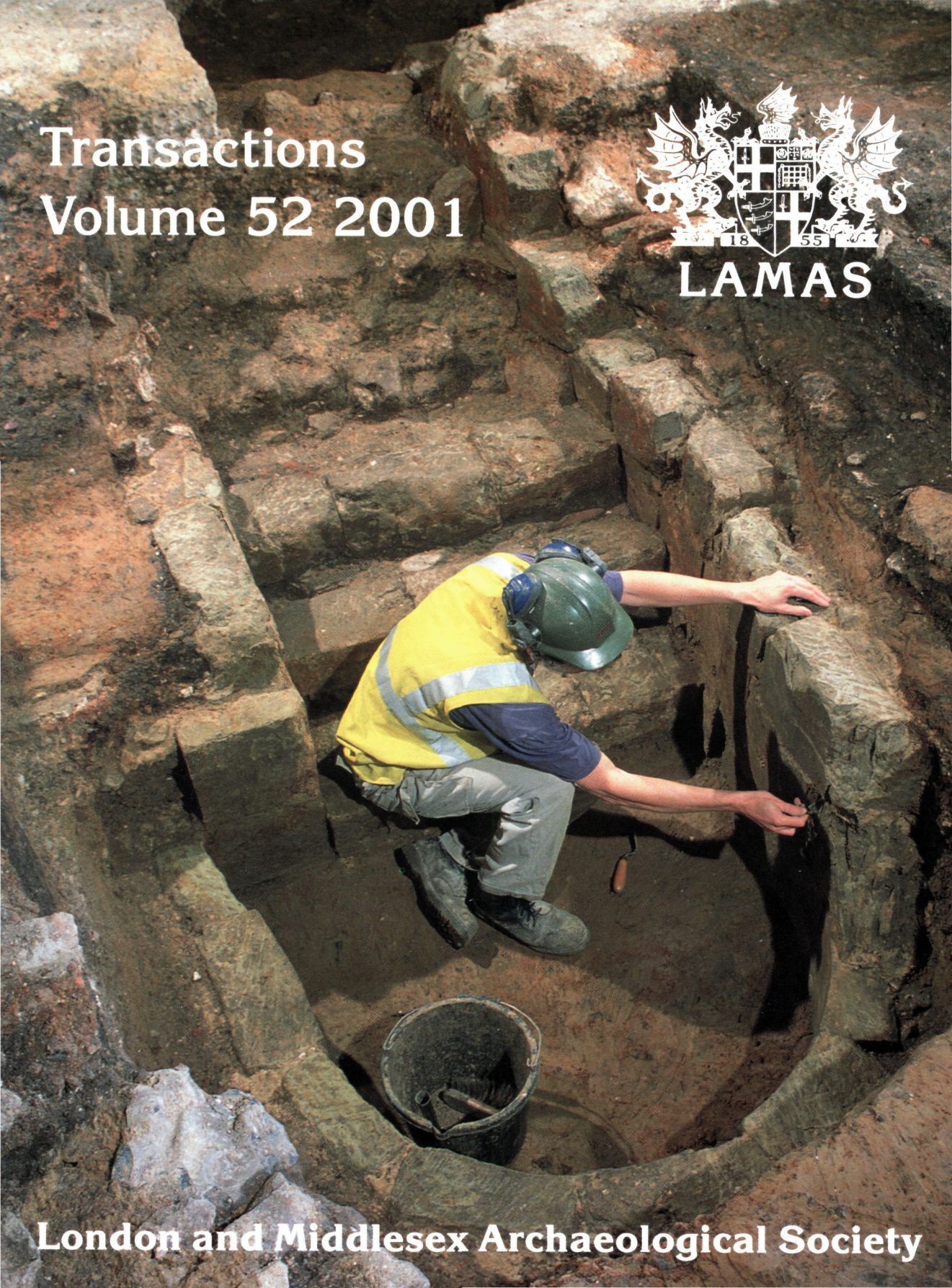
Transactions
Volume 52 2001



LAMAS

London and Middlesex Archaeological Society

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Editors' note: the editors are happy to consider articles for publication in *Transactions*. New contributors are advised to ask the Production Editor for a copy of *LAMAS Notes for Contributors* before submitting papers.

Front cover: The Milk Street *mikveh* looking north, with the blocking removed, showing the full extent of the ashlar lining. See Ian Blair *et al*, pp 127–37.

LAMAS

Transactions of the

London and Middlesex Archaeological Society

Volume 52
2001

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London & Middlesex Archaeological Society

Registered as a charity

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Patrons: The Most Rev The Archbishop of Canterbury; The Right Rev The Bishop of London; The Right Hon The Lord Mayor of London; HM Lieutenant for Greater London and Custos Rotulorum; HM Assistant Lieutenant for the Middlesex area of Greater London; The Very Rev The Dean of St Paul's

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London and Middlesex Archaeological Society

145th ANNUAL REPORT OF COUNCIL FOR THE SUBSCRIPTION YEAR ENDING 30th SEPTEMBER 2000

Around 70 LAMAS members and their guests gathered on 31 July to celebrate the new millennium at an evening event at the Museum of London. The evening offered members the opportunity to view the Museum's exhibition, 'High Street Londinium', and to meet curators involved in the project. The evening was made possible with the support of the Museum and its staff, and proved to be a very enjoyable occasion.

At the 2000 AGM, the Society elected Rupert Morris as Treasurer, and four new Ordinary members joined the Council. During the course of the year, the new Treasurer reviewed the Society's financial arrangements, and with Council's agreement adjusted the Society's investments so that the accounts benefit from a higher level of interest. In addition, he has been working hard to ensure that all outstanding invoices are paid up.

Meetings and visits

This year's season of evening lectures began in October with a presentation by Damian Goodburn on the results of his studies of medieval woodworking and timber building techniques. Two lectures related to maritime and Thames activities followed: Clive Powell, Curator of Manuscripts at the National Maritime Museum, talked about the Press Gang and its activities, with particular reference to a series of letters sent by a young man pressganged in 1803; Chris Ellmers, Director-designate of the eagerly-awaited Museum of Docklands, talked on shipbuilding on the Thames, with a fine range of illustrations. The series of Hugh Chapman Memorial Lectures continued in January, with a lecture by Gus Milne on Professor W F Grimes and the reassessment of work on medieval London. Our President, Dr Derek Keene, gave his first Presidential Address at the AGM in February, with some thoughts on the location of the late Saxon royal palace in London. In March Chris Thomas spoke on the MoLAS excavations at Spitalfields, and in April John Shepherd described exciting plans for the future of the Museum of London's London Archaeological Archive and Research Centre; the previous Saturday a visit had been arranged at short notice to the Archive and the Museum's stores at Eagle Wharf Road, Hackney, and a party of members of the Society had the opportunity to see over the building with John and his colleagues. The lecture season closed with an enthralling talk by Ronald Shelley of the Jewish Museum on the Jewish settlement in London in the 17th century. Attendances at meetings varied, in some cases being disappointingly low. It is hoped that by changing the day of meetings and increasing publicity attendances may improve in the new year.

Publications and Newsletter

As reported last year, the members of the Society received a free copy of the Museum of London Archaeology Service's 'Excavations at 72–5 Cheapside/83–93 Queen Street' (Archaeology Study Series 3). It is hoped that this co-operative venture will be repeated in future years.

With the delivery of Volume 49, for 1998, and Volume 50 for 1999 Gill Clegg has successfully brought the publication of the Society's Transactions back on schedule. Sadly, having achieved this feat, Gill has decided to resign as Technical Editor. The Society owes her a great debt of gratitude for her hard work over the last few years.

Membership

The year to 30 September 2000 showed a total of 646 fully paid-up members (including life and honorary members), as compared with 635 for the previous 12 months. 34 members had left or their membership had lapsed. 61 new members had joined during the year, of which 24 joined by internet, as opposed to 84 new members in the preceding year, including 14 by internet.

Archaeological Research Committee

ARC met three times during the year, in January, May, and September. Reports on archaeological fieldwork and related matters were received from MoLAS, GLAAS, and SCOLA. ARC continued to pursue the question of

the adequacy of the archaeological evaluations' process in London with relevant bodies, and commented on the Museum of London's draft Archaeological Priorities document, on behalf of Council.

Following a suggestion by one of the Committee, Nick Merriman, subsequently ratified by Council, the Committee will henceforth be known simply as Archaeology Committee.

The Committee organised the 37th Annual Conference of London Archaeologists, which was held at the Museum of London in April. For various reasons, the attendance was down on recent years, though the meeting was in other respects a success. The morning session started with the presentation of the fourth Ralph Merrifield Award. This year it was given jointly to Rose Baillie of CoLAS and to Geoffrey Gillam of the Enfield Archaeological Society. The session continued with a round up of recent work in the London area, including the excavations at Perry Oaks, London Bridge, City, Spitalfields, and Greenwich Park. The afternoon session was devoted to the theme 'Romans in the suburbs', and was addressed by Jane Sidell, Paul Tyers, Harvey Sheldon, and David Bird.

Local History Committee

The 34th Local History Conference was held at the Museum of London on Saturday 20 November 1999. The theme was 'The Effect of Tudor and Stuart Royalty on the Greater London Area'. The successful formula of the previous year was continued with five speakers: Michael Berlin of Birkbeck College on 'The Clash between Royalty and the City'; Simon Thurley, Director of the Museum of London, on 'Tudor and Stuart Palaces in London – the Impact of Residences of the Monarch'; Andrea Cameron of Hounslow Local History Society on 'Royal Visits around Hounslow Heath via Bath and Great Western Roads'; Rosemary Weinstein, writer and researcher in 16th- and 17th-century history, on 'Tudor and Stuart Royal Parks in the Greater London Area'; Geoffrey Toms on 'Places, Parks, Property and Power — the Royal Estates'.

231 tickets were sold and the event was greatly appreciated by the audience, which was composed mainly of members of affiliated local history societies. Displays were mounted by 24 societies and a fine collection of local history publications produced by them were on sale.

Further meetings of the Committee during the year were devoted to preparations for the 2000 conference on 'Crossing the Thames' and discussing ways of attracting articles on local history suitable for publication in LAMAS Transactions.

Historic Buildings and Conservation Committee

250 cases were considered by the Committee in the year 1999/2000, of which the vast majority (161) were from Westminster City Council. Cases were considered from all London boroughs bar three. The Committee started 2000 by considering proposals for the Crossness Sewerage Treatment Works. However, it went on to consider the Palace of Westminster and, at a later meeting, Buckingham Palace. Other major applications referred to the Committee were to do with Holwood House, Bromley, and Forty Hall, Enfield. Confusingly Coleorton Hall in Northants and Birmingham New Street Signal Box were also referred.

Most applications are to do with alterations to more ordinary Listed Buildings, but Battersea Power Station and various developments at Paddington and in the City have been on a very much bigger scale. At the other extreme is the proposal referred to the Committee three times for work to a Coal Post in Bexley. The Committee have though been particularly concerned this year with transportation schemes and are in correspondence with the DETR about the Thameslink 2000 Inquiry.

Various major projects such as these (and of course Wembley Stadium) will continue to be considered into the next year along with hundreds of new proposals, all of which will be looked at carefully to assess and comment on their potential impact.

Finally, the Committee was pleased to note that at the beginning of the year Dennis Corble was granted honorary life membership of LAMAS in recognition of his outstanding contribution to the Society and specifically to this Committee.

BY DIRECTION OF COUNCIL

John Clark
Chairman of Council

Karen Fielder
Honorary Secretary

London and Middlesex Archaeological Society

146th ANNUAL REPORT OF COUNCIL FOR THE SUBSCRIPTION YEAR ENDING 30th SEPTEMBER 2001

Council met six times during the year. Matters considered included applications for grants towards two publications. The first was a grant for the publication costs of *Coinage and Currency in London* by John Kent, a work based on Presidential Addresses given as President of LAMAS. In the other case, the City of London Archaeological Trust sought a grant towards the preparation of a volume on tin-glazed pottery from London.

During the year, representatives of Council met with staff at the Museum of London to discuss the involvement of the Society and its members in the work of the London Archaeological Archive and Research Centre. It is hoped that the Society will be able to publish the results of research projects based on the Archive in Transactions. Projects that might involve members of the Society are under active consideration.

Council is aware that the year 2005 marks the 150th anniversary of the founding of the Society. We feel that this anniversary should be celebrated, but also that it provides the ideal occasion for us as a Society to consider the way ahead and whether our existing role and constitution is appropriate in the new century. These discussions will continue.

At the AGM, thanks were given to Alan Thompson, who rotated off Council, and Colin Bowlt was welcomed as a new elected member.

It was with great sadness that Council learned of the death of John Kent, past President of LAMAS. Council paid tribute to John and his contribution to London archaeology.

Lecture meetings

Due to unexpected problems, the Society found itself approaching the beginning of the lecture season with no organiser for our evening meetings. Fortunately Joanna Clark, who had stepped down at the previous AGM, agreed to organise another season; suggestions from members of Council provided the basis of a varied and interesting programme of speakers. Held this year on Wednesday evenings, the series began in October 2000 with a glimpse of 18th-century London low-life, when Alex Werner of the Museum of London spoke about 'Immoral Earnings, 18th-century Style: Elizabeth Haddock, her Bagnios and Country House'. In November, Paul Hill described some 'Early Anglo-Saxon Swords in the London Area', as well as showing some modern reproductions of such weapons. A seasonal touch in December was provided by Jeremy Smith, of the Guildhall Library, with a talk on 'London on Ice: the Thames Frost Fairs'. January 2001 saw our regular Hugh Chapman Memorial Lecture, when Jenny Hall's talk 'In Mint Condition?' included not only the evidence for coin forgery in Roman London, but also a description of the recently discovered hoard of gold coins from Fenchurch Street. In February, at the AGM, our President Dr Derek Keene gave his second Presidential Address — a look at 'The Streets of Medieval London'. In March Jon Prosser described an intriguing building in Bruce Castle Park, and posed the question — is it 'A Tudor Hawk Mews in Tottenham?' In April Malcolm Hay, Curator of Works of Art at the Palace of Westminster, spoke on 'The Importance of Westminster Hall', and our season closed in May, when Colin Thom of the Survey of London spoke on the extraordinary history of 'Knightsbridge' and its buildings, the subject of the Survey of London's 45th volume. The change to Wednesday seems to have suited many of our members, but attendances at evening lectures are still often not as large as we might hope or our speakers expect.

Publications and Newsletter

Lynn Pitts joined as the new Technical Editor of Transactions to see Volume 51 through the press. This was John Shepherd's last volume as Archaeological Editor, and Council owes him a great debt of gratitude for all his work over the past years. Kim Stabler has agreed to take over the role for future volumes.

Three volumes of the Newsletter were produced under the very capable editorship of Nikola Burdon.

Membership

Last year's paid-up membership, with comparison of the two previous years, is as follows:

	Sept 1999	Sept 2000	Sept 2001
full paid & life & hon.	635	646	654
left or lapsed	34	45	57
new members	84	61	54
(incl. by internet	*14*	*24*	*19)*

Archaeology Committee

The Archaeology Committee met three times during the year, in January, April, and September. Reports on archaeological fieldwork and related matters were received from MoLAS, GLAAS, and SCOLA. The Committee was much exercised by an initiative on the part of CBA to create a new CBA Group for London, and representatives of the Committee attended various meetings jointly convened by CBA and SCOLA to review the situation.

The Committee organised the 38th Annual Conference of London Archaeologists, which was held in the Museum's Lecture Theatre at the end of March. A well attended meeting witnessed the presentation of the 5th Ralph Merrifield Award to Gill Clegg, in recognition of her long-standing contribution to London's archaeology and, more particularly, for her successful editorship of Transactions. The morning session continued with a round-up of recent work in the London area, including the excavations at Plantation Place (City), Dollis Hill, Covent Garden, the Royal Arsenal, and Narrow Street in Tower Hamlets. The afternoon session was devoted to 'Archaeology in the Landscape', and was addressed by Jane Sidell, John Barrett, Robert Cowie, Barney Sloane, and John Schofield.

Local History Committee

There were no changes to the Committee this year. The main business was the arranging of the Local History Conference held at the Museum of London on 18 November 2000. The theme 'Crossing the Thames' proved very popular and every seat was sold.

The Committee was concerned that material gathered during the LAMAS Project on the 18th-century population of London and Middlesex, carried out in 1993, was not accessible to anyone. It consists of counts of baptisms and burials from parish registers, on a monthly and yearly basis for the whole century. Thirty parishes were completed. After discussion, it was decided to offer the forms to the London Metropolitan Archive, where they have since been deposited.

Historic Buildings and Conservation Committee

The HBCC met nine times in the year, and considered 228 cases in that time. The majority were from Westminster, with cases also from Bexley, Harrow, Hammersmith, Lambeth and Havering, the City, Islington, and Wandsworth together making up another 25%. Another 14 boroughs accounted for the other cases. Four boroughs are dealt with by the Surrey Archaeological Society, leaving only six boroughs unrepresented in last year's figures.

Among the more interesting cases considered were proposals for Paddington Station and the Paddington Basin area, the Festival Hall and South Bank site, and the Heron tower proposal in the City. The Wembley Stadium saga continues, as do the attempts to find a solution for Battersea Power Station. At the other end of the scale, we considered proposals for the timber-framed barns and other agricultural buildings at Forty Hall Farm, Enfield, and at East End Farm, Pinner.

All these cases have been considered fully by the Committee with site visits and/or inspection of the Application drawings beforehand.

We continue to monitor individual cases and to express our concerns over the London-wide situation, with retrenchment by English Heritage and consequent uncertainties about the coverage in the individual London boroughs.

BY DIRECTION OF COUNCIL

John Clark
Chairman of Council

Karen Fielder
Honorary Secretary

LONDON AND MIDDLESEX ARCHAEOLOGICAL SOCIETY
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 30th SEPTEMBER 2000
AND BALANCE SHEET AS AT 30th SEPTEMBER 2000

1998/99	**Income**	*1999/00*
£		*£*
10,312	Subscriptions	9,354
200	Donations Received	80
897	Dividends and Interest	598
1,027	Sales of Publications	1,293
12,289	Grants for Publications	10,276
£24,725	TOTAL INCOME	£21,601
	Expenditure	
20,087	Transactions	10,735
1,492	Newsletter	1,588
5,000	Contribution to London Archive	0
117	Internet Costs	494
32	Lectures and Visits	45
(767)	Local History Conference	(518)
(457)	Archaeological Committee	(312)
58	Historic Buildings Committee	56
526	Postage, Printing & Stationery	70
100	Ralph Merrifield Award	100
30	Bank Charges	30
200	Scola	0
£26,418		£12,288
(1,693)	Surplus/(Loss) for the Year	9,313
£24,725		£21,601

1999	**Assets**		*2000*
£		*£*	*£*
1,127	Investments at Cost		2,006
8,631	Sundry Debtors		11,836
14,575	Bank & Cash Balances		7,016
25,951	Building Society Deposits		40,618
£50,284			£61,476
	Liabilities		
850	Future Publications		850
910	Archaeological Projects		0
439	Wheatley Bequest		439
11,378	Publication Fund		11,160
118	G.E. Eades Memorial Fund		118
9,237	Creditors		10,237
	ACCUMULATED FUNDS		
	General Fund:		
20,072	Balance at 1.10.99	27,352	
(1,027)	Transfer to/from Publications Fund	218	
0	Transfer from Grants Unexpended	910	
0	Revaluation of Investments	879	
10,000	Transfer from Provision for Transactions	0	
(1,693)	Surplus/(Deficit) for the Year	9,313	38,672
£50,284			£61,476

LONDON AND MIDDLESEX ARCHAEOLOGICAL SOCIETY
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 30th SEPTEMBER 2001
AND BALANCE SHEET AS AT 30th SEPTEMBER 2001

1999/2000	**Income**	*2000/2001*
£		*£*
9,354	Subscriptions	9,978
80	Donations Received	0
598	Dividends and Interest	1,232
1,293	Sales of Publications	214
10,276	Grants for Publications	6,152
£21,601	TOTAL INCOME	£17,576
	Expenditure	
10,735	Transactions	11,152
1,588	Newsletter	1,600
0	Contribution to London Archive	0
494	Internet Costs	336
45	Lectures and Visits	180
(518)	Local History Conference	(680)
(312)	Archaeological Conference	(346)
56	Historic Buildings Committee	0
70	Postage, Printing & Stationery	34
100	Ralph Merrifield Award	100
30	Bank Charges	61
0	Subscriptions	175
£12,288		£12,612
9,313	Surplus/(Loss) for the Year	4,964
£21,601		£17,576

2000	**Assets**		*2001*
£		*£*	*£*
2,006	Investments		2,006
11,836	Sundry Debtors		8,062
7,016	Bank & Cash Balances		4,688
40,618	Building Society Deposits		53,234
£61,476			£67,990
	Liabilities		
850	Future Publications		850
0	Archaeological Projects		0
439	Wheatley Bequest		439
0	Provisions		7,500
11,160	Publication Fund		11,321
118	G.E. Eades Memorial Fund		118
10,237	Creditors		11,787
	ACCUMULATED FUNDS		
	General Fund:		
27,352	Balance at 1.10.00	38,672	
218	Transfer to/from Publications Fund	(161)	
910	Transfer from Grants Unexpended	0	
879	Revaluation of Investments	0	
0	Transfer to/from Provision for Transactions	(7,500)	
9,313	Surplus/(Deficit) for the Year	4,964	35,975
£61,476			£67,990

EXCAVATIONS AT 552 KINGS ROAD, CHELSEA

David Divers

With contributions by Nick Branch, Chris Green, Chris Jarrett, Peter Moore, Christopher Phillpotts and Jean-Luc Schwenninger

SUMMARY

Archaeological excavations undertaken in advance of the redevelopment of the former Kings College, 552 Kings Road, Chelsea revealed evidence of the early post-glacial topography of the area and changing land use from medieval agriculture to landscaped gardens around a large post-medieval house. A military folly built by Lewis Lochie in the early 19th century was also found.

INTRODUCTION

Archaeological excavations were undertaken by Pre-Construct Archaeology Limited at 552 Kings Road, Chelsea (NGR TQ 2605 7738) in advance of the redevelopment of the site (Fig 1). The excavation of two trenches was carried out between 13 January and 25 February 2000 following archaeological evaluation of the site in 1998 (Douglas 1998).

Although a house has occupied the site since the late 16th century, the oldest surviving building is Stanley House, which was completed in the early 18th century. It became a college in the mid 19th century when the first of several additions to the complex were made. The new residential development retains some buildings of historical or architectural merit (Blee 1998).

The work was funded by Bouygues UK Limited and was monitored on their behalf by Eric Norton, Norton Thompson Associates. The excavations were supervised by Mick Parsons and project managed by Peter Moore, Pre-Construct Archaeology. The site archive will be deposited with the London Archaeological Archive Research Centre (site code KRC 98).

GEOLOGY AND TOPOGRAPHY

Chris Green, Nick Branch and Jean-Luc Schwenninger

At the time of excavation, ground level ranged from 5.6m OD to 3.7m OD reflecting the general slope in the underlying geology towards the back-filled Counter's Creek immediately south-west of the site (known as Chelsea Creek at its confluence with the Thames). The floor of the creek's valley was considerably disturbed in the early 19th century when its lower two miles were incorporated into the Kensington Canal which was '100 feet wide and able to carry vessels of 100 tons burden' (Barton 1962).

The natural geology of the site comprised London Clay, which is shown overlying Kempton Park Gravel on geological maps (BGS 1998). These sands and gravels were found to be partially overlain by brickearth deposits. Geological maps show the alluvium of Counter's Creek as being 100m wide (*ibid*).

Kempton Park Gravel, which underlies the Upper Floodplain Terrace of the Thames, is considered to be of Early to Mid Devensian age (Bridgland 1994). In the central London area this gravel overlaps Shepperton Gravel, which underlies the Lower Floodplain Terrace, and is generally regarded as Late Devensian. These gravels are generally mapped together (*eg* BGS 1998; Bridgland 1994), and in central London, where natural

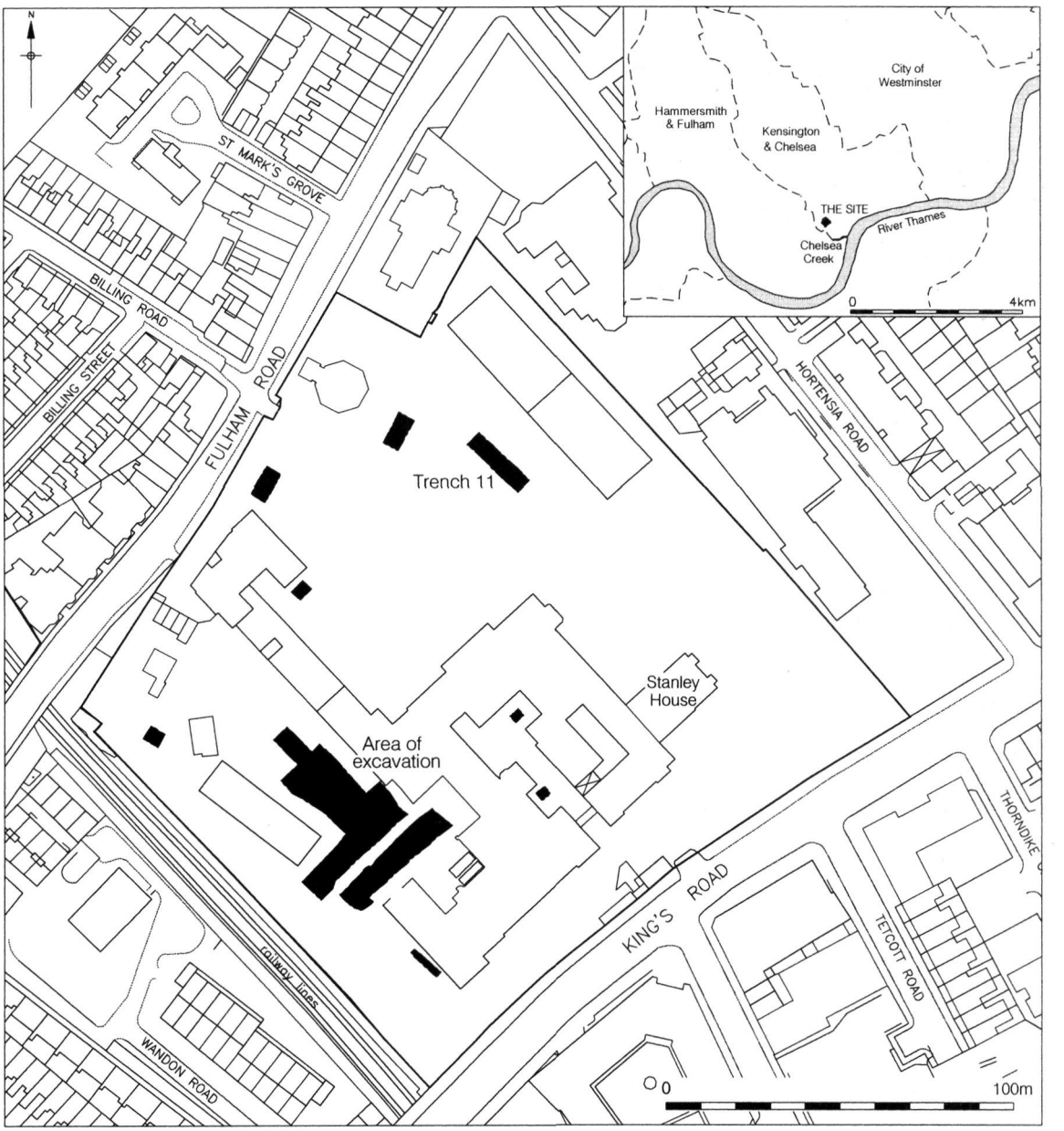

Fig 1. Site plan and location

ground levels have often been substantially altered by building and civil engineering work, it is generally difficult to distinguish between the Upper and Lower Floodplain Terraces.

The palaeochannels

Two palaeochannels on an approximately east–west alignment were recorded during the excavation. Channel 1 was 1.25m deep and in excess of 7.2m wide and Channel 2 was probably at least 1.6m deep and over 7.0m wide, extending beyond the southern limit of excavation (Fig 2).

Lithostratigraphic investigation

The fill of Channel 1 appeared to be entirely minerogenic, but in Channel 2 there were two

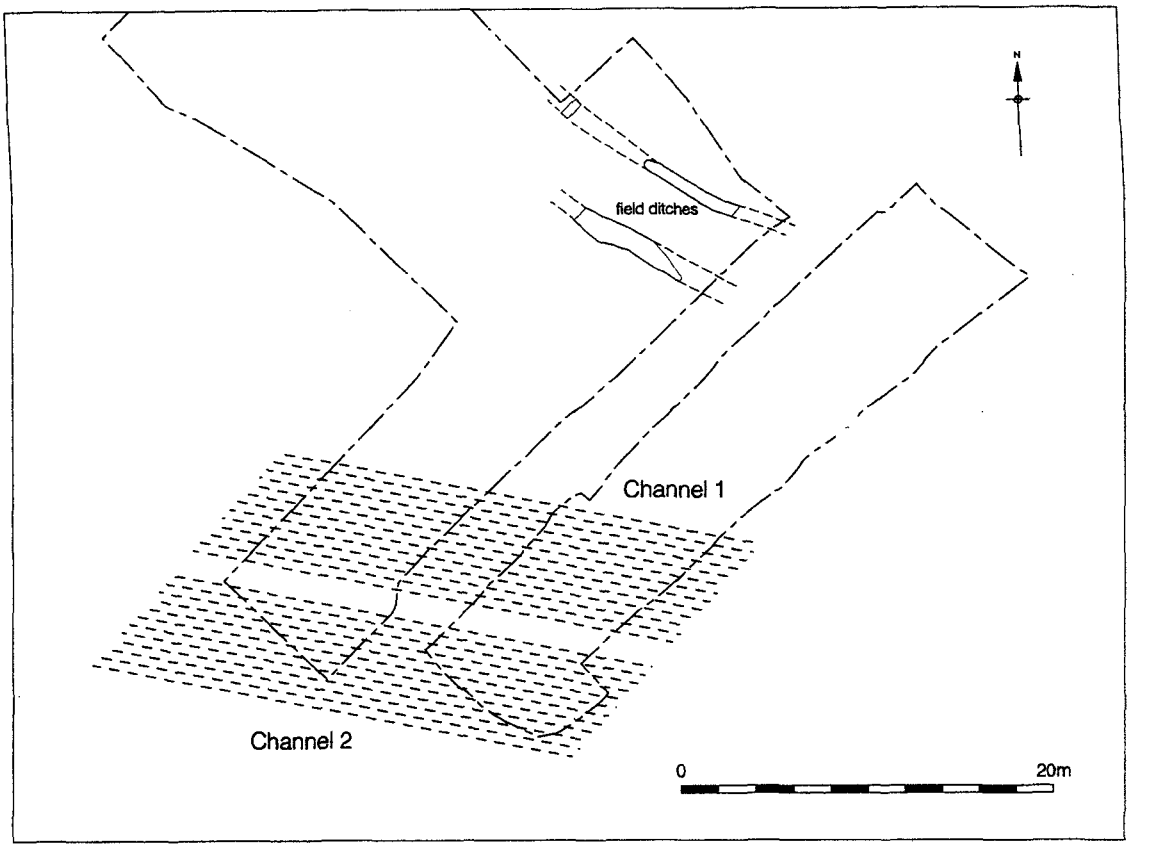

Fig 2. Plan of palaeochannels and medieval ditches

darker horizons which appeared to have an organic content. An undisturbed column sample was collected from the lower fills of Channel 2 which appeared to be confined within shallow channel-like depressions cut into sandy gravel. These lower fills suggest water flow was intermittent and that at times the channel became no more than a damp hollow.

Dating

Optically Stimulated Luminescence dating of sandy clay units within the palaeochannels suggests dates of 20,930 ± 5630 BP for Channel 1 (OSL 1) and 21,060 ± 1980 BP for Channel 2 (OSL 2). These dates provide an internally consistent dating framework for the lower part of the sedimentary sequence. However a bulk sample taken from a sediment fill of Channel 2, which was stratigraphically earlier than the deposit from which OSL 2 was taken, produced a radiocarbon date in the range 10,140 Cal BP to 9,720 Cal BP.[1]

Pollen analysis

Analysis of the column sample in Channel 2 revealed pollen and spores in the bottom fill. The poor preservation may be attributed to physical destruction, which is often the case in sequences with a high coarse mineral content. Nevertheless, the pollen indicated a mixed plant community, characterised by birch and pine woodland, and herbs of tall grassland and short turf communities. The absence of evidence for warmth loving plant communities, such as elm or lime, may be indicative of cold climatic conditions. This interpretation is consistent with the dating implying that the sequence is Late Devensian (last glacial) or very early Holocene.

Interpretation

The natural sand and gravel, through which the palaeochannels were cut, seems most likely to have been part of the Shepperton Gravel which was deposited as an aggradational unit in the final stages of the Devensian Late Glacial. The relief of its upper surface is often differentiated by longitudinal bars and intervening channels. Infill of such channels and minor re-working of this surface can often be shown to have begun in the Early Holocene. The radiocarbon date (10,140–9,720 Cal BP) for the thin organic unit resting directly on the gravel is consistent with deposition at the very beginning of the Holocene. The alignment of the palaeochannels suggests that they may represent an early stage in the Holocene development of Counter's Creek.

The OSL dates of 20,930 BP and 21,060 BP for mineral sediment in the lower channel fills is not entirely inconsistent with the fill being of Holocene age. These dates indicate a Devensian Late Glacial age for the last zeroing event to affect the sand grains in the OSL samples. The OSL dates suggest that the sand grains were not re-exposed to sunlight and zeroed when they were re-worked into the channel fill from the underlying Shepperton Gravel. Given the clayey or silty nature of most of the sediment examined in the column sample from Channel 2, and the turbid conditions of deposition that they suggest, this interpretation is entirely plausible.

THE HISTORY AND ARCHAEOLOGY

David Divers, Christopher Phillpotts and Peter Moore

Prehistoric and Roman periods

There was no evidence for human activity associated with the palaeochannels. The oldest archaeological evidence was a small assemblage of undiagnostic flint flakes and tools, burnt flint and burnt daub, all of which were recovered as residual finds. The assemblage as a whole was most consistent with a Later Neolithic or Bronze Age date (Bishop 1998). Residual Roman pottery and tile were also recovered, but these were most likely brought onto the site, perhaps during the manuring of fields.

Medieval Chelsea

In the reign of Edward the Confessor (1042–1066) a woman called Wulfwer held Chelsea, but by the Domesday survey of 1086 *Chelched* was part of Edward of Salibury's land. A tenant population of nine households with three slaves operated one plough, and another two ploughs were used on Edward's demesne land. There was also meadow, pasture, and woodland in the manor (Morris 1975, 20.1).

The site lay in the north-west corner of the parish and manor, bordered by Counter's Creek and the road to Fulham (Fulham Road), and would have formed part of the medieval common fields, worked in cultivation strips. The line of Kings Road was a headland between fields until the 17th century, serving as an access path from the village into the fields. The site was therefore probably ploughed in a NW–SE orientation (Faulkner 1829, i, 43).

The manor of Chelsea was acquired by Westminster Abbey by the early 12th century. By the middle of the century it was in the hands of a family of tenants called de Septem Fontibus, who held it until the early 14th century. In the 15th century the manor was held by the Shordych family, but was sold to Sir Reginald Bray in 1485 (Davies 1904, 37, 44–5; Sullivan 1994, map B).

Archaeological evidence for this period was limited to a probable ploughsoil layer and two parallel ditches, 3.3m apart, possibly demarcating a NW–SE road (Fig 2). The small assemblage of medieval pottery from these ploughsoils occurred as small abraded sherds. Medieval and post-medieval finds in the backfill of the ditches may indicate a reorganisation of the local medieval field system during the early post-medieval period.

The 16th to mid 18th century

Sir Reginald Bray died in 1503, and, after a period of dispute, the manor passed to his niece Margery and her husband Sir William Sandes in 1510. The manor was bought by Henry VIII in 1536, and a new house was built on the riverfront. Henry used the manor as part of the jointure bestowed on his last queen, Catherine Parr, who held it until her death in 1548. In 1553 Edward VI granted it to John Dudley, Earl of Northumberland; Dudley was executed shortly afterwards but his widow remained at the manor until her death in January 1556. Henry VIII's

fourth wife, Anne of Cleves, also died here in July 1556. The Crown leased the manor in 1559 to Ann, Duchess of Somerset, in 1587 to Sir John Stanhope, and in 1591 to Catherine Howard, Countess of Nottingham. It then remained in the Howard family until 1639.[2]

By the 16th century, the site had become part of the estate of Sir Thomas More, who settled in Chelsea in about 1524. In this year he bought two plots of land, one of 7½ acres and the other of 27 acres; there must have been other purchases later. The estate comprised mostly land to the west of Church Lane, possibly acquired by buying out tenants of the individual cultivation strips. Some of his estate may also have derived from the land in *Chelsey* bought from Sir Reginald Bray and bequeathed to Corpus Christi College at Oxford in 1518 (Davies 1904, 37–40, 85; Hardy & Page 1893, ii, 29).

Sir Thomas More was executed for high treason in 1535 and his lands were confiscated; almost all of Chelsea passed into the hands of the King. The custody of More's property at Chelsea was granted to William Paulet, later Marquess of Winchester, in April 1536. He converted this into a grant in fee on the accession of Edward VI in 1547. The Paulets and their successors, the Dacres, held the estate until the end of the 16th century (Davies 1904, 38, 47, 106).

The excavated site probably formed the field called Stonybridge Close, noted as a meadow held by Sir William Paulet, Lord St John, in rentals and surveys of the late 1580s.[3] Its northern boundary, along the road from Stamford Bridge to the village (Fulham Road), probably had a hedge and ditch which Thomas Bene was ordered to clean by the manorial court of 1543.[4]

In the last years of the 16th century Thomas More's former estate was broken up. Much of it, including the excavated site, passed to Sir Arthur Gorges (Davies 1904, 38, 107). He built a house called Brickills, probably by 1599 when Queen Elizabeth is recorded as having passed it. By 1620 the site was known as Brickbarn Close, and the land on its east side was called Sandhills (Beaver 1892, 131). These names suggest that the area was quarried for brickearth and that bricks were manufactured here.

After the death of Sir Arthur Gorges in 1625, the house became the residence of his son-in-law Sir Robert Stanley (Faulkner 1829, i, 55). It was leased, and then sold to Lady Stanley by her widowed mother, Lady Elizabeth Gorges, in 1637. It became known as Stanley House and is shown on contemporary maps as having 7 acres to the north of the house with a formal garden layout.[5] Stanley Close and Wrench's Garden lay to the east, within the excavation site. Sir Charles Stanley was assessed for 11 hearths in the house in 1662. The Stanley family continued to hold the estate until the death of William Stanley in 1691.[6]

A footbridge called Bloody Bridge had crossed the Creek but after the restoration of King Charles II in 1660 the route along the Kings Road was converted into a carriage road with a new bridge across the Creek. The Crown made up the road with gravel and the landholders on either side dug ditches along its sides. Attempts by the Crown to restrict access along the new road led to protests by landowners who were still working the fields in 1718–19 (Faulkner 1829, i, 43–4).

Stanley House was being rebuilt when William Stanley died in 1691. The new building was a few yards north of the original 16th-century house, whose foundations were partly exposed in 1887. The new structure was left unfinished for a number of years, but tenants were being listed in the rate books from 1701 onwards.[7] This new house was owned by Sir Henry Arundell, followed by his son Thomas. They had various tenants in the first half of the 18th century, including Joseph Collins from 1703 to 1726, and Admiral Charles Wager in 1743.[8]

Hamilton's map of 1664 (updated to 1717) and Desmaretz's map of 1717, although small-scale, both suggest the presence of a series of garden terraces to the north of Stanley House. To the east the land was divided into a series of rectangular enclosures aligned NW–SE, probably derived from furlongs of cultivation strips in the medieval common fields. An early 18th-century view of Stanley House shows the grounds to be thickly wooded.

Archaeological evidence for the extensive landscaping and terracing of the gardens, suggested by early 18th-century maps, was found between the house and Counter's Creek. Excavation revealed a stepped terrace extending along the width of the excavation. The upper terrace to the north-west was at least 0.5m higher and was retained by a brick wall which only survived at its south-western end (Fig 3). The bricks were consistent with the wall's construction being associated with the late 16th- to 17th-century Brickills House. However, it may date to

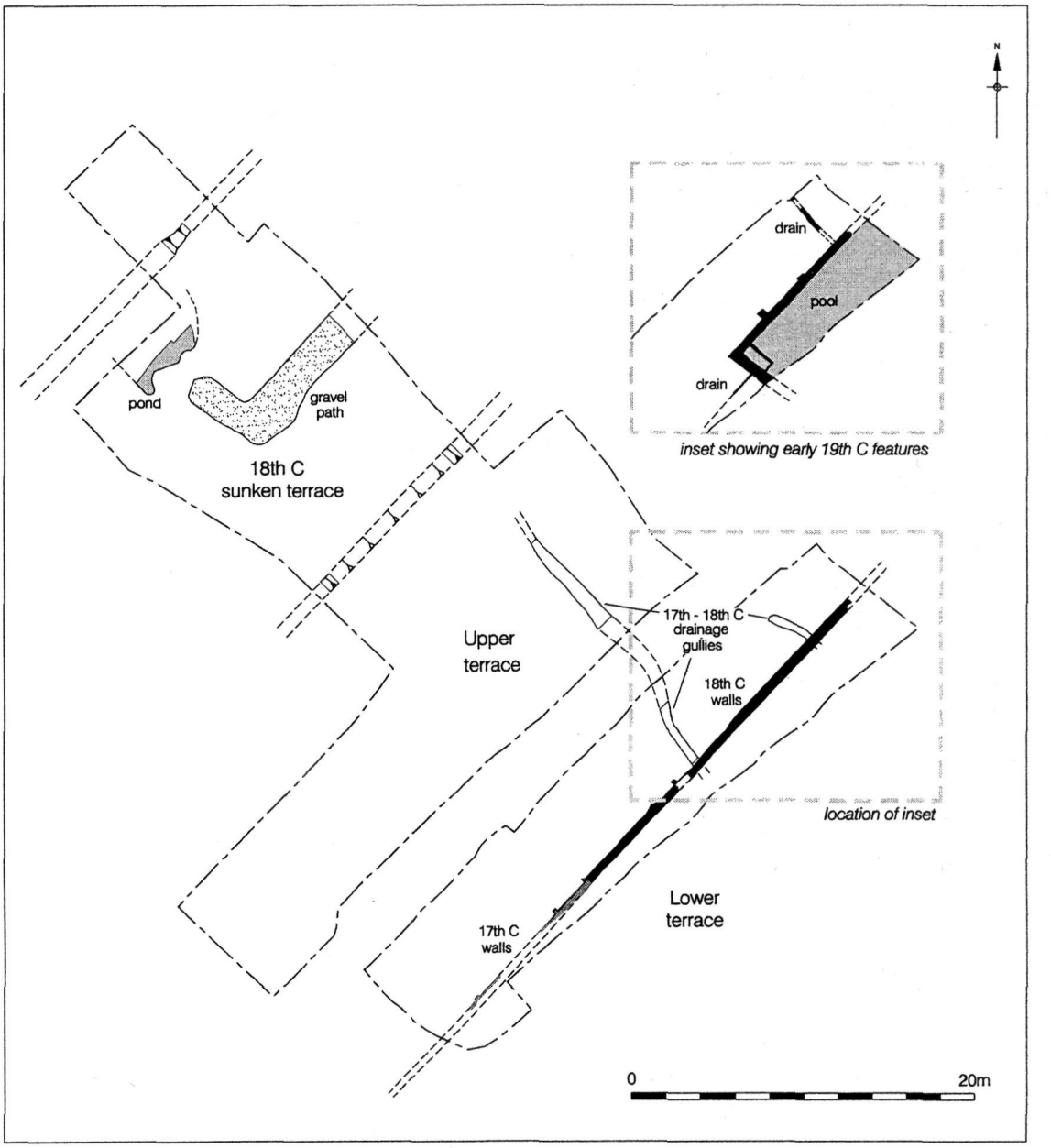

Fig 3. Plan of post-medieval garden features

the rebuilding of Stanley House at the very end of the 17th century.

Possible garden soils or horticultural deposits, which appear to have been continually reworked into the mid 18th century, were recorded on the upper terrace. They produced relatively large quantities of low status pottery, presumably being derived from the wares of the estate's workers rather than the main occupants of the property.

Two, possibly three, linear features associated with this phase of activity were also recorded (Fig 3), their silty fills suggesting a drainage

function, and the mid 18th-century finds are consistent with archaeological evidence for new developments at this time.

