arch similar to that spanning the ven­
tilation shaft in the south wall.

The central part of the new chapel could
not be investigated, as it lay beneath the drive
of the Courtauld mansion. However, part of
a brick trough for the choir stalls was found
on the northern side of the choir and the east
end of an equivalent trough on the south side
of the choir was found in an area excavated
to the east of the drive (see Fig. 10). Such
underfloor troughs had the effect of turning
the floor of the stall into a sounding board.
Nothing survived of the floors themselves, and
the troughs were filled with destruction debris
which yielded several lead oak leaves sized
and covered with gold leaf.

Attached to the north side of the chapel
were the footings of a domestic building
measuring 10.2m by 6.9m. At the north-east
corner of this building was the base of a newel
stair, and on the southern interior face of the
apartment was a brick fireplace.

The Pentise

Along the front of the range of apartments
erected in Phase Three at the edge of the moat
a pentise was now built (B11/G166). A brick
structure (G228) projected from this pentise.
The southern edge of this structure had been
destroyed by a 20th-century drain and the
eastern face was obscured by the wall of a
later pentise, but the general shape of what
survived indicated that it was an oriel for
looking out over the court. There was a seat
inside the oriel.

The pentise would have been narrowed
considerably at this point by the projection
into it of the chimney-breast G64. This was
clearly the reason for the presence of the oriel
immediately opposite: its purpose was to
make the pentise wide enough for its users to
walk round the chimney.

Plate 10. Eltham Palace: The east front of
the range of queen’s apartments, and the
tower at the north-west corner of Henry
VIII’s chapel, showing the well of the stair
(Phot: Derek Craig).
6. THE REBUILDING OF THE ROYAL APARTMENTS (Masonry Phase V—see Fig. 11)

During this phase the range of apartments south-west of the chapel was refronted, the larger room was sub-divided into two smaller rooms by the insertion of a second partition, and a new pentise replaced that erected in Phase Four.

The east front of the royal apartments, towards the courtyard, would appear to have been completely rebuilt on a line 1m further east. The new wall (F120/G163) ran south from the five-sided bay window F47 to the chimney-breast G64, which was demolished. The base of the obsolete bay window was incorporated into the new frontage. Within the range, the Phase III timber partition was retained and a second partition, also of timber but without any footing, was erected 6.5m to the south.

In the north-east corner of the southern

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**ELTHAM PALACE 1975-79**

**PHASE FIVE**

1528++

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**GREAT COURT**

**NAVE OF CHAPEL**

**SANCTUARY**

**CHAPLAIN’S HOUSE**

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**Fig. 11. Eltham Palace: Phase Five.**
apartment formed by the new partition, and integral with the new front wall, was a garderobe (G141) served by a drain running along the outside of the wall and carried through it into a cistern (G222, see Pl. 11). The bottom of the cistern was of loosely-bonded brick which could never have retained water, so it seems likely that it accommodated a lead tank. There was probably some kind of trap at the north end of the cistern which could be used to flush the garderobe, though in the absence of the tank this can be no more than conjecture. It is possible, of course, that the garderobe was flushed whenever it rained, the rainwater being carried through the drain and cistern, but the size of the cistern argues against this and in favour of a quite sophisticated example of Tudor plumbing. The garderobe was filled with demolition debris containing a large number of pieces of clear window glass, a pane of glass with its lead came intact, and a sized and gilded lead leaf similar to those found in the filling of the brick troughs for the choir stalls in the chapel.

The pentise along the front of the old apartments was demolished and a new one was erected further to the east. Its footing of loosely-packed rubble (B14/G51) was cut through the layers representing the demolition of Bishop Bek's hall, the base of the footing resting on the remains of the tiled floor of that building.

INTERPRETATION AND DISCUSSION

The cellared building
The cellar was clearly used for the storage of perishable commodities, for ventilation shafts were discovered in the north and south walls to allow air into the cellar and prevent the decay of whatever was kept there.

One difficulty in suggesting the nature of the goods stored in the cellar is the fact that the excavated floor of rammed pebbles was not the primary floor laid down by Bek. Similarly, since the primary doorway at the west end of the cellar was remodelled in Phase III it is not possible to say exactly how the cellar was entered at this point during Phase I. Had the original flooring survived, as it does for instance at Leeds Castle in Kent, it would have been much easier to conjecture the purpose of this cellar. At Leeds the cambering of the floor makes it clear that the cellar was used for wine or beer, the cambering allowing for ullage to run down to the side drains.

No such cambering was evident in the 15th-century pebble floor at Eltham and the underlying subsoil, where examined at the west end of the cellar, was level. This does not, of course, rule out the possibility of the use of the cellar as a store for wine or beer. An argument against its being a food store is that it is
Excavations at Eltham Palace, 1975–9

a long way from the presumed site of the kitchens. Although the kitchens were not excavated, it may safely be guessed on the analogy of innumerable 13th-century manor houses that these would have been at the south end of the hall (now under the Great Hall built by Edward IV, which still stands). An argument in favour of the cellar’s being used for the storage of drink is that it is conveniently close to the hall.

It might be argued that there was an entrance to the cellar at the eastern end, perhaps in the south-east corner, though the presence of the modern drive precludes examination of this point. Certainly, if the cellar was for wine or beer an entrance larger than that in the west gable wall would have been necessary to allow the passage of casks into the cellar. The room at the east end, with its 2m high walls, would have allowed plenty of room for access and for the servants to manoeuvre the casks. By comparison, in the barrel-vaulted part further west a man would not be able to stand upright until he was near the centre of the chamber (see Fig. 3). It is suggested, therefore, that casks may have been let into the cellar at the east end, where the chamber with the depressed vault had plenty of headroom, and then taken into the barrel-vaulted part of the cellar and mounted in racks down the sides, a central passage, accommodating the drain, being left clear.

Nothing survives of the building above the vaulted cellar, so nothing can be deduced about the arrangements above ground from archaeological evidence. However, in the royal exchequer accounts for AD 1399–1400 there are three references to a chapel over a cellar, two of these being to ‘the great chapel’. It seems unlikely that much alteration was made to this building between 1305, when Bek granted the reversion of the manor to Edward Prince of Wales, and the reign of Henry IV to whose first two years these accounts belong. It is suggested, therefore, that the cellar with a chapel over it in use in Henry IV’s reign was that under discussion here.

The precise location of the chapel itself cannot be fixed from the documents, which make it clear that there were several other chambers over the cellar in addition to the chapel. Liturgical considerations might suggest that the chapel was at the east end of the building. It might have occupied the space represented below ground by the chamber at the east end beyond the barrel vault. Chapels in domestic manor houses were often quite small. The chapel at the town house of the Bishop of Ely in Ely Place, Holborn, which is still in use as a Catholic church, is an example of such a chapel contemporary with Bek’s building.

The early hall

To the south of the cellared building was a large building which by reason of its remarkable state of preservation at floor level was easily identifiable as a hall.

It is typical of domestic halls of the late 13th century, except in one particular: at such a date it would be an early example of a hall of such a width being roofed in a single span. It was more usual for halls of this period to have aisles. At the beginning of the 14th century carpenters were only just beginning to master the new methods of roofing construction which dispensed with the need for aisles (Wood 1965, 49). The hall is attributed to Bishop Bek solely on grounds of historical probability. The most that can be deduced from the archaeological evidence is that it was built some time after about AD 1280 and that it was demolished some time in the latter part of the 15th century. A terminus ad quem is given by the construction of the present Great Hall, which
overlies the building here attributed to Bek: this is known to have been built for Edward IV in AD 1475–80. It is not clear when the external buttresses were added.

The tiled floor is described in detail below (pp. 238–244).

The Royal Apartments

Until the reign of Edward IV (1461–1483) the royal apartments had been situated on the east side of the Great Court. Edward seems to have undertaken a major remodelling of the palace. He demolished the early hall and replaced it with another, which still stands. His new hall, orientated east-west, covered the southern end of the earlier building and perhaps also the kitchens associated with it. It is probable that the settling of the made ground on which the early hall was built, and which had necessitated the addition of external buttresses, had by Edward’s reign made the hall so unsafe that it had to be demolished. It seems unlikely that Edward would have embarked on such a major rebuilding programme without good reason.

The King’s Lodgings were rebuilt at the west side of the Great Court, where they could be integrated with the west end of the new hall. Unfortunately, the presence of the squash courts and orangery built by the Courtauld family precludes investigation of this particular point. The new range was of brick, as was the new hall, though the latter was clad externally with Reigate stone. The line of the east front of the range, towards the Great Court, was broken by a projecting chimney stack and bay window.

Of the Queen’s Lodgings, only the front wall lay within the area of excavation, butted into the north-west buttress of the cellared building, which was retained in use. Doubtless the great depth of the foundations of this latter building had saved it from the settlement problems which had beset the early hall. The west end of the cellar was modified so that it could be connected up with the royal apartments. From the remodelled doorway an underground passage led to a flight of steps which ascended to the ground floor of the Queen’s Lodgings.

The work of this phase can be dated securely from documentary sources (Brown et al. 1963, 936). In the Patent Rolls for 1476–77 it is recorded that in November 1475 Roger Appleton was appointed ‘master and surveyor of the repair and building of the king’s manor of Eltham’. During the next five years he received at least £1,500 ‘for the works within the manor of Eltham’. Accounts kept by an associate of Appleton’s, James Hatfield, show that the roof of the new Great Hall was under construction in October 1479, and although there is no documentary evidence for the exact date of the completion of the hall, it seems reasonable to suppose that the work was finished by 1480 or a little after. A date of c. 1480–85 may therefore be assigned to the rebuilding of the royal apartments at the west end of the new hall. Sometime between 1477 and 1485 Adam Vertu was asked to supply no less than eleven new fireplaces for the ‘logyngs over the new seler’.

The King’s Lodgings were subsequently remodelled, at least to the extent of being re-fronted. The old east front, erected by Edward IV, was demolished and a new front built just beyond the old line. This must imply some alterations to the roof structure as well. The interior room spaces were also altered. The exact date of these alterations is not clear, but it would seem to lie some time in the second quarter of the 16th century.

During the excavations fragments of a window were recovered which probably came from the northern gable end of the King’s Lodgings. These fragments are
discussed and illustrated below (pp. 244–5 and Fig. 14). Also recovered were fragments of a stucco frieze which probably came from the same area as the window (see below pp. 249–51, and Figs. 20 and 21). These window and frieze fragments help to give some idea of the above-ground appearance of the royal apartments in the 16th century.

**The New Chapel**

The major work of the early 16th century was the destruction of Bishop Bek’s cellared building to make way for a grandiose new chapel in the Renaissance style. This building appears in the royal accounts between 1518 and 1528: ‘Item to take down our olde Chapell and a new to be sett upp and made of timber work sett upon a wawte with a foundation of stone . . . and the same Chapell to be sett xij feet nearer to hall than the old chapell’ (Brown *et al.* forthcoming, 80). Excavation showed that the detailed specification given in the final part of this instruction was faithfully followed.

A survey was made of the whole of Eltham Palace during the reign of Elizabeth I by John Thorpe. Of the two drawings he made in 1590, the first, showing the Great Court, is now in the collection of the Marquis of Salisbury at Hatfield House; the second, showing the Green Court, is in the Public Record Office in London. These two drawings form the basis of Fig. 1, but in this figure the orientation of the chapel in relation to Edward IV’s hall, which is incorrectly shown on Thorpe’s drawing, is shown as excavated.

Excavation added only one structural detail to the plan of the chapel known from Thorpe’s survey. In the area west of the circular driveway of the Courtauld mansion, the west end of the brick base for the northern choir stalls was found; the east end of the southern stalls was located in the area east of the drive. The screen shown on Thorpe’s drawing as dividing the nave from the choir must have been immediately west of these stalls.

Of the two chambers of the Chaplain’s house shown by Thorpe, only one could be excavated, the other lying under the car park. The base of the newel stair between the two chambers was, however, located. Two pieces of the finial from the west end of the Chaplain’s house were recovered (see below p. 245, and Fig. 15). The lower piece, from the apex of the gable, shows the pitch of the roof. It was relatively shallow, which casts doubt on the reliability of the drawing made by Peter Stent in c. 1650 (Pl. 12) which is preserved in the Officers’ Mess at Eltham.

Although the roof of the Chaplain’s house is hidden by other buildings in the foreground of this drawing, Stent shows the roof of Edward IV’s Great Hall and Henry VIII’s Chapel. He shows the pitch

![Plate 12. Eltham Palace: Drawing by Peter Stent made c. 1650 of Eltham Palace from the west, shortly before its demolition by Colonel Nathaniel Rich (Photo: Derek Craig).](image)
of the hall roof as being much sharper than it actually is, and by analogy it seems likely that his portrayal of the pitch of the chapel roof, which he shows as even sharper than that of the hall, is also inaccurate. Stent’s drawing is useful, however, in showing the general massing of buildings just before their demolition.

THE TILE PAVEMENT
By Elizabeth S. Eames

DATE
During these excavations five areas of tile paving were found in situ in the hall built for Bishop Antony Bek. The tiles were set in lime mortar on a man-laid foundation of clay. The paving was demonstrably coeval with the building. The hall was apparently begun in or soon after 1295, when Antony Bek acquired the manor of Eltham, and is assumed to have been completed before his death at Eltham in 1311; indeed it is probable that it was completed by 1305 when Bek granted the reversion of the manor to Edward Prince of Wales (Brown et al. 1963, 930). Building accounts survive in royal records for the period after 1311 but none are known from the period when Bek held the manor and this hall was constructed. Paving was always one of the last tasks to be undertaken in a new building, probably the very last after the removal of the internal scaffolding which would still be in use while the windows were being glazed and the walls painted. It is therefore probable that this paving was laid during the first few years of the 14th century. Such a date is also suggested by a coin discovered in clay in the same archaeological context level as that on which the pavement was based, although not under the pavement itself. This coin was identified as one minted for John I of Brabant as Duke of Limburg (1288–94), lost or rejected c. 1300. A date between 1300 and 1305 for the laying of the tile pavement in Antony Bek’s hall can be postulated.

GENERAL DESCRIPTION
As can be seen from the plan on Fig. 2 complete excavation of the area of Bek’s hall was not possible. Its full width of 10.8m was recovered in the area south of the drive, the position of the dais at its northern end was ascertained, 22.3m of its length was investigated, the base of the porch on the west side was found, and part of a central octagonal hearth was present. The area of the hall was overlain and cut by some later walls, pipe trenches and drains, including an inspection chamber. The five areas of paving are numbered I to V on the plan on Fig. 5. The most informative was that numbered I at the north end of the hall next to the dais and extending southwards nearly as far as the central hearth. Area II lay just within the west porch, area III lay by the west wall near the southern limit of the excavation and areas IV and V lay by the east wall, IV opposite the porch and V opposite III (Fig. 5). In all places where the edge of the pavement was present near a wall there was a substantial gap between it and the face of the wall indicating either that the wall had been rendered with a thick coat of plaster (or even with plaster and wainscott) or that severe slumping had taken place in the underlying deposits.

All the surviving tiles were very worn. Many of the plain dark glazed tiles had lost all or most of their glaze, many of the plain light glazed tiles had lost not only the glaze but most of the underlying white slip and many of the decorated tiles had lost most of their decoration. This condition was informative. Bishop Bek’s hall was apparently still in use in 1456 but was evidently demolished by 1475/6 when the building of the present great hall began (Brown et al. 1963, 936). This degree of wear therefore demonstrates the result of about 175 years of heavy use.

In addition to this normal wear the remaining paving showed signs of other severe damage, consisting of secondary burning, breakage and even shattering of most of the tiles and a scatter of specks of lead. Such damage could have been sustained during the demolition of the building if roof tiles and stones were allowed to fall to the floor, fires were lit on the pavement and lead was melted in the
Excavations at Eltham Palace, 1975-9

building. Further south in the hall two pits had indeed been used for melting lead (Fig. 5). Comparable damage might also have resulted if there was a fire in the roof and burning timbers, roof tiles and melted lead fell from it. At Clarendon Palace, however, where a burning joist is known to have fallen on to the pavement of the Queen’s chamber, the middle of the area of secondary burning was deeply depressed where the blow made by the falling timber striking the floor had been sufficient to compress the underlying foundation of flint and chalk (Eames 1958, Pl. 34; Eames 1980, Vol. 2, 188, Fig. 12). Such a blow would certainly have compressed the clay foundation beneath the pavement at Eltham but no such depressions were found. It therefore seems probable that the damage was sustained during demolition and that the spatter of lead was due to carelessness on the part of the demolition workers rather than to accidental fire in the roof of the hall. The damaged state of the pavement made conservation in situ or lifting impractical.

AREA I

The paving in area I is illustrated in detail on Fig. 6. It occupied the full width from the west wall of the hall to the eastern limit of the excavation, measuring a maximum of about 8.5m west to east and 3.8m north to south. It consisted of five parallel panels running north to south marked A to E on the plan and of a sixth panel running west to east across the north edge of panels B, C and D. Within panels A to E the tiles were set diagonally to the axis of the building; in the north panel they were set square. The panels were separated by a single row of tiles set square and the presence of a few tiles set square at the west edge of panel A suggests that a comparable row ran down each side of the pavement against the west and east walls. This arrangement of the paving in parallel panels was the most usual in the 13th and 14th centuries. It can most easily be seen in the pavements remaining in situ in Westminster Abbey Chapter House, Clifton House, King’s Lynn and Prior Crauden’s Chapel, Ely, and in the piece of pavement from the Queen’s chamber at Clarendon Palace, already mentioned, exhibited in the Medieval Tile and Pottery Room at the British Museum. At Eltham the single lines of tiles set square were, as far as can be ascertained, laid with alternate light and dark plain glazed tiles except in the row separating panels B and C where the dark glazed tiles alternated with examples decorated with a rosette, illustrated on Fig. 12 as design 3.

Panels A and E were set with plain glazed tiles, dark and light examples being laid alternately to form a chequered pattern. In panel A the triangular half tiles at both the west and east edges were light. This panel was a little under 2m wide and remained to a maximum length of 3m. Its central part lay under a later wall. The maximum excavated width of panel E was 0.8m and its maximum remaining length 2.4m. The tiles at the west edge were triangular halves of dark glazed examples.

The central panel C was narrower than the rest being 0.97m wide. Its maximum remaining length was a little over 2m. It was laid with alternate rows of plain dark glazed tiles and decorated tiles. From west to east these rows were composed of plain triangular half tiles, rosettes (design 3), plain tiles, fleurs-de-lis (design 4), plain tiles, rosettes, plain tiles, castles (design 7), plain tiles, rosettes, triangular halves of plain tiles. The tiles decorated with fleurs-de-lis and castles were set with the base to the south so that they would look the right way up as one approached the dais but upside down as one looked down from the dais.

Panel B was a little over 2m wide and remained to a maximum length of 3.2m. It was laid with decorated tiles arranged in groups of four of the same design except at the edges where the triangular half tiles were probably all plain with dark glaze although many were too worn for this to be certain. All eight designs illustrated on Fig. 12 were present in this panel. Only two of these, 6 and 8, were designed to be laid in groups of four so that the principal motif in each was a circular band, but both were repeating patterns that would never be complete. In design 4 the fleur-de-lis was set diagonally and such
Fig. 12. Eltham Palace: The tile designs in the great hall pavement (1/4).
designs were frequently set in fours with the stems to the middle so that they formed a cross, as they did in this panel, where the castles (design 7) were also set with the base to the middle. The vesicas of design 2 formed endlessly repeating interlacing circles when four or more tiles were laid together. At the east edge of the panel there was insufficient room for a row of complete 4-tile squares and the easternmost tile of each square was replaced by a plain triangular half tile on which the glaze was probably yellow.

No systematic arrangement of the 4-tile squares could be found. Generally tiles in adjacent squares were decorated with different designs but in one area five 4-tile squares all decorated with the paschal lamb (design 5) were placed edge to edge to form a diagonal line and this was apparently bordered on the south-east by a single row of rosettes. It is not unusual to find some apparently haphazard features within the general framework of a medieval tile pavement.

Panel D presented the least regular appearance. Its east edge sloped inwards as it went south so that the panel narrowed and different shaped pieces of tile were necessary to complete it at that side. Because the east wall of the building could not be excavated at this end it is not known whether the wall itself inclined inwards or whether this sloping edge was due to a fault in the layout of the panels.

This panel remained to a maximum length of 2.5m but the northern part was so badly damaged that the few remaining pieces of tile were unrecognisable and most of it had been subjected to severe secondary burning. As far as could be seen both plain dark glazed tiles and decorated tiles were used in this panel. The decorated tiles were arranged in diagonal lines running in both directions but not in any apparently systematic relationship to each other. In the north-west part of the remaining area all the decorated tiles were examples of design 3, the rosette, and in the area south-east of this all were decorated with design 4, the fleur-de-lis, but this sequence was interrupted on the south by castles and paschal lambs, which also had an intrusive rosette among them. Even if one assumed that some of the very worn tiles had also been decorated it remained impossible to work out any systematic plan in the placing of the decorated examples.

The north panel running west to east across the north end of the panels B, C and D was laid with the tiles set square in three rows. In the two southern ones plain dark glazed tiles alternated with tiles decorated with the paschal lamb to form a chequered pattern. The third row on the north continued this but had rosettes instead of paschal lambs as the decorated members at the west and east. North of that were only a few uninterpretable fragments. It is not known whether this panel continued west and east across the ends of panels A and E. Panel A had two triangular half tiles remaining at its northern end and panel E had only one, but these were sufficient to indicate that those panels terminated at that point. If the north panel did not continue across them, some other arrangement was present there. It seems probable that the north panel ran right across the width of the building.

AREA II

Two patches of paving remained in area II in the west porch both on the line of the west wall of the hall and therefore west of the edge of the main pavement which may be supposed to have continued south from area I at least as far as the south end of the porch. Both patches formed part of the same panel running north to south at the inner edge of the porch. The west edge with its triangular half tiles was present in the south patch (Fig. 5). The tiles were set diagonally in alternate rows of plain dark glazed tiles and decorated tiles, finished at the west edge with triangular halves of plain dark glazed tiles. From west to east the sequence of rows was plain, the rosette (design 3), plain, the fleur-de-lis (design 4), plain, an arrangement comparable with that used in panel C. If at the east this panel was squared off by a row of plain triangular half tiles and edged by a row of tiles set square this would probably bring it up to the edge of panel A of which nothing survived in this area to which area II could be accurately related. West of this panel the porch was paved with stone slabs. Part of area II
had been overlaid by a later wall and cut by a modern pipe trench so it was fortunate that these two patches of tiles remained. Although the tiles were worn and broken they did not show any secondary burning or shattering.

AREA III

Area III also contained two small patches of tile, separated by a pipe trench. The northern patch measured a maximum of 0.95m east to west and 0.5m north to south. It lay close to the west wall of the hall at the south end of the excavation (Fig. 5). It included the remains of six groups of four tiles set diagonally, arranged in alternating east west rows of plain and decorated groups. All that remained was part of a group decorated with the rosette, south of that part of three groups of plain dark glazed tiles and south of that part of another group decorated with rosettes in line with the first and part of a group decorated with the 4-tile pattern illustrated as design 6 (Fig. 12).

The southern patch apparently continued the same arrangement but retained only parts of two plain dark glazed tiles and one triangular half yellow glazed tile which presumably indicated the position of the edge of the panel. This was not a continuation of the arrangement of plain glazed tiles in area I panel A.

AREA IV

Area IV consisted of five small patches of plain glazed tiles near the east wall of the hall opposite the porch. This area was cut by scaffold holes and a pipe trench and the largest patch included the remains of only nine tiles but one set square indicated the position of the east edge of the panel. The tiles were severely damaged by secondary burning but their position suggested that panel E may have continued south as far as this.

AREA V

Area V consisted of three small patches of tile against the site of the east wall near the southern limit of the excavation (Fig. 5). Two of these included tiles set square indicating the position of the east edge of the panel.

Three tiles set square were decorated with the fleur-de-lis (design 4) and two with single examples of the 4-tile pattern illustrated as design 8 (Fig. 12). These were contiguous, not alternated with plain glazed tiles as they were in the row between panels B and C in area I. The remaining tiles were plain set diagonally, apparently arranged chequerwise dark and light. This could be a continuation of panel E in area I. No part of the east edge of that panel could be excavated there and it is possible that that too was bordered by decorated tiles set square at its eastern edge; it must be noted, however, that the single border tile in area IV was plain.

One area in line with the south patch of tiles in the porch, beginning about 1.8m east of it and extending about 1.4m eastwards, showed faint marks of the position of tiles on the remaining mortar bed. Those at the east were marks of a row of tiles set square, the rest were diagonal. The marks of tiles set square were not in line with the rows dividing panels A and B or B and C in area I and, if they were correctly interpreted, indicate a change in the width of the panels in the southern part of the hall. There is no remaining evidence of a screen north of the porch which might give occasion for a change in the arrangement of the panels and the evidence is too slight to be certain but the possibility of such a change exists.

THE TILES

Among the many loose tiles of varying date found during the excavations and taken into store were many examples the same as those in situ in the pavement. These were made available and a representative sample was examined in detail.

The fabric was well prepared for that of medieval floor tiles and had small red and white inclusions. The tiles were well and evenly fired and in the sample examined only one plain glazed tile (78F41B) and one decorated tile (77F55) had a grey reduced core, the rest being fully oxidized. There were no keys in the bases of the tiles, which were untrimmed and retained traces of the sand on which they had been formed. The sides had been trimmed with a downward sloping bevel
in the most usual way. The thickness of the tiles in the sample examined varied from 18 to 24mm. The length of the sides averaged 135mm but there was a noticeable tendency for them to be a little longer on one dimension than the other. The general impression was that they had been well made and fired, and both plain glazed and decorated tiles were the same.

The glaze was the usual lead glaze (Eames 1980, Vol. 1, 19–23). It was applied over a coat of light slip to produce the light glazed tiles. In the sample examined these ranged in colour from pale yellow through orange/yellow to quite a deep orange. The lead glaze was applied direct to the body to produce the plain dark glazed elements in the pavement. These ranged in colour from a dull olive brown through light brown and medium brown with darker spots, to a dark purplish brown. None of the green to black tiles that most commonly formed the dark elements in English medieval pavements was present. It was more economical to use the same glaze for both light and dark tiles, but it is possible that iron had been added to the glaze used on some of the dark elements; some iron was always present. None of the glaze or body fabric has been analysed. The lead glaze was applied to the decorated tiles to produce the usual yellow design on a brown background, the brown tending to purplish rather than golden shades and the yellow deep rather than cream.

The decoration was applied in white slip in shallow stamped cavities and clings to the edges in the way that indicates that it was introduced in a liquid not a plastic state. The cavities do not have the sharp cut edges that are present when the tile was coated with slip before the decoration was stamped. Whatever method was used to apply the white slip the final appearance of the decoration depended upon the care taken to remove surplus slip and body clay from the surface (Eames 1980, Vol. 1, 45–8). On these Eltham tiles this seems to have been fairly carefully done and there is very little smudging of white slip on to the background.

Only eight different decorative designs were present and this accords with the practice of the period except in the most elaborate pavements. In the remaining piece of pavement from the Queen’s chamber at Clarendon Palace only six different designs were present, and in the pavements at Clifford House, King’s Lynn, only seven two-colour designs were used. Such pavements depended for their general effect on the layout of the panels and the arrangement of the dark, light and decorated elements, and only on closer inspection upon the decorative designs themselves.

All the motifs used in the designs on the tiles in the Eltham pavement were common in the latter half of the 13th century and the earlier half of the 14th but at the time of writing only one tile identical with any of the Eltham examples had been located. It is a tile of the same size, decorated with design 8, in Plumstead Museum, said to be from the site of Lesnes Abbey, formerly in Kent, and less than five miles from Eltham. Other indications of a link between the decorated tiles at the two sites have been found and are here demonstrated by comparison with tiles in the British Museum (Fig. 13). Other tiles from Lesnes Abbey are preserved on the site itself, in Plumstead Museum and in St John’s Church, Erith.

A larger tile from Lesnes Abbey about 170mm square (1468 design 2806) is decorated with a design resembling Eltham 6 but including two circular bands. Four smaller tiles about 100mm square are decorated with another version closer to Eltham 6 (1220–3 design 2808). All three designs could be derived from a better-drawn version on a tile about 112mm square (13,602 design 2807) of Middle Thames type but uncertain provenance, possibly from the site of Chertsey Abbey, Surrey. Four tiles of the small size, about 100mm square, from Lesnes Abbey are decorated with a variant of Eltham 8 (1214–9 design 2795) and another about 108mm square from Hayden Street, Minories, London (11,350 design 2794) is decorated with yet another variant. Neither of the 4-tile designs Eltham 6 and 8 is particularly common in any form.

Four of the more usual motifs present on the Eltham pavement tiles were also used on the smaller tiles at Lesnes Abbey but all in
different designs, not merely in reduced versions of the Eltham designs. The paschal lamb is not known from Lesnes. An unprovenanced tile about 115mm square is decorated with the same simple geometric design as Eltham 1 (122 design 2024), but it belongs to an entirely different series related to the tiles in Westminster Abbey Muniment Room pavement and therefore known as the 'Westminster' series.

None of these Eltham Palace pavement or Lesnes Abbey tiles has at the time of writing been found in association with a kiln. Among the Eltham tiles in store examined by the writer was an example decorated with design 5 (77F84) which had cracked or broken during firing and had glaze on the fractured edge. One not very seriously damaged waster cannot be taken as evidence of the presence of a kiln. Nevertheless it seems probable that the tiles in the Eltham pavement were made in west Kent, perhaps within Eltham manor itself or somewhere nearby, and that the related tiles from Lesnes Abbey were made by the same tilers. The fact that these Eltham designs are virtually unknown elsewhere is probably due only to the accident of survival. The Eltham examples were unknown before these excavations were undertaken and further excavations elsewhere may reveal other examples and supply more information. Meanwhile this pavement supplies a closely dated group of tiles and decorative designs.

MOULDED STONE (Figs. 14–19)

Ten fragments of a window. Part of the window has been reconstructed (Fig. 14), but the reconstruction of the entire window is not possible. The fragments recovered make up three lights divided by a transom.

1. Bottom part of a mullion with frontal fillet chiselled off. Cf. No. 2. The fact that the fillet has been chiselled off makes it clear that this is a mullion on the interior of a building: the fillet must have been chiselled off to make way for some piece of internal decoration or furnishing such as an arras. From layer A 3/2, backfill of the underground strongroom west of Henry VIII's chapel.

2. The same as above, but more complete. The whole
profile of the mullion survives, with exterior fillet intact though abraded, and grooves for the glass on either side. From layer A3/1, backfill of the underground strongroom.

3. Part of the transom with a deeply cut corner spandrel. Grooves for the glass in the soffit. From layer A3/1, backfill of the underground strongroom.

4. Section of mullion beneath the transom. Grooves for glass surviving on either side. From layer A3/2, backfill of the underground strongroom.

5. Section of the side of the window beneath the mullion. The border has been deliberately chiselled off, cf. Nos. 1 and 2. Groove for glass on inside. From layer A4, backfill of the doorway into the underground strongroom.

6A and 6B. Two joining fragments of a mullion. At the top of the upper fragment is a horizontal groove to hold an iron tie-rod. Grooves for glass on either side. From layers A3/2 and A3/4, backfill of the underground strongroom.

7. Bottom half of a section of mullion. The complete profile survives, showing the exterior frontal fillet to be wider than the interior fillet. Grooves for glass on either side. From layer A3/1, backfill of the underground strongroom.

8. Fragment of mullion with internal fillet and grooves for glass on either side (illustrated in section only). From layer A3/1, backfill of the underground strongroom.

9. As above (illustrated in section only). From layer A3/1, backfill of the underground strongroom.

All these fragments were recovered from the backfill of the underground strongroom west of Henry VIII's chapel and the doorway leading into it. It seems reasonable to suppose that they came from a building of the final structural phase standing in immediate proximity to the strongroom. Thorpe's plan of the chapel as it appeared in the reign of Elizabeth I shows a doorway at the west end of the chapel. Undoubtedly there would have been a large window over the doorway, and there may have been windows at ground level on either side of the door. The fragments recovered could represent part of one of these side windows.

The other likely provenance is the northern gable end of the king's apartments, which is also directly over the strongroom. The fact that the fillets have been chiselled off the mullion above the transom to make way for a decoration or furnishing seems to argue in favour of this location rather than the chapel.

Two pieces of a roof finial (Fig. 15)

10. The apex of a gable: the bottom part of the finial is integral with this. In each shoulder there is a socket to hold a metal tie. The two parts of the finial were held together with a lead tie (illustrated in plan view and section). From layer D69, backfill of choir stall base.

11. Base of the finial column. The lead tie which held this to the gable apex has been snapped in antiquity, when the palace buildings were razed by Colonel Nathaniel Rich. From layer D69, backfill of choir stall base.

These pieces were recovered from the backfill of a choir stall base immediately south of the western chamber of the chaplain's house. It can only be from the west end of this building, therefore, that the finial came. It is especially useful in attempting to reconstruct the appearance of the Henrican chapel and chaplain's house in that it shows the pitch of the roof of the chaplain's house, which was lower than as illustrated by Stent.

Two pieces of column base which may be part of the same column, but could be from two nearly identical columns (Fig. 16).

12. Part of the moulded base of an engaged shaft. It is similar (though of a later date) to the clusters of engaged shafts on either side of the doorways and in the oriels at the west end of Edward IV's Great Hall, which still stands. In plan, No. 12 does not exactly match No. 13.

If No. 12 was part of a base with only three facets, then clearly two shafts are represented. If, however, it was part of a base with five facets, the two fragments could have been part of a single shaft whose facets were not symmetrical. From layer G30, demolition layer inside the king's apartments.

13. As above. From layer G30, demolition layer inside the king's apartments. The composite section drawing to the right of No. 13 shows the appearance of a shaft base reconstructed from the two fragments. (Fig. 17).

14. Fragments of upper greensand window tracery. From a 20th-century disturbance at the dais end of Bishop Bek's Great Hall.

15. Fragment of tracery, probably from a blind arcade. From layer A3/2, backfill of the underground strongroom. (Fig. 18).

16. Ashlar with a border of ivy leaf decoration. From layer 2, topsoil.

17. Bottom of upper greensand shaft with foliate border. The sculpted foliage is very abraded, but appears to represent ivy leaves, as in No. 16. From layer 2, topsoil.

18. Fragment of a trough. From layer 2, topsoil (Fig. 19).

19. Fragment of attached shaft with frontal roll moulding and projection at the back for keying the shaft into the wall. From layer 2, topsoil.


21. Chip of ashlar with hollow chamfer. From layer G34, the demolition layer inside Bishop Bek's Great Hall.

22. Fragment of string course. From layer D106, a demolition layer of the chaplain's house.

23. Corner piece of a string course. In footing G212, so presumably it came from Bishop Bek's Great Hall, which was demolished just before footing G212 was constructed.
Fig. 14. Eltham Palace: Reconstruction of a window probably from the north gable end of the king's apartments (1/8).
Fig. 15. Eltham Palace: Gable finial from the chaplain’s house (1/6).
Fig. 16. Eltham Palace: Fragments of shaft base from the king's apartments, and a composite reconstruction of a complete base (1/3).
24. Fragment of drip mould. From layer A4/3, backfill of doorway into the underground strongroom.

25. Fragment of drip mould. From layer B33, the construction trench for a brick drain leading from the south-west tower of Henry VIII's chapel under the king's apartments to the moat.


27. Fragment of a scroll. From layer A4/7, backfill of the doorway into the underground strongroom.

STUCCO
(Figs 20–21)

Eleven fragments of stucco were recovered from layers A3/1, A3/2, and A3/3, all layers of backfill of the underground strongroom immediately west of Henry VIII's chapel. They must represent parts of an internal frieze, but it has not been possible to reconstruct the appearance of this frieze, as the fragments do not join. They are therefore published without textual description of the individual pieces and illustrated without numbers.

Two of the fragments have not been illustrated because they are small pieces of which much larger pieces bearing the identical designs have been recovered and illustrated.

The relief, composed of a rather gritty buff plaster averaging 10mm high, has been applied to a thick, coarse, buff-coloured plaster matrix. On one of the pieces (top left, Fig. 20), the fingerprints of the craftsman are...
Fig. 18. Eltham Palace: Fragments of moulded stone (1/3 except No. 18, 1/6).
clearly visible on the relief work, where he has pressed this onto the matrix.

The most likely provenance for this frieze is, as for the window illustrated in Fig. 14, the northern end of the king’s apartments, whose gable stands almost directly over the underground strongroom.

In general style the designs are typical of the Early Renaissance period and the frieze must date to the reign of Henry VIII.

Similar stucco work was recovered during the excavation of Henry’s palace at Nonsuch in Surrey (Biddle 1961, 9–10). The Eltham stucco, however, is much finer in both design and execution, and must be the work of a different hand.

LEAD LEAVES (Figs. 22–23)

Thirteen decorative leaves of sized and gilded lead were recovered. All except one came from the backfill of the brick bases of the choir stalls. The exception came from the backfill of the garderobe in one of the chambers of the king’s apartments.

The leaves have been cast in a mould. They
Fig. 20. Eltham Palace: Fragments of stucco (1/2).
Fig. 21. Eltham Palace: Fragments of stucco (1/2).
Fig. 22. Eltham Palace: Lead leaves (1/2).
have rivet holes, and in some cases surviving rivets, at the base, presumably for attachment to the choir stalls, or in the case of the example recovered from a garderobe, to the wainscotting.

Nos. 1–8 are more or less identical. Nos. 9–12 appear to be fragments of the same design—oak—as all the others with the exception of No. 13. The design of No. 13 does not resemble the leaf of any English tree known to the author, but the plumber may not have been English.

Most of the pieces are bent to a greater or lesser degree, some being completely doubled over. In conserving them, no attempt has been made to straighten them out. They have been conserved and are illustrated as found.

MORTAR OF PURBECK MARBLE WITH PIERCED HANDLES

By the late G. C. Dunning

(Fig. 24)

The fragments comprise: part of the rim and side, with upper end of a handle; small piece of rim; and lower part of handle and part of base (two pieces joining).

The rim has an outside diameter of about 8.4 ins.; it is hollowed on top, as often on this type (Clarke and Carter 1977, 326–7, Fig. 148). The side of the bowl is faceted and tooled obliquely. The spacing allows for three facets between the handles and the lugs at the front and back.

Only two mortars of this type are complete to the base: unprovenanced, in the Department of Medieval and Later Antiquities, British Museum (Reg. No. O.A.35); and from Wintringham, Hunts., (G.T.M. Beresford excavations). On both the base is moulded, and that of the Eltham Palace mortar has been restored accordingly.

The pieces of side handle show that they extended from rim to base, and curved markedly outwards from the bowl. Thus the hole was rather larger than on other examples of this type. The lower part of the handle splays considerably to merge into the base. The surface of the handle is carefully smoothed and polished.

Mortars of Purbeck marble with pierced handles, regarded as early in the series from this source, have been found in thirteenth-century contexts at Winchester (inf. Mr M. Biddle and Mr D. Smith). The early dating is confirmed by the evidence from Eltham Palace.
SMALL FINDS
(Fig. 24)

SILVER
1. Star-shaped object with rivet at back. From layer F 36/2, dumped clay overlying the demolition layer within Bishop Bek’s great hall.

GILT BRONZE
2. Decorative fitting from a book cover. Rouletted decoration and gilding on face. Broad end doubled over to protect the edge of the book. Two rivet holes at this end. Trilobe edge at narrow end, where a single rivet survives. From layer G119, the construction trench for footing C88, at the west end of Henry VIII’s chapel.
3. Domed stud, shank bent. Traces of gilding on the dome. From layer D78, demolition layer within the chaplain’s house.

BRONZE
4. Pen with nib at one end and spoon at the other. The shaft is hollow. From layer C45, earth overlying the clay backfill of Bishop Bek’s cellar.
5. Instrument formed of three pointed bronze strips. The three strips are attached by a single rivet. From layer G148, dumped clay over the demolition layers inside Bishop Bek’s great hall. Late 15th century.
6. Hinged clasp, perhaps from a book. The hinged attachment is at the front of the object, and has a rivet hole near the hinge. The back end of the object has a loop on its underside. The back end is now doubled over on itself, and the hinged attachment is also doubled back. The bronze is tinned. From layer G178, a surface cut by the garderobe of the final Henrican phase. Early 16th century.
7. Book boss with two rivets surviving, and holes for two further rivets. From layer F106, a demolition layer inside Bishop Bek’s great hall.

Fig. 26
8. Decorated hollow domed stud. From layer A4/4, backfill of the doorway into the strongroom at the west end of Henry VIII’s chapel.
9. Chape from the upper end of a leather dagger sheath (Medieval Catalogue 1940, 192, Fig. 59). Cusped edges with incised decoration. The holes are probably decorative rather than for rivets. One rivet surviving at the back and a hole for another. From layer F177, ground make-up under the king’s apartments built by Edward IV. Late 15th century.
11. Fragment of strap-end buckle of pronged type (Medieval Catalogue 1940, Pl. LXXV, No. 2). From layer F90, surface associated with Tudor king’s apartments.
12. Dress fastening (cf. Sherlock and Woods forthcoming, Fig. 23, No. 64). From layer A14, ground surface associated with the tower at the north-west corner of Henry VIII’s chapel.
13. Dress fastening, similar to above but without surviving hooks. From F22, a 20th-century disturbance cut into the demolition layers inside Bishop Bek’s great hall.
14. Dress pin with drawn stem and head of coiled wire. From layer A14, ground surface associated with the tower at the north-west corner of Henry VIII’s chapel.
15. Dress pin. From layer D106, a demolition layer of the chaplain’s house.
16. Boot lace tag. From layer C119, the construction trench for footing C88 at the west end of Henry VIII’s chapel.
17. As above, but smaller. From layer D16, a demolition layer within the chaplain’s house.
18. Fragment of a belt chape with raised decoration. Rivet hole at one end. The chape is broken across the rivet hole and also at the other end. From layer E32, a
Fig. 25. Eltham Palace: Small finds, objects of silver, gilt-bronze and bronze (1/1).
Fig. 26. Eltham Palace: Small finds, objects of bronze (1/1).
Excavations at Eltham Palace, 1975-9

ground surface associated with the east end of Henry VIII's chapel.
19. Fragment of sheet with rivet hole. From layer A4/8, backfill of the doorway into the underground strongroom at the west end of Henry VIII's chapel.
20. Coiled wire (cf. Sherlock and Woods forthcoming, Fig. 23, Nos. 61 and 62). From layer B33, the construction trench for a brick drain leading from the south-west tower of Henry VIII's chapel under the king's apartments to the moat.
22. Riveted strip. From layer C90, the dumped clay backfill of Bishop Bek's cellar.

(Fig. 27)

IRON
23. Rondel dagger in leather sheath, which is carried up under and around the guard. Grip and cylindrical pommel of wood. Remains of a bronze end cap where the tang protrudes from the pommel. A green stain round the girth of the pommel shows that it was encircled with a bronze band. On one side of the sheath a piece of leather survives which may be a belt attachment. The guard is convex in profile. The point of the dagger is missing. From Dr Donald Strong's excavations, found in a garderobe attached to the north-west tower of Bishop Bek's perimeter wall, but not contemporary with Bek's wall.
24. Spearhead, socketed (cf. Medieval Catalogue 1940, Pl. XVI, No. 1). From layer F132, ground make-up under the king's apartments built by Edward IV, but the spear head is probably of earlier date.
25. Arrow head, socketed (cf. Medieval Catalogue 1940, Fig. 16, No. 9). From layer F106, a demolition layer inside Bishop Bek's great hall.
26. Arrow head from a socketed hunting arrow. The open flanges are not barbed, so it was designed to be withdrawn after killing. From layer E173, ground make-up under the king's apartments built by Edward IV.
27. Socket from an arrow. The head is missing. From layer D147, layer of backfill in the well sealed under the north wall of the chaplain's house.

(Fig. 28)

29. Key. From layer G184, the demolition layer of the Phase II chalk building.
30. Key, in three pieces which do not join. From layer D42, a demolition layer associated with the chaplain's house.
31. Knife blade, tip missing, part of tang surviving. From layer D173, a ground surface cut by the late 12th-century turf building in area D.
32. Knife. From layer D76, dumped clay sealing the 13th-century ground surface west of the chaplain's house. Early 14th century.
33. Knife, blade broken. From layer D34, a demolition layer of Henry VIII's chapel.

34. Fragment of blade and whittle tang of knife. Brass inlay on blade; and applied brass plate surviving on the top of the tang. From layer A4/4, backfill of the doorway into the underground strongroom at the west end of Henry VIII's chapel.
35. Knife with brass shoulder-plate attached with a single brass rivet, and brass end cap. Bone handle attached with three iron rivets. From layer D81, a ground surface associated with the chaplain's house.
36. Knife with scale tang and broken blade. The tang, which is incomplete, has three tubular brass rivets surviving. From layer E22, demolition layer overlying the south wall of Henry VIII's chapel.
37. Fork, with bone handle. The handle is secured to the scale tang with two rivets, and is decorated with incised lines. From layer G1, topsoil.
38. Part of a horseshoe, with three nail holes. From layer E23, a demolition layer associated with the south wall of Henry VIII's chapel.
39. Part of a horseshoe, with three nail holes. From layer D82, a ground surface associated with the chaplain's house.

(Fig. 29)

40. Strip with four rivet holes. From layer D106, a demolition layer of the chaplain's house.
41. Pintle for a door. From layer C103, the ash overlying the pebble floor of Bishop Bek's cellar.
42. Fragment of a hinge-plate, with a single nail head surviving. From layer E23, a demolition layer associated with the south wall of Henry VIII's chapel.
43. Staple. From layer D198, a ground surface cut by the late 12th-century turf building in area D.
44. Hook. From layer G184, the demolition layer of the Phase II chalk building.
45. Wall hook. From layer F42, a demolition layer inside Bishop Bek's great hall.
46. Hook. From layer A4/4, backfill of the doorway into the underground strongroom at the west end of Henry VIII's chapel.
47. Hook. From layer A3/10, backfill of the underground strongroom at the west end of Henry VIII's chapel.
48. Looped object, possibly part of a chain. From layer E2, topsoil.
49. Nail with wood adhering. Shank broken. From layer D69, the choir stalls in Henry VIII's chapel.

LEAD
(Fig. 30)

50. Lead alloy mèreau, with crude design in relief on one side only. From layer A108, the construction trench for the east wall of the queen's apartments. Late 15th century.
51. Weight, with suspension lug at the top. From layer F57, clay surface associated with the final phase of the king's apartments under Henry VIII.
52. Window came. From layer G141, backfill of the garderobe of the final phase of the king's apartments under Henry VIII.

BONE
53. Ring seal, with initials JW. Two small holes on
Fig. 27. Eltham Palace: Small finds, objects of iron (1/2).
Fig. 28. Eltham Palace: Small finds, objects of iron (1/2).
Fig. 29. Eltham Palace: Small finds, objects of iron (1/2).
Fig. 30. Eltham Palace: Small finds, objects of lead and bone (1/1 except Nos. 51 and 52, 1/2).
either side for the clasps. From layer E30, a demolition layer at the east end of Henry VIII’s chapel.

54. Handle with bird at one end, the other end broken. Circular perforation for suspension, perhaps from a belt. From Dr Donald Strong’s excavations, unstratified.

55. Part of a casket. Three edges intact, the fourth broken away. Incised design of a crown of which the central terminal is clearly visible, and the tips of three other terminals—two to the left and one to the right—are just visible above the break. From layer G30, the demolition layer overlying the Tudor king’s apartments.

56. Decorated strip, probably a border for a casket. From layer A4/1, backfill of the underground strongroom at the west end of Henry VIII’s chapel.

(Fig. 31)

57. Decorated stick, sawn at both ends. From layer D106, a demolition layer of the chaplain’s house.

58. Similar to the above, but without the decoration. Sawn at one end, broken at the other. Also from layer D106.

59. Similar to Nos. 57 and 58, but heavily burnt. Broken at both ends. Also from layer D106.

60. Peg, possibly for a game. From layer C78, backfill of ventilation shaft in north wall of Bishop Bek’s cellar.

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The published site drawings are the work of Mr David Honour from original drawings by Mr Stuart Glen, Mr Christopher Guy, Mr Brendan Murphy, Mr Christopher Russell-White, Mr Michael Webb and Mrs Jennifer Woods. The drawings of the moulded stone, stucco, lead leaves, and small finds are also the work of Mr Honour. The marble mortar was drawn by Mr James Thorn, and the floor tiles were drawn by Mrs Jennifer Woods.

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INTRODUCTION

Excavations by the Department of Urban Archaeology, Museum of London, at sites along the Thames waterfront have revealed many timber revetments, dated by a variety of means, including dendro-chronology. In most cases these revetments are associated with dumps of refuse which must be contemporary with construction, either because the revetment has bracing keyed into the dump or because the front bracing must have had something to push against. Using the information from two waterfront sites, Seal House and Trig Lane, it is possible to construct a sequence of deposits starting c. 1140 and finishing c. 1440 with dated groups every thirty to fifty years (see Fig. 1). These deposits contain large assemblages of pottery and, as far as can be seen, very little residual material. This agrees with the observations of the excavators, who noted the very organic nature of the dumps, which suggests that contemporary rubbish rather than re-dug soil was used to provide most of the deposit.

This pottery can therefore be used to create a chronological framework for the medieval pottery of the London area, and sometimes beyond. In order to make the best use of this chronology the Department has combined a statistical study of the pottery, analysing the frequency of occurrence of fabrics and forms by two methods of quantification—weight and estimated vessel equivalents (EVEs)—with a typological and technological study of the abundant complete vessels residing in the reserve collections of the Museum of London and the British Museum.

The results of this study are being published as parts of a series of papers, of which this is the first. They present the chronological and statistical evidence from the Seal House and Trig Lane excavations together with a type series constructed from all available sources. Discussion of the source and distribution of the pottery is based on a superficial survey of readily available evidence. The present paper is very largely the work of Roger White formerly of Liverpool University and Carol Cunningham of the Chelmsford Archaeological Trust.

‘MILL GREEN WARE’ AND ‘WEST KENT WARE’—TERMINOLOGY

The origin of the term ‘West Kent ware’ is now obscure, although it has been in use since 1972 when the second edition of Bernard Rackham’s ‘Medieval English Pottery’ with emendations by John Hurst was published. In the plate captions it is referred to as ‘West Kent ware’ when white slipped and green glazed, or ‘Kent-type’ when white slip decorated (Rackham 1972, Pl. 25, 32, 69). Since that time the terms have been used in some excavation reports in the London area, for example Angel Court (Orton 1977, 82), where the ware is first thoroughly described, or at King’s Langley Palace where a source in West Kent
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Fig. 1. Mill Green ware: The relative frequencies of the major pottery sources in the Seal House and Trig Lane waterfront revetment dumps.
is implied by the author (Hurst 1977, 155–7). The same ware is, however, called ‘Mill Green ware’ in the report on the excavation at King John’s Hunting Lodge at Writtle, Essex (Rahtz 1969, 94–5). This term does not appear to have been used in Kent itself until very recently, when the Essex origin of the ware is suggested (Thorn 1979, 157).

It is the conclusion of the present paper that the latter term is more correct and that all the vessels previously termed ‘West Kent ware’ have the same source, in and around Mill Green, near Ingatestone, Essex (TL 643022). The term ‘West Kent ware’ is therefore obviously a misnomer, and will not be used in this paper.

This paper is concerned largely with the fine glazed wares, which predominate in London. However, the same kilns were also producing undecorated and unglazed coarsewares, some examples of which have been found at Trig Lane. A preliminary note on the fabric and typology of this ware is therefore included. The coarseware is of considerable local importance in south and central Essex but does not have the wide distribution of the fine glazed ware.

**SOURCES**

Explorations have been carried out on the medieval kiln dumps at Mill Green, Ingatestone, on six occasions. Evidence of pottery manufacture was first discovered there in 1879 (TL 641013; Christy, 1884), when it was thought to be Roman. A further site was excavated in 1914 (TL 643017; Christy and Reader 1918), and was dated to the late 15th or early 16th centuries. The pottery is now stored at the Colchester and Essex Museum (Acc. No. 1916:10:3384.15).

No further work took place until 1962–3 when Mr David Saunders collected the material now in the possession of the Chelmsford and Essex Museum (Acc. No. 1977:151; TL 640024; TL 639015). Explorations continued in 1963–4 under Mr Kenneth Marshall and Mr Walter Davey (TL 642014) on a dump thought to have been situated very close to a kiln and consisting largely of unfired fragments. The fired vessels amongst them seem to be entirely wasters, and are now in the Passmore Edwards Museum (PEM Acc. Nos. 008, 0005–008, 00012) and Harlow Museum (Acc. Nos. HMB 5604, 2716, 2717, 2719–21, 2723, 2724, 2727, 2729, 2731, 2738, 2774).

The most significant excavations were conducted by Mr J. and Mrs E. Sellers in 1967 (Sellers 1968; 1970a and b; TL 643022), and were both more extensive and well stratified, with evidence of four periods of production. The material remains in their possession, with the exception of four complete squat jugs in the Colchester and Essex Museum (Acc. No. 12, 1968/1–2; Fig. 12 no. 32; Fig. 14 Nos. 34–5). Only one fieldwalking collection has been published since (Eddy 1980, 71; TL 643021).

All of the groups so far found at Mill Green contained fineware jugs with exactly the same forms and decoration as those found in deposits dated to the late 13th and early 14th centuries at Trig Lane. Petrological analysis reveals no distinctive inclusions, but in thin section samples from Mill Green are identical to those from London. This dating corresponds with the documentary evidence. A survey of the manor of Ingatestone in c. 1275 (contained in a Rental of 1521; ERO D/DP M150) mentions two Thomas Potters and a John le Potter, indicating that pottery production had started at least by this date.

Only the smaller kiln groups found in 1962–3 and 1979 produced both coarse and finewares entirely consistent with the
Fig. 2. Mill Green ware: The distribution of Mill Green ware (for site names and details see Appendix 2).
dated material from London. The larger groups all contained pottery which arguably could post-date the disappearance of Mill Green products from London, for example, cisterns, which are not unusual in the second half of the 14th century but are common in the 15th century. The dripping dish, cauldron and probably the skillets are also more consistent with a late 14th-century date.

Culinary stamps (Drury forthcoming) were found in 1914 and 1963–4 and, in substantial numbers, in the 1967 group. This increase in the variety of vessel forms may indicate a slightly later date, in accordance with the development of the coarseware fabric towards the harder, sandier types similar to transitional wares in Essex (Cunningham forthcoming). Plain and decorated floor tiles were found in association with pottery in 1967, and the former were provisionally dated to the late 14th century at Pleshey (Drury 1977, 107–8). Subsequent work has confirmed this (Drury and Norton forthcoming). The tiles were possibly hardcore derived from a nearby kiln site rather than products from the potter’s workshop.

Pottery manufacture at Mill Green flourished in the late 13th and early 14th centuries, producing mainly jugs, cooking pots and some large bowls. It probably continued for some time after the mid 14th century, perhaps until c. 1400, producing a rather wider range of vessels and floor tiles which, like the later coarse wares, had a purely local distribution. Peg-tile and floor-tile production in the Mill Green area continued throughout the medieval period and later (Drury 1981, 132, 140; Sellers 1970b).

DISTRIBUTION

The distribution of Mill Green ware is at present imperfectly known. An attempt to present the current state of knowledge is to be found in Fig. 2. Collections in the major museums of Hertfordshire, Essex, Kent, Surrey and London have been examined, whilst the pottery of Berkshire is known to contain no Mill Green ware (Vince forthcoming). It is possible that there is a minor coastal distribution outside this region; Mill Green ware, for example, has been identified at Bergen and Trondheim, Norway, by J. G. Hurst (pers. comm.).

Only in London itself (and there only at a few sites) can the quantity of Mill Green ware at any period be determined (Fig. 1; Appendix 3). This shows that at the height of its popularity Mill Green ware supplied between 10 and 20% of the pottery in the City, at a time when jugs accounted for between 60 and 70% of all pottery used.

Although similar figures were not available for sites outside London, a subjective impression of frequency has been obtained. Those sites with a similar or higher proportion of Mill Green ware to London are shown on Fig. 2 with large dots. Other sites either have a lower proportion, or not enough late 13th to 14th-century pottery was present for the proportion to be estimated. It is, however, clear that at the fringes of the plotted distribution, Mill Green ware is rare, for example at Kings Langley Palace, where two sherds only are known (Hurst 1977, 155). Other kiln sites producing fine, glazed jugs in the late 13th to early 14th centuries are shown on Fig. 2 as open squares. The distribution of Mill Green ware in two areas extends into what should be the market area of other potteries: London and Tyler Hill. A possible explanation for this distribution is that cheap water transport was used. Similar extended coastal distributions are known for Grimston-type ware and Ham Green ware (Clarke and Carter 1977; Barton 1963).
Fig. 3. Mill Green ware: Conical jugs with white slip and green glaze. No. 1 MOL Acc. No. A22555; No. 2 MOL Acc. No. A16922; No. 3 MOL Acc. No. 5630. (1/4)
DATING

The dating of Mill Green ware, as with all other Medieval wares in London, has been well secured by association with successive Thames waterfronts, renewed approximately every thirty years. Examples of these waterfronts have been excavated and can be closely dated by several complementary methods including dendrochronology (Milne and Milne 1982). At Trig Lane seven waterfronts were excavated and dated:

- G2: c. 1270
- G3: c. 1290
- G7: c. 1330
- G10: c. 1360
- G11: c. 1380
- G12: c. 1430
- G15: c. 1440

The G2 and G3 waterfronts produced large quantities of Mill Green ware, indicating that it was already in production by c. 1270. It was therefore necessary to examine the pottery from a slightly earlier waterfront site at Seal House (Miller and Schofield forthcoming), in the hope that this would establish a date for its introduction into the London area.

The Seal House site produced four Medieval waterfronts. The timberwork of the third waterfront was dated to c. 1210, and a drain in use with the revetment was dated to c. 1220 (Morgan and Schofield 1978). The fourth waterfront was dated by estimation, to c. 1240. In the latter phase, the waterfront had been divided into two areas of contemporary dumping by the stone foundations of a building (D). The pottery in the dumping contained no Mill Green ware, so its introduction would seem to post-date c. 1240. The secondary floor levels in building D were dated, again by estimation, to c. 1270 and it is in these levels that the first examples of Mill Green ware occur. It therefore seems likely that the ware was introduced into London between c. 1240 and 1270, probably nearer the later date rather than the earlier.

The quantity of Mill Green ware in the Trig Lane deposits was measured using two methods, weight of sherds and Estimated Vessel Equivalents (EVEs). The latter method compares the actual number of vessels of Mill Green ware with other wares and the former compares the bulk of the vessels only. The results are shown in Fig. 1 (see also Appendix 3), suggesting that in the late 13th century Mill Green was the third most important pottery source supplying London but by c. 1340 had been essentially supplanted by kilns in the West Surrey–N. E. Hampshire area.

In order to investigate the relative proportion and starting date of the various Mill Green forms and decorative types, all the Mill Green ware from the site was examined and every featured sherd described. This information was then compared with the type series of complete forms.

At Trig Lane, waterfronts G2 and G3 (c. 1270–1290) contain slip-decorated, clear-glazed Mill Green jugs as well as white-slipped green-glazed vessels. Although the actual proportions of forms could not be determined it is clear that conical jugs outnumbered squat jugs.

The foreshore deposit in front of the G3 revetment and sealed by the G7 revetment (i.e. c. 1290–1340) contained sherds of a Mill Green polychrome baluster jug. A complete example (Fig. 7 No. 13; PI. 1) was found in a pit at the G.P.O. site (POM79 Context 2048) associated with a complete Saintonge polychrome jug, dated to the early 14th century. Mill Green polychrome ware was totally absent from the largest sample groups, G2 and G3. However, at King John’s Hunting Lodge at Writtle, Essex, sherds have been found in phase 1, dated to
Plate 1. Mill Green ware: Baluster jug with polychrome decoration. MOL Acc. No. 5671 (Height 360mm)
Fig. 4. Mill Green ware: Conical jugs with white slip and green glaze. No. 4 MOL Acc. No. 13615 very pale glaze, 'owner's' mark opposite handle; No. 5 MOL Acc. No. A1441; No. 6 MOL Acc. No. 5658. (1/4)
c. 1306 (Rahtz 1969). By the time the G7 revetment was constructed, Mill Green ware formed only a small proportion of the pottery found, but it may be significant that the number of identifiable sherds from squat jugs was higher than that of conical jugs. The late 14th and 15th-century deposits at Trig Lane contained only a minimal proportion of Mill Green jugs, but it is unlikely that they were contemporary with the contexts in which they were found.

THE ORIGINS AND AFFINITIES OF THE MILL GREEN POTTERY

In the mid 13th century, when the Mill Green pottery industry first started, there were three comparable fineware industries in the London/Essex area which between them supplied the whole region with glazed jugs. London-type ware, made somewhere in the immediate vicinity of London, was supplied to London itself and much of the surrounding area. Kingston ware, made at Kingston-on-Thames (Hinton 1980) was also supplied to London, but at this date, the industry was just getting underway, and it flourished at the same period as the Mill Green industry. Sible Hedingham ware was supplied to much of Essex, including Chelmsford (the nearest market to Mill Green). Little is yet known of the Sible Hedingham industry, but those of London and Kingston are now well-known through the vessels in the Museum of London reference collection and the excavations on the Thames waterfront. From a comparison of the products of the Kingston and London-type industries in the mid 13th century with those of Mill Green in the late 13th century, it may be possible to show whether or not the Mill Green pottery industry derived from either of these sources.

Mill Green white-slipped, green-glazed jugs are frequently decorated using a technique also found in the London-type industry; a total slip of white clay on a red-firing body is scratched through with a comb, and the whole vessel is then covered with a thick, glossy, green glaze, coloured by the addition of copper. However, the combing on London-type jugs is much more controlled than that on the Mill Green vessels and occurs in more complicated designs.

The presence of 'ears' either side of the rim-handle join is a feature which ultimately originated in northern France, and is found, for example, on Rouen ware jugs. On Mill Green ware jugs, these 'ears' are pressed into the handle, whereas on Rouen, London-type and Kingston jugs they are applied strips.

There is, as yet, no evidence that the polychrome-decorated baluster jugs were an original component of the Mill Green industry. However, they have close parallels with the tall, highly decorated baluster form in both London-type and Kingston wares (no examples of these 'polychrome' jugs have yet been found at the Kingston kiln-sites but occur frequently in the Kingston fabric in London). In both these industries the vessels are white-slipped, clear-glazed and decorated with applied clay strips of white and red-firing clay. Green paint was added to some of the strips to emphasise the design. This is close, but not identical to the technique used on Mill Green polychrome jugs. All three wares use red slip in broad painted stripes, but whereas London and Kingston then use applied slip in a plastic state, all of the Mill Green slip decoration was applied in a liquid state. This probably includes the green paint, which might be formed by adding copper to a white slip, and was certainly painted onto the jugs. The blobs on Mill Green ware are used decoratively in the same way as those on London and Kingston polychrome jugs, but were applied by
Plate 2. Mill Green ware: Squat jug with white slip decoration and clear glaze. MOL Acc. No. A25546 (Estimated height 248mm)
dabbing slip onto the jug with the finger-tips rather than by rolling plastic clay into small balls and pressing them onto the jug.

The same level of similarity is found in the white-slip decorated squat jugs. The general form and type of decoration may again be seen in the London-type industry on vessels which are definitely of early and mid 13th century date (from Seal House Waterfronts III and IV).

In the period immediately preceding the introduction of Mill Green ware, there are no local wares employing precisely the same range of shapes and techniques. By contrast, the earliest Kingston ware jug forms are identical to those found in London-type ware. Therefore, either the Mill Green potters originated the style for themselves or one has to look further afield for its origins.

Once the Mill Green industry was established, close links began to develop with several other industries. Late 13th and early 14th century Kingston ware includes some conical jugs which copy the Mill Green form precisely. Similarly, the one Mill Green scale jug known (Fig. 10 No. 25; Pl. 3) is similar to vessels produced at Kingston (e.g. Museum of London Acc. No. 5664). The same range of miniature jugs found in Mill Green ware may also be seen in Kingston ware (e.g. Spencer 1969, 388).

A recently defined group of jugs from Colchester, presumably made in or near the town (Cunningham 1982), share certain characteristics with Mill Green ware in having white slip and, in some instances, green glaze. At present, however, there is insufficient evidence to indicate whether the start of this industry pre- or post-dates the first production of Mill Green ware, and the links between the two wares are rather tenuous.

A more general similarity can be seen between Mill Green ware and a series of white-slipped, green-glazed wares produced in southern England, notably from the kilns at Earlswood, Surrey and Nash Hill, near Lacock, Wilts. and Newbury Group C, produced somewhere in central or eastern Berkshire. The Nash Hill industry and Newbury Group C, like Mill Green ware, have a definite late 13th century origin (Vince forthcoming). The Earlswood kiln, however, is not independently dated, and to judge by the reduced, sandy, coarsewares produced, may start slightly earlier, perhaps in the early to mid 13th century (Turner 1974).

The decline in Mill Green fineware production in the 14th century is paralleled by the decline of Kingston ware. Both industries continued into the second half of the century, but on a greatly reduced scale, and making more utilitarian products. In the London area their place is taken by coarse, green-glazed, whiteware vessels from the Surrey–Hampshire border (Coarse Border ware).

DESCRIPTION AND TYPE SERIES

THE FINEWARE

Fabric

The fabric of Mill Green fineware is hard, and smooth to slightly rough in feel, with a finely irregular fracture. It is generally brick-red in colour (2.5 to 5YR 6/10; 5YR 5/4 to 6/8) with a grey core (N3–7), although completely reduced and completely oxidised examples are not uncommon.

Ten examples of Mill Green ware from London were examined in thin-section (Appendix 1) and comprised six fineware and four sandy ware sherds. Nine examples of Mill Green ware from the kiln excavated by Mrs Sellers in 1967, comprised five fineware, one sandy and three coarseware sherds.

The matrix of all nineteen sections is similar and consists of abundant, very fine quartz (average size 0.08mm) with sparse to moderate, fine mica, sparse iron ore (0.14mm),...
Fig. 5. Mill Green ware: Pear-shaped jug with white slip and green glaze. No. 7 MOL Acc. No. A20355. Baluster jugs with white slip and green glaze. No. 8 MOL Acc. No. A27569; No. 9 MOL Acc. No. A252268; No. 10 V&A no Acc. number. (1/4)
occasional very fine organic matter and occasional plagioclase feldspar. The majority of examples have ill-sorted, moderate tempering, probably deliberate, which consists of sub-angular and rounded quartz and metamorphic quartz (0.28–0.8mm). The quartz temper is more abundant in the sandy and coarseware fabrics. In addition to the quartz temper, sparse red clay pellets (c. 1.3mm) are present in the sandy and coarse fabrics and occasionally in the fine fabric, while rounded flint (0.26–0.44mm) occurs in the sandy fabric in greater quantity than in the coarse fabric. The white slip on the decorated sherds contains a very fine quartz silt.

Form

There are four basic types of fineware jugs. Their capacities were measured to the nearest 10ml, when possible, using dry rice.

(1) Conical and pear-shape (Figs 3–5 Nos. 1–7). These forms are closely similar and are often difficult to tell apart in sherd material. The profile basically forms the lower part of a truncated cone with no distinct neck and often curving gently into the base. In some examples, this curve is more pronounced and sometimes forms a definite carination. Conical jugs are by far the most common form, both in the complete collection and from excavated contexts. In the late 13th century, a small proportion are more pear-shaped than conical (e.g. Fig. 5 No. 7). Although a wide range of capacities is found, from 2,500 to 4,500ml, the average is in fact close to the late 13th century Wine Gallon of 3,540ml (Zupko 1968; Skinner 1967).

(2) Baluster (Figs 5–7 Nos. 8–15). This form has a distinct, generally straight-sided neck, semi-bulbous or pear-shaped body and a flared or pedestal base. Baluster jugs are much less common than conical or squat types and seem to fall into two groups: small vessels, all white-slipped and green-glazed, with capacities ranging from 750 to 2,000ml (Fig. 5 Nos. 8–10); and larger vessels (Fig. 6 Nos. 11, 12 and Fig. 7 Nos. 13–15), comparable in capacity with the conical jugs. The capacity of the largest complete example (Fig. 7 No. 13; Pl. 1), has been calculated by Clive Orton.

Fig. 6. Mill Green ware: Large baluster jugs with white slip and green glaze. No. 11 MOL no. Acc. number; No. 12 MOL Acc. No. 78. 159/12. (1/4)
Fig. 7. Mill Green ware: Baluster jugs with polychrome decoration, No. 13 POM 79 Context 2048; No. 14 MOL Acc. No. 18.413; No. 15 MOL Acc. No. 5671. (1/4)
to be approximately 10,080ml. These vessels are sometimes painted with red slip or are polychrome-decorated (Pls. I and I).

(3) Squat (Figs 11–14 Nos. 26–35). These have a bulbous or globular body whose height and girth are approximately equal. They appear to have slightly larger capacities than the conical jugs. Surviving vessels range from 3,400 to 5,500ml but larger jugs are known, mostly from fragments (Fig. 11 No. 28, Fig. 12 No. 30, Fig. 13 No. 33). A vessel from South Norwood has a capacity probably in excess of 9,000ml (Thornhill 1975, 150–4). Squat jugs are the second most common form found. There are slight indications that, although present in the late 13th century, the jugs become more common in the early 14th century at the expense of the conical and pear-shaped jugs.

(4) Rounded (Fig. 10 Nos. 23–25). These have a distinct, roughly straight-sided neck and rounded body tapering gently into the base. They appear to be much less common than any of the types described above, but are difficult to recognise from fragmentary material. The capacities of only two vessels were measured, 3,830ml and 4,750ml (Fig. 10 Nos. 23, 25). These are comparable with the capacities of the squat jugs.

It would appear that the jugs produced at Mill Green were primarily intended for carrying and serving liquids. There is no evidence that large cisterns with a bunghole to take a spigot were produced in fineware, and only two examples, from a kiln site, are known in coarseware (Fig. 18 Nos. 57, 58).

Neck forms fall basically into two types: a distinct, approximately cylindrical, but often slightly flaring neck (Fig. 10 Nos. 23–25); and, by far the commoner form, curving gently and with no distinct break out of the body into a collar, situated generally 15–20mm below the rim. The collar is typically slightly wider than the rim (Fig. 3 Nos. 1–3), although straight and everted rims are also known (Fig. 4 No. 5; Fig. 5 No. 9). The latter neck form is generally a feature of conical, pear-shaped and squat jugs. With either neck form, the rim may be rounded (Fig. 4 No. 6), flat-topped (Fig. 4 No. 5) or, most commonly, internally bevelled (Fig. 3 Nos. 1–3). A slight cordon at the juncture between neck and body may be present on any vessel type. Baluster jugs in particular may have up to three pronounced cordons on the neck. Pouring lips, when present, are pinched. Handles are commonly of strap form, ranging in width from 30–50mm. The upper surface may have slight vertical ridges (Fig. 11 No. 27). They are frequently stabbed, down the central ridge alone (Fig. 5 No. 7) or more at random in roughly double
Fig. 9. Mill Green ware: Miniature jugs, No. 17 MOL Acc. No. A1357; No. 18 MOL Acc. No. A1358; No. 19 BM B52; No. 20 BM B81; No. 21 MOL Acc. No. A3915; No. 22 MOL Acc. No. 25991. (1/4)

or multiple vertical rows (Fig. 10 No. 25; Fig. 12 No. 31). Such stabbing may have ensured the correct firing of the handle. It is certainly unlikely to have been decorative since it appears to have taken place before the application of the white slip which subsequently somewhat obscured it. Handles are attached at the rim by inserting a plug fashioned on the handle into a hole cut into the vessel wall. The join is invariably smoothed over inside. The exterior of the rim/handle join is either left plain or is 'eared' by making two distinct thumb impressions (Fig. 1 No. 1; Fig. 5 No. 7). The lower attachment may also be plugged or made by pushing the vessel wall into the thickened handle base, leaving the join unsmoothed inside (Fig. 14 No. 38). Externally, the attachment is smoothed over, usually leaving two or three elongated, shallow thumb-marks. Plain rod handles are uncommon except on miniature jugs (Fig. 9 Nos. 17, 19 and 22). Handles of flattened oval section are also known (Fig. 5 Nos. 8 and 9).

In the majority of vessels examined, of all forms, the base has been pushed out from inside, giving a slightly convex profile.
Fig. 10. Mill Green ware: Rounded jugs with white slip and green glaze. No. 23 MOL Acc. No. 78.185/2; No. 24 MOL Acc. No. 15948; No. 25 MOL Acc. No. 5641. (1/4)
Plate 3. Mill Green ware: Rounded jug with white slip and green glaze and scale-decoration. MOL Acc. No. 5641 (Height 299mm)
some instances, the base has then been somewhat flattened as a result of the vessel being placed before completely dry on a flat surface. The parallel marks of the wire used to remove the pot from the wheel are often visible, although sometimes obscured by knife-trimming, especially close to the edge. The lower part of the body, just above the base angle, is also knife-trimmed after the application, by hand, of white slip. In some instances, this causes the slip to end in a markedly straight line (Fig. 3 No. 2; Fig. 6 No. 12). Knife-trimming is noticeably heavy on squat jugs with their generally more pronounced convex profile. With few exceptions, the base is then thumbed, continuously on conical and pear-shaped and baluster jugs, and in groups, commonly of three or four, on squat and rounded forms. Thumbing may be oblique in appearance (Fig. 4 No. 4; Fig. 7 No. 13) and occasionally takes the form of a series of thumbnail nicks (Fig. 3 No. 2; Fig. 12 No. 29). In all instances, the vessels appear to have been glazed after this treatment has taken place.

A few exceptions to this general procedure may be noted. The bases of baluster forms whose necks are too narrow to allow the potter's hand to work inside the vessel may be more or less flat rather than pushed out. They may also have a slightly recessed appearance caused by smoothing underneath with a thumb or finger (Fig. 5 No. 9) and one squat jug from the kiln site has a noticeably flat, unthumbed base (Fig. 14 No. 35).

The even, unpitted quality of the glaze suggests that the method of application was different from that used on London ware jugs, which appear generally to have been dusted with powdered lead and copper. Since Mill Green vessels do not seem to have been dipped in a glaze, it is likely that they were glazed by being dusted with a lead oxide or sulphide, with or without the addition of copper. Glaze varying in colour from a pale yellow with specks of green to an overall dark green, depending on the quantity of copper added, is used over a white slip on by far the greatest proportion of Mill Green jugs of all forms found in London. The slip is wiped onto the body by hand and generally ends just inside the rim and at approximately 1/5 of the height from the base. Wipe-marks may be just visible on the body (Fig. 11 No. 27).