Later 18th to early 19th century

Rocque's map of 1746 shows a similar layout of the grounds, although the gardens were perhaps more elaborate than on the earlier maps. Stanley House was bought by the Countess of Strathmore in 1777 who built conservatories and hot-houses in the gardens for her collection of exotic plants. The house was then sold in 1780 to Mr Lewis Lochie, founder of the Military Academy at Little Chelsea and author of treatises on fortification.[9] Lochie laid out the grounds with miniature ditches, ramparts, bastions, and outworks which became a local attraction for a while.[10]

In 1806–7 the jurisdiction of the Westminster Commission of Sewers extended to the Creek. Its powers included the ability to widen and alter watercourses and make new sewers (Faulkner 1829, i, 59). The land along the east side of the Creek was below the high water level of the Thames and was probably prone to flooding.[11] The Creek was canalised as the Kensington Canal in 1828, with a new brick bridge carrying King's Road across it (*ibid*, i, 54). In 1859 the canal was filled in and the railway built over it.

From about 1815 Stanley House was occupied by William Hamilton, British Envoy at the Court of Naples, who superintended the transportation of the Parthenon marbles from Athens for Lord Elgin. He built a large gallery on the east side of the house which still houses casts of the marbles.[12]

The 17th-century terrace retaining-wall appeared to have been rebuilt, or repaired, at its north-eastern end during the 18th century. The wall was rebuilt using a pink mortar rich in brick dust, a type of mortar well known during the 18th century for its water resistant properties (Langley 1748, 43), although there was no evidence for any associated water features. Garden soils on the upper terrace, to the north-west of this wall, continued to be worked during this period.

Further evidence for landscaping during the 18th century included a 0.6m deep sunken terrace, although no evidence for retaining-walls survived. A gravel path recorded in its base appeared to lead to a silt filled, irregularly shaped, large pit that may represent a pond or water feature (Fig 3). These modifications could reflect the more elaborate appearance of the gardens on Rocque's 1746 map.

There was a major redevelopment of the grounds within the area of excavation during the early 19th century. The north-eastern end of the retaining-wall was raised by at least 0.8m, this new addition being supported by buttresses on the north-west side of the wall. A new south-eastern return built into these new upper courses made the south-western part of the retaining-wall redundant and the gardens within the excavation area were raised and levelled (Fig 3).

The raised retaining-wall and its new south-eastern return, which was built using the new waterproof Roman Cement patented in 1797 (Kelsall 1989, 21), formed a 1.3m deep enclosure that appears to have been used to hold water. Water entered the feature along a brick drain through the top of the retaining-wall, the flow of water being controlled by an iron valve. Flow through the exit drain, found at the base of the pool's south-western wall, separated from the main pool by a brick silt-trap, was also controlled by an iron valve. The interior of the feature had been scoured clean of all deposits to the extent that the bases of the wall were exposed indicating occasional turbulent water flow. Backfill was found immediately over the last scouring event. The water level in the pool would have been controlled by adjusting both in-flowing and out-flowing drains allowing the selective removal of water, which had been cleared of silt and vegetation so as not to block outlet drains.

The feature was probably built by the military academic and author Lewis Lochie, between 1780 and 1815, who is known to have built military structures, or follies, in the grounds. The feature could have been the walled face of the angle of a counterscarp as in use by Vauban from the late 17th century to at least Napoleonic times (Hogg 1975, 65, 70). The water management arrangements would also be consistent with a military wet ditch, which would also require water management and control of silt build-up.

Three parallel NE–SW linear features found in evaluation Trench 11 may also represent mock military earthworks. These gravel filled trenches were spaced 7.25m apart; they had vertical sides and a flat base and measured 1.7m wide and 1.66m deep. A resistivity survey showed a network of linear anomalies both parallel and perpendicular to the features recorded in Trench 11 (Dean *et al* 1999).

Mid to late 19th century

By the late 1830s the main house, which was re-named Stanley Grove, was entered by a driveway from King's Road, where there was a lodge. The rectangular enclosures to the east were occupied by a house called Stanley Place and an exotic nursery with a large conservatory, run by a Mr Knight.[13]

In 1840 the property, comprising the house and 11 acres of grounds, was purchased by the National Society for Promoting the Education of the Poor and renamed St Mark's College for the training of teachers. At this time the grounds were laid out as parkland with many trees but there were also two kitchen gardens and three small meadows, which were all surrounded by a wall.[14] All previous archaeological features were abandoned and the general ground level raised.

THE FINDS

Chris Jarrett

The medieval pottery, which occurred in small quantities, may be indicative of agricultural activity. 17th-century pottery was also scarce but by the 18th century large assemblages start to occur, often indicating an accumulation over a period of time. By the latter half of the 18th century, the pottery might be expected to reflect its association with a high status property, but it showed conflicting evidence of socio-economic status. The fairly mundane assemblage contained few quality items and the Tin-glazed wares were often of a poor quality, perhaps indicating that the pottery assemblage derived from servants quarters. However, a glass item and the high occurrence of initialled tobacco pipe bowls may imply a degree of affluence. The early 19th-century deposits tended to show a greater degree of affluence in material culture. The pottery included fashionable items such as a Black Basalt teapot and a Wedgwood candlestick, while a transfer printed Pearl ware service of plates was identified. A Creamware plate with maker's stamp is of note as only higher quality items in this ware are usually marked. The wine bottles are most likely to originate from inhabitants of higher social status while the fragments of phials, presumably mostly medicinal, could have been used by any of the inhabitants.

CONCLUSIONS

The Quaternary deposits are typical of those associated with the Devensian Late Glacial and Early Holocene in the Lower Thames valley. The proximity to Counter's Creek, one of the 'lost rivers of London', and a possible palaeo-depositional relationship to it provide an early prehistoric interest at the site.

In the medieval period, the area of the excavated site was probably part of the open fields of Chelsea, ploughed as cultivation strips. The property was first united by Sir Thomas More in the 1520s, but continued as farmland, although bricks may have been manufactured on the site in the late 16th century. The site was probably laid out as formal gardens when Stanley House (originally known as Brickills) was first built in the late 1590s. The early terraces may have evolved from steps and hollows resulting from the quarrying of brickearth. Archaeological and cartographic evidence show that these terraces were certainly present by the early 18th century, and may have been made more complex in the middle years of the century.

The construction of mock fortifications, during Lewis Lochie's occupancy of the property (1780–1815) is likely to have removed or masked earlier structures and garden designs. A walled water feature, which partly incorporated an earlier terrace retaining-wall, may have been one of these military follies.

NOTES

[1] Beta Analytic Radiocarbon Dating Laboratory, Miami, Florida calibrated to 2 Sigma (95% probability): Beta 143076, 8830 ± 40 BP, 13C/12C ratio 27.1.

[2] Davies 1904, 37–8, 45–54; LPH xiv(1), 163, no. 403(57); xv, 541; BL Harley Roll L26.

[3] BL Harley MS 6853 f383; Harley Roll L26.

[4] PRO SC2/188/43 m1d.

[5] Map of Chelsea, surveyed 1664 by James Hamiilton, up-dated 1717.

[6] Davies 1904, 38, 39, 130; Faulkner 1829, i, 57; SoL iv 43–4.

[7] Faulkner 1829, i, 57; Beaver 1892, 153; Chelsea Society 1956, 27; SoL iv 43.

[8] SoL iv 44; Faulkner 1829, i, 58; Kings Road 1716, PRO MPE482, no. 33.

[9] SoL iv 44; Faulkner 1829, i, 59; Chelsea Society 1956, 27.

[10] Faulkner 1829, i, 59; Chelsea Society 1956, 27–8.

[11] LMA WCS/PR/39.

[12] Faulkner 1829, i, 60; SoL iv 44.

[13] Faulkner 1829, i, 61; LMA MDR/1839/6 no. 334; WCS/PR/84; PRO IR29/21/9 and IR30/21/9 nos 42, 43 and 49.
[14] *Illustrated London News* 4 March 1843, 158–9; SoL iv 44.

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LMA London Metropolitan Archives
LPH Letters and Papers of Henry VIII
OS Ordnance Survey
PRO Public Record Office
SoL London County Council Survey of London

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EXCAVATIONS AT 120–124 KING STREET, HAMMERSMITH

Ron Humphrey

With contributions by Frances Raymond and Nigel Jeffries

SUMMARY

An excavation in advance of development at 120–124 King Street, Hammersmith revealed two large, parallel ditches, which ran 5m apart for over 25m across the site and continued beyond its limits. The ditches were thought to be contemporary and pottery finds suggested that their origin was Late Bronze Age. These were longstanding landscape features as the middle and upper fills of the ditches contained Middle to Late Iron Age pottery. The ditches either served a defensive function or perhaps marked a major, potentially longstanding, landscape division. Associated settlement was suggested by the presence of three shallow Late Bronze Age pits and three postholes, which are imprecisely dated but probably also of this date. In addition, moderately large quantities of pottery and other finds of a domestic nature were recovered from the ditch fills.

Post-medieval features included a property boundary ditch that ran along the length of the site from the street frontage, building remains and numerous pits, reflecting intensive backyard activity from the 17th to the 20th century, associated with buildings either fronting or set back from King Street.

INTRODUCTION

The excavation at 120–124 King Street, Hammersmith, London W6, was conducted by AOC Archaeology Group, on behalf of BDL Hotels Ltd over three weeks in March and April 2000. The area of evaluation was defined as the areas where significant ground disturbance would take place as a result of the redevelopment, which resulted in the excavation of an irregular shaped area measuring approximately 665m^2.

The site was located on the north side of King Street (Fig 1). The area of excavation was set back from the street frontage, which was occupied by basemented buildings dating from the turn of the 20th century.

The plot of land immediately west of the development area at Albion Mews was subject to archaeological evaluation and watching brief by the Museum of London Archaeology Service in November 1996, January 1997, and March 1997 (5–15 Galena Road, Partridge 1998). A large ditch was revealed, which was thought to represent a linear boundary and was dated by pottery to the Middle to Late Iron Age. It ran east–west across the site, parallel to King Street, on an orientation that suggested that it would traverse the northern part of the proposed development area, should it continue. No evidence for the nature of settlement related to the boundary was revealed.

The development area lies on or close to the projected line of the Roman road that ran from London to Silchester, via settlements at Brentford and Staines. King Street shows a noticeable curve to the south at this point and it is possible that the Roman road may have kept to a straighter course to the north of King Street. No traces of the Roman road were discovered during the archaeological work at 5–15 Galena Road.

EXCAVATION RESULTS

Late prehistoric (*c.*1000 BC to AD 43)

The majority of the pottery collected from features of this phase is of Late Bronze Age date

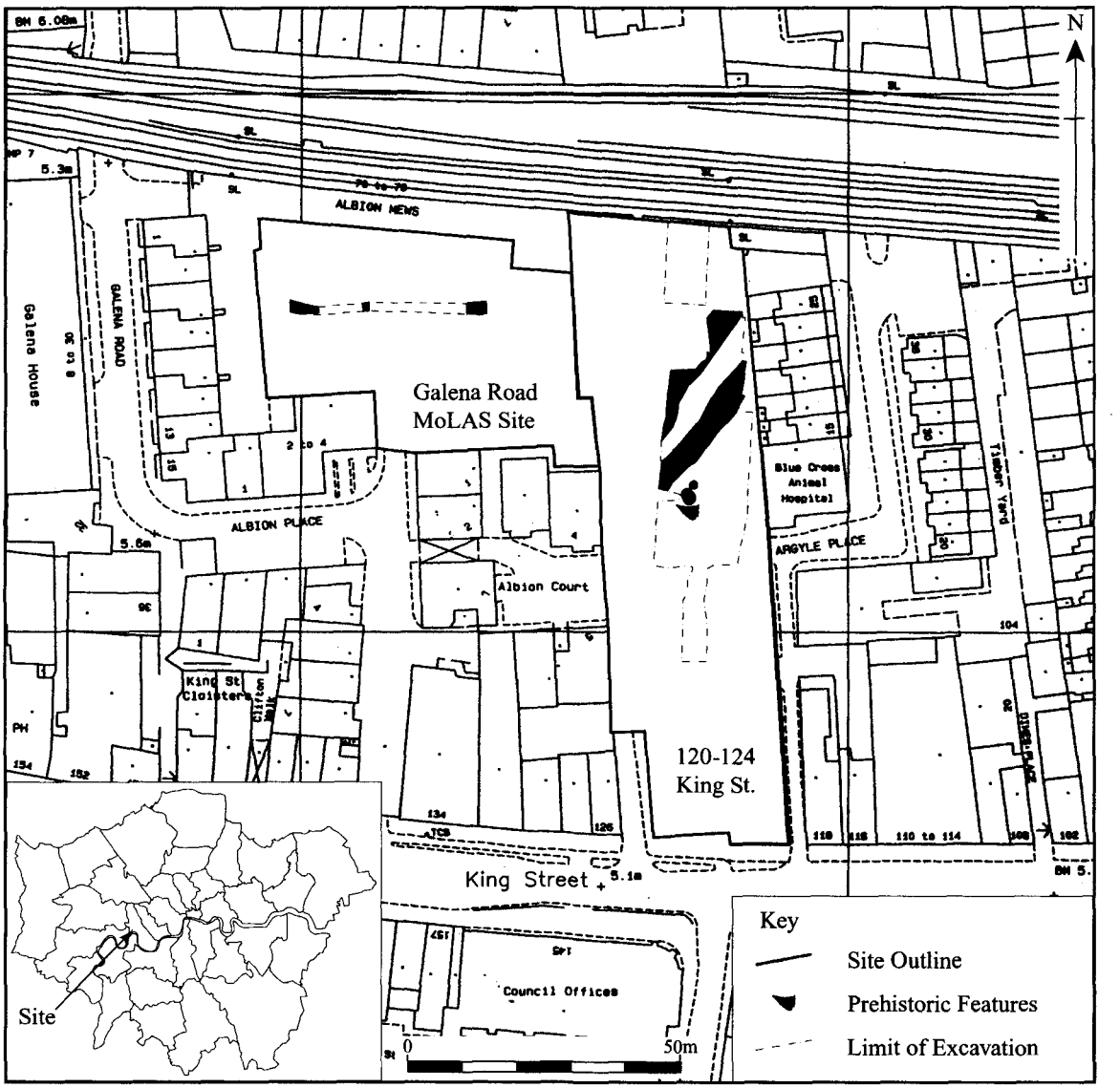

Fig 1. Site location

and may have been produced over a broad period of time between 1000 and 600/550 BC. The remainder can be assigned to the Middle and Late Iron Age (*c.*350 BC to AD 43). Two ditches, three pits, and three postholes have been dated to this period (Fig 2).

The two large ditches [1050/1063] and [1038/1043] ran parallel, 5m apart, for over 25m north-east to south-west across the site and beyond its limits. Both ditches were *c.*5m wide and 1.4m deep, with 45° sloping sides and wide, flat bases. Section 1 revealed a pronounced, deeper groove on the south-east side of the base of the north ditch (Fig 2). The ditches were filled with a succession of naturally accumulated silts containing a moderate quantity of pottery, fired clay fragments (loom weight fragments, daub, hearth lining), fire cracked flint, and occasional very small and fragmentary pieces of animal bone and metalworking slag. It seems probable that the ditches were contemporary and that they had an origin in the Late Bronze Age as the lowest dated fills contained Late Bronze Age pottery in relatively unabraded condition. These

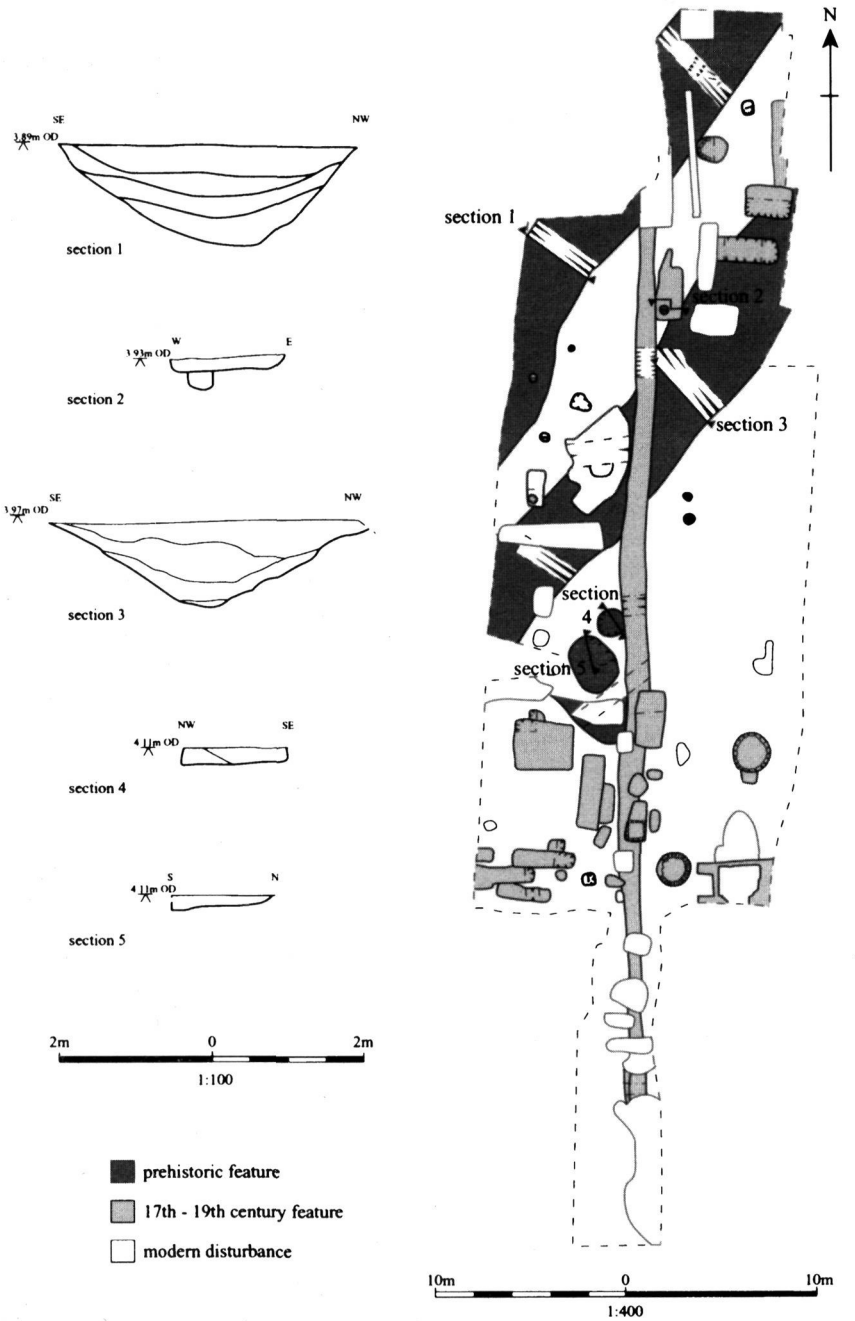

Fig 2. Plan and sections

assemblages may, however, be too small to provide reliable dating evidence, particularly as the middle and upper fills of both ditches also contained Middle and Late Iron Age pottery, and even a few sherds of Roman pottery (see late prehistoric pottery report). No recutting of the ditches was apparent in any of the excavated sections and it is likely that they remained as stable, partly silted, visible landscape features throughout these periods, during which time pottery and other finds, as well as residual material, was incorporated into the silts that

gradually filled them. Given the size of the ditches and their relative position to each other, they may be interpreted as having originally served a defensive function. Another possibility is that they marked a major, potentially long-standing, landscape division or droveway.

Three small, shallow pits [1013, 1015, 1105] were clustered together on the south-east side of the southern ditch. All had naturally accumulated silt fills, which contained a moderate quantity of Late Bronze Age pottery, fired clay (as above) and fire cracked flint, and very occasional, small fragments of animal bone. The pits contained sufficient quantities of pottery to date them to the late 9th or 8th century BC (see late prehistoric pottery report).

Three postholes [1021, 1065, 1067] were also recorded; one was located between the ditches, the other two were located 1m apart on the south-east side of the southern ditch. The fill of posthole [1021] contained two sherds of Late Bronze Age pottery, the other fills contained no finds but were of a similar nature to the dated prehistoric fills observed on site. It was not possible to reconstruct buildings or structures from the postholes but they serve to demonstrate that there was structural activity on site.

The presence of pits and postholes in association with the large ditches, together with the moderately large quantity of pottery and other finds of a domestic nature such as daub and loomweight fragments, suggests that the site was the location of a Late Bronze Age settlement, that demonstrates continuity into the Middle to Late Iron Age. At present, it is unclear whether the large ditches enclosed the settlement or whether they marked a landscape boundary or droveway.

Roman

No features were securely dated to this period. However, a few Roman pottery sherds were recovered from the upper fills of the large prehistoric ditches on the site. The sherds were all heavily abraded; the diagnostic sherds suggest a 1st-century date. Roman ceramic building material was recovered from a small number of post-medieval features, but it is unclear how far this had travelled prior to deposition.

Medieval

No features of medieval date were recorded on site, but a few sherds of medieval pottery were collected from post-medieval features. Some of the ceramic building material recovered from these features may be attributed to the late medieval or early post-medieval period.

Post-medieval

The earliest post-medieval feature appeared to be a property boundary ditch [1011] that ran north–south along the length of the site (Fig 2). This contained 16th- to 18th-century pottery, glass, clay pipe fragments, and animal bone, as well as some residual late medieval or earlier post-medieval pottery (15th- to 16th-century). A clay pipe bowl from the ditch was dated to 1680–1710.

Building remains recorded on the site included three brick-lined wells, a small brick cellar and a brick soakaway, all of 17th- to 18th-century date. Several 19th-century brick building foundations were also revealed.

The site contained numerous 18th- and 19th-century pits (Fig 2). Some of these were obviously rubbish pits, which contained good finds assemblages, but others may have been secondarily backfilled with debris after fulfilling another function. Three small postholes with post-medieval fills were also recorded.

FINDS

Late prehistoric pottery

Frances Raymond

Introduction

A small assemblage of late prehistoric pottery, comprising 471 sherds weighing 4.229kg, was recovered from the site. The majority of sherds are of Late Bronze Age date and could have been produced over a broad period of time between 1000 and 600/550 BC. Although much of this pottery is residual, the character and quantity of the material suggest that it is derived from nearby settlement. The assemblage also includes a small group of Middle to Late Iron

Age sherds, dating between approximately 350 BC and AD 43.

Methodology

The analysis of the pottery was carried out according to the guidelines of the Prehistoric Ceramics Research Group (PCRG 1997). Detailed records of fabric, form, decoration, surface treatment, colour, sherd size, condition, and food residues are available in the archive. For the purposes of this report, the fabrics have been amalgamated into general ware groups and, where possible, the Late Bronze Age forms have been keyed into the type series devised for Runnymede Bridge (Longley 1991). The featured sherds are mostly small, providing only limited information about vessel profiles. Furthermore, many are residual and in the absence of key groups or unusual forms have not been illustrated. All percentages quoted in the text are based on sherd number.

The Late Bronze Age pottery

General character and contextual associations

At least 72% (340 sherds, weighing 2931g, derived from a minimum of 34 vessels) of the prehistoric sherds date to the Late Bronze Age. Much of this pottery was found alongside Middle to Late Iron Age and early Roman ceramics in the upper fills of two ditches [1038/1043] and [1050/1063], where it was clearly residual. However, exclusively Late Bronze Age assemblages were recovered from the lower contexts within these same ditches and from three pits [1013, 1015, and 1105] and a posthole [1021]. Most of these groups are too small to be utilised as reliable dating evidence, particularly as up to 96% of the pottery in Middle Iron Age contexts is of Late Bronze Age date, suggesting that there is a high potential for the redeposition of earlier material on this site.

The only possible exceptions are two of the pits [1013] and [1015], which produced slightly larger numbers of sherds (between 28 and 32 fragments) and may be Late Bronze Age features. In each case, the assemblage is dominated by body fragments in variable condition, typical of material derived from household midden deposits. Part of a cabled or 'pie crust' rim and a fingertip decorated shoulder were found in pit [1013], while pit [1015] contained a carinated shoulder and a plain rim, revealing little about the vessel from which it was derived. The majority of sherds are made from the flint or flint and sand filled fabrics of Ware Groups 1 to 3 and in both assemblages the sandier wares of Group 3 predominate (86% of sherds in pit [1013]; and 59% of sherds in pit [1015]).

The precise phasing of this pottery to the earlier 'plain ware' or the later 'decorated' horizon of the Late Bronze Age is problematical. The forms represented are present in assemblages assigned to both stages in the Thames Valley, although fingertip impressed shoulders are largely a feature of the 'decorated' groups of ceramics, which seem to have emerged towards the end of the 9th or during the 8th century BC. The relatively high proportions of the sandier Group 3 fabrics in both pits may also point to this period. On sites in the Colne Valley area to the west, fabric contrasts have been tentatively attributed to a chronological trend: examples include Runnymede Bridge (Longley 1980; 1991), Petters Sports Field (O'Connell 1986), and Jewsons Yard, Uxbridge (Barclay 1995), where there seems to have been a shift away from the earlier coarse flint gritted wares, towards the increased production of sandier fabrics during the latter part of the Bronze Age.

The residual wares: forms and decoration

The number of featured sherds is relatively low and most are too fragmentary to provide evidence of vessel form. Enough survives, however, to confirm activity between approximately 800 and 600/550 BC, when 'decorated' assemblages were in current use. An earlier origin for some of the pottery during the preceding 'plain ware' horizon is also possible, but is difficult to demonstrate in the absence of securely stratified groups. Although some of the forms represented at King Street appear in 'plain ware' assemblages, they are also a feature of the 'decorated' horizon and cannot be closely dated once they are out of context.

The majority of diagnostic sherds are derived from Class I shouldered jars (as defined by Barrett 1980), which were in use throughout the Late Bronze Age. The more complete examples are from tripartite forms, including vessels similar to the Type 12 jars at Runnymede Bridge (Longley 1991). Where decoration occurs it is mostly confined to the shoulder and almost

exclusively comprises a single row of fingertip impressions. The position of these motifs suggests a date in the latter part of the Bronze Age between the late 9th and 7th centuries BC (*cf* Russell 1989). Rows of fingertip impressions also occur on the rim of one vessel and on three pinched-out neck or shoulder cordons. Similar cordons, but mostly applied, are a recognised feature of Late Bronze Age assemblages, occurring at Runnymede Bridge (Longley 1980; 1991), Petters Sports Field (O'Connell 1986), Stanwell (O'Connell 1990), Queen Mary's Hospital, Carshalton (Adkins & Needham 1985), and Caesar's Camp, Heathrow (Grimes & Close-Brooks 1993). Other forms of decoration represented at King Street include deep diagonal slashes on one shoulder and irregular pre-firing incised lines on a body sherd. This is an unusual motif, which has also been recorded at Stanwell, but on vessels with earlier Deverel Rimbury affinities (O'Connell 1990, 45, fig 28).

The assemblage additionally incorporates a few shoulders from carinated bowls and several sherds from vessels which were probably produced during the 7th or early 6th century BC. These were found in the upper fills of ditches [1038/1043] and [1050/1063] and include parts of two furrowed bowls and three body sherds decorated with deeply impressed geometric motifs. The more complex comprise swags in-filled with oval impressions and a zigzag motif composed of parallel lines bordered with rows of dots, which is reminiscent of a sherd from Petters Sports Field (O'Connell 1986, fig 54, no. 243).

Surface treatment

The sherds exhibit a wide range of surface treatments. Most of the flint-gritted wares of Groups 1 and 2 are either smoothed or crudely wiped, sometimes with traces of prominent vertical finger smearing. The sandier wares exhibit similar characteristics, but incorporate a higher proportion of burnished sherds, including one example with a red burnished surface coating typical of later 'decorated' assemblages. In general, oxidised colours predominate, ranging from light reddish yellows, through yellow/browns and red/browns, to dark brown, but greys and black are also represented. There are, in addition, a few bases with common to abundant (20–40%) flint grits or with the impressions of organic material on the exterior. Heavily flint-gritted bases have been noted in Late Bronze Age assemblages across southern England, with local examples recorded at Runnymede Bridge (Longley 1980), Petters Sports Field (O'Connell 1986), Queen Mary's Hospital, Carshalton (Adkins & Needham 1985), and Caesar's Camp, Heathrow (Grimes & Close-Brooks 1993). Although impressions of either grass or straw on base sherds occur during the Late Bronze Age in Wessex, they are seemingly less common in the Thames Valley. An example has been recorded at Petters Sports Field, where it was interpreted as the product of chance (O'Connell 1986).

Commentary on the fabrics

The Late Bronze Age wares are described in detail below. In very general terms, the fabric range at King Street is consistent with other Thames Valley Late Bronze Age ceramic groups. The assemblage is dominated by wares tempered with calcined flint or containing a mixture of sand and flint (Table 1, Ware Groups 1–4 and 6). These seem to have been the most commonly produced fabrics in the area and are in the majority at Runnymede Bridge (Longley 1980; 1991), Petters Sports Field (O'Connell 1986), Stanwell (O'Connell 1990), Weston Wood (Russell 1989), Jewson's Yard, Uxbridge (Barclay 1995), and Queen Mary's Hospital, Carshalton (Adkins & Needham 1985).

Shell-tempered fabrics are also represented at

Table 1. The relative proportions of pottery assigned to each ware group

Ware Group	Sherd No.	% No.	Sherd Wt	% Wt
Group 1	35	7.4	305	7.2
Group 2	126	26.8	1164	27.5
Group 3	165	35.0	1368	32.3
Group 4	2	0.4	8	0.2
Group 5	4	0.9	9	0.2
Group 6	2	0.4	5	0.1
Group 7	2	0.4	17	0.4
Group 8	29	6.2	323	7.6
Group 9	9	1.9	50	1.2
Group 10	44	9.4	462	10.9
Group 11	42	8.9	436	10.5
Group 12	10	2.1	77	1.8
Group 13	1	0.2	5	0.1
TOTALS	471	100.0	4229	100.0

King Street (Table 1, Ware Groups 5 and 7), but are in the minority. Similarly low proportions of shell-tempered sherds were recorded at Runnymede Bridge (Longley 1991), while shelly fabrics are a more prominent feature of the 'decorated' assemblage from Snowy Fielder Waye, Isleworth (Timby 1996). Although in this particular case most of the pottery was derived from a single feature (*ibid*), so that the relative proportions of wares are not necessarily representative of more general patterns in the area.

The furrowed bowls from King Street are made from micaceous sandy wares (Ware Group 10), while the sherds decorated with complex geometric motifs occur in sandy fabrics containing flint (Ware Group 3) or shell (Ware Group 8). This pottery is likely to have been made during the 7th or 6th centuries BC and its character is entirely consistent with the suggested trend towards the production of a new fabric repertoire by the end of the Bronze Age (*cf* Longley 1980; 1991; O'Connell 1986).

The Middle to Late Iron Age pottery

General character and contextual associations

Only 12% of the prehistoric pottery (56 sherds, weighing 571g, derived from a minimum of 12 vessels) can be attributed to the Middle or Late Iron Age. With the exception of a single Late Iron Age sherd from a post-medieval boundary, all of this material was derived from the upper and central fills of two ditches [1038/1043] and [1050/1063]. The pottery from the upper fills ([1044] and [1045]) of ditch [1038/1043] is certainly residual, since it occurred alongside heavily abraded Roman ceramics dating to the second half of the 1st century AD.

Most of the Iron Age pottery is fragmentary in character and there are too few featured sherds to allow for refined phasing, although the diagnostic fragments are exclusively from Middle Iron Age vessels in current use between *c.*350 and 100/50 BC. Potentially Late Iron Age material is confined to a few body sherds made from Ware Group 12, also found in the upper and central fills of ditches [1038/1043] and [1050/1063]. The presence of these sherds either indicates that the assemblage is transitional between the Middle and Late Iron Age or suggests that the Middle Iron Age pottery is residual. Unfortunately, the ceramic group is too small and fragmentary to provide the evidence necessary to resolve such uncertainties.

Forms and decoration

The only relatively complete vessel is part of a hemispherical bowl, represented by 13 well-preserved sherds weighing 208g, found in the central fill [1035] of ditch [1038/1043]. The vessel is made from a sandy fabric (Ware Group 11) and its upper part is decorated with a shallow-tooled zigzag motif, bordered at the top and bottom by a single horizontal line (Fig 3). Bowls of this type were produced throughout the Middle Iron Age. This particular vessel is either a late example or is residual, since it was found in the same context as a few sherds of Late Iron Age grog-tempered ware.

The other featured sherds include two small sandy rims from a high-shouldered jar and a storage jar (Ware Group 11), and two rims from similar vessels made from shelly fabrics (Ware Group 8). A body fragment decorated with a shallow tooled geometric motif in a micaceous sandy ware (Ware Group 10) is also present.

Commentary on the fabrics and surface treatment

75% of the Iron Age sherds are made from the Group 11 sandy wares (see Table 1). These are either smoothed or burnished and the majority are black to dark grey in colour. Much of the rest of the pottery is made from the Group 12 wares which contain either grog or clay pellets. Shell- and sand-tempered wares (Group 8) and

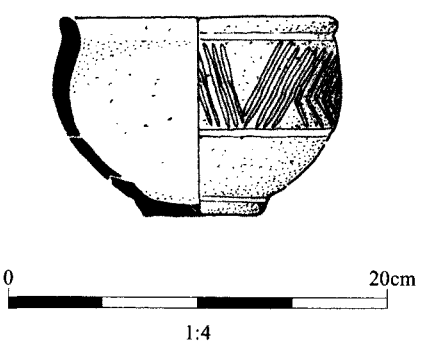

Fig 3. Middle Iron Age bowl, Context [1035]

micaceous sandy wares (Group 10) similar to fabrics current during the Late Bronze Age form a minor component of the assemblage.

The fabrics

Thirteen general ware groups have been identified (Table 1) and are described below. Groups 1–7 date exclusively to the Late Bronze Age, while Groups 11–12 were produced during the Middle to Late Iron Age. Groups 8 and 10 recur during both periods and can only be assigned to a specific phase where diagnostic sherds are present. Groups 9 and 13 are represented by body fragments derived from contexts with mixed period assemblages and cannot be dated closely.

Group 1: hard flint-tempered wares. These fabrics date to the Late Bronze Age and are tempered exclusively or predominantly with calcined flint ranging up to 4 or 6mm in size. The flint in the Group 1 wares is either very common (30%) or moderate (10–15%). All sherds with moderate quantities of flint tempering also contain sparse (3–7%) clay pellets, while most examples (75%) have similar quantities of medium sized sand. Rare particles of very fine mica are present in the sand-free fragments. Apart from a single sherd decorated with a fingertip impression, all of the Group 1 wares are body fragments.

Group 2: hard flint- and sand-filled wares. These wares are of Late Bronze Age date and are characterised by similar proportions of burnt flint and sand, or contain slightly more sand than flint. The group includes a range of fabrics with flint and sand in variable quantities from sparse (3–7%) to very common (20–25%). The flint in 77% of the sherds assigned to Group 2 is very coarse with a size range of up to 5 or 7mm, while it ranges up to 1.5 or 3mm in the remainder. Contrasts in the character of the sand may indicate the exploitation of two different clay sources. 75% of the sherds contain a slightly micaceous very fine to medium sub-angular sand, while 25% include a medium to coarse or very coarse sub-rounded sand with no mica. Rare to sparse (1–7%) iron minerals are the only other inclusion type noted in the Group 2 fabrics. All of the featured sherds are likely to have been derived from shouldered jars. In most cases the fragments are too small to provide an indication of the vessel profile, but the more complete examples are from tripartite forms including examples comparable to the Type 12 jars at Runnymede Bridge (Longley 1991).

Group 3: sandy wares with flint. The Group 3 wares date to the Late Bronze Age and in all cases sand is the predominant inclusion type. Calcined flint is also present, but in lower proportions (10 to 25% less than the sand). The sand is common to abundant (20–50%) in 94% of the sherds and moderate in the remainder, while the flint is sparse in 64% of the sherds and moderate in the other 36%. 43% of the pottery assigned to Group 3 contains very fine to medium sand, and 56% includes medium to very coarse sand. Apart from one exception, where very coarse flint of up to 11mm occurs, none of the flint exceeds 4mm and there is a greater proportion of sherds with flint of up to 1.5 or 3mm than in the Group 2 wares (56% as opposed to 23%). Other non-plastics are present in rare to sparse amounts (1–7%) in some of the fabrics, including clay pellets, iron minerals, mica, and linear voids left by organic material. The featured sherds are derived from different vessel types including shouldered jars and carinated bowls.

Group 4: soft glauconitic sandy ware with flint. This ware dates to the Late Bronze Age and contains moderate quantities (10–15%) of both fine to medium sand and glauconite, which has been altered to limonite by heating. Sparse amounts (3–7%) of crushed burnt flint up to 2mm in size are also present.

Group 5: soft shell- and flint-tempered ware. Although there are no featured sherds from the site, this fabric occurs in pit [1013]. The ware contains similar sparse amounts (3–7%) of shell (surviving as voids) and calcined flint. The shell measures up to 2mm and the flint is up to 4mm.

Group 6: vesicular wares with flint. The occurrence of a sherd from this ware group in pit [1015] suggests that it is of Late Bronze Age date. The fabrics are characterised by sparse flint (3–7%) up to 4mm in size, and abundant (40–50%) sub-rounded voids of up to 1mm, which may be the result of misfiring or refiring. Sparse (3–7%) medium sand is also present in one of the sherds.

Group 7: soft shell-tempered ware. This fabric dates to the Late Bronze Age and is tempered exclusively with common quantities (20–25%) of shell up to 2mm in size (surviving as a series of voids).

Group 8: shell- and sand-filled wares. These wares occur in both the Late Bronze Age and the Middle Iron Age and contain variable proportions of both shell (surviving as voids) and sand. The shell occurs in greater quantities than the sand in 85% of the sherds. These have moderate to common quantities (10–25%) of shell measuring up to 5mm, alongside sparse to moderate amounts (3–15%) of a medium to coarse slightly micaceous sand. The remaining 15% of the Group 8 sherds contain common (20–25%) very fine to medium sand and sparse (3–7%) shell with a size range of up to 5mm. The diagnostic sherds include a Late Bronze Age body sherd with deeply impressed swags in-filled with oval stab marks, a rim from a Middle Iron Age storage jar, and a Middle Iron Age high shouldered jar rim.

Group 9: hard sandy vesicular ware. This fabric cannot be dated closely, since none of the sherds are featured and all are from deposits containing both Late Bronze Age and Middle to Late Iron Age pottery. The ware contains moderate quantities (10–15%) of both fine to medium sand and rounded to sub-rounded voids up to 3mm in size, which may represent calcareous inclusions.

Group 10: micaceous sandy wares. These wares occur in both the Late Bronze Age and the Middle Iron Age and all are filled with a slightly micaceous, sub-angular sand. In 98% of the sherds this is either very common or abundant (30–50%) and is sparse (3–7%) in the remainder. The sand is very fine to fine in 66% of Group 10 pottery, and fine to medium in the remaining 34%. Sparse iron minerals are also present in 27% of the sherds. There are only four featured fragments represented including three Late Bronze Age examples and one of Middle Iron Age date. The Late Bronze Age sherds include the shoulders of two furrowed bowls; while the Middle Iron Age example is decorated with shallow tooled geometric motifs.

Group 11: hard sandy wares. These fabrics date to the Middle Iron Age and contain common amounts (20–25%) of sand, which is either medium to coarse, or medium to very coarse. They were used for a range of vessels including high shouldered jars, storage jars, and hemispherical bowls.

Group 12: wares filled with sand and grog or clay pellets. These fabrics date to the Middle or Late Iron Age and contain sparse to moderate amounts (3–15%) both of fine to medium sand and grog or clay pellets with a size range of up to 3mm. The grog-tempered ware also contains rare particles of mica, flint, and quartzite.

Group 13: organic-tempered ware. This fabric is represented by a single body sherd, which cannot be dated closely, since it is derived from a deposit containing both Late Bronze Age and Middle Iron Age pottery. The ware contains moderate amounts (10–15%) of organic tempering, now visible as a series of linear voids, and sparse quantities (3–7%) of fine to coarse sand.

Post-Roman pottery

Nigel Jeffries

Introduction

The post-Roman pottery assemblage consists of 406 sherds from up to 286 vessels. Ten of these are residual medieval sherds but the majority of the pottery dates between the late 16th and the early 19th century. The pottery indicates that most of the features were filled between *c.*1800 and 1850.

Fabric and forms

The complete range of fabrics and forms recovered is listed in the site archive. The stonewares found consist of a variety of English wares (Black Basalt, Blue Dry-Bodied, English, Midlands Purple, Nottingham and Staffordshire White Salt-Glazed) and Rhenish made fabrics (Frechen and Westerwald-type), some of which (Black Basalt, Nottingham and Staffordshire White Salt-Glazed wares) were used as teawares (Fig 4, No. 1). The other stoneware fabrics were used for beverage consumption or storage (bottles, jars, mugs, and tankards) and include two near complete black leading bottles. The earthenwares consist of the white (Brown-glazed Border ware and both Green and Yellow-glazed Surrey/Hampshire Border ware) and the later, more frequent, red-fired products of the Surrey/Hampshire Border ware industry (Brown and Green-glazed Red Border ware and Red Border ware with slip trailed decoration). Border wares served a variety of mundane functions and were

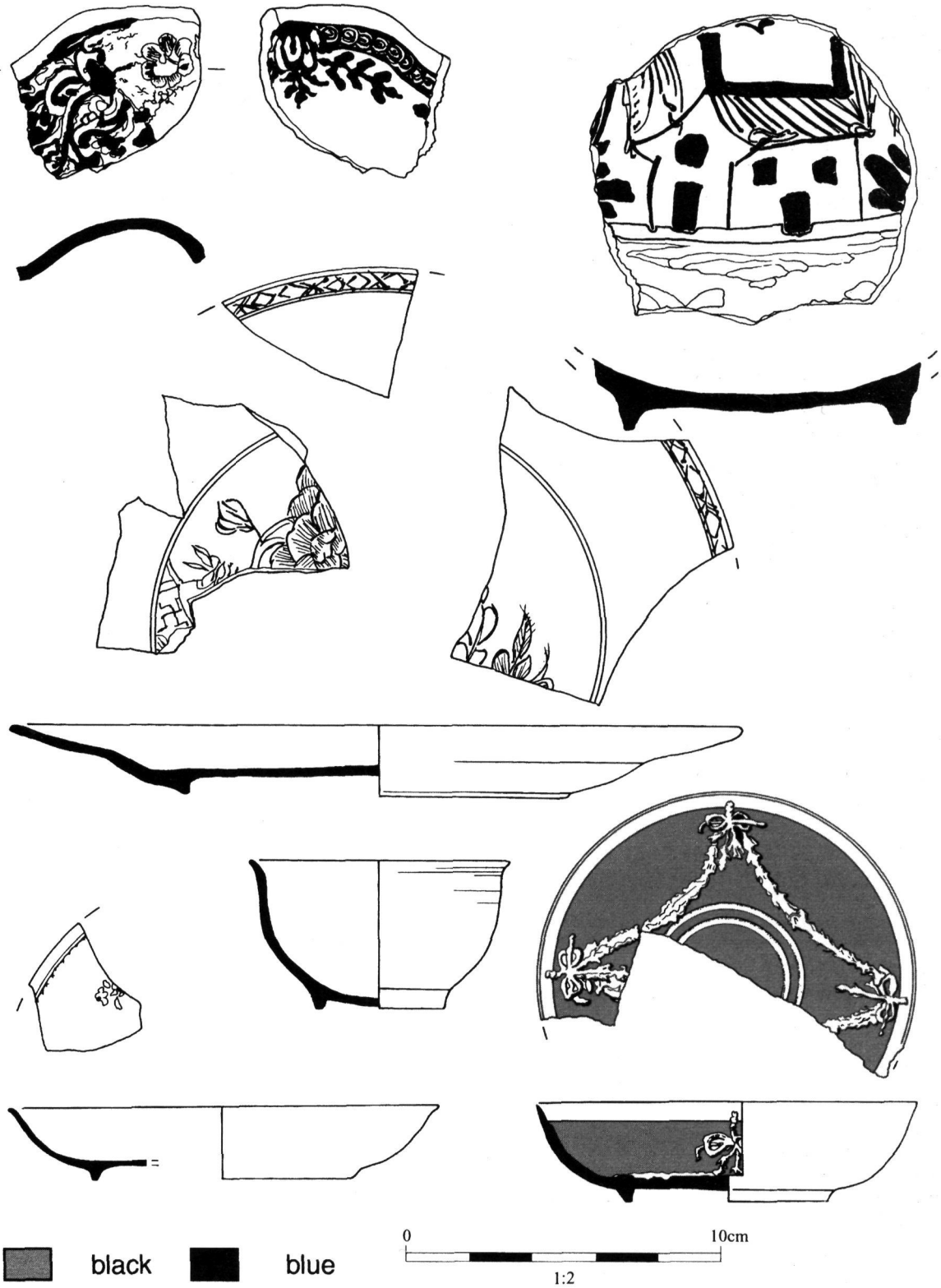

Fig 4. Post-medieval pottery

mainly found as chamber pots, with a smaller group of rounded and handled bowls and dishes serving as food distribution and kitchen vessels. The ubiquitous London area red earthenware (Post-medieval Earthenware) was also identified. In common with Border ware, this was produced in a range of forms that served a wide range of domestic functions, and was found primarily as kitchen vessels, but also in a small range of flowerpots.