Four basic types of decoration have been recognised:

1. **Combing**
   This takes the form of lines incised through a white slip, and is found mostly on conical or pear-shaped and squat jugs. Made with a three- to five-pronged comb, the commonest pattern consists simply of intermittently spaced vertical lines, often discontinuous (Fig. 3 Nos. 1 and 3). A more deliberate but less common design consists of groups of two or three vertical lines separated by panels of short oblique combed strokes (Fig. 5 No. 7).
   One example combines wavy lines with both vertical and horizontal combed lines (Fig. 14 No. 39).

2. **White slip painted decoration**
   Relatively rare in London, white slip decoration is painted straight onto the body of the pot, with no overall white slip. The glaze is clear and is often restricted to the body alone. Vertical lines again form the principal design scheme, irregularly spaced (Fig. 12 No. 32; Fig. 14 No. 34), or grouped evenly around the body of the pot (Fig. 12 No. 29; Pl. II). In one example, groups of three vertical lines are separated by rows of semicircular hoops (Fig. 12 No. 30). Horizontal lines are frequently painted just below the rim and at the point at which the body curves into the neck (Fig. 14 Nos. 34 and 35). A line of slip may also be painted down the centre or along the edges of the handle (Fig. 12 No. 31). More complex designs make use of foliate and chequerboard patterns, inverted horseshoes or somewhat less coherent geometric devices (Fig. 12 No. 31; Pl. 2), and one large, squat jug (Fig. 13 No. 33) has cross-hatched panels filled with white slip dots.

3. **Red slip painted decoration**
   Only one example has so far been found in London, a baluster jug with red slip decoration painted onto an overall white slip under a clear glaze (Fig. 7 No. 14; Pl. III). The design mirrors that of the combed examples described above (e.g. Fig. 5 No. 7), consisting
Fig. 11. Mill Green ware: squat jugs with white slip and green glaze. No. 26 MOL Acc. No. B160; No. 27 MOL Acc. No. A5214; No. 28 MOL Acc. No. 78.199/71. (1/4)
of groups of three vertical lines alternating with panels of short oblique lines.

(4) Polychrome decoration

This appears to be limited to baluster jugs, and so far only one basic design has been recognised, directly paralleling London ware Rouen copies (Fig. 7 Nos. 13, 15; Pis. 1 and I). Red slip vertical lines and chevrons, 40–50mm wide, and with white slip dots applied at random, are painted onto an overall white slip, and outlined in green with white clay painted onto the vessel in a slip mixed with copper. The glaze is clear.

Applied decoration is relatively rare. The only complete example examined was a rounded jug with seven horizontal rows of applied scales approximately 10mm high around the body (Fig. 10 No. 25; Pl. 3). Sherd material from Trig Lane included one example of a thumbed vertical strip (Fig. 14 No. 37) and a plain horizontal strip applied across the base of a handle (Fig. 14 No. 38).

Slashed decoration appears to be even less common, and only two sherds are illustrated, one from a jug with a row of shallow oblique cuts around the collar just below the rim (Fig. 14 No. 42). The other is part of a strap handle, also with shallow oblique cuts (Fig. 14 No. 40).

A very unusual, highly decorated jug (Fig. 8 No. 16), probably of baluster form, has the remains of a prominently modelled, bearded face set between two subsidiary strap handles that curve in the middle to meet the neck of the pot. The vestiges of two arms spring from the base of these handles presumably meeting on the body. The main, and more substantial, handle is missing. The body is clear-glazed, and the facial features have deeply incised decoration through white slip. Additional decoration consists of vertical lines of white slip, and a somewhat random arrangement of applied, raspberry-stamped, white slip pads.

A single handle is known from a large vessel (Fig. 15 No. 43), and since no jug with such a robust handle has yet been found, it might come from another form, such as a storage jar or possibly a decorated curfew (cf Jennings 1981, 42–3). However, the thin walls of the vessel suggest that it was more likely to have been a jug. The ring-stamp decoration down the centre and on the sides of the handle is so far unparalleled, as are the deeply indented finger-impressions pushed into the base of the handle from inside the body.

**Miniature jugs**

Six miniature jugs are known, from the Museum of London and British Museum reserve collections (Fig. 9 Nos. 17–22), although none have yet been identified in any of the kiln groups. Four are anthropomorphic, including one of Dunning’s type II with a brooch (Dunning 1969, 388–390), one has a ram’s head and one is plain. All the vessels are of baluster form, and all are covered with white slip and green glaze. However, the faces are unslipped and have a clear glaze. Applied white clay is sometimes used to emphasise lips, eyes and hands (Fig. 9 No. 17). Red slip is also used on the face and arm of one of the jugs (Fig. 9 No. 20). Apart from the one brooch, none of the jugs have any indications of dress. Two have free-standing arms with hands holding the chin (Fig. 9 Nos. 17 and 18), and two have one hand on the stomach and the other on the chin (Fig. 9 Nos. 19 and 20). The fingers are indicated by slashing. The eyes are either applied blobs with a pierced pupil or, in one case, ring and dot stamps (Fig. 9 No. 18). The settings on the brooch are similarly made from applied blobs centrally pierced. The lips on two jugs are applied (Fig. 9 Nos. 17 and 20). These jugs have capacities of less than 200ml and, if they were not merely decorative, were probably used to hold liquids.

**'Owner's' marks**

There is one example in the Museum of London reserve collection of a deliberate mark made by the potter himself (Fig. 4 No. 4; Pl. 4). This takes the form of a deeply incised arrow pointing upwards placed just below the collar, opposite the handle and made with three distinct knife cuts. It is not unlike the broad arrow War Department mark found on government property and may be an early example of this. However, it may simply be a personal mark or may represent an order placed with the potter (Hinton 1977, 225–6). Only one example of a mark made after firing
Fig. 12. Mill Green ware: Squat jugs with white slip decoration and clear glaze. No. 29 MOL Acc. No. 5690; No. 30 MOL Acc. No. ER 1522 Pit 27; No. 31 MOL Acc. No. A25546; No. 32 Colchester and Essex Museum 12, 1968/2. (1/4)
Plate I. Mill Green ware: Baluster jug with polychrome decoration. POM 79, context 2048 (Height 634mm)

Plate II. Mill Green ware: Squat jug with handle decoration and clear glaze. MOL Acc. No. 5690 (Height 225mm)
Plate III. Mill Green ware: Baluster jug with red slip painted decoration. MOL Acc. No. 18.413 (Estimated height 288mm)

Plate IV. Mill Green ware: Miniature jugs. MOL Acc. No. A3915 (Estimated height 130mm); MOL Acc. No. A1358 (Estimated height 91mm); MOL Acc. No. A1357 (Estimated height 118mm); MOL Acc. No. 25991 (Height 124mm)
A Dated Type Series of London Medieval Pottery, Part One, Mill Green Ware

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Fig. 13. Mill Green ware: Large squat jug with white slip decoration and clear glaze. No. 42 LUD 82 Context 1048. (1/4)

was found, on an oval-sectioned handle from Trig Lane (Fig. 14 No. 36). It is in the form of an equal-armed cross, with the glaze chipped off around it (see also Huggins 1972, Fig. 19 No. 14).

THE COARSEWARES

Examination of the pottery found at the kiln site (except for that from the 1967 excavations) suggests that coarsewares constituted 20-40% of Mill Green's total production. The fabric is basically the same as that of the finewares (see p. 277ff.) with abundant, clear, angular quartz, up to 0.1mm in size, and sparse, very fine, white mica. However, the tempering is much coarser than that generally added to the finewares, consisting of moderate, clear and brown, sub-angular and rounded quartz, up to 1.0mm or more in size; sparse to moderate, medium-sized red clay pellets (0.25–0.5mm); and occasional very coarse, sparse flint. Similar tempering is occasionally used for handles on fineware jugs. The vessels have most commonly been oxidised in firing, giving the fabric a pale orange/brown colour (5YR 6/8–5/8), although some have a grey or completely reduced fabric (5YR 4/8; 10YR 5/1–5/2).

Coarseware forms are normally undecorated, although cooking pots may sometimes have applied thumbed strips (Fig. 16 No. 44; Fig. 17 No. 50; see also Christy & Reader 1918, Fig. 15 No. 4). Thumbing is generally absent from bases. With the exception of the cooking pots, which often have a thin green glaze on the inside of the base, and the louvre, mentioned below, no glaze or slip is used. Cooking pots, which together with the bowls, seem to form the major coarseware output, are generally thin-walled with a slightly sagging base and either a short, upright neck (Fig. 17 No. 47), or a sharply everted rim and
Fig. 14. Mill Green ware: Squat jugs with white slip decoration and clear glaze. No. 34 Colchester and Essex Museum no number; No. 35 Colchester and Essex Museum 12.1968/1. Miscellaneous jug fragments with white slip and green glaze. No. 36 TL 74 Context 2467 ‘owner’s’ mark on handle; No. 37 TL 74 Context 1743; No. 38 TL 74 Context 2422; No. 39 TL 74 Context 2482; No. 40 TL 74 Context 47; No. 41 MOL no number; No. 42 TL 74 Context 2422. (1/4)
Plate 4. Mill Green ware: Conical jug with white slip and clear glaze, showing 'owner's' mark. MOL Acc. No. 13615 (Height 304mm)
no neck (Fig. 17 Nos. 49 and 52). Rims are flat-topped (Fig. 17 No. 49) or occasionally bevelled and thickened externally (Fig. 17 No. 51). The bowls, which are marginally less common, are large with heavy, flanged rims and often have a slight angle just below the rim (Fig. 17 No. 54). As yet, no bases have been recognised and a complete profile cannot be reconstructed.

A number of small, curved, pipkin-type handles have been found (Fig. 18 No. 55), but again no complete profile is known. They may, however, be associated with the lid-seated rims from small, cooking pot-shaped vessels (Fig. 18 No. 56). Cisterns are equally uncommon and have been mainly identified from the bungholes alone. These are usually plain (Fig. 18 No. 58), but may be pierced, with a thumbed collar (Fig. 18 No. 57). Although jug-shaped cisterns are known (Sellers 1968; 1970a), it is possible that jar-shaped vessels were also made.

One fragment of a dripping dish has been found at the kiln site (Fig. 18 No. 59). It appears to be part of a crudely formed, D-shaped vessel rather than an oval or rectangular form. Deduction of this form is confirmed by an example from Hadleigh Castle (Drewett 1975). Only one example has so far been found of a two-handled cooking pot or cauldron (Fig. 18 No. 60). The rim is of simple, everted form and the handles are distinctly angular, possibly in imitation of metal forms. There was one fragment of a louvre with white slip decoration and green glaze. In addition to the forms recognised here, Mrs Sellers records the presence of dishes, 'plates' or perhaps lids, and cups (Sellers 1970).

CONCLUSION

On the basis of the distribution evidence, the petrological analysis and comparison of the material from the kiln excavations with that from London, it seems certain that the Mill Green kilns are one source, if not the only source, for what has been termed 'West Kent' ware in London. It is therefore recommended that in future the use of the term 'West Kent' ware should be dropped in favour of Mill Green ware.

A type series has been produced based on the forms in the Museum of London reserve collection although this may of course be modified by further material from excavations. The dating of the ware in London seems now to be securely established. Its introduction occurred c. 1240–1270, probably closer to the latter date rather than the former, and importation reached a peak c. 1300 and stopped or tailed off after c. 1350. The polychrome ware was introduced to London probably during the peak period, c. 1290–1306. The latest material, possibly produced in the late 14th century, is mostly coarseware, and is found predominantly in south and central Essex.
Fig. 16. Mill Green coarseware: Cooking pots, No. 44 MOL no number; No. 45 MOL Acc. No. 11921; No. 46 MOL Acc. No. A27898.

(1/4)

ACKNOWLEDGMENTS

First and foremost we would like to thank Brian Spencer and John Clark for allowing us to use the vessels in the reserve collection in the Museum of London; John Cherry for permission to study vessels in the British Museum; and Mrs E. Sellers for supplying sample sherds and information on Mill Green itself. The compilation of the distribution map necessitated writing to many museums in the Home Counties and we would like to thank the following for their prompt replies and help when Roger White came to view their pottery collections: M. J. Winter of Colchester and Essex Museum; P. Wilkinson and P. Greenwood of the Passmore Edwards Museum; M. Shaw of the Croydon Natural History and Scientific Society; K. L. Crowe of Southend-on-Sea Central Museum; I. K. Jones of Harlow Museum; J. Arthur of Guildford Museum; D. B. Kelly of Maidstone Museum and Art Gallery; N. Macpherson-Grant of the Canterbury Archaeological Trust; C. Partridge of the Hertfordshire Excavation Trust; D. J. Turner; E. Hills; S. Jordain of Saffron Walden Museum; C. R. Baker of Dartford Borough Museum; C. V. Dawes of Stevenage Museum and L. Millard of the Kent Museums Service.

Thanks are also due to Kate Armitage and Anne Jenner who provided some of the illustrations, and to Rita Rattray who carried out the fabric analysis. Roger White would like to thank Andy Carden for correcting a typescript, Lloyd Laing for suggesting the project and for his subsequent help and his mother for typing the first draft.

Fig. 17 Nos. 49, 50, 53-54 and Fig. 18 Nos. 55-56, 59-60 are published by kind permission of the Curator, Passmore Edwards Museum, Stratford, E15 4LZ.

We are grateful to the Colchester and Essex Museum for permission to publish Fig. 12 No. 32; Fig. 14 Nos 34 and 35; Fig. 17 No. 47; Fig. 18 Nos. 57 and 58; and to the Chelmsford and Essex Museum for permission to publish Fig. 17 No. 48.
Fig. 17. Mill Green coarseware: Cooking pots, No. 47 Colchester and Essex Museum 3384.15; No. 48 Chelmsford and Essex Museum 1977.151; No. 49 Passmore Edwards Museum Acc. No. 008.0005; No. 50 Passmore Edwards Museum Acc. No. 008.0006; No. 51 Chelmsford and Essex Museum 1977.151; No. 52 TL74 Context 2415; No. 53 Passmore Edwards Museum Acc. No. 008.0007, Bowl No. 54 Passmore Edwards Museum Acc. No. 008.0008. (1/4)

(1/4)

APPENDIX 1

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APPENDIX 2

List of find-spots of Mill Green ware and other relevant sites (see Fig. 2).

Essex

(1) Mill Green, Ingatestone (2) Colchester (Cunningham 1982)
(3) Rivenhall (Drury forthcoming)
(4) Ongar Castle (Colchester Mus. unpubl.)
(5) Harlow, Chalk Lane (Passmore Edwards Mus. unpubl.)
(6) Hadleigh Castle (Drewett 1975)
(7) Mucking Windmill (Cunningham forthcoming)
(8) Canvey Island (Southend Mus. unpubl.)
(9) Two Tree Island (Southend Mus. unpubl.)
(10) Rayleigh Castle (Helliwell and Macleod 1981; Southend Mus. unpubl.)
(11) Southchurch Hall (E. Hills pers. comm.)
(12) Harwich (C. Cunningham pers. comm.)
(13) Dunmow
(14) Danbury
(15) King John’s Hunting Lodge, Writtle (Rahtz 1969)
(16) Waltham Abbey (Huggins 1972; 1976)
(17) Chelmsford (Cunningham forthcoming)
(18) Tyler Hill
(19) Moat Farm, Leigh (Parfitt 1976)
(20) Upchurch (Rackham 1972)
(21) Canterbury (N. Macpherson-Grant pers. comm.)
(22) Dartford (Mynard 1973)
(23) Eymsford Castle (Rigold 1971)
(24) Stonar (N. Macpherson-Grant pers. comm.)
(25) Ospringe (Thorn 1979)

Hertford

(26) Hertford
(27) Stevenage (C. Dawes pers. comm.)
(28) King’s Langley Abbey (Hurst 1977)

Greater London

(29) West Ham, Bakers Row, Church St. (Passmore Edwards Mus. unpubl.)
(30) Stepney (Blackmore 1982)
(31) Norwood/Beckenham (Thornhill 1974)
(32) Barking Abbey (Passmore Edwards Mus. unpubl.)
(33) Dagenham (Passmore Edwards Mus. unpubl.)
(34) Berden (Passmore Edwards Mus. unpubl.)

Inner London

(35) City
(36) Palace of Westminster, Cromwell Green (Platts 1980)
(37) Tottenham Court, Euston Road, Whytehead in prep.)
(38) Kingston (Hinton 1980)
(39) Earl’s Court (Turner 1974)
(40) Guildford
(41) Reigate
(42) Brill (Jope 1953–4)
(43) Reading (A. Vince pers. comm.)
(44) Newbury (Vince forthcoming)
(45) Oxford (M. Mellor pers. comm.)
APPENDIX 3: QUANTITIES OF MILL GREEN WARE IN THE SEAL HOUSE–TRIG LANE SEQUENCES

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<td>Totals</td>
<td>16.37 Eve's</td>
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<td>96.21% wt</td>
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(iv) Trig Lane Group G10, c. 1360.
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<td>CP</td>
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(v) Trig Lane Group G11, c. 1380.
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(vi) Trig Lane Group G12, c. 1430.
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(vii) Trig Lane Group G15, c. 1440.
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J. E. Pearce, A. G. Vince and R. White
A MEDIEVAL ARMORIAL BROOCH OR PENDANT FROM BAYNARDS CASTLE

TONY WILMOTT

The medieval dock excavated in 1972 at Baynards Castle was constructed in the late 13th – early 14th century. The dumped make-up layers which were laid down during the construction of the dock were very rich in finds (pers. comm. P. Marsden). Under consideration here is one of the items from these deposits (Baynards Castle Find No. 3058: Fig. 1a).

The object consists of a copper alloy shield measuring 31mm long and 27mm wide. This was cast in one piece with a stud positioned in the centre at the back. The shield is fastened by means of the back stud to an iron object. This is made of an iron bar of rectangular section pierced to form a loop at one end. The bar is split, probably by sawing, up to 26mm from the pierced end. The two arms thus formed are bent into arcs such that the pierced hole is in the centre point of an ‘M’ shape. The end of each arm is treated in a different way. One is bent at right-angles to the arm and although broken appears to have been pierced with a small hole or slot: on the other side the arm was flattened and was also pierced and this hole too is broken across (Fig. 1a). The stud on the back of the shield was passed through the hole in the iron support and hammered flat after the fashion of a rivet. The shield was enamelled and the enamel has retained its original colours, though the red field has in places taken on a green tinge.

Stud fastened enamel shields occur relatively infrequently, the more usual fastening consisting of a pendant loop. Shields with rear studs are often very small, like that mounted on a stirrup-iron from Warpsgrove, Oxon (pers. comm. N. Griffiths), which is only 18mm high. Two enamel shields of similar size to that from Baynards Castle have recently been found at Maison Dieu, Ospringe, Kent (Goodall 1979, 137). One of these, bearing the arms England, a label which probably pre-dated 1340 (Pinches and Pinches 1974, 72) retained the stump of a rear stud fastening.

The most usual explanation of these enamelled shields is as part of a horse trapping, especially in the case of the pendant type (see e.g. Rimmington and Rutter 1967, 62), but it is difficult to match the shape of the iron portion of the Baynards Castle object with any part of a horse’s furniture. However, a brooch published by Nelson (1940, 387) provides a close parallel to the Baynards Castle object and an alternative explanation of its function. This unprovenanced object was solid cast of bronze and was gilded. It was dated to c. 1320. It was the same shape and size as the Baynards Castle find and also had a shield of arms placed on the centre point. The ends of the arcs were connected with the brooch pin. The shield was so contrived that when the correct way up the arched support and the pin formed a ‘B’ shape. On the Baynards Castle item the stud of the shield turns in its socket and it is not certain which way up it should lie. The treatment of the ends of the iron piece is somewhat similar to those on Nelson’s bronze...
brooch. The flattened end here curved round to meet the support and retained the top of the pin. In the case of the Baynards Castle example, the pin may have been held in position with some arrangement connected with the small hole mentioned above. The end bent at right-angles was bent outwards again, the hole becoming a slot into which the pin would catch. Thus although of iron and copper alloy and hence of poorer quality than the gilded bronze of the earlier find, the Baynards Castle find may similarly be identified as a brooch.

This, if accepted, would indicate that it was worn by a retainer of the personage or family whose arms it displays, as were the FitzWalter scabbards previously identified from London (Wilmott 1981, 132–139). The arms depicted on the shield can be blazoned gules, three lions passant guardant or, a label of three points charged on each point with two fleurs-de-lis or. The arms well established as those of the medieval Earls of Lancaster (Brooke-Little 1978, 119) are identical except for the fact that these had three rather than two fleurs-de-lis on each point of the label (Fig. 1b). The first appearance of these arms is found on a seal of Edmund Crouchback, Earl of Lancaster 1245–1296 (Pinches and Pinches 1974, 32). From him the arms descended to his son Thomas the 2nd Earl (1296–1322); Thomas’ younger brother Henry, the 3rd Earl (1322–1345); and thence to his son, the 1st Duke of Lancaster, Henry (1345–1361) (Pinches and Pinches 1974, 33). The heiress of the 1st Duke, Blanche
of Lancaster, used these arms until her marriage with John of Gaunt (1340–1399), who thus became Duke of Lancaster. Though the arms were not used by Gaunt himself (Stanford-London 1956, 25), they descended to his son Henry of Bolingbroke (later Henry IV), who bore them when Earl of Derby. (1386–1413) (Pinches and Pinches 1974, 86). The arms remain to the present day as those of the Royal Duchy of Lancaster (Pye 1962 a, 98) If the arms on the Baynards Castle brooch are intended as those of the Earls of Lancaster it is likely to have been as the arms of one of the first two earls, Edmund or Thomas (1245–1322). The date of the deposit in which the object was found, together with the fact that it must have been in use for some time before being disposed of as rubbish, make this almost certain to be the correct date range.

The presence of two, rather than three fleurs-de-lis on each point of the label on the Baynards Castle brooch does not affect the interpretation of the arms as those of the Earls of Lancaster, despite the fact that the full blazon with three fleurs-de-lis on each point of the label appears as early as 1298 as the arms of Earl Thomas in the Fakirk Roll (Brault 1973, 88). It was common practice in medieval heraldry to increase or diminish the number of charges represented according to the space available, especially if it did not matter how many were represented, for example when the blazon merely required 'many' (senee or scattered; Pye 1962b, 201). In the 1300 Caerlave-rock Roll (Brault 1973, 111) the arms of Thomas of Lancaster are blazoned England, a label of France, or the arms of England with a label, the design of which is based on the arms of France. As the arms of France at this time were azure, senee de lis or (Pinches and Pinches 1974, 43) this alternative form of blazon logically requires that the label should be scattered with fleurs-de-lis rather than be charged with a specific number, a requirement which is fulfilled by the representation on the brooch. During this period many rules of heraldry had not yet become inflexible. For example, the label was not exclusively the mark of an elder son, it merely denoted some form of kinship. In the case of Edmund Crouchback the relationship was as brother to the King of England whose arms he differenced. Although now generally shown with three points, in the 13th century either three or five points were shown depending on the space available. This flexibility is shown on a seal of Edmund Crouchback. Here, a shield of his arms on one side of the seal, is shown with a five-point label, the equestrian figure on the other side has three-point labels charged on both horse trappings and shield (Sandford 1707, 102). It would appear that the seal engraver recognised that to place a five-point label on the equestrian figure would obscure the rest of the device. It is equally likely that the enameller of the brooch would take advantage of the possibility of freedom in his design, with regard to the number of points on the label and the number of fleurs-de-lis on each point, in order to create a pleasing and uncluttered effect while ensuring that the arms were sufficiently correct to avoid confusion.

The fact that the brooch was found in a rubbish dump precludes any speculation on the occasion of its loss. The Earls of Lancaster did not hold much land in London. In 1284 Queen Eleanor granted to her son, Edmund Crouchback, the area on the north bank of the Thames between Westminster and Temple Bar known as the Savoy (Somerville 1953, 13). His successor Thomas acquired land in Holborn after his marriage to Alice de Lacy and the death of his father-in-law the Earl of Lincoln in 1311 (Maddicott 1970, 9),
while in 1313 the Earl of Pembroke bought peace with Thomas by releasing to him New Temple manor and the lands of the Templars outside Temple Bar (Somerville 1953, 24). After c. 1308 and the break with Edward II over Piers Gaveston however, Thomas was very infrequently in the City (Maddicott 1970, 11). Although very inconclusive, it may be noted that the main concentration of Lancaster lands was very close to the site of the second Baynards Castle where the brooch was found.

ADDENDUM
As this note was going to press three further brooches of similar shape were found on the site at Swan Lane (SWA 81; pers. comm. G. Egan). These brooches have identical terminals to that from Baynards Castle and the centre points of the ‘M’ shapes were all treated decoratively. None of the decorations were armorial.

ACKNOWLEDGEMENTS
I would like to thank Tony Dyson, Nick Griffiths and Peter Marsden for their help and encouragement in the preparation of this note, and Nick Griffiths for the illustration.
In 1976, Arthur MacGregor published his excellent summary of the historical and archaeological evidence for bone skates (MacGregor 1976; see also MacGregor 1975). As he noted, virtually all the examples from museum collections in Britain (including 168 from the Museum of London) must be regarded as unstratified. He lists 37 stratified skates from the British Isles in the appendix to his article (none of which are from London), and calls for further information on more recent finds.

The following short descriptions of the seven stratified bone skates from London can now be added to MacGregor’s list. The distal end of the bone is here designated as the ‘toe’, and the proximal end as the ‘heel’, in reference to the attachment of the skate to the foot.

Department of Urban Archaeology Excavations, Museum of London.


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Pilgrim signs have long been recognised as almost an intrinsic ingredient of London's medieval riverside and foreshore. Those found on the Trig Lane site span two centuries and begin with a souvenir brought back from Canterbury in the middle of the 13th century.

It was about then, too, that Matthew Paris drew a route map for pilgrims, marking Canterbury at two days' distance from London. Chaucer's pilgrims took four days to get to Canterbury, as did Queen Isabella in 1358 and King John of France in 1360. But their leisurely rides must have been conducted at little more than walking pace. Four days were allotted in 1391 to a convicted felon to walk from London to Canterbury on the way to exile. There can be little doubt that Londoners who went on horseback could comfortably complete the Canterbury pilgrimage inside a week, stopping each way for the night and for a change of horses at Rochester. The regular horse-hire service cost four shillings return.

It was this partly contrived accessibility as much as St. Thomas's special appeal to Londoners that accounts for the predominance of Canterbury souvenirs among the finds from Trig Lane. Not only do these commemorate nearly all of Canterbury's most important attractions to the medieval pilgrim, but most of them date from the time of Geoffrey Chaucer (c. 1340–1400). This is perhaps no coincidence. It was in his lifetime that the Canterbury pilgrimage seems to have reached its peak, for, in a period of unprecedented mortality and anxiety, Londoners turned increasingly to their chosen saints for protection in this life and salvation in the next. As other badges show (Nos 3 and 6), they also grew more dependent on magic pure and simple as an answer to life's hazards.

In their minor way the badges and brooches from Trig Lane illustrate other trends of thought and behaviour in Chaucer's time — the emergence of English and the wider spread of literacy (Nos. 6 and 15), for example, and the growth of social ambition represented by the wearing of cheap ornaments made in imitation of the jewelled and enamelled brooches worn as status symbols by the well-to-do (Nos. 6, 11–13). Also foreshadowed (No. 15) is the practice that developed during the 15th century of wearing badges of livery, the secular parallel to the badges that marked the wearer's allegiance to a particular saint or cult.

This group of objects includes two
Plate 1. Canterbury ampulla (No. 1), front (ht. 97 mm).

Plate 2. Canterbury ampulla (No. 1), reverse.
that are of particular interest and importance—an ampulla from the priory of Bromholm, Norfolk (No. 2) and a badge commemorating the Black Prince (No. 15). These, like the rest described below (excepting No. 13), are made of tin or tin-lead alloy. With two exceptions, each badge or brooch is (or originally was) provided with a pin and clasp, which were cast in one piece with the badge. Nos. 2 and 12 were cast in two-piece moulds, the remainder (except No. 13) in three-piece moulds.

The figures were drawn by Nicholas Griffiths and the photographs were taken by Jon Bailey, except for Plates 1 and 2 which are by Trevor Hurst. All objects are reproduced actual size.

1. (1671) (Pis. 1, 2) Pilgrim's ampulla, a slim, flat-sided vessel, widest at the mouth, its front and back as well as its edges tapering to the base. From just below the mouth the ampulla is surrounded by a narrow circular band. This is attached by means of interlinked fleurs-de-lys and is inscribed on the front: O(P)TIMVS EGRORVM MEDICVS FIT THOMA BONOR(VM) (Thomas is the best doctor of the worthy sick) and decorated on the back with zigzags alternately hatched and plain.

On the front of the ampulla, within a border of triangular bosses, is depicted the figure of St. Thomas of Canterbury, his head in low relief. He wears a squat mitre, an amice, and a chasuble that hangs in curious V-shaped folds over a diapered, full-length dalmatic. Low on the shoulders is the top of the Y-shaped pall, the special mark of an archbishop. His right hand, wearing an episcopal glove and ring, is raised in benediction or intercession, and round his right forearm is wound the maniple that was normally worn draped over the left arm. In his left hand he holds a crosier, its crook enriched with scroll-work. Down the middle of the ampulla his cross-staff is modelled in the round. Though now squashed flat and distorted, it originally stood about 5mm proud of the ampulla and is attached to it by an arm of the cross and two struts.

The reverse side shows Becket's martyrdom. A knight on the left cleaves Becket's head with a sword. Between them is an altar, an allusion to the popular, but mistaken, belief that Becket had been slain while saying mass. Behind the archbishop and holding his cross-staff stands Edward Grim, who alone stayed with Becket when he was set upon by the assailants. The knight wears a flat-topped helm, mail leggings and a hauberk of mail over a knee-length gambeson, and he carries a kite-shaped shield.

The ampulla would have been worn like a mayoral badge, suspended from a cord around the neck. It would have provided its owner with flamboyant proof of his accomplished journey and Canterbury with eye-catching propaganda for its martyr. But its main purpose was as a container of a dose of Canterbury's miracle-working water, which was reputedly tinged with the blood that Becket shed at his martyrdom. Characteristically, its precious contents were (in this case permanently) sealed tight by nipping up its narrow mouth with pincers.

The form and size of the phial resemble those of a simple sword-chape, but its outline is here extended into that of a wide-necked flask or bag by surrounding its lower parts with an ornamental flange. Along with other evidence of date, the significance of this feature to the construction of a typological sequence of surviving Canterbury ampullae has been considered elsewhere, and the suggestion there put forward is that this type of ampulla (also represented by two earlier finds from London) came roughly midway (c. 1245) between other sorts that were evidently under production at the time of the two peak years of the 13th-century pilgrimage, 1220, when St. Thomas's body was transferred from the crypt to a magnificent new shrine, and 1270, the first jubilee of his translation and the centenary of his martyrdom.

The superlative condition of the Trig Lane specimen tends to outshine the many signs of wear on it. Close examination reveals that the high spots, especially on the back, have been rendered smooth by long usage. Historical
evidence affirms that at this period ampullae were much cherished by their owners. Some were given by returning pilgrims to their parish churches, to be hung up and used in emergencies as thaumaturgic remedies by the neighbourhood. Some were passed on as family heirlooms. Others were taken back to Canterbury for a refill. But most appear to have been worn or kept about the home continuously both as talismans, fending off trouble, and, in the last resort, as the handy medieval equivalent of the life-support machine. It would be reasonable to suppose, then, that most Canterbury pilgrims would keep their ampullae for the remainder of their lives and, since every Londoner aspired to visit the shrine of the city's own patron and protector, that a family's interest in the possession of an ampulla might have been expected to last for a generation. In short, it can be suggested with confidence that the ampulla was made well on in the second quarter of the 13th century and that, on a more precarious basis of probability, it was deposited up to 25 years later, c. 1275 at the latest. From the Group 2 dump (Period III, Phase i).

2. (1672) (Pls. 3 and 4). Pilgrim’s ampulla of unusual trapezoidal form, its slightly tapering sides being indented at intervals. The base is about half as wide as the mouth, but the depth (from front to back) remains constant. Two handles are provided for suspension.

On the front is a delicately modelled figure of Christ on the Cross. His emaciated thighs show through the loincloth, which hangs obliquely over the right knee. His feet are crossed in keeping with changes in the imagery of the Crucifixion that were taking place in the first half of the 13th century. Above Christ’s head and nimbus there is no trace of a top limb to the Cross. Instead, in a space reserved by a double line, are shown the three crosses from the Mount of Calvary. Unusually, each of them is depicted as a patriarchal cross with two crossbars. It seems possible that the ampulla’s own form, which is picked out on the front with a double outline edged with cross-hatching, is intended to echo the shape of the patriarchal cross.

On the back are depicted two angels holding between them the upright beam of a cross, the upper parts of which have been obliterated by wear and by the tool marks made when the ampulla was sealed. Each angel has one wing folded and the other upraised, and each wears a long robe decorated along the hem and hanging below the feet in a series of elegant, descending folds. This mannered treatment of the drapery is characteristic of English drawing around 1250.

The raising up or exaltation of the Cross by angels is also the subject of a late 12th-century seal of the Abbey of Waltham Holy Cross. The Abbey owed its origin to the discovery in the 11th century of a miracle-working cross at Montacute, Somerset, which was carted off to Waltham. Perhaps seeking to boost the relic’s appeal in the late 12th century, the Abbey evidently decided to follow Canterbury’s immensely successful example by commissioning pilgrim souvenirs of its own. But, despite the analogy provided by...
the Abbey seal, the ampullae designed for Waltham Holy Cross bore no resemblance to the ampulla from Trig Lane. The crosses they depicted, for example, were of simple, conventional form and were therefore unlike the patriarchal crosses on the Trig Lane specimen.

The Cluniac priory at Bromholm, Norfolk, on the other hand, did possess a small patriarchal cross made from the wood of the True Cross. According to Roger of Wendover (d. 1236), it was almost as long as a man's hand and had two transverse pieces. This Holy Rood of Bromholm is depicted on the priory's mid 13th-century seal and it takes the patriarchal form. It is also given a double outline as if to suggest not only the relic but the gold or silver container that would have encased it. Remarkably, the same kind of cross, labelled the 'Signe of the cros of bromholm', is given the same double outline when it appears on devotional souvenirs of parchment sold, like picture postcards, to Bromholm's pilgrims more than two centuries later.

Stolen from the imperial collection in Constantinople, the relic itself seems to have reached Bromholm in 1220. Three years later it was already famous as a worker of miracles. 'Dead people were restored to life, the blind could see and the lame walk; lepers were cleansed and those possessed by devils set free. No matter who he was, the sick man who came to the Holy Rood with faith went away from it cured. So the Cross is adored and worshipped not only by people from all over England but by men from far-off lands.' Consequently Bromholm leapt from obscurity to prosperity. For the next thirty years or so it was much favoured by the king and fashionable society and, under the stimulus of the pilgrimage to Walsingham, it managed to remain on the circuit of East Anglian shrines familiar to ordinary folk during the rest of the Middle Ages. Being sat upon in the middle of the night and startled out of deepest sleep, the miller's wife in Chaucer's Reeve's Tale exclaimed 'Help! hooly croys of Bromeholm, ... in manus tuas!'

Stylistically the ampulla from Trig Lane appears to belong to the period when Bromholm was enjoying its first flush of success in the second quarter of the 13th century. Iconographically, there are further features about the ampulla that enable us to link it more positively with this pilgrimage. There is reason to suppose that the veneration of the priory's relic centred on two annual feasts of the Cross—Passion Sunday (the fifth Sunday in Lent), for a papal indulgence was eventually secured for pilgrims visiting Bromholm on that day; and the Exaltation of the Cross (14 September), for in 1226 the king granted the priory an annual fair to be held on that feast. The ampulla brings together two devotional subjects that suitably commemorated one or other of these great festivals.

A surviving cellarer's account shows that the priory enjoyed the income from another fair on the feast of St. Andrew (30 November). St. Andrew was the priory's patron. Accordingly he is shown on the conventual seal (c. 1250), seated beneath an arch and holding the priory's wonder-working relic of the True Cross. It was almost inevitable that among the other relics accumulated by the

Plate 4. Ampulla (No. 2), reverse.
Pilgrim Souvenirs from Trig Lane, 1973-6

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There should be a portion of the cross of St. Andrew. It is likely, then, that the feast of St. Andrew was another annual high-point in the pilgrimage to Bromholm.

This brings us to another ampulla, found in 1865 on the site of the London Steelyard, which, battered and incomplete as it is, has hitherto defied identification. On one side of it is depicted, beneath an arch, a large figure of St. Andrew bound to a saltire cross. Bearded and wearing a voluminous robe, he compares very closely with a wall-painting (c. 1250) of St. Andrew formerly in the church of St. John, Winchester. Though its lower parts are missing, enough of the ampulla survives to show that it had the same curiously indented sides as the ampulla from Trig Lane and that its shape was similarly outlined with a double line edged with cross-hatching. It is tempting to wonder if the configuration of both ampullae represented the actual shape of Bromholm’s fragment of the Cross. Be that as it may, a large patriarchal cross, again with double outline, is depicted on the other side of the ampulla from the Steelyard. It is set among three roundels containing narrative pictures which are now difficult to discern. But most probably they commemorated three of Bromholm’s most talked-about miracles, the sort which, in c. 1250, are likely to have encouraged at least two Londoners to set out for a remote corner of Norfolk and bring back a drop of water imbued with the virtues of Bromholm’s Holy Cross. From the Group 2 dump (Period III, Phase i) and therefore deposited before c. 1275.

3. (2329) (Pl. 5) ‘Disc’ brooch, for wearing in the hat. Its ornament is bordered by three concentric circles. The smallest circle, enclosing a flower, forms the eye of a daisy with petals alternately tipped with cross-hatching and pellets. Encircling this are the names of the Three Kings: CASPER MELCHIOR BPTIS (contracted from BAPTISAR).

The brooch is unlikely to have had any direct connection with the celebrated pilgrimage to the shrine of the Three Kings at Cologne. The souvenirs that Cologne made available to pilgrims were invariably more picturesque. The brooch is almost certainly English and was probably made as an amulet to divert evil and bring good luck. The names of the Magi, which the Middle Ages seem to have inherited from Mithraic tradition, were believed to possess talismanic virtue and in the 14th and 15th centuries were fairly regularly inscribed on such things as jewels, brooches, rings, boxes, belts, needlecases and jettons or were written on parchment to be worn about the person. The practice was itself occasionally recommended in medical treatises as a prophylactic against (variously) cramp, epilepsy and fevers and as a method of recovering lost property.

The medallion form of the Trig Lane brooch is uncommon in the 14th century, but is closely paralleled by certain other pewter disc brooches which appear to be contemporary and which also have a flower at the centre and the inscription SACTE THOMA OR P M in very similar Lombardic lettering. This invocation—‘St. Thomas pray for me’—suggests that these, too, were produced primarily for use as talismans and not as Canterbury souvenirs, a view that is perhaps reinforced by the use of the same inscription, identical in every detail, on ring-brooches with swivel-pins, which are of a kind attributable to the middle of the 14th century. An almost identical inscription occurs on another disc brooch from London, but here it surrounds four fleurs-de-lys in cross (cf. No. 17) within a double tressure of four ogival arches. From the Group 10 dump (Period IV, Phase iii) and therefore not later than c. 1360.

4. (736) (Fig. 1) Pilgrim badge depicting St. Thomas of Canterbury on an ambling,

Plate 5. Brooch (No. 3) naming the Three Kings (diam. 35 mm).
Fig. 1. Trig Lane: Pilgrim badges depicting St. Thomas on horseback, that above (No. 4) from Trig Lane, the other (collection of Mr. H. Grala) from Bull Wharf; both actual size.
Pilgrim Souvenirs from Trig Lane, 1973-6

dappled horse. He is wearing the vestments of an archbishop—an appared amice at the neck, a dalmatic, a tunicle with close-buttoned sleeves, a cope with an orphrey round its edge, gloves and, when complete, an embroidered and jewelled mitre. He holds the staff of a crosier or cross-staff in his left hand and wears an episcopal ring on the second finger of his right hand, which is raised in benediction or intercession. His long pointed shoes are fitted with rowel spurs. He leans against the high, winged cantle of the saddle, which rests on a decorated saddle-cloth. The horse wears a rumber-bell on its collar and its harness, down to the stirrup-straps, is studded with ornaments. A light rein rests on its neck, while the reins proper were evidently drawn forward over the horse’s head.

Several similar badges have been found at London, mostly somewhat smaller and less elaborate and usually facing the opposite way.21 Many survive as mere fragments. All of them differ in detail but, with the unusual supporting evidence of a surviving stone mould,22 combine to present a picture of Becket riding in triumph, his head and shoulders turned sideways to face the onlooker instead of the way ahead and the horse led by a groom (Fig. 1b), often holding a ceremonial wand or mace in his free hand. Alongside the horse runs an elegant greyhound, also with a bell on its collar, while sinuous shrubs act as openwork links between the various figures and a slender base-plate. The attendant depicted on the mould wears a caped hood over a short, close-fitting, belted tunic, buttoned down the front and sleeves, a jaunty outfit datable to the 1370s or 1380s. The same is true of some surviving figures of the groom cast from similar moulds.23 The style of Becket’s sleeves and shoes on the Trig Lane badge is likewise consistent with this date.

Badges of this kind used to be thought to refer to Becket’s fame as a horseman, but they seem more likely to have been made to commemorate a specific event. It is evident that in some instances the base plate bore an inscription. Though neither is complete, two examples recently recovered from the Thames foreshore at London appear to allude to an episode in Becket’s life. One fragment reads... CANT EQVIT... and the other [THOM]AS. CANTEO. VITAT (Mus. of London Nos. 75.1/14 and 80.251), the latter strongly suggesting that the mounted figure was intended to represent Thomas’s escape from Kent to France in 1164. On more general grounds, however, it seems probable that this type of badge was also regarded as a memento of Becket’s return from exile six years later, a journey which, according to his biographers, culminated in a rapturous welcome and triumphal progress from Sandwich to Canterbury on 2 December 1170.

Only a month later, news of his martyrdom was spreading like wildfire across Christendom. Not only did men instantly look upon his murder as the most atrocious crime since the Crucifixion, but they soon began to liken his last days to Christ’s Passion and his journey into Canterbury to Christ’s entry into Jerusalem. This concept was kept alive liturgically by the annual celebration of the feast of the Regressio Sancti Thome and popularly, it would appear, by the commissioning of mementoes like the badge from Trig Lane and of others showing St. Thomas sailing across the Channel from France.24 From the Group 7–11 dumps (Period IV to Period V, Phase 1) and therefore not later than c. 1380.

5. (494) (Pl. 6) Lower right-hand corner of a large pilgrim badge, the subject of which appears to have been framed beneath an architectural canopy with pinnacles or flying buttresses at the sides. At the base is a fragment of a horizontal band of delicate pierced quatrefoils, a decorative feature especially characteristic of large Canterbury badges apparently designed in the second quarter of the 14th century, though doubtless manufactured over a longer period.25 Above this ornamental border is part of an arcade, the only known parallel for which is to be found on badges commemorating the shrine of St. Thomas of Canterbury. Many fragments of these badges have been recovered at London and, in the three examples that have survived more or less intact,26 the arcade is seen to represent the niches into which pilgrims could creep at the base of the shrine in order to be in the closest possible proximity to the relics.
enclosed in the feretory above. An effigy of St. Thomas rests on top of the arcade and, higher still, appears the famous feretory encrusted with jewels and topped by votive offerings. From the Group 11 dump (Period V, Phase i) and therefore deposited c. 1380.

![Image of a feretory]

Plate 6. Pilgrim sign (No. 5), perhaps fragment of shrine (ht. 32 mm).

6. (758) (Pl. 7) Hat brooch in the form of a hexagram, a six-pointed star formed by two intersecting equilateral triangles, with a roundel at its centre, cross-hatched and containing the letter E. Linear decoration on the surface of each ray takes the form of a pointed trefoil arch, while each point is tipped alternately with either a tiny flower or an acorn. Similar, but larger, flowers are set in the interstices and supported on double stalks.

Pilgrim signs consisting of the initial letter of a saint’s name or even of a place of pilgrimage are relatively common. Often the letter is in a decorative setting or is itself used, like an illuminated initial, to frame the figure of a saint or an episode from his life. It is therefore tempting to look upon this brooch as a pilgrim souvenir and to speculate whether its letter E stood for St. Edward the Confessor, Richard II’s chosen patron and centre of a late 14th-century dynastic cult, or for Edward II, whose apotheosis and appeal to pilgrims Richard II tried so sedulously to foster as a means of branding his deposition as a crime.

However, the survival of another brooch bearing the letter H at its centre but in every other way identical with the Trig Lane specimen at once suggests that neither was a pilgrim souvenir. As brooches, they were perhaps intended to be identified with the wearers’ names, and in common with a host of other manufactured goods, helped to satisfy a new and widespread demand for visible marks of status and identity in a period of acute social instability. At this time also the dreadful mortality arising from the arrival of the pestilence drove men increasingly to magic, as well as to pilgrimage, as a defence against afflictions and sudden death. The use of the hexagram on these brooches is consistent with these attitudes. As ‘Solomon’s seal’, this ancient cabalistic symbol was thought in 14th-century England to exercise control over every kind of demon. Provence and dating as for No. 5.

![Image of a hexagram]

Plate 7. Brooch (No. 6), letter E in hexagram.

7. (268) (Pl. 8) Part of a hat badge, an angel’s wing, outstretched in a manner sometimes encountered on the angels of church roofs (e.g. Blythburgh and Mildenhall, Suffolk).

Demi-angels, comprising head, wings and arms (or simply hands), seem to have been used on 14th- and 15th-century badges exclusively for holding shields of arms or emblems of the Passion. The demi-angel on a badge found (1976) at Queenhithe holds a crowned heart, probably intended as the heraldic badge of the Blessed Virgin, the angel’s arms are sleeved and, following standard practice, its wings start from the back of the shoulders, thereby concealing the point of junction between wing and body and circumventing the insuperable difficulty of depicting a convincing organic relationship between the two.
With this in mind, and with the discovery at Bull Wharf (1979) of an identical, but opposing wing, it can be seen that the wing from Trig Lane was designed and cast as one of a pair of wings, which, in accordance with a convention best illustrated from roof bosses, may have flanked the Virgin’s badge, a heart transfixed by a dagger. Alternatively, the wings may have been attached to the back of an angel, cast or carved separately. Provenance and dating as for No. 5.

Plate 8. Pilgrim sign (No. 7), angel’s wing (width 59 mm).

8. (602) (Pl. 9) Pilgrim badge in the form of a sword slotting into a scabbard, which lies vertically across, and is cast in one piece with a buckler covered in a chequer pattern. The pin and clasp are aligned behind the scabbard. The sword has lost most of its blade, but even when complete this was much shorter (76mm long) than the scabbard, judging from an identical twin found (1977), without the scabbard, on the Thames foreshore at Queenhithe. The blade is fullered on its upper half and is then of flattened diamond section. The grip is trimmed with a running chevron and capped by an annular pommel, perhaps a fanciful form, and a projecting stud. The quillons, broadening from the centre, end in fiercesome devils’ heads as if to suggest some evil inherent in the sword.

The badge is a sophisticated product of the
mould-maker's craft. Its quality is typical of Canterbury souvenirs of the last quarter of the 14th century, when the pilgrimage was at its peak of popularity. Other scabbards from the same mould have turned up at London and several other, evidently later, versions of the badge have survived, mainly as fragments. Yet another sort, which stylistically seems somewhat earlier than the Trig Lane type, has a more richly ornamented scabbard and, in place of the buckler, a heater-shield charged with the heads of four sharp-toothed animals.

Very similar armorial bearings appear on a shield in mid 14th-century badges depicting Becket's martyrdom. The shield is held by the foremost of the four knights as he strikes the top of Becket's head with his sword. The knight who delivered the fatal blow with such force that his sword was broken in two is identified by contemporary chroniclers as Richard le Bret and by later popular opinion as Reginald Fitz Urse, and it rests uncertain whether the animals on the shields are intended as the boar's heads of Le Bret or the bears' heads of Fitz Urse. There can, however, be little doubt that all these badges were made as mementoes of the murder weapon which had been gathered up in December 1170 and treasured as a relic, subsequently to be exhibited to pilgrims at an altar set up on the spot where Becket had been murdered. On the evidence of offerings made there, this Altar of the Sword-Point was still one of Canterbury's attractions in Chaucer's day. From the Period V foreshore and therefore not later than c. 1440.

9. (2242) Part of a pilgrim badge; the buckler and a portion of the scabbard from a badge identical to No. 8. Provenance and dating as for No. 8.

10. (782) (Pl. 10) Sword from a pilgrim badge akin to No. 8. The hilt is missing. The quillons are short, slightly drooping and knobbed at the ends, and the blade has a fullered groove along two-thirds of its length. Though perhaps encountered most often in the second half of the 14th century, both are long-lived features of actual swords in the 14th and 15th centuries.

Similar quillons occur on another miniature sword from the Thames at London Bridge and several other swords, while differing from each other, similarly lack the distinctive decoration of the type represented by No. 118. One, found at Queenhithe in 1978, has a straightforward wheel-pommel; another, from King's Lynn, has bifid ends to its quillons. But only one (found at Bankside in 1977) has been discovered sheathed in the rest of the badge; this has pointed, downward-curving quillons, and features about the scabbard and buckler as well as associated evidence suggest that it comes late in the sequence of these badges, during the second half of the 15th century. Provenance and dating as for No. 8.

Plate 10. Pilgrim badge (No. 10), sword (ht. 89 mm).
11. (818) (PI. 11) Pendant in the form of a sheathed rondel-dagger. Presumably worn as an adornment on the hood or hat, the sheath is fitted with a rectangular loop for suspension or stitching. At the top it is cupped and ornamented with a panel of scroll-work; the rest is of diamond-shaped section and decorated with lozenges alternately cross-hatched and beaded. The dagger hilt is missing apart from its rondel guard which sits deep in the sheath’s cup. Coming into general fashion in the 1390s, the rondel dagger appears to have remained the predominant type throughout the 15th century. But even without the important dating evidence of the hilt, it can be suggested that the best parallels for the deep-seated guard and four-square blade are to be found on brasses and monuments of the early 15th century. Provenance and dating as for No. 8.

12. (2520) (PI. 12) Hat badge, probably French, depicting the head of a woman within a pierced octofoil and circular frame. Looking somewhat like a nimbus, the horse-shoe shaped appendage that frames the face probably represents a kind of headdress, made of ruched linen and with a ruff-like fore-edge, that was fashionable between c. 1370 and c. 1420 (e.g. the effigy of Lady Maud Harcourt, c. 1370, at Stanton Harcourt, Oxfordshire, or the brass of a lady, c. 1390, at Holme Pierpont, Nottinghamshire). Backing this design is a circular plate, which originally is likely to have been painted to set off the openwork. The two components were joined at the edge by four blobs of solder. Originally a pair of stitching loops, cast in one piece with the back-plate, protruded from either side of the badge. This means of attachment and the method of affixing the back-plate are entirely uncharacteristic of English badges. Provenance and dating as for No. 8.

Plate 12. Badge (No. 12), woman's head (diam. 29 mm).

13. (635) (Pl. 13) Mount of thin sheet copper-alloy, cut and embossed to the shape of a scallop-shell and pierced with a hole for a nail, rivet or stitches. Several similar mounts have turned up at London.

Devotion to St. James of Compostella was everywhere depicted in terms of his emblem, the scallop, which was also the badge of the Compostella pilgrim. In 1352 a London hosier and devotee of St. James owned a girdle of scallops and similar girdles are mentioned in late medieval wills and inventories. Some of these, especially where the scallops were of jet and silver, may well have come as devotional souvenirs from Compostella. Shells cast sturdily in bronze or pewter and provided with short spikes at the back were presumably for cheap versions of the more fashionable belts and they were doubtless local products. But the mount from Trig Lane is very flimsy and would have been rather impracticable as a belt-mount. It may have belonged instead to the vogue, beginning under Edward III, for 'powdering' garments and hangings with spangles stamped in many shapes out of thin sheet metal. Provenance and dating as for No. 8.
14. (2251) (Pl. 14) Badge, probably a pilgrim sign, in the form of a fleur-de-lys within a circular, beaded frame, from the lower edge of which protrudes a loop. The badge has the usual pin and clasp on the back, and it is clear from other examples that the loop was intended for the suspension of some trinket from the badge itself, a length of lead chain in three instances and a single link and pendant ornament in another.

The badge could have been the souvenir of a pilgrimage to one of many miracle-working statues of the Virgin Mary. The lily, symbol of purity, was the flower of the Virgin, and though its heraldic form (the fleur-de-lys) was an attribute of royalty and appeared, for example, on the crowns and sceptres of kingly saints, it, too, was an emblem of the Virgin Mary, as Queen of Heaven. No fewer than 30 other examples of this badge, practically all from different moulds, are known to have been found at London. Such evidence of popular appeal, coupled with the discovery of another four specimens at King’s Lynn, at once suggests a major shrine, such as Walsingham, as the probable source. Canterbury, however, seems the likelier place of origin since the same frame and loop appear on a badge depicting the mitred head of St. Thomas, and on others depicting the letter T.

In 1361 a well-to-do painter living in London’s artists’ quarter (on or very near the present site of the Museum of London) arranged for pilgrimages to be made both to Our Lady of Walsingham and to St. Mary ‘under the vout’ (i.e. in the crypt or undercroft) at Canterbury, at a time when devotion to this image, measured in terms of offerings, was showing an extraordinary increase among Canterbury’s pilgrims. The image had first caught their interest a century earlier and was shortly to receive a further boost from the personal devotion and sumptuous benefactions of the Black Prince (see No. 15). Our Lady Undercroft remained a popular attraction for the next fifty years and it was to this period that the badge from Trig Lane apparently belongs. From the Group 15 dump (Period VI) and therefore not later than c. 1440.
Fig. 2. Trig Lane: Badges commemorating the Black Prince, that on the left (No. 15) from Trig Lane; the other (unprovenanced), is in the British Museum; both actual size.
to be considered presently, appear to be the earliest surviving representations of the garter.

The Black Prince’s effigy in Canterbury Cathedral shows him, in accordance with the specifications laid down in his will, ‘fully armed in plate of war with our quartered arms’. On this badge, too, he is shown in full plate armour, except that he lacks cuisses for the thighs. As on the effigy, the royal arms (quarterly France ancient and England) are here also blazoned on his tight-fitting tabard and he wears the same kind of studded hip-belt.\(^{36}\) Resting on the ground in front of him are his gauntlets, and behind him stands his helm with a leopard crest and mantling.\(^{37}\) Immediately behind him appears a banner of his arms (quarterly France ancient and England with a label of three points) attached to a spirally fluted shaft and, behind that, his badge of the ostrich feather, its quill and part of the scroll concealed behind the helm. This combination of the ostrich feather with the prince’s trappings of warfare brings to mind the instructions he left that his funeral procession should be led through Canterbury by two destriers with trappings of his arms and badges and two men, one armed ‘for war with our whole arms quartered, and the other for peace with our badges of the ostrich feather’.\(^{38}\) The latter, like the ostrich plumes for which the prince paid so lavishly, are thus seen to have been associated with the tilt-yard, in the chivalric exercise of arms at Smithfield or Windsor, as distinct from actual warfare.

On the left of the badge are depicted two persons of the Holy Trinity, God the Father, seated on a rainbow, holding his crucified Son. God’s feet rest on a globe, divided into half earth and half water.\(^{39}\) His right hand supports an arm of the cross and his left is extended towards the Black Prince. The upper part of the Father is missing but can be reconstructed from the evidence of a very similar badge in the British Museum (Fig. 2b).\(^{40}\) This also takes the form of the Garter encircling a scene of the Black Prince kneeling before a personification of the Trinity, and there are enough similarities about the design and execution of both badges to indicate that their moulds were the products of one and the same workshop and that they were probably made for the same purpose.

The British Museum’s badge has intrigued students of heraldry and chivalry for over a century. It is intact and perfectly preserved. It is also thicker than contemporary pewter hat badges and is both sturdier and larger\(^{41}\) than the badge from Trig Lane. Unlike the latter, moreover, it was not provided with a pin and clasp at the back and it may therefore have been worn in a different way, stitched to a body garment rather than to the hat.

The absence of the vertical pin also made it unnecessary for this badge, as distinct from the one found at Trig Lane, to have continuously solid construction down its middle, behind which the pin and clasp and the division in the counter-mould could be concealed. The designer could therefore place the figure of the Black Prince to the right of centre and at a more respectful distance from the Trinity. The figures of the prince and the Trinity, however, are essentially the same in both badges.

Where the two badges diverge most markedly is in the area above and behind the prince’s figure. In place of the banner, the British Museum’s badge has a shield of the prince’s arms held by a demi-angel emerging from clouds; replacing the ostrich feather, a guardian angel, wearing a long robe and a diadem, bears the prince’s leopard-crested helm; and instead of the English inscription is the famous Garter motto, ‘hony soyt ke mal y pence’ (shame be to him who thinks evil of it). In addition to these differences the Trig Lane badge is rather more painstaking in its attention to detail, in the extraordinarily delicate beaded lattice that spans all the openwork, for example, or in the ornamental refinements on its pendant strap-end and in the inclusion of five rows of microscopic breathing holes in the helm.

According to a contemporary biography, the Black Prince was a lifelong devotee of the Trinity.\(^{52}\) At the age of sixteen, for example, he granted a substantial annuity to a hermit of the Trinity in his park at Restormel Castle, Cornwall.\(^{53}\) As Canterbury Cathedral was dedicated to the Holy Trinity and in remembrance of his pilgrimage to the shrine
of St. Thomas, Edward later founded two chantries there, in the undercroft of the south transept, and dedicated the principal one to the Holy Trinity, 'which', he said, 'we have always revered with a special devotion'. He also appears to have arranged for the decoration of this chapel of the Holy Trinity to include allusions to himself and to his wife, Countess Joan of Kent, whom he married two years earlier, in 1361. The following year he became the first and only Prince of Aquitaine and in the royal charter granting him the principality the illuminated initial again shows him kneeling before the Trinity. The same subject forms the frontispiece of the verse account (c. 1385) of his life and deeds mentioned earlier. His will, drawn up the day before he died in 1376, also underlines his preoccupation with the Trinity. He bequeaths his soul 'to God our Creator and to the Holy Blessed Trinity and to the glorious virgin Mary', he asks to be buried 'in the cathedral church of the Trinity at Canterbury where the body of the true martyr my lord St. Thomas rests', and he bequeaths an image of the Trinity to the high altar and gives black tapestries of ostrich feathers to hang above the choir stalls to serve as a memorial to him on all the principal festivals and on the feast of the Trinity in particular. Though he had asked to be buried in the darkness and comparative obscurity of the crypt 'in the midst of the chapel of Our Lady Undercroft' and not far from the chantries he had founded, his tomb was nevertheless sited high above, in what was then regarded as the most sacred spot in England, the Trinity Chapel that contained the shrine of St. Thomas. As to the tomb itself, the Prince's recumbent effigy was made to gaze upwards at a large picture of the Trinity painted on the wooden canopy above it.

The brand-new tomb of England's hero must have stirred countless pilgrims as they approached St. Thomas's shrine. Some of Chaucer's pilgrims in the Prologue of The Tale of Beryn were so caught up by the cathedral's diverse attractions that they almost forgot the purpose of their visit and wandered hither and thither 'goglyng with hir hedis'. When, at the end of the day they went to choose their pilgrim souvenirs, they may conceivably have found some popular memento of the Black Prince's tomb among the large selection of hat ornaments on sale.

But the artistry of the two badges of the prince considered here transcends that of any known English pilgrim souvenir, even though, as some of the other finds from Trig Lane have shown, Canterbury's products for the pilgrim trade were artistically and technically very accomplished at this period. Both badges are of such exceptional quality that they must surely have been designed by a royal artist. It is perhaps significant that the only other pewter badges which possess a comparable grandeur of design and crispness of execution are secular in purpose and that chief among them are certain badges of the ostrich feather. Essentially these are replicas, much enlarged, of the feather depicted behind the prince on the Trig Lane badge. Six of them have been found at London and one at Old Sarum. Apart from their size (110mm high), what is especially striking about them is that the form and size of the lettering of the prince's motto 'ich dene' (I serve) across their scrolls exactly match the epigraphy on the Garter badges.

All these badges, then, seem likely to have been commissioned officially and were presumably cast in quantity for use on a particular occasion and, since the badge from Trig Lane is unquestionably commemorative, the occasion is most likely to have been the Black Prince's funeral. This took place in an atmosphere of unparalleled national grief in late September and early October, 1376, four months after Edward had died at Westminster. En route to Canterbury, the great procession passed along the Strand, through the City and across London Bridge. For its part in this, the City spent liberally, though not so extravagantly as it had done in 1371, when the mayor and aldermen had welcomed the prince back from Aquitaine with a present of 273 items of domestic silver plate. Edward had returned broken by the disease which he had contracted on his Spanish campaign and which was to make him an invalid thereafter and ultimately cause his death. But his tragic decline and death did nothing to diminish, and probably enhanced, his reputation as a
brilliantly successful man of action, who once brought a captive King of France to London and did so much more to make Englishmen conscious of the Englishness. It was fitting, though nevertheless remarkable, that a commemorative badge apparently made for courtly purposes in 1376 should have had an inscription in English. From the Period V foreshore and therefore not later than c. 1440.

16. (2562) (Pl. 15) Pilgrim badge depicting the mitred bust of St. Thomas of Canterbury in a pierced quatrefoil within a square frame and with trefoils in the spandrels. Several other examples of this badge, all differing slightly from each other, have been found at London and another comes from Bury St. Edmunds. They belong to the series of badges (by far the largest single group surviving from any medieval shrine) which were made from the early 14th century until the early 16th to commemorate the famous reliquary known as the ‘corona’ or ‘caput Sancti Thomae’. This, one of the principal places of devotion at Canterbury, contained the portion of St. Thomas’s skull that was said to have been severed at his martyrdom and took the form of a richly jewelled, mitred bust. As a rule, mementoes of it made for 14th-century pilgrims were strikingly large or were surrounded by large elaborate settings and often inscribed ‘Caput Thome’. During the 15th century their size diminished and the quality of their workmanship steadily deteriorated. On a typological basis, badges of the sort found at Trig Lane appear to belong to the early part of the 15th century.

17. (1094) (Pl. 16) ‘Disc’ brooch decorated with four fleurs-de-lys in cross and three pellets between each fleur, bordered by an inner circle and a band of zigzags crudely outlined in pellets. The centre motif, which is occasionally mirrored on jettons, appears on a mid 14th-century inscribed disc brooch referred to above (under No. 3) and on a series of brooches closely related to it. These lack the inscription but, instead of it, have carefully executed borders of zig-zags or running scrolls. The Trig Lane specimen is a degenerate and presumably later version of these brooches. Provenance and dating as for No. 16.

18. (1421) (Pl. 17) Bronze seal matrix. Circular (d. 19mm), with a hexagonal conical handle ending in a loop in the form of a quatrefoil (h. 24mm). The central device shows two heads facing each other above two branches beneath which there sits a dog who appears to be biting his foot. The surrounding inscription reads AMI AMET LEAL AMIE AVET (in the friend you love, you have a loyal friend).

There is a good collection of seals relating to love and friendship in the British Museum. Among 31 catalogued by Tonnochy (1952, Nos 709–740), which have devices ranging from birds, hands supporting a heart, and crossed hands, there are five with male and female heads confronting each other. Three of these have French inscriptions and two
English. The closest comparison to the seal in question is inscribed -AMIE-AMET-CAR-LEL-AMI-AVET (ibid., No. 730). There are also two seals with confronted heads in Norwich Museum, both with English inscriptions (Leney 1909, 99, Nos. 939 and 940), and another example with an English inscription, from London, is in the Museum of London (A11711, see Perkins 1940, 298). Confronted heads often occur on Italian nielloed pendants of the 15th century and it is normally assumed that this indicates that the pendant was a betrothal gift (Hind 1936, 37). It may well be that the device had a similar significance on earlier medieval seals.

From the Period IV foreshore, and therefore not later than c. 1380, although probably dating from the first half of the 14th century on stylistic criteria.

Plate 17. Bronze seal matrix (No. 18).

19. (2357) (Pl. 18) Lead seal matrix in the shape of a pointed oval. The central device is a fleur-de-lis. The legend reads S' MATILD ISLEBEL (the seal of Matilda Islebel). At the back is a pierced handle now slightly squashed.

This is a personal seal belonging to Matilda Islebel. Islebel or Isabel was a popular medieval surname and examples are quoted from Norfolk (1141-9); Leicestershire (c. 1160); London (1202-16); and Yorkshire (1379), see Reaney (1976, 191).

The lombardic lettering is distinguished by marked serifs which together with the form of the letters would indicate a date in the first half of the 13th century. Residual in the Period V foreshore.

Plate 18. Lead seal matrix (No. 19), (ht. 40 mm).

NOTES
1. This, the commonest inscription on Canterbury ampullae, sums up one of the messages to be gained from the volumes of miracles laboriously recorded by Canterbury’s scribes. Ordinary doctors and practitioners of folk remedies are shown up to be expensive failures. But the superior skill and success of Canterbury’s sacred doctor rested on expectant faith and the reason why some pilgrims were not cured, it was stressed, was because they were unworthy, lacking sufficient belief or piety. About half the recorded cures occurred away from Canterbury, the remainder at the shrine, which year in and year out, must have looked like a casualty ward; see Robertson (1875 and 1876, passim).
2. Spencer (1973), which also briefly discusses the use of Canterbury water. See also Spencer (1971a); Spencer (1974) and Spencer (forthcoming a).
3. This suggestion also applies to No. 2 below, which shows similar signs of long usage. In so far as these remarks have any wider validity (and there is ample evidence to show that pilgrim badges were often kept long after the completion of a pilgrimage), they are less likely to apply to pilgrim badges (Nos 8-14 following) recovered from foreshore deposits, for the reasons stated in Spencer (1978, 250).
5. Hope (1918, Figs 1 and 4).
7. Luard (1890, 273).
8. Wormald (1917, Pl. 6b).
9. Ibid., Pl. 7a, b; Hall (1965, 207-9).
11. Bliss and Twemlow (1904, 394); Hardy (1844, 105).
12. Redstone (1944, 37).
15. Baigent (1854, Pl. 3).
17. Evans (1922, 125-6), Dalton (1912, 140), Oman (1930, 114), Smith (1848, 113-22) and Gray (1972, 118).
18. Cuming (1868, Pl. 17, No. 9); Mus. of London Acc. No. 8805; Brit. Mus. Reg. No. 56 7-1 2039.
19. For example, Spencer (1972, Pl. 35); Harvey (1975, Pl. 153); Spencer (1978, Fig. 3). Only two others, from Bull Wharf (1979), show the saddle (collections of Mr A. J. Easery and Mr A. R. Carok).
20. Spencer (1968, Pl. vi, i).
21. Mus. of London Acc. No. 8796 and Mr S. Wheeler’s collection; Mus. of London Acc. No. 8829 is a cruder version.
22. The most spectacular example (mid 14th century) was found (1979) at Bull Wharf, Queenhithe (Mus of London Acc. No. 82 8/3) while an
ampulla of c. 1200 depicting the same subject was found (1975) in the excavations at Wood Quay, Dublin; see Spencer (forthcoming b).

25. For see, for example, Spencer (1968, Pl. VII).

26. Two in Brit. Mus. Reg. No. 1921 2-164, see Tait (1955, Pl. xv, a, b), and Reg. No. 1971 6-3-3. The third (Mus. of London) was found in the late 15th-century inlaid of Baynard's Castle Dock and must either be archaic or have been kept as a family relic for a century or more.

27. Spencer (1971 b, 63-4).

28. Spencer (1978, Fig. 5, No. 91) where a suggested link with the pilgrimage to Holy VI's tomb is now seen to be mistaken.

29. For a fuller discussion see Spencer (1983).

30. Mus. of London Acc. No. 77.165/2; cf. Spencer (1968, Fig. 4). For angels with shields see, for example, Mus. of London Acc. No. 8853 and Brit. Mus. Reg. Nos 52 3-29-1 and 1921 2-6-76.

31. Cave (1948, Plgs 296-4).

32. Mus. of London Acc. No. 79.135/4, Museum of London, 1800, fig. 29, another was found (1978) at the N. end of Southwark Bridge (Mr J. Auld's collection). An almost identical sword comes from Brooks Wharf, Southwark: Cuming Mus. Acc. No. C2755, wrongly described as a forgery (Cuming, 1867, 206).

33. Though zoomorphic terminals occur on late 12th-century quillons, see Hoffmeyer (1954, Pl. 7).

34. Mus. of London Acc. No. 8900; another, now in Mr T. Crispin's collection, comes from Clerkenwell, see Brit. Archaeol. Assoc. (1864, 80); another from Bull Wharf (1979) is in Mr A. J. Essery's collection.


36. Spencer (1975, 248); Borenius (1933, 181).

37. Woodruff (1932).

38. Perkins (1910, LXX, No. 26).


40. Spencer (1978, 260-1); Mr. J. Hayward's collection.

41. Perkins (1940, Fig. 59).

42. Laking (1905, 18-19); Southall (1817, Pl. 112).

43. Two, for example, were found in 1978 by Mr John Auld at the N. end of Southwark Bridge.

44. Spencer (1971 b, 80-1); Spencer (1974, 115-15).

45. Sharpe (1889, 637-8).

46. For example, see Perkins (1940, Fig. 89, No. 4). A specimen nearly 232mm high as against 86mm, the original height of the Trig Lane badge.
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EXCAVATIONS AT STEPNEY HIGH STREET, E1

PETER S. MILLS

SUMMARY
Part of a Late Bronze Age/Early Iron Age pit, much disturbed, was revealed in the north area. Medieval pits and some scoops lay in the north area, a ditch and postholes in the south trench. All other features were post-medieval, most seeming to be associated with a period of agriculture.

INTRODUCTION
The remodelling of the west side of Stepney High Street for a short term urban farm project and a new through route from Mile End Road to Commercial Road was thought likely to disturb the documented Saxon and medieval village of Stepney (Llewellyn Smith 1939, 16). The Inner London Archaeological Unit carried out an excavation in the autumn of 1979 to examine the deposits endangered by the redevelopments. Because only certain areas were available for investigation the excavation (TQ358816) was restricted to the north end of the High Street some 100m north-west of the medieval church of St. Dunstan (Fig. 1).

An ‘L’ shaped area 22m by 15m was cleared of c. 0.5m of modern deposits by machine. Further south a trench 12.5m by 2.5m was cut by hand. The north area was disturbed to the north, west and south by modern intrusions.

The site records may be examined at Imex House, 42 Theobalds Road, London WC1.

THE EXCAVATION (Fig. 2)

LATE BRONZE AGE/EARLY IRON AGE

Phase 1
The last vestiges of a pit or scoop (F155) containing a quantity of Late Bronze Age/Early Iron Age pottery lay on the north edge of the north area. Cut to the north by a cellar and disturbed by later ploughing the feature had curved sides and a gently sloping bottom (length 1.05m, width 0.2m, max. depth 0.22m). It was filled with buff sandy clay (Layer 156) and a few pebbles. The pottery was distributed throughout the fill, some also having been transposed to the ploughsoil above (Fig. 3).

MEDIEVAL

Phase 2 (mid–late 14th century)
This consisted of features cut into the natural brickearth and sealed by the Phase 5 loam. In the north area pits (F111 and F146), scoops (F79, F109, F130, F144, F165, F178) and a posthole (F172) indicated a mid 14th-century presence, though no associated structures were found. The pit F111 (Fig. 4), irregular in outline and disturbed by later features (length 4.1m, width 1.7m, depth 0.75m) lay on the east of the site and continued under the pavement. Two other pits (F77 and F161) seem to be slightly later than the rest of the features, possibly late 14th century; by similarity of form the pit F99 may be contemporary. The south trench contained a north–south ditch (F233) and two postholes (F226 and F228).

POST-MEDIEVAL

Phase 3 (late 15th century–early 16th century)
Cut into the brickearth and sealed by the
Fig. 1. Stepney High Street: Site Location.
Fig. 2. Stepney High Street: Site Plan.
Phase 5 loam this phase was represented by scoops (F103 and F170), a posthole (F230) and a drain (F140). This substantial brick-lined drain (exposed length 16m, width 2.3m, depth 1.5m) ran north–south.

Phase 4 (mid–late 16th century)
On the eastern side of the north area were a series of bedding trenches or furrows (F61, F65, F67, F69, F81, F117, F121, F123, F125, F127, F138, F180) which ran east–west, though three (F85, F101, F134) ran north–south. There were also scoops of unknown function (F75, F87, F105, F151) and some postholes (F91, F159, F188, F190, F192) which formed no discernible pattern. In the north-east corner was a hollow showing signs of burning (F153), possibly the site of a bonfire.

In the south trench a ditch ran east–west (F211) cutting a slightly earlier pit (F223).

Phase 5 (early–mid 17th century)
Sealing Phases 1, 2, 3 and 4 and cut by Phases 6 and 7 was a layer of brown sandy loam, F3 in the north area and F203 in the south trench. In the north area this produced a range of exotic pottery (see below) probably derived from either the Great Place, which lay to the south, or from Worcester House to the west. In contrast the south trench produced only domestic wares.

Phase 6 (post 1650)
Cut into the Phase 5 loam were a number of features apparently agricultural in origin. On the west side of the north area lay some furrows (F26, F28, F30, F32, F36, F38, F42, F50, F52, F194, F196) running east–west and one north–south (F73). These respected a chalk wall (F176) which defined the western edge of the site and was probably a property boundary. This wall was subsequently reused as the foundation of a 19th-century brick wall. There were also several shallow scoops (F6, F10, F16, F20, F24, F44, F107, F115, F198, F236) and two pits (F8 and F89) in this phase. Six postholes (F22, F34, F40, F46, F48, F200) of differing proportions made no recognisable pattern.

At the east end of the south trench a small hearth was uncovered made of tiles set on edge in clay over the Phase 5 loam (F203). No associated structure was revealed and it was sealed by loam (F201).

Phase 7
This consisted of modern drains and cellars and c. 0.5m of modern deposits.

DISCUSSION
The Late Bronze Age/Early Iron Age pit or scoop F155 was unexpected and, due to later disturbance, its purpose remains unclear though the pottery vessels (possibly buried upside down) may indicate a funerary deposit. Nonetheless it does provide further evidence of a Bronze Age presence in the vicinity already suggested by a bronze founder’s hoard uncovered about a mile away at the turn of the century (Read 1903, 14).

The sparse remains of the medieval settlement found during the excavation add little to Stepney’s written records. The scatter of pits implies the area was open during the 14th century and, indeed, the kitchen gardening may have begun in this period. There was no indication of the purpose of the pits, though the pit F111 could have been a brick-earth quarry pit. Certainly the continuation of the pit suggests that the medieval High Street lay further east than its modern counterpart.