The functions of the earthenwares contrast with the industrial finewares. Amongst the largest group of finewares is Creamware found in a limited range of scalloped edged plates, meat dishes, jugs, and chamber pots. Some of these vessels have the butter coloured glaze applied that is characteristic of Creamware produced around the mid 18th century. Also found was a variety of different and finely decorated Creamware (Blue-painted decorated, Banded, Marbled slip decorated, and Tortoiseshell decorated) identified in a range of rounded bowls, ointment pots, and small, cylindrical jars. The rounded bowls may have served as drinking vessels that could be used either for the consumption of tea, coffee, or punch. Large quantities of Pearlware (including transfer-printed and painted Pearlware) also characterise the assemblage, being found as plates, tea bowls, and dishes (Fig 4, No. 2). The transfer-printed designs applied are in the usual range of Chinese inspired landscapes, and include the ubiquitous Willow pattern design. The painted Pearlwares are decorated in the Chinese landscape 'tree-fence-post-fence-house' style and form a small set of teacups and saucers. The Pearlware also includes a range of plates with blue and green feather shell-edged rims. A small group of European (English Porcelain, Painted English Porcelain, and Underglaze Transfer English Porcelain) and Chinese porcelain (Chinese Porcelain and Famille Verte Chinese Porcelain) was found in a small range of teaware vessels (Fig 4, Nos 3 & 4). None of the English porcelain is seemingly derived from a matching set and seems to have been discarded in part, although these vessels were likely to be well looked after and subject to less use; subsequently they are less common in the archaeological record. Chinese blue and white porcelain is the main type of porcelain in the assemblage and includes the profiles from a small number of plates (therefore used as dining pieces) and also a matching teacup and saucer.

Discussion

Two main groups of pottery, from the single backfills of pits [1019] and [1070], provide the main focus for the wider discussion of the post-medieval assemblage. Both groups appear to have been discarded between 1807 and 1850. The first date is derived from the advent of stippling on transfer-printed wares, and the last reflects the considered date for the end of production of Pearlware. The small amount of tin-glazed ware found also attests to a later 18th- to early 19th-century date for the discarding of these groups (Fig 4, Nos 5 & 6). By this date tin-glazed ware was becoming unfashionable and was increasingly replaced by creamware and pearlware. The identification of cross-joining sherds from the same Green-glazed Red Border ware chamber pot in both pits suggests that these features were simultaneously backfilled with pottery from the same property.

The pits that contained these groups were dug in the backyards of the group of buildings identified either on, or set back from, the King Street frontage shown on John Roque's map of 1746 (Fig 5). The closely datable nature of the pottery from these pits, together with the high proportion of vessels that have complete profiles or could be reconstructed as substantially complete, and the range and quality of the pottery make them interesting groups. Utilitarian earthenwares and stonewares used for baking, cooking, and storage were discarded alongside wine and medicine bottles, ointment pots, tea and table wares, and chamber pots, indicating that these pits received rubbish from different elements of the household. The pit fills may represent a policy of deliberate backfilling as part of a wider abandonment or rebuilding of the structures in the area and suggest that the backyard and garden areas of houses were perceived as acceptable areas for the digging of pits for household rubbish.

DISCUSSION

Late Bronze Age

Archaeology of this period had not been anticipated, but is potentially, as a new discovery for the area, of the greatest significance. Archaeological discoveries over the last 25 years have identified the Lower Thames Valley as an

intensively settled landscape in the Late Bronze Age period (Merriman 2000), with traces of circular post-built houses set among extensive field systems linked by trackways (Brown & Cotton 2000). Until now, no Late Bronze Age archaeological remains have been recorded in the London Borough of Hammersmith and Fulham.

The ditches recorded at the King Street site and the earthwork (long since destroyed by ploughing) resultant from the spoil created would have been a substantial landscape feature. The nature of this feature is uncertain at present as only a relatively small area of the ditches and surrounding area was excavated, but it does appear to have an origin in the Late Bronze Age, probably within the period between the late 9th and 7th centuries BC.

The size of the ditches may suggest that they formed part of a defended enclosure. Large circular enclosures (ring-forts) are characteristic of the Late Bronze Age period. Examples are known from the Greater London region, such as Queen Mary's Hospital, Carshalton (Adkins & Needham 1985) and a double-ditched example at Mayfield Farm, which may date to the Late Bronze Age (Lewis 2000), and more commonly from Essex, such as Springfield Lyons (Buckley & Hedges 1987). These sites have been interpreted as important foci within the Late Bronze Age and probably represent particular enclosed elements within much larger settlement activity, formerly described as extramural (Needham 1991). The size of the King Street ditches is consistent with the ditch of the ring-fort at Carshalton (Adkins & Needham 1985) but, as over 25m of the King Street ditches was exposed and no appreciable curve was detected, it seems unlikely that they formed part of a circular ring-fort enclosure. This does not necessarily mean that the ditches do not form part of an enclosure; an enclosure in the Lower Thames area, which may be contemporary and which has a quadrangular layout, was recorded at Heathrow, Greater London (Grimes 1960). A double-ditched sub-rectangular Late Bronze Age enclosure at Lofts Farm, Essex (Brown 1988) may be a good parallel for the King Street site, although the ditches at Lofts Farm were smaller and closer together, just 1.2–2m apart. The enclosure was a settlement with a single central roundhouse and a rectangular structure in one corner.

It is also possible that the ditches delineated a major trackway, droveway, or land division. A feature of this type was excavated in Holloway Lane, Hillingdon (Cotton *et al* 1986), where over 400m of a sinuous east–west aligned feature, consisting of two parallel ditches some 5m apart, was revealed. The profile of the ditches was very similar to the King Street ditches, though the Holloway Lane ditches were slightly smaller. The Holloway Lane ditches were also considered to have been accompanied by high banks that had been destroyed by ploughing. This feature was probably used for driving flocks and herds between neighbouring farmsteads, although no farmsteads were located within the area available for excavation. The pottery from the Holloway Lane ditches indicated an origin in the Late Bronze Age and use through the Iron Age and even that one of the ditches may have been visible as a grass-grown depression in the Roman period. This dating and longevity is mirrored by the King Street ditches.

It is uncertain exactly where the Late Bronze Age settlement was located in relation to the King Street ditches. Late Bronze Age pits were located to the south of the ditches, as were two of the three postholes (the other was located between the ditches). Whether the ditches were part of an enclosure or a major trackway, droveway, or land division, associated settlement would be expected and is suggested by these peripheral features and the quantity and character of the finds within the ditches. The nature of the settlement is not well elucidated by the archaeological evidence. The site would have been favourably located close to the Thames (which would have been closer than at present, due to the gradual reclamation of marshy land), in an area of broad river valley terraces and possibly an unwooded, farmed landscape. Riverfront settlements are also characteristic of the Late Bronze Age period of the Lower Thames region (Merriman 2000). These sites are sometimes located at the confluence of the Thames and a tributary, for example the Runnymede-Petters complex (Needham 1991). Outside London at Reading Business Park, eight settlement foci were found within six square kilometres at the confluence of the Kennet and the Thames. Excavation here revealed post-built roundhouses, four- and six-post structures, pits, ponds, wells, fences, and ditches (Moore & Jennings 1992). The King Street site is also located close to a tributary: the Stamford Brook/The Creek joins the Thames just to the east of the site. In 1936

this was filled in and the water channelled through a culvert (Fulham and Hammersmith Historical Society (FHHS) 1965).

A large quantity of Late Bronze Age metalwork has been recovered from the Thames, much through dredging during the 19th and early 20th century (Brown & Cotton 2000). The King Street site contributes to providing a context for this material. Further archaeological work will hopefully be able to expand the knowledge of the Late Bronze Age of the Hammersmith area. It will be particularly important to ascertain the nature of the settlement at King Street, the economy of the site, and how it may have functioned within the wider landscape as, crucially, at present there is not enough evidence to really understand the primary function of the large ditches.

Iron Age

Pottery and occupation debris within the large ditch fills suggest that the two large ditches were still extant through the Iron Age and that settlement continued into the Middle to Late Iron Age, though the focus of activity may have shifted during this time as no features dated solely to these periods were recorded on site. The ditch dated as Middle to Late Iron Age, recorded by MoLAS at 5–15 Galena Road (Partridge 1998), did not extend into the King Street site. This would suggest that it either terminated or turned sharply to the north or south before it reached the site. Although no structural features of Iron Age date were recorded on the King Street site, the presence of Middle to Late Iron Age occupation debris within the large ditches suggests that structures must have existed in close proximity. Therefore, whilst the Galena Road ditch itself may still be either a landscape division, such as a field boundary, or part of a settlement enclosure, there now exists clear evidence that a local Iron Age settlement existed. The small quantity of animal bone collected from the Middle to Late Iron Age fills of the ditch was very fragmentary and suggests little more than cow was part of the diet and economy of this settlement.

Roman

It is probable that the large ditches were still a slight landscape feature in the Roman period as Roman sherds were incorporated into the upper fills, probably as a result of manuring and ploughing during the Roman period. It is reasonable to assume that if there had been Roman settlement in the vicinity of the site, then greater quantities of Roman finds would have been recovered.

No evidence for the Roman road or any other roadside activity other than agriculture north of King Street was recorded on the site. By the Roman period, the two large ditches were heavily silted. It is probable that any earthwork associated with the ditches would have been denuded by this time as well. It seems unlikely therefore that the ditches would have presented a significant enough landscape feature to cause a divergence of the Roman road. If the Late Iron Age settlement here had some influence in a diversion of this route to the south of its projected straight line course, then it was probably a lot more substantial than has been revealed to date.

Medieval

King Street follows the medieval road from Brentford to London. There may have been some settlement along this road but the few residual medieval sherds that were recovered suggest that the King Street site was within agricultural land during the medieval period.

Post-medieval

The hamlet of Hammersmith gradually expanded in the post-medieval period, as indicated by the building of a chapel in Hammersmith in about 1624, which residents would have attended instead of the parish church in Fulham (FHHS 1965). Throughout the whole of the 1640s and 1650s, Hammersmith and its neighbourhood were in the forefront of the Civil War and Cromwell and other important officers were quartered here for a while (FHHS 1965). When the Commonwealth was over and the King was restored, Hammersmith became a favourite area for country residences. By 1700 it was expanding fast and was a noted stopping point for travellers on roads leading west from London. King Street received its name in 1794, having previously been known as the turnpike road to Brentford (FHHS 1965). The 17th- to 19th-century remains on site reflect general backyard activity associated

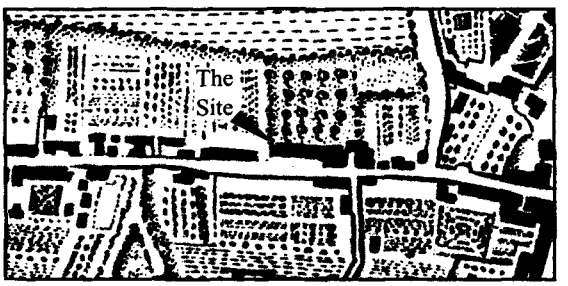

Fig 5. Roque's map of 1745

with buildings either fronting King Street or set back from this frontage.

The site underwent much change during the post-medieval period. During the 18th and into the 19th centuries, the area was well known for market gardening and nurseries, whose success was due to the close proximity of the area to London. The Hammersmith market gardener would have taken produce into London by cart in the morning, returning with a cartload of manure in the evening. The mid 18th-century John Roque map (Fig 5) indicates that the site street frontage was fairly heavily built-up, with more open gardens and orchards behind, and it is probable that the site was, at least in part, the location of a small market garden during this period. The early boundary ditch described above may represent one of the boundaries shown on the map, but the scale of the map and the potential for even small inaccuracies makes this impossible to prove. A very similar picture is shown on John Salter's map of Hammersmith (1830). By the 19th century the frontage of King Street consisted mainly of commercial properties: Piggot's Directory (1839) lists many different trades working along King Street, for example James Cromwell, Brewer; Thomas Miller, coach builder; Richard Thomas, comb maker; Wright and Collick, varnish makers.

It is probable that the early 19th-century rubbish pits contained everyday debris from the household and commercial properties that occupied the site at that time.

Roberts' map of the Parish of Hammersmith (1853) and a map of the London Suburbs (1860) show the site with a built up frontage and open area to the rear. The 1860 map names the Plough public house as one of the buildings fronting the site. The Hammersmith Directory of 1860 lists:

King Street	Tenant or Owner	Landuse
120	Seldon and Beency	Furnishing, Ironmongers
122	John Hardwick	Plough & Harrow PH
124	Henry C Gibson	Smith

The First Edition Ordnance Survey map of 1871 shows that by this time buildings had been added to the site to the rear of the street frontage and the railway line that forms the rear site boundary had been constructed. The Hammersmith Directory of 1872 lists:

King Street	Tenant or Owner	Landuse
120	Charles Doe	Confectioner
122	James Seldon	Ironmonger, Stone and Kitchen Range Manufacturer
122	Robert Blade	Plough & Harrow PH
124	Thomas William Ayres	Furniture Dealers

The Second Edition Ordnance Survey map (1897) shows the site to be almost completely built on. The public house is still extant at this date but the site frontage was rebuilt around the turn of the century.

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EXCAVATIONS AT CANON'S CORNER, BARNET, MIDDLESEX

Alex Smith

With contributions by Leigh Allen, Edward Biddulph, Paul Booth, Bethan Charles, Kate Cramp, Ruth Pelling, Sue Pringle and Ruth Shaffrey

SUMMARY

Excavation of a small area at the base of Brockley Hill revealed a section of Watling Street Roman road and its eastern roadside ditch, together with a series of associated ditches, gullies, and postholes. Some of these ditches may have served as drainage channels, while others are more enigmatic and could represent enclosure boundaries. Finds indicate activity of a non-domestic nature, commencing in the later part of the 2nd century AD, when the pottery industry on the upper slopes of Brockley Hill had largely ceased. Most of the pottery was probably dumped at Canon's Corner from other sites during the later Roman period. The location of the road section to the east of the modern A5 suggests that it swung over from the west towards the bottom of the hill, although it is quite possible that this part represents a widening of the road in the 3rd to 4th century AD.

INTRODUCTION

In March 2001, Oxford Archaeology (then Oxford Archaeological Unit, OAU) were appointed by the National Grid Company plc to excavate an area of approximately 940 sq.m, prior to the sinking of a shaft and construction of a head house and access road. The site was in a field to the north of Canon's Corner roundabout (NGR TQ 1830 9290), adjacent to Watling Street Roman road (the modern A5), and near to excavations carried out by Wessex Archaeology (WA) in 1997 (Fig 1).

The brief was to investigate, characterise and record any archaeological evidence which would be destroyed by the development. In particular, it was proposed to investigate any roadside ditches or other features and deposits relating to Watling Street, and to clarify the nature of the Roman road and possibly its subsequent development as a major route. It was also the intention to look at evidence for the Roman site of *Sulloniacae* or possible roadside ribbon development associated with the settlement.

GEOLOGY AND TOPOGRAPHY

The area of excavation lies towards the base of Brockley Hill. The ground falls very gently from south-west to north-east, with an average level between 75 and 80m above Ordnance Datum. The underlying geology is London Clay, with low permeability ensuring rapid flooding in certain conditions.

ARCHAEOLOGICAL BACKGROUND

Archaeological investigations have been carried out on numerous occasions along the line of the A5 road running up Brockley Hill (Fig 2). The principal objectives of most of these excavations were to locate and investigate the Roman settlement of *Sulloniacae*, mentioned in the Antonine Itinerary as being 12 miles from London and 9 miles from Verulamium, and to locate the exact course of the Watling Street Roman road. Despite the intensity of archaeological investigation, these two objectives are far from being completely resolved, although important evidence

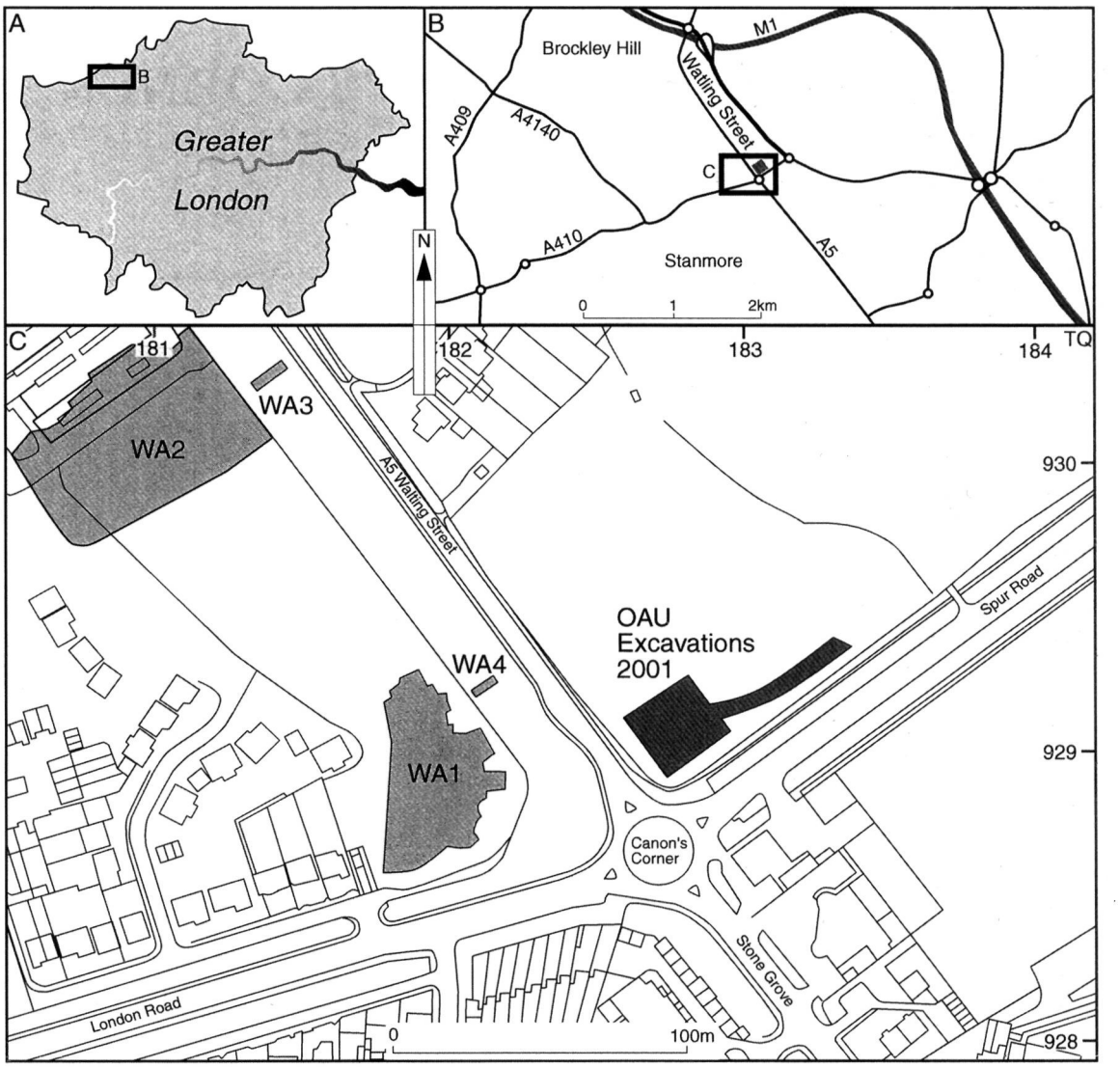

Fig 1. Site location showing OAU excavation in relation to previous Wessex Archaeology excavations

for the nationally important Verulamium region pottery industry (later 1st to mid 2nd century AD) has been gained, with many kiln sites being discovered on the upper slopes of Brockley Hill (Castle 1976; Tyers 1998; Fig 2, Areas 1–3). Roman Watling Street has been traced for much of its length, lying on the western side of the modern A5, a line confirmed by excavations in 1995 (Bowsher 1995; Fig 2, Area 5). However, there is still some dispute as to the line of the road towards the base of Brockley Hill, where the 2001 OAU excavation lay (see discussion below). Other archaeological features in the area include two late 1st- to early 2nd-century cremation burials north of Piper's Green Lane found in 1954 (Suggett 1958; Fig 2, Area 4), and a linear earthwork running through Pear Wood called Grims Ditch (SAM 120), thought to have been a possible 5th-century territorial boundary between the sub-Roman populations of London and Verulamium (Castle 1975, 275). Much closer to the Canon's Corner site were excavations carried out by Wessex Archaeology in 1997 (McKinley 1998; Figs 1–2, Area 6), which revealed a series of ponds, along with spreads of dumped masonry and ceramic material. It was suggested as a

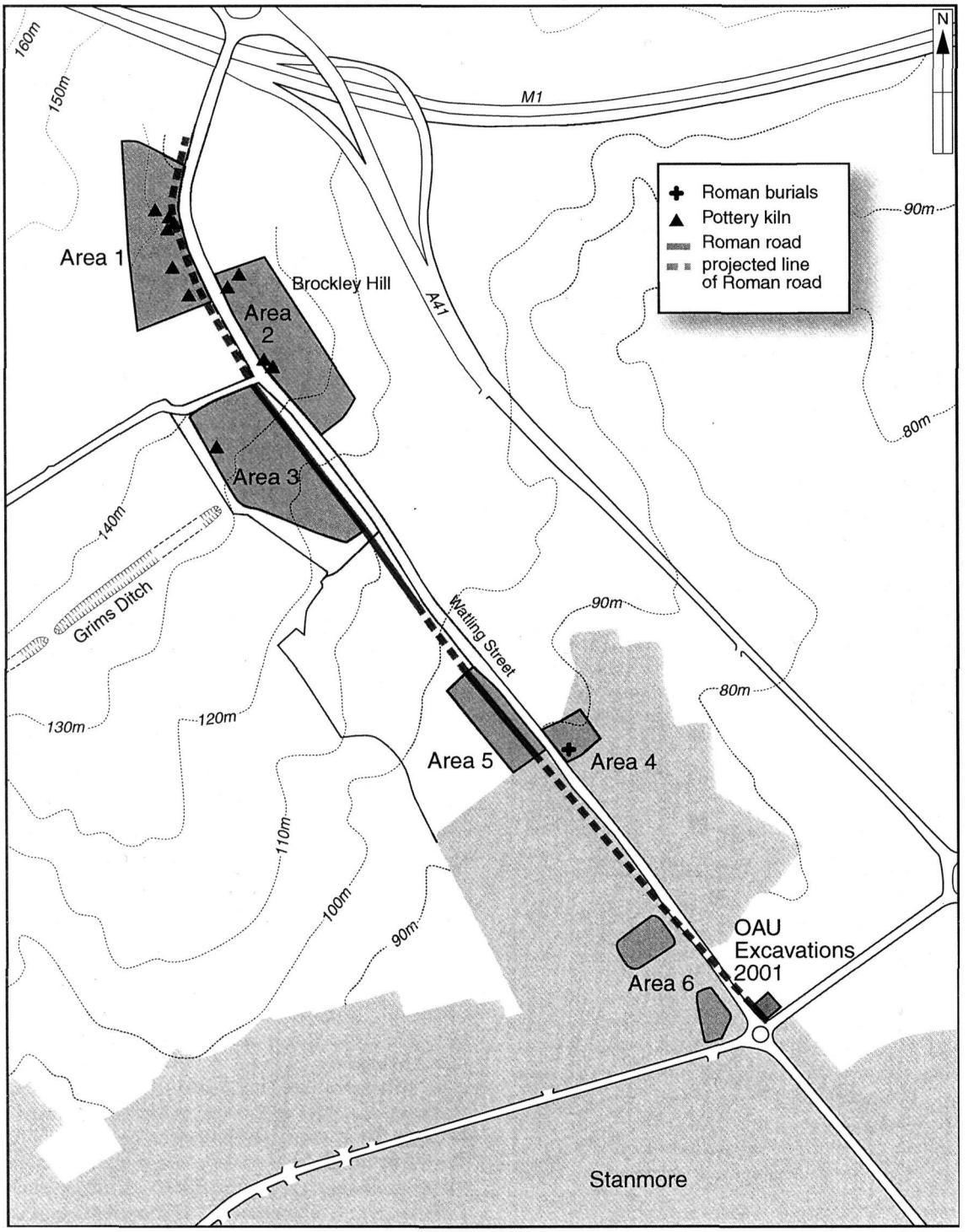

Fig 2. Main areas of excavation and principal archaeological features along the route of Watling Street at Brockley Hill (after McKinley 1998, Fig 2, with additions)

possible Roman industrial site and rest station on the west side of Watling Street, although the features were somewhat enigmatic.

ARCHAEOLOGICAL DESCRIPTION

The principal archaeological features of the Canon's Corner excavation are described below and are marked on Fig 3. The area was machined down under supervision to the significant archaeological horizon, and, after cleaning by hand, sections were cut through the archaeological features in order to determine their nature. This was made difficult by heavy rain and large volumes of standing water, which caused problems for machining and identification of finds and features. The southern part of the site, which contained the section of Watling Street Roman road, was particularly badly affected, with the result that some sections could not be fully excavated. In addition to the area shown on Fig 2, a strip along the access road was excavated (Fig 1), but revealed no archaeological features as it was covered by standing water.

Roman

Watling Street ditch [29, 34 and 39] (Figs 3–4)

The Watling Street ditch (Sections 5–7), which lay approximately 1m east of the roadway, was

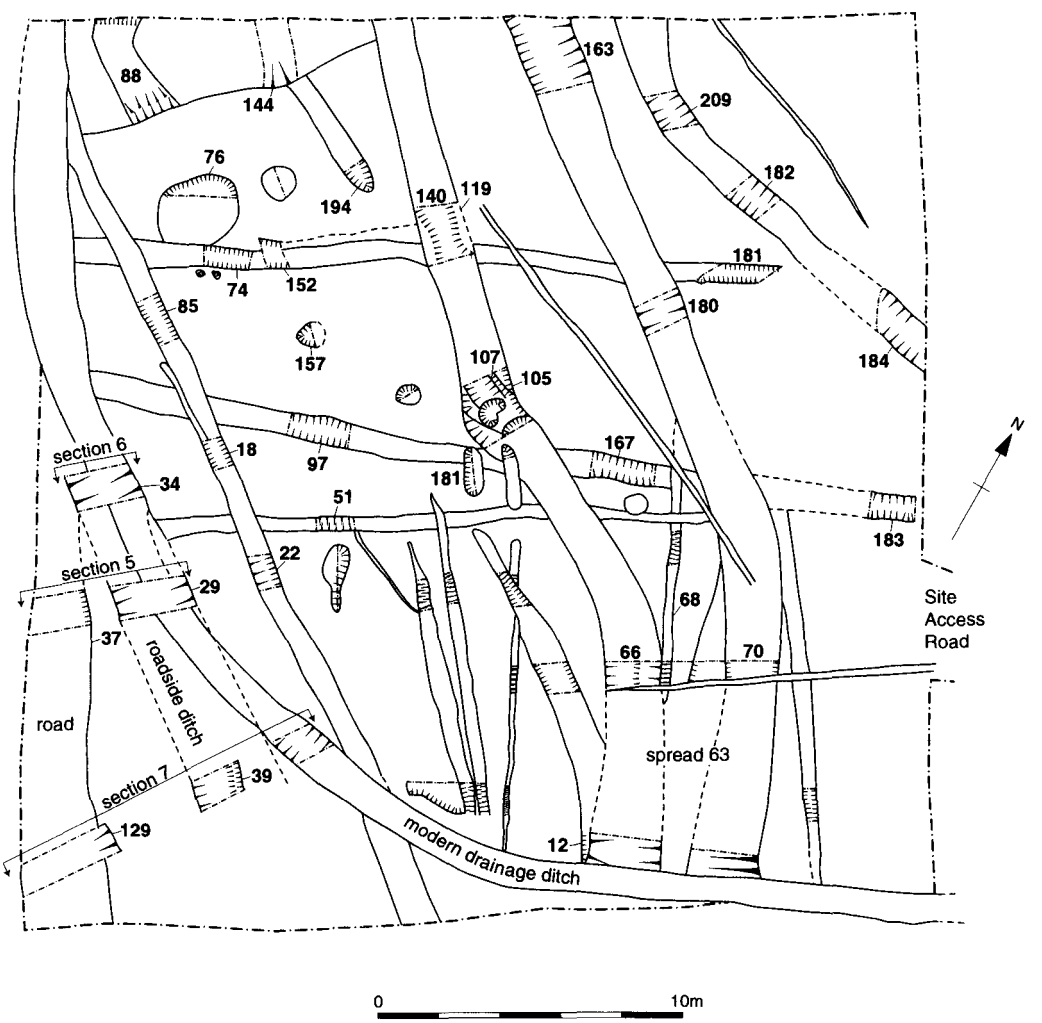

Fig 3. Plan of excavated area showing main features

excavated in three sections. The V-shaped northern ditch section (Section 6) had steep sides and a primary deposit of water-borne clay [33] which was devoid of finds. The main fill of this section [32] derived from a gradual build-up of water action and contained very abraded pottery and tile. The pottery dated mostly from the early 3rd to mid/late 4th century AD.

Approximately 5m further to the south, Section 5 showed the ditch to be more irregular in profile, although the width was difficult to ascertain accurately due to similarity between fill [28] and the colluvial subsoil. None of the fills contained any finds.

The southernmost ditch section (7) had a U-shaped base with a sloping side to the south-west and a shallow stepped side to the north-east. This side may have been recut at some point, although no truncation of earlier fills was observed. A deposit [40] on the north-eastern side contained large quantities of tile but no pottery, and was thought to have been trampled or re-deposited clay associated with the use of the road and associated ditch. The subsequent silting of the ditch [41–3] derived mainly from the north-east side, and contained Roman pottery which was not closely datable. All of these fills were stratigraphically later than Layer [62], which is seen as the final construction layer for the road surface (see below).

All three sections of the roadside ditch were truncated by a modern drainage ditch [126, 31, 27].

Watling Street road [129, 37] (Figs 3–4)

Two sections of a road presumed to be Watling Street were excavated, although both ran into the south-west baulk, so the full width of the road could not be recorded. Additionally, it was not possible to fully excavate Section 5 as it was largely underwater, consequently the complete profile is unknown. A layer of compacted flint gravel [36] in this section was excavated to a depth of 4cm before the water table was reached. The metalling lay within a cut feature [37], so as to be sunken below surface level, and it may well have been a construction layer rather than the actual road surface, as otherwise it would have become waterlogged very easily. The subsequent layer of silty clay mixed with tile and pottery [35] was quite substantial in depth (40cm), and there was no indication of any further gravel layers in this section. This upper layer contained mixed pottery of late 2nd- to late 4th-century date.

In the southern section (Section 7) there was clearer evidence for the sequence of road construction. The initial make-up consisted of re-deposited natural clay [124] contained within a cut [129], full of Roman tile, but no pottery. The subsequent layer [123], which comprised compacted flint gravel, was heavily truncated and existed in pockets, compressed into the clay layer beneath. It is possible that this was the initial road surface, although it would have been of very poor quality for such a major road, and it is perhaps more likely to have been a construction layer, as suggested for Context [36]. This was succeeded by a silty clay layer [62, 128] which may have acted as the final make-up for the probable road surface [122], comprising compacted and worn metalling. Thus a low bank (agger) would have been created, with water draining off into the side ditch. The central part of the road seems to have been infilled [121] with silty sand and resurfaced with compacted gravel [61] at a later date. This was probably a localised repair caused by wear, and the metalling contained pottery of late 3rd- to late 4th-century date. The general sequence of gravel and clay/silt layers is similar to a section of Watling Street examined by Bowsher (1995, 48–50, fig 6b), *c.*0.6km to the north-west.

Chronology of road and ditch

The quantity of diagnostic pottery from the possible Watling Street road and ditch was minimal, but, aside from a few sherds of mid 1st- to mid 2nd-century date in a disturbed upper surface spread [60], most of it dated from the late 2nd to mid/late 4th century AD. It is possible that the road and ditch were kept relatively clear until the later 2nd century, after which material was re-deposited there from other areas. Alternatively, this section of the road may have been part of a road widening development which occurred in the later Roman period (see discussion below). At some point in the 4th century, it appears that the road was re-metalled in places, probably as localised repairs.

Associated Roman features

The area to the east of the Watling Street ditch contained a succession of ditches, gullies and

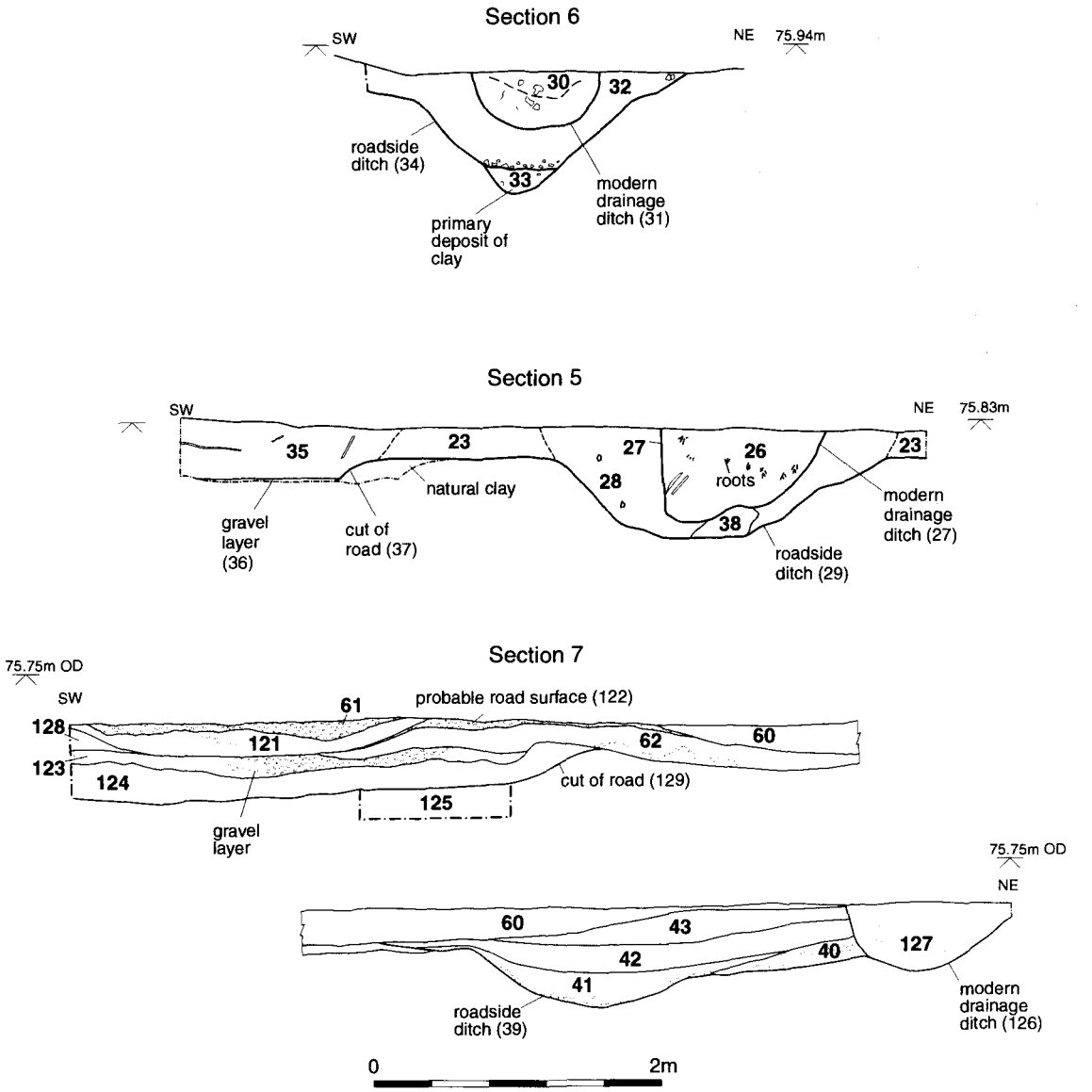

Fig 4. Sections 5–7: Watling Street road and eastern ditch

postholes, many of which contained Roman tile and pottery indicating activity from the 1st to 4th century AD, with a distinct emphasis on the later Roman period. Much of the pottery was very worn with only a broad date range, making it difficult to assign precise chronological sequences for the features. This was further complicated by the disturbed nature of much of the stratigraphy.

Among the earliest stratigraphic features were two shallow ditches or gullies running approximately east–west from the eastern roadside ditch. The southernmost ditch/gully [97, 167, 183] was covered by Roman plough soil at its eastern end, and contained mid to late 1st-century AD pottery in its disturbed upper fill [188]. To the north, the other ditch/gully [74, 181] cut plough soil containing mid 1st- to mid 2nd-century pottery, while a possible recut of this feature [152] cut an occupation layer [153] containing pottery no earlier than mid 2nd-century AD. Both of these gullies were cut by two north–south linear

features containing pottery primarily of 2nd- to 4th-century date. The westernmost [140/119, 107/105, 66] was a substantial irregular ditch, which appears to have contained a possible palisade in one section [107], and was recut, probably in the 3rd/4th century. The eastern linear feature [163, 180, 70] contained layers of compacted gravel, suggesting a possible trackway, although most of it appears quite narrow (*c.*1.7m wide). In the southern part of the site, the linear features were obscured by a spread of re-deposited material [63] containing Roman and medieval pottery (see Post-Roman activity, below). The spread was difficult to distinguish from the fills of features beneath, although a sondage was cut through to help determine the nature of this area. It appeared that the linear features ran into, or were cut by, a hollow [12], probably man-made, containing concentrated gravel deposits, Roman tile and Roman and medieval pottery.

A further ditch in the north-east of the site [209, 182, 184] contained a small amount of 2nd- to 4th-century pottery. The easternmost section [184] was devoid of finds and only partly visible. Another ditch to the west [85, 18, 22] was dated on ceramic grounds to the 3rd to 4th century AD, while part of a very substantial ditch [88, 144], over 5m in width and 0.6m in depth, was found running SW–NE across the northernmost part of site. Most pottery from this feature was late 2nd- to 4th-century in date, with a preponderance of later material.

The only features aside from ditches and gullies were six possible postholes in the northern part of the site, in no recognisable pattern. The two that produced dating evidence indicated a 1st- to 2nd-century date.

Post-Roman activity

Aside from the modern drainage ditch running in an arc from the north-east to south-west, there are no features of demonstrable post-Roman date, although a small amount of medieval (12th- to 14th-century) pottery and a 12th-century horseshoe suggest some further activity at the site. This material is concentrated in the south, primarily in spread [63] and the fill of the features beneath. It is possible that the recutting of this area is medieval in date, although the material is too disturbed and features too unclear to have any great level of confidence.

FINDS

Metal artefacts

Leigh Allen, with identification of the Roman coins by Paul Booth

A small assemblage comprising three copper-alloy and three iron objects was recovered from the excavations; all the objects are in very poor condition. The copper-alloy finds consist of two coins and a possible stylus. SF 5 from the upper fill [147] of ditch cut [163] is a corroded fragment from a coin, possibly an *as* originally at least *c.*28mm in diameter. The letter C (of 'SC' in the field) is visible on the reverse. The coin is possibly 2nd-century in date. The second coin (SF 4), from a possible tree throw [92], is very corroded, with a diameter of *c.*13mm. It is almost completely illegible and is late 3rd- or 4th-century in date. The third copper-alloy object (SF 1), which came from a dark spread across the eastern corner of site [13], is a very corroded slender strip of copper, circular in cross section and tapering to a point at either end; both ends are very corroded and this need not be the original shape of the object. At the centre where the object is better preserved there is a decorated section with fine criss-crossing grooves and raised ridges running around the strip. It is possible that this decorated surface originally extended along the full length of the strip.

The three iron objects consist of a horseshoe arm, a nail shank and a miscellaneous curved fragment. The horseshoe arm (SF 3) came from a disturbed layer between the Watling Street road and ditch [62], and has a lobate profile and three lozenge-shaped nail holes. This type of shoe is hardly known before the Norman Conquest but is common thereafter; it is predominant throughout the 12th century and is replaced by a heavier more developed type of shoe in the 13th century (Clark 1995, 96). The date is therefore consistent with the medieval pottery found at the site. The nail shank was recovered from the modern drainage ditch [26] and the curved fragment (SF2) from the subsoil.

Flint

Kate Cramp

The excavation produced a total of 95 struck flints within eight individual contexts. A further

160 pieces of burnt unworked flint, weighing 20g, were recovered from the site.

No potential *in situ* assemblages were noted, and no diagnostic tool-types were recovered. Rather than an artefact, the scraper from Context [63] probably represents a piece of thermally-fractured flint that has been subjected to a small amount of modern mechanical damage. The flakes, from Contexts [120 and 191], are generally in a poor condition and may represent naturally-struck pieces.

Relatively large quantities of spalls were recovered from the site, a number of which were in fresh condition and may have derived from the same nodule. The fill [120] of recut ditch [140] in particular produced a total of 50 spalls of a similar iron-stained, translucent gravel flint. It is conceivable that the spalls represent genuine micro-débitage, deposited in the course of knapping activity. However, given the paucity of associated flint work such as flakes and cores, it is more likely that the majority of the spalls are the result of modern plough or trowel damage.

Together with the questionable authenticity of the individual artefacts, the limited size of the assemblage implies that prehistoric activity at the site was negligible.

Roman pottery

Edward Biddulph

A total of 178 sherds of Roman pottery weighing 1,482g was recovered from the excavation. Its condition was generally poor; most sherds were small and abraded. Few forms could be identified, while some sherds were assigned to sources with only marginal confidence.

Fabrics were identified using the MoLAS series of common names and codes. Descriptions of these are provided by Symonds and Tomber (1994). Most of the imported and Romano-British traded wares are described in greater detail by Tomber and Dore (1998). Form typology follows Marsh and Tyers (1978, 546–82).

The pottery derived from a limited number of sources. The largest single fabric group, sand-tempered grey wares (SAND), accounts for 39% of the assemblage by weight. Most of it is likely to have originated locally. Verulamium region and Nene Valley wares both account for 12% of the assemblage. Oxfordshire products seem to have been of lesser importance, although a range of fabrics is represented. Products from the Hadham region are poorly represented; reduced wares are entirely absent and the oxidised fabric (MHAD) makes little more than a token contribution. However, that it is present at all reflects a general predilection for oxidised wares, which make up the bulk of the assemblage. A sherd of a South Gaulish form 30 or 37 samian bowl, probably manufactured at La Graufesenque, is the sole piece of definitely imported pottery. Like the rest of the pottery, its surfaces are very worn, though traces of moulded decoration are visible.

Inevitably, jars were the commonest vessel class. These included storage jar (2V) and everted-rimmed cooking pot (2F) fragments. Mortaria, mainly from Oxfordshire, with the remainder from the Nene Valley and Hadham regions, were unusually well represented, contributing over 10% of the assemblage by weight. At London, mortaria tend to account for less than 5% of any assemblage (*eg* Symonds and Tomber 1994, tables 1–5). Bowls were more numerous than dishes; the former included a reed-rimmed bowl (4A1) from Verulamium and a Nene Valley bead-and-flanged bowl (4MX). Drinking-related vessels are limited to three probable beakers and two flagon handle sherds, one of which was in Verulamium region white ware. Of intrinsic interest was a black-burnished style dish base with a small 'X' graffito scored after firing on its exterior surface; its significance is unknown; marks of ownership or contents are among the more reasonable explanations.

The bulk of the assemblage dates from the second half of the 2nd century onwards. It contrasts with the assemblage recovered from the WA excavations to the west of Watling Street (Seager Smith 1998, 51–6), which contained a greater proportion of 1st- and early 2nd-century pottery, particularly Verulamium region white ware, grog-tempered ware, and South Gaulish samian. The absence of recognisable early to mid 3rd-century pottery argues for a reduction or break in activity during this time, although, given the size of the assemblage, this lacuna is perhaps unsurprising. The supply of non-local wares, such as those from the Nene Valley and Oxfordshire, increased from the late 3rd century. How late settlement activity continued is uncertain. The limited range of late Roman fabrics (chiefly OXRC and CALC) hints at a date terminating around the mid 4th century, although the presence of Portchester D ware west of Watling Street (Seager Smith 1998, table 1) is

Table 1. Roman pottery fabrics by sherd number and weight

Fabric	Sherds	Weight (g)
South Gaulish samian ware (SAMLG)	1	6
?Colchester colour-coated ware (COLCC)	1	2
Much Hadham oxidised ware (MHAD)	2	24
Nene Valley colour-coated ware (NVCC)	13	90
Oxfordshire red colour-coated ware (OXRC)	8	44
Black-burnished-style ware (BBS)	10	118
Miscellaneous sand-tempered wares (SAND)	75	584
Late Roman 'calcite-tempered' wares (CALC)	1	10
Grog-tempered wares (GROG)	3	28
Miscellaneous shell-tempered wares (SHEL)	4	24
Nene Valley white ware (NVWW)	2	104
Miscellaneous oxidised wares (OXID)	28	170
Miscellaneous fine oxidised wares (OXIDF)	4	12
Oxfordshire white-slipped red ware (OXWS)	3	12
Oxfordshire white ware (OXWW)	5	72
?Verulamium region coarse white-slipped ware (VCWS)	2	10
Verulamium region white ware (VRW)	16	172
Total:	**178**	**1482**

likely to push this date further into the second half of the century.