The early post-medieval period is represented principally by the large drain which crossed the site from north to south. This may be connected with the prestigious local house, the Great Place, or perhaps nearby Worcester House, though this is less likely. These houses may have been the source of the unusually varied range of imported pottery recovered from the first period of furrows (Phase 4) and subsequent loam (Phase 5).

The layout of the Phase 4 furrows suggests the area was cultivated as a kitchen garden. These furrows, the loam (Phase 5) and the second phase of furrows represent a continuous period of small scale
Fig. 3. Stepney High Street: Section of Pit F155.
Fig. 4. Stepney High Street: Section of Pit F111.
agriculture. The east–west ditch in the south trench (F211) may have formed a property division though this could not be determined within the confines of the excavation.

The Phase 5 loam, apparently two layers in the north area but only one in the south trench, seems to include domestic debris from two different sources. The northernmost pottery included a considerable amount of foreign material whereas the south trench contained pottery of a more local nature. Possibly this reflects separate landholdings beside the High Street.

Finds from the later kitchen-garden use (Phase 6) show a marked reduction in the imported pottery, possibly corresponding to a change in the status of the neighbourhood. The south trench hearth (F217) indicates a house or workshop stood on the site but no trace of this survived.

Generally the evidence implies that the area was open for tipping and cultivation from the 14th century onwards, though the hearth shows that later agricultural works could destroy the remains of buildings. Further work around the High Street, where extensive developments are expected may reveal more details of the Bronze Age in Stepney and central London. To the south of the excavation, nearer to the church and the Great Place, there may be an area undisturbed by post-medieval agricultural features which could produce evidence for the growth of Saxon, medieval and post-medieval Stepney.

THE POTTERY

By Lyn Blackmore

1. The Prehistoric Pottery

Group 1. Late Bronze Age/Early Iron Age (Fig. 5)

The unexpected discovery at Stepney High Street of a pit (F155) containing fragments of two Late Bronze Age/Early Iron Age jars datable to c. 800–700 BC is of considerable interest and potential importance, being the first stratified ceramic land find of this period not only from Stepney but from the entire north bank of the Thames between Rainham, Essex (Greenwood 1982, 185–193) and the Heathrow area (Grimes 1961; 1969), a distance of some 20 miles.

The stylistic affinities of the two vessels are discussed below.

No. 1 Four rim sherds and fifty eight body sherds with extremely variable wall thickness, from a large hook-rimmed jar. The fabric is almost identical to that of No. 2, but is less well fired, and contains a sparse scatter of red haematite inclusions. This ware is also closely matched at Rainham (Greenwood 1982), where the presence of haematite is a noticeable characteristic of the assemblage. With the exception of the rim and adjacent body sherds, which are reduced to a purple-grey throughout, the majority of sherds have a pale grey core, black interior, and dull orange-grey exterior, although there are patches of redder orange. The inner wall is well smoothed, but the exterior has both untreated areas with protruding flint grits and a porous appearance, and areas with a roughly smoothed surface, which has caused a localised vertical scarring of the clay.

No. 2 Two rim sherds and sixty-nine body sherds from the neck and body of a large thick-walled jar with an open, flat-topped rim and probably of tripartite form. The hard fine micaceous fabric, heavily tempered with very coarsely crushed angular white, grey, black and occasionally burnt flint grits (up to 10mm across), is closely paralleled at Rainham (Greenwood 1982). Surface colouring varies from grey black exterior and core with yellow-brown interior on the neck and rim sherds to, on the majority of the body sherds, yellow-brown exterior with grey-black core and interior. The outer surface has been vertically smoothed, giving a rippled, but not burnished, appearance.

The fabric of both vessels, although hard, is somewhat laminated in structure, and this has caused some flaking of the surfaces. Together with the fragmentary condition of the pots, and the uneven nature of the rim sherds and wall thicknesses, this has prevented a full reconstruction of either vessel. The illustrations here present the most probable profile of each jar; the angle of No. 1 may in fact be more pronounced.
DISCUSSION

These two jars belong to the 'plain ware' tradition of ceramics which succeeds that of Deverel-Rimbury. They date to the transition from the Late Bronze Age to the Early Iron Age, a period which over the last few years has been the subject of widespread review (e.g. Barrett and Bradley 1980 and papers therein; Barrett 1979, 231) and they have elements in common with both the earlier and later ceramic styles.

Technologically the Stepney jars represent an eastward extension of the general southern tradition of Later Bronze Age plain coarse wares built with the slab rather than with the coil technique, a trait which is common in Somerset, the Upper Thames Valley and the south-east counties of Surrey, Sussex and Hampshire (Barrett 1975, 104), but not apparently at Mucking, where coil building is the norm (Jones 1980, 477). The slab technique results in extreme variations in the wall thickness of the pot, and a rippling or smearing of the surfaces where the clay has been moulded to shape, and is particularly obvious on jar No. 2 from Stepney; jar No. 1 has apparently been built up with smaller pieces of clay, with less attention to the appearance of the final product. The absence of base sherds in the Stepney deposit is of some interest, suggesting that the pots were buried in an inverted position, and that their bases were destroyed by subsequent agricultural activity on the site. Another possibility is that, as at Mucking, the bases were formed as a separate piece of clay, and then ineffectively luted to the body of the pot, with a resulting weakness at this point. A general absence of base sherds in the assemblage from the North Rings at Mucking has been noted (Jones 1980, 477).

Fig. 5. Stepney High Street: Late Bronze Age/Early Iron Age Pottery.
Stylistically the Stepney pots fall within the category defined by Barrett (1978, 268; 1980, 301) as 'Class 1' jars, that is, large plain ware jars in coarse fabrics with minimal surface treatment and little or no decoration. In the 10th and 9th centuries BC the range of forms is fairly limited, with the emphasis on larger vessels. By the 8th century, however, there is a much greater variety of forms, and a growing use of decoration, but the Class 1 jars are on the whole rather smaller (Barrett 1980, 303). For its probable date jar No. 1 from Stepney is a particularly large example (330mm diameter), while No. 2 is probably of average size (238mm diameter).

Of the two forms represented at Stepney, No. 1, referred to by Bishop (1971, 3) as Form 1, is typologically the earlier, although it is also extremely long lived, with a probable life-span of over 600 years. First identified as a specific form at Ram's Hill, Berks., where it was associated with the earliest phases of the site, c. 11th century BC (Barrett 1975, 103–104, Fig. 3.5, 6, 8, 9, 15), the 'hook-rimmed jar' is now known from a number of Late Bronze Age sites in southern England, although with considerable variation in the angle of the 'hook' to the main body of the pot, and in the depth of the rim itself. Assuming the reconstruction of No. 1 to be correct, the Stepney example seems to represent a hybrid of the hook-rimmed form and the slightly later barrel urn form. The closest local parallels would appear to be from Petter's Sports Field, Egham (O'Connell and Needham, 1977, Fig. 5, 5), from Brooklands, Weybridge, where a number of rim sherds from barrel-type jars ranging in size from 130–160mm were found (Close-Brooks 1977, Fig. 15, 39; Fig. 16, 57; Fig. 18, 123, Fig. 19, 144; Fig. 20, 158, 168), and at Orsett, Essex, where the complete profile of a much smaller barrel-shaped jar was recovered from the upper fill of the causewayed enclosure ditch (Barrett 1978, 277–8, Fig. 39, 4). The Petter's example may be dated by its association with a hoard containing Ewart Park style metalwork to the 8th or 7th century BC, and while a possible date in the 6th century BC was postulated for the Weybridge jars, some of these derive from the early land surface and may therefore be earlier (Close-Brooks 1977, 40). The Orsett jar, although with an associated C14 date of 564 ± 81 bc, was found together with simply decorated Class 1 jars and bipartite bowls comparable both with those from Petter's Sports Field and with a group of 8th century BC material from Mucking (Jones 1980), and also with certain elements of the apparently 9th century BC assemblage from Runnymede (Barrett 1978, 273–4); this jar would therefore also appear to be of probable 8th-century BC date.

The shouldered, or tripartite jar, No. 2, is a typologically later development, but by the 9th–8th century BC forms a major part of the ceramic assemblages from Runnymede, Brooklands and Heathrow (Needham and Longley, 1980, 412). Classified by Bishop (1971, 3) as Form 2, this type also sees numerous variations in the basic form, most noticeably in the profile of the rim and the angle of the shoulder, which range from an exaggerated 'S' curve to a more angular form with a developed, carinated shoulder. This last element of the Stepney example must remain in doubt, but the flat-topped rim with its slight internal bead, slightly convex neck and apparently broad shoulder find possible parallels in West London and Surrey at Heathrow (Canham 1978, Fig. 1, 3), at Petter's Sports Field (O'Connell and Needham 1977, Fig. 5, 2) and at Runnymede (Needham and Longley 1980, Fig. 5, 11). A similar form was also found at Ivinghoe Beacon, Buckinghamshire (Waugh 1968, Fig. 18, 71). The Heathrow examples have however a characteristic short, sharply curved shoulder, while the rim profile of the Ivinghoe and Runnymede jars is more upright; the shoulder of the latter is extremely broad, whereas that of the example from Petter's Sports Field is remarkably slack. Downstream from Stepney similar, although more developed, forms are found at Orsett (Barrett 1978, Fig. 40, 24), although this is decorated, at Mucking (Jones 1980, Fig. 3, 16) and at Mill Hill, Deal in Kent (Champion 1980, Fig. 6, 3). These latter examples have a noticeably more convex neck, rounded rim and generally slacker shoulder.

As may be expected from its geographical location, the above jars from Stepney have
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affinities with ceramic finds from sites both to the east and to the west. Jar No. 1 is typologically later, but the two forms are frequently found together, as for example at Ram's Hill and at Petter's Sports Field. On the evidence of the above parallels, the generally coarse nature of the fabric and lack of decoration on the Stepney jars, a date in the 8th–7th century BC seems appropriate for this deposit. The association of both forms at Petter's Sports Field with a hoard of bronze metalwork containing Ewart Park type material contemporary with that found in a hoard at Devons Road, Tower Hamlets, only one mile from the site at Stepney High Street, is particularly valuable, lending further weight to the suggestion that the two pots discussed and the Devons Road hoard may be contemporary and indicative of a settlement nearby, perhaps between the two find-spots. A settlement here is not unexpected given its strategic position just to the west of the River Lea, with commanding views over the Thames. It lies only a mile from the City of London where numerous land finds of 8th–7th century BC metalwork indicate considerable activity (Needham and Burgess 1980, 449).

2. The Medieval and Post-Medieval Pottery

Introduction

1. In addition to the prehistoric pottery discussed above, a total of 2791 sherds of medieval and post-medieval pottery was also recovered from the site, mainly from the 14th-century features, and from the mid 17th-century garden soil. The nature of the assemblage is governed by two main factors, namely the limited number of medieval features, and the considerable disturbance of the site, probably from the 15th century, but dateable on a major scale from the mid 16th century. As a result the number of securely stratified medieval sherds is low, while the post-medieval layers contained a high proportion of residual material. The assemblage as a whole, however, is of some interest for the wide range of imported wares represented.

2. The pottery is first discussed according to the main phases of activity on the site; the imports are then summarised, and the assemblage as a whole considered in relation to the local history of the area.

3. For economy the following consists of generalised descriptions of the fabric groups only, with reference to published groups and parallels wherever possible; full fabric descriptions are only included where not matched elsewhere. Full details of all fabric types and all unpublished material may be consulted in the pottery archive, which is stored together with the material at the I.L.A.U., Imex House, 42, Theobalds Road, London W.1.

Group 2. Mid-late 14th century (Fig. 6, Nos 3–21)

These features produced an entirely homogeneous assemblage of wares with a general date range of c. 1270–1350, suggesting a probable date of c. 1325–1350 for the majority of features in this group. F161 however also contained one sherd of 'Tudor Green' type ware, while F77 produced two sherds of Cheam type white ware, which if securely stratified, would suggest a date of c. 1350–1380 for these two square pits, and therefore, by analogy of form, possibly also for F99. The dominant fabrics in this group are the Mill Green red wares, and the white wares from north-east Surrey. There is also a small proportion of South Hertfordshire type ware, London ware and some unidentified wares which appear to be of 13th-century rather than 14th-century date. Of these the South Hertfordshire wares are represented by only cooking pots (Nos. 5, 6, 7) and bowl sherds (No. 3); these are mainly reduced (see Orton 1977, 80), but include some oxidised wares. No. 5 resembles the reduced products of the Pinner kilns (Sheppard 1977); the oxidised wares are as yet unprovenanced, although red wares are known at Elstree (Castle and Hammerson 1977, 152), and red or brown surfaced wares are present in the assemblage from the Manor of the More (Hurst 1959, 163). The London wares are varied (see Orton 1977, 80–81), but comprise mainly jug sherds, some decorated with a white slip and green glaze, and also include one unusual base with a ring foot (No. 18). Of some interest is the almost complete
lower half of a jug of unknown origin (No. 22) from the lower fill of F111 (Layer 133), which appears to combine the London and Mill Green traditions of painted slip decoration with an oxidised South Hertfordshire type coarse sandy fabric.

The Mill Green wares range from extremely fine to very coarse. Formerly known as ‘West Kent’ ware (Thorn 1975; Orton 1977, 82; Orton 1979a, 30), these are discussed more fully elsewhere in this volume (Pearce et al, 1982). The Stepney group consists almost entirely of jug sherds, which occur more or less equally in all fabric grades, both with a white slip and green glaze (Nos. 19, 20) or unglazed (No. 21). Cooking pots are few, and appear in the coarsest fabric type only. The Surrey wares, conversely, are represented predominantly by cooking pots (No. 8), bowls (Nos. 10, 11) and jars (No. 9) with a wide range of rim forms. There are however some jug sherds (Nos. 12–17), and an early copy of a lobed cup (No. 17). Decoration is rare, consisting mainly of a patchy green glaze, but includes stabbing on the rim (No. 10) or handle, while on the jug sherds both the repoussé (No. 12) and the applied techniques are represented, the latter in the form of rouletted strips (No. 14) or overlapping scales (cf. Thorn 1975, Fig. 11, 161; Orton 1979, Fig. 16, 103). The majority of sherds would appear to be of ‘Kingston’ type (see Orton 1977, 82; Hinton 1980). There are, however, in addition to two sherds (including No. 16) of ‘Cheam’ type ware (see Marshall 1922; Matthews and Green 1969; Orton 1977, 82; Orton 1979b), and a few sherds (including No. 8) of probable south-west Surrey ware (see Holling 1968: Holling 1971, 57–69), two other smaller groups. Of these the first, also noted at Angel Court (Orton 1975, 82) is solely or predominantly tempered with translucent red quartz grains (in sharp contrast to the main group, which is predominantly tempered with white, grey or clear quartz in varying proportions and a moderate amount of very fine black iron ore, with little or no red quartz); the second has a much sandier texture and is pinkish-buff rather than white or off-white in colour, and is in fact more akin to the oxidised South Hertfordshire wares. This ware is further distinguished by its much thinner wall and poor finish; some sherds are hand-made, and it is possible that this group is of 12th–13th-century date. The attribution of the various Surrey wares to specific kiln sources is frustrated by the current lack of excavated kiln sites, the very considerable inter- grading of the fabric types, the similarity nature of the forms produced, and moreover by the recent discovery at Bankside, Southwark, of a large dump of kiln wasters (Dennis and Hinton 1983) which contains many sherds identical both in form and fabric to wares from Kingston, Cheam and Stepney. Given the proximity of the Southwark site to the City of London, it seems likely that a certain proportion at least of the Surrey white ware jugs and mugs found in London and formerly assigned to the Kingston or Cheam kilns may in fact derive from the nearer production centre.

Ceramically the richest features in this phase are F111 and F146 in the north trench, which, on the evidence of matching sherds in different layers of their fill, would both appear to have been backfilled as one controlled operation. Sherds from the same pots were also found in F146 and F161. In the south trench F226, F233 and F228 would also appear to be contemporary with this phase, although these only contained only one sherd of South Hertfordshire grey ware and one sherd of Surrey white ware (No. 13) respectively; F228 was sterile. Imported wares in this group are limited to one sherd of Langerwehe stoneware, and one sherd of possible Low Countries grey ware, although the Saintonge wares from the fill of F140 may derive from this phase.
Fig. 6. Stepney High Street: Medieval and Late Medieval Pottery, Phase 2 (Nos. 3–21): Phase 3 (Nos. 22–24), Phase 5 (No. 25).
No. 8 Cooking pot in a very hard greyish-white ware, possibly from south-west Surrey. The heavy flanged rim form with marked internal bead is paralleled at Ash (Holling 1971, Fig. 8, 6 and 7). Probably mid 14th century. F111, Layer 132.

No. 9 Straight-sided cooking pot in medium sandy pale orange Surrey ware, with splash of green glaze over top and underside of rim, and smoke-blackened outer wall. The flat rim form with slightly triangular section is typical of the Kingston products (Hinton 1980, Fig. 3). Late 13th-14th century. F165, Layer 166.

No. 10 Seated rim sherd from a large cooking pot or bowl in Kingston type greyish-white ware, with splashes of green glaze. Late 13–14th century. F146, Layer 149.

No. 11 Large bowl with coarsely finished flanged rim decorated with triple stabbing at intervals of c. 120mm. Medium coarse pinkish-white ware, possibly from south-west Surrey, with thin green glaze over rim and inner wall, outer wall smoke-blackened. 14th century. F130, Layer 131.


No. 13 Jug neck and rim sherd with elegantly shaped profile. Medium fine dull pinkish grey Kingston type ware with rich external green glaze. Late 13th–14th century. F233, Layer 234.

No. 14 Body sherd with decoration of applied rouletted strips. Medium fine Kingston type ware with rich external green glaze. Late 13th–14th century. F77, Layer 78.

No. 15 Jug rim, very hard coarse greyish-white Kingston type Surrey ware; dark green glaze externally with a scar on the rim from contact with another vessel in the kiln. Late 13th–14th century. F146, Layer 147.

No. 16 Jug rim, fine sandy Surrey ware with pinkish-buff core and creamy-yellow surfaces (cf. Hurst 1960, Fig. 2, 6; Turner 1971, 162, Fig. 3, 6). A pedestal base in the same fabric was also recovered from this feature, (cf. Hinton 1980, Fig. 2, 8, 10–12). Mid 14th century. F77, Layer 78.

No. 17 Rim sherd, possibly from a copy of a lobed cup. Surrey ware; fine pinkish-cream fabric with internal yellow glaze, external olive green glaze with brown streaks, possibly from Kingston, where a few lobed cups and ‘Tudor Green’ type vessels were found together with the more usual coarse fabrics (Hinton 1980, 381). 14th century. F146, Layer 148.

No. 18 Jug base with applied ring foot. London ware, lightly knife-trimmed above the base angle, with traces of white slip and green glaze. 13th century. F146, Layer 149.

No. 19 Plain rounded jug rim sherd. Mill Green coarse ware with white slip and green glaze (see Pearce, this volume). Poorly finished, with a scar on the rim from contact with another vessel in the kiln. Late 13th–14th century. F146, Layer 147.

No. 20 Three rim sherd and two body sherds, Mill Green coarse ware with white slip and thin, motled green glaze. Late 13th–14th century. F146, Layers 147, 148; F3, Layer 5.

No. 21 Forty-five sherd, many joining, from the lower half of a jug in a coarse, slightly micaceous sandy fabric with occasional larger inclusions of finely crushed flint, rounded or sub-angular grains of red or grey quartz, and haematite. Pale grey core with orange surfaces, externally decorated with vertical stripes of white slip and a patchy green glaze. The surfaces are very rough, and almost appear to have been water-worn. The jug resembles the products of the Earlswood kiln (Turner 1974, 50–54), but probably derives from one of the nearer South Hertfordshire kilns. The base of a jug in a rather coarser version of this fabric, with similarly abraded surfaces was recently excavated by the I.L.A.U. in Stoke Newington (Harding and Gibbard, in prep), while a similar ware was found at Elstree (Castle and Hammer­son 1978, 152).

Group 3. Late 15th–early 16th century (Fig. 6, Nos. 22–24)

F140, the drain, which cut both the large shallow pit F165 and the square pit F161, contained predominantly residual material largely derived from those features. In addition, however, this feature also produced a few sherds of coarse Surrey/Hampshire border ware, Late London ware (see Orton 1979a, 31), one sherd of ‘Tudor Green’ and also the first imported wares, namely two sherds of Saintonge (Nos 23, 24), one sherd of Beauvais stoneware and one sherd of Raeren stoneware. Beauvais stoneware was produced from the 14th to the 19th century; this sherd would appear to be from a flask, and thus is probably of late 15th or early 16th-century manufacture. Raeren stoneware is known in England as early as 1460 at Southampton (R. Thompson, pers. comm), but the main influx of this ware is not until later in the 15th century, with dated groups of c. 1480 at Trig Lane (A. Vince pers. comm) and c. 1500 at Norwich. Since the cut for the drain would appear to have been backfilled more or less immediately, the stoneware and other late medieval/early post-medieval sherds together suggest a date in the first years of the 16th century for this feature (although
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if the drain is associated with Worcester Place, which was constructed by the first Marquis of Worcester (1577–1644) this date would, unless these sherds are residual, seem rather early).

Also probably associated with this phase are pits F103 and F170, of which F170 contained one sherd of Andalusian lustreware with badly decayed glaze (see Dunning 1961, 6–12; Caiger-Smith 1973, 53–64; Hurst 1977, 68–95), one sherd of Late London ware, and one sherd of Cistercian ware (see Le Patourel 1966, 262–69). F103 contained three sherds of early post-medieval red ware, including one sherd tempered with minute chalk or shell inclusions. Although unusual, this ware is also known from a 16th-century garderobe pit at the Tower of London (exc. G. Parnell). In the south trench, F230, which contained only one sherd of Raeren stoneware, would also appear to be contemporary with these features. Only the following sherds merit illustration.

No. 22 Jug or small jar with flaring rim. Mill green coarse ware, unglazed. Late 13th-mid 14th century. F140, Layer 141.

No. 23 Body sherd Saintonge ware with decoration of applied, moulded strip and mottled green glaze. Possibly from a three handled pitcher (pegau) (cf. Moorhouse 1972, 37, Fig. 4, 56; Barton 1972, 29–30; Thorn 1975, Fig. 6, 34). Probably late 13th century. F140, Layer 150.

No. 24 Jug rim, Saintonge ware. As above, fine white micaceous fabric with no visible inclusions; pale grey core, greyish-cream surfaces. (cf. Thorn 1975, Fig. 6, 34; Broady 1979, Fig. 35, 381, 386). 13th century. F140, Layer 137.

Group 4. Mid-late 16th century.

These features produced a totally different assemblage to that seen in the earlier phases. As above there is a dominant group of residual wares, but now also a considerable variety of both English and imported wares which all point to a date of c. 1550 for this first phase of garden features. The possibility, suggested by their marked difference in form, that garden beds F81, F83 and F138 may be earlier or later in date than the other garden features, was not borne out by their ceramic content, indeed sherds from the same vessels were found in F81 and F138, in F81 and F69, and in F67 and F121.

The residual English wares are in the main as those described above, but there is now a larger proportion of late medieval buff-white wares from south-west Surrey/Hampshire. These include a wide range of cooking pots and bowls, mainly with flanged rims, and also a base sherd from a 'D' shaped Dutch oven (I am indebted to Alan Vince for the identification of this sherd). The Mill Green wares include two sherds of coarse ware, from F67 and F121, decorated with rings and barbotine pellets of white slip under a clear glaze. Contemporary English wares are represented by a greatly increased proportion of 'Tudor Green' type wares (29 sherds), and also the first appearance of the post-medieval red wares produced at Cheam and Kingston. Of these the most readily identifiable forms are a wall-sided bowl and possibly a jug rim from Cheam (Orton 1979) Fig. 5, 40, and possibly Fig. 4, 26), and one jug rim, one handle, and one body sherd from a costrel with concentric grooves (Nelson 1981, Fig. 2, 3 and 5; Fig. 4, 20) from Kingston. Other sherds of interest include two joining sherds from a dish in a clear glazed sandy pink ware (cf. Dawson 1979, 44), and one sherd of Cistercian ware from F138. In the south trench F223 and F211 would also appear to be contemporary with the above. The most striking feature of this group is the dramatic increase in the number of imported wares, which total twenty-four sherds from ten different sources (see Fig. 8).

Group 5. Early-mid 17th century (Fig. 6 No. 25, Fig. 7 Nos. 26–32)

The building up of the garden area consisted in the north trench of two deposits, Layers 5 and 4 (F3), and in the south trench of only one deposit, Layer 204 (F203). In the north trench the ceramic contents of Layer 5 are again in total contrast to those of the preceding groups. As before there is a high proportion of residual material from vessels noted in earlier contexts, most noticeably in the Mill Green wares, but now the range of late medieval and post-medieval wares is much broader, with a marked emphasis on table wares such as 'Tudor Green' cups, lobed cups and dishes, fine Surrey/Hampshire border wares (Holling 1971, 69–86) which include a rare albarello form (No. 36), Cis-
tercian ware cups, fragments from a number of exotic dishes and bowls (see Fig. 7) and other imported wares, and a quantity of German stoneware. The contemporary coarsewares are mainly from Kingston or Cheam. These include one rim sherd with strap handle, deeply thumbed below the rim, and one rim sherd from a wall-sided bowl from Cheam (Orton 1979a, Fig. 4, 27 and 29; Fig. 5, 40); one slightly everted squared rim sherd, possibly from a cistern, and one base sherd with multiple thumbed feet, internal cream slip and greenish glaze, probably from a wall-sided bowl (Nelson 1981, Fig. 2, 1; Fig. 3, 14), also possibly one pipkin handle.

This pattern is continued in Layer 4, although here the total number of sherds is much smaller, and the total number of fine and imported wares proportionally lower.

In addition to the above, Layer 5 contained 25 fragments of clay pipe, including four bowls, which may be loosely dated to c. 1610–1680, while Layer 4 produced 48 fragments of clay pipe, including seven bowls, which may be loosely dated to c. 1610–1710.

Layer 204 in the south trench yielded pottery which was again quite different in character to that from Layers 4 and 5, with virtually no residual wares, and a greater proportion of contemporary English coarsewares. Whereas in Layers 5 and 4 these were mainly represented by fragments of Cheam and Kingston ware in the same style as those seen in Phase 4, and therefore possibly residual, in Layer 204 the contemporary wares are dominated by quite sizeable fragments of pottery of a very domestic, mundane nature, coming apparently from the 17th-century Woolwich kilns. These include at least half of a large bucket-type vessel with horizontal strap handles, and the base of a strainer (cf. Pryor and Blockley, 1978, Fig. 14, 69; Fig. 15, 77). Following the maxim that the lightest wares travel furthest, these heavy duty vessels suggest the presence of a scullery in the vicinity of this trench. The fine wares in this group are also different, comprising only two sherds Staffordshire slip-ware, a few sherds of post-medieval black glazed ware, and only six sherds of imported ware.

On the basis of the pottery and clay pipes, and also the coin evidence from Layer 4 (see p. 343), which contained two tokens dateable to post 1613–1625, and to the late 16th–17th century, Phase 5 may be dated with some confidence to the mid 17th century.

No. 25 Small ‘cauldron’ pot or pipkin, copying a metal form. Fine sandy fabric, with dull orange inner margin and surface, orange-grey outer margin and surface with unevenly poured green glaze over the shoulder, which is heavily rilled and sharply carinated with a pronounced ridge. Corresponds to the description of the type I cauldron shaped cooking pots from Kingston (Nelson 1981, 97) but the small size, only 95mm internal rim diameter, is not paralleled among the published groups from Kingston, Arundel House (Haslam 1975) or Guy’s Hospital (Dawson 1979). Probably late 15th century or early 16th century. Layer 5.

No. 26 Dish rim, Spanish lustreware, probably Valencia, white tin-glaze, over both surfaces, geometric decoration in cobalt blue over copper lustre internally, externally in lustre only (now very faint) over lightly fluted surface. Fine pinkish-buff fabric. ?15th century. Layer 5.

No. 27 Costrel, probably Spanish. Very fine micaceous dull red fabric with slightly powdery surfaces, one face lightly burnished, the other bearing a biff of green glaze. 16th–17th century. Layer 5.

No. 28 Base of dish with wire marks faintly visible on the underside; Italian, Montelupo. Fine pinkish-buff micaceous ware with minute red and black inclusions and rare grains of quartz. White slipped body with white tin glaze externally and rather gaudy decoration internally in yellow, orange, and light and dark blue. Reconstruction based on an example from St Andrews Street, Plymouth (Brodny, 1979, 76, Fig. 43, 532). 16th century. Layer 5.

No. 29 Dish rim, Beauvais sgraffito, double slip. Hard fine buff fabric with occasional fine red inclusions, with first red slip, then white slip over the upper surface and extending over the rim onto the underside of the dish (poorly finished). Geometric decoration then inscribed through the upper slip only, the body of the dish painted with copper oxide and the whole glazed with a clear glaze. The bead of the rim is thus yellow, the flange green, the incised decoration dark green/black. Beauvais sgraffito is known from a number of sites in southern England (Hurst 1968, 58); to date it is not common in London (although this may in part reflect a publication bias towards earlier material), but a few sherds have recently been published from Guy’s Hospital (Hurst and Clark 1979, 53, Fig. 12, 210). Mid-late 16th century. Layer 5.

No. 30 Two base sherds with wire marks on the underside, and three body sherds Cologne/Frechen drinking mug. Pinkish-bronze internally, mottled honey-brown glaze externally over applied,
stamped decoration of medallions containing classical portraits, acanthus leaves, and central horizontal band with moulded inscription inscribed '... T. OTs. NEIT ...'. The legend probably reads 'Trink und est, Gots nicht vergess!', one of the two most common mottoes on mugs of this type (Holmes 1951, 173-4, Pl. XXI). Mid 16th century. Layer 5.

No. 31 One of two decorated sherds Cologne/Frechen stoneware bottle. Grey glaze internally, mottled dark brown glaze externally over applied medallions with face stamps. Mid 16th century. Layer 5.

No. 32 Body sherd, Cologne/Frechen stoneware. Streaky pale grey-brown internally, rich yellowish-brown glaze externally over large medallion containing stamped portrait of warrior or courtly figure. Mid 16th century. Layer 4.

Groups 6, 7 Post 1650 (Fig. 7, Nos. 33-36)
With the exception of F16 and F34, which produced sherds of 19th-century china, the pottery from these features remains consistently of late 17th-century date regardless of any apparent stratigraphic sequences. By comparison with the wealth of pottery from the preceding group, the pottery from the second phase of garden features and the pits and scoops they cut, is poor and almost entirely medieval in character, with only nine sherds of imported ware, including six sherds of stoneware, of which four derive from F28. The pits and scoops F6, F8 and F10 were more productive, yielding in addition to sherds of contemporary coarsewares, a number of finer or imported wares reminiscent of those seen in Layer 5 (including Nos. 33, 34, 36) and sixteen sherds of stoneware.

With the exception of the following and the stonewares, which are well published elsewhere, sherds from this group are too fragmentary or of insufficient interest to merit illustration.

No. 33 Base of dish or shallow bowl, Vauxhall or Lambeth tin glazed ware with decoration in cobalt blue and manganese. 17th century. F10, Layer 11.

No. 34 Dish rim, Low Countries tin-glazed ware. Pinkish-red body with pinkish-buff surfaces, densely tempered with fine black sand, and with frequent inclusions of both red and white grog ranging from 1 x 1mm to 3 x 4mm. Thin white tin glaze externally over rilled surface, internally decorated with orange swirls and blue blobs within concentric rings of blue and yellow. Early-mid 17th century. F10, Layer 11.

No. 35 Dish rim, ?German. Fine pinkish-buff ware with pinkish-orange surfaces, poorly prepared and having a laminated structure; occasional red ?flint, greyish and translucent quartz inclusions (up to 3 x 4mm) and with one large inclusion of rose coloured quartz (4 x 5mm). Externally corrugated surface, unglazed, internally decorated with bands of zig-zag lines under a thick orange glaze. A possible source near Limburg has been suggested by Dutch and German specialists, although a similar rim form in a finer fabric from St Andrews Street, Plymouth, was identified as being of Dutch origin (Broady 1979, 74, Fig. 108, 492), Probably early 17th century. F209, Layer 210.1

No. 36 Albarello, very fine buff Surrey/Hampshire border ware, with pale green glaze over inner face of rim only. 17th century. F10, Layer 11.

THE IMPORTED WARES
In all a total of 216 sherds from stratified groups, and a further 16 unstratified sherds was recovered. In all a minimum of twenty wares are represented, coming from the Mediterranean, France and the Rhineland (see Fig. 8). These range in date from the 13th century to the late 17th century. In the earlier period the South-west French ware predominate, but in the post-medieval period the Cologne/Frechen wares are the dominant group, both in the stonewares and in the assemblage as a whole (Fig. 8). There is an unexplained lack of imported Delft type tin-glazed ware. Considering the nature of the site the assemblage is one of the richer and more diverse groups so far published from the Inner London area, other comparable groups being in the main derived from more auspicious sites such as Arundel House (Haslam 1975), the Custom House (Thorn 1975) and Guy’s Hospital (Dawson 1979). In many respects, although on a considerably smaller scale, the group closely resembles those from Castle Street and St Andrew’s Street, Plymouth (Clark 1975; Broady 1979), which together have produced the largest collection and widest range of imported wares in Britain to date. Sherds of interest in the Stepney assemblage inlcude:
Saintonge, 13th century. Phase 3: Nos. 23 and 24. Phase 4: one strap handle, F67 (cf. Thorn 1975, Fig. 11, 149), one sherd with applied decoration, as No. 23, F123; one sherd with red painted decoration, F144.
Fig. 7. Stepney High Street: Imported Pottery and Other Fine Wares, Phase 5 (Nos. 26–32): Phases 6/7 (Nos. 33–36).
Excavations at Stepney High Street

Saintonge, 16th–17th century. Phase 6: one sherd bucket handle, F34 (cf. Hurst 1974, 225, Fig. 1).

Beauvais sgraffito, 16th century. Phase 5: No. 29.


Iberia, 14th century. Phase 4: One body sherd, very coarse laminated ware with ill-sorted inclusions of fine grey quartz sand, fine plates of mica, and large inclusions of translucent quartz, red haematite and white ? silica. Bluish-grey core, dull reddish-brown surfaces, smoothed but rough to the touch; F117.

Iberia, 16th century. Phase 4: four joining sherds from a flat-based vessel, probably a jug. Fine sandy orange ware with frequent large plates of mica, very fine black sand and translucent quartz inclusions. Pale grey core, pale orange inner surface, orange-red exterior. Wall thickness 4–5mm. There is a concentration of black sand on the underside of the vessel similar to that seen on the larger Merida wares (Clark 1975, 47). F223. Phase 5: one body sherd, Layer 4, and one handle sherd, Layer 5, from the same vessel as that from F223.

Spain/Iberia, 16th century. Phase 5: No. 27.

Mediterranean Maiolica, 16th century. Phase 5: one base and two body sherds from an albarello. Fine pinkish-red micaceous fabric with a slightly rough, powdery texture. Clear glaze internally, white slip under white tin glaze externally; Layer 5.

Italy, Montelupo. 16th century, Phase 5: No. 28.


Low Countries, 16th–17th century. Phase 6: No. 34.

Germany, Earthenware, 17th century. Phase 6: No. 35.

Germany, Stoneware. Siegburg, 13th–14th century. Phase 5: One rim sherd from a cup or shallow drinking bowl (Beckman 1974, 202, Fig. 19, 174).

Cologne/Frechen, 16th–17th century.

Phase 5: Nos 30–32; one acanthus leaf stamp, Layer 5; one fragment from an armorial stamp showing a lion passant below a crown (cf. M.O.L. Acc. Nos. 6351, 25148), Layer 204; one fragment from a medallion stamped with a trident and cross within a single rosette, Layer 4; one fragment from an applied face mask, Layer 4; one rim sherd from an 'oak leaf' jug or mug decorated with a stamped leaf, Layer 5. Phase 6: Fragments from two armorial stamps bearing the arms of Amsterdam (cf. M.O.L. Acc. No. 6552), F8, F28; one fragment from an armorial stamp showing the upper part of a chevron with a star on either side of the point (cf. M.O.L. Acc. No. 37.194.28. Young Collection), F10; one fragment from the border of an armorial stamp, Layer 202; fragments of two medallions stamped with a double rosette (Layer 2) and as Phase 5, Layer 4; fragments of five applied stamped face masks; F8, F8, F10, F36, Layer 202.

DISCUSSION

Although the bulk of the medieval pottery is of the period c. 1270–1350, there is a small proportion of potentially earlier material (see Group 2) which may derive from some earlier activity in the vicinity of the site. The medieval wares are dominated by the products of the Surrey and Mill Green kilns; London wares were apparently less popular, although the poor finish of many sherds in the dominant groups suggests that there may have been a local market for 'seconds'.