The assemblage is typical of that recovered from linear, surface and structural features, in that sherds are small and worn. Half of the pottery derived from ditches and gullies. Much of it was recovered from single or upper fills. The lower fills from two ditches [39 and 144] yielded pottery, although these contained just six and seven sherds respectively. While the absence of imported pottery and reliance on local producers, at least until the late 3rd century, suggest a low-status settlement, the pottery assemblage and the features from which it derives may properly reflect the peripheral nature of the excavated area. Unlike low-status sites such as Harefield Road, Uxbridge (Booth 1995, 19), which almost exclusively yielded locally-produced wares, wider trade links were evident at Canon's Corner. In addition, clearly residual pottery, such as the sherds of VRW in ditch [17], gully [52] and surface [61], had a similar mean sherd weight to the later, contemporary, pottery, suggesting that all the pottery in these contexts derived from the same source prior to final deposition. The conclusion that the pottery became incorporated into features away from the main focus of settlement through re-deposition and dumping episodes seems inescapable. Interestingly, a similar view is expressed by Seager Smith (1998, 56) with regard to the pottery from the west side of Watling Street.

Medieval and post-medieval pottery

Edward Biddulph

Ten sherds of South Hertfordshire grey ware/ Limpsfield ware (SHER), weighing 103g, were recovered from the site. This sand- and flint-tempered fabric is dated *c.*1150–1300. Four vessels, comprising a flange-rimmed bowl and three square-rimmed cooking jars, were represented. The medieval pottery was in noticeably better condition than the Roman wares, suggesting that the focus of its use was closer to the point of final deposition or that it was subjected to fewer episodes of disturbance. The distribution of this pottery was largely restricted to the south-east corner of the site within homogeneous deposits (in and around [63]). Two sherds of post-medieval porcelain were recovered from the topsoil [14]. Both sherds appear to form part of a flat handle attached to a porringer.

Worked stone

Ruth Shaffrey

Three items of worked stone were found during the Canon's Corner excavation (Table 2). The piece of Millstone Grit is clearly a quern fragment, despite having no edges. Such an item could have been easily transported from a

Table 2. Worked stone

Context	Lithology	Interpretation	Description
26 (fill of modern ditch 27)	Chalk	Possibly used in building or in a floor	Large chunk with one smooth side suggesting use of some kind
90 (fill of ditch 88)	Fine-grained sandstone	Possible mortar rim	Curved rim, probably belonging to a mortar. Measures 82 × 38 × 20mm. From an artefact with a diameter of less than 35cm
169 (backfill of ditch 167)	Medium-grained Millstone Grit	Possible quern fragment	One very smooth flat surface, and, opposite, a slightly worn surface. No edges. Measured 70 × 52 × 28mm

probable source in Derbyshire via Watling Street and is therefore not a surprising find for a roadside location. The sandstone fragment was probably a mortar rim, and was associated with pottery of 4th-century date. Finally, the large chalk fragment was certainly utilised, but it is not clear for what purpose it was intended. Possibly it had some structural use such as part of a floor, as one side is very worn.

Ceramic building material

Leigh Allen, with fabric identifications by Sue Pringle

A total of 388 fragments of ceramic building material weighing 25,913g was recovered from the excavation. The fragments were in poor condition with a large number of small and heavily abraded fragments. No examples of intact tiles were recovered and no complete width or length dimensions were recorded. Only a very few fragments were identifiable to a definite form, and the majority were plain with no distinguishing features. Eight fabric types were recognised, and have been compared with the MoLSS fabric series.

Forms

In total there were only 45 fragments identifiable to a specific form of tile: *tegula*, *imbrex*, box-flue, or brick. 17 fragments (2,401g) were identified as coming from *tegulae*. They either had part of the flange attached or evidence of the finger groove at the base of the flange. The thickness of these fragments lay in the range 17–26mm with most of the fragments measuring between 23 and 26mm. The flange heights measured 35–57mm. The predominant fabric was Fabric 3. Only three fragments (275g) were identified as coming from *imbrices*, the curved tiles that cover the flanges of the *tegulae*. The thickness of the fragments lay in the range 11–16mm. The predominant fabric was Fabric 3.

There were 11 fragments (903g) identified as coming from box-flue tiles. They all had incised combing marks on the upper surface: this acts as a key for plaster. The thickness of the fragments lay in the range 11–21mm with the majority of the fragments at the lower end of the range. Fabrics 3 and 7 were predominant. 14 fragments (2,803g) came from large floor tiles or bricks (fragments with a thickness greater than 39mm).

The remaining fragments are grouped together either as flat tiles, if they have a measurable thickness, or miscellaneous, if they are irregularly shaped with no complete dimensions. There were 99 fragments (12,039g) assigned to the category of flat tile. These could be fragments from any of the above mentioned types or from one of the great variety of floor tiles used in the Roman period. There are no complete dimensions other than thickness to indicate what forms these may have been. A large proportion of the assemblage (7,492g) comprised 244 small abraded fragments with no measurable dimensions. All fabric types were represented in this category.

Samples

Samples from eight different fabric types were submitted to MoLSS for identification (Table 3).

Most of the samples (2, 3, 4, 5, 7, 10) fall into the 2815 group made from the red-firing London clays. The group is sub-divided into four categories according to the grade of quartz in

Table 3. Tile fabric types

Sample No.	Weight	% of total weight	Form	MoL Fabric No.	Comments
1	995g	3.8%	Brick	3023	
2	5502g	21.2%	?	2815 group	Variant with paler silty streaks
3	7963g	30.7%	?	2815 group (2452)	
4	3520g	13.6%	Brick	2815 group (3006)	
5	3110g	12%	Brick	2815 group (3006)	
6	1708g	6.6%	Brick	3060	
7	2676g	10.3%	Box tile	2815 group (3004)	
10	247g	0.95%	Brick	2815 group?	Over-fired and vitrified

the matrix and the coarseness of the inclusions; the three finer types can only be distinguished with macroscopic examination. The fabrics in this group commonly contain small amounts of white calcareous and dark red iron-rich material, and infrequently contain blocky clay inclusions or paler silty lumps and swirls. The date range for all except fabric 2459B is *c.*AD 50–160.

The main divisions of the 2815 group are as follows:

Fabric 2452. Clean looking matrix containing very fine quartz with very sparse coarser grains. Medium grade moulding sand.

Fabric 2459A. Very fine quartz and sparse inclusions of medium to very coarse quartz. This fabric has a granular look under the microscope. Medium grade moulding sand. A later version, 2459B, which first appears between *c.*AD 120 and 140 has a very fine moulding sand.

Fabric 3006. Very fine quartz and sparse inclusions of medium to very coarse quartz. Medium grade moulding sand (this is the commonest fabric type recovered from excavations carried out by MoL and is used as the standard against which to measure the variants).

Fabric 3004. Very fine quartz with frequent to common inclusions of medium to coarse quartz. Medium to coarse moulding sand.

Samples 1 and 6 are in a version of London clay which contains fine black iron oxides. Fabric 3023 is red with the fine black particles and cream-coloured rounded inclusions or streaks. Fabric 3060 is plain red with the same black inclusions. Both types have fine moulding sand, although a version with coarse sand is occasionally seen, usually from late Roman deposits. Both types match material from kilns at Radlett, Herts.

Other black-speckled clays occur in the London area, and it is possible that there were alternative kiln sites for some of this material, but Radlett is the most likely source of tile found at Canon's Corner. The date range is *c.*AD 50–120 for the Radlett production.

Summary

The tile assemblage is very fragmentary and abraded and there are no large pieces of any type of tile. The material seems to have been scattered fairly evenly across the site. The presence of roof, floor and box-flue tile fragments indicates a building in the vicinity but the paucity of readily identifiable fragments and the high level of abrasion implies that the pieces have probably been scattered a fair distance from their source. This scatter may be a result of field manuring or of use as hard core for the building of the road. Nearly 25% of the total weight of tile was recovered from the sections across Watling Street and the ditch that lay 1m to the east of the road. Nearly half of the identifiable fragments of *tegula* and box-flue tile came from Context [62], a make-up layer within the cut of Watling Street. Context [61], the latest metalling of the road, contained mostly fragments of plain flat tile. Nearly 90% of the assemblage is made from London clay and dates to the period *c.*AD 50–160 with the remaining 10% possibly being produced in Radlett, *c.*AD 50–120.

Animal bone

Bethan Charles

A total of three fragments of bone was recovered by hand from the site. Two were from the fill of

ditch [209] and another from posthole [157]. The bone was in very poor condition and was not identified to species. A further 32 fragments of bone were recovered from environmental samples, sieved through a mesh of >10mm and 10-4mm. All were small fragments in very poor condition, and none could be identified to species. The majority of the sieved bone (25 fragments) came from posthole [157], associated with 2nd-century AD pottery, and included a very small fragment of burnt bone.

Charred plant remains

Ruth Pelling

Ten bulk samples were taken for the extraction of charred plant remains from Roman period ditches lying alongside Watling Street. The samples were processed using a modified Siraf type machine and flots collected onto 250um mesh sieves. No charred seeds or chaff were recovered from the flots, so it is unlikely that any cereal processing or food production type activities were taking place in the immediate vicinity. Occasional charcoal fragments were present, including *Quercus* sp (oak) and Pomoideae (apple/pear/hawthorn *etc*), possibly representing contemporary fuel use. Fragments of coal and numerous ants were present in the flots suggesting recent disturbance of the deposits had occurred, hence it is possible that the charcoal may be derived from later contamination.

DISCUSSION

Excavations at Canon's Corner uncovered part of a substantial metalled road surface and an associated eastern ditch, which despite not being of the highest quality construction, must have been Roman Watling Street. The ditches, gullies and postholes to the east are more enigmatic, but chronologically and spatially clearly relate to the road and ditch. The amount of standing water in the trenches during the excavations suggests that some of the ditches may have served as run-off drainage channels, to keep the road from being flooded. A possible cut for a palisade within one section [107] of a linear ditch running parallel to Watling Street may represent part of an enclosure system, although the extent and nature of this remains unclear. Other ditches – including the very substantial feature to the north-west [88, 144] – could have marked boundaries in and around the site.

The overall chronology of the excavated area, as indicated by the pottery, is quite similar to the WA sites, with the main phase of activity ranging from the later 2nd to mid/late 4th century AD. This was seemingly after the pottery kilns on the upper slopes of Brockley Hill had ceased production. The nature of this activity is uncertain, but the finds and environmental evidence do not indicate any domestic occupation and there is nothing to suggest any direct association with the settlement of *Sulloniacae*. Along with the WA sites, Canon's Corner may have been part of an unofficial rest stop alongside the road before it ran up Brockley Hill, although the character of the two sites is somewhat different. However, both excavations did reveal mixed spreads of Roman tile and pottery, probably dumped there from nearby settlements during the later Roman period (McKinley 1998, 65). The presence of non-local wares in the pottery assemblage suggests that the settlement(s) from which they derived had wider trade-links than would be normal for typical low-status rural sites, and it is certainly possible that at least some came from *Sulloniacae*.

The line of Watling Street

The line of Watling Street Roman road in the area of Brockley Hill was initially thought to have been traced to the east of the modern A5 road (O'Neil 1951, 137–9; Margary 1973, 171). However, more recent excavations failed to find the road on this side, and instead found evidence to indicate that it ran slightly to the west of the modern road (Castle 1976, 207; Bowsher 1995; McKinley 1998), although Bowsher (1995, 54) did argue that it must have swung back to the east towards the base of the hill. This latter point was refuted by McKinley (1998, 63), who suggested that a ditch located in a small trench just to the west of the modern A5 – 200m to the north of Canon's Corner – was the western Watling Street roadside ditch. This interpretation was made on the basis of morphological comparison with Bowsher's roadside ditches, although the area was heavily truncated and no dating evidence was recovered (*ibid*, 50). The results of the OAU Canon's Corner excavations indicated that at least part of Watling Street lay

to the east of the modern A5 road, so Bowsher's argument that the road swung back to the east would seem to be correct (see Fig 2 for projected line of road). The deviation need not have been that substantial however, as recent work on Ermin Street in Gloucestershire has shown that in some places the road surface was widened significantly in the later Roman period, being up to 14m across (Mudd *et al* 1999, 267). If this was the case with Watling Street, then the section found in the south-west corner may have extended westwards under much of the modern road. The near-absence of 1st- early 2nd-century pottery from the road section and ditch in this area, together with the relatively poor quality of the road construction, does imply that this section may have been part of a road-widening development in the later Roman period.

ACKNOWLEDGEMENTS

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The site archive has been deposited with the Museum of London.

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THE CITY DEFENCES AT ALDERSGATE

Jonathan Butler

With a contribution by Ken Sabel and specialist reports by Philip Armitage (animal bone), Joanna Bird (decorated samian ware), Wendy Carruthers (charred plant remains), Nina Crummy (leather and small finds), Chris Jarrett (post-Roman pottery), Robert Scaife (pollen), and Penelope Walton Rogers (textiles); Andrew Lacey (crucible analysis), Malcolm Lyne (Roman pottery), and Ken Sabel (ceramic building materials)

SUMMARY

An archaeological excavation, evaluation, and watching brief at Alder/Castle/Falcon House revealed a complex history of the City of London's defences from Roman times to the 17th century. The site investigations revealed a ditch probably associated with the Roman Cripplegate fort and an early city boundary ditch dating from the same period. In the NW corner of the development an early Roman road, previously discovered on the site to the N at 7–12 Aldersgate in 1984 (Egan 1985), was traced. Along the S part of the site the Roman city wall was located with the remains of a probable turret, slightly further to the N than previously believed. The remains of both the associated 3rd-century city ditch and the later, much larger, 4th-century ditch were revealed respectively in section and in a tunnel beneath Aldersgate Street. An important find was the survival of the infilled Saxo-Norman city ditch, with late 11th- and early 12th-century features cut into it, including a narrow gully containing significant numbers of crucible fragments which provide evidence of silver working and refining. Two fragments of the medieval bastion (Merrifield B15) were discovered in the SE corner of the site and within the main area of investigation six phases of medieval and post-medieval city ditch dating from the 13th century to the 17th century were excavated, providing evidence of continual re-cutting and cleaning of the city ditch.

INTRODUCTION

Pre-Construct Archaeology Limited was commissioned by the Argent Group Investments PLC to conduct an archaeological evaluation and excavation within the area formerly occupied by Alder, Castle and Falcon House at 1–6 Aldersgate Street in the City of London. The main phase of excavation and evaluation was undertaken between 3 November 1997 and 17 February 1998. Thereafter a small controlled excavation in new drainage trenches along the NW side of the site was undertaken and an intermittent watching brief was maintained until 14 May 1998 when all relevant groundworks were completed. Finally a watching brief was conducted during the construction of a garden area to the S and E of the site between 16 February and 18 March 1999.

The site lay on the E side of Aldersgate Street and was roughly 'L'-shaped in plan, respecting the historic property boundaries determined by the city wall (Fig 1). The development area was within an important location, being on the boundary of the Roman city, at the junction of Cripplegate fort and the Roman city wall (Fig 3).

The site included three Scheduled Ancient Monuments: County Monument Number 26D the City Wall Bastion, County Monument Number 26R the Roman, Medieval and Post-Medieval City Wall, and County Monument Number 26S the Roman, Medieval and Post-Medieval City Gate and City Wall. The strategic approach to the archaeology of the site was dual purpose: comprising an evaluation of the extent of survival of the city wall, the city gate (Aldersgate), and Bastion 15 along the S and E boundaries of the site, and excavation of limited

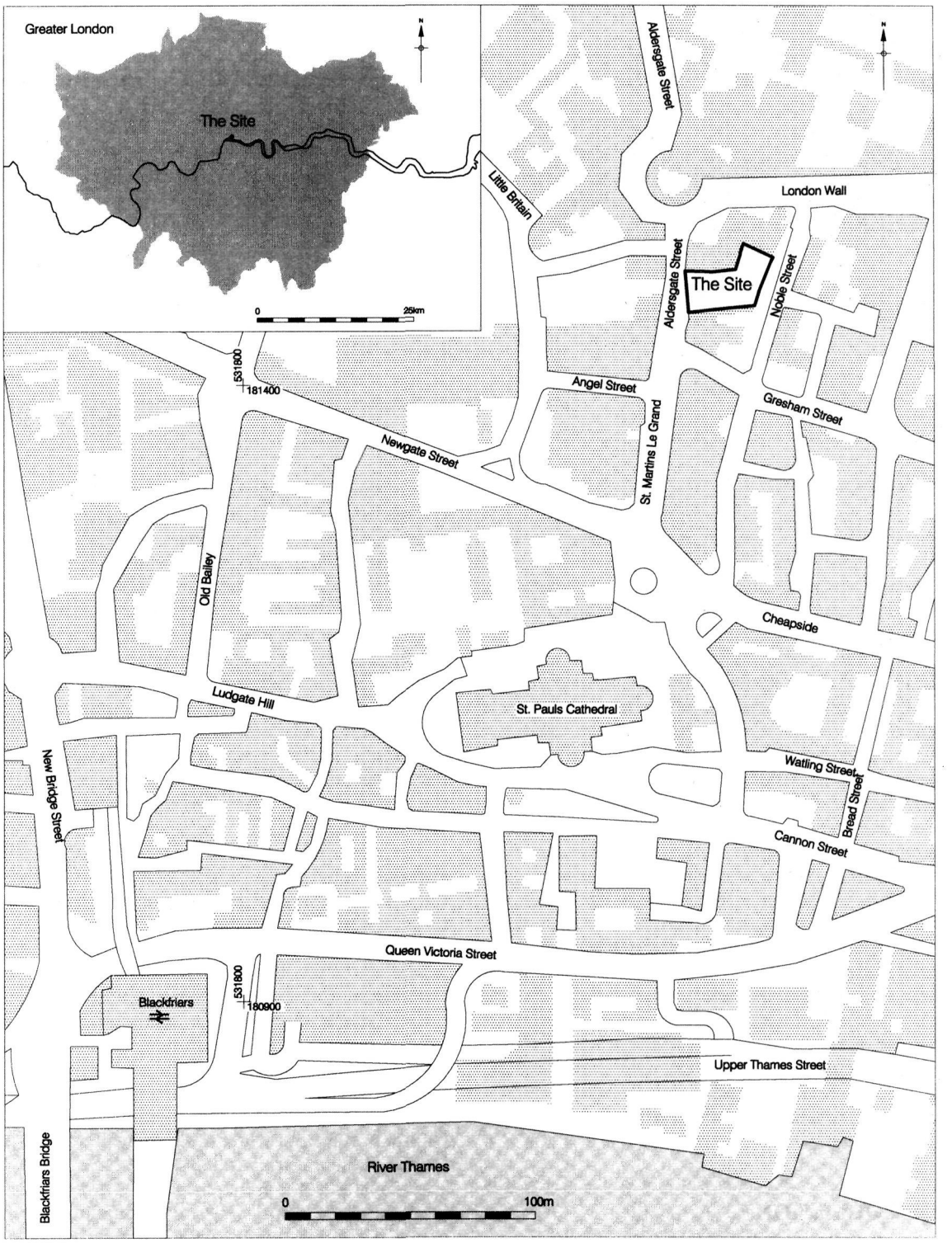


Fig 1. The site location

areas within the city ditch, where planning consent had been given for new lift shafts (Area A), for a sewer heading in the NW corner of the site (Sewer & Area I), and new drainage runs along the NW boundary (Area H) (Fig 2). A watching brief was maintained during the rest of the ground works.

With the exception of the areas where consent for archaeological excavation was given, no medieval or Roman deposits were removed. In the S part of the site in the area of the Scheduled Ancient Monuments the archaeological deposits were recorded in top plan and section where possible. Finds retrieval from these areas was therefore limited, and interpretation of some of the features was far from definite. Once the archaeological investigation of the areas was completed the surviving archaeological deposits were protected with a layer of terram geotextile and sand. Thus, most of the archaeological remains encountered on site were left preserved *in situ* as agreed in the mitigation strategy.

HISTORICAL BACKGROUND (Fig 3)

The fort at Cripplegate was laid out between AD 90 and 120 and was defended by a 'V'-shaped ditch up to *c.*3.00m wide. Between AD 190 and 225 a defensive wall two miles long was constructed, encircling the landward side of the city. The W and N sides of the fort were incorporated into the city wall by adding 1.2m thickness of masonry internally to strengthen the existing walls. The city wall was 2.4m thick and constructed of ragstone and mortar with tile bonding courses at regular intervals and a red sandstone plinth at ground level on its external face. The masonry rested on a foundation of puddled clay and flints. The wall was defended by a roughly 'V'-shaped ditch *c.*4.5m wide and 1.8m deep; the upcast from the ditch was piled up inside the wall to form a rampart about 4.9m wide and 1.8m high (Marsden 1980, 120–1). Some time later a gate was inserted at Aldersgate, perhaps to replace a small postern, which may have served a narrow road recorded to the N at 7–12 Aldersgate Street and dating from the 1st/2nd century (Egan 1985). During the 4th century bastions were added to the E circuit of the wall and the ditch was greatly enlarged to accommodate them (Maloney 1983, 105–11).

The city was largely abandoned at the end of the Roman period, with the Anglo-Saxons preferring to settle in *Lundenwic*, in the Strand/Covent Garden area. In response to Viking raids on London in AD 841, 851, and 871, it would appear that by *c.*AD 890 the Saxons had to a large extent moved from *Lundenwic* on the Strand back within the former Roman walled city (Vince 1990, 20). The Anglo-Saxon Chronicle for 886 states that, 'The same year King Alfred occupied London and all the English, those of them that were free from the Danish bondage, turned to him, and he then entrusted the burgh (fortified place) to the keeping of the ealdorman Ethelred' (Garmonsway 1954). It is more than likely that the city defences would have been repaired and the ditches maintained. The fact that the defences were probably in good order is suggested by the success of London in being able to hold off Danish attacks in 994, 1009, and 1013.

During the medieval period the walls and ditch were continually repaired and maintained (Grimes 1968, 80–1, 86; Maloney & Harding 1979, 350–3). It would appear from the archaeological evidence that bastions were added to the W circuit at this time, including Bastion 15 at the junction of the city wall and the former Cripplegate fort (Grimes 1968, 71–6). Stow mentions repairs to the walls being undertaken in the reigns of John, Henry III, Edward III, Richard II, and Edward IV (Stow 1598, 41–2). Stow records that 'the ditch ... was begun to be made by the Londoners in the year 1211, and was finished in the year 1213, the 15th (year) of King John. This ditch being then made of 200 feet broad'. Thereafter it was 'cleansed' in 1354, 1379, 1414, and 1477. Regular 'cleansings' were recorded until the end of the 16th century. However, much of the circuit of the ditch had been infilled by the second half of the 16th century to satisfy the constant need for more space within the cramped city (Maloney & Harding 1979, 354).

The limit of the Great Fire of 1666 passed along the N boundary of the site. By the date of Ogilby and Morgan's map (1676) the site was occupied by the Falcon Inn and its premises. An inn or hotel of that name occupied at least the W part of the site until the 1890s (OS map 1894–96). In 1673 the property was known as 'The Castle and Falcon' (Letters & Papers Charles II, 15.384), in 1720 as the 'Castle Inn' (Strype 1720), and in 1750 as the 'Castle and Falcon Inn', under which name it was known on Richard Horwood's map of 1813. On the Ordnance Survey maps of 1869–70 and 1894–6

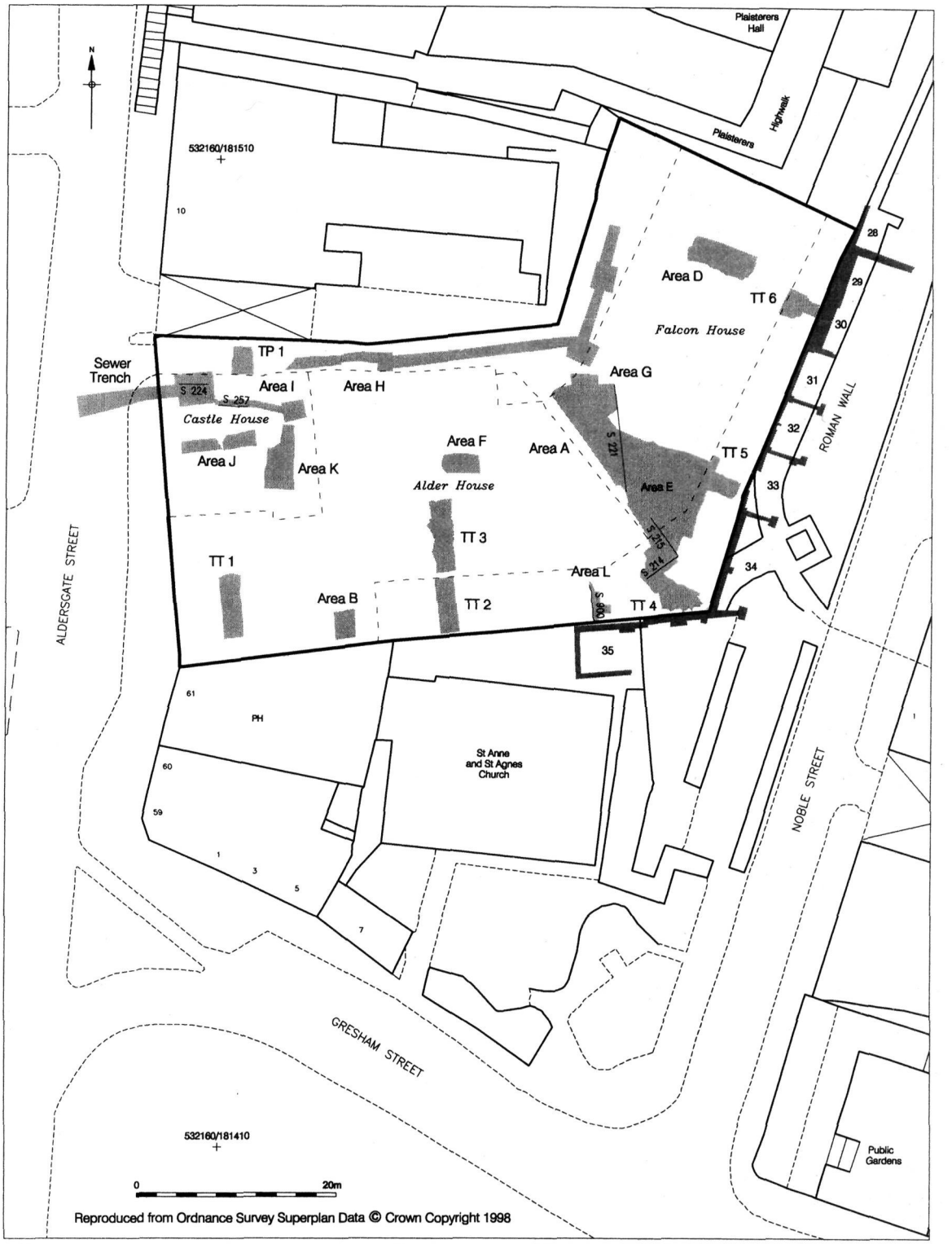


Fig 2. Location of areas of archaeological investigation

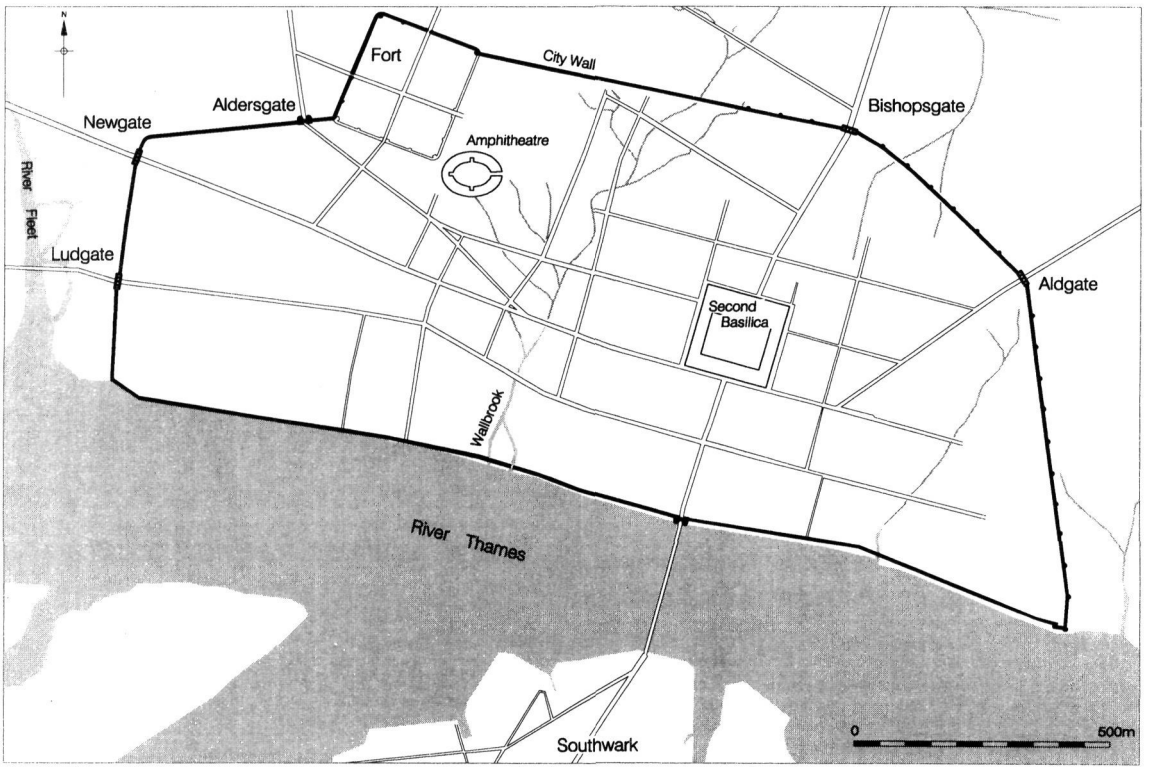


Fig 3. Plan of Roman London and the city wall

the W part of the site is occupied by the Castle and Falcon Hotel and the NE dog-leg by the Parcel Office. The W side of Noble Street, now occupied by the gardens, was by the time of Richard Horwood's map occupied by terraced buildings, which continued to occupy the site until their destruction in the Blitz during the Second World War.

PRE-CITY WALL ROMAN ACTIVITY
(Fig 4)

A 'U' shaped ditch, measuring 1.70m by 0.60m deep, was recorded in a NE–SW aligned section in the SE corner of site (Fig 5). An apparent return, heavily truncated by a later cut, continued in the NW–SE section. The ditch was backfilled with a mixture of brickearth and gravel fills from which no datable finds were retrieved. However, this cut predated the Roman city wall, which was built over it, and was probably associated with the Cripplegate fort, as it seems to have respected the rounded SW corner of the fort. It did not align with the fort ditch excavated by Grimes in the Noble Street garden area but was very similar in size to that recorded by Grimes (Grimes 1968, 52) and the base was at an almost identical level (Watson 1993, 9). It may, therefore, represent a second ditch beyond that recorded by Grimes, suggesting that the fort may have been protected by a double ditch on its W side.

An E–W aligned cut backfilled with a homogeneous dark grey-brown silty deposit was encountered in top plan along the S boundary of the site (Fig 4). In section it was flat bottomed and cut to the N by a later city ditch. The cut was traced for up to 38m across the site roughly following the line of the later city wall and survived to a width of up to 6.60m and depth of 1.50m; it did not continue on the line of the later city wall into the SE corner of site. This large feature could represent a city boundary ditch, which preceded the construction of the city wall. In other Romano-British towns, such as Verulamium and Silchester, the construction of walls was preceded in the 2nd century by a ditch and rampart defence (Wacher 1995, 71), and this may well have been the case in *Londinium* as well. Other traces of a pre-wall ditch have been found

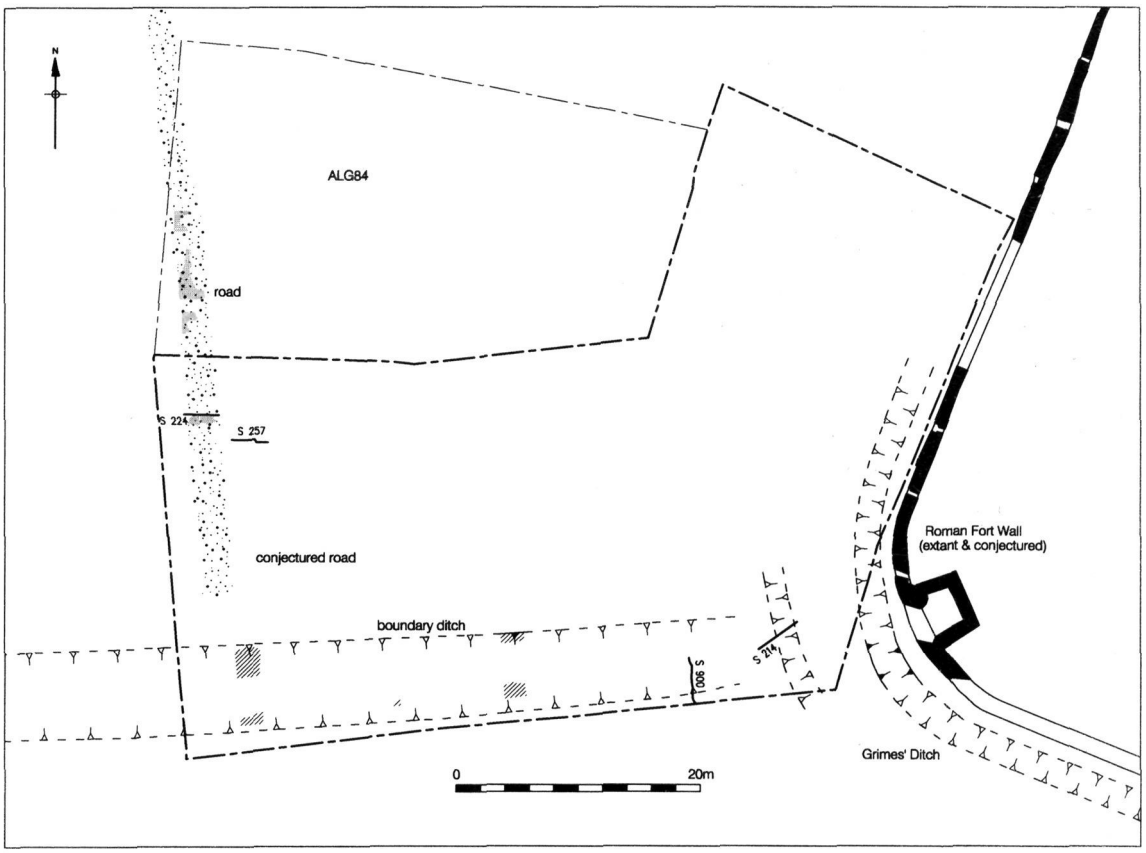


Fig 4. Plan of Roman boundary ditch and Cripplegate fort

to the E of the fort at Crosswall (Egan *et al* 1981), Dukes Place (Maloney 1983, 97), 1 Crutched Friars (Merrifield 1965, 291), 85 London Wall (Sankey & Stephenson 1989, 117–18), and opposite 57 London Wall (Pye 1985). The pottery assemblages from the ditch indicate that it was dug *c.*AD 100 and had rubbish tipped into it until the end of the 2nd century (Lyne 2000). The ditch's alignment with the SW corner of Cripplegate fort, its termination before the ditch possibly associated with the fort, and the 2nd-century dating for its infilling suggest that it may have been contemporary with the fort, and, together with the remains found on several sites to the E, may represent the late 1st/early 2nd-century boundary/*pomerium* of *Londinium*. However, the early 2nd-century boundary has previously been postulated as being on a line S of the SW corner of the fort, based on a change in the alignment of the E–W street, at a point where it was intersected by other roads, and the distribution of early burials (Marsden 1976, 47–9; Perring *et al* 1991, 108–9). This would be the first evidence of such a boundary W of Cripplegate fort, suggesting that the boundaries of *Londinium* extended further to the W in its early history than previously thought. A similar earlier, narrower boundary ditch, the backfill of which was dated to AD 70–100, was traced immediately to the N of the later S wall of the Cripplegate fort just to the E of the present

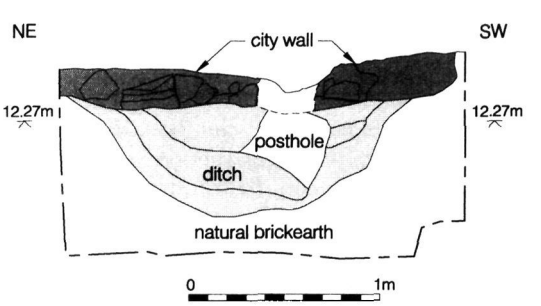


Fig 5. Section 214 of Cripplegate fort ditch

site (Howe & Lakin in prep), which might suggest that the fort itself was preceded by a boundary ditch.

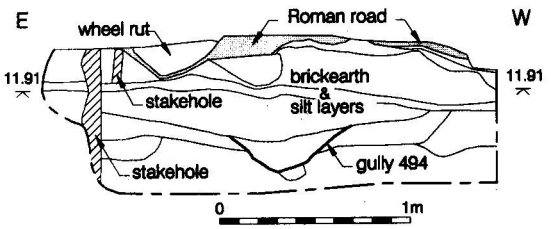


Fig 6. Section 224 of Roman road

In a sewer heading in the NW corner of the site an island of Roman archaeology survived the extensive truncation caused by the city ditch (Fig 6). A N–S aligned gully [494], 1.55m by 0.62m by 0.28m deep, was sealed by a series of brickearth and silt layers. Thin gravel surfaces, up to 2.20m wide, were observed. A roughly N–S aligned road up to 2.00m wide was found on the site immediately to the N at the same height and in direct alignment (Egan 1985), the gravel being mixed with mortar. It would seem likely that this was a continuation of the metalling observed in the sewer heading. A slight hollow backfilled with a mixture of silt and gravel at the E side of the road could be the remains of the attempted repair of wheel ruts, a feature also observed to the N (Egan 1985). A series of seven vertically driven stakeholes, roughly aligned N–S along the E edge of the road, might represent the remains of a road-side fence. Dating material from the road was scarce, consisting of fragments of tile dated to pre-AD 60/61–mid 2nd century. However, pottery recovered from the make-up dumps below was dated to the second half of the 1st century–early 2nd century. Two postholes, one vertical, the other set at an angle of 45 degrees, could possibly represent part of an upright and brace of a wooden bridge across the city ditch (see Fig 7). However, both were recorded in section only and definite interpretation is not possible.

The dating material, such as it is, suggests an early date for the road, late 1st century–early 2nd century, and suggests that the road was in place before the Roman city wall was erected. It is therefore necessary to speculate what became of this road when the wall was built. From the archaeological investigations beneath Aldersgate Street in 1939 (Maloney 1983, 110) it was suggested that Roman Aldersgate was a later addition to the city wall. However, this road was on a direct alignment with the projected E passage of the later Roman Aldersgate, which was unfortunately not observed on site, and it may be a forerunner of the later major Roman street which left the city through Aldersgate. It may have originally had a small postern gate through the wall which then, as the importance of the road grew, was converted into a major city gateway.

THE ROMAN CITY WALL AND DITCHES
(Fig 8)

The foundations of the Roman city wall were observed along the S part of the site. The wall had previously been revealed in 1922, during excavations on the site of the Castle and Falcon Hotel and its yard (RCHM 1928, 90). The foundations consisted of lumps of roughly hewn ragstone and flint in a bonding matrix of sticky light brown puddled brickearth clay. This is consistent with the construction techniques of the wall revealed on other sites on its circuit (Marsden 1980, 121). The foundation measured

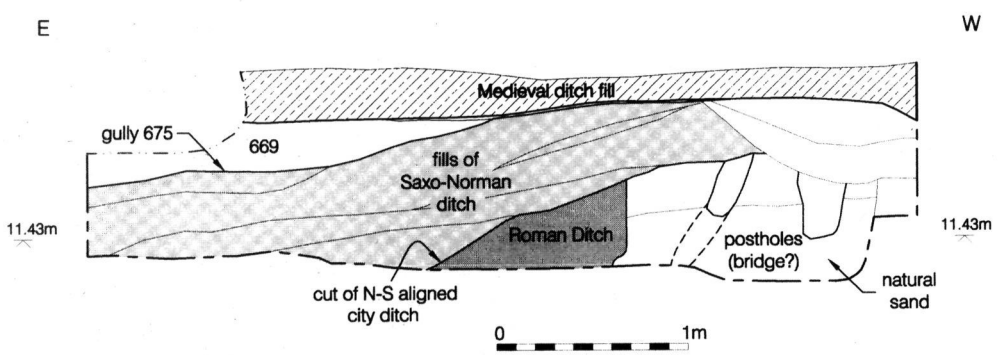


Fig 7. Section 257 of medieval city ditch

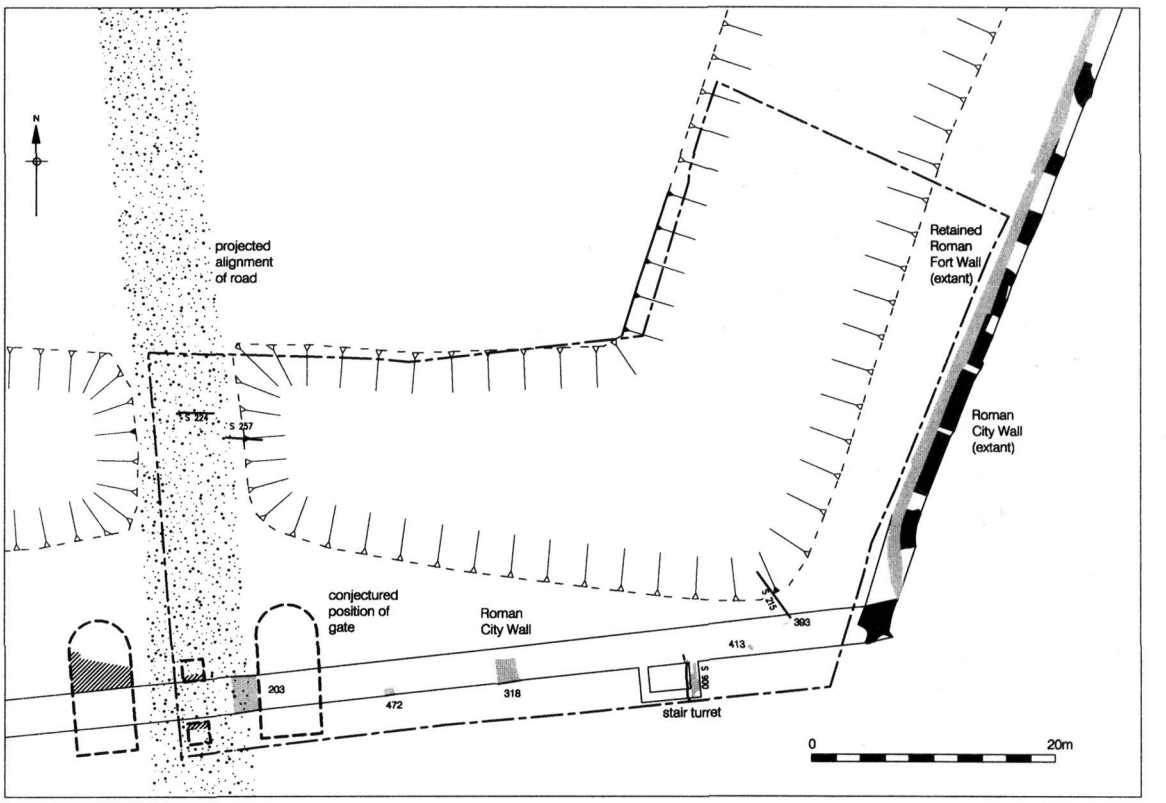


Fig 8. Plan of Roman city wall and turret

3.23m max wide in the W, the only area in which the full width could be observed (Fig 9), as it was heavily truncated by modern concrete footings elsewhere. This was much wider than the *c.*2.70m encountered elsewhere on its circuit (Perring 1991, 90). The construction of a wider foundation at this point could have been in response to the local ground conditions (Maloney 1983, 98). In 1939 the opening of a GPO tunnel beneath Aldersgate Street in the SW corner of the site found that the site was occupied by a marshy hollow or stream bed filled with black silt to a depth of at least 18ft below street level. The footings of the city wall had been widened and deepened and then reinforced with large blocks of ragstone and timber piles (Merrifield 1965, 103) to overcome the problem. To the E remnants of ragstone foundation bonded with a light brown sandy mortar and up to 0.52m high were revealed on top of the puddled clay foundation, which was at least 0.60m deep. The surviving fragments of wall were in direct alignment with the heavily truncated stub of city wall in the SW corner of the Noble Street Garden as discovered by Grimes (Grimes 1968). It would appear that the foundations of the wall were deeper the further W they progressed across site.

Dating material for the city wall was sparse. The foundation of the wall was trench built, mainly cut through the earlier infilled boundary ditch which ran along the S part of the site. The date of the infilling would appear to be the second half of the 2nd century. Two fills, [915] and [916], of another earlier feature were also cut by the city wall in the area of the putative turret (Fig 10). These were dated to the late 2nd century. The dating material retrieved on this site would seem to confirm the construction of the city wall taking place some time between AD 190 and 225 (Lyne 2000).

Towards the SE corner of the site a N–S aligned wall, measuring 2.44m by 0.66m (0.77m with clay foundation) wide and constructed from ragstone and sandy lime mortar resting on a puddled clay and flint foundation, was revealed

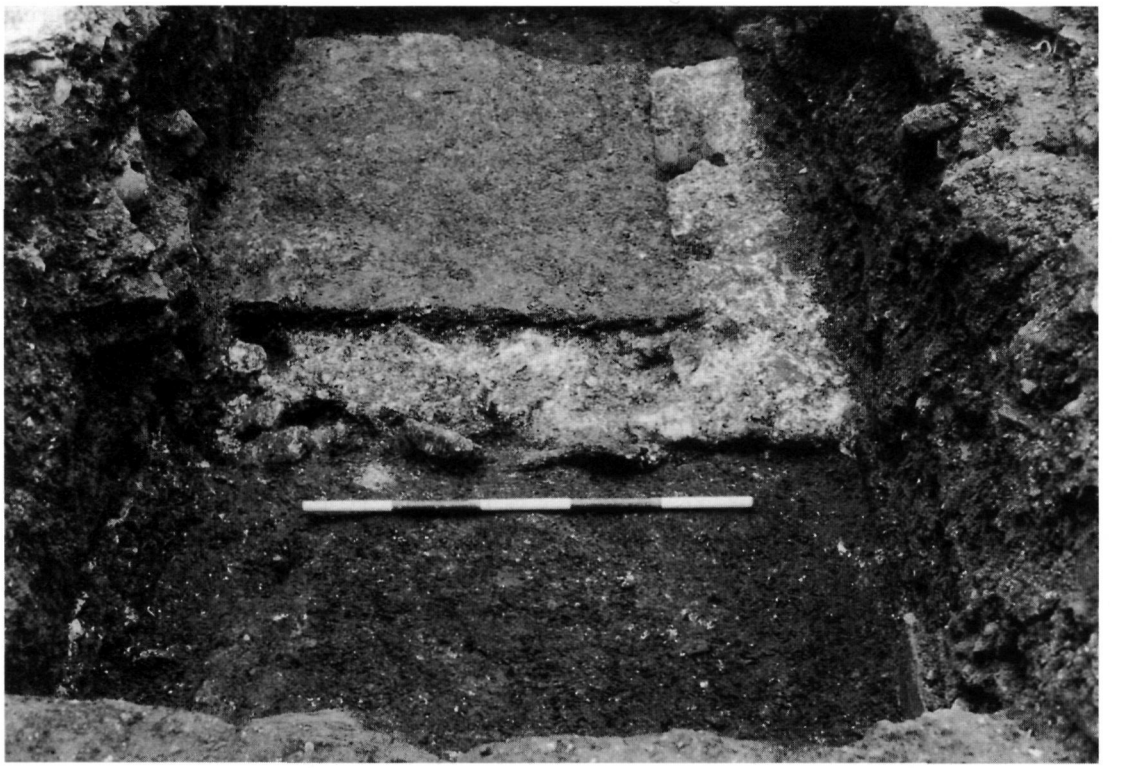


Fig 9. View of city wall

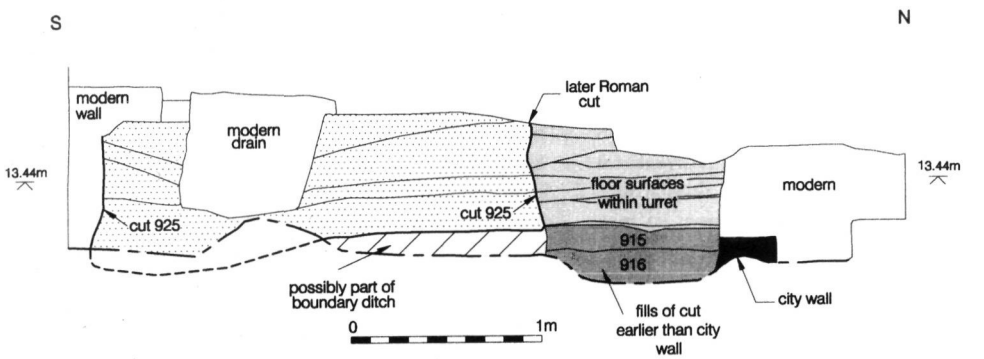


Fig 10. Section 900 across deposits within turret

lying perpendicular to and to the S (*ie* internal to) of the truncated remains of the city wall. This wall was identical in construction to the city wall and would appear to be part of an internal structure against the city wall, most likely a stair turret. The remains of four other internal turrets have been found along the wall circuit. Three of these were found on the wall between the Tower of London and Aldgate and one more was located on the Central Criminal Court site between Newgate and Ludgate (Marsden 1980, 122–3). They varied in size internally from 11ft by 6ft (3.35m by 1.83m) at No. 19 Tower Hill (Cottrill 1937, 28) to 9ft by 5ft (2.74m by 1.52m) at the one between Tower Hill and the Wardrobe Tower (*JRS* 1958) Their walls were also of varying thicknesses ranging from 2ft 8in (0.81m) at No. 19 Tower Hill to 3ft 2in (0.97m) at the Central Criminal Court (Marsden 1970, 3). The wall on the present site measured between 0.66m

and 0.77m thick, but had been heavily truncated from above with only a few mortar bonded lumps of ragstone remaining, and there were no signs of an E–W return. However, its general size and its construction would suggest that it was a stair turret.

The position of the turret is of major interest. It is very close to the SW corner turret of the Cripplegate fort and adds to the debate over the status of the fort after the city wall was built. The filling of the ditch at the SE corner of the fort produced material ranging down to the late 2nd or early 3rd century suggesting that at least this part of the fort's defences had gone out of use by the time of the construction of the city wall (Grimes 1968, 39). It is, therefore, possible that the SW turret of the fort also became superfluous with the building of the city wall, and was pulled down at this time and replaced by the turret discovered on the present site.

To the W of the wall a sequence of probable brickearth floor layers with silt and burnt occupation deposits, cut by a large pit [925] to the S, was revealed in section (Fig 10). Pottery from these deposits was sparse as they were mainly examined in section, which was cut back by 10cm for finds retrieval. However, the pottery that was retrieved was dated to the second half of the 2nd century, which suggests that all the material was residual as two fills, [915] and [916], below these deposits were dated to late 2nd century and were not out of keeping with an early 3rd-century date for the construction of the city wall. The fills of the large cut to the S [925] produced small assemblages of residual material of 2nd-century date, much of which was probably derived from the disturbance of the deposits within the turret. These were interpreted as being occupation deposits within the turret, with the large cut possibly being where the ladder or stairs had been removed.

Associated with the Roman city wall was a series of brickearth, gravel, and clay silt layers against the internal face of the wall. A similar sequence of brickearth sealed by gravel was recorded in very truncated form against the wall in Area B. Similarly a gravel deposit was found against the wall in the SE corner of site. These were probably the remains of the internal rampart against the city wall, which was most notably found at the Central Criminal Court, Warwick Square (Marsden 1980, 120–1). Finds were very sparse as no excavation was permitted but eight sherds of pottery dating to the first half of the 2nd century were recovered during cleaning of layer [307]. This material would most likely have come originally from the upcast from the construction cut of the city wall, which passed through the large earlier E–W boundary ditch, and cannot be a guide for the construction of the wall or the bank.

Remains of a ditch were observed in the SE corner of the site, where a flat-bottomed cut [402], measuring at least 2.07m wide and 1.25m deep with a gently sloping side to the S, was recorded in section (Fig 11). This was backfilled with a mixture of silt and brickearth deposits containing large lumps of ragstone, presumably originally part of the city wall. Finds were again sparse, consisting of a fragment of Gauloise amphora of uncertain form dated to between AD 43 and 250, and a few fragments of cbm dating to AD 120/160–late 2nd century/3rd century. The finds are consistent with a late 2nd-century/early 3rd-century date for the ditch. The city wall ditch was typically 3.05m to 4.88m wide, between 1.17m and 2.00m deep (Perring 1991, 91), and lay between 2.70m and 4.50m from the external face of the city wall. This cut lay *c.*2.20m from the projected line of the wall and would therefore seem to fulfil all the characteristics of the original Roman city ditch associated with the building of the wall.

In Area I in the NW corner of the site the remains of a linear cut [714] aligned N–S were backfilled with a dark grey-brown silt deposit [713] (see Fig 7 above). A small assemblage of 15 sherds of pottery dated to the first half of the 2nd century and cbm fragments of similar date were recovered. The feature was heavily truncated by the later medieval city ditch, making interpretation difficult. It was located just to the E of the Roman road in the sewer heading and might represent a roadside ditch up to 1.08m deep; however, it could alternatively be part of the later 4th-century city ditch, although the dating would seem to be too early.

Truncating the S edge of the city ditch was a 'V'-shaped cut [406], measuring 2.26m wide by 1.00m deep in section. It was backfilled with mixed brickearth and clayey silt deposits. Partial excavation for finds retrieval was undertaken; this showed the cut to be aligned E–W on its N side (the S edge was truncated), running parallel to the city wall with its truncated S side at a distance of only 0.60m from the outer face of the city wall. The few datable finds consisted of two sherds of 2nd-century pot, one very abraded,

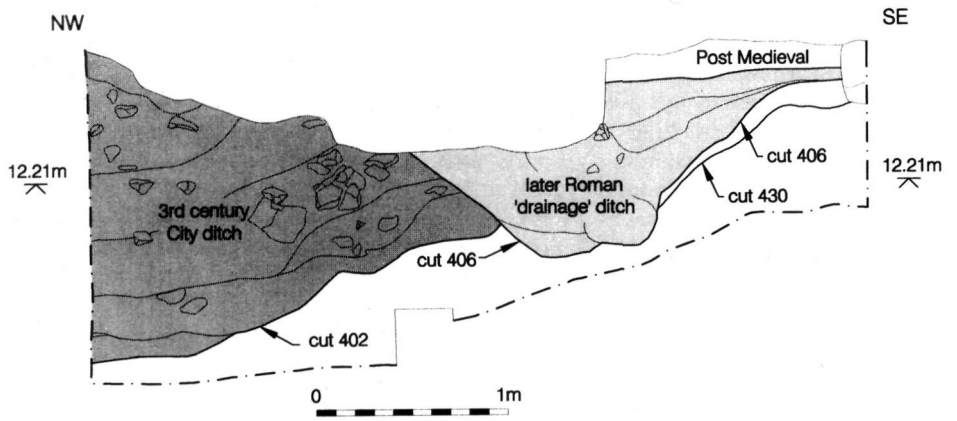


Fig 11. Section 215 of Roman city ditch

and fragments of 2nd-century cbm, which do not help to satisfactorily date the feature. It probably represented a later drainage ditch associated with the later Roman ditch. However, elements of a human skeleton, including the humerus, radius, ulna, scapula, and several ribs and vertebrae of an individual aged 25 to 30 years old, were recovered from one of the fills, suggesting that it might possibly be a grave, although the shape in section is very unusual (see Fig 11). It is possible that an individual was dumped into an open ditch and rapidly covered for a quick and clandestine burial.

Evidence of the later, wider, flat bottomed Roman city ditch found elsewhere on the wall circuit at Ludgate Hill (Hill 1977, 45), Aldgate/ Dukes Place (Marsden 1969, 20–6), and the GPO site (RCHM 1928) is less forthcoming on this site. This is probably due to it being largely cut away by the later, deeper medieval ditch; also as Maloney points out a large late Roman ditch could have remained open for a long time, especially following the abandonment of the city at the end of the Roman period, and the upper fills might well contain pot of early medieval date, as was the case in the possible late Roman ditches found at Houndsditch and Dukes Place (Maloney 1983, 111). However, in the tunnel beneath Aldersgate Street, which connected the sewer heading in the NW corner of site to the main sewer, a flat bottomed cut slightly sloping from N to S was observed. The cut measured at least 6.48m E–W by at least 2.20m N–S by 1.50m in depth. This was backfilled with a mixture of dark grey and dark brown waterlain silt and sandy silt containing frequent Roman cbm and animal bone. It may represent the late Roman ditch. Two sherds of Saxon pottery and some fragments of late Saxon leather shoes recovered from the tunnel may represent the scanty remains of a later Saxon city ditch. Stratigraphic retrieval of finds was impossible and the finds which were recovered came from the contractor's spoil during a watching brief on the digging of the tunnel. To the E of the sewer heading a N–S, possibly linear, cut, heavily truncated to the E by later ditches, was observed. The silt backfill contained 2nd-century pot and was apparently contemporary with the ditch deposits in the tunnel to the W of the gravel surfaces in the sewer heading. It would, therefore, appear that the strip of land occupied by the earlier road had been left as a causeway approaching the site of the Roman gate at Aldersgate. This causeway through the ditches seems to have been respected by the Saxon ditch and in part by the medieval city ditch, the sides of which rose up as it approached the W edge of the site.

The edge of the later Roman city ditch closest to the city wall had been lost on the site due to the presence of the large medieval ditch *c.*3.00m from the wall. However, a large ditch to the N of the site contained much Saxo-Norman pot and could well have originally been the late Roman ditch. Evidence for this ditch can be found on other sites in the vicinity. The W edge of the late Roman ditch was recorded at a distance of *c.*25m from the outer face of the city wall at 7–12 Aldersgate Street (Egan 1985), making the late Roman ditch some 23m wide. On the E side of Aldersgate Street in 1887 Fox observed a large, flat bottomed ditch, 22.71m wide by 4.29m deep with an inner edge 3.12m

from the face of the Roman wall, which he interpreted as Roman, although this dating was doubted by Wheeler (RCHM 1928). Tunnelling for a sewer in 1924 revealed 'black mud, still oozing in some places, and very foul smelling' a few feet to the N of the city wall and extending 21.30m to the N, containing numerous animal bones (Harding & Marsden 1986, 757). This was then reckoned to be part of the medieval city ditch, but the material is very similar to that observed in the sewer tunnel excavated as part of the current project which was dated mainly to the Roman period with some Saxon finds.

No remains of the Roman, medieval, or post-medieval gateway at Aldersgate were observed on site. During building work in 1922, 210ft (64.01m) of Roman wall traced from Bastion 15 was observed (RCHM 1928, 90) but no mention was made of the gate. If the interpretation of the ragstone masonry found in the GPO tunnel beneath Aldersgate Street in 1939 is correct the E side of the gate was predicted to lie in the SW corner of the site (Maloney 1983, 110–11). Indeed the E opening would have been in direct alignment with the earlier Roman road, found in the sewer heading and at 7–12 Aldersgate Street, and with the apparent remains of a causeway crossing over the Roman and later city ditches. However, it was not possible to excavate in the predicted location of the gate due to the presence of large steel supports maintaining the integrity of the party wall of the Lord Raglan public house.

SAXO-NORMAN CITY DITCH

In the NW part of the site adjacent to the boundary wall of 7–12 Aldersgate Street a sequence of fill deposits was revealed. One mid brown organic deposit extended along the length of the party wall suggesting that the fills were all contained in one large E–W feature. A Saxo-Norman date (11th century to early 12th century) has been given to these deposits, which may form the fills of a large defensive city ditch. The maximum width of Saxon ditch observed was 6.60m N–S. However no sides or base were visible, since its S edge was cut away by the later medieval city ditch and its N edge would appear to be just beyond the site boundary.

A N–S aligned ditch of similar date was recorded in the SE corner of 7–12 Aldersgate Street (Egan 1985), the outer edge of which extended at least 25m from the city wall. No evidence of any E–W aligned ditch was found along the S periphery of 7–12 Aldersgate Street, but, if a distance of *c.*25m from the city wall was maintained round the dog-leg to the W, the edge of the ditch would have been positioned on the party wall boundary. To the W at the junction of Little Britain and King Edward Street a large E–W ditch, with stakes driven in its sides, contained a fill dated mid 11th to mid 12th century, providing further evidence for a late Saxon city ditch (Gibson 1995). Other evidence for a Saxon city ditch was observed at Ludgate Hill (Hill 1977, 45) and possibly at Houndsditch (Vince 1990, 90).

A small number of residual Early Saxon pottery sherds of a 5th- or 6th-century date were present in the backfill of the Saxo-Norman ditch and later pitting. Early Saxon finds from within the City area are extremely rare, consisting of small assemblages from Billingsgate and elsewhere along the waterfront and outside the city walls at St Brides and in the Roman cemeteries at Mansell Street and West Smithfield (Blackmore & Williams 1997, 54–6). 5th-century Saxon activity has also been recorded at Clerkenwell to the NW of the site (Cowie & Harding 2000, 177). Only four sherds were recovered and they may have been imported onto the site with material from elsewhere. However they may be evidence of at least a transitory presence in the near vicinity.

SAXO-NORMAN PITTING

Several pits cutting into the infilled Saxon ditch in the NW part of the site were identified in both plan and section. The organic remains within them suggest their primary use as cess pits. An excavation at 7–12 Aldersgate Street revealed a series of pits of Anglo-Norman date along the E side of Aldersgate Street, suggesting an extra-mural ribbon development (Egan 1985). The cess pits found on the current site are probably part of the same development, encroaching on the partially filled in late Roman/Saxon ditch.

A large quantity of fragments of crucibles (over 500) was found sporadically in the late Saxon ditch fills but mostly from fill [668] of a Saxo-Norman gully [675], where 497 sherds with 10 lips of individual crucibles were identified. This gully measured 8.4m by 0.65m by 0.53m max deep and was aligned roughly NW–SE. The base was relatively flat, sloping slightly down to the

W. The majority of these crucibles were in Early Medieval coarse whiteware, with four crucibles of Stamford ware also present (Jarrett, below). These have been dated to the late 11th century. The large quantities of crucibles found on site indicate metal working on a large scale just outside the city wall, where the risk of fire to the wooden buildings of the city would be less. The crucible fragments and associated metal slag were subjected to further analysis in order to determine the industrial processes involved. Petrographic thin sectioning of the crucibles and analysis of the slag involving furnace tests and EDS (Energy Dispersive Spectroscopy) on the metal prills contained within the slag resulted in a conclusion that they were used for 'silver refining' and 'silver processing' by means of lead extraction. This process either involved silver extraction by lead, to produce lead bullion for the later refinement of the silver content, or a cupellation process (Lacey 2000). According to Stow silversmiths used to live in Silver Street which was to the NE of the site where London Wall now runs. Perhaps this was a continuation of silverworking from late Saxon times into the medieval period.

The presence of the teeth of a field vole, a species requiring ground cover and therefore more commonly associated with the rural environment, serves to illustrate the rural setting found immediately outside the city wall in the Saxo-Norman period (Armitage, below). The faunal material recovered from the Saxon ditch and Saxo-Norman pitting can be identified as a whole as discarded food debris from all stages of meat preparation and consumption (slaughtering, primary/secondary butchering, as well as kitchen and table waste) (Armitage, below). This material provides an insight into the diet of the inhabitants of the Saxo-Norman/early medieval period. There was a distinct lack of variety, with the diet dominated by meat (especially cattle and sheep). The infrequency of pig and domestic fowl/geese/duck suggests there was little (if any) localised backyard food production. There is a wider variety with respect to fish, with cod and herring and the presence of mackerel and flat fish showing the preponderance of marine fish over freshwater fish (Armitage, below). This lack of variety in the diet is confirmed by the relative scarcity of plant remains and diversification recovered from the environmental samples (Carruthers, below).

The survival of the Saxon ditch and Saxo-Norman pitting in the NW corner of the site suggests that the medieval ditch was not as wide as the earlier Roman 4th-century and Saxon ditch at this point, its outer edge measuring only 18.5m from the line of the city wall.

MEDIEVAL BASTION 15 (Fig 12)

In the SE corner of the site a curving masonry fragment constructed of roughly hewn lumps of ragstone, chalk, flint, and occasional tile bonded together with soft dark yellow very sandy lime mortar was found (Fig 13). The external stones were faced and the wall curved round to the S. It measured 1.90m N–S by 2.90m E–W by at least 0.32m high. A smaller fragment to S respected the same curve. This represents the remains of medieval Bastion 15 (Merrifield 1965) which was inserted into the angle formed by the junction of the city wall and Cripplegate fort. The N end of the wall roughly aligns with the small fragment of wall keyed into the fabric of Cripplegate fort in the Noble Street garden. The bastion was circular according to its representation on Ogilby and Morgan's Map of 1676; however, the maps of Agas *c.*1562, Braun and Hogenberg 1572, and Leake and Hollar 1667 and the archaeological evidence, observed both on the present site and in 1922, would seem to point to a semi-circular or horse-shoe shaped bastion (RCHM 1928, 104). A fragment of pot recovered from the bastion was dated to 1080–1350, and its foundation cut through an apparently 3rd/4th-century Roman deposit. Although finds retrieval was minimal because of the restrictions on excavating within the Scheduled Ancient Monument, the fabric of the masonry, which included a fragment of medieval tile dated 1240/70–1270/1350, certainly points to a medieval date for the bastion, thus confirming that the hollow bastions on the W circuit of the wall were medieval, whilst those with solid bases on the E circuit were of Roman date.

MEDIEVAL CITY DITCH: 13th/14th CENTURY (Figs 14–15)

Area A, the main area of excavation, contained a sequence of six large infilled cuts, which are interpreted as being the city ditch with evidence for its periodic cleaning out and re-cutting.

The medieval ditch was found to be at least

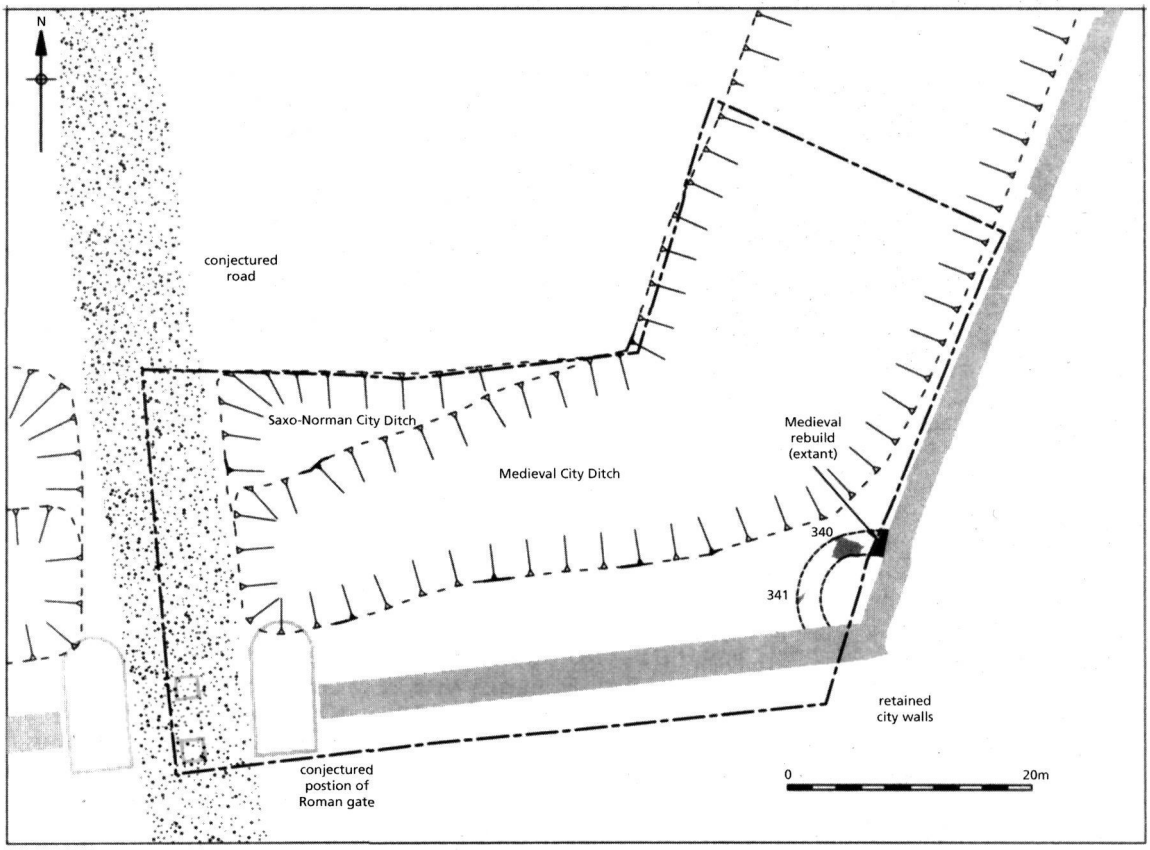


Fig 12. Plan of medieval city wall and bastion

17.50m wide extending from 3.10m from the city wall in the N and it was up to *c.*4.00m deep. In the excavation at 7–12 Aldersgate Street the outer edge of the medieval ditch was observed at a distance of *c.*25m from the line of the city wall (Egan 1985). The edge of the medieval ditch probably lay under the party wall to the N in the NE part of the site. However, to the W the ditch did not appear to have been so wide as the outer edge was recorded in a modern service trench as being only 18.5m from the projected line of the city wall, suggesting that the ditch narrowed as it approached the gateway and road at Aldersgate. The E–W arm of the ditch is unlikely to have extended much further N than the site, since the property to the N plotted by Treswell in *c.*1610 (Schofield 1987, 34–5) belonged to Christ's Hospital, and it was well established long before the Dissolution, when it was known as 'Trinity Hall' and formed part of the endowments of the fraternity of the Holy Trinity in the parish church of St Botolph Aldersgate opposite (Dyson 1999). These measurements are comparable with observations elsewhere on the circuit, which seem to suggest that the ditch was not a constant width (Maloney & Harding 1979, 353). Stow mentions the ditch as being up to 200ft wide.

The earliest phase of the medieval city ditch measured at least 11.24m wide by at least 1.90m deep with a gradually sloping side to the S and a flattish base. It continued beyond the limit of excavation to the N. It was filled with dark brown and grey waterlain silts, suggesting that the bottom of the ditch was filled with water. For a great part of its history the city ditch at Aldersgate would appear to have been filled with water. In 1240–41 an unknown man was found drowned in the ditch outside Aldersgate (Chew & Weinbaum 1970, no. 143). The maps of Agas *c.*1562 and Braun and Hogenberg 1572 both show the ditch slightly to the N of the site as being waterfilled. This was certainly the case at Houndsditch, where a freshwater (slow-moving

Fig 13. View of bastion

and unpolluted) environment for the lower levels of the ditch was identified, with a more stagnant environment in the upper levels (Maloney & Harding 1979, 351). The survival of leather and textile finds from the first two phases of the medieval ditch seems to confirm the waterlain nature of the deposits. Among the plant remains recovered from the environmental samples were waterlogged remains of aquatic/semi-aquatic weeds, which were primarily marginals, some of which grow in seasonally exposed, often polluted muddy areas. The relatively low percentage present and small range of such plants suggest that the ditch did not contain standing water for long periods of time allowing a well-developed aquatic flora to become established, but probably experienced periodic episodes of waterlogging due to poor drainage (Carruthers, below). Towards the N end of the ditch attempts seem to have been made to consolidate the bank by dumping gravel and large lumps of ragstone, chalk, and ceramic building material. The fills have been dated to 13th/early 14th century, and the ditch probably represents the remains of the city ditch which Stow in his Survey of 1598 records was 'begun to be made by the Londoners in the year 1211, and was finished in the year 1213'.

RE-CUT OF CITY DITCH *c.*1350–1400

The above ditch was later re-cut with a similar flat bottomed profile, measuring at least 8.30m wide N–S by *c.*0.54m deep. This ditch seems to have been prone to silting up, as it was infilled with a mixture of apparently waterlain silts and bands of pure silts and sand lenses. The late 14th-century deposition date for the backfills of this ditch was based on the absence of Late London Ware within the pottery assemblage (Jarrett, below).

RE-CUT OF CITY DITCH *c.*1400–1500/50

The previous ditch was later re-cut to form another flat bottomed ditch, measuring at least 10.46m wide N–S by *c.*0.50m deep, which continued beyond the N limit of excavation. This

Fig 14. View of medieval city ditch

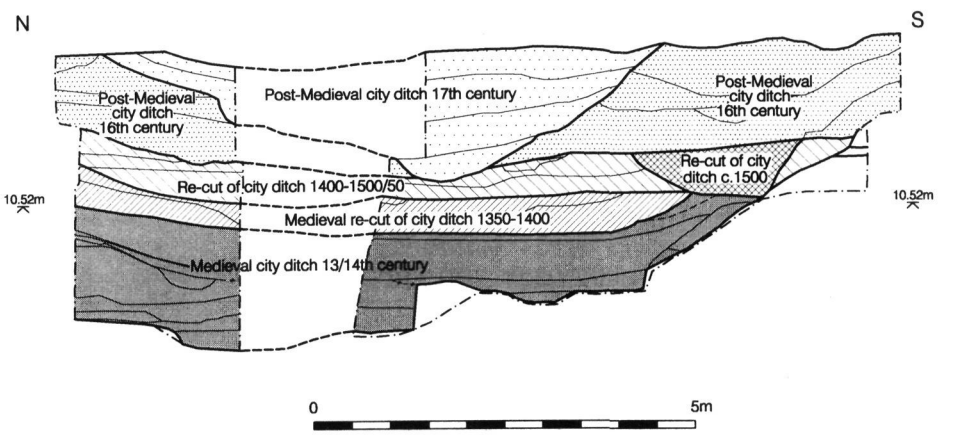


Fig 15. Section 221 across medieval city ditch

ditch also seems to have been subject to silting-up with frequent sand lenses within the fills. Dated to between the 15th and early 16th centuries this phase of re-cut could represent another cleaning episode of the ditch, or may perhaps have been done in response to the need for the city defences to be rebuilt during the Wars of the Roses when Ralph Joceline, Mayor of London, in 1477 'caused the whole ditch to be cast and cleansed' (Stow 1598, 51). This may have been a direct response to the poor state of the defences. Previously the dilapidated condition of the walls of London may well, in part, have accounted for the readiness of the City fathers to

negotiate with both Yorkists and Lancastrians in the 1450s and 1460s; and in 1461 and 1471 when London had been threatened by Margaret of Anjou and then by the Bastard of Fauconberg whose guns shot at Aldgate and London Bridge (Lander 1990, 145).

RE-CUT OF CITY DITCH *c.*1500

The sequence of three flat-bottomed ditches was replaced by a much smaller cut with sharply sloping sides and a narrow flat-bottomed base which was only 0.90m wide. It measured 2.40m wide N–S by 0.89m deep. It was filled with an organic rich silty clay. This phase of the city ditch would appear to be much narrower and slightly deeper than that which it replaced. It does not appear to have been in use for long and must have quickly filled up either naturally or by man-made activity.

RE-CUT OF CITY DITCH 16th CENTURY

The smaller ditch was replaced by another large flat bottomed cut, measuring at least 10.90m wide N–S by 1.37m deep. It was gradually filled in by the dumping of domestic and other waste. The backfill of the ditch was dated to the late 16th century to early 17th century, but very few sherds of pottery of this date were recovered, most were earlier, from the mid 16th century.

POST-MEDIEVAL CITY DITCH 17th CENTURY

One last phase of city ditch was revealed, being much smaller and with its S side at *c.*9.00m from the city wall being much further away than the other ditches. It was roughly 'V'-shaped with fairly steep sides and a rounded base which measured 5.52m wide N–S by 2.04m deep. It perhaps represents one last attempt to improve the city defences in response to a time of political crisis, most probably the Civil War. This may be the ditch which appears and is called 'town ditch' on the map of Newcourt and Faithorne of 1658 and which would seem to be much narrower than the ditch which appears to the N of the site on the earlier Agas and Braun and Hogenberg maps. The pottery recovered from the fills suggests an early 17th-century date; no clay tobacco pipes were found. The possible mid 17th-century dating is based on the presence of brick fragments dated from 1620/40s–1900 from the primary fill of the ditch (Sabel 2000). Further evidence for a re-cutting of the city ditch during the Civil War is provided by three other sites to the E: St Alphage Street (Grimes 1968, 88), Fore Street (Flintham 1998, 233), and Dukes Place at the junction of Houndsditch and Aldgate (Maloney & Harding 1979, 354) where 17th-century material was found in the top fills of the ditch. However, it has been doubted that the whole ditch was re-dug around the entire circuit of the city wall during the Civil War because in many places it was built over or laid out as gardens by this time (Maloney & Harding 1979, 354), it may just have been a localised re-cutting of the ditch, although as Maloney and Harding argue there would have been little point in just re-cutting small sections. However, it is true that the only named mention of the city ditch on the Newcourt and Faithorne map is that section between Aldersgate and the bastion at the NW corner of Cripplegate fort, suggesting that, if the map is accurate, it was a localised survival by 1658.

GENERAL DISCUSSION OF THE MEDIEVAL/POST-MEDIEVAL CITY DITCH

The six phases of the medieval city ditch revealed within the main area of excavation (Area A) show that the city authorities must have waged a constant battle against Londoners disposing of their rubbish in the ditch. The city ditch was continually being cleaned out and re-dug, especially at times of political upheaval such as during the Wars of the Roses. However, this rubbish has provided an important archaeological record of the food and lives of ordinary Londoners.

From the analyses of the anatomical distribution/body part representation in the bones of domestic livestock, as well as the presence of poultry and fish bones, the bulk of the faunal material from all phases represents discarded domestic food debris (kitchen/table waste). There is very little evidence for concentrations of primary butchery waste from slaughteryards in individual deposits. There was a certain amount of industrial waste from horn-, bone- and antler-working crafts, but this was

apparently intermixed with the domestic refuse during disposal into the city ditch, along with the carcasses of dead pet cats and dogs. Dead pack- and cart-horses, either as complete carcasses or in the form of disjointed portions (probably cut up to better facilitate their transportation and disposal), were also thrown into the city ditch either by their owners or by the knackers after processing/removal of their skins (Armitage, below). The absence of any evidence of weathering and biological degradation indicates that the bones had become incorporated into the deposits shortly following discard and had not been left lying scattered and exposed on the ground for any length of time prior to burial (Armitage, below). This suggests that the bones were not just dumped into the ditch but were covered immediately with other debris, probably in an attempt to smother the smell.

From analysis of the animal bone from the medieval and post-medieval phases of the city ditch it is evident that beef/veal was the most important staple item in the diet of Londoners, with mutton/lamb second, and pork/suckling pig a poor third. Apart from the remains of haunches of venison there were no bone elements, such as plover, crane, woodcock, dove or quail, within the assemblages to suggest high status. Domestic fowl and geese were consumed along with an increasing number of rabbits, however, and a wide variety of fish was represented (Armitage, below).

Vermin and scavengers were also present on the site, as attested by the discovery of bones of black rats and ravens, as might be expected following the disposal of meat and other rubbish into the ditch. However, there was a noticeable lack of evidence of small vertebrate fauna, such as wild mammals, birds, and amphibians, whose presence might be expected just outside the city walls, especially for the Roman and medieval periods (Armitage, below).

From the analysis of the pollen found in column samples taken from the bottom two phases of the medieval ditch, the absence locally of extensive tree growth is indicated. The pollen spectra are typical of medieval and later contexts in that there is little tree and scrub pollen but a very diverse assemblage of weeds derived from various habitats and via various transport mechanisms. The most widespread were wild grasses and cultivated cereals including wheat, barley, and rye. These are associated with numerous weeds typical of cultivated and waste ground. Most of the cereals are probably of secondary derivation coming from refuse; this might include human and animal ordure, straw floor coverings, roofing materials and waste food or the by-products of cereal crop processing (Scaife, below).

Certain findings suggest that the ditches were used for the disposal of human and animal cess. The presence of whip worm and maes worm indicates that there was a faecal component in the sediments and suggests that the cereal pollen was present in food and has passed through the guts of humans or animals. Another major source of pollen from ingested grasses and cereal fodder may result from the disposal of slaughterhouse offal in the city ditch. The presence of borage and hop pollen is also indicative of cess/faecal disposal, since borage is a well known pot herb and was also used in cups of wine and cider to impart a cool flavour. The presence of hop pollen, which would have come from beer drinking, is also an indication of the disposal of cess into the ditch (Scaife, below). Analysis of the fish bones by Armitage (Armitage, below) has also provided evidence for certain bones having passed through both human and canine digestion.

Analysis of the charred, waterlogged, and mineralised plant remains from four phases of the ditch by Carruthers has confirmed the cessy nature of much of the fills. The range of edible taxa present and the recovery of coprolites provide evidence that faecal material was a major component of the waste deposited in the ditches. Many of the seeds recovered were from plants that could be used for their culinary and/or medicinal properties, such as hemp, flax, pot marigold, white horehound, hemlock, and henbane. The wide range of medicinal plant species present in the samples taken from the ditch suggests either that the inhabitants were in poor health and were of high enough status to afford remedies or that a physic garden or hospice existed in the vicinity of the site for much of the medieval period (Carruthers, below). The lack of high status food among the animal remains would seem to suggest the latter alternative. Indeed, St Bartholomew's Hospital, founded in 1123, is not far to the NW.

The medieval ditches contained largely unabraded sherds of domestic kitchen and tablewares, but with a general absence of complete or near complete pots. This indicates the rapid deposition of rubbish and the mixing of materials resulting from the amalgamation of several middens from

organised refuse disposal or the mixing of earlier material from the re-cutting and cleaning of the ditches (Jarrett, below). From the pottery analysis by Jarrett it is evident that the latest pottery in the last two phases of the city ditch is under-represented, indicating that contemporary refuse was not dumped into the ditch or that the ditches were maintained regularly.

Therefore, from the analyses of the different samples and finds recovered from the various phases of ditch fill, it is apparent that the ditch was the dumping ground of the City despite the City authorities repeated attempts to stop the practice. Everything from domestic household rubbish and human faeces to deceased pet cats and dogs was deposited into the ditch. But the proportion of bone elements representing butchers' waste is much less than that identified as domestic waste, suggesting that the City authorities may have had at least some success in regulating proper disposal of the butchers' waste products (Armitage, below). Generally the authorities fought a losing battle with only times of political crisis leading to effective cleaning and reinstatement of the ditch.

END OF THE CITY DITCH

So, when was the city ditch backfilled? The map evidence is slightly contradictory. On the Agas map of *c.*1562 (Fig 16) the area of the site suffers from the perspective used on the drawing and is largely obscured by the city wall; the distance between Bastions 14 (to the N) and 15 is also greatly foreshortened. However, immediately to the N of Bastion 14 the ditch is shown filled with water, to the W of Aldersgate the ditch is apparently present enclosed on its N side by a wall, but the area of the site up to Bastion 14 is shown as an open space. The Braun and Hogenberg map of 1572 (Fig 17) would appear to have a ditch filled with water running to Bastion 15 and Aldersgate, although yet again there is a slight problem with perspective and the area immediately beyond the city wall is obscured. The Newcourt and Faithorne map of 1658 (Fig 18) appears to show that the ditch has been filled in and built over nearly everywhere except in the vicinity of the site, where a narrow ditch is seen to extend from Aldersgate to the bastion at the NW corner of Cripplegate fort. By the time of Ogilby and Morgan's map of 1676

Fig 16. Agas map of c.1562

(Fig 19) the ditch has been infilled and the site was occupied by the Falcon Inn and its premises.

Documents of the period suggest that mention of the city ditch within the development area was spasmodic. The first recorded tenant of the ditch area was Noel Sotherton, a merchant taylor, who was preceded there by his father John, a baron of the exchequer. On 23 April 1589 Noel Sotherton was granted a new 40 year lease of 'a garden now in his tenure situate without Aldersgate under London Wall' (CLRO, City Lands Grant Book, i (1589–1616), ffiv, 14r). There was no specific reference to the city ditch in this lease. Nor was there such in a viewer's certificate of 3 June 1549 concerning a dispute between the City and the owner of the future Christ's Hospital property, and referring to a piece of ground outside Aldersgate, extending from his wall to the town wall and belonging of right to the City (Loengard 1989, no. 252).

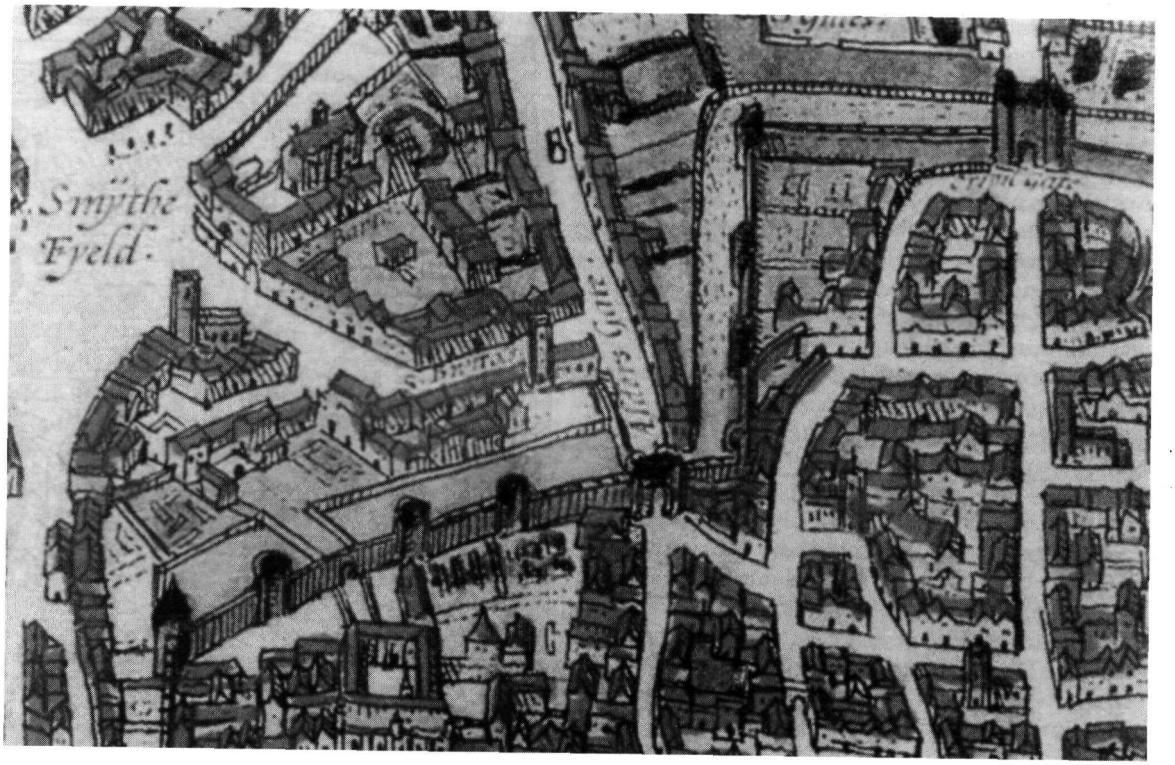


Fig 17. Braun and Hogenberg map of 1572

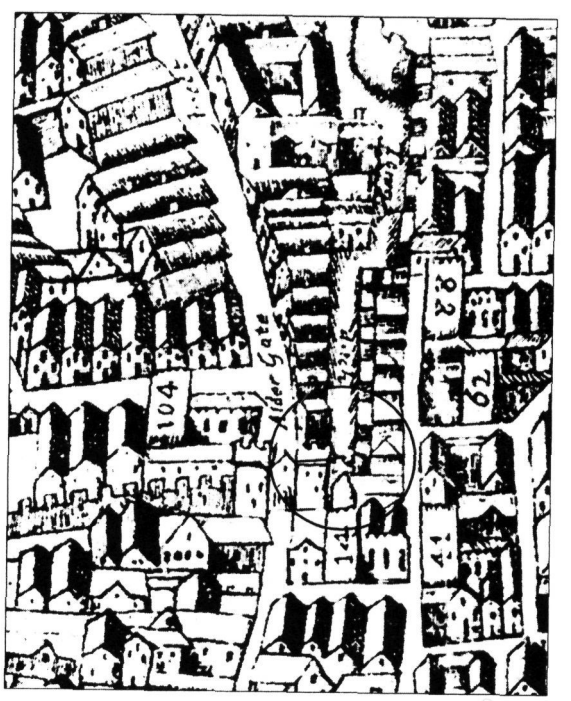


Fig 18. Newcourt and Faithorne map of 1658

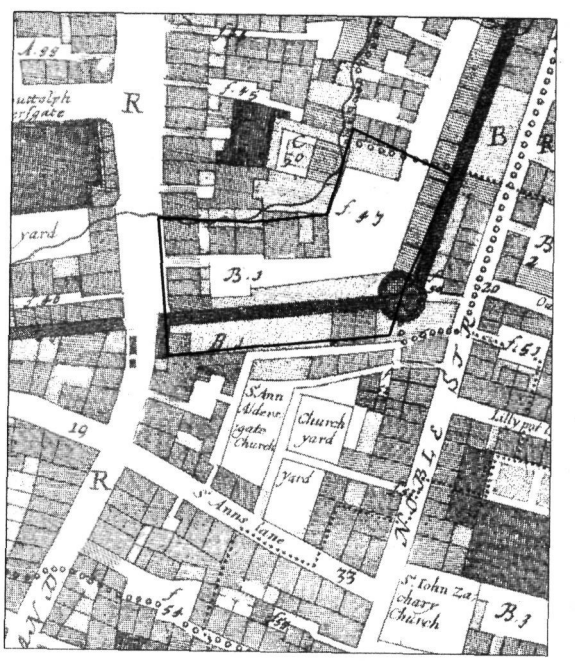


Fig 19. Ogilby and Morgan map of 1676

However, the ditch between Cripplegate and Aldersgate was ordered on 7 May 1602 to be kept in better sort – the tenant (Sotherton) being required to cleanse it from time to time (City Lands Grant Book, i. Ff59v, 60r). The city ditch to the W side of Aldersgate was referred to in 1667–68 (Fire Court, ii.D41) and as late as 1742 (CLRO, City Lands Deeds, Box 5 no. 8).