In the post-medieval period there is a brief but drastic change in the quality of the contemporary wares, which include a high proportion of fine table wares and a number of exotic imported wares. The diversity of the 16th-century wares on this garden site is not however as surprising as might at first appear when one considers the status of the residents of the immediate neighbourhood of the site throughout the medieval and early post-medieval periods. Documentary sources reveal the presence of at least two houses of some standing to the west of and close by St Dunstan's Church. Of these the earlier, which in 1299 served as the temporary meeting place
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Peter S. Mills

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Fig. 8. Stepney High Street: Distribution of Imported Pottery.

of the ‘Stepney Parliament’ (Smith 1937, 257–62), was known as the Great Place. In the late 13th century this was occupied by Henrey le Waleys, Gascon wine merchant and twice Lord Mayor of London, and thereafter by men of considerable importance in social, political or religious affairs (Smith 1939, 257–62; Loftie 1884, 155) including, in the mid 17th century, the Vicar General Cromwell, Earl of Essex. In the late 16th or early 17th century a second large house, known as Worcester Place was also apparently constructed near the site by the first Marquis of Worcester (1577–1644), while throughout the 16th century, with the growth of the Tudor navy and the growth of the mercantile marine, Stepney flourished as the residence of seamen and naval officers retiring from expeditions to the East and West Indies, the Mediterranean, Africa, Cadiz and the Baltic (Brett-James 1935, 188–193). It is therefore perhaps not entirely coincidental that the bulk of the medieval wares are of south-west French origin, while in the post-medieval period there is a much greater variety, coming mainly from the Mediterranean and the Rhineland. The great quantity of pottery and the nature of the table wares in Phase 5 suggest the clearance in the mid 17th century of an establishment of some wealth. It is suggested therefore, that some at least of the imported or more unusual pottery found on the site may derive from one or other of the two houses noted above. The pottery from the drain, F140, shows that this feature probably predates the building of Worcester House, but the general
Excavations at Stepney High Street

deposit over the first phase of garden features, F3 (Phase 5), would appear, ceramically, to date to the death of the Marquis of Worcester, 1644. At the same time there is a marked change in the nature of the pottery from the south trench, which suggests the presence of a domestic building immediately to the south or east of the site, and thus perhaps a changing pattern of land use. Following this the general composition of the assemblage reassumes its former ‘medieval’ appearance, although the imported stonewares make a stronger appearance in the latest pits. The general sequence of imported wares ceases with the Cologne/French stonewares — there are no Westerwald or other later wares — and indeed although the English wares continue into the 19th century, the major ceramic sequence would appear to cease in the late 17th century.

COINS

THE ANIMAL BONES
by Alison Locker

Some 449 bones were recovered from Stepney High Street excavation, mostly from post medieval features. The following species were identified: ox (Bos sp.), sheep (Ovis sp.), pig (Sus sp.), horse (Equus sp.), rabbit (Oryctolagus cuniculus), dog (Canis sp.), domestic fowl (Gallus sp.), jackdaw (Corvus monedula), and pigeon (Columba sp.). There were also some fragments of oyster (Ostrea edulis), and cockle (Cardium edule).

Although numerous features were excavated relatively few bones were recovered hence it is not possible to comment on their distribution over the site. However, they seem mostly to represent domestic debris with butchering marks.

Each bone was recorded and measured using the method of Jones et al. (1981); further details are available from the author.

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The Society is grateful to the Department of the Environment for a grant towards the cost of publishing this report.
EXCAVATIONS AT BROAD SANCTUARY, WESTMINSTER

PETER S. MILLS

SUMMARY
A series of 16th-century drainage ditches canalizing a branch of the river Tyburn at Thorney Island indicated that the area had been reclaimed from the surrounding marshes in the early post-mediaeval period.

INTRODUCTION
Prior to the redevelopment of the Broad Sanctuary site as a conference centre a trial excavation was carried out by the Inner London Archaeological Unit from February to March 1979 on behalf of the Department of the Environment. The site, bounded by Storey’s Gate, Broad Sanctuary and Little Sanctuary (TQ29957962), lay near the presumed edge of Thorney Island about 140m north-west of Westminster Abbey and 260m west of Westminster (Fig. 1). The southern portion of the site had formerly been occupied by the Westminster Hospital and its deep basements had removed all archaeological deposits. However, test pits and boreholes at the northern end of the site, formerly Her Majesty’s Stationery Office, indicated that some 2m of archaeological deposits survived beneath a 2m overburden of modern rubble.

It was the purpose of the excavation to determine the nature of the archaeological deposits and whether it would be feasible to excavate a larger area. Unfortunately, due to the depth of the deposits the cost of excavation was so high further work was restricted to a watching brief.

The site records are deposited at 42 Theobalds Road, London WC1.

DESCRIPTION OF THE EXCAVATION
An east–west trench 2m by 25.5m was cut in the north end of the site. Having removed c. 2m of modern brick rubble overburden by machine a further 2m of stratified deposits were excavated by hand. Note that heights are given according to the New Westminster Datum (NWD) which lies 100m below the Ordnance Datum at Newlyn.

Phase Ia (Fig. 2)
This comprised a shallow sloping sided stream bed (F107) approximately 2.5m wide running east–west for the whole length of the trench cutting the natural clay (top of clay at 100.5m NWD). Filling the stream was a compact grey-black clay (L55) containing numerous fragments of branches, twigs, leaves and other organic material over which lay a deposit of grey-brown clay (L64) containing a few small brick flecks. Both layers were deposited by slow moving water.

Phase Ib
Covering the west end of the stream a spread (F111) of light green sandy clay with gravel contained some limestone blocks. Over this was a small layer of grey-brown sandy clay. This spread may have been part of the stream F107 or material dumped to redirect the course of the stream.

Phase II (Fig. 2)
Cutting through the spread F111 and the stream F107 was a segment of a ditch (F99). A series of wooden posts and a plank (F54) on the north side of the ditch may have been the remains of revetting. The ditch was possibly part of the Phase IV ditch F100 which had silted up and required recutting for drainage.
**Phase III**

Over the fill of the ditch F99 was a deposit of green-brown sandy gravel (F112) which may have been dumped to consolidate the west edge of the ditch F100 (Phase IV).

**Phase IV** (Fig. 2)

Running east–west and turning south into the section at the west end of the trench was a large ditch (F100) (c. 2m wide, 1.5m deep) with sloping sides and flattish bottom. This cut through the stream F107, the earlier ditch F99, and the dump levels F111 and F112. Part of the south side was revetted by wooden posts (F114 to F134), wooden planks set behind posts (F57) and woven hurdle behind posts (F113). The planking, hurdle, and some of the posts subsequently collapsed into the ditch F100. The ditch gradually accumulated deposits of clay, sandy clay and sand which were heavily contaminated with organic debris.

**Phase Va** (Fig. 2)

Cutting through the fill of the ditch F100 was another ditch (F108) (exc. width 0.6m, depth 0.8m) with steeply sloping sides and flattish bottom. The ditch ran east–west and was filled with grey-brown and grey-green clay.

**Phase Vb**

The Phase Va ditch F108 apparently silted up fairly rapidly and was recut on the same line at its east end (F109) (exc. width 0.6m, depth 0.8m).

**Phase VI** (Fig. 2)

Cutting through the ditches F108 and F109 was another ditch (F101) (1.2m wide, between 0.5m and 1.2m deep) with steeply sloping sides, rounded bottom; having run east–west for 20m the ditch turned south into the section. Though smaller this appears to be a recut of the ditch F100 (Phase IV).
PHASE I

PHASES II & IV

collapsed revetting

PHASES V, VI & VII

Fig. 2. Broad Sanctuary: Phase Plans.
Fig. 3. Broad Sanctuary: North and South Sections.
Excavations at Broad Sanctuary Westminster

Where the ditch F101 curved south the corner of the earlier ditch F100 had been backfilled with a deposit of sawdust over which lay a dump of tiles in clay stabilized by numerous wooden stakes. A few wooden stakes and a plank (F42 and F43) may be a section of revetting associated with this ditch.

Like the other ditches investigated this ditch silted up with water-borne deposits and the slumping banks of the watercourse.

Phase VII (Fig. 2)
This phase consisted of features which were uncovered after the removal of the modern overburden and have no inter-relationships.

A ditch (F10), running north–south, had shallow sloping sides and a rounded bottom and was of unknown function.

A well (F18) cut through the ditches F100, F101 and the stream F107. The well was lined with reused overlapping barrels, from which the tops and bottoms had been removed. This feature was not fully excavated but was re-exposed during the watching brief.

At the west end of the site a deposit of dark grey sandy clay (F110) covered the ditch F101. It was not clear whether this was a deliberate dump or a flood laid layer.

Cutting through the east end of the ditch F101 was a steeply sloping sided ditch (F144) with a rounded terminal. This contained numerous fragments of leather.

Fig. 4. Broad Sanctuary: Cross-sections A and B.
WATCHING BRIEF

The excavation at Broad Sanctuary was followed in February 1981 by a watching brief during which further archaeological and topographical details were recorded. Unfortunately, the speed with which the remaining deposits were removed (some 30,000 cu.m in 20 days) precluded the observing and recording of any but the most obvious features.

The general line of the stream/ditch was observed but no differentiation could be made between the phases of recutting and reuse. Six more barrel wells, probably 17th century, were recorded but no related structures observed. The vestiges of two pits were also recorded. Scattered over the site were a number of posts and stakes but no pattern was discernible, though they were probably more consolidation and revetting posts.

The natural subsoil over most of the site was a blue-grey viscid clay (height 100.5m NWD) but in the south-east corner the natural was a compact clean yellow-tan sand and clay. This seems to represent the geological edge of Thorney Island.

During site watching at 3–7 Old Queen Street (TQ29897964), some 30m west of the western edge of the Broad Sanctuary site, a series of stratified deposits were recorded. From the upper level (c. 101.85m NWD), a grey sandy clay, pottery dating from the 13th to the 16th centuries was recovered. Below lay a grey clay with numerous organic inclusions and a sharpened stake; the top of the natural clay was at 99.3m NWD. These deposits again seem to be part of the gradual expansion in the early post mediaeval period into the bog around Westminster.

DISCUSSION

Until the 16th century the area immediately around Thorney Island seems to have been a low-lying marshland crossed by numerous branches of the Tyburn and subject to regular flooding by the Thames. The stream F107 is likely to have been one of these water-courses which rendered the periphery of Thorney unsuitable for building. The process of canalizing the stream for more effective drainage commenced with the ditches F99 and F100, the deposit F111 possibly being dumped in the stream to strengthen the western limit of the ditch F100. Considerable care was taken to reinforce the banks of this ditch by the use of various forms of revetting. The ditch silted up and two (one) other ditches were cut, F108 and F109, to provide alternative drainage: these too became choked with sediment. Eventually the large ditch F100 was recut on a smaller scale and following the same alignment, F101. Part of the earlier ditch was deliberately backfilled to create a reasonably solid bank for the recut. The deposit F110 may have been dumped in the ditch F101 to level up the surrounding ground surface, while another ditch F144 was cut at the east end of the ditch F101 to improve drainage.

The well F18 and the other wells recorded during the site watching may be associated with the houses which covered the site in the early post mediaeval period.

Elsewhere in Westminster, notably at Cromwell Green in the Palace of Westminster (Mills 1980, 25), and Richmond Terrace, Whitehall (Mills forthcoming) there was considerable pressure during the late Middle Ages for land all around Thorney Island, and areas which hitherto had been regarded as unusable were drained and built upon. It appears the ditches at Broad Sanctuary were part of this move to reclaim marginal land.

The gradual encroachment of Thorney Island’s north–west corner began with the construction of the Belfry in the mid 13th century (Honeybourne 1932, 323). This Belfry was a free standing structure situated where the Middlesex Guildhall now stands, some 40m east of the 1979 excavation. Its massive ragstone foundations, 1.5m thick lying over a bed of elm and beech piles driven into gravel, were exposed (and dynamited) earlier this century (Norman 1916, 16; Radcliffe...
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Fig. 5. Broad Sanctuary: Features observed during site watching.
1939, 40). During the late Middle Ages the Abbey built houses on land near the Belfry (also known as the Sanctuary church) to provide accommodation for those seeking sanctuary (Honeybourne 1932, 323) and it seems probable that the extensions into the marsh began at this time. Although subsequent redevelopments removed all trace of structures on the site the area was exceptionally well recorded in pictures at the beginning of the 19th century (Capon 1808; Smith 1837, Pls. 43–47, drawn 1807). The prints depict 15th and 16th-century houses tightly packed in a maze of small alleys and courts.

The environmental evidence (see details below) recovered during the excavation sheds light on this squalid quarter of Westminster. The ditches, which in date only span the 16th century, needed to be recut regularly as they were blocked by discarded household rubbish, sewage and the by-products of animal slaughtering. The presence of leather debris and possible leather working tools (see below) may indicate a local industry. Likewise knives found on the site may be discards from an adjacent cutler’s workshop. The promiscuous blend of domestic and industrial refuse implies the neighbourhood was a mix of houses and small scale businesses.

The area remained residential until widespread demolition for the Parliamentary Mews (later the Stationery Office) in 1826 and the Westminster Hospital in 1832.

THE FINDS

The site did not produce a large quantity of material, and what was recovered bore out the conclusion of the excavation, that the area uncovered had been backfilled to reclaim land on the edges of Thorney Island. The backfilling would appear to have been done over a comparatively short period, perhaps from the end of the 15th century to the middle of the 16th, and it is quite likely that the material was local, rather than transported any great distance. It is not possible to state whether the earlier material was wholly residual or whether it was dumped simultaneously with the later—perhaps an example of the long usage of the highly decorated wares—but at least some sherds appeared to show considerable abrasion. The waterlogged nature of the deposits preserved some organic artifacts fairly well, notably the leather, but it is interesting that no traces of handles to the knives were discerned, suggesting at least the possibility of their being discarded as rubbish when broken. The iron piercing tools could suggest leather working but no undeniable off-cuts of leather were found, and other light industrial use might be suggested for them.

THE POTTERY

by Elizabeth Platts

The evidence of the pottery, consisting in the main of a large proportion of unconnected quite small sherds, confirms the evidence of the excavation that such finds as were able to be recovered were dumped on the site. The small extent of the area uncovered did not allow the finding of the settlement which provided the material, but the documentary evidence shows that Thorney Island itself was well populated through the medieval and early post-medieval periods, and one aspect of the range of pottery—the straight-angled-handled pipkin sherds which were found in several deposits—suggests, at least in one case, a limited source for the material dumped. The range of the pottery, including locally (London) made wares and imported pots from Europe, particularly Northern Europe, is the expected one of an area such as that round the Abbey, a mixture of resi-
Fig. 6. Broad Sanctuary: Medieval and Post-Medieval Pottery Nos 1–5 (1/4).
dential occupation and what we would now term light industrial use over a long period.

The small quantity of pottery makes it very difficult to differentiate dates for each phase, as does the overlapping in use of many sorts of pottery at this time. The residual material found suggests the long occupation of the site, and, in some cases, the long use of the object, particularly where a useful and possibly highly prized import is concerned. Little of the pottery could be reconstructed to useful profiles, and a large number of different vessels were represented.

All the material is deposited at the offices of the Inner London Archaeological Unit, Imex House, 42 Theobalds Road, London W.C.1. and may be consulted there.

Phase Ia
A total of approximately 125 sherds were recovered from the features of this phase, making a minimum vessel count of approximately 110. The residual sherds, including a small sherd of lemon yellow glazed white ware from northern France, come from cooking pots and jugs, and range in date from the 13th through the 14th to the 15th century. The phase is dated by the presence of some small sherds of the fine Surrey/Hampshire green glazed white ware produced at Farnborough (Holling 1971), a fragment of a sharply curved salt-glazed stoneware handle from a small Raeren mug (Steinzeug 1971 (343)), and a piece of the base of an Italian maiolicajug similar to one excavated at Southampton (Piatt and Coleman-Smith 1975 (1348)). These sherds are all small in size and present a problem in that without their presence the phase could happily be dated somewhat earlier. Perhaps only slight disturbance took place at, say, the beginning of the 16th century and these sherds might be considered intrusive.

Phase Ib
No dateable finds were retrieved from this phase.

Phase II
Nearly 30 sherds were recovered from this phase, representing probably only six vessels: two blackened grey-ware cooking pots of the South Hertfordshire types of fabric, three sandy white ware jugs with mottled green glaze and one ‘West Kent’ ware jug.

One of the cooking pots possessed a stabbed rim sherd and this, and the sherd of ‘West Kent’ ware, were somewhat abraded, and could be considered residual, leaving the dating of the deposit with the Surrey/Hampshire ware jugs of the 15th century (Holling 1971) (Fig. 6, No. 1).

Phase III
This phase yielded no finds.

Phase IV
This phase contained approximately 500 sherds, and is dated by a number of examples of Surrey/Hampshire ware jugs (Holling 1971) of dates from the 15th to the early 16th century (Fig. 6, No. 2), as well as the less closely dateable lead glazed red sandy wares made at a number of kilns near London during the late 15th and early 16th centuries including one almost complete pipkin with a straight handle (Fig. 6, No. 3); and a Siegburg and a Raeren stoneware sherd of the same dates. However, this phase contained a high proportion (approximately 60%) of residual material of ‘West Kent’ and South Hertfordshire and other wares.

Phase Va
This phase produced nearly 50 sherds, representing possibly 50 vessels, though a number of those vessels are very similar. The sherds appear all to come from plain slipped and glazed jugs except for two very small green glazed Surrey/Hampshire ware which, it is suggested, could come from a line, possibly lobed, bowl made at the Farnborough production site in the 15th century (Holling 1971). One of the two jug bases is of the heavily thumbed type in a dark pink-buff sandy fabric (also a product of the Surrey/Hampshire kilns) which is found in many London contexts, for example at the Custom House site (Thorn 1975), Westminster Abbey (Black 1976) and described by Rackham (1973). The other in a fine sandy pink fabric with a light grey core has a footing similar to some of the northern French medieval jugs. It has a white slip and, it is presumed, was partially glazed in a mottled green glaze. It also has parallels from other London excavations of the period (the 13th to the 15th centuries), again, for example, at Westminster Abbey (Black 1976). Two fragments of jug handle, possibly from the same vessel, are from a ‘West Kent’ vessel, but are much abraded and should be considered residual.

Phase Vb
Seventy sherds of pottery were found in this phase, representing about 60 different vessels. The date range shown by the pottery is from the 13th century (sherds of coarse ‘shelly’ ware, one with a thumbed applied strip, similar to examples found during the Westminster Abbey Misericorde excavations (Black 1976)), to the late 15th century (a number of sherds of the mottled green glazed Surrey/Hampshire ware) and a single small rim sherd of the fine mottled green/yellow glazed Surrey/Hampshire ware produced during the 16th century.

Phase VI
This phase contained by far the largest number of finds of all sorts, including over 1,000 sherds of pottery and one fragment of tile. The pottery contained residual sherds similar to those in other deposits, that is, South Hertfordshire wares, ‘West Kent’ wares, early Surrey/Hampshire wares, the sandy ‘London’ ware, and so on, but the important dating evidence is provided by sherds of jugs and pots of the early 16th century, for example slipped pancheons, and bowls, some with the grouped pinchet pedestal feet typical of the Dutch and Dutch emigre potters, pipkins of all sizes, a plain bung-hole cistern with the grouped pinchet feet, all in a fine red sandy fabric; the slip-painted unglazed ware, dark grey surfaced with a red core in a fine sandy fabric thought to have been made in or near London (Guildhall Museum
Excavations at Broad Sanctuary Westminster

Phase VII
This phase contained approximately 120 sherds, and represented about 105 different vessels. Although there was a certain amount of residual material, it was a lower proportion than in other phases. The majority of sherds come from vessels made at the end of the 15th century and the beginning of the 16th century. They include the handle of a dripping pan (similar to that found in phase VI (Fig. 6, No. 5), sherds of a pierced vessel (probably a colander rather than a fuming pot) and a nearly complete small tripod pipkin (Fig. 6, No. 4) and a number of other sherds in the red sandy fabric of the Dutch potters at Aardenburg and elsewhere in the Netherlands, and at Woolwich (the first production, Pryor and Blockley 1978) and no doubt at a number of other kilns around London. The group also contains the base of a Siegburg mug.

THE SMALL FINDS
by Wendy McIsaac

The small finds described and illustrated below are from Ditch 101 (Phase VI). This contained the largest group of objects. Items found in other features are referred to where appropriate, but have not been illustrated.

Iron
1. Knife. Broken point, pointed tang, copper alloy strip, separate blade from tang. 16th century. Fig. 8, No. 1.
2. Knife. Strip tang with iron rivet. 16th century. Fig. 8, No. 2.
In all, 13 knives were recovered from the site: four from Ditch 101 (Phase VI) as listed above; two from Ditch 107 (Phase Ia); five from Ditch 100 (Phase IV); one from Feature 109 (Phase Vb); one from Feature 141 (Phase VII). Most had the long narrow blades typical of the 16th century. Probable cutler’s marks could be made out on a couple of the blades with the help of X-ray photographs. None of the knives were found with a handle although the organic material in the deposits was generally well preserved.
3. Half of a pair of shears. The protuberance just in front of the blade suggests an early 16th-century date. Fig. 8, No. 3.
4. Doorkey. This type is found in 16th-century contexts but continued to be manufactured into the 17th century. Fig. 8, No. 4. A similar key was found in Ditch 100 (Phase IV).
5. Rowel spur of silvered iron. If this was made in England it is probably medieval. Fig. 8, No. 5.
6–9. A group of implements pointed at one or both ends, probably used for piercing. Fig. 8, Nos 6–9. A similar tool came from Ditch 109 (Phase Vb).

Copper Alloy
10. Buckle probably from a belt. First half of the 16th century—possibly before 1530. Fig. 8, No. 10. A large rectangular buckle with pin was found in Ditch 100

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Fig. 7. Broad Sanctuary: Post-Medieval Pottery Nos 6–7 (1/4).

1908, Plate LXIX No. 5); the ‘Inns of Court’ Surrey/Hampshire ware jugs (Matthews and Green 1969); and the imported pottery, Siegburg and Raeren sherds. A notable find was a large proportion of a dripping pan (Fig. 6, No. 5). Two examples of the red sandy ware is of particular note: nearly complete (when reassembled) large pipkins with an interior lead glaze and a blackened (through use) exterior (Fig. 7, Nos. 6 and 7). It is not possible to tell what length its feet were in one case, but of interest are the sharply angled handles, reminiscent of the metal cauldron prototypes. The flat bottoms would usually suggest an English rather than a Dutch source, where it was common to produce sagging bases to pipkins.

The tile is of late 13th or early 14th-century date, bearing chequers diagonally quartered and skewed. It is similar to, but not identical with, examples found at the tile factory at Danbury (Drury and Pratt 1975).
Fig. 8. Broad Sanctuary: Iron (Nos 1–9) and copper alloy (Nos 10–11) small finds (1/2).
(Phase IV). Similar types of buckle are found in the 17th century; however, the pottery found in this phase suggests a 16th-century date.

11. Bell. Inside are the remains of the now mineralised iron clapper. Most likely for use on a hunting bird. 16th century—possibly the first half of the century. Ditch 101 (Phase VI). Fig. 8, No. 11.

12-19. Seven pins with coiled heads, ranging from 25mm to 45mm in length. These fit well with a 16th-century date although their manufacture carried on into the 17th century. Ditch 101 (Phase VI). Not illustrated.

20. A more elaborate pin was also recovered. This had a head formed of thin pieces of copper alloy over a mineralised inner core. The stem appears to be a separate piece rammed into the core of the head. 16th century. Ditch 101 (Phase IV). Not illustrated.

**Coin and jettons**

1. From an unstratified context.


2. From an unstratified context.

   Identical to Catalogue No. 1 in Barnard (1916, 187 and Pl 23, 1) except 3 fleur-de-lys in shield instead of 2 fleur-de-lis quartered. All other details identical. O. Leg. A saltire AVE MARIA GRACIA. Illustrated jetton with difference of arms as noted is of the period of Philip le Hardi, Duke of Burgundy: 1363–1404. Identified by Anne Jones.

3. From Feature 99 (Phase II).

   An Anglo-Gallic jetton (the piercing on the obverse side is a distinctive feature of Anglo-Gallic jettons), cf. Barnard (1916, 104 and Pl 2, 51).

   O. A lion rampant within a tressure of nine curves. R. Anulet enclosing a pellet and surrounded by four fleur-de-lys in cross. Anglo-Gallic jettons were probably made at English mints in France and it is unlikely that they are later than 1453, the year of the final expulsion of the English from France. Comparisons with Anglo-French money suggest that they were not stamped after the end of the 14th century. Identified by Anne Jones.

**The Leather**

The water-logged nature of the deposits allowed leather to be preserved to a reasonable standard. A number of fragments and scraps were recovered, and those which are identifiable appear to consist of parts of shoes and straps. It is not possible to comment on the amount of wear on the fragments of shoes, except that none showed excessive wear, and it is suggested that the scraps at least might be evidence of local leather working. Indeed, the iron piercing tools lend support to that theory. Leather was found in Ditch 107 (Phase II), Ditch 100 (Phase IV), and Ditch 101 (Phase VI). An analysis of (where identifiable) pointed-, square-, and round-toed shoes shows again, as does the pottery, that although the excavation revealed a sequence in the stratigraphy, the finds appear to show a very short time span in the last stages of dumping and land-reclamation in the ditches.

<table>
<thead>
<tr>
<th>Phase II</th>
<th>Phase IV</th>
<th>Phase VI</th>
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<tr>
<td>Pointed</td>
<td>5 + 1?</td>
<td>?</td>
</tr>
<tr>
<td>Square</td>
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<td>Round</td>
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The significance of the toe shapes is that pointed toes were general at the end of the 15th century until the beginning of the 16th century when square toes came into fashion, followed by round toes. As nowadays, however, some overlap in these fashions prevents very close dating.

**THE ANIMAL BONES**

by Alison Locker

A. The Mammal bones

The following species were identified from 3 main ditches dated to the 16th century; horse (Equus sp.), ox (Bos sp.), sheep (Ovis sp.), pig (Sus sp.), fallow deer (Dama dama), dog (Canis sp.), cat (Felis sp.), rabbit (Oryctolagus cuniculus) and hare (Lepus sp.).

Measurements were taken whenever possible according to von den Driesch 1976 and are available in the full report, Ancient Monuments Laboratory Report No. 3850, kept at Fortress House 23, Savile Row.

The chart below indicates the number of bones for each species in each ditch. The categories ox and sheep include ox and sheep sized fragments respectively; since ox and sheep were the two most frequently occurring species it is very likely that these fragments do indeed belong to these two species. All loose teeth and rib fragments have also been included in the count.

**OX**: Ox comprised 35% of the total, most parts of the skeleton was represented, 7% of which were mandibles. These were heavily chopped through the diastema, around the alveoli of the molars, or under the alveoli.
Two partially complete skulls were chopped around the area of the neurocranium, possibly to facilitate the removal of the brain. Chop marks were also common around the occipital condyles and the homion, which may be evidence of the removal of the head from the rest of the carcass. All the major meat bearing bones were chopped, frequently across the joint surfaces and around the mid shaft area. Rib fragments and vertebrae were heavily chopped, and os coxae were frequently chopped around the acetabulum.

Few of the mandibles were complete enough to apply the Grant method of ageing, but most were mature with all molars in full wear. The epiphyses of most long bones were fully fused.

Withers heights were calculated (using Fock 1966) from seven complete metacarpals giving a range of 113.2 to 123.3cms, and ten metatarsals giving a range of 120 to 130cms. Unfortunately there were too few metapodials to separate them into groups by sex.

No horncores were recovered from these ditches, which may suggest that they were being taken elsewhere for horn working, unlike sheep for whom many horn cores were present.

SHEEP: again a relatively high proportion—10%—of mandibles was present. Some of these were also chopped across the diastema and occasionally near the third molar.

On the skull the horncores had all been chopped off individually, and in one case sawn off. One pair of horncores was larger and more robust than the rest and probably belonged to a ram; these had been removed as a pair by chopping through the frontal bones. The occipital condyles were frequently chopped in the same manner as ox.

Butchery was noted on all the major meat-bearing bones around the joint surfaces and about the mid shaft. On a few sheep humeri knifecuts were made encircling the midshaft. This has also been observed in other late medieval contexts at Maison Dieu (Wall in press), Nonsuch Palace (Locker in preparation), and Baynards Castle (Armitage 1977 unpublished). The purpose of this is unclear, but it seems unlikely that this is the result of skinning since the bone bears a lot of flesh at this point, but it could be the preliminary stages of bone working later abandoned on these particular bones. As with ox the os coxae were heavily chopped around the acetabulum and at the proximal end of the femur.

Twenty-six mandibles were aged according to Grant, their numerical values ranging from 32 to 42, indicating that the sheep were all fully mature, which is also supported by complete epiphyseal fusion in most of the long bones. This might suggest that the primary function of these individuals was not meat but wool, milk or breeding.

PIG: The pig only forms 4% of the total, and as is usual contains a much higher relative proportion of immature bones than ox or sheep. This is thought to be for two main reasons, firstly the pig has no other important economic function other than as a meat producer and therefore should be slaughtered as soon as it has achieved an optimum meat yield. Secondly it has a high fecundity rate which means fewer individuals need be kept for breeding.

One of the skulls was split saggitally, and on another the neurocranium was chopped away, presumably for the removal of the brain. Many of the long bones were chopped at their joint surfaces and around the mid shaft.

The other mammals that may have con-
Excavations at Broad Sanctuary Westminster

Contributed to the diet were poorly represented. Fallow deer was identified from three broken metapodials and a cast antler. Only a few bones of rabbit and one of hare was present.

On the femur of a dog the greater trochanter was covered in exostosis. Two shoulder heights were calculated using Harcourt (1974) on 2 humeri. These gave heights of 49.1cms, and 48.7cms.

The cat bones included two skulls. No knifecuts were observed on these or any of the long bones so it seems unlikely that these cats were skinned.

B. The Bird Bones

A total of 60 bird bones was recovered, and included the following species; domestic fowl (Gallus sp.), duck cf. mallard (Anas platyrhynchos), goose (Anser sp.), pigeon (Columba sp.), ? swan (Cygnus sp.), crow/rook (Corvus corone/fragilegus).

The chart below shows the species present in each ditch. All the mature bones were measured, and all these species were probably eaten except crow which may have been a scavenger around the site.

C. The Fish Bones

Thirteen fish bones were recovered and the following species were identified; conger eel (Conger conger), cod (Gadus morhua), gurnard (Triglidae), turbot (Scophthalmus maximus). These were all recovered by hand picking on site which may well have reduced the chances of recovering the smaller species.

D. The Shellfish (and snails)

A total of 309 fragments of shellfish was recovered, including the following; oyster (Ostrea edulis), cockle (Cardium edule), mussel (Mytilis edulis) and whelk (Buccinum undatum).

Twenty eight Cepaea and one Planorbid were also present. All the shellfish were probably eaten and oysters are known to have been a very cheap source of food at this time. Each valve of the bivalves was counted separately.

GENERAL CONCLUSIONS

This faunal assemblage suggests a mixture of debris types. Household domestic waste is suggested by chopped bone that probably came from individual joints of meat, and chops. Butchers’ waste may be represented by the many mandible and skull fragments which are usually removed at source by the butcher during ‘primary’ butchery. Thirdly the disposal of non dietary waste is suggested by the presence of horse, dog and cat whose partial corpses were incorporated in these deposits.
Further site watching in 1981 produced 52 mammal bones (plus a few oyster valves). These were recovered from a 16th-century ditch (F25), three barrel wells (F5, F16, F7) one of which cuts the ditch, and two pits (F1, F3) of 16th/17th-century date. Mainly ox and sheep were found. Primary butchery waste was suggested by four sheep skulls chopped axially from the foramen magnum, and transversely across the frontals, and an ox skull cleaved axially. Also present were horse, pig, dog, fallow deer and hare. These finds were consistent with the earlier excavated material.

Essentially these deposits are dumps of urban organic waste whose sources are varied. The livestock may have been brought some distance to the site specifically for slaughter which would account for the sheep and ox being consistently mature, in comparison with the different age groups one might expect to encounter when dealing with a single population.

These deposits of decomposing material in close proximity with the possible dumps of cess material indicated by the pollen analysis (Scaife 1980) must have been a rank, putrid neighbour for the occupants of the houses indicated on contemporary engravings.

POLLEN REPORT

by Robert G Scaife

The interpretation of pollen spectra obtained from urban archaeological contexts presents a variety of problems relating to the possible sources and modes of incorporation of pollen into the sediments analysed. Broad Sanctuary is such a case, where pollen and spore assemblages occur as a function of both natural and human factors. The result is that a remarkably high diversity of pollen types occurs which may or may not be explainable in terms of normal pollen dispersion by wind or insect.

Though the ditches have been divided into phases in the excavation report (above) they effectively formed one feature and have been treated as such in this report. A section of organic sediments filling the channel was sampled for pollen analysis at 6cm intervals. Standard pollen extraction techniques were used (Moore and Webb 1978). The results obtained are presented diagrammatically (Figs 9 and 10) with pollen totals calculated as a percentage of total pollen (TP) which comprised a total of 300 grains per level. Spores were recorded outside of the sum and were calculated as a percentage of total pollen plus spores for each level. A total of 87 pollen and spore taxa was recorded which are divisible into a number of naturally or anthropogenically derived categories. These are listed below and briefly discussed.

1. The tree component

   Betula
   Pinus
   Taxus
   Tilia
   Ulmus
   Fraxinus
   Juglans
   Fagus
   Quercus

   These are all present in diminutive frequencies of 0–5% TP, and possibly, therefore derive from non-local growth of these genera. Quercus (oak) attains the highest value (6%TP) and may be representative, along with Betula (birch), Fagus (beech) and Fraxinus (ash) of woodland growing in the region. Alternatively, these pollen taxa may derive from stream transportation from areas high-up in the river’s catchment area.

2. Shrubs

   Corylus
   Salix
   Prunus type
   Rubus type
   Sambucus

   These are similarly present in low numbers but their source of origin may not necessarily be from long distances. With the possible exception of Corylus (hazel) these shrubs may be more typical of waste ground in urban areas. Certainly in the case of Sambucus (elderberry) its seeds are frequent components of urban plant macrofossil assemblages because of its high fidelity with urban dereliction. Consistent pollen records of Salix spp. (willow) throughout the sediment sequence presents the problem as to whether local autochthonous growth is represented or whether this pollen was transported from upstream. The entomophilous nature of this
Fig. 9. Broad Sanctuary: Pollen diagram.
A species of Salix usually results in its under-representation in pollen totals and it seems likely therefore that areas of Salix were prevalent in Broad Sanctuary.

3. Dwarf shrubs

Ericales
Calluna
Hedera

Low frequencies of ericaceous (heath) taxa may be derived either naturally or as suggested by Scaife (in Macphail 1981), be liberated from animal bedding brought into the urban area.

4. Aquatic and mire

Caltha type
Filipendula
Alisma type
Succisa
CYPARISACEAE
Hydrocotyle vulgaris
Typha angustifolia/Sparganium type
Typha latifolia
cf. Stratiotes
Sphagnum

These marginal aquatic and mire taxa may be constituents of the marsh area and of plant species growing along the stream margins, both at Broad Sanctuary and upstream.

5. Ruderals

Ranunculus type
Papaver
Chelidonium
Dianthus type
Cerastium type
Stellaria type
Spergula type
Chenopodium type
PAPILIONACEAE
ROSACEAE
Polygonum spp.
Urtica type
Anagallis arvensis
Solanum dulcamara
SCROPHULARIACEAE
Plantago spp.
LABIATAE
Galium
COMPOSITAE

In this category a very marked floral diversity is evident. These are essentially herbaceous plants typical of disturbed waste-ground areas such as might readily be encountered in urban areas and as to be expected, form the predominant pollen group found in these sediments.

6. Ethnobotanical types

Certain interesting pollen types were recorded in the analysis, which may be attributable directly to anthropogenic factors.

(i) Linum bienne type (flax): three pollen grains of this type were recovered. This pollen type includes both Linum bienne and L. usitatissimum and it seems likely that the latter type is represented here. This may therefore be attributable to the usage of flax during this period, the pollen being derived from localised growing, or from the processing of this commodity. A further possible alternative may be its derivation from linseed oil waste.

(ii) Cannabis sativa (Cannabis): low numbers of pollen grains of Cannabis were recorded. These may have derived from the production of hemp. Pollen separation of Cannabis sativa from Humulus lupulus (hop) was carried out on pollen morphological criteria.

(iii) Fagopyrum (buckwheat): three records of Fagopyrum are present. The origin of these is problematical, but the use of this plant in the production of flour may be noted. Palynologically this is an interesting record, as this taxon has rarely been recorded in Britain (Godwin 1975).

7. Enigmatic types

Gramineae (grasses) and Cyperaceae (sedges) form the dominant individual pollen types in the spectra from Broad Sanctuary. Their derivation is again enigmatic and various possible sources for the pollen may be postulated. Both Gramineae and Cyperaceae may be autochthonous constituents of the flora growing on or around the area of Westminster. Alternatively the pollen may derive from floor covering in houses or stables which was removed and dumped on waste-ground areas. It is likely that much hay fodder may have been introduced into the area for feeding domesticated animals. Removal and dumping of animal waste materials (including dung) could similarly have been a prominent source of these pollen taxa. The similarity of the pollen morphology in the different genera of
Fig. 10. Broad Sanctuary: Pollen diagram.
Gramineae and Cyperaceae does not, unfortunately allow more detailed separation into groups having a similar ecology. This would, if it were possible, allow more specific origins to be postulated.