The leasing of gardens outside the city wall such as that outside Aldersgate leased to Sotherton did not preclude the existence of the city ditch, which the tenant was expected to respect and maintain; this could evidently be taken for granted without always being specified. Apart from the mid 16th-century reference to the 'George' to the south of the Christ's Hospital premises, there is no documentary evidence of building on the site before the Great Fire (Dyson 1999) and none before the Falcon on Ogilby and Morgan's map of 1676, though Leake and Hollar 1667 shows The Great Fire as reaching the site, which would have destroyed any buildings that might have stood there.

A lease of 1668 made by the City to William Thornhill concerning land on the present site treats the property as an ordinary plot of land and makes no mention of any contemporary ditch or of the site's former status as part of the city ditch (CLRO City Lands Deeds, Box 86 no. 3). By the date of Ogilby and Morgan's map, 1676 (Fig 19), the site was occupied by the Falcon Inn and its premises, and it continued to be occupied by the inn in different forms into the 19th century.

The archaeological evidence would seem to indicate that the last phase of the ditch was backfilled some time in the 17th century. It would seem to suggest that the city ditch was backfilled in this vicinity in the late 16th/early 17th century and then it was re-cut later in the 17th century, for example at the time of the Civil War. Evidence of such an occurrence was previously found by Grimes at St Alphage (Grimes 1968). An Act of Common Council of 1643 ordered the destruction of buildings erected against the outer face of the city wall (Smith & Kelsey 1996), suggesting that preparations were made to improve the City's original defences at the time of the Civil War despite the impressive modern defences that were constructed on London's outskirts (Sturdy 1975). So it is not unreasonable to suggest that the ditch was reinstated, where possible, at the same time and then backfilled after 1647 when London's new defences were dismantled with the removal of the Royalist threat.

POST-MEDIEVAL STRUCTURES ON THE INFILLED CITY DITCH

After the Restoration in 1660 the city ditch was no longer required and was infilled with domestic and other waste containing a great deal of animal bone and building material. Evidence of post-medieval structures built on the infilled ditch was recorded across the site. In the centre of the site towards the N of the main excavation area a 17th-century brick wall aligned N–S with associated postholes was recorded. To the NE a 17th-century brick cellar and later brick-lined well were uncovered. Further to the E a brick-floored cess pit, dating to the late 17th century, was found, and in the SE corner of the development area a rectangular brickearth-filled cut was probably the clay floor of a post-medieval structure. These structures were probably part of the Castle and Falcon Inn which occupied the site into the late 19th century. However, a quantity of fragments of red earthenware distillation flasks, associated with the manufacture of strong acids and indicating mid 17th-century metallurgy, was found in the backfilled cellar, which might point to another use for this building.

CONCLUSIONS (Fig 20)

The site at 1–6 Aldersgate Street is of particular importance in contributing to the history of London's defences from Roman times to the post-medieval period. This is the first evidence of an early Roman city boundary ditch to be found W of Cripplegate fort. The city wall has been located with certainty, being slightly further to the N than had previously been suggested. The dating of the construction of the wall has been found to be consistent with the late 2nd/early 3rd century. The discovery of a stair turret and its vicinity to the SW turret of Cripplegate fort is an interesting development. The city gate at Aldersgate, however, was not observed on site and the E part of it may have lain slightly to the E of the evaluation trench in an area where excavation was impossible. The remains of the Saxon ditch are a rare survival as elsewhere on the defensive circuit most of the

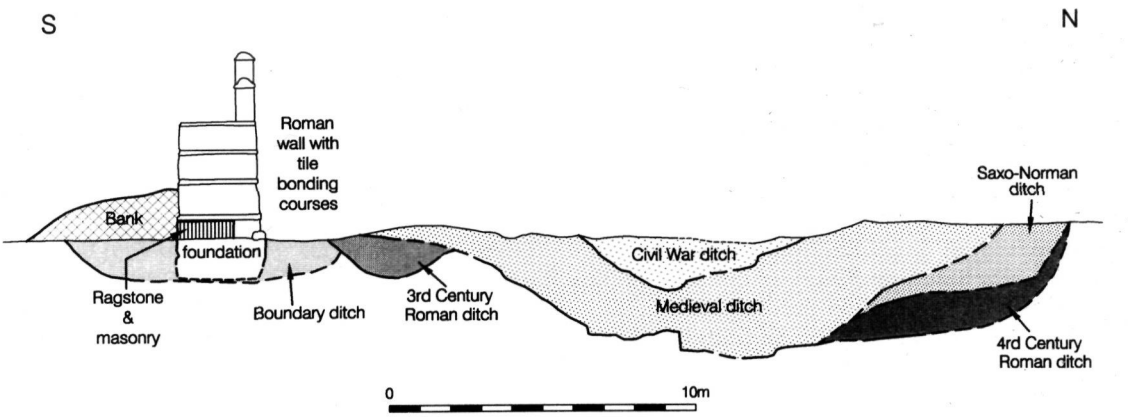


Fig 20. Composite section across the site

evidence for it has been destroyed by the later medieval ditch. The presence of medieval tile in the fabric of Bastion 15 proves its origin as medieval and contributes further proof to the suggestion that all the hollow bastions on the W circuit of the wall are of similar date. The several phases of re-cuts demonstrate that the cleaning and maintaining of the ditch was a continual process during the medieval and early post-medieval periods, necessitated by constant silting up of the waterfilled moat, and by the battle against the citizens of London who continued to use it to dump their rubbish. Finally the 17th-century ditch suggests that London was protected at least in part during the Civil War by an inner ring based on its 1600 year old defences.

THE STANDING CITY WALL FRONTING ONTO NOBLE STREET (Fig 21)

K.R. Sabel

The wall forming the E and SE boundary of the site (see plan, Fig 21) was recorded and analysed prior to the redevelopment and a watching brief was conducted during the wall's reduction as part of the works associated with the new building. The wall's surviving elements indicate the development of the buildings along the line of the city wall from the Roman period to the 20th century. A detailed analysis can be found in the report (Sabel *et al* 1997). This section briefly summarises the historic development of the buildings.

The foundations of the wall were formed by the Roman and medieval wall foundations

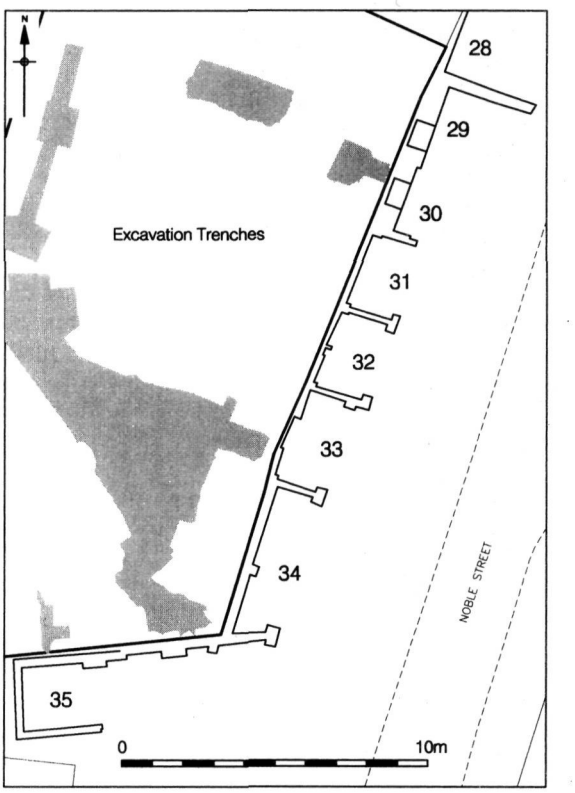


Fig 21. Location of wall

revealed by Grimes in excavations in 1949, 1957, and 1961–63 (Grimes 1968). The earliest surviving post-medieval building was the 18th- to early 19th-century building which stood to the W of the current wall. Its E wall was most recently the W wall of 34 Noble Street, parts of

its S wall survive in the party wall between Alder/Castle House and 35 Noble Street, and evidence was found of a wall relating to this building extending W from the W wall of 34 Noble Street. An element of the party wall between 34 and 35 Noble Street of the same period indicates that these properties were delineated at this time. These buildings were mostly built re-using 15th- to 17th-century bricks with fewer more contemporary bricks. Lime wash on the E wall face in 34 Noble Street suggests that the external face may not have been intended to be seen. There is also evidence of the party wall separating 32 and 33 Noble Street at this period, although this does not extend to the main wall face. There was also a late 18th- to early 19th-century element of the same party wall.

During the 19th century the area immediately to the E of the current wall consisted of the back yards of the properties fronting Noble Street and arches through the party walls of 33 and 34 and 32 and 33 Noble Street which linked these areas remain extant.

Later in the 19th century a predecessor of both Falcon House and Alder House was built in brick with a brick-vaulted basement supported on cast iron beams set into the side walls. The E wall of this building now forms the main city wall from the S part of 28 Noble Street to 33 Noble Street, and the wall passed behind the 18th- to early 19th-century elements in 34 Noble Street. The construction of this building would have necessitated the demolition of any buildings to the W of the wall. The warehouse at 35 Noble Street was also built during this period. It was brick built with bonding timbers and presented a classical external W elevation with blind arched windows towards the rear elevation of the church of St Anne and St Agnes (Face 4), with the brickwork built in Flemish bond, whereas elsewhere in the building it was built in English bond for strength.

Later still in the 19th century, 32 Noble Street was extended as far as the wall face and the six storey building which formed 29 and 30 Noble Street was built against the wall (Goad Fire Insurance 1940s), with a window overlooking the back yard of No. 31. The construction of these buildings would have closed any path which may have existed through the back yards of the Noble Street properties. 28 Noble Street was also built during this period, although later than 29 and 30 Noble Street.

With the removal of any rear access between the buildings along Noble Street and with a pressure towards the intensified use of space in the buildings, such as the need to install internal bathrooms, the other Noble Street properties were gradually extended to the wall from the late 19th century until the Second World War bombing. 33 Noble Street was extended either before or at the same time as 34 Noble Street. The relationship between the extensions of 31 and 32 Noble Street is ambiguous. The extensions of 31–34 Noble Street were mostly two storied, with the basements excavated from the back yards and their ground floors lit by skylights. The southern end of 34 Noble Street's extension was of three storeys. Nos 28, 29 and 30, and 35 were internally re-modelled at this time.

During the 20th century two window recesses and windows were inserted in the W wall of 29 and 30 Noble Street at ground floor level. These were only finally blocked after the demolition of the buildings, probably during the 1950s. After the blocking, the N end of the W face (Face 6) was rendered and a new wall with a glazed brick W face was built along the rest of Faces 5 and 6.

The wall's development can therefore be seen to reflect changing social needs and pressures. There was a move towards warehouse and commercial use in the 19th century. In the later 19th and early 20th century the extension of some of the properties to the wall imposed a social and economic pressure for the other Noble Street properties to follow suit. The late 19th- and 20th-century internal alterations in many cases reflected the provision of extra comfort and better facilities in buildings, with the insertion of new windows and internal bathrooms and WCs.

THE DECORATED SAMIAN WARE

Joanna Bird

[268] Dr 37 in Montans ware (Fig 22.22), with interior groove below the rim. The large hooked chevrons, arrowhead motif, wavy-line borders, and what is probably the same lion occur on a mould in the style of the Leaf Stamp Potter (Simpson 1976, fig 7, no. 32). The ring motif was not apparently common at Montans, but *cf* fig 2, no. 10, stamped by Malcio. A date *c.*AD 110–145 is likely.

[268] Dr 37 in the style of Drusus 1 (X-3) of Les Martres-de-Veyre. The dolphin frieze and beaded

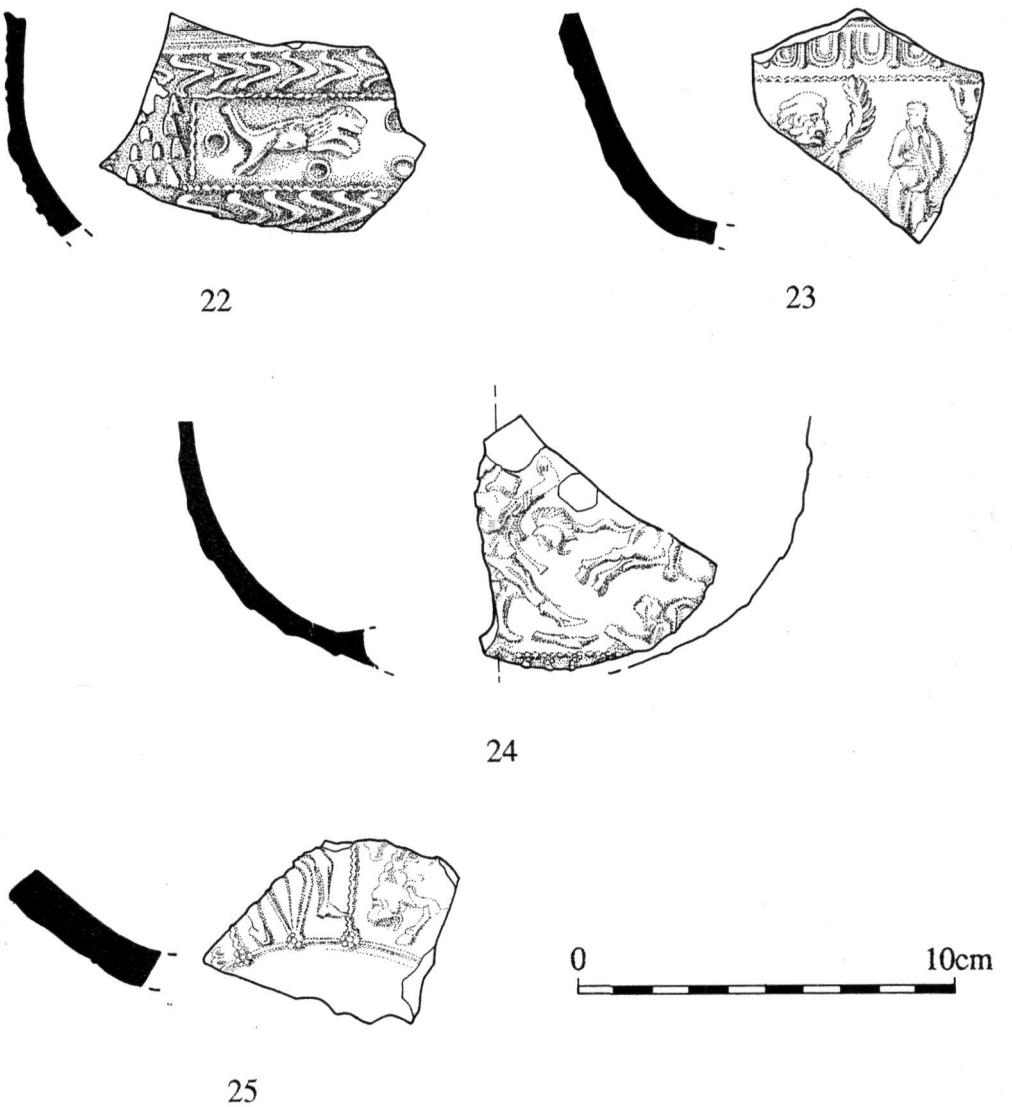


Fig 22. Samian ware

border are on Stanfield and Simpson (1958), pl 14, no. 173. *c.*AD 100–125.

[268] Dr 37 in the style of Drusus I (X-3) of Les Martres-de-Veyre. Stanfield and Simpson pl 15, no. 185 has the band of beaded rosettes, wreath of anchor motifs, and fringed scrolls; the figures are too fragmentary to identify. *c.*AD 100–125.

[268] Dr 37 by X-13 (Donnaucus) of Les Martres-de-Veyre or a potter of the Sacer group at Lezoux; they shared the leaf motif, Rogers L19, and similar beads and rosettes. The hare is not precisely identifiable. *c.*AD 115–130.

[268] Dr 37 in the style of Avitus of Lezoux (Fig 22.23). The ovolo, crisp wavy-line border and guideline (here below the border) are on Stanfield and Simpson pl 64, no. 18, the mask and lyre on pl 64, no. 22, and the cushion-shaped motif on pl 63, no. 10. The frond is Rogers J170, ascribed to Avitus; the figure is close to Oswald 923. *c.*AD 125–145.

[437] Dr 37 in style of X-13 (Donnaucus) of Les Martres-de-Veyre. The ovolo, beads, and rosette are on Stanfield and Simpson pl 42, no. 487; the motif in the panel is probably a tripod but is smudged (*cf* pl 42, no. 489). *c.*AD 100–125.

[437] Dr 37, probably by X-5 of Lezoux. The

ovolo, border, and corded motif are on Stanfield and Simpson pl 67, no. 2, the double medallion on pl 67, no. 8. The motif in the medallion is not identifiable. *c.*AD 125–150.

[437] Dr 37, Lezoux. The ovolo is too blurred and the figures too fragmentary to suggest an attribution; the rather heavy beads indicate an Antonine date.

[580] Dr 37 in the style of X-2 of Les Martres-de-Veyre (Fig 22.24). The figure is probably an Amazon, a larger version of that on Stanfield and Simpson pl 6, no. 62; the shield, helmet, border, and wreath are on pl 7, no. 95. The horse and rider are probably Oswald 246, recorded for X-1. *c.*AD 100–125.

[640] Dr 37 in the style of X-12 (Ioenalis) of Les Martres-de-Veyre. The ovolo and beads are on Stanfield and Simpson pl 41, no. 478. *c.*AD 100–125.

[655] Dr 37 in the style of X-9 (Medetus-Ranto) of Les Martres-de-Veyre (Fig 22.25). The crisp border, beaded rosette, and the lines at the base are on Stanfield and Simpson pl 31, no. 368; the animal may be the bear on pl 30, no. 360, and the figure is probably the Hercules on pl 34, no. 410. The leaf is Rogers U161, recorded for X-9. *c.*AD 110–130.

THE POST-ROMAN POTTERY

Chris Jarrett

The post-Roman pottery from the site dates from the early medieval period to the 17th century and reflects the chronology of the city ditches and activity within this area. A total of 1,933 sherds of pottery for these periods was recovered, weighing 39kg. The pottery was quantified by sherd counts, weight, and estimated vessel equivalents (Eves), but sherd counts appear to give a better representation of the material because of its fragmentary nature. This report outlines the ceramic chronology on the site with reference to its more interesting aspects and a more detailed report is available as part of the archive. Table 1 shows the distribution of pottery throughout Phases 4 to 12, quantified by sherd count. The final phase produced entirely residual pottery in modern features.

Phase 4, *c.*1050/1080–1150

Phases 4 and 5 represented early medieval activity on the site, mostly datable to the late 11th century, with Early Surrey ware (ESUR), Early medieval shell-tempered ware (EMSH), and glazed Stamford ware (STAM) present; all dated 1050–1150. Additionally other 11th-century pottery types occurred (see Table 1). Stamford ware was present as unglazed crucibles (Fig 23.26) and glazed pitchers (Fig 23.27). Imported pottery was present as Andenne-type ware (ANDE), North French wares (NFRE and NFRY), Normandy gritty ware (NORM), and Red-painted ware (REDP). A small number of sherds of London-type ware and its coarse variant (LCOAR), some glazed, were present and indicated activity from the end of the 11th century. Forms in these wares were usually jar-shaped and mostly used for cooking as indicated by the presence of external sooting, but bowls were present in most fabrics as well as a lamp in the Early medieval sandy fabric (EMS). A small number of residual Early Saxon pottery sherds of a 5th- or 6th-century date were present in the Phase 4 and 5 ditches, possibly imported onto the site with material from elsewhere. 5th-century Saxon activity has been recorded at Clerkenwell to the NW. However, Early Saxon occupation is believed to be sporadic and temporary in the vicinity around abandoned *Londinium* and it is difficult to interpret the presence of the small number of sherds on the site (Cowie & Harding 2000, 178).

Phase 5, *c.*1080–1150

The Saxo-Norman pottery from Phase 5 largely contained those pottery types present in the previous phase, but an absence of London-type wares was noted. The latter must infer an 11th-to early 12th-century date for this phase because of their presence in the earlier period of activity. Of interest was the presence of a large number of early medieval crucible fragments, mostly recovered from gully [675] and almost exclusively present in this phase in fill [668] where the quantity was so great the deposit was sampled. The crucibles from fill [668] consisted of some 497 fragments, weighing 1168g; the true number of crucibles present was under-represented and only 10 lips of individual crucibles could be identified. The majority of these crucibles were in Early medieval coarse whiteware (EMCW) with four sherds of Stamford ware crucibles present. The crucibles were impossible to reconstruct to produce a complete profile for a vessel, but the

Table 1. Phases 4–12. Quantification of pottery by sherd count

Code	Fabric and date range	Phase 4	5	6	7	8	9	10	11	12	Total
RPOT	Roman pottery	9	1						1		11
ESAX	Early Saxon pottery, 5th or 6th century	3	1								4
LSS	Late Saxon shelly ware, 900–1050	2	2								4
NFRE	Miscellaneous North French unglazed wares, 900–1200	1									1
NFRY	Miscellaneous North French glazed wares, 900–1200			1							1
REDP	Red painted ware, 900–1250	4	3						2		9
RHGR	Rhenish greyware, 900–1100		1								1
THET	Ipswich Thetford-type ware, 900–1150	2	1	2					1		6
EMS	Early med. sandy ware, 970–1100	23	13	2					1		39
EMCW	Early med. coarse whiteware, 1000–1150		493								493
EMSS	Early med. sand and shell ware, 1000–1150	21	9	3					2		35
ANDE	Andenne-type ware, 1050–1200	1	4								5
EMCH	Early med. chalky ware, 1050–1150	3	3						2		8
EMIS	Early med. iron-rich sandy wares, 1050–1150	7	2	8				2	1		20
EMSH	Early med. shell-tempered ware, 1050–1150	14	4					1			19
ESUR	Early Surrey ware, 1050–1150	26	15	1				2			44
LOGR	Local greyware, 1050–1150	1	3	1							5
NORM	Normandy gritty ware, 1050–1250	1									1
STAM	Stamford ware, 1050–1150	61	24	1							86
LCOAR	Coarse London-type ware, 1080–1200	4		2					1		7
LOND	London-type ware, 1080–1350	3		47	7	7	1	22	36	13	136
SHER	South Hertfordshire/Limpsfield greyware, 1140–1300					1		7	20		28
ROUL	Late Rouen ware, 1250–1350								1		1
KING	Kingston-type ware, 1230–1400			37	7	18		23	21	9	115
LOND HD	London-type ware, highly decorated 1240–1350			16				1			17
SAIN	Saintonge ware, 1250–1650				1			2	1		4
CBW	Coarse Border ware, 1270–1500			35	26	77	1	90	57	28	314
MG	Mill Green ware, 1270–1350							1	3		4
DUTR	Dutch redware, 1300–1650					1					1
SIEG	Siegburg stoneware, 1300–1500				1	1		3	1	1	7
CBW CIST	Coarse Border ware cisterns, 1340–1500					1			1	5	7
CBW FT	CBW cooking pots, flat-topped rims, 1340–1500				1	4		3	5		13
LMHG	Late med. Hertfordshire glazed-ware, 1340–1450					1		6	3	1	11
CHEA	Cheam whiteware, 1350–1500			1		11		10	3	3	28
CUER	Cuerda seca Spanish tin-glazed ware, 1350–1600								1		1
LANG	Langerwehe stoneware, 1350–1500					1				1	2
CBW BIF	CBW cooking pots, bifid rim, 1380–1500				2	3		3	1		9
TUDG	'Tudor green' ware, 1380–1500							12	11	7	30
LLON	Late London ware, 1400–1500					14		18	6	16	54
LLSL	Late London slipware, 1400–1500							9	1	3	13
TGW IMP	Tin-glazed ware (imported)								1		1
VALM	Mature Valencian Lustreware, 1430–1500					1					1
ANDAL	Late Andalusian tin-glazed ware, 1480–1550							1	1		2
CHEAR	Cheam redware, 1480–1550					1		2	4	4	11
CSTN	Cistercian ware, 1480–1600							1			1

Table 1. (Continued)

Code	Fabric and date range	Phase 4	5	6	7	8	9	10	11	12	Total
EBORD	Early Border ware, 1480–1550								1		1
MPUR	Midlands purple ware, 1480–1750									1	1
PMRE	Early post-med. redware, 1480–1600					10		42	72	26	150
PMSR	Post-med, slip-coated redwares, 1480–1650					1		3	10	4	18
RAER	Raeren stoneware, 1480–1610					1		15	12		28
SNTG	South Netherlands maiolica, 1480–1575							2			2
SPOW	Miscellaneous Spanish post-med. wares 1480–1900							1			1
COLP	Columbian Plain ware, 1500–1600							1			1
DUTSL	Dutch slip-coated ware, 1500–1650								1		1
BORD	Border ware, 1550–1700							1	1	4	6
FREC	Frechen stoneware, 1550–1700									2	2
NORS	Normandy stoneware, 1550–1700							1			1
PMBL	Post-med. black-glazed, 1580–1700								1	5	6
PMFR	Post-med. fine redware, 1580–1700									1	1
PMR	Post-med. redware, 1580–1900							1	3	42	46
TGW A	Tin-glazed ware, Orton style A, 1612–1650									3	3
TGW D	Tin-glazed ware, Orton style D, 1630–1680									1	1
Total sherds		186	579	157	45	154	2	286	290	184	1883

EMCW crucibles appeared to be hand-made, hemispherical in shape, with pulled lips. The rim diameters of these vessels ranged from 60 to 160mm, with the vast majority of the vessels being 80–100mm; this fits well with the descriptions of these vessels by Bayley *et al* (1991). None of the vessels recovered from the gully had an additional external surface of clay, noted by Bayley *et al*, which would have given the vessels greater thermal properties. However, a small number of crucibles with the additional clay 'cladding' were noted elsewhere on the site. A high proportion of the vessels were self glazed by the heating of the crucibles. Metallurgical analysis of the crucibles and metal working residues from the site indicated that the crucibles were employed in silver refining and silver processing by means of lead extraction. Saxo-Norman crucibles have been found elsewhere within the City of London for this period, for example a STAM example was present on the adjacent site of 7–12 Aldersgate (Vince 1990, 90), and more recently within the Cripplegate area (Pearce in prep); the large quantities of crucibles indicated metalworking on a sizeable scale on the site or in the vicinity.

Phase 6, *c.*1230/1270–1350

The Phase 6 ditches contained mostly London type wares, usually as glazed and slipped jugs but some examples of the highly decorated style (LOND HD) were present, dated 1240–1350. Kingston type ware was also notably present; this first appears in London *c.*1230. Another later Surrey whiteware, Coarse Border ware (CBW) dating from *c.*1270, was rare in the Area A ditches. A decorated CBW baluster jug with incised circular discs and piercings was recorded in this phase (Fig 23.28). Coarse Border ware was more prevalent in other areas where ditches of this phase were recorded. Other late 13th- to early 14th-century pottery assemblages from London at Swan Lane and Trig Lane demonstrate that KING becomes less important than CBW (Pearce & Vince 1988, 17). The process where CBW became more important was probably occurring in this phase.

Phase 7, *c.*1350–1400

In the Phase 7 ditches, London-type ware was sparsely represented – it finished production around *c.*1350 – but Kingston ware was present and included a pipkin (Fig 23.29), while Coarse Border ware was the dominant pottery type. In this phase forms appeared for the first time in the latter ware as cisterns and cooking pots/jars with flat topped rims, dating from *c.*1340, and cooking pots with bifid (lid-seated) rims, dating

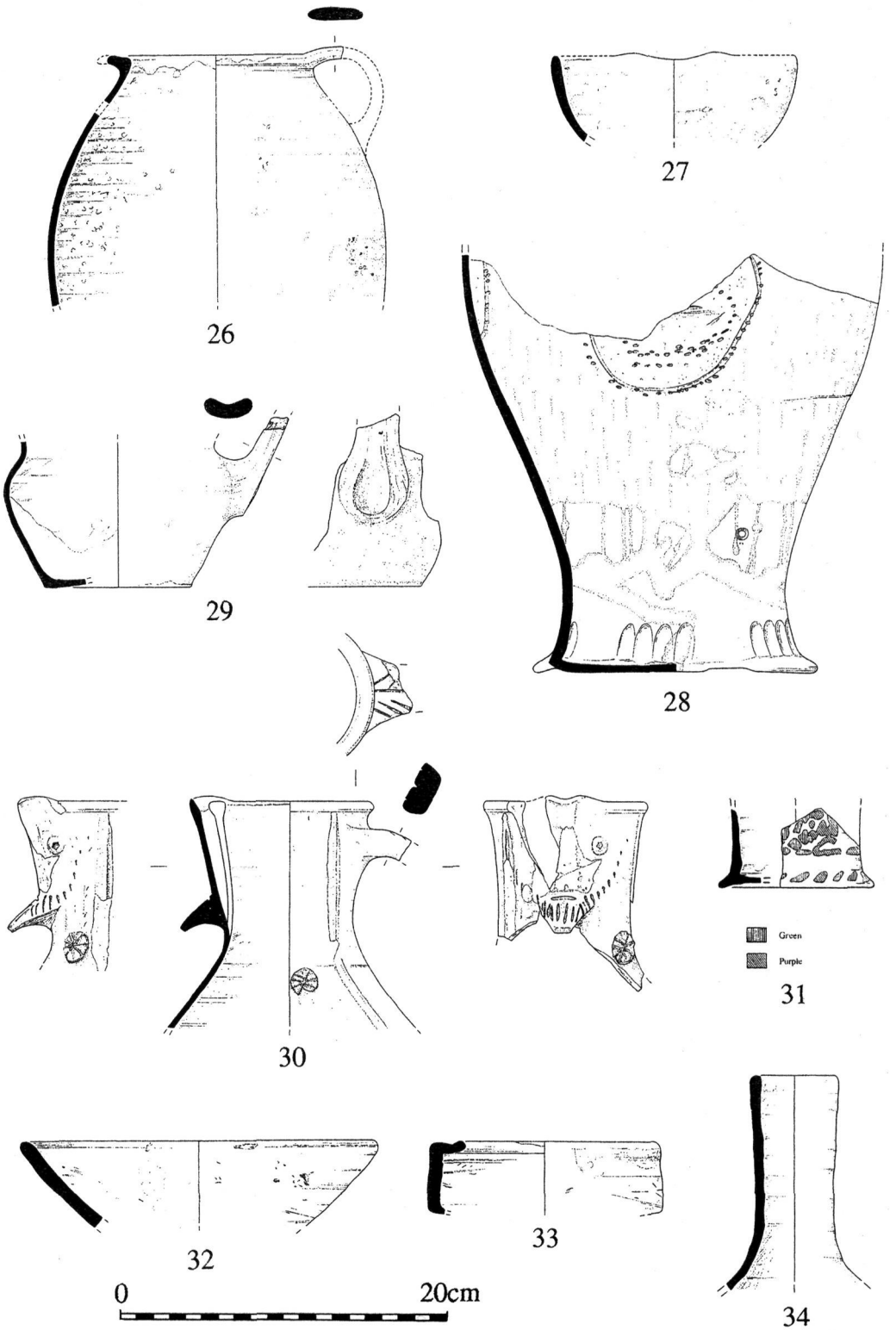


Fig 23. Post-Roman pottery

from 1380. Of note also were imported Siegburg stoneware and the base of a mottled green-glazed Saintonge (SAIM) jug.

Phase 8, *c.*1400–1500/50

The fills of ditches and features in Phase 8 again had a high occurrence of Coarse Border ware, but 15th-century Late London ware was present as well as Dutch redware (DUTR) and Langerwehe stoneware (LANG). In the latest fill of ditch [388], Raeren stoneware (RAER) was present for the first time, with Early Post-Medieval redware (PMRE) (formerly Tudor brown ware) indicating infilling at the end of the 15th century and early 16th century. Imported pottery also included a rim sherd from a Mature Valencian lustre ware (VALM) dish. Amongst the residual pottery was a rare CBW anthropomorphic jug depicting a male figure with an applied beard and a circular stamp with a central stamped star used to form the eyes. The body of the jug has applied bands of clay forming arms and other decoration as well as applied circular stamps consisting of four crossing lines (Fig 23.30). Few occurrences of CBW anthropomorphic jugs are known in London, and this example has more in common stylistically with the Kingston industry versions than other CBW examples (Pearce & Vince 1988, 108, fig 63, no. 65; 130, fig 85; 151, fig 106, no. 413). However, this style of CBW anthropomorphic jug is not necessarily unique for the industry. Anthropomorphic jugs in the London type, Kingston, and Coarse Border ware pottery industries fall within a general mid 13th- and 14th-century dating, but this example probably dates to within the highly decorated period for this ware of 1270–1350.

Phase 9 and 10, *c.*1480–1600

The ditch of Phase 9 [439] contained sparse amounts of pottery, mostly residual. The earliest ditch in Phase 10, Area A, produced sherds of Early Post-Medieval redware, Tudor green ware (TUDG), and probably residual Coarse Border ware, indicating a similar late 15th- to early 16th-century date as the Phase 8 ditches. The latest ditch in this phase contained Surrey/Hampshire Border ware (BORDG and BORDY) dated from *c.*1550–1700, while the occurrence of Post-Medieval redware (PMR) would indicate a date at the end of the 16th century for its infilling. Present also in the fills of the ditch were imported sherds of Saintonge ware (SAIN), South Netherlands maiolica (SNTG), and 16th-century Spanish wares such as Late Andalusian tin-glazed ware and Columbian Plain ware.

Phase 11, *c.*1580–1650

The final ditch in Area A [286] contained Early Post-Medieval redware PMRE, Border ware (BORDY), Post-Medieval black glazed ware (PMBL), and Post-medieval redware (PMR). An early 17th-century date for the back-filling of the ditch would seem most likely, but the material did not allow for more precise dating. Imported wares in this phase consisted of a rare sherd of Spanish Cuerda Seca (CUER), tin-glaze from the splayed base of a possible albarello (Fig 23.31).

Phase 12, *c.*1612–50

Features in this phase were associated with occupation features on the infilled city ditches. Gully [289] contained in its backfill sherds of PMBL, PMR, and a sherd of Tin-glazed ware in Orton style A (TGW A) as well as a *c.*1640–60 clay tobacco pipe. Industrial activity was noted in this phase as redware distillation bottles, associated with the manufacture of strong mineral acids, for example nitric or sulphuric acid, were present in three deposits. A very large quantity of these vessels was present in fill [211] of the cellar [220], together with a possible industrial saucer (cupel) (Fig 23.32). Trench D provided a small sample of these vessels, present as 27 sherds, representing at least 13 flasks, along with a PMR handled bowl. Layer [216], also in Area D, contained 20 fragments of distillation bottles, together with another part of an industrial vessel (Fig 23.33) and, in Test Trench 1, fill [207] of cut [206] contained the base of a bottle.

The fabrics of these distillation bottles were Post-medieval redware, often poorly made and fired, with blisters (Fig 23.34). The form is known from the first half of the 16th century from kiln waste at Kingston (Nelson 1981, 100) and from a group at Gresham Street (Moorhouse 1972, 118–19), where they are described as bottle shaped. In PMR, the vessel was also produced at Deptford in the late 17th–early 18th century (Divers & Jarrett 1999, 14–15, fig 10 no. 7). The

distillation bottles from the site are probably 17th-century in date, and in the cellar these vessels were associated with an Atkinson and Oswald type 12 clay tobacco pipe (*c.*1640–1660). Many of the vessels had a red deposit (hematite), a result of acid production, possibly for the parting of precious metals, such as silver and gold (Bayley 1992, 7–8, fig 9; Heyworth 1996, 131). Therefore, mid 17th-century metallurgy, probably associated with the building belonging to cellar [220], was taking place on the site, in an area – Gresham Street and Cripplegate – noted for its metal working environs (Chew & Pearce 1999, 24).

THE SMALL FINDS

Nina Crummy

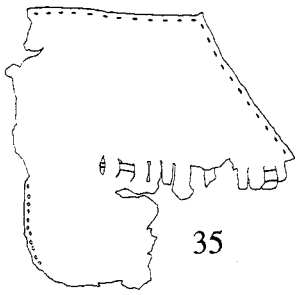
The only item definitely of Roman date is a small plain bone counter with a lathe-centre mark on the upper face from context [650]. This simple form first appears in the mid 1st century and was probably current throughout the Roman period (Crummy 1983, 91, Type 1).

The largest group of material is a collection of leatherwork from the fill of the city ditch, mainly of late Saxon and 14th-century date. It specifically complements two previously published groups from the City: the Saxo-Norman shoes and straps in Pritchard 1991, and the medieval shoes in Grew & de Neergaard 1988. Referencing has therefore been almost exclusively limited to these publications wherever possible. As the assemblage is quite small, no attempt has been made to identify the types of leather used, though differences are apparent to the naked eye.

The earliest leather comes from a single late Saxon context [580], and consists mainly of worn and fragmentary pieces of turnshoes, many too small to identify the style or date. Of those that can be dated all but one are 11th-century. The exception is an upper fragment from the heel of a low 10th-century shoe, on which the raised heel extension does not reach the solid top edge of the quarters. The shoe must have been seamed down the side, as was a shoe from Milk Street, (Pritchard 1991, fig 3.100). The 11th-century pieces are uppers and top-bands from ankle-boots. At least three pieces were from drawstring ankle-boots of the late 11th century. One quarters fragment (Fig 24.35) is of a similar pattern to an ankle-boot from St Magnus House, but has a single rather than double thong (*ibid*, fig 3.110). A fragment of a strap is pierced, and resembles one for a latchet fastening on a shoe from King Street (*ibid*, fig 3.104).

Apart from shoes the leatherwork from context [580] consists of small waste offcuts, two unidentified pieces, and strap fragments. The best-preserved strap (Fig 24.36) was constructed by a method seen on 11th- and 12th-century straps from sites in the City (*ibid*, 239). An unusual item, found in association with the 10th-century shoe fragment, consists of two thicknesses of leather folded over and held together by a thong passed through a series of incisions. No edges survive and the piece is so friable that it has not been illustrated. It may be binding to pad the edge of a wooden or metal object, or was perhaps from a garment. A somewhat similar fragment from the Barbican Ditch at Oxford Castle, though only a single folded thickness and of later date, had both edges surviving and was identified as from a belt or strap (Jones 1976, fig 20.37). The final piece from [580] (Fig 24.37) is a more or less rectangular panel with edge/flesh stitching along one long and one short side and grain/flesh stitching along the other short side. The other long side is an unsewn, cut, slightly curved edge, decorated with two rows of fine incisions set herringbone fashion. It may be one half of a two-piece collar.

Fig 24. 35 [580]. Fragment from the upper of an adult's ankle-boot with a small piece of a drawstring slotted through a line of incisions. The upper edge and side seam are sewn with edge/flesh stitching. This style of ankle-boot has been dated to the late 11th century with similar examples recovered from excavations at St Magnus House (Pritchard 1991, fig 3.110–11); 36 [580]. Length of strap formed by folding over both sides and sewing the edges together with a butt seam. This seam was reinforced by two further lines of stitching, one along each side, through the full double thickness. Length 290mm; 37 [580]. Panel of thin leather with edge/flesh stitching along one long and one short side and grain/flesh stitching along the other short side. The other long side is an unsewn cut slightly curved edge, decorated with two rows of fine incisions set herringbone fashion. Maximum dimensions 206 by 82mm. Possibly part of a collar; 38 [509]. Adult's left shoe of front-laced type: vamp, tongue, rand. Length (taken from rand) 255mm. The vamp has split from its opening down towards the toes. The tongue was attached with a binding seam along one side only. Similar to a front-laced shoe dated c.1330–50 from Baynard's Castle (Grew & de Neergaard 1988, fig 98).



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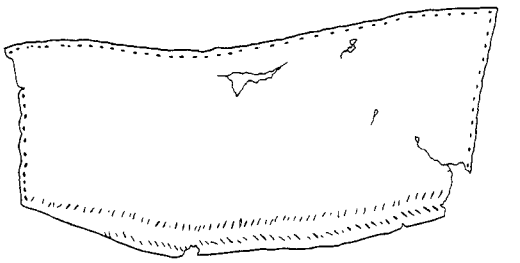

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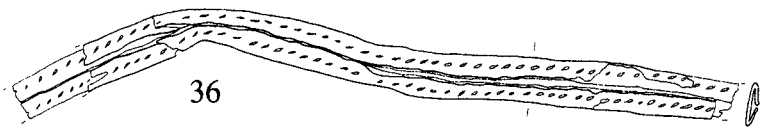

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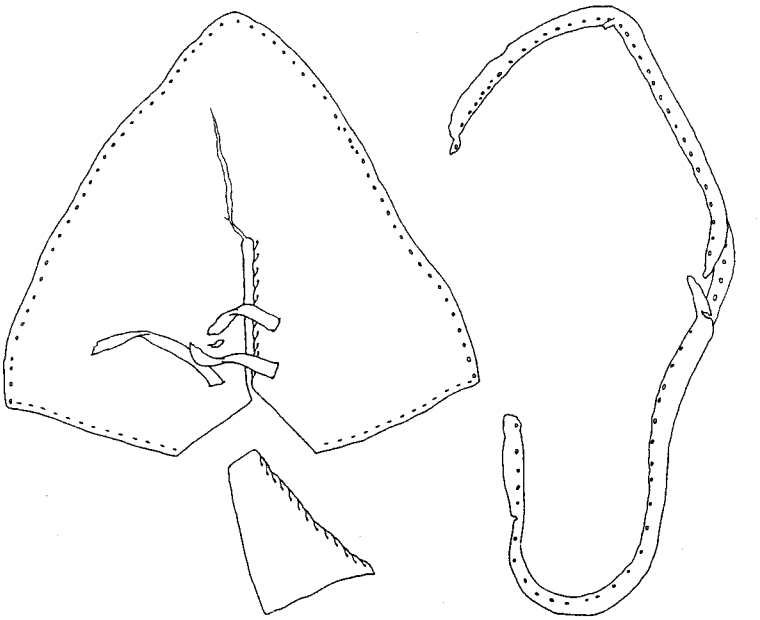

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0 12cm

Three contexts from the various infillings of the city ditch produced the majority of the later medieval leatherwork: [509], [500], and [492]. In all three contexts the leatherwork again consists primarily of fragments of shoes, mainly soles and insoles of both one- and two-piece form, both child- and adult-sized. Some strap fragments and offcuts from leatherworking were also recovered. A waste fragment from [500B/509] is similar to a vamp with an elongated and blunt-ended toe, but is of ungenerous width and cut irregularly at the throat.

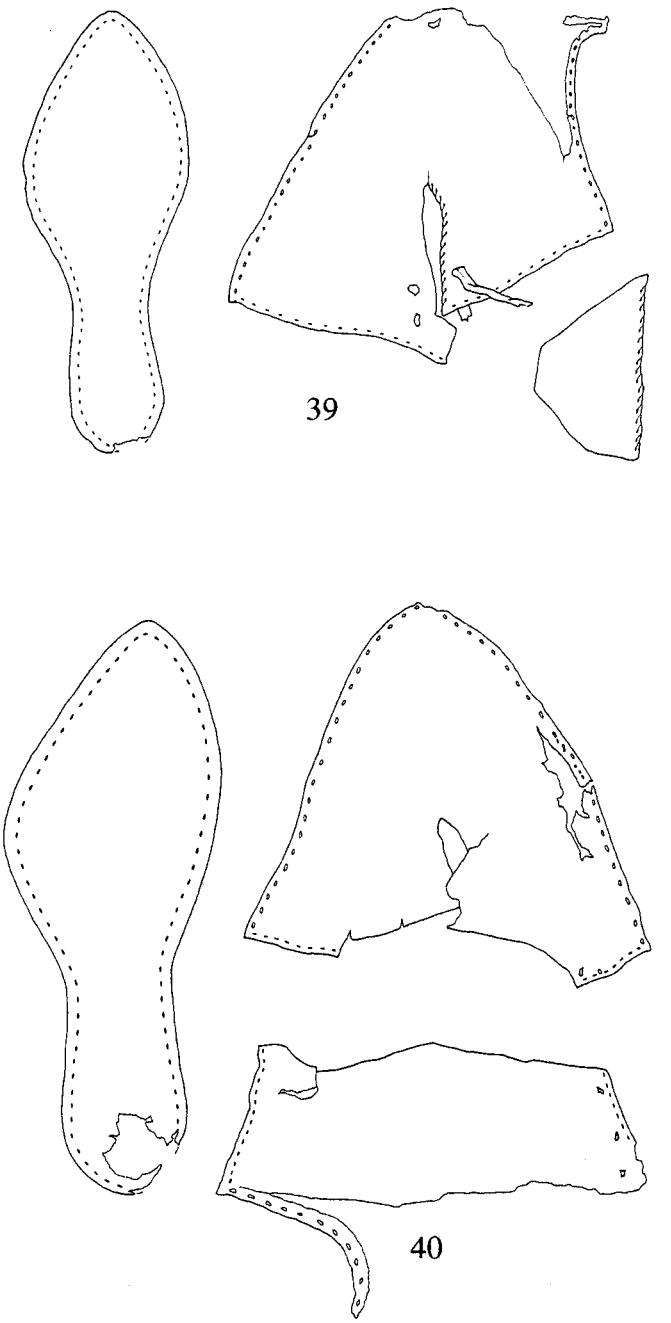
The more or less complete shoes and the more substantial upper fragments are closely comparable to two well-dated groups from Baynard's Castle dock, though none were recovered that match the more elaborate and decorated examples from that high quality assemblage (Grew & de Neergaard 1988, 28–9).

From [509] came three shoes comparable to examples from Baynard's Castle dated *c.*1330–50. Two, one a child's, are front-laced (Figs 24.38; 25.39) and one is toggle-fastened (Fig 25.40). On the toggle-fastened shoe the quarters have the high back and dipped sides also found on shoes dated to the later 14th century, and it may be appropriate to date this example close to *c.*1350. Other quarters of this form are also present in the context, as are two low open vamps with the elongated blunt-ended toe, *poulaine*, typical of the late 14th century (Fig 26.41–42). One of these vamps has a buckle-and-strap fastening (Fig 26.41). Moss packing from a *poulaine* was also recovered from this context. Of the strap fragments from [509], one is tongue-shaped, with a slit near the end, and is probably from a shoe, and another is partly twisted.

All the surviving features and designs of the shoes from [500] are matched by late 14th-century shoes from Baynard's Castle. They include further examples of quarters with high back and low sides, and other quarters which have a dip on one side only. One of these has the two lace-holes on the side opposite the dip that show it to be from a shoe fastened by a side-latchet. Two vamp fragments appear to be from boots with toggle fastenings. Each has edge/flesh stitching on its upper edge, and the remains of internal terminals from two straps set just within the edge. There is no vamp opening between these terminals. Two shoes from [500] are reasonably complete. One is a shoe with buckle-and-strap fastening (Fig 26.43), and the other is a well-preserved front-laced ankle-shoe (Fig 27.44). Deformities of the feet are demonstrated by the toggle-fastened shoe (Fig 25.40) on which the heel of the sole is worn on the inner side, a tread characteristic of pigeon toes, and a sole fragment is worn under both tread and toe tip, which may indicate hammer toe (Grew & de Neergaard 1988, 106–9). Two decorated fragments of leather came from [500], neither necessarily from shoes. One has a serrated cut edge, and the other has two parallel lines of short incisions down the centre.

Context [492] produced two fragments of uppers from 15th-century front-laced ankle-shoes. One is reasonably substantial, though its lower edges and most of one side of the vamp are missing (Fig 28.45). Both this example and the second fragment from this context have only two lace-holes. A possible parallel is a shoe from Sewer Lane, Hull, also dated to the 15th century (Armstrong 1977, fig 21, 13).

Fig 25. 39 [509]. Child's left shoe of front-laced type: sole, vamp, tongue. Length 175mm. Tongue attached with a binding seam along one side only; 40 [509]. Adult's left shoe of toggle-fastened type: sole, vamp, quarters. Sole scored and partly split across the tread, and with the inner side of the heel worn through. Length 226mm. The quarters have a fairly high back and low dip at the side, with the inner edge terminating in a butt seam with edge/flesh stitching. Here would have been attached the inserts, now missing, needed to allow the foot to be eased into the shoe. This shoe combines features seen on two from a context dated c.1330–50 at Baynard's Castle. The shapes of the quarters and of the sole are matched on a front-laced shoe (Grew & de Neergaard 1988, fig 98), while the side inserts occur on a toggle-fastened example (ibid, fig 95). The wear on the inner side of the heel is characteristic of 'pigeon toes' (ibid, 106–7).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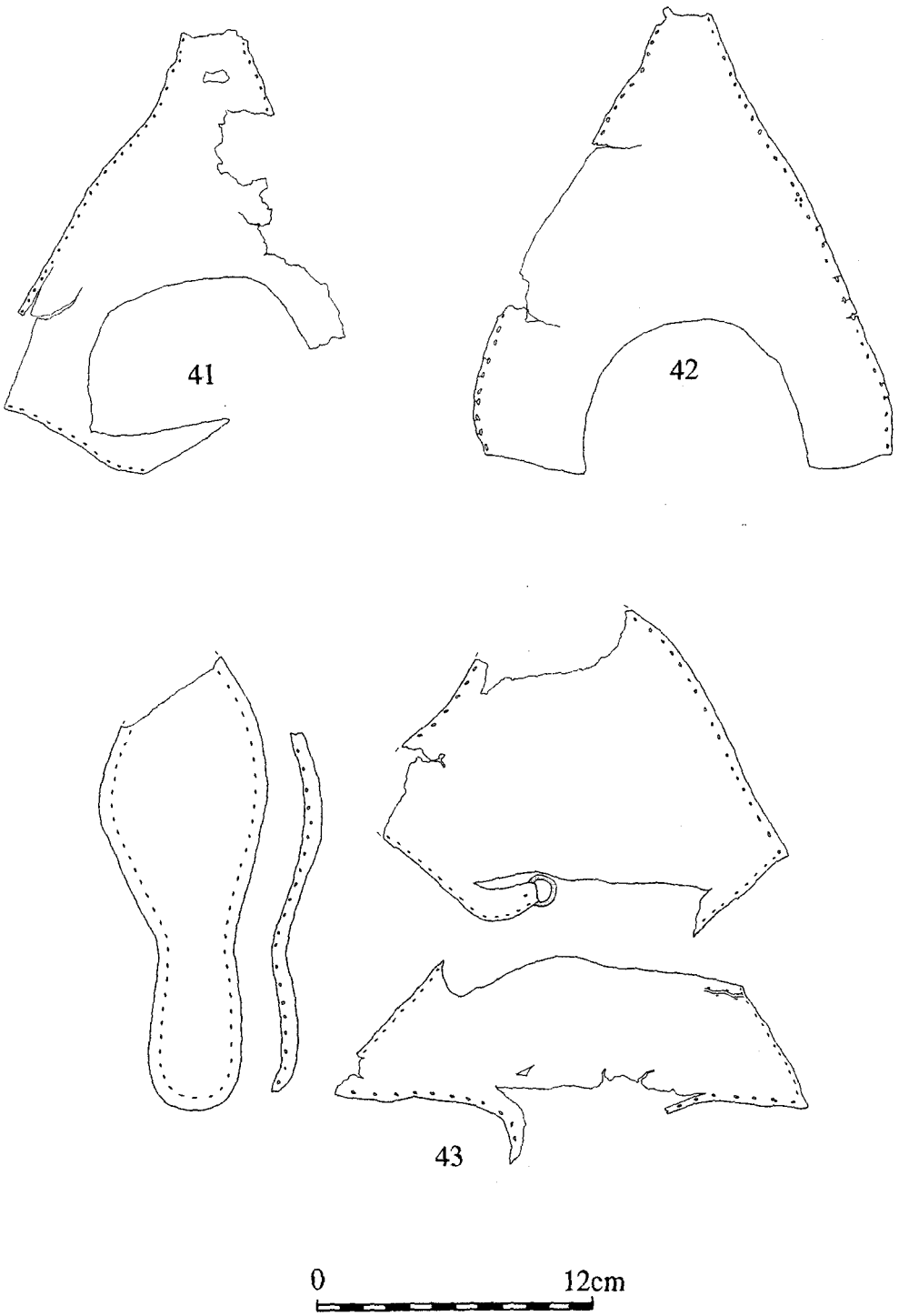

Fig 26. 41 [509]. Adult's left shoe with buckle-and-strap fastening: vamp. Curved open throat, and blunt-ended elongated toe. One side is missing, the other terminates in a butt seam above which projects a strap with pointed end and small hole for a buckle tongue. Similar to a shoe from Baynard's Castle dated c.1375–1400 (Grew & de Neergaard 1988, fig 102); 42 [509]. Adult's right shoe: vamp. Curved open throat, and the elongated blunt-ended toe typical of the late 14th century. Both sides end at a butt seam, with no sign of a strap. Similar to a shoe with front-latchet fastening from Baynard's Castle dated c.1375–1400 (ibid, fig 103); 43 [500]. Adult's left shoe with buckle-and-strap fastening: sole, vamp, quarters, rand. The toe, on both sole and vamp, is missing. The circular buckle is iron with a tin coating; its tongue is missing. The quarters are low-sided on the outer side only. This asymmetry can be seen on a late 14th-century front-laced shoe from Baynard's Castle (ibid, fig 99).

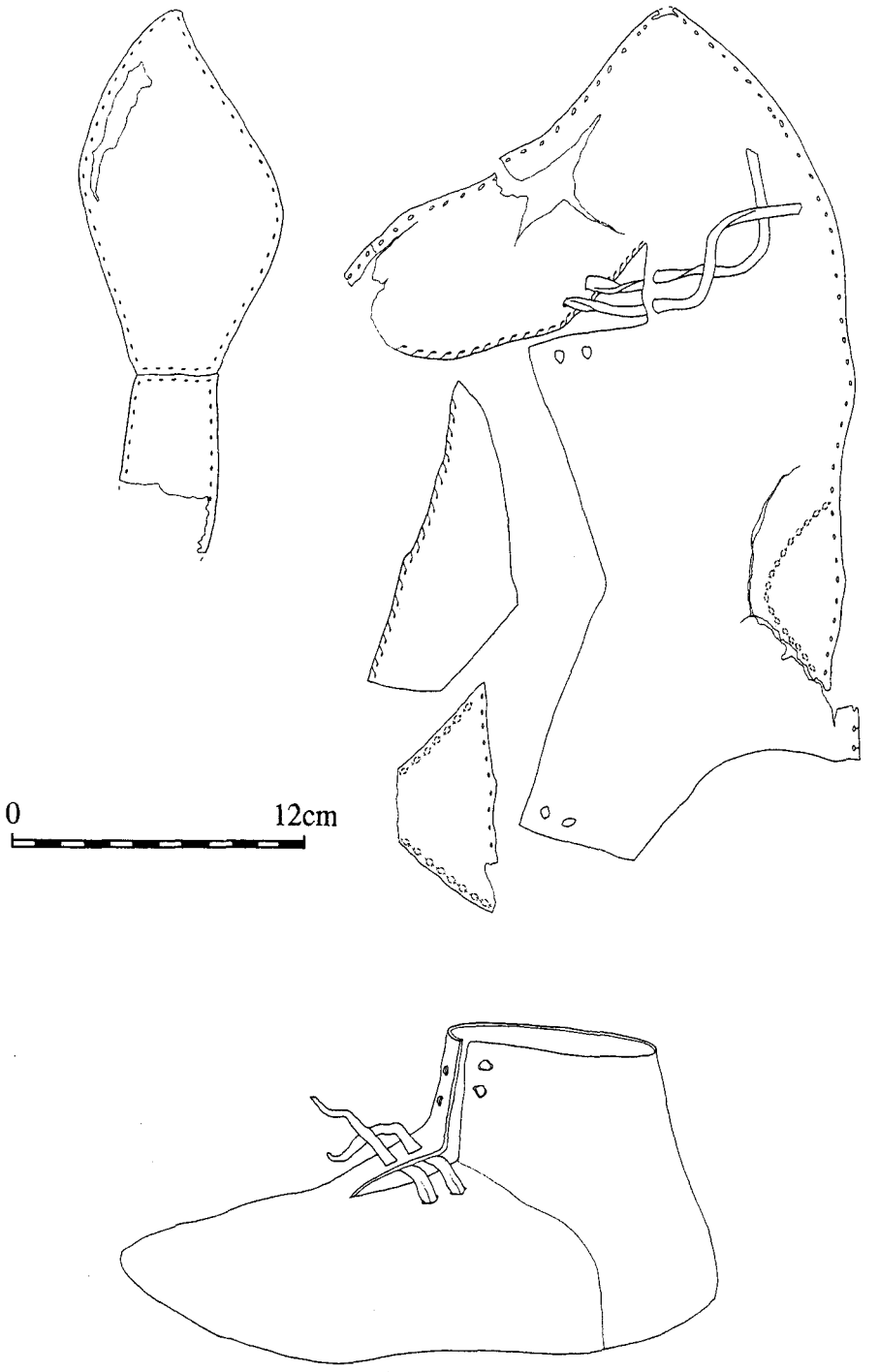

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Fig 27. 44 [500]. Adult's right front-laced ankle-shoe: sole, vamp, tongue, heel-stiffener, rand. Length 240mm. Two-piece sole, worn away at heel, and along the inner edge at the toe. The vamp is in one-piece, the two lower laces survive. The tongue was attached with a binding seam along one edge only. A similar late 14th-century ankle-shoe, but with an insert as the inner vamp wing, was found at Baynard's Castle (Grew & de Neergaard 1988, fig 101).

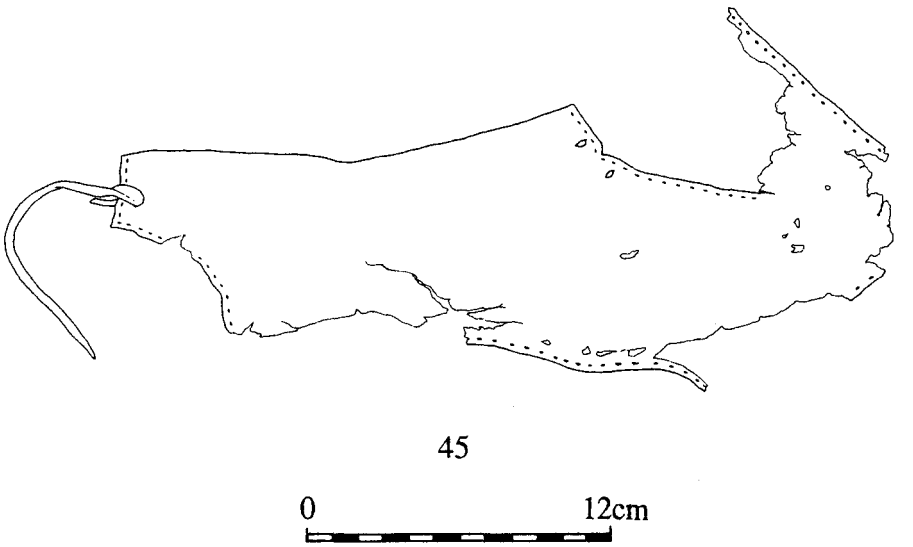
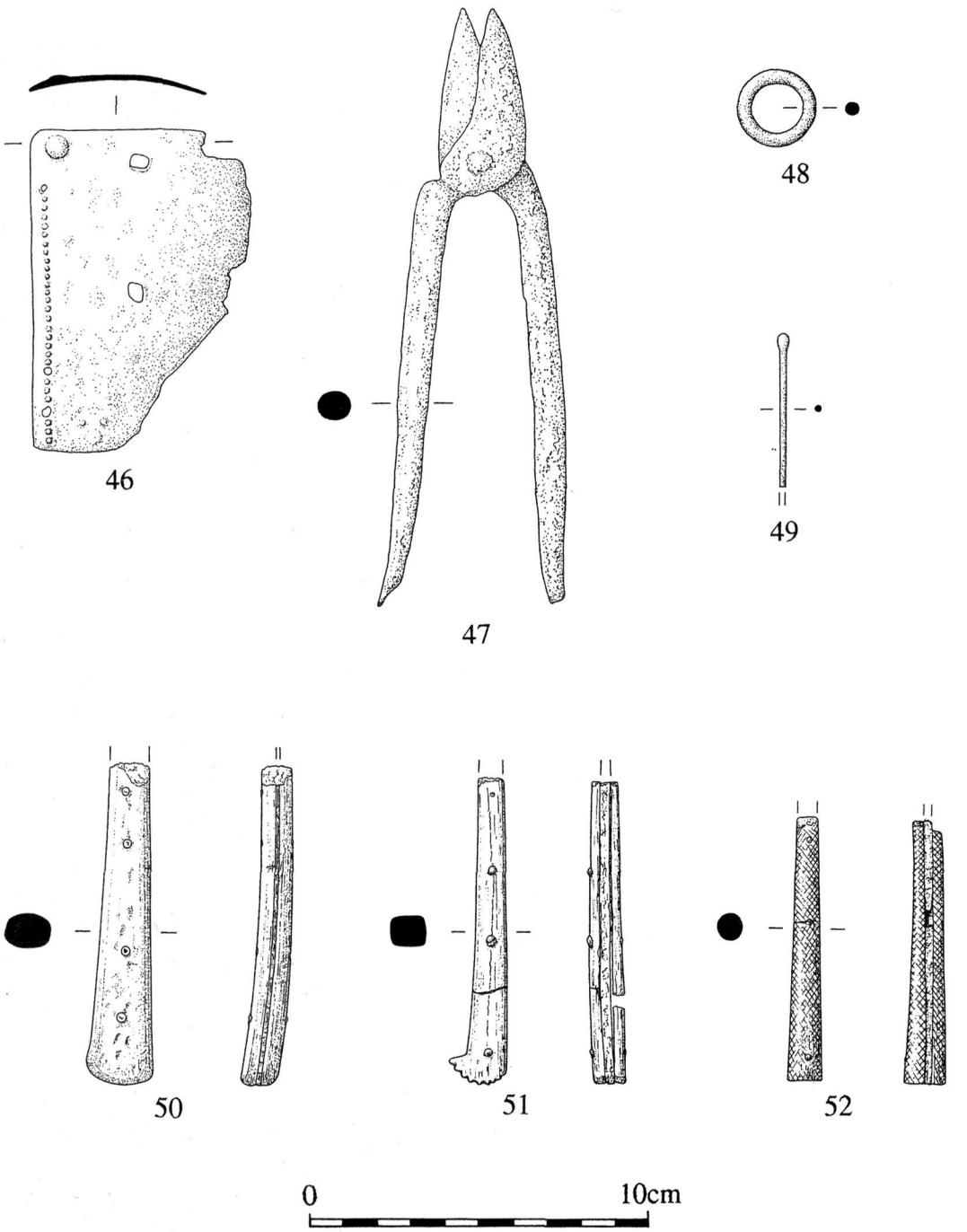


Fig 28. 45 [492]. Adult's front-laced ankle-shoe in one main piece. A short length of edge/flesh seam on the ?inner side suggests either that an insert was used at that point or that it was repaired at some time. It has only two lace holes. Probably similar to a 15th-century shoe from Hull (Armstrong 1977, fig 21, 13).

Compared to the leather, very little metalwork was recovered. The earliest piece is a fragment of sheet iron with white-metal inlay (Fig 29.46) from the context [580] that produced fragments of late Saxon shoes. It may be from the corner of a piece of furniture. The early post-medieval fill of the city ditch contained evidence of both industrial and domestic life in the area: a pair of iron clippers of a type used in metal-working for cutting up plate (Fig 29.47), a very worn fragment of a lead cloth seal, a plain copper-alloy ring, probably from a curtain (Fig 29.48), a small copper-alloy wire needle of a size used for fine sewing (Fig 29.49), and fragments of three knives with bone handles (Fig 29.50–52).

Fig 29. 46 [580]. More or less triangular piece of sheet iron with white-metal inlay. Along one edge is a row of tiny, regularly-spaced, white-metal dots, with slightly larger dots at intervals. There is a white-metal rivet at the surviving corner. The other two corners are damaged, but at one there appears to be a white-metal rivet with a square washer, two edges of which also have traces of white metal. Probably originally flat, it is now irregularly convex. Longest edge 97mm, thickness 2mm; 47 [216]. Iron clippers with convex backs to the blades, the points of which are damaged. The straight handles bow out sharply below the fixing rivet. Total length 180mm. A pair of clippers with similar blades, though of much earlier date, was among the iron-working tools from 16–22 Coppergate, York (Ottaway 1992, fig 201, 2249); 48 [258]. Copper-alloy ring of circular section, external diameter 21mm. Egan suggests that such rings were used for hanging up curtains (1998, 62–4); 49 [258]. Fine copper-alloy wire needle with small eye. Length, tip missing, 45mm, diameter 1.5mm. Suitable for fine sewing; 50 [607]. Two-piece tapering cylindrical bone handle with iron scale tang fixed by three copper-alloy rivets. Only a small fragment of the blade remains. The handle-plates are covered with regular fine incised hatching. Length 79mm; 51 [409]. Iron knife with blade, bolster and scale tang forged in one, and flat bone handle-plates. Most of the blade is missing. Its back is in line with the edge of the handle. The handle-plates are fixed to the tang by four iron rivets. The end is rounded, hooked and serrated. Maximum surviving length 135mm. The forging of blade, bolster, and tang in one piece was introduced in the 16th century. A similar handle from Colchester, Essex, dates to the end of the 15th or early part of the 16th century (Crummy 1988, fig 76, 3099), and another from Winchester dates to the early to mid 16th century (Hinton 1990, fig 261, 2899). The handle form also occurs in wood, with an example from Sandal Castle, Yorkshire, coming from a context dated 1485–c.1600 (Goodall 1983, fig 6, 69); 52 [285]. Iron knife with blade, bolster and scale tang forged in one, and bone handle-plates. Most of the blade is missing. Both back and edge are straight and in line with the lower edges of the handle. The handle is curved longitudinally. Its slightly convex plates widen towards the end and are held in place by four iron rivets. The end is curved, very slightly hooked, and incised with both long V-shaped and narrow grooves which are almost worn away where the handle rests against the ball of the thumb. Maximum surviving length 124mm.



THE TEXTILES

Penelope Walton Rogers

Fragments of a medium-fine wool textile were recovered from mid to late 14th-century levels of the city ditch (context [529]). The textile is of 'worsted' type, that is, woven from wool which has been combed, so that the yarn has a smooth, silk-like appearance. It is woven in 2/2 twill, which is the usual weave for worsteds in the medieval period. Textiles of this sort are a recognised medieval type, but not one which was

very common. There are sixty or so comparable examples from medieval London (Crowfoot *et al* 1992, 36–9) and approximately ten more from other English towns (Walton Rogers unpub data). They are far outnumbered in the archaeological record by 2/1 twill and tabby-weave textiles, which represent the more usual clothing fabrics of the period. Worsted twills were used for clerical garments and for mass vestments, as witness the inner tunic worn by the late 15th-century pilgrim buried at Worcester Cathedral (Walton unpub) and the embroidered blue chasuble in which Abbot Dygon (d.1510) was buried at St Augustine's, Canterbury (Crowfoot 1983). They were also made into linings for fashionable garments (Crowfoot *et al* 1992) and may be tentatively identified with the medieval fabric known as 'say', which was used for wall hangings, bed curtains, and coverlets (Beck 1886, 290–2).

MAMMAL, BIRD AND FISH BONES

Philip L. Armitage

Methods of recovery and analysis of the bone

The majority of the bone elements submitted for analysis had been hand-collected routinely during the course of excavation and for those contexts where this was the sole means of recovery there is a noticeable absence of the bones of the smaller mammalian species and small fishes. For the 25 contexts listed below, however, the collection and sieving of soil/environmental samples ensured that such evidence was recovered, where present. All archaeozoological data presented in this report should therefore be carefully considered in the light of this dual collection strategy, and the assemblages from non-sieved contexts viewed as possibly exhibiting sampling bias in favour of the larger more robust bone elements.

Contexts where soil/environmental sampling was carried out and small mammal and small fish bones recovered are listed as follows:

Phase	Contexts
4	[640], [650], [702]
5	[641], [668], [689]
6	[507], [509], [510], [529]
7	[492], [495], [496], [500]
8	[388], [456], [459], [461], [487], [488]
9	no sieved samples
10	[349]
11	[216], [258], [259]
12	[201]

Study of the faunal remains followed standard archaeozoological methodological and analytical procedures. Identification of the mammalian and fish bones was undertaken using the author's own comparative osteological specimens and those kindly supplied by Mrs Alison Locker. For the purpose of identifying the bird bones, reference was made to the modern comparative osteological specimens in the collections of the Ancient Monuments Laboratory (English Heritage), London (now relocated to Fort Cumberland, Portsmouth). Access to this reference collection was very kindly arranged by Dr Simon Davis.

Recording sheets giving full details of anatomical distribution (NISP = numbers of individual skeletal elements identified), with associated weight-of-bone data, together with measurements taken from selected adult bone elements (after the method of von den Driesch 1976), form part of the archival documentation for this particular site. For the purposes of this published report, all these data have been summarised.

Numbers of bones and species identified

A total of 6,327 animal bone elements (NISP) are represented. Of these 4,481 (70.8% of the total) are identified to species and to part of skeleton, and 1,846 (29.2%) remain unidentified. Of the 4,481 identified specimens, 4,121 (92% of the total) are from mammalian species, 171 (3.8%) from bird, and 189 (4.2%) from fish species. There are no amphibian or reptilian species represented. Of the 1,846 unidentified specimens, 1,554 (84.2% of the total) are mammalian, 35 (1.9%) bird, and 257 (13.9%) fish.

A summary of the numbers of bone elements by species/taxon and stratigraphic phase is presented in Table 2.

General descriptions of the assemblages and species by phase

Phase 2: pre-city wall Roman activity

This very small assemblage is recognised as discarded food debris. The presence of skull fragments, jawbones, and metapodia of cattle

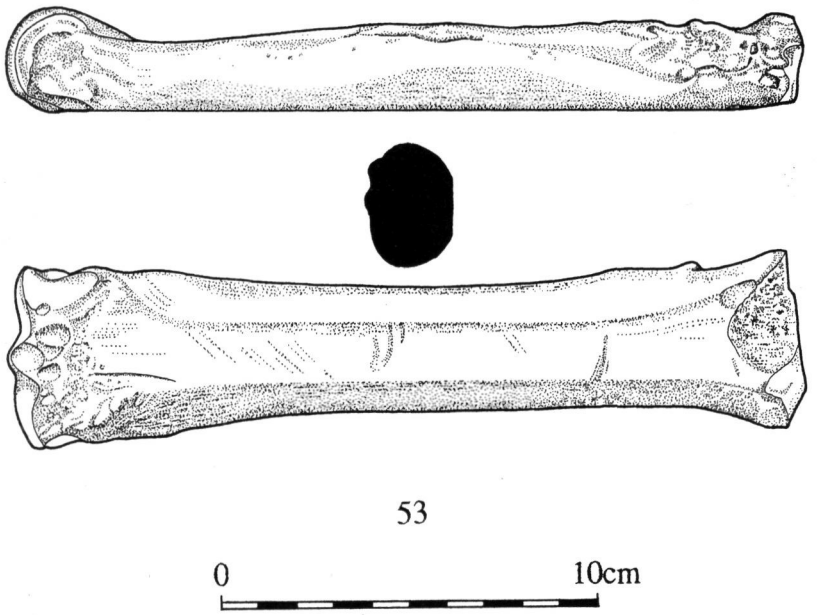


Fig 30. 53. Bone skates

and sheep indicates that these animals had been slaughtered, butchered, and consumed locally. Of the identified bone elements, those of cattle form the greatest proportion by weight (93.4% of the total) and it is speculated that the assemblage may have derived from the nearby Cripplegate fort – applying the findings of King (1978, 225) who demonstrated a correlation between high concentrations of cattle bones (reflecting high levels of beef consumption) and military sites in Roman Britain.

Among the sheep elements (context [205]) is an adult horn core (length of outer curvature 105mm) very similar in size and overall appearance to those found today in the horned ewes of the primitive Soay breed.

Phase 3: Roman city wall and ditches

Another very small assemblage, predominantly the remains of cattle and sheep that had been slaughtered, butchered, and consumed locally. Besides this food debris, Phase 3 also yielded the bones from the skeletal remains of two dogs, one of which (from [408]) is identified as female from the broad basioccipital markings (criteria of The & Trouth 1976) with an estimated height at the shoulder of 56cm (calculated from the lengths in two long bones, applying the regression formulae of Harcourt 1974). From the length of a complete cattle radius (GL 228mm) the withers height in this individual is estimated to have been 98cm (calculated using the factors of Matolsci 1970), which even by Roman standards would have been a very small, reminiscent of the unimproved, dwarf (scrub) cattle typical of the pre-Roman Iron Age (Grigson 1982; Armitage 1982).

Context [405] yielded 22 human bones from a single skeleton of an individual aged about 25 to 30 years at time of death.

Phase 3/4: Roman ditch or stream channel ([580], fill of [581])

The bones from [580] (fill of [581]) are for the purposes of this report considered separately from those above owing to the possibility of intrusive Saxon/early medieval material in an otherwise Roman assemblage. This problem is well illustrated with reference to the presence of two bone artefacts (both fashioned from horse metacarpal bones) commonly interpreted as ice-skates (Fig 30.53). Generally, such artefacts are associated throughout NW Europe with medieval sites, with many dating from the 11th to 13th centuries, the period of climatic deterioration leading to the onset of a 'little ice age'. It is important to note, however, that two skate-like

Table 2. Numbers of animal bone elements (NISP) by species and stratigraphic phase

Species/Phase	2	3	3 or 4	4	5	6	7	8	9	10	11	12	TOTALS
horse			12	7	9	14	1	1		1	6	2	53
cattle	21	16	74	177	272	85	126	309	5	459	464	160	2168
sheep	4	8	60	110	217	47	114	214	4	205	173	106	1262
goat				1									1
pig	2		11	19	33	12	16	49	2	36	31	15	226
dog		4	86	20	10	22	30	31		15	9	5	232
cat			6	4	2	8	17	73	1	11	5	11	138
rabbit							3	2		5	1	5	16
fallow/red deer							2	3		2	1		8
roe deer			1	1									2
black rat							6	1		1			8
house mouse						2	2						4
wood mouse										1			1
field vole					2								2
domestic fowl			1	4	1	6	20	30	1	18	18	11	110
domestic goose					4	3	4	10	1	10	11	4	47
mallard/dom.duck					2			1				1	4
tufted duck										1			1
teal								2					2
other duck							2					1	3
raven			1					1				1	3
crow				1									1
roach						1	1						2
eel				2	7	5	7						21
cod				32	14	2	3	1					52
ling						1							1
pollack								1					1
haddock							1	1					2
whiting						9	2	2		1			14
cod family										1			1
conger eel								2					2
plaice						2	8				1		11
sole						1	2			1			4
mackerel				1		1	7						9
herring				8	19	23	18			1			69
unident. fish				7	23	90	102	18		16	1		257
unident. bird						5	11	7		5	2	5	35
unident. mammal	8	1	27	82	344	65	211	436		249	113	18	1554
TOTALS	35	29	279	476	959	404	716	1195	14	1039	836	345	6327

objects – one made from an ox radius, the other from a sheep metapodial bone (presumably an ice skate intended for use by a child) – were discovered from a securely dated late Roman context, General Post Office site, City of London (specimens identified and published by West 1982a). The dating of the bone skates from [580] therefore remains open.

Excluding the bone skates, the assemblage from [580], viewed as a whole, is interpreted as a probably contemporaneous deposit comprising discarded food debris intermixed with the remains of pet dogs and cats, a scavenger (raven *Corvus corax*), and refuse from horn-working activity (represented by the horn cores of two castrate sheep and one ox, all of which have been detached from the cranium by chopping through the base). In addition, there are twelve equid bones representing the remains of at least four adult horses and one foal (aged between 16 and 20 months at time of death). The virtually complete lower jawbone of one of the adults is aged between six and eight years on the basis of the pattern of wear in the incisor teeth (criteria of the American Association of Equine Practitioners 1966); the presence of a moderately

developed incisor tooth in this same specimen identifies the sex as a castrate (gelding). A complete pelvis (right and left conjoined innominate bones) – possibly from the same individual as the jawbone – is also identified as that of a gelding (using the anatomical features described and illustrated by Fleming 1891, 132–3 and Getty 1975, 302–3). Withers heights in three of the adult horses can be estimated from the lengths of their long-bones (using the factors of Kiesewalter 1888). The resultant calculated heights of 1.25, 1.30, and 1.31m would all be considered pony-sized by modern standards (by comparison, modern riding and race-horses generally have a stature of between 1.5 and 1.6m, while large draught horses like the shire are 1.7m at the shoulder) but compare very favourably with the size-ranges documented for horses from other Romano-British sites, including Oxfordshire sites where the horses were between 1.22 and 1.41m at the shoulder (Wilson *et al* 1978, 117).

The assemblage includes 86 bone elements from the skeletal remains of at least seven dogs, whose ages at time of death are indicated by epiphyseal fusion in their long-bones: five animals were fully mature while two were much younger individuals– under 5 to 6 months (based upon ageing data published by Sumner-Smith 1966). The shoulder heights in the five adults when alive are calculated (method of Harcourt 1974) as follows: 35.8, 49.0, 52.9, 68.8, and 74.9cm. In the last animal, the sex is identified as female from the broad basioccipital markings in its skull, which also features a prominent, ridge-like sagittal crest similar to those found in the skulls of modern terriers. Evidence for the advanced age and/or poor dental health of this female dog is provided by ante-mortem loss of both upper canine teeth (with complete closure/healing over of their alveoli) and by the much shortened (worn-down) enamel crowns of certain of the lower cheekteeth (P_4, M_1, and M_2), which has resulted in exposure of the underlying dentine in their occlusal (biting) surfaces. There appears also to have been marked degenerative osteo-arthritis affecting the left hip joint in this same dog, as evidenced in its innominate bone by the severe exostoses of the acetabular rim, with erosion (pitting) of the interior acetabular articular socket, and in the associated femoral proximal epiphysis (caput) by peripheral exostoses and eburnation (polishing) of the articular surface. In the right femur of another, smaller dog, there is evidence of a past traumatic injury in which the femoral shaft was fractured in its mid region, and the subsequent lateral and vertical stress-loads imposed on this bone element during the period of healing resulted in mal-union (misalignment) of the broken halves, which has left a piece of the shaft protruding.

A single adult cat is represented by six long-bones (fore and hind limbs). The two wild species identified in the Phase 3/4 assemblage are each represented by a single bone element: roe deer by an immature (neonate?) metatarsus and raven by a sternum. Domestic fowl is repre sented also by a single bone element: an adult femur.

No fish bones were recovered from [580].

Phase 4: Saxo-Norman city ditch

The bulk of the faunal assemblage (comprising bones of cattle, sheep, and pigs) is recognised as discarded food refuse from all stages of meat preparation and consumption (slaughtering, primary/secondary butchering, as well as kitchen/table waste), intermixed with the skeletal remains of other food species (fowl and fish) as well as those of pet dogs and cats, a scavenging crow, and horses.

Horse bones from [654] include a humerus with the proximal articulation chopped through and another with knife cut (scoring) marks circling the shaft (either from skinning or defleshing). While these specimens could possibly indicate human consumption of horse meat (perhaps from dire necessity in a time of famine), it should be remembered that generally this practice was at that period 'discountenanced' by the Church (see Wilson 1976, 71), and a more likely explanation for the butchering is that this is evidence of the feeding of horse meat to dogs. Possible evidence for the (arguably) more gruesome practice of recycling dead dogs as food for their still living companions (as discussed by Wilson & Edwards 1993, 54) is provided by a canine skull from [654] that has been chopped by an axe or cleaver.

Phase 4 produced the only positively identified goat bone element for the whole site (from [708]): a right horn core of an adult male, LOC length of outer curve 305mm, BC basal circumference 155mm, whose shape may be described as long, straight, with a well-developed keel on the anterior edge (as in the horn core of the old English goat breed). This specimen has been detached (chopped) from the cranium, and is therefore recognised as waste from horn-working activity. Further evidence for this craft activity is

provided by the following horn cores and cranium of sheep recovered from Phase 4 contexts:

Table 3

context	bone element	description and method of detachment of the horn (& horn core) from the head ( )
[637]	horn core	R adult male (b)
[637]	horn core	L adult male (b)
[647]	horn core	L young male LOC 225mm (b)
[650]	horn core	R juvenile/subadult male (b)
[655]	horn core	? adult male (c)
[677]	cranium	sex indet. (a)

Key to method of detachment: a: horn chopped through well above its base (along its length); b: horn chopped through very close to the axis of attachment to the skull; c: horn removed by chopping well below its basal axis, leaving a portion of the cranium still attached.

Determinations of the sexes and ages in the above specimens were based on the criteria of Hatting (1975; 1983) and Armitage (1977, 82–8).

Evidence of removal of the horn sheath of cattle for use as a raw material is provided by the horn core of a young adult medium-horned ox (castrate) from [640], which has been detached (chopped) from the head with a portion of cranium still attached (classification of this and other cattle horn cores from other phases follows the system of Armitage & Clutton-Brock 1976 and Armitage 1982a).

A dog skull from [654] is identified as male of the terrier-type. Shoulder heights in four dogs are calculated from the lengths of their limb bones, as follows: [650], 64.3cm; [654], 30.7 and 56.8cm; [702], 64.2cm. These animals fall within the size-range of Anglo-Saxon dogs (23–71cm) documented by Harcourt (1974, 171).

At least two cats are represented in Phase 4: a juvenile aged under nine months at time of death ([650]) and a fully grown adult over 15 to 17 months ([696]) (based upon ageing data in modern domestic cats published by Smith 1969). The length of the humerus (GL 97.1mm) from [696] indicates a cat of comparable stature to the average-sized modern animal (modern data collected by Armitage gave a mean of 98.6mm and size-range 89.5–113.3mm, N=8) – an unanticipated finding as cats in the High Medieval period in Britain were generally of much smaller size than their modern counterparts, as discussed by Armitage (1977, 108–9) and Bond and O'Connor (1999, 412).

Roe deer is represented by a single immature metatarsus (distal epiphysis unfused) from [650].

Five bird bones are identified from three of the contexts: [650]: humerus, ulna and tarsometatarsus of domestic fowl; [685]: tarsometatarsus of crow (*Corvus corone*); [709]: tarsometatarsus of domestic fowl. Both domestic fowl tarsometatarsi are identified as female from the absence of a spur (criteria of West 1982b) and the size of the intact specimen from [709] (GL=57.8mm) falls into the lower end of the size-range 57.0–78.9mm documented by Maltby (1979, 210) for the unspurred (female) tarsometatarsi from Exeter (deposits dated 1200–1300) – in comparison with modern fowl this bird would appear somewhat diminutive and scraggy.

Of the 43 identified fish bones from Phase 4, 32 (74.4% of the total) are cod: [640]: 3 cranial fragments, 4 posterior abdominal vertebrae, 4 caudal vertebrae; [650]: 3 cranial fragments, 1 basioccipital bone, 1 premaxilla R, 1 maxilla R, 3 dentaries 1R 2L, 2 opercular bones, 1 ceratohyal, 1 epihyal, 1 branchiostegal ray, 1 anterior abdominal vertebra, 1 posterior abdominal vertebra; [654]: 2 cranial fragments, 1 premaxilla, 1 dentary R, 1 articular R. Cod bone elements exhibiting butchering marks are confined to three posterior abdominal vertebrae (all from [640]) which have bilateral cranio-caudal cuts through the transverse processes. Singer (1987, 90) identifies such marks as evidence of filleting of fish. None of the cranial elements appears to have been chopped and these therefore represent the remains of whole fish heads perhaps cooked in stews.

The other identified fish bones comprise vertebrae of herring (8 specimens), mackerel (1 specimen), and freshwater eel (2 specimens).

Phase 5: Anglo-Norman pits, ditches and gullies (11th–13th century)

As with Phase 4, this assemblage comprises proportionally high frequencies of cattle, sheep, and pig bones recognised as discarded food refuse from all stages of meat preparation and consumption (slaughtering, primary/secondary butchering, and kitchen/table waste) intermixed with the bones of other food species (fowl and fish), and the remains of pet dogs and cats, and wild fauna (represented by a field (short-tailed) vole (*Microtus agrestis*)).

Apart from a single cattle horn core (juvenile/subadult short-horned female, LOC 124mm) from [680], all the specimens from Phase 5 representing debris from horn-working activity

are from sheep and include crania (which have had their horn cores removed) as well as detached (isolated/separated) horn cores; these are listed as follows:

Table 4

context	bone element	method of detachment of the horn (& horn core) from the head ( )
[638]	horn core	L adult male (b)
[680]	horn core	R old adult castrate LOC 120mm BC 112mm (c)
[680]	horn core	R adult male LOC 250mm BC 138mm (c)
[680]	horn core	L old adult castrate (c)
[680]	horn core	L old adult male (c)
[694]	horn core	L adult male (c)
[694]	horn core	R & L (pair) adult male (c)
[700]	horn core	adult male LOC 195mm (b)
[644]	cranium	adult female (a)
[644]	cranium	young male (a)
[667]	cranium	adult male (a) also split in half along the sagittal axis
[679]	cranium	adult male (a)
[698]	cranium	adult of indeterminate sex (a) also split in half along the sagittal axis

Key to method of horn detachment: a: horn chopped through well above its base (approx a quarter of the distance along the length); b: horn chopped through very close to the axis of attachment to the skull; c: horn removed by chopping well below its basal axis, leaving a portion of the cranium still attached.

Method 'a' at first appears somewhat wasteful by trimming off the basal portion of the horn sheath (while on the core), but this piece may have been regarded by the craftsman as unsuitable as raw material owing to the presence of closely arranged basal annular/seasonal-growth rings, which are especially pronounced in the larger horns of older rams. It is interesting to note that this distinctive technique of cutting off the horn sheath above the base seems to have been largely confined to the High Medieval period and is rarely seen in horn-working debris from later medieval/post-medieval contexts.

The splitting in half of some of the sheep crania (for extracting the brain) may indicate that these (and the other sheep skulls) are butcher's waste, and that the horns had been removed by the butcher for sale direct to a horn-worker rather than supplied via a tanner as was the more usual procedure in the medieval period (Serjeantson 1989).

A horse femur from [679] shows evidence of having been gnawed by a dog, suggesting perhaps that horse meat had been fed to dogs, or, alternatively, a portion of horse hind leg had been scavenged by a dog from a knacker's yard. The heights at the withers in three of the horses represented by limb bone elements from [644], [679], and [694] are estimated (after the method of Kiesewalter 1888) at 124.7, 127.4, and 135.4cm. An example of an ankylosing lesion is identified in two adjoining (articulated) horse lumbar vertebrae from [669]; in these specimens, the condition involves bony bridging across the intervertebral discs (on the ventral surface) resulting in fusion of the centra. In their appraisal of this pathologic condition, Stecher and Goss (1961, 254) note its absence in wild equids and suggest that its incidence in domestic equids may be the consequence of trauma or from repeated stress imposed upon the posterior region of the spinal column as in animals ridden frequently or employed throughout their lives in haulage or as pack carriers.

The dog skull from [689] is identified as a female of the terrier-type; the reduced (worn down) enamel crowns in the upper and lower cheekteeth, resulting in the exposure of the dentine, and ante-mortem loss of the left canine tooth (with complete closure of the alveolus) indicate this animal was of advanced age at time of death. A skull of another adult dog was recovered from [641] (infill to cesspit [642]); although this specimen is incomplete and much fragmented, its sex is identified as male from the surviving narrow basioccipital markings. From the measured length (GL=227mm) of a tibia from [679], the shoulder height of a third dog is estimated at 67.2cm.

An individual cat of indeterminate age and sex is represented by a piece of skull and a lumbar vertebra from [679].

The residue of a sieved soil sample taken from [689] yielded two teeth (an upper incisor and an upper molar) of a single field (short-tailed) vole.

Seven bird bones from five of the Phase 5 contexts are identified as follows: [668], domestic goose, coracoid; [669], domestic goose, radius; [676], mallard/domestic duck, coracoid; [680], domestic fowl, ulna; [680], domestic goose, carpometacarpus, ulna; [699], mallard/domestic duck, humerus.

Of the 40 identified fish bones from Phase 5, 19 (47.5% of the total) are from herring, 14 (35%) from cod, and 7 (17.5%) from freshwater

eel. Both herring and eel are entirely represented by vertebrae, while cod comprises the following bone elements: [641]: 1 articular L, 2 posterior abdominal vertebrae, 2 fragments of unidentified vertebrae; [676]: 1 branchiostegal ray; [680]: 2 dentaries (R & L=pair), 1 articular (with retroarticular), 1 ceratohyal R, 1 posterior abdominal vertebra; [689]: 1 branchiostegal ray, 1 posterior abdominal vertebra; [699]: 1 articular L. By comparison with modern specimens of known size, the length-range (TL) in the Phase 5 eels is assessed at between 40 and 50cm.

Phase 6: medieval city ditch and Bastion 15 (13th/late 14th century)

Domestic (kitchen/table) refuse intermixed with that from butchers' slaughteryards and horn-workers, as well as the skeletal remains of horses, pet dogs and cats, and rodent vermin (represented by a pair of femora (R & L) of a single house mouse (*Mus musculus*) from the sieved residue of Seed-sample 26 from [509]).

Horn-working debris comprises the following seven sheep horn cores; all of which have been cut from the skull by an axe blow directed from the side of the head through the basal axis or just below:

[509] adult male R; LOC 195mm BC 129mm
[531] 5 specimens (MNI=5):
[531] adult male R; LOC 270mm BC 144mm
[531] old adult male L
[531] adult male L; LOC 265mm BC 135mm
[531] adult male L
[531] adult male L
[539] young adult male R; LOC 150mm.

Use of cattle horn as a raw material is evidenced by the following three horn cores that have been chopped from the skull by an axe blow directed below the horn core base (leaving a portion of the cranium still attached):

[510] old adult medium-horned ox; BC 178mm
[530] adult short-horned ox; BC 138mm
[530] young adult short-horned ox; BC 151mm.

The 14 horse bone elements include two adult lumbar vertebrae from [539] which exhibit ankyloses (fusion) of their centra and lateral transverse processes (evidence that this horse had been ridden frequently or had worked throughout its life as a draught or pack animal).

At least five dogs and two cats (all mature animals) had been thrown as carcasses into the section of the city ditch crossing the Alder/Castle/Falcon House excavation site. None of the bones from these animals exhibit any evidence of skinning and therefore they were probably household pets that had lived and died nearby. Most of the dogs were of similar stature to modern medium-to-large terriers: from the lengths of their limb bones the shoulder heights in three of them were determined at 40.8, 47.5, and 55.0cm. Context [643], however, yielded a right innominate bone of a very much smaller dog: the measured length of this bone (GL 86mm) compares favourably with that taken by the author on the innominate bone (GL 86.7mm) of a modern toy poodle in the osteological collections of the Ancient Monuments Laboratory (English Heritage), London. Evidence of spondylosis deformans, a pathological condition relatively common in archaeological animal remains, especially dogs (see Baker & Brothwell 1980, 131) was found in the thoracic vertebrae of an adult dog from [512]; the centra are all deformed, and exhibit periarticular lipping (exostoses), together with eburnation (polishing) and grooving/faceting of the cranial and caudal articular surfaces.

Phase 6 yielded 9 bird bones from two contexts: [509], domestic fowl: 1 synsacrum; 3 vertebrae; 1 tibiotarsus (GL 126.2mm); 1 phalanx I; domestic goose: 1 carpometacarpus (GL 91.4mm); [512], domestic goose: 1 skull; 1 sternum. The goose sternum (breastbone) from [512] is chopped in half, a pattern of butchering also recorded in two similar specimens excavated from 14th- to 16th-century rubbish pits in the town of Dokkum, Friesland, the Netherlands (von Gelder-Ottway 1979, 116, fig 3.C).

45 fish bones are identified from two of the Phase 6 contexts: [509] (sieved samples): herring: 23 vertebrae; whiting, 1 dentary, 8 vertebrae (= 3 anterior abdominal, 3 posterior abdominal and 3 caudal); eel: 5 vertebrae; cod: 2 caudal vertebrae; plaice: 1 preopoerculum, 1 caudal vertebra; roach: 1 pharyngeal bone; sole: 1 caudal vertebra; mackerel: 1 vertebra; [510] (sieved sample): ling: 1 vertebra. Attention should be drawn to two of the eel vertebrae and the caudal vertebra of the plaice (all specimens from [509]) which exhibit the distortion of shape in the centrum characteristic of fish bones ingested/digested/voided by humans (see Wheeler and Jones 1989, 75, fig. 5.2), indicating these particular fish bones were probably in human faeces when deposited/disposed of in the ditch.

Phase 7: later medieval re-cut of the city ditch (c.1350–1400)

Like the assemblages from earlier phases, that of Phase 7 comprises cattle, sheep, and pig bones recognised as food refuse from all stages of meat preparation and consumption (slaughtering, primary/secondary butchering, and kitchen/table waste). Bones of other food species are also represented: fowl and fish, and, for the first time, rabbit and fallow deer.

Unlike the previous phases, however, there is a noticeable absence of horn-working debris: apart from an isolated sheep skull (from [493]) which has had the horn cores removed (chopped through at the base). There is also a paucity of horse bone elements; again limited to a single bone: a complete adult radius (from [499]) from an animal with an estimated withers height of 1.3m.

In common with the earlier phases, the Phase 7 assemblage includes skeletal remains of dogs and cats, representing at least four adult dogs and an equal number of adult cats. In the absence of any noticeable skinning marks on their bones, it is suggested that these animals had probably been kept nearby as pets rather than for their skins. One of the dogs (from [492]) is identified as a male of the terrier-type from its skull, with an estimated shoulder height (based on the lengths of its humerus and radius) of 40.6cm. Another dog (from [495]) is identified by its short snout and domed forehead, exhibited in its skull, as a spaniel-type.

A piece of red deer antler tine (from [495]) provides the only evidence in this phase for bone-working activity. Fallow deer is represented by a single adult metatarsal bone from [492].

Rodent vermin are represented by bone elements of black rat (*Rattus rattus*) and house mouse: [495] (sieved sample) yielded 1 piece of black rat cranium and 2 mouse bones (mandible & cervical vertebra); [492] (sieved sample) yielded 5 rat vertebrae, 1 rat mandible, and 1 rat maxilla (dental wear-stage C subadult/adult – classification system of Armitage 1997).

26 bird bones are identified (from [492], [495], [496] and [500] combined, incl. sieved samples), as follows: domestic fowl: 1 clavicle, 1 coracoid (GL 54.8mm), 1 humerus, 1 ulna, 2 synsacrum, 2 femur (intact spec. GL 95.4mm), 1 tibiotarsus (GL 104.9mm), 1 tarsometatarsus, 9 vertebrae, 1 rib; domestic goose: 1 sternum, 1 femur, 1 phalanx I (immature), 1 vertebra; duck (*cf Anas/Aythya* sp.): 1 scapula, 1 ulna.

49 identified fish bone elements came from sieved soil/seed/environmental samples collected from [492], [495], [496] and [500] combined: roach, 1 pharyngeal bone; eel, 7 vertebrae; cod, 1 premaxilla, 1 post abdominal vertebra, 1 vertebra (indet.); haddock, 1 dentary (*cf* in size to modern specimen TL 36cm); whiting, 1 post abdominal vertebra, 1 caudal vertebra; plaice, 1 post abdominal vertebra, 6 caudal vertebrae, 1 indet. vertebra; sole, 2 vertebrae; mackerel, 7 vertebrae (including 1 from [495] digested by a human); herring, 18 vertebrae.

Phase 8: early post-medieval re-cut of city ditch (c.1400–1500/50)

Predominantly food refuse from all stages of meat preparation and consumption (including kitchen/table waste), comprising bones of cattle, sheep, pigs, deer, rabbits, domestic and wild fowl, freshwater and marine fishes. Skeletal remains of pet dogs and cats are also represented, as are those of scavengers and vermin (raven and black rat).

The Phase 8 faunal samples include only moderate amounts of horn-working waste, identified by the presence of the following specimens:
sheep horn cores (all detached from the skull by an axe blow directed close to the base of the core, from the side of the head):
[420] L adult male
[420] L young adult male
[456] R young adult castrate LOC 133mm BC 94mm
[488] R adult female LOC 127mm
sheep crania (with their horn cores removed by chopping through close to the base):
[388], 3 specimens; [461], 1 specimen
cattle horn cores (chopped from the skull with attached portion of frontal bone):
[388] adult medium-horned ox with sawn core
[488] young adult short-horned ox LOC 185mm.

Antler-working is evidenced by the portion of fallow deer (*Dama dama*) cranium (from [456]), right side, with attached basal part of the antler (comprising the pedicle, coronet, and brow tine). Inspection of the butchering pattern indicates that the whole antler (with portion of frontal bone) was originally removed by a series of repeated cuts (made by an axe or heavy cleaver) transversely

through the cranium, with the blows directed laterally just behind the orbital region, followed by cutting of the antler itself, as evidenced by several chopping marks on the beam posterior to the brow tine. Deer antler throughout the medieval period was commonly and widely used as raw material for manufacture of combs.

Two further fallow deer bone elements (from the food refuse) are identified: an innominate bone (from [388]) of an adult male (criteria of Lemppenau 1964) with the acetabulum chopped (evidence of the removal of the hind leg from the carcass); and a complete, adult metatarsal bone (from [456]).

31 bone elements are identified as dog, representing at least eight adults and two immature animals. Based upon epiphyseal fusion times in modern dogs given in Sumner-Smith (1966) the age at death of one of the immature animals is assessed at under six months, while the other was between six and thirteen months. Three skulls (two from [456] and one from [488]) are all identified as male of the terrier-type, with one of the specimens from [456] exhibiting signs of bi-lateral pressure atrophy across the maxillae (evidence perhaps that this animal was frequently muzzled). An ulna from [461], from an animal with an estimated height at the shoulder of 45.4cm, shows evidence of osteoarthritis that afflicted the elbow joint; in this specimen there is extensive peripheral exostoses (bony outgrowths), with associated eburnation (polishing) and grooving of the articular surface. In addition to the ulna above, the presence of the complete limb-bones of seven other dogs allows their respective shoulder heights to be calculated, as follows: 29.6, 34.3, 46.7, 47.1, 50.2, 51.9, and 53.5cm.

The relatively high frequency of identified cat bone elements from Phase 8 (NISP = 73) reflects the presence in the collected faunal material of a partially complete skeleton from [456] and several groups of once-articulated (associated) limb-bone elements, including two pairs of right femora and right tibae from two adult cats from [487]. The majority of the cats (exact number indeterminate) are adults, but at least one immature animal aged under nine months at time of death is represented by an unfused femur from [488], and another animal aged over 17 months but less than 21 months is represented by a humerus, radius, and ulna (with all epiphyses fused except for the distal radius) from [388]. In the absence of any evidence of skinning, it is suggested all the cat bones from Phase 8 are from pets rather than animals kept for their skins.

Black rat is represented by a single adult radius (GL 26mm) from [456].

Phase 8 yielded 44 bird bones (from [388], [420], [456], [459], [461], [487], [488] combined) identified as follows:

domestic fowl: NISP = 30: 1 scapula; 1 coracoid (GL 64.3mm); 5 humerus (intact specs. GL 70.8 & 73.0mm); 2 radius; 3 ulna (intact spec. GL 63.5mm); 4 femur (intact specs. GL 78.6, 88.1 & 88.9mm); 7 tibiotarsus (intact specs. GL 101.7, 114.6, 124.2, 128.9 & 139mm); 2 tarsometatarsus (1 spurred = male GL 83.3mm context [420] and 1 unspurred = female context [487]); 3 vertebrae; 2 unident. long-bone shafts

domestic goose: NISP = 10: 1 clavicle; 2 humerus (intact spec. GL 174mm); 2 radius; 1 ulna (GL 162mm); 1 carpometacarpus (GL 93.2mm); 1 tibiotarsus; 1 tarsometatarsus; 1 phalanx I

mallard/domestic duck (*Anas platyrhynchos*): 1 tarsometatarsus

teal (*Anas crecca*): 2 carpometacarpus (R & L = pair)

raven: 1 ulna.

7 fish bones are identified from sieved samples collected from [456], [459], [461], [487], [488] combined: cod, 1 caudal vertebra; pollack, 1 anterior abdominal vertebra; *cf* haddock, 1 posterior abdominal vertebra; whiting, 2 anterior abdominal vertebrae; conger eel, 2 vertebral centra. Special mention should be made of the cod caudal vertebra (from [459]) which exhibits modification consistent with its having been chewed/ingested/digested/voided by a dog in its faeces. A further vertebra (species indeterminate) from [456] appears to have been digested also, but by a human (suggesting this particular bone element had been deposited in human faeces).

Phase 9: early post-medieval re-cut of city ditch (c.1500)

This very small sample (from [438]) comprises food (kitchen/table) refuse (beef, mutton, pork, chicken, and goose bones) together with one humerus of an immature pet cat. The single domestic fowl bone is identified as an adult radius with greatest length (GL) 66.7mm. No fish bones were recovered.

Phase 10: early post-medieval re-cut city ditch (16th century)

Primary and secondary butchering refuse together with that derived from domestic (kitchen/table)

sources form the bulk of the assemblage from Phase 10. Skeletal remains of domestic dogs and cats are also represented, as are those of smaller wild mammalian species: black rat and wood mouse (*Apodemus sylvaticus*). This assemblage exhibits a relatively high frequency of horn-working waste, as evidenced by the presence of 15 sheep horn cores all cut from the skull by an axe chopping through the base of the horn from the side of the head; of the specimens so identified, the greatest concentration (11 specimens = 73.3% of the total) came from [334], as shown below:

[331] adult male, R: BC 164mm
subadult female, R; BC 91mm
[334] young adult male, R; LOC 120mm BC 99mm
young adult castrate, R: LOC 115mm BC 110mm
young adult castrate, R; LOC 110mm BC 109mm
adult female, R; LOC 150mm BC 108mm
young adult male, L; LOC 105mm BC 91mm
adult castrate, L
young adult castrate, L
adult female, L; BC 93mm
young adult female, L
adult male? (piece only)
indet. (piece only), L
[335] indet. (piece only)
[349] subadult, male; LOC 58mm

In addition to these detached horn cores, there are three skulls (two specimens from [335] and one from [349]), that have had their horns removed by chopping through just below the basal axis of the horn cores.

Evidence of cattle horn-working is provided by four chopped horn cores (all from [349]) identified as follows: a young adult short-horned ox (castrate); two adult medium-horned oxen; and a young adult medium-horned ox. In each of these the horn had been detached from the head by an axe blow directed below the core base, leaving part of the frontal bone attached.

Horse is represented by a single bone element: a first phalanx from [331]. Fallow deer is represented by one femur (from [330]) and a tibia (from [349]); both specimens from adult animals.

From [331] there is an adult pig metatarsus IV with proximal periarticular exostoses and erosion (pitting) of the articular surface. In the absence of eburnation and grooving (as would be expected in a case of degenerative osteo-arthritis), this appears to be an example of osteo-myelitis/septic arthritis – the condition arising as a result of an infected joint in the hind foot.

A sieved soil sample collected from [349] (sample 10) yielded a cervical vertebra of black rat and a left adult innominate bone of a wood mouse.

Using epiphyseal fusion in long-bones (criteria of Sumner-Smith 1966) as a basis for establishing the ages at time of death of the Phase 10 dogs, the following individuals are recognised: one immature animal aged less than five to eight months, and four older animals aged at least ten months or more. Stature (shoulder heights) in three of the older dogs is estimated from their respective long-bones as follows: [331], humerus (R & L pair), 44.5cm; [349], left tibia, 53.8cm; left tibia, 55.8cm.

Eleven bone elements from the skeletal remains of at least five cats are represented; ages at time of death are estimated from epiphyseal fusion in their long-bones (criteria of Smith 1969) as follows: four fully grown (adult) individuals aged over 15 to 18 months and one immature animal under nine months.

[319], [330], [331], [334], [349], [410], and [613] combined yielded the following bird bone elements:

domestic fowl (NISP = 18): 1 coracoid; 3 humerus (intact spec. GL 77.9mm); 1 radius (GL 54.4mm); 5 ulna (intact specs. GL 75.4, 75.7, 81.3, 84.4mm); 4 femur (GL 75.8, 82.1, 93.2, 98.5mm); 3 tibia; 1 phalanx I

domestic goose (NISP = 10): 2 scapula; 1 radius; 2 carpometacarpus (GL 90.6, 120.5mm); 2 femur (intact spec. GL 81.9mm); 1 tibiotarsus; 1 tarsometatarsus; 1 phalanx I

tufted duck (*Aythya fuligula*): 1 coracoid (from [349]).

A sieved soil sample collected from [349] yielded four identified fish bone elements: *cf* whiting, 1 post abdominal vertebra; cod family (indet.), 1 vertebra; sole, 1 caudal vertebra; herring, 1 vertebra.

Phase 11: post-medieval city ditch (17th century)

The faunal material deposited in the city ditch during this phase comprises primary and secondary butchering debris, domestic (kitchen/table) waste intermixed with the skeletal

remains of pet dogs and cats, as in the previous phases. With respect to the horn-working refuse, however, there is a marked difference in its composition. In earlier phases, sheep horn cores noticeably outnumbered those of cattle, but here the situation is reversed – the Phase 11 contexts yielded 24 cattle and 10 sheep specimens. Except for a single specimen of a young adult medium-horned ox (castrate) from [258], all of the cattle horn cores came from [216] and these are summarised below:

Table 5

group/age class	cow	bull	ox	indet.
short-horned:				
adult	1		3	
young adult				none represented
medium-horned:				
adult	1	1	2	
young adult		1	1	
subadult/juvenile			1	1
long-horned:				none represented
indeterminate group:				
adult				8
young adult				2
subadult/juvenile				1

In these specimens the horns had been hacked off the skull by means of a cleaver or axe either as a pair attached to a portion of the frontal bone (which subsequently broke apart) or separately by means of chopping just below each horn core base in turn, by a blow directed obliquely from either the back of the head or from the side (as illustrated in Armitage 1980, 85, figs 1a–c). After soaking, the outer horn sheaths could then be pulled off their cores and used whole in the manufacture of such items as livestock drenching horns or powder horns, or softened by heating, pulled apart, cut up, and pressed flat between heated oiled-iron plates to convert the horn into translucent sheets used in glazing lanterns. There is evidence that at least one of the horns had been sawn through whilst still on its core, apparently leaving behind the basal portion of the outer sheath where the closely grouped growth-rings probably rendered it unsuitable as raw material.

Of the ten sheep horn cores recovered from Phase 11, nine came from [258] and [259], with a single specimen from [216]: four are recognised as adult males, four as young adult males, one as an adult castrate, and one as a young adult castrate (LOC in intact specimens: 170 and 190mm (both males) and 240mm (castrate)).

In addition to the many cattle horn cores from [216] there is an ox mandibular ramus (lower jawbone) that exhibits marked swelling in the region of the alveoli (teeth sockets) of the fourth premolar and first molar. This condition was probably due to inflammation at the tooth roots resulting from impacted food causing irritation of the tissues, resulting in the formation of abscess chambers which ultimately caused ante-mortem shedding of the affected teeth (as discussed in Baker & Brothwell 1980, 154). This same specimen also shows the non-metrical trait of a vestigial (*ie* incompletely developed) third cusp (hypoconulid) in the lower third molar. Maltby (1979, 40) found this congenital abnormality to be relatively common in the cattle jawbones he was studying from Roman Exeter (21% of cases) but, as discussed by Albarella *et al* (1997, 27–8), it is somewhat rarer in medieval and post-medieval British cattle (with the incidence ranging regionally from 3% to 10%). Mention should also be made of the fact that this jawbone shows evidence of butchering: the diastema had been cut completely through the bone either by an axe or heavy cleaver.

There is a single cervid bone element from Phase 11: a sawn piece of antler tine (from [259]) of either red deer or fallow deer (species indet.), identified as waste/off-cut from antler-working activity/craft.

Six horse bones are identified: five specimens from [216] comprising 1 mandibular ramus from a gelding (castrate) aged 7–8 years at time of death; 1 innominate bone; 2 femora (one of which is chopped through below the proximal epiphysis); 1 phalanx I; and one specimen from [285]: a piece of mandibular ramus (age and sex indet.).

Among the dog bones are two crania: one from [216] is identified as female of the terrier type (with a moderately developed sagittal crest), and the other from [259] is of a very small dog comparable in size to the modern toy poodle in the osteological reference collections of the Ancient Monument Laboratory (English Heritage) London. In this specimen the cranium is domed (bulbous-looking) and the snout short, both these anatomical features are found in spaniel-type dogs and indicate this animal was probably a lady's lapdog; examples of these small, lop-eared dogs adorned with belled collars are frequently depicted playing at the feet of

ladies on monumental church brasses, including the following (in chronological order): Margaret Torryngton (1356), Great Berkhampstead, Hertfordshire; Margaret de Freville (1410), Little Shelford, Cambridgeshire; Margarita Cheyne (1419), Hever, Kent; and Agnes Salmon (1430), Arundel, Sussex (Beedell 1973; Armitage 1977, 104–7). In Juliana Barnes' Book of Saint Alban (1486) mention is made of the toy dog, which is listed as a 'small ladies popis' (quoted in Vesey-Fitzgerald 1957, 80–1). From the length of the complete adult tibia ([258]) the shoulder height in one of the dogs from Phase 11 is estimated at 57.6cm.

Contexts [216], [258], [259], [285], [328] combined yielded 29 bird bone elements, identified as follows:

domestic fowl (NISP = 18): 2 coracoid (intact spec. GL 55.8mm); 5 humerus (intact specs. GL 64.5, 75.6, 81.1mm); 1 ulna (GL 81.0mm); 5 femur; 4 tibiotarsus; 1 tarsometatarsus (unspurred = female)

domestic goose (NISP = 10): 1 humerus; 1 radius; 4 carpometacarpus (intact spec. GL 85.6mm); 1 femur; 2 tibio-tarsus (GL 119.5, 127.5mm); 1 tarsometatarsus (GL 91.1mm)

mallard/domestic duck: 1 coracoid.

A sieved soil sample taken from [259] produced the only identifiable fish bone from this phase – a caudal vertebra of plaice which is almost twice the size of a modern comparative specimen of a fish of this species of TL 34cm.

Phase 12: post-medieval activity on infilled city ditch and fill of cesspit

This last site phase is represented by the following component faunal assemblages:

Context [201] 17th-century make-up dump sealing the city ditch

Predominantly household food refuse (bones of beef, mutton, pork, rabbit, and domestic fowl) intermixed with the skeletal remains of pet dogs and cats, pieces of two horse jawbones (from a knacker's yard?), and a single femur from a raven. Three chopped sheep horn cores are recognised as waste from horn-working activity: adult male R LOC 160mm BC 140mm; young adult castrate R LOC 145mm BC 108mm; another young adult castrate L LOC 120mm BC 106mm. Evidence of the exploitation of cattle horn as a raw material is provided by a single chopped horn core identified as that of an adult medium-horned bull.

A very large pig metacarpus III (GL 90.1mm) merits special mention as this specimen exceeds in size those from two modern wild boars (comparative GL measurements: 83 & 85mm) reared in London Zoo (documented by Noddle 1980, 407). While this specimen is also much larger than its medieval counterparts (GL size-range 68–86mm: various authors), it does compare favourably with one of the pig metacarpus III bones (GL 90.7mm) from the early Tudor deposits excavated at Baynard's Castle, London, which was interpreted (Armitage 1977) as a large domestic male. As discussed by Noddle (1981), at the close of the Middle Ages British pigs increased in size and by the 18th century 'there are some enormous animals documented in the contemporary livestock literature'. This specimen in addition to its large size also exhibits moderate exostoses and localised pitting/erosion of the bone on the medial (inner) surface – evidence of a septic lesion (infection) in one of the forefeet?

The bird bones from [201] are identified as follows:

domestic fowl (NISP = 11): coracoid (GL 50.6, 54.2mm); 1 humerus (GL 84.0mm); 2 ulna (an immature and an adult); 2 femur; 1 tibiotarsus; 3 tarsometatarsus (two recognised as males from the presence of a spur, the other broken specimen is of indeterminate sex)

domestic goose (NISP = 4): 1 sternum; 2 tibio-tarsus; 1 tarsometatarsus

mallard/domestic duck: 1 tarsometatarsus (GL 49.2mm)

other duck (indet. sp.): 1 tibiotarsus

raven: 1 femur (GL 69.4mm)

There are no fish bones from this or any other Phase 12 context.

Context [556] infill of brick well/soakaway [521] (post-medieval)

Another very small assemblage of household food refuse (bones of cattle and sheep) together with a single sheep horn core, chopped across the base (= horn-working waste) identified as an adult male R LOC 180e.

Contexts [566] and [568], combined infill of cesspit [569] (1650–1700)

Household (kitchen/table) refuse comprising beef, mutton, and pork bones.

Analysis and discussion

Site environment

Some insight into the site environment (habitats) is provided by the presence of certain small wild mammal species. An overgrown habitat close to the city wall near the Alder/Castle/Falcon House site is indicated by the field vole from the Anglo-Norman (11th–13th century) phase (Phase 5), as this particular animal generally prefers to live in rough, ungrazed grassland – thus confirming William Fitzstephen's observation in his work *Descriptio Londoniae* that just beyond the city walls lay 'fields for pasture, and a delightful meadowland, interspersed with flowing streams...' (quoted in Wheatley 1970, 502). The wood mouse also favours overgrown habitats, and today is abundant and widespread in London's outer suburban gardens; but this species will also often enter houses during the winter months (Burton 1974) and its presence on the site in the 16th century (Phase 10) may perhaps be explained by this behaviour. It would, however, have been in competition with the many rats and mice (commonplace commensal vermin) already found in this part of London (whose presence is evidenced by their bones from Phases 6, 7, 8, and 10). Yet another scavenger species, this time a bird, the raven, is represented by bone specimens from Phases 3/4, 8, and 12. Indeed, the raven was a 'ubiquitous urban scavenger' throughout N Europe, especially during the medieval period, according to O'Connor (1993, 159) who also records its disappearance from British cities and towns from the 17th century onwards; this perhaps makes the bird from Phase 12 among the last of its kind to naturally inhabit the City (leaving only its 'captive' relations in the Tower of London remaining today).

Refuse dumping in the city ditch (medieval and early post-medieval period)

From historical sources it seems the dumping of refuse into the city ditch was an illicit but largely unregulated activity, with the authorities either powerless or disinclined to prosecute transgressors.

In his survey of *Street Life in Medieval England* Salusbury (1939, reprint 1948, 77) observes that the 'private citizen was only too ready to dispose of dead dogs and cats by dropping them ... just over the town wall'. Evidence for such casual and opportunistic disposal of unwanted carcasses into the city ditch near Alder/Castle/Falcon House is provided by the many skeletal remains of these animals recovered from all the medieval and post-medieval phases. These private citizens also seem on the archaeological evidence to have had no reservations about dumping their ordinary household refuse (especially food debris) into the city ditch. Likewise, butchers, horn- and antler-workers as well as those working in knackers yards all seem to have exploited the city ditch as a convenient garbage dump – presumably thereby saving themselves the expense and trouble of carting their noxious refuse out beyond the City limits. It should be noted however that proportionately the amounts of bone elements representing butchers' waste are generally much less than those identified as domestic food refuse in the assemblages, reflecting perhaps the greater control the City authorities were able to exert over the butchers (*cf* ordinary citizens) in respect of ensuring the proper disposal of their waste products (see Sabine 1933).

As discussed by Sabine (1937, 36–7) London's Mayors in times of national emergency often did instigate the cleansing of the city ditch where required in order to restore its original intended function as a defensive feature. Such action was taken for instance in 1378 in response to the threat of imminent attack by the French (*ibid*) and Butler (1999) further discusses this aspect in the light of the Alder/Castle/Falcon archaeological evidence. What the faunal evidence makes clear, however, is that immediately such threats were over, the city ditch was quickly refilled with refuse by local households and tradesmen–indicating just how ineffective were the authorities in preventing such activity. By the early post-medieval period, the development in heavy siege artillery had rendered the city ditch and wall obsolete and, apart from its apparent temporary restoration during the time of the Civil War (in the 17th century)(see above), the upkeep of the ditch for military purposes was no longer of concern to the authorities, and it rapidly became infilled.

Diet and foodways of the inhabitants

Extrapolating back to the households from which the food refuse thrown into the city ditch originated, it is possible to say something about

the variety and quality of their diet (viewed collectively) as the bulk of the faunal remains represents domestic (kitchen/table) waste. For the purposes of this assessment only the medieval and post-medieval assemblages (Phases 4–12) were chosen for analysis; the earlier (Roman) assemblages were omitted owing to their small samples; also left out for the same reason was the Phase 9 assemblage.

Bone-weight data rather than NISP was employed as the most accurate means of determining the relative (proportional) contributions made to the diet by the principal meat-supplying species. For greater precision, non-food bone elements (horn cores of sheep and cattle) were omitted from the calculations. The results of this analysis are presented in Table 6 which shows that, for all the phases under consideration, beef/veal was the most important staple-item in the diet, with mutton/lamb second, and pork/sucking pig making a lesser contribution.

From Phase 7 (later medieval period) through to the more recent Phase 12 there is evidence for the consumption of rabbits. Measurements taken of the rabbit limb-bones all fall within the size-ranges of modern wild rabbits and identify them as warren- rather than hutch-reared (criteria of Armitage 1981).

Phases 7, 8, and 10 also reveal evidence for the consumption of fallow deer meat; the prevalence of hind-limb bone elements of this species in these assemblages indicates that the supply of venison was in the form of haunches (following the interpretation made by Albarella & Davis (1996, 34) who, in a survey of high status (castle) sites, discovered a similar discrepancy in body-part representation of both red and fallow deer).

Apart from the venison mentioned above, there is nothing else in the faunal assemblages to suggest high status. Overall the diet appears to have been one of basic sufficiency rather than of extravagance, and there is (for example) no evidence for the lavish consumption of a diversity of bird species – including plovers, cranes, woodcock, dove, quail, as well as exotics such as peafowl and great bustard – as apparently enjoyed by the inhabitants of Baynard's Castle, City of London, in the late Middle Ages and early Tudor period (as documented by Bramwell 1975). Instead the Alder/Castle/Falcon inhabitants relied on domestic fowl and geese, supplemented by the occasional duck; however in Phases 6, 7, 8 and 10 they apparently indulged in a wide variety of freshwater and marine fish. From the historical and modern records of fish species caught in the Thames compiled by Wheeler (1979) and from information relating to the modern distributions of marine fish species published by Kennedy (1954) it is possible to suggest where the fish species represented in the assemblages were caught.

According to criteria proposed by Wheeler (1977) small cod in the size range TL 60–80cm would have been caught by inshore fisheries off the E coast, while larger individuals than this could only have come from more distant waters in the northern North Sea. In order to determine which of these applied to the cod eaten in Phases 4 and 5, estimates of size (TL) were made using measurements taken from the dentaries, premaxillae, articular and opercular bones (after the methods of Ekman 1973, 56; Wheeler & Jones 1976; Rojo 1986); dentary depth measurement 'A' (devised by Wheeler & Jones 1976) was not used because of its known inaccuracy in large-sized individuals (as discussed by Armorosi *et al* 1994, 11). From 14 estimated values, the cod elements indicated a size-range between 90 and 149cm TL showing these were the products of

Table 6. Relative proportions (% of the total/phase) of the three main domesticates, based on bone weight, omitting non-food refuse (horn cores of cattle and sheep)

Phase/species	**cattle**	**sheep**	**pig**
4: Saxo-Norman	80.3%	15.7%	4.0%
5: Anglo-Norman (11th–13th cent.)	72.7%	23.3%	4.0%
6: Medieval (13th/late 14th cent.)	82.0%	13.3%	4.7%
7: Later medieval (*c.*1350–1400)	73.4%	18.9%	7.7%
8: Early post-medieval (*c.*1400–1500)	77.6%	15.5%	6.9%
10: Early post-medieval (16th cent.)	87.7%	9.4%	2.9%
11: Post-medieval (17th cent.)	88.2%	9.2%	2.6%
12: Post-medieval	80.1%	15.6%	4.3%

deep-sea fisheries in the North Sea, and therefore probably supplied to London either in the form of 'stockfish' (dried cod) or as preserved cod in barrels (either packed dry-salted or pickled in brine). Irrespective of the method or methods used in their preservation, it was usually the practice to remove the head during processing; cranial bone elements should therefore be absent at consumption sites, according to Perdikaris (1996). In view of this model, the disproportionate predominance of cranial parts and associated dentaries in the food refuse (Phases 4 and 5) seems highly anomalous. It is, however, worth mentioning that traditionally in Britain the 'cod's head and shoulder' were considered as delicacies and the best parts of this fish owing to the 'particularly rich and nutritious' thick tongue and cheeks, and the very firm fleshy neck, according to Hartley (1954, 239), who further observed that when served together such parts from a single large cod would make 'a substantial dish for three or four people'.

Neither pollack nor haddock are normally found in either the outer Thames estuary or in the southern North Sea and therefore must have been caught in the same 'distant water' fishing grounds as the cod. Whiting has always entered the outer Thames estuary in high numbers and this is probably where the specimens represented in the assemblages were caught. Herring, plaice, and sole are also commonly abundant in the Thames mouth, but the conger eel must have originated from elsewhere (English Channel?) as it is uncommon in both the Thames and southern/central North Sea. Conger eels were often preserved by pickling for transportation and long-term storage: split lengthways, rolled into collars, and soused like brawn (as described by Wilson 1976, 54). Mackerel is associated with open coasts and moderately deep water, and has never been recorded from the Thames. This fish must therefore have been caught by deep-sea fishermen. In contrast the freshwater eel and the roach were probably caught by local net-fisheries either in the freshwater reaches of the tidal Thames or in one of the tributaries.

Livestock husbandry

Analysis of the cattle and sheep bone elements recovered from site gives useful insight into the breed-types and sizes of these animals from Roman to early post-medieval times, as well as revealing their ages at time of slaughter. The results of this research make a further contribution to our knowledge of the history of livestock husbandry in Britain.

Cattle

No crania of polled (naturally hornless) cattle are represented, all the animals are horned and identified as belonging to the short- and medium-horned groups (classification of Armitage 1982b and Armitage & Clutton-Brock 1976).

Using the factors of Fock (1966) for metapodia and Matolcsi (1970) for the other long-bones, the withers heights (in cm) in the cattle are calculated as shown in Table 7.

Intra-site assessment of these data reveals the Anglo-Norman/High Medieval cattle to have been of small stature, including dwarf individuals under one metre high at the shoulder. This picture of impoverished stock is found to be common and widespread throughout Western Europe during that period, as discussed in detail elsewhere by Armitage (see Armitage 1980, 406–8; 1982b, 53). By the later medieval period, however, there is evidence of improvement, with the average height increasing from 103.8 to 117cm, and there is yet a further increase to 122cm by the early post-medieval period. Somewhat surprisingly, however, there is an absence in the later medieval/early post-medieval assemblages of bone elements of the sturdy-built, very tall (up to 151cm at the shoulder) long-horned cattle recorded from other early Tudor sites in the City of London, including Baynard's Castle (see Armitage 1977, 38–63; 1980, 408–11).

The age classes of the cattle represented in each of the faunal assemblages comprise calves as well as juvenile, subadults, and fully grown adults. A summary of the epiphyseal fusion in the more complete long-bone specimens is given below (Table 8).

Sheep

Horned rams, ewes, and wethers (castrate sheep) are all represented in Phases 2–12. Polled (naturally hornless) sheep, however, are identified only from the later medieval and early post-medieval phases, evidenced by three crania from the following contexts: [492] (Phase 7); [488] (Phase 8); and [216] (Phase 11). There are two

Table 7. Summary of the calculated withers heights in the cattle, by phase

	withers height (cm) N	Mean	Range	SD
Phases 2 & 3: Roman	3	108.3	98.0–115.2	–
Phases 4 & 5: Saxo-Norman/Anglo-Norman	5	103.8	95.9–115.5	–
Phases 6 & 7: Later medieval	5	117.0	110.1–126.9	–
Phases 8–12: Early post-medieval	45	122.0	107.9–137.3	6.95

Table 8. Summary of the epiphyseal fusion in the cattle long-bones (after Grant 1985)

		Roman P2, 3 & 3/4		Anglo-Norm. P4 & 5		Later med. P6 & 7		Early post-med. P8–12	
Approx. age at fusion	**Bone element**	**UF**	**F**	**UF**	**F**	**UF**	**F**	**UF**	**F**
10 months	pelvis		2		4		3	3	22
	scapula D				2	3	3	1	14
18 months	humerus D				3	1	7	1	24
	radius P		1		7	1	2	2	7
2–2½ yrs	metacarpus D		3	2	4		4	5	39
	tibia D	1	1		3		4	1	5
	metatarsus D	4		3	6	4	2	10	27
3½ yrs	femur	2		1	3	1	2	13	19
	calcaneum			1				11	6
3½–4 yrs	humerus P	2	1			1	3	11	13
	radius D	3	1	3	5	2	2	6	17
	ulna P		1	1				2	3
	femur D	2			2		2	8	25
	tibia P	1			1	4		10	13

Key: UF = unfused; F = fused; P = proximal epiphysis; D = distal epiphysis.

explanations for the presence together in the same phases of both polled and horned individuals: they represent two distinct breed-types (one hornless and the other horned) or only a single breed-type is represented in which the rams were always horned while the ewes were either horned or polled (as in the primitive Soay sheep of today).

In addition to the crania completely lacking horn cores, there are also two specimens (from [334] (Phase 10) and [216] (Phase 11)) which have only rudimentary (short and stubby) cylindrical horn cores (scurs).

Withers heights (in cm) were calculated from the lengths in the long-bones (after the method of Teichert) as shown in Table 9.

Intra-site assessment of these data reveals remarkable similarity in the mean stature values in the Roman, Saxo-Norman/Anglo-Norman, and early post-medieval sheep, and the only anomaly is in the later medieval sheep where apparently there is a preponderance of smaller individuals represented. Also surprisingly, the sheep from the early post-medieval assemblages do not include examples of the tall, unimproved longwool sheep (the largest of which attained shoulder heights up to 80cm) that have been recorded from other early modern sites in the City of London, including Aldgate (see Armitage 1983, 93).

Ages at death in 38 sheep from the combined medieval phases and 44 from the combined early post-medieval phases (represented by jawbones and isolated dp4 and M3 teeth) have been determined using the pattern of eruption and dental attrition in the lower cheekteeth (after the method of Payne 1973). The results of this analysis are presented in Table 10.

The main differences in the kill-off patterns seem to be in the relatively greater frequency of

Table 9. Summary of the calculated withers heights in the sheep, by phase

	withers height (cm)			
	N	Mean	Range	SD
Phases 2 & 3: Roman	1		59.0	
Phases 4 & 5: Saxo-Norman/Anglo-Norman	23	59.3	54.0–64.1	3.13
Phases 6 & 7: Later medieval	18	56.0	51.9–60.6	2.39
Phases 8–12: Early post-med.	23	59.1	54.5–64.7	3.09

Table 10. Kill-off pattern in the medieval and early post-medieval sheep

suggested age range	**wear stage**	**no. individuals**	
		medieval	**early post-med.**
		(Phases 4–7)	**(Phases 8–12)**
0–2 months	A	0 (0%)	0 (0%)
2–6 months	B	5 (13.2%)	1 (2.3%)
6–12 months	C	2 (5.3%)	1 (2.3%)
1–2 years	D	6 (15.8%)	6 (13.6%)
2–3 years	E	4 (10.5%)	5 (11.4%)
3–4 years	F	11 (28.9%)	13 (29.5%)
4–6 years	G	9 (23.7%)	17 (38.6%)
6–8 years	H	1 (2.6%)	1 (2.3%)

lambs (aged 2–6 months) in the medieval phases and in the larger number of mature sheep (aged 4–6 years) in the early post-medieval phases which, supported by the high frequency of male and castrate horn cores, suggests culling of older animals that had been primarily kept for their wool rather than as meat producers.

POLLEN ANALYSIS

Robert G. Scaife

Pollen analysis has been carried out on the fills of the Phase 6 medieval ditch dated to the 13th/14th century and the fill [500] of the Phase 7 later ditch dated to between 1400 and 1500, excavated at Alder/Castle/Falcon House. An initial assessment was carried out on material obtained from this substantial ditch profile (Scaife 1999a) with the aim of establishing presence or absence of pollen and spores and potential for environmental reconstruction. Pollen was successfully recovered from two sampled profiles (Sections 228 and 229) which showed a marked diversity of herbs with few trees and shrubs. As a result, the more complete profile, Section 229, has been studied in greater detail. The results of this fuller analysis are presented here.

Methodology

Samples for pollen analysis were obtained directly from the open sections using box monolith tins. These were sub-sampled for pollen analysis in the laboratory at the same time as examination of the stratigraphy was carried out (see Keeley 1999). Samples of 2ml were taken at 5cm intervals. Standard procedures were used for the extraction of the sub-fossil pollen and spores (Moore & Webb 1978; Moore *et al* 1991). Pollen counts of 400 grains of dry land taxa and extant mire/aquatic and spores were counted. These data are presented in standard pollen diagram form (Table 11) with the pollen sum comprising dry-land pollen as a percentage of its sum and mire and spores as percentages of these groups plus the total of dry-land taxa for each level. Absolute pollen frequencies were calculated using the addition of a known number of exotic spores (*Lycopodium*) to a known volume of sample (Stockmarr 1971). Pollen taxonomy generally follows that of Moore and Webb (1978) modified

Table 11. Pollen data

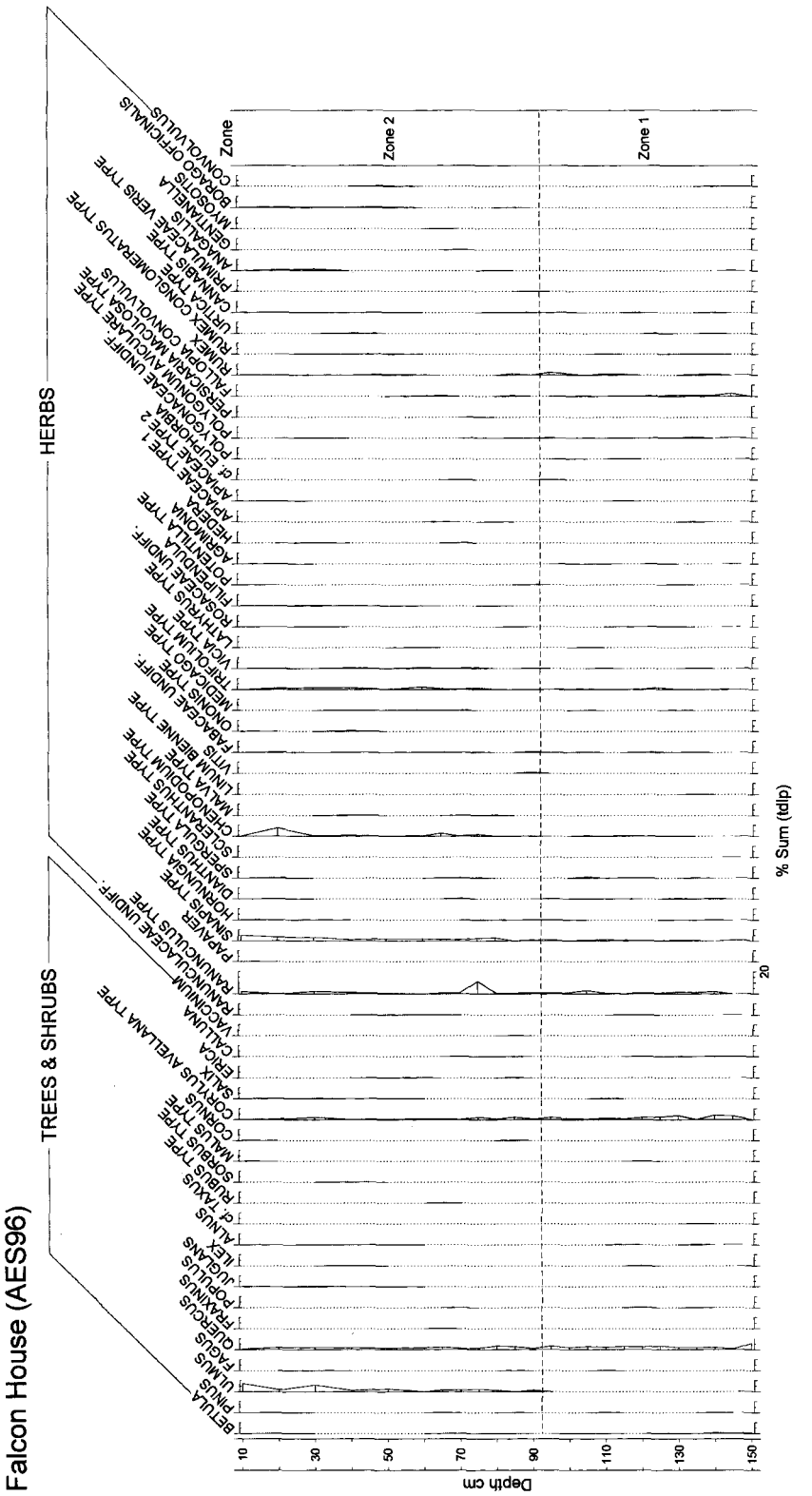