8. Cess component

Papaver
Chelidonium
Sinapis type
Hornungia type
Anthemis type
Centaurea cyanus
Cereal type

Nematode eggs: Trichuris
Ascaris

This is an especially interesting group, in that the high cereal pollen percentages (see Fig. 9) may derive from faecal material. The transport of cereal pollen in cereal bracts has been discussed (Robinson and Hubbard 1977) and such pollen types have been found in pollen spectra in samples obtained from cesspits (Greig 1981). It is possible that pollen of associated arable weeds such as listed above may have been incorporated in the same way. A cess component in the uppermost sediments (0–33cm) is also suggested because of the presence of the eggs of the intestinal parasites Trichuris (whipworm) and Ascaris (roundworm). These have similarly been frequently found in cesspits and latrines (Taylor 1955, Pike and Biddle 1966, Greig 1981 and Scaife unpublished). These parasites are associated with man and his domestic animals, especially pigs.

Although the sediment texture and pollen content of the deposits strongly indicate a high cess component, the possibility that these pollen types come from animal feed and waste offal cannot be precluded. In either case, there is substantial written evidence that streams in London were running sewers (Ziegler 1969) into which a wide range of urban waste was disposed of.

It is evident that a great diversity of pollen types is present, possibly representing varying modes of incorporation into the sediments of the Broad Sanctuary sequence. As seen above, the interpretation of such an assemblage is a function of both natural and human dispersion factors. Consequently, as seen, the interpretation of the pollen spectra can be difficult and itself a reflection of the diversity of urban habitats, surrounding plant communities and anthropogenic causes.
Excavations at Broad Sanctuary Westminster

RADCiffe (1939), C. W. Radcliffe Middles (London 1939).


The Society is grateful to the Department of the Environment for a grant towards the cost of publishing this report.
KINGSBURY St. Andrew (old church)

I. John Shepard, ob. 1520, and wives, Anne and Mawde, inscription and children; N. wall of Chancel

This brass was mentioned by Lysons (1795, 234), at which time it was lying in the nave. Mill Stephenson in his list (1926, 306) found it on the chancel wall, where it now is (Fig. 1). A line drawing of the brass is illustrated by Potter (1928, 36).

This is a typical memorial of this early Tudor period to a civilian and his family; it is small and of no great artistic merit. His figure is centrally placed and in full face to the beholder. His wives are on either side and half turned towards him. Each figure is just 13½ inches high. The gown of the man can be seen to be fur-lined where it is turned back down the opening at the front. The collar is also of fur. The two wives have fur cuffs and each has a long, ornamented pendant hanging from a waistbelt and reaching almost to ground level. The wife on the dexter side wears a kennel headdress: the other has a simpler veil turned back off her forehead.

Immediately below is an inscription in three lines of blackletter, on a rectangular plate 4" high and 20¾" wide. This reads:

Pray for the soules of John Shepard Anne & Mawde
his wyfes whiche John decessed the xv day of Aprell
the yere of o' lord m° v' xx on whose soules ihu have mercy

Below this inscription are four separate plates with groups of children on each. By the wife on the dexter side are seven sons and three daughters, below the other wife five sons and three daughters. These are cut from conventional strips of children, all about 5¾" high.

II. Susan Gawen, ob. 1607

On the same wall, within the sanctuary, is a late inscription in Roman capitals.

SUSAN LATE WYFE OF THOMAS GAWEN AND
DAUGHTER OF THOMAS SCVDAMORE BY FRANCIS BORNE
LYES BVRYED HEERE BY DEATHS VNPARTIALL HAND
REFT FROM HER DEAREST FRENDs THEY LEFT TO MOVRNE
THEIR LOSSE OF HER WHO WAS THROVGH ALL HER LIFE
A LOYALL DAUGHTER AND A LOVING WIFE
SHE DIED A° DNI 1607
Fig. 1. Kingsbury Old Church: John Shepard and two wives, 1520.
This inscription was originally accompanied by a figure of a lady, 30" high, of which a poor rubbing exists in the library of the Society of Antiquaries. Her Paris headdress is of typical late Elizabethan style, with the lappet turned up over the top of the head. Over this she wears a hood falling like a cape on the shoulders and hanging around the ruff. The outer gown is plain and open in front, revealing a petticoat with elaborate diagonal pattern. She has a pointed stomacher and a hooped skirt or farthingale. She stands upon a circular base, a feature common on engravings of this date.

**Fig. 2.** Kingsbury Old Church: Susan Gawen, 1607.

III. Thomas Scudamore, ob. 1626

On the opposite wall to No. II is another brass inscription, commemorating Susan's father (Fig. 3). It is a plate 22" wide and 6" high on which are six lines of Roman capitals, reading:

HERE LYETH THE BODY OF THOMAS SCVDAMORE GENT. SERVANT VNTO QVEENE ELIZABETH & K E IAMES, 47 YEARES WHO HAD TWO WIFES SVSAN & FRANCIS & HAD ISSVE BY THEM 6 SONNES & 5 DAVGHTERS & CHANGED THIS LIFE IN THE FEARE OF GOD THE 10 DAYE OF SEPTEMBER 1626 BEING OF THE AGE OF LXXVII YEARES.

**Fig. 3.** Kingsbury Old Church: Thomas Scudamore, 1626.
KINGSBURY St. Andrew (new church)

Between the two wars the residential population in and around Kingsbury increased greatly in numbers. The old parish church of St. Andrew was no longer large enough for the size of congregation. As a local resident in the early thirties it was possible to watch a most remarkable translation of a church. The magnificent early Victorian church designed by Dawkes and built in the fashionable west end of London—in Wells Street—became redundant. It was dismantled in 1931 and, stone by stone, reerected on a good site at Kingsbury adjacent to the old church. Originally built in 1847 it was reconsecrated at Kingsbury in 1934. Many of the furnishings are from the hands and design of the leading church artists of the nineteenth century. It is not a historical church of Middlesex, yet has come complete with its furnishings into the County. Several brasses of the Victorian period are in this church, including two with figures of the deceased which deserve mention in this account.

The earlier commemorates Vicesimus Knox (Fig. 4), who died in 1855. His figure, which is 30” high, stands on a grassy mound on which flowers are growing. At his neck is a large bow and over his buttoned coat he wears a long furred and fur-trimmed robe with long false sleeves. Around the head is a curved scroll on which is engraved a cross and, in black-letter, the words: ‘Lord remember me.’ This well-engraved figure, lying now as no doubt it always has, on the nave floor at the foot of the chancel steps, is already showing signs of wear from the trampling of many feet. Below the figure is a rectangular plate, 5½” by 21”, on which, in four lines of blackletter, is the following inscription:

In memoriam viri dilectissimi Vicesimi Knox
qui obiit xxv'° die Jan'° A.D. Mdccclv. aetatis suae
lxxvii. Grati animi testimonio ponendum curavit
Vidua sua Lucy Knox x'mo die Aprilis A.D. Mdccclvi

The name Vicesimus is curious and was the Christian name of four successive generations of this family. The grandfather of the one commemorated by this brass, the Reverend Vicesimus Nock, later Knox and yet later Knox, was born the son of a London vicar in 1728. He was educated at Merchant Taylors school and St. Johns College, Oxford (Hart 1936). He returned to Merchant Taylors as a master from 1753 to 1772 in which year he became headmaster of Tonbridge, retiring in 1778. He died two years later and is commemorated in Tonbridge church. His only son, also Vicesimus, was born in 1752 and was also educated at Merchant Taylors and St. Johns College, Oxford. He held a Fellowship at St. Johns from 1775 to 1778, during which time he, too, was ordained. In 1778 he succeeded his father as headmaster of Tonbridge. With two livings in Essex he retired to London in 1812 to pursue further the writing by which he achieved sufficient notice to merit his inclusion in the Dictionary of National Biography. He died in 1821 and was also commemorated by a monument in Tonbridge church. Two of his three sons survived to adult life and both were educated at Tonbridge school (Hart 1935, 20, 186, 188). The younger of the two, Thomas, went on to Brasenose College, Oxford, and succeeded to the headmastership of Tonbridge when his father retired in 1812. He died in office at the age of 59 in 1843. He, too, was buried in Tonbridge church. This Thomas had four sons who were all at Ton-
Fig. 4. Kingsbury New Church: Vicesimus Knox, 1855.
bridge while their father was headmaster. The eldest, also Vicesimus, died at the age of sixteen.

The elder surviving son of the well known writer was the Vicesimus whose brass was placed in the church at Wells Street and is now at Kingsbury. He too was a pupil at Tonbridge from 1786 to 1795, being head boy in his last year. He was admitted to the Inner Temple in 1796 and called to the bar in 1804. He became Recorder of Saffron Walden and, in 1848, a Bencher of the Inner Temple. Hence the legal robe in which he is depicted on this brass.

A second brass in the church is a rectangular plate measuring 24\(\frac{3}{4}\)" by 17" (Fig. 5). It shows the threequarter length figure of Frederick Nicholl in contemporary civilian dress and wearing over it his academic gown and hood. The head suggests portraiture: a furrowed forehead and hair thinning on top, with copious side whiskers. The background to the figure is plain, but with a border of foliage pattern. In a small circle in the centre at the top of the border is a crest with a bird on a tower. The figure is just over 17" high. The bottom five inches of the plate is devoted to a small shield with arms and a five line inscription in blackletter. This reads:

To the Glory of God and in memory of
Frederick Ilid Nicholl M.A.
for twenty five years warden of this Church
born July 5 1814. entered into rest Feb. 25 1893
Make him to be numbered with Thy Saints in Glory everlasting

This plate is signed by the engravers, Barkentin & Krall, London, in the bottom left-hand corner. Frederick Nicholl was educated at Eton and Trinity College, Cambridge (Venn 1951, 544), taking his BA in 1836 and MA three years later. In 1840 he was admitted as a solicitor and he practised in the Strand. In 1844 he married Eliza Louisa, daughter of William Bode Esq. of Wargrave Lodge in Henley-on-Thames and of Harley Street. The arms on the shield are those of Nicholl of Llantwitt-Major, co. Glamorgan: Sable, three pheons argent, and the crest of this family is given by Burke as: a Cornish chough wings elevated proper perched on the battlements of a tower argent.

There are two other late nineteenth century brasses in this church. They are engraved with crosses and inscription. One is to Kenneth Herbert Eddes, ob. 27 March, 1888, aet. 23 and to Lucy Caroline Olliant, ob. 10 May, 1891. Both died in India and the plate was put in the church by their father, Arthur S. Eddes, MA. The other inscription, and Celtic cross, commemorates John Scott, ob. 22 January, 1892 and his wife Johanna, ob. 30 March, 1898.

I am grateful to Mr D. A. Chivers for telling me of the presence of these brasses in this church at Kingsbury and particularly indebted to him for lending his excellent rubbings of the two figure brasses for illustration in this paper. He also kindly made a new rubbing of the Shepard brass especially for this paper. The two inscriptions are illustrated from rubbings made by the author in July, 1954.
To the Glory of God and in memory of Frederick Iltid Nicholl M.A.
for twenty-five years warden of this Church
born July 5 1814 entered into rest Feb 25 1893
make him to be numbered with thy Saints in Glory everlasting

Fig. 5. Kingsbury New Church: Frederick Nicholl, 1893.
LITTLETON

I. Inscription to Lady Blanche Castell, ob. 1553, second wife of Sir Hugh Vaughan of Westminster

Lysons (1800, 203) records that 'on the chancel floor is a brass plate in memory of Blanche, wife of Sir Hugh Vaughan, who died in 1553.' It was more recently affixed to the north wall of the chancel (R.C.H.M. 1937, 92), though, curiously, it was reported by Mill Stephenson to have been once on a chest tomb. In recent years, transferred to the nave wall, it has suffered corrosion from a lime plaster wall and is now loose in the vestry.²

There remains an inscription plate, 3¼" by 23½" (now), set below two roses inscribed 'Jhū' and 'Mcy', with a shield of arms immediately below the inscription (Fig. 6). The inscription is in three lines of blackletter and reads:

Here lyeth lady Blanche Vaughan sometyme wyfe of Syr Hugh Vau
han knyght who lyeth buryed at Westminst' whych lady Blanche
cessyd the viii* day of decéber An° dni m v* liii whose soules Jhū pdo

Fig. 6. Littleton: Lady Blanche Vaughan, 1553.
A very small piece at the end of this inscription is missing. On this would have been, in the first line, the ‘g’ in Vaughan, the letters ‘de’ in the second line, and presumably ‘on’ in the third.

André (1895, 212) illustrated these two roses, but believed they were no part of the brass to Blanche Vaughan. He says: ‘Two roses bearing the words Jhu Mcy form part of a brass at Littleton, Middlesex, c. 1450, but the arms and inscription now on the same slab do not belong to this memorial.’ Some three years later Mill Stephenson (1900, 221) read a paper before the St. Pauls Ecclesiological Society entitled ‘Notes on the Brasses of Middlesex’. Again the two roses are illustrated and Stephenson writes: ‘At Littleton are two roses inscribed ‘Jbu-Mcy’, date about 1460, no doubt portions of some larger memorial, but now relaid.’ There were, according to Stephenson, originally four roses on the original stone. It seems therefore that a memorial stone in which were set four inscribed roses was appropriated for the later commemoration of Lady Blanche. As further evidence of the economy exercised by those preparing the later memorial, the shield of arms beneath the inscription is reused scrap metal from an earlier brass of date about 1520. It is cut from a group of children of which five daughters can be counted on the engraving now on the

reverse side (Fig. 7). The arms on the shield appear to be argent, three castles triple-turreted . . ., a fleur-de-lys in fess point for difference. The nearest coat to this quoted in Burke is Castell (co. Cambridge): argent three towers triple-turreted gules. The same arms were used by the family in the counties of Cumberland, Warwick and Devon. There is no heraldry remaining to show evidence of her marriage. Sir Hugh Vaughan of St. Peter, Westminster and Littleton in Middlesex married as his first wife Anne, daughter of Henry, Earl of Northumberland and widow of Thomas Hungerford. He received a grant of arms on 27 March, 1508 (Burke, 1051). In another reference close by in Burke these same arms are quoted as borne by Sir Hugh Vaughan, Governor of Jersey. This may account for the quartering of speared fishes’ heads not found on other Vaughan arms. The pedigree in the Middlesex Visitation starts only with Sir Hugh Vaughan, following this grant of arms in the reign of Henry VIII. The brief entry shows just two sons by Blanche, his second wife; George and Francis, the second dying in 1600. The coat of arms differs from the many others of the name, mostly Welsh, quoted in Burke, or from the Vaughan arms on the shields of Sir Thomas Parry, the grandson of Sir Thomas Vaughan, both of whom were commemorated by brasses in Westminster Abbey (Wright 1969, 40). There does not seem to be any close connection between Sir Hugh and these others of the name at Westminster.

Sir Hugh died in 1536 and in his will asks to be buried ‘in the church of the monastery of St. Peter of Westminster within the chapel of St. Michell, or within the parish church of Lyttelton, at the discretion of myn executors.’ It is evident from the inscription to Lady Blanche that he was interred at Westminster. The only possible evidence in what was the chapel
of St. Michael, now part of the east aisle of the north transept, is a worn indent probably of two figures with an inscription plate below (R.C.H.M. 1924, 47). In his will he leaves money to his four daughters, Jane, Anne, Elizabeth and Kateryn, the youngest, to be paid on their marriage day or when they reach the age of 21. To his widow, Blanche, he leaves his ‘mansion place of Lyttelton called Ipwell’ and other property at Feltham and at Holborn ‘within the suburbs of the City of London which lately I purchased of Giles Heron, with a garden called Bell Ally in Westminster’: and a ‘mansion place in Westminster which I hold of the Abbot until the tyme my son and heir come to the full age of 21.’ He appointed Dame Blanche and Anthony Vaughan his son as executors and the overseers of the will included two of Dame Blanche’s brothers, Edmund and Richard Castell. Blanche’s property is to go to George on her death, while George and Francis are to receive money if and when they reach the age of 21.

The illustration is from a rubbing made by the author in September, 1947.

NOTES
2. It is understood that at the time of writing (May 1982) a repair is imminent; the brass is to be mounted on a board by Wm. Lack and fixed to the wall.
3. ‘Visitation of Middlesex’ Harl. Soc. 65 (1914) 65.
4. PCC Wills F40 Hogen

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A WESTMINSTER CHARITY

ROSEMARY WEINSTEIN

A Queen Anne oval silver almsman's badge in the Museum of London collections—repoussé and chased with the head and shoulders of Emery Hill (1610-1677) brewer of Westminster—bears the initials EH and coat of arms of Hill of Lewisham, Kent.

Emery Hill left provision in his will (1677) for the founding of several separate benefactions including almshouses in Rochester Row (then Tothill Fields) and a free school to teach twenty Westminster born children English, Latin, accounts and religious instruction.

Hill, a Past Master (1663) of the Brewers' Company, appears to have made his money by property dealing. He endowed his almshouses from properties in the Strand, Buckingham Street, Duke Street, Villiers Street and Of Alley, adjacent.

Wealthy Londoners provided for the poor, often members of their own company or trade, by building almshouses, usually small cottages ranged round a quadrangle with a matron's house and a chapel. Badges of the type illustrated represent the history of such charitable institutions (as a feature of their uniform) which were so important in London patronage of the 16th, 17th and 18th centuries. Personal emblems including donor's initials are increasingly common after the Reformation.

The almshouses, built by Emery Hill's trustees in 1708 at a cost of £1,229 15/5d, were located on Tothill Fields, south-west of the Green Coat School and opposite the present church of St. Stephen, where the charity still exists, though now part of the United Westminster Almshouses.

A stone bust and memorial to Emery Hill set in the wall record the original foundation in 1708, as does the adjacent Emery Hill Street.

The almshouses consisted of six houses of one room each, for six poor old men or six couples, and six houses for six poor old widows, a free school for the twenty children mentioned above, with a chapel over the school and 'a territ at one end of the chapel to hang a bell in, to ring the poor people to prayers,' and 'a house for the school master to dwell in, much after the manner of Mr James Palmer.' One Plate 1. Silver cloak badge by Benjamin Pyne, London 1708. Museum of London Acc. No. 77.174. The edges are pierced for attachment, the reverse with suspension rings; ht. 115 mm
of these almspeople wore this silver badge on his cloak. The school master was to have £20 per annum, a house and a supply of coals. It was enacted that there should be a courtyard in front of the almshouses 'planted with good elmes, and not with lime trees, for elmes is a better greene and more lastingly'.

From the almshouses it was said that the Residents had a clear view over the open country to the River Thames and the heights of Sydenham beyond. The mens' accommodation was built to the west of the chapel and the widows' on the east side; all almspeople were to be sixty years of age or more, to be known to the governors as 'honest housekeepers', and residents of at least twenty years standing in St. Margaret's parish. Those born in the parish were to be preferred, if equally in need. Should the wife die, the man continued to live there as a single person, if the governors thought fit, but if the husband died, the widow was placed in temporary accommodation to await the next occurring vacancy on the women's side. None was to marry.

In 1708, couples were entitled to 12/- (60p), single women 8/- (40p) per month, a chaldron (thirty-six bushels) of coal each year, and a coat or gown every second year (the material not to cost more than 10/6 (52½p) a yard, or 50p for the school master's gown).

The Treasurer's account book records that in the year of the foundation of the almshouses (1708):

'Jan 20 Pd Mr Gilbert for making the Gown' as pR 04 03 00'

The cost of the badges themselves are also recorded in the same account entry:

'Pd Mr Eales for 12 Badges as per Receipt £13 09 00'.

The Museum's badge is one of these made in 1708.
Not all inmates, it seems, were mindful of the succour they received, and the governors were empowered to remove any inmate for misbehaviour. Such a person was Richard Booner. In 1710 it was complained that 'Richard Booner one of the almsmen lives disorderly, keeps ill company and comes into his room at unreasonable Hours. Order'd that the s^d Booner for the sd offences, do deliver up to the Treasurer his Gown and the Key of his roome and stand suspended for three months'.

From the end of the 18th century, services in the chapel were discontinued, the premises being used as temporary lodgings for widows awaiting a vacancy. By 1817 the Nurse appointed to look after the old folk no longer existed, one of the women inmates acting as warden. No boys were educated at the school until that year (1817), owing to shortage of funds. Their education was then undertaken in Palmer's school, the same Trustees controlling Emery Hill's and Palmer's charities.

Emery Hill died on 27th June 1677 aged 68 years. A member of the Vestry of St. Margarets Westminster and a churchwarden, Hill is buried there. His bequests included: the revenue of several houses in Westminster forever, for the use of the poor children of the King's Hospital in Tothill Fields (Green Coat School) of which he was a governor; also, sympathetically, green mittens to help them combat chilblains, each time they had new cloaks, and money for roast meat and plum pudding at Christmas, £100 was given for the building of almshouses for three old women in Petty France (also with an elm court or walk), £7 p.a. in fee for teaching poor children of the parish, £100 for a stock of coals forever, for the parish poor, £50 for the children of Christ's Hospital, a donation towards the setting up of poor decayed tradesmen and £50 for the use of the poor of the Brewers' Company.

20/— was also set aside annually for a collation each June for the governors of his almshouses, their wives and the vestrymen of St. Margarets. This was intended as more than a mere 'spread' but to see, in Hill's own words, that his gifts to the parish were 'truly entered in a book' and 'applied justly and according to the donor's intentions'. 'I know' wrote Hill that 'for want of such a yearly inspection, there is a great neglect of good works, and many a pound lost to the parish for want of looking after gifts and wills'.

On 11th July 1879 the almshouses of James Palmer, Nicholas Butler and Emery Hill, together with Mrs Hardwick's Charity, were consolidated into one charity in future to be known as the United Westminster Almshouses. The present buildings were erected in 1881-2 on the site (42 Rochester Row) formerly that of Emery Hill's almshouses of 1708.

NOTES
1. See Abstract of Deed of Settlement, 8th March 1674. MS 882/13 Westminster City Libraries Archives Department.
2. Also listed amongst Wardens to appear with gowns and hoods on Lord Mayor's Day 23rd November 1669. MS 873 Guildhall Library.
3. Loc. cit. in note 1. See also Guildhall Library MS 1900 for 24th September 1674; lease of parcel of property in York House Yard (south side of the new Duke Street, c. 1674–6); St. Martin's-in-the-Fields, between Hill et al and Benjamin Bartlett.
4. W. H. Godfrey The English Almshouse London, 1903, Westminster was generously served by its inhabitants in respect of almshouses and schools. See also The Parishal Charities of Westminster. London, 1890. Almshouses are still a necessity, some 2,500 separate groups of almshouses in this country have been noted. See also The United Westminster Almshouses to the Victoria and Albert Museum; also that of Rev. James Palmer, an assimilated charity. The Mercers and Fishmongers are amongst the Livery Companies still retaining 17th century almshouses' badges. See Phillips Cunningham and Catherine Lucas Charity Costumes of Children, Scholars, Almsfolk, Pensioners London 1978.
6. Deed, dated 8th March 1674 (loc. cit. in note 1). The Rev. James Palmer's almshouses erected in 1654, served as the model for Hill's foundation. Hill acted as Treasurer to the Palmer Charity in 1667, with the responsibility of overseeing of the school and furniture.
7. Loc. cit. in note 1.
9. MS 882/19 Minutes of the Governors of Emery Hill's almshouses, 19th October 1708-19th October 1763. James Eales was appointed a governor on 2nd November 1713, to replace John Aynsworth, deceased. Westminster City Libraries Archives Department.
11. Memorial plaque on nave column. As churchwarden, Hill audited the accounts for plague year (1665).
12. Loc. cit. in note 1. If this duty were neglected, the 20/— to go to the churchwardens of St. Martin-in-the-Fields.
INTRODUCTION
The early decades of the nineteenth century were marked by an unprecedented demographic and urban expansion which produced a number of acute social problems, notably those concerned with housing, public health and sanitation and their effects upon the physical and moral welfare of the 'labouring poor'. A great body of evidence about urban conditions was gathered by official bodies following the cholera epidemics of the 1830s and 1840s. The Select Committee appointed in 1840 'to inquire into the circumstances affecting the health of the inhabitants of large towns, with a view to improved sanitary arrangements for their benefit . . .' began to reveal the extent of the problem. Shortly afterwards the Poor Law Board produced its voluminous 'Report on the Sanitary Condition of the Labouring Population and on the means of its Improvement', which owed much to the energies of Edwin Chadwick and the diligent researches of Dr Thomas Southwood Smith. However, until the passing of the defective and inadequate Public Health Act of 1848 little government action was taken, thus provoking the condemnation of the landlord and capitalist 'with all the wealthy and influential classes' who stood accused 'in that apathetic and selfish indifference to the wants and happiness of their dependents, which is the besetting sin of this Utilitarian Age'.

THE PROBLEM OF WORKING CLASS HOUSING
The mounting problems of housing and sanitation were commented upon by numerous authorities, and the parish of Saint Pancras was frequently cited as an example of poor and deteriorating conditions. The first and obvious fact was that the acute shortage of rented properties forced up rent levels thereby contributing to the poverty of the occupants. Charles Pearson, Solicitor to the City of London explained that overcrowding and high rents were caused by the necessity for workers to live near to their place of work, for 'a poor man is chained to the spot, he has not leisure to walk, and he has not the money to ride to a distance from his work, in consequence of which he must stay there, with an accumulating population'. Pearson was particularly well informed about the situation in central London and stated that rents on slum properties were so high that a house he had recently built—'a gilded mansion in St. James's Park'—brought less rent per square foot than a rotting hovel in Saffron Hill.

The desperate shortage of housing which produced such rents was exacerbated by the massive growth of the urban population and as the Metropolitan Sanitary Association said, the worker had no choice but must take what room was available: 'He finds a house—and all too often a grave—for himself or some of his
family'. The great disparity between demand and supply in this area of the housing market was sufficient to confirm the rule that ‘the worse the property, the higher comparatively are the rents’.3

At the same time that rising population was increasing the demand for housing, the supply in many central and inner London areas was being reduced by the clearance of slums to make way for more remunerative forms of land use and ‘The substitution of offices and warehouses for dwellings, the creation of wider thoroughfares, the penetration of railways into thickly populated districts, have co-operated to maintain and intensify the mischiefs of overcrowding’.4

These developments were all to be seen in Saint Pancras, where the building of the New Road (now Euston Road) by the Metropolitan Board of Works, the wholesale demolition of Agar Town and parts of Somers Town by the Midland Railway Company and other improvements and developments led to the displacing of thousands of poor inhabitants. The pressure of demand upon the surrounding districts was simply increased and it was little wonder that the middle classes moved out, their ‘habitations abandoned to the poor . . .’.

The inadequacy of the arrangements for the rehousing of the poor was pointed out by the Reverend William Denton, who said that while these ‘improvements’ were dressed up and presented to the public as a good thing, ‘The poor are indeed displaced, but they are not removed. They are shovelled out of one side of a parish, only to render more overcrowded the stifling apartments in another part’.5

Such claims have been corroborated by subsequent research and as A. S. Wohl has written, out of fifty improvement schemes carried out by the Metropolitan Board of Works, only thirteen included any provision for the rehousing of displaced people.6 The inevitable conclusion which was drawn from these circumstances was that the continuing increase in the population, especially in the burgeoning industrial towns, was attended by ‘a fearful diminution in the material comforts of the people, and a corresponding amount of suffering, sickness and death’.7

THE ESTABLISHMENT OF THE METROPOLITAN ASSOCIATION

In the absence of resolute action by the State to bring about reform and improvement in urban conditions, a large number of societies and associations were formed with this intent. The Society for Improving the Conditions of the Labouring Classes was formed in 1844, supported by Lord Ashley and Dr Southwood Smith, and was primarily charitable in nature.

A different approach to the problem of housing had been initiated in 1841 with the formation of the Metropolitan Association for the Improvement of the Dwellings of the Industrious Classes. This was done as a direct response to the great body of evidence produced before the Parliamentary Committee on the Health of Towns, which revealed a situation ‘fearful to contemplate, and urgently calling for a remedy’.5 The Rector of Spitalfields, the Reverend Henry Taylor, convened a meeting in September 1841 at which it was resolved that ‘an association be formed for the purpose of providing the labouring man with an increase of the comforts and conveniences of life, with full compensation to the capitalist’, and ‘the first object of the association be to erect, rent or purchase suitable buildings, to be let in compartments, at a moderate weekly rent’.8

The Association determined to show by example that the interests of the capitalist could be reconciled with those of
the tenant—even of the working class—and hoped that their example would lead to an increase in the supply of rented housing through higher investment. Investors were invited to take up shares of £25 denomination, upon which a maximum return of 5% would be paid. J. N. Tarn has commented that the dividend ‘was hardly a commercial proposition in those days’ and it is true that the take up of shares was slow, but not for this reason. Share subscriptions progressed as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Shares taken out</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1841</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1842</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>1843</td>
<td>23</td>
<td>27</td>
</tr>
<tr>
<td>1844</td>
<td>252</td>
<td>279</td>
</tr>
<tr>
<td>1845</td>
<td>469</td>
<td>748</td>
</tr>
<tr>
<td>1846</td>
<td>407</td>
<td>1,155</td>
</tr>
</tbody>
</table>

Given the moral purpose of the venture it seems unlikely that potential investors were discouraged by the rate of return upon their capital, particularly as the average share holding was quite small and many of the investors quite wealthy. This view is supported by later appraisals of this and other schemes. In 1874 Kay Shuttleworth and Waterlow asked ‘Whether the erection of these buildings is so profitable an investment to tempt builders to step in’. They believed so and in the previous year it was stated that the Metropolitan Association had demonstrated ‘the profitable character of industrial dwellings...’ The Improved Dwellings Company, which operated under similar financial conditions ‘found that this return attracts as much capital as can be employed’.

It was perhaps overly optimistic to expect that the acceptable rate of return to shareholders would induce private builders to follow the example. Their investment decisions were based upon the principle of profit maximisation and the alternative commercial and industrial uses of inner London land yielded a higher rate of return. Similarly, the developers and builders who were so active at this time in such areas as Kentish Town and Camden Town would hardly have concerned themselves with this area of the housing market beset as it was with the problems of poverty, irregular employment and criminality. It was for these reasons that Charles Gatliff, Secretary to the Metropolitan Association, urged that the government should provide money, in the form of loans at 3½% from the Public Works Loan Board for the purposes of building artisans dwellings.

The take up of shares was hindered by the legal status of the Association, since investors were, under the terms and laws of partnership held personally liable to the full extent of the Association’s debts. This was a common obstruction to the raising of capital for industry and the only means of securing limited liability were to promote a private parliamentary bill, as the railway companies had done in large numbers, or to secure a Charter of Incorporation from the Crown.

The Directors decided upon the latter course of action and approached Robert Peel the Prime Minister, and Lord Lincoln, the First Commissioner of Woods, who ‘expressed their entire approbation of it, thought it likely to accomplish much good, and advised the granting of the Charter by the Crown’. The costs of securing the Charter were high, and whilst of certain benefit in the long term, it strained the Association’s finances and depressed dividends.

The Charter fixed the capital of the Association at £100,000, confirmed the maximum dividend at 5%, allowed limited liability and gave the directors powers to make calls upon subscribers. One quarter of the capital had to be raised before the commencement of operations
Plate 1. Metropolitan Buildings at St. Pancras.
and any trading surplus remaining after the payment of dividends was to be used to extend the scheme. Share subscriptions certainly gathered pace after 1845—the year of the Charter—and by 1846 more than £28,000 had been raised, rising to £65,150 in 1853.

From the outset it was stressed that the Association was a commercial undertaking and not a charity. Indeed, Dr Southwood Smith held that charity was undesirable and even counterproductive for ‘however it may sometimes “bless” the giver, it rarely benefits the recipients, but on the contrary tends to injure and corrupt them, by lessening their self reliance and destroying their self respect’.

The choice of this site was particularly apt, for it was in ‘a crowded neighbourhood occupied almost entirely by the working classes’. The district suffered from both material and moral deprivation of precisely that kind that the Metropolitan Association was determined to alleviate. The Buildings stood directly opposite Old Saint Pancras Church and next to this was the Saint Pancras Workhouse, a notorious institution which was the subject of repeated complaints and investigations over the ill treatment of the poor. The workhouse grounds contained cess pits, rubbish heaps, open sewers and pig styes—a thorough bog of the blackest filth imaginable.

To the east and south of the Church stood Agar Town, a slum built quickly as a speculative venture by William Talbot Agar and his family. It was described as ‘the most appalling spectacle of temporal and spiritual destitution which was to be found in the diocese of London’—a pointed observation since the freehold of the property was owned by the Church of England. The houses, or rather hovels, of Agar Town ‘were built of old rubbish on a twenty-one year lease’. Generally the houses were of one or two floors and,

‘...the interiors represent the lowest condition of poverty and filth... In most of these squat places, families of 5, 6, ten, twelve were found leading a swinish life in one room...’

In these dwellings lived many ‘human rats’ who had been displaced by the clearing of the Rookeries of central London. No thought was given to the provision of drains and sewers or to the disposal of refuse. One resident told of the privies and cess pits which overflowed the paths and of ‘the sundry carcasses of cats and dogs remaining on top thereof. We have besides a pigsty on the left of us... which has become the receptacle of costermongers refuse in the shape of entrails of fish, oyster shells etc that lay there rotting and as the weather has been warm it is almost enough to throw a person on a sick bed that has occasion to pass’.

Further to the east stood the yards of the Great Northern Railway and the inappropriately named area of Belle Isle ‘a pestilential settlement... composed of Knackers boiling down Lucifer Chemical, manure, and other loathsome, putrid establishments. The affluvium and stench that is wafted over to us... is unbearable.
and must prove a fearful antagonist to health'.

To the west and south of the new Buildings stood Somers Town, a district then in the process of decay and decline brought about by gross overcrowding and the neglect of the basic decencies of life. The London City Mission published the results of a visitation there in 1850. Small houses were occupied by one family per room and given 'the promiscuous character of the persons and families inhabiting the same house... who can be surprised at the number and magnitude of the evils which ensue...'.

The lack of drainage meant that houses were always damp, and in the ground floor rooms 'if a stick were put down between the chinks of the boards, and were moved about, the splashing of the water would be heard and a very offensive smell would rise up'.

John Hollingshead visited Somers Town in 1861 and commented upon the gin palaces 'built in the true Seven Dials style' and upon the number of cheap china and haberdashers' shops and the butchers' premises which contrived 'to look like a cats meat warehouse...'. Its side streets have a smoky, worn out appearance; gas lamps project jauntily from the walls... no house is without patched windows and every passage is full of children'. These southern areas of Saint Pancras attracted the attention of several philanthropic agencies and it was amongst these distressed and deprived people that the beneficial results of their work could be seen most graphically.

The Association retained the services of the architect, Mr. Moffat, and a scheme was approved consisting of 110 flats in a five storey block. Ninety flats had 3 rooms and twenty had 2 rooms. Some details of the scheme were recorded by Charles Gatliff some years later:

<table>
<thead>
<tr>
<th>Built 1846</th>
<th>Leasehold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superficial area of land Sq. Ft.</td>
<td>25,920</td>
</tr>
<tr>
<td>Superficial area covered. Sq. Ft.</td>
<td>11,852</td>
</tr>
<tr>
<td>Recreation land. Sq. Ft.</td>
<td>14,068</td>
</tr>
<tr>
<td>Population, families</td>
<td>110</td>
</tr>
<tr>
<td>Average total population for one year</td>
<td>648</td>
</tr>
<tr>
<td>Rent of 4 rooms</td>
<td>6s-7s 9d</td>
</tr>
<tr>
<td>Rent of 3 rooms</td>
<td>4s 3d-5s 9d</td>
</tr>
<tr>
<td>Ground Rent</td>
<td>£90</td>
</tr>
<tr>
<td>Ground rent per family per week</td>
<td>3½d</td>
</tr>
<tr>
<td>Cost per room</td>
<td>£43 03 04d</td>
</tr>
<tr>
<td>Gross cost</td>
<td>£18,306 01 00d</td>
</tr>
<tr>
<td>Gross rents</td>
<td>£1,778 16 00d</td>
</tr>
<tr>
<td>Expenses</td>
<td>£674 09 11d</td>
</tr>
</tbody>
</table>

The architectural plan and the type of building underlined the serious problem involved in attaining the financial objective of charging a 'moderate weekly rent' while affording 'full compensation to the capitalist'. The standard of housing was intended to be much better than that of the nearby slums and lodging houses which were much more densely occupied. This of necessity dictated the intensive rather than extensive use of land in order to achieve economies and raise rent revenues per acre of land.

Many of the slum properties built during the 1840s and 1850s in the same area of Saint Pancras were houses of 2 to 4 rooms. Each room could be let, although information about rents is very difficult to assess since it was seldom clear how many occupants shared a tenancy and there was no such thing as a standard unit of accommodation against which rents could be judged. However, to provide decent, sanitary family flats in new buildings at a rent which made no greater financial demands upon the tenant than slums and hovels which were grossly
The Metropolitan Buildings, Saint Pancras

overcrowded was an ambitious and difficult goal. Clearly it could not be achieved by buildings of the cottage or terrace kind.

Somewhat later the logic of this early high density experiment was elucidated by Charles Gatliff when he wrote: 'It is certain that by systematic distribution, by economy of space, and greater elevation in the structures, one half more people might be lodged in a comfortable and wholesome manner, where the present occupants are huddled together in dirt, discomfort and disease'. The example was followed in the construction of many other blocks, some with extraordinarily high densities which were nevertheless thought consistent with the maintenance of acceptable physical and hygienic standards. For example, a block of artisans flats at Farringdon Road achieved a density of 1,625 persons per acre, while the most populated parts of London—such as Westminster—had 235 per acre. These very high figures were regarded with equanimity by Gatliff, since it was still possible to raise standards of accommodation. As he wrote, the buildings housed four times as many people to the acre than in other highly populated areas and 'we have an irresistible argument in favour of the increase and extension of this class of buildings'.

The Metropolitan Buildings were intended for family occupation with basic amenities which were usually totally lacking or grossly deficient in the overcrowded lodging houses of districts such as Somers Town. As Southwood Smith said, the physical condition of the labouring poor 'is mainly dependent upon the state of their dwellings' and as has been noted, there was a growing body of evidence to emphasise the heavy social cost of deprivation.

The dimensions of the rooms (Pl. 2) varied between 14' × 10' 6" and 13' × 8'. The sculleries were fitted with sinks and piped water 'at the rate of 40 gallons per day'. This standard of provision was excellent for the time. In 1847 researches by the Health of Towns and of London Associations indicated that out of 270,000 houses counted, no less than 70,000 had no water supply. These findings were confirmed in 1850 by the Metropolitan Sanitary Association which found 80,000 dwellings housing 640,000 people without piped water. The problem was graphically illustrated at Agar Town where water was drawn from holes in the ground which was itself sodden with rainwater, sewage and other 'impure matter'. One resident who later moved to the Buildings recalled the 'foul water' there and 'on one occasion they found a dead cat in one of the butts'. It was little wonder that the inadequacies of the water supply regularly led to quarrels and violence between neighbours.

The flats were also equipped with 'the means of carrying off ashes and other solid refuse through a shaft accessible from the scullery'. This was particularly important in an area where, as the Medical Officer of Health commented, the disposal of rubbish was 'systematically neglected' and there were constant complaints that dustmen refused to remove it from the houses of the poor 'unless they are paid for their trouble'.

The living rooms were furnished with a cooking range, a boiler and oven which provided hot water and encouraged the economical baking of bread. Again this was a conspicuous improvement upon prevailing standards since many houses were not equipped with cooking facilities and at Agar Town soup kitchens enjoyed an active trade. In addition to the hot water supply, the Buildings contained a communal wash house on the ground floor.

In the impoverished and overcrowded
areas of London the lack of drains and sewers presented perhaps the most serious threat to health. This problem generated a vast literature of criticism and protest. The Metropolitan Buildings were fitted with lavatories and ‘There is no cess pool on the premises. The water-closet, substituted for the privy, is situated in the scullery, the door of the closet being so hung as, when open, to shut off access to the scullery’. The entire block was provided with sub-soil drainage and this was a notable feature at a time when many houses had only cess pools, open sewers or ditches for this purpose. One resident compared these arrangements with her previous abode in Old Saint Pancras Road, where there was one privy for nine houses and ‘it was in a very foul state and very unpleasant for females’.11

The rents charged for flats varied with their size and in the early years were as follows:13

- 2 rooms and scullery 3s 6d–5s per week
- 3 rooms and scullery 4s 9d–6s 3d per week

By 1861 the rents were said to range between 3s 6d and 7s.14 These rents compared favourably with other properties in the same district. In 1851 single rooms in Agar Town fetched between 3s and 4s 6d and two roomed houses fetched 4s per week.

However, the quality and condition of these habitations left much to be desired being ‘situated between two burial grounds, no back yard or windows behind, one water butt, one wash house, one closet for nine houses. The parlours are damp, nearly two feet up the walls, caused by the graves being so much higher than the floors of the houses’. Similarly, at Somers Town two rooms in a ‘very delapidated’ house were let for 5s 6d p.w.15

Better quality houses containing two rooms at the northern end of Agar Town fetched 7s–8s per week and four roomed dwellings £28 per annum.46

The Association claimed an active demand for its flats and it was reported in The Times that 192 applications had been received for the Metropolitan Buildings and that there were 275 applications for the 253 flats at Farringdon Road, long before they were completed.47 It was said that the turnover of flats was low and that the ‘empties’ remained vacant only for a week.48

It was expected that the provision of decent housing would serve to enhance and preserve family life and stimulate moral improvement. Southwood Smith noted that families were the Associations most appreciative tenants.49 Decent housing was clearly intended to impose a discipline upon the occupants and the paternalistic zeal of the age was well illustrated by Henry Roberts when he wrote that the Buildings ‘appear to act as silent monitors, reproving disorder and encouraging cleanliness and propriety’. He reported with satisfaction that amongst the tenants ‘The intemperate have become sober, and the disorderly well conducted, since their residence in these healthful and peaceful abodes’. The police, it was said, were infrequent visitors to the Buildings.50

The alleged moral improvement might well have owed something to the selection of tenants and the regime of estate management. References were required from prospective tenants and this ensured an acceptable standard of behaviour.51 The ‘inmates’—as Grainger rather oddly described them—were ‘Well ordered mechanics, such as carpenters, painters, jewellers, compositors, printers etc...’ The adult population was said to be so well ordered that few cases of misconduct were reported and these were of drunkenness.52
Good conduct and order were further encouraged by the installation of 'superintendents' on the estate, whose function was 'to collect rents, supervise, and make himself generally useful'. Labourers were employed to carry out repairs and maintenance work, while the superintendents kept watch on the tenants and 'soon detect any drunkards, brawlers, prostitutes, receivers of stolen goods, or other bad characters, who occasionally resort to improved dwellings to evade suspicion'. Such people were simply 'sent away'.

It is obviously very difficult to gauge consumer reaction to the provision of this kind of housing under these circumstances. The Association was itself prompted to stress that it did not intrude upon the privacy of its tenants but there was clearly some resistance to the 'stringent rules' imposed upon them and enforced by the superintendents. These rules included the 'registering coming in at night' which certainly caused resentment. Kay Shuttleworth was moved to deny that this kind of housing was unpopular with tenants and this must have been in response to some criticism. The Association was not inclined to dwell upon the shortcomings of their experiment and such reports as there were of consumer reaction tended to be favourable. One tenant in the Metropolitan Buildings was reported to have expressed the view that 'this set of rooms is quite sufficient for any gentleman'.

HOUSING, HEALTH AND WELFARE

The building of model dwellings was expected to bring about an improvement in both the moral and physical welfare of the poor. The problems of the grossly inadequate provision of public health facilities and their debilitating effects upon the health and life expectancy of the poor began to attract serious attention during the 1830s. Thereafter a mounting body of evidence indicated plainly the urgent necessity of reform which extended far beyond the competence of most parochial authorities.

Detailed investigations of social conditions in distressed areas such as Agar Town and Somers Town revealed the full extent of the dangers confronting their inhabitants. The Metropolitan Association was closely linked with such investigative bodies as the Metropolitan Sanitary Association, the Health of Towns and of London Associations and the Charity Organisation Society. Drawing upon the work and findings of these and other bodies the Metropolitan Association set out to demonstrate that improved dwellings could be some curb to disease and early death. A proper appraisal of the quality and accuracy of this great volume of work is beyond the scope of this note, but the claims of improvement by the Association do demand attention.

An early survey of social and sanitary conditions in both town and country was that carried out by Hector Gavin MD, FRCSE, a member of the Health of Towns Association, and fortunately one of the urban districts he surveyed was Saint Pancras. Death rates in England in the years 1838–1842 were computed to be 2.209% per annum, a figure that accords well with later researches. The ratio of deaths to population was 1:45 per annum nationally. However, the study showed a rural death ratio of 1:54.91 and a significantly higher urban ratio of 1:38.16.

The geographical distribution of mortality rates further emphasised the problem for in the 'worst' urban areas death rates were up to 66% higher than in the better districts. This clearly meant higher death rates and lower life expectancy amongst the urban working class and this
was demonstrated by Gavin’s figures for the parish of Saint Pancras:

**Saint Pancras: Average Age at Death, 1839.**

<table>
<thead>
<tr>
<th>Class</th>
<th>Average Age at Death</th>
<th>Average Age at Death of Those Who Achieved 21 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gentry</td>
<td>45</td>
<td>61</td>
</tr>
<tr>
<td>Tradesmen</td>
<td>27</td>
<td>50</td>
</tr>
<tr>
<td>Artisans</td>
<td>22</td>
<td>47</td>
</tr>
</tbody>
</table>

There were clearly problems of definition and of the size and distribution of samples used by Gavin. However, these findings were confirmed by other investigators. The evidence relating to very high levels of infant mortality was now overwhelming and as Gavin concluded, ‘It is a lamentable fact, that one quarter of the children born in England die before they reach the fifth year of their age’. In the crowded urban areas the figures were even worse and Dr Thomas Hillier, the first Medical Officer of Health for Saint Pancras stated that in 1859 23% of deaths from all causes were amongst children under one year of age, and 43% amongst the under fives.

Gavin, like so many other social reformers protested at the apathy and indifference of the upper classes to the hideous condition of so many people and this continuing and ‘frightful devastation of human life’. This indifference, he later wrote, ‘cannot be considered but as an ignorant or criminal violation of the laws of life’.

When R. D. Grainger visited the Metropolitan Buildings in 1851 he noted the absence of cholera and while there was some illness and fever he pronounced that ‘The inmates are very healthy’. In the early 1850s the population of the Buildings was counted and revealed an apparent improvement in health:

<table>
<thead>
<tr>
<th>Year</th>
<th>Metropolitan Buildings</th>
<th>Deaths per 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1850</td>
<td>560</td>
<td>7</td>
</tr>
<tr>
<td>1851</td>
<td>600</td>
<td>9</td>
</tr>
<tr>
<td>1852</td>
<td>680</td>
<td>9</td>
</tr>
</tbody>
</table>

The average was 13.6 deaths per 1,000 and this compared with the London average of 22 per 1,000. However, this improvement would have depended to a great extent upon the age structure of the inhabitants and Southwood Smith claimed that deaths amongst the under 10s were drastically reduced. The London average was 46 per 1,000, while at the Buildings the figure was 10 per 1,000. Similarly, death from infectious diseases were half the London figure at 8 and 16 per 1,000 respectively.

There was said to be a conspicuous decline in the incidence of typhus—not one case being reported in the early years and the sanitary arrangements must certainly have assisted in this, for ‘Its true source is not want, but filth’. On the basis of Southwood Smith’s figures, it was argued that if London had been as healthy as the Metropolitan Buildings, then 23,000 people a year would have been saved from an early death.

During the 1860s and 1870s further and wider studies were carried out into rates of mortality in ‘Model Lodging Houses’ in London. The results of one such survey were presented before the Statistical Society of London by Charles Gatiff and were as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Death Rates per 1,000 from all causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1867</td>
<td>18 15 18 16 17</td>
</tr>
<tr>
<td>1868</td>
<td>16 18 17 18 16</td>
</tr>
<tr>
<td>1869</td>
<td>15 18 16 17 18</td>
</tr>
<tr>
<td>1870</td>
<td>17 18 16 17 18</td>
</tr>
<tr>
<td>1871</td>
<td>18 16 17 18 17</td>
</tr>
</tbody>
</table>
This count included other buildings and estates erected by the Association. The averages for the five years were 16.8 and 24.2 deaths per 1,000 for the Model Lodging Houses and for London. The survey also revealed that the under 10 years population of the estates of the Association was higher than that of London as a whole whilst mortality in this vulnerable age group was apparently much lower.

<table>
<thead>
<tr>
<th>Population</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 10 yrs Per 1,000</td>
<td>Under 10 yrs Per 1,000</td>
</tr>
<tr>
<td>Model Lodging Houses</td>
<td>330</td>
</tr>
<tr>
<td>London</td>
<td>237</td>
</tr>
</tbody>
</table>

These figures suggested both that the population of the Model Lodging Houses under the age of 10 years was higher than for the whole of London and that the death rate was lower. The problem of the reliability of Gatliff's sources and methods remains, although he himself said that his figures could easily be verified by the Registrars for the Districts examined. They were not received without comment and criticism and were denounced by Mr. Francis Saunders, who claimed that since many tenants of the new buildings died in hospital, the statistics for mortality were 'entirely fallacious'. Whether or not this criticism is valid can only be determined by further enquiry into the question of the relationship between housing conditions and mortality in these areas.

**CONCLUSION**

In 1850 it was said that the Metropolitan Association 'have set a noble example of what can be achieved by philanthropic and enlightened self interest'. By 1874 the Association had spent £189,028 and housed 1,060 families consisting of 5,206 people. Similarly, the Improved Industrial Dwellings Company had spent £274,773 and housed 1,452 families consisting of 7,260 people. Other societies and organisations had expended a further £1,209,359 providing 6,838 dwellings and housing 32,435 people. The Association continued to build tenement blocks and in the 1860s began to construct cottage style housing in outer London, such as 166 dwellings in Beckenham and 165 cottages at Penge. These houses workers who travelled to London to work and this was indicative of the suburban expansion which was facilitated by the greater availability of railway and other forms of transport. The suburban dwellings were more commodious—having gardens and a much lower density of occupation and were also far cheaper to build. It was estimated that in London tenement buildings cost £46 per room to erect, compared with £34 per room in the outer regions.

However, this work was quite incapable of leading to any general raising of housing standards and in this sense the experiment, although widely imitated, failed. The population of London increased by 45,000 per annum during the 1860s and the 'housing problem' remained acute. In the parish of Saint Pancras the density of occupation continued to rise until 1911 by which time 30% of the inhabitants lived in one or two roomed tenements.

As early as 1850 it was argued that the example set by the Metropolitan Association at Old Saint Pancras Road could not be followed and imitated in sufficient number to change the desperate problem of housing London's poor, and it was prophetically said that—

'The Public, therefore, for many years—perhaps for a century—cannot look for a sufficiency of healthy dwellings'. In such circumstances 'it is the bounden duty of Government to step in and afford
to the public that security, which is utterly out of their power, by any knowledge, ability, or forethought of their own, to obtain for themselves.\(^{74}\)
The aim of this paper is to examine in detail the first generation of inhabitants who came to live in part of north-east Battersea in the latter part of the 1860s. The principal sources for this investigation are the census enumerators' books for 1871. Although this gives only a single snapshot of the local population on only one day, it does have the merit of providing comprehensive demographic data, and it is reasonably close in time to the first occupation of the houses, before the original pattern had had time to be overlaid with subsequent migration and employment changes.

It is not the intention here to deal with the building history of the Park Town Estate, since this has been the subject of a recent monograph (Metcalf 1978). The development formed part of a grand strategy to open up a through route from Chelsea Bridge, opened in 1858, to Clapham Common, and to build several thousand substantial houses on what had hitherto been agricultural and market gardening land. The scheme was aimed at attracting middle class residents to an area made desirable both by lower property values than those in similar developments north of the Thames, and by nearby Battersea Park (opened 1858) and Clapham Common.

Unfortunately for Philip Flower and his partners, the future of this corner of Battersea was already being shaped by other, more powerful, hands, namely those of three main-line railway companies developing low cost routes to their London termini at Waterloo and Victoria (Fig. 1) (Jackson 1969). Park Town has the misfortune of being at the intersection of the London and South Western approach to Waterloo and that of the London, Brighton and South Coast and London, Chatham and Dover Railways route into Victoria. Between them, these three railways spun a veritable cat's cradle of viaducts and embankments around this part of Battersea. In addition, the Chatham company built a substantial works at Longhedge Farm for the building and repair of locomotives, carriages and wagons, situated right along the eastern boundary of Park Town. Much of this railway-building activity was under way during the boom years of the mid 1860s, precisely at the time when the estate was being laid out and developed. The worst effect on the social aspirations of the estate came from the Brighton line's new high-level viaduct, which sliced across the northern part of the estate, separating the bulk of it from Battersea Park, and towering above what had been planned as one of the best parts of the estate. The building of this viaduct in 1865–7 caused the demolition of many nearly-completed houses, as well as leaving a legacy of noise and vibration to those which survived.

Dr Metcalf's detailed treatment of the architectural history of the estate makes further comment superfluous here (Metcalf 1978, 25–37), save to say that almost all the houses which were occupied at the time of the 1871 census were of James Knowles' basic three-storey terrace design. Some embellishments were to be found in the northern part facing principal roads, and around Queen's Square. Although they were no doubt designed...
Fig. 1. Park Town 1871: General Location, with empty and unfinished houses.

1. West Street
4. Queens Crescent
7. St. Andrew Street
10. South London Line (LBSCR)

2. St. George’s Street
5. Hamilton Street
8. London and S.W. Railway
11. Gladstone Terrace

3. South Street
6. Tennyson Street
9. London, Brighton and South Coast Railway
12. London, Chatham & Dover Railway Works

- Empty
- Unfinished

scale (approx.)

0 100 200 300m
for occupation by a single family and its servants, they were large and eminently suited to subdivision into two or three dwelling units.

A comment made by the vicar of St. Phillip’s Church, Queens (town) Road that the houses were ‘inhabited chiefly by persons in humble circumstances, and of a very migratory character’ (see Metcalf 1978, 35), is amply borne out by the census returns of 1871. Between them they show that the developers’ and architect’s aims and intentions for the estate had largely been thwarted in the decade since its conception. Despite the size and style of the houses, their occupants’ social and economic backgrounds varied little from those of a dozen other building developments along the south side of Battersea Park Road in the 1860s in which they were housed in more commonplace, less pretentious houses.

Excluding the eight houses in Gladstone Terrace, which had been compulsorily purchased and retained by the Brighton Railway, whose South London Line viaduct ran only inches in front of the houses, a total of 292 houses was occupied on census night in 1871. In addition, a further 95 were completed but not occupied, and five were still under construction. Approximately 90 houses had been demolished in connection with the various railway projects (Metcalf 1972, 94). The enumerators found 2,590 people in residence, comprising 546 households. Even at this early stage of development there were almost two households in each house. The average size of household was 4.7 people, and there were just under nine persons in each house. Only one house in three was occupied by a single family, as Table 1 shows.

From these figures it will be seen that 60% of the houses were occupied by two or three families, accounting for 73% of households. Relatively few houses contained more than twenty people, however, and there were generally less than fifteen, making an average of five or so per floor. Many of them were young children of the skilled artisans who had migrated to Park Town in search of a home and work. In fact, the house with five households in it contained only sixteen people. It was 28 Queen’s Crescent, hard by a viaduct subjected to constant buffeting by trains. The five small families were headed by a clerk, a banker’s assistant, two needlewomen and a tailor.

There were few boarders, lodgers, and living-in servants in Park Town in 1871—only thirty-three, twenty-two and thirteen households respectively came into these categories. It seems that the local population was not so necessitous as to need paying sub-tenants or guests, nor so well-to-do as to be able to afford servants who lived on the premises. In common with the surrounding estates developed in the latter part of the 1860s, Park Town was a colony of skilled artisans, many of them employed in service industries in the locality.

Following the example of Armstrong

<table>
<thead>
<tr>
<th>House</th>
<th>No. Houses</th>
<th>%Houses</th>
<th>No. Households</th>
<th>%Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>108</td>
<td>37.0</td>
<td>108</td>
<td>19.8</td>
</tr>
<tr>
<td>2</td>
<td>125</td>
<td>42.8</td>
<td>250</td>
<td>43.8</td>
</tr>
<tr>
<td>3</td>
<td>49</td>
<td>16.8</td>
<td>147</td>
<td>26.9</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>3.1</td>
<td>36</td>
<td>6.6</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>0.3</td>
<td>5</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>292</td>
<td>100.0</td>
<td>546</td>
<td>100.0</td>
</tr>
</tbody>
</table>
(1972) and others, five basic social classes have been employed in this analysis of Park Town's earliest inhabitants. Because of its overwhelming numbers, Class III has been subdivided into skilled manual and non-manual occupations. The groups making up the other classes may briefly be summarised as follows: Class I, higher professions, gentry; Class II, other professions, shopkeepers, employers; Class IV, semi-skilled workers; Class V, unskilled workers. In Table 2 the class structure of Park Town is compared with a 10% sample for the whole parish of Battersea.

Table 2

<table>
<thead>
<tr>
<th>Class</th>
<th>Park Town</th>
<th>Battersea (10% sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>7</td>
<td>1.3%</td>
</tr>
<tr>
<td>II</td>
<td>77</td>
<td>14.6%</td>
</tr>
<tr>
<td>IIIM</td>
<td>266</td>
<td>50.7%</td>
</tr>
<tr>
<td>IIINM</td>
<td>98</td>
<td>18.7%</td>
</tr>
<tr>
<td>IV</td>
<td>33</td>
<td>6.3%</td>
</tr>
<tr>
<td>V</td>
<td>44</td>
<td>8.4%</td>
</tr>
<tr>
<td>Total</td>
<td>525*</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*21 heads did not provide details of occupation

The principal feature revealed by these data is that over half the families in Park Town belonged to the skilled manual class, compared with just over one-third in the whole of Battersea. This is balanced by a deficiency in Classes IV and V in Park Town. With 70% of households in Class III, Park Town was almost a one-class estate, albeit not the one for which it had been designed. If the sample for Battersea is factored up, then it is seen that 6% of skilled manual workers lived in Park Town, although it contained only 4% of households and a slightly smaller proportion of occupied houses.

Following the classification employed by Armstrong (1972) once more, Table 3 sets out the numbers of household heads in each of the main occupational categories, again compared with a 10% sample for the whole of Battersea. It should be emphasised that within any given occupational grouping there will be people who belong to more than one social class, since each covers a wide range of income and hence ability to pay for housing and other goods and services.

Comparing the two populations, it will be seen that Park Town has more than the expected proportion of building and transport workers, but far fewer in the distributive and retail trades. This reflects its location close to railway works and stations, and the fact that construction was still in progress in 1871, albeit at a very low ebb. Retail provision tended to lag behind housebuilding, and in any case the plan for Park Town as originally conceived did not allocate much room for shops—mainly in Queen’s Road and over the parish boundary in Clapham. Surprisingly in view of its physical surroundings, almost one household in ten in 1871 belonged to the professional and private means categories, although they had a distinct tendency to cluster in one part of the development.

Although many of the people who moved into Park Town when the houses were first built came from other London suburbs as part of the general tendency for outward migration in short hops, it is nevertheless interesting to examine the ultimate origins of the first inhabitants from the data in the census on birthplace. The figures are given in aggregates of parishes or counties in Table 4, expressed as percentages and compared, as previously, with a sample for the whole of Battersea parish.

The most striking difference between the two distributions is that the proportion born in the two immediate countries of Surrey and Middlesex is about 40% higher in Battersea as a whole than in Park Town. Two-thirds of the latter were
Table 3
Park Town 1871: Occupation of Household Heads

<table>
<thead>
<tr>
<th>Group</th>
<th>Park Town</th>
<th>Battersea (10% sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Building</td>
<td>135</td>
<td>25.7</td>
</tr>
<tr>
<td>Distribution</td>
<td>35</td>
<td>6.7</td>
</tr>
<tr>
<td>Domestic Service</td>
<td>29</td>
<td>5.5</td>
</tr>
<tr>
<td>Industrial Service*</td>
<td>58</td>
<td>11.0</td>
</tr>
<tr>
<td>Minerals, etc.</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>148</td>
<td>28.3</td>
</tr>
<tr>
<td>Private Means</td>
<td>8</td>
<td>1.5</td>
</tr>
<tr>
<td>Professions</td>
<td>38</td>
<td>7.2</td>
</tr>
<tr>
<td>Transport</td>
<td>73</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>525</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

* Includes clerks and unspecified labourers

Table 4
Park Town 1871: Birthplace of Household Heads

<table>
<thead>
<tr>
<th>Parish/County/Region</th>
<th>Park Town</th>
<th>Battersea (10% sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battersea</td>
<td>0.2</td>
<td>3.4</td>
</tr>
<tr>
<td>Adjacent parishes</td>
<td>14.9</td>
<td>19.9</td>
</tr>
<tr>
<td>London (City)</td>
<td>5.8</td>
<td>4.7</td>
</tr>
<tr>
<td>Rest of Surrey</td>
<td>4.2</td>
<td>8.3</td>
</tr>
<tr>
<td>Rest of Middlesex</td>
<td>7.1</td>
<td>9.3</td>
</tr>
<tr>
<td><strong>Total Surrey/Middlesex</strong></td>
<td><strong>32.2</strong></td>
<td><strong>45.6</strong></td>
</tr>
<tr>
<td>Home Counties</td>
<td>16.0</td>
<td>13.4</td>
</tr>
<tr>
<td>South West</td>
<td>11.9</td>
<td>8.2</td>
</tr>
<tr>
<td>East Anglia</td>
<td>9.5</td>
<td>9.5</td>
</tr>
<tr>
<td>West Midlands</td>
<td>9.5</td>
<td>5.7</td>
</tr>
<tr>
<td>North East</td>
<td>4.9</td>
<td>1.8</td>
</tr>
<tr>
<td>East Midlands</td>
<td>4.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Ireland</td>
<td>2.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Scotland</td>
<td>2.6</td>
<td>4.8</td>
</tr>
<tr>
<td>North West</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Wales</td>
<td>1.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Overseas</td>
<td>2.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Not known</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

born further afield, and only one third in Battersea itself. The majority of household heads in Park Town were born in the south and east of England, in a swathe of counties from Norfolk to Devon and Cornwall, which accounted for about 70% of the total, with another seventh from the Midland counties. Many of the building workers came from rural counties in the south and west, doubtless attracted to south London by easy rail access and the feverish building activity there in the 1860s.

Having examined the total pattern of social class and occupation in Park Town in 1871, it is appropriate to look a little deeper at the way in which the various groups were actually located within the estate. There is some evidence of geographical concentration in certain groups,
and this is also true of empty properties, for example two-thirds of the houses at the south end of Stanley Street were unoccupied at the time of the census, and only four out of thirty-five in Queen’s Square were inhabited. In Robertson Street, one-third of the houses were empty, and five were still under construction.

Taking the middle-class households first, more than 40%, lived to the north of the L.S.W.R. viaduct, and there were other, smaller, groups in Stanley Street (18%) and St. Andrew Street (11%). The attraction of the northern end of the estate to these families lay in its proximity to Battersea Park, and also to the more fashionable parts of town by way of Chelsea Bridge. In addition many of the houses around the Queen’s Road/Battersea Park Road intersection were of a grander design than usual (Metcalf 1978, 35, Pls. 6a, 7c, 7e).

Skilled manual workers formed such a high proportion of the total in Park Town that they are found throughout the estate, often sharing accommodation with families of other classes. Non-manual workers in service industries show some concentration, however, with one-third to the north of the L.S.W.R., and a block in Queen’s Crescent, one of the few areas of shops. In the semi-skilled and unskilled classes, there is only one appreciable cluster—in Broughton Street—with 23% of the total.

As is the case with Class III manual workers, those employed in the various building trades are found throughout Park Town. Their distribution generally accords with that of occupied houses, except in the case of West Street, where there are fewer than expected (4% compared with 8% of houses), and in Broughton Street (25% compared with 17% houses).

Employees in ‘industrial service’, who comprise mainly clerks and some labourers whose trade is not specified in the census returns, tend to be scattered widely throughout the development. In contrast, employees in metalworking and in road and railway carriage building show more evidence of concentration in the streets around the periphery of Park Town. Six of these households are clustered in St. Andrew Street, just outside the gates of the Chatham Railway’s workshops.

Employees in the clothing trades account, somewhat surprisingly, for more than one third of manufacturing employment in the area, with local concentrations in Queen’s Crescent, St. Philip Street and Stanley Street, which between them house 57% of the clothing workers in only one third of the houses. Many of those employed in these trades were homeworkers, either tailors or needlewomen, and there was little or no factory employment for them nearby. The census is unfortunately silent about how many, if any, used the various local train services to reach the West End and the City for work.

Excluding those engaged in carriage building, some fifty-five heads of household in Park Town in 1871 were employed on the railways and of these 60% lived to the north of the South Western viaduct, and a further 12% in St. Andrew Street. The former reflects the ease of access to Victoria and the Brighton Company’s locomotive and goods facilities at Battersea Park and the latter the proximity of similar facilities at Stewart’s Lane on the Chatham line. (The South Western station in Queen’s Road was not opened until 1877, making access to Waterloo and the Nine Elms works more difficult for those in Park Town in its early days, although some of the railwaymen doubtless walked the mile or so needed to reach the works.) The most obvious concentration of railway workers was in Brighton.
Terrace, a group of eight houses compulsorily purchased by the Brighton Railway in the mid-sixties and housing ten of its employees in 1871.

 Those who belonged to the professional classes and those of 'private means' in the 1871 census conceal a wide variety of incomes and status in society. For example, not only those at the peak of careers in medicine, trade or the civil service count as professional, but those in lower echelons such as Board School teachers, nurses and policemen. Similarly, those living on private income could include not only gentry, but those who had retired to live on the rents of a few houses, or the interest from stocks. In Park Town, these groups are often found at the northern end of the development reflecting the predominance of social Classes I and II there. Examples include a mission woman, two Greenwich pensioners, a musician and a police constable. About one-fifth of these households lived at the western end of Broughton Street and the northern end of Stanley Street. In the former No. 46 housed a tutor, No. 47 a schoolmaster, No. 48 a chemist and No. 49 a science teacher. Persons of private means tended to be scattered at random throughout the estate, with no discernible pattern.

 From the foregoing analysis of the social and economic characteristics of the early settlers on the Park Town estate in north Battersea, it is clear that whatever the aspirations of its developers, notably Philip Flower, and its architects, the two James Knowles, the location of the development, both in relation to the sorts of estates going up around it at the same time, and more particularly in relation to the pattern of railway lines and works as it emerged between 1863 and 1867, ensured that it became occupied by an essentially working class population. Already in 1871 a majority of these large houses was subdivided into two or three dwelling units, and the middle class element in the population was small, and tending to gather in the detached northern portion of the estate.

 The estate, in short, came to resemble its more humbly conceived neighbours despite the intentions of its developers. No doubt they had been in part compelled to accept this kind of tenant in order to reduce the number of houses standing empty and unprofitable. In the end, the physical presence of railways and their works in such profusion cast the die. Although the original houses were, and are, impressive in their style and massing, and the concept of the focal main thoroughfare with its square and church echo grander parts of the metropolis, the fact that by 1885 the rest of Park Town was being finished with ordinary two-storey houses, and even maisonettes, is eloquent testimony to the forces which moulded Battersea during the mid-Victorian period.

 NOTES
 1. Held on microfilm at Battersea District Library, Lavender Hill.
 2. Clapham Gazette, December 1864, 22.

 BIBLIOGRAPHY
 ARMSTRONG (1972), W. A. Armstrong 'The use of information about occupation' in Wrigley (1972), 191-310.
March 1982 saw the culmination of more than seven decades of historical scholarship, marked by the publication of Volume VII of the *Victoria History of the County of Middlesex* (Oxford University Press, £60), edited by T. F. T. Baker. This is, therefore, an opportune time to look briefly at the present volume, along with its six predecessors, for this marks the completion of that part of the historic county which was not absorbed into the L.C.C. in 1889. The areas which were so transferred will be the subject of further volumes, the first of which is already well under way.

The V.C.H. in general is often criticised for perpetuating what is seen as an anachronistic format based on hundred and parish divisions, with an emphasis on manorial and ecclesiastical history. Such comments apply especially to urban and suburban areas which have grown up since 1800. They may have some validity, but it must not be forgotten that the parish was central to local government and life in general right down to the present century, when Middlesex was finally engulfed by the Great Wen. It is also questionable whether it is justifiable to change the format of a standardised, national historical survey, which commenced in 1899, has produced one hundred and eighty volumes, and is set to continue its task into the next century. It has, after all, proved possible to treat railways and factories along the Great West Road within the existing framework, and one only has to contrast the parish histories in Volume II of Middlesex, published in 1911, with those in Volume VII to see that laid-down formats do not stultify the outlook of the contributing scholars.

The Middlesex V.C.H. has had a chequered history, and has only been in continuous production since it was revived in 1955, as the list on p. 400 shows.

The completion of this task is a testimony to the successive County Editors, to the University of London, which owns the V.C.H., and to the various local authorities who have continued to make financial contributions in an increasingly stringent climate.

The eccentric appearance of Volumes I–III over no less than fifty-eight years reflects two quite separate phases of the V.C.H.'s own history in Middlesex. Under the general guidelines for the History, the first volumes are for the treatment of general themes in the history of the county, while the rest is given over to a treatment of each parish in detail. Volume II represents the first, Edwardian phase of the History, and contains the end of the general treatment, and the first parochial histories. Work on Volume I seems to have commenced, but was stopped by the onset of the Great War. (As an aside, the ‘rogue’ volume entitled London, Volume I, which appeared in 1909 must be mentioned. This covers the City, Borough of Southwark and ‘ancient parish’ of Westminster, and its 588 pages deal with Roman and Saxon archaeology, ecclesiastical history and religious houses.)

Not until 1955 was the work resuscitated, when local authorities and the erst-
<table>
<thead>
<tr>
<th>Volume</th>
<th>Date</th>
<th>Pages</th>
<th>Principal contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>1911</td>
<td>406</td>
<td>Political, economic, social, industrial, agrarian history, sport; Spelthorne Hundred (Ashford-Littleton)</td>
</tr>
<tr>
<td>III</td>
<td>1962</td>
<td>325</td>
<td>Spelthorne Hundred (Shepperton-Teddington), Isleworth, Elthorne (Cowley-Harlington)</td>
</tr>
<tr>
<td>I</td>
<td>1969</td>
<td>385</td>
<td>Physique, archaeology, Domesday, religion, education, hospitals</td>
</tr>
<tr>
<td>IV</td>
<td>1971</td>
<td>289</td>
<td>Elthorne (Harmondsworth-Ruislip), Gore (Edgware and Harrow)</td>
</tr>
<tr>
<td>V</td>
<td>1976</td>
<td>424</td>
<td>Gore (Hendon-Stanmore), Edmonton</td>
</tr>
<tr>
<td>VI</td>
<td>1980</td>
<td>228</td>
<td>Ossulstone (Friern Barnet, Finchley, Hornsey with Highgate)</td>
</tr>
<tr>
<td>VII</td>
<td>1982</td>
<td>280</td>
<td>Ossulstone (Acton, Chiswick, Ealing and Brentford, West Twyford, Willesden)</td>
</tr>
</tbody>
</table>

while Middlesex Local History Council agreed to set up a Council and appoint editorial staff. Over the last twenty-seven years, successive editors have produced one general and five topographical volumes.

The fact that the volumes are spread over such a long period shows at a glance that although the framework for the parish histories is essentially unchanged, the content and approach are vastly different. In 1911, each parish received an average of four–five pages, almost entirely concerned with the manor and the church, although the Editor allowed no less than seventy-three pages for Hampton Court. In Volume VII, Acton is given fifty and Willesden seventy-eight pages, to give two examples.

The more recent volumes still deal in depth with medieval and post-medieval history, including the descents of manors and the church. In doing so they provide local historians with the distilled essence of thousands of documents which can act as the basis for further research. Each parish now contains a section on its development since about 1850, full of useful pointers. It would be to misunderstand the purpose of the V.C.H. to expect it to provide an encyclopaedic history of every topic in every parish—that, after all, would be to render the local enthusiast largely redundant!

This conflict between the general and the particular is a commonplace in the study of London history. For example, Michael Robbins’ *Middlesex* in the New Survey of England series (1953) gives a thematic history in 212 pages, and a topographical gazetteer in another 152, may be contrasted with the late H. J. Dyos’ study (1961) of Victorian Camberwell, which covers broadly one century in one parish and fills 177 pages.

Turning to Volume VII, it is impossible in such a short compass to review fully its 254 closely-packed pages, illustrated with thirty-five plates and some good, concise maps. One minor quibble from page 1 onwards concerns metrification, that scourge of historical writing and maps. While the maps have both imperial and metric scales, the text refers only to kilometres and metres, while parish areas are given only in acres. Likewise, many of the sources used quote only imperial measures. Could we have a consistent approach in Volume VIII and thereafter?

The article on Chiswick (pp. 50–100) forms a convenient example of the current V.C.H. treatment. It starts with a description of the location, area and general configuration of the parish, followed by communications within the area and to the outside world, from Roman roads to the M4. The problems of dealing with transport in London, which has been the subject of vast amounts of work on railways, buses, trams and so on, is illustrated.
on p. 54, where almost all the sources cited are secondary, and the demise of West London's trolleybuses in May 1962 has been inferred from the bus map. The section on 'Growth' gives an overview of Chiswick from prehistory, with an emphasis on the post-medieval period, considering the Village and other districts in turn. Villa development from the 1860s, including Bedford Park, and even municipal enterprise in building all have their place.

Social and cultural activities cover pubs, clubs, sport, amenity societies (including the Brentford & Chiswick Local History Society), music hall and cinema, and suggests many lines for further work. On then to the more traditional, manorial history, whose detail on fees, successions and personalities contains further useful pointers.

The section on economic history reflects how much this has changed in content and approach since the early days of the Victoria History, including as it does items on Thorneycrofts and Reckitt & Coleman. The local government from parish to London Borough includes reference to the all-important infrastructure of urban life—gas, water, sewerage and open spaces, for example. The ancient church of St. Nicholas is treated in depth, and there are abbreviated notes on other churches and places of worship, including a Buddhist centre at 5, Heathfield Gardens. Notes on schools and charities round off the article.

This forms the pattern for the other histories in this volume. The historical connection between Ealing and Old Brentford results in their being treated together, while the small extra-parochial sliver of West Twyford is easily accommodated in the standard format. It is interesting to note that it receives four-and-a-half pages, about the same as Ashford in Volume I. Willesden, with its sub-districts of Neasden, Cricklewood and Brondesbury represents a transition from the stereotypical semi-detached suburban image of Middlesex (Jackson 1973) to the Victorian terraces of inner London, and hence a bridge into later volumes. It is interesting to note a reference to Rachmanism (p. 186), and another to the magazine 'Private Eye' and its satires on Neasden in the 1970s (p. 195), proof, if any were needed, that the V.C.H. has kept up with the times where appropriate.

BIBLIOGRAPHY

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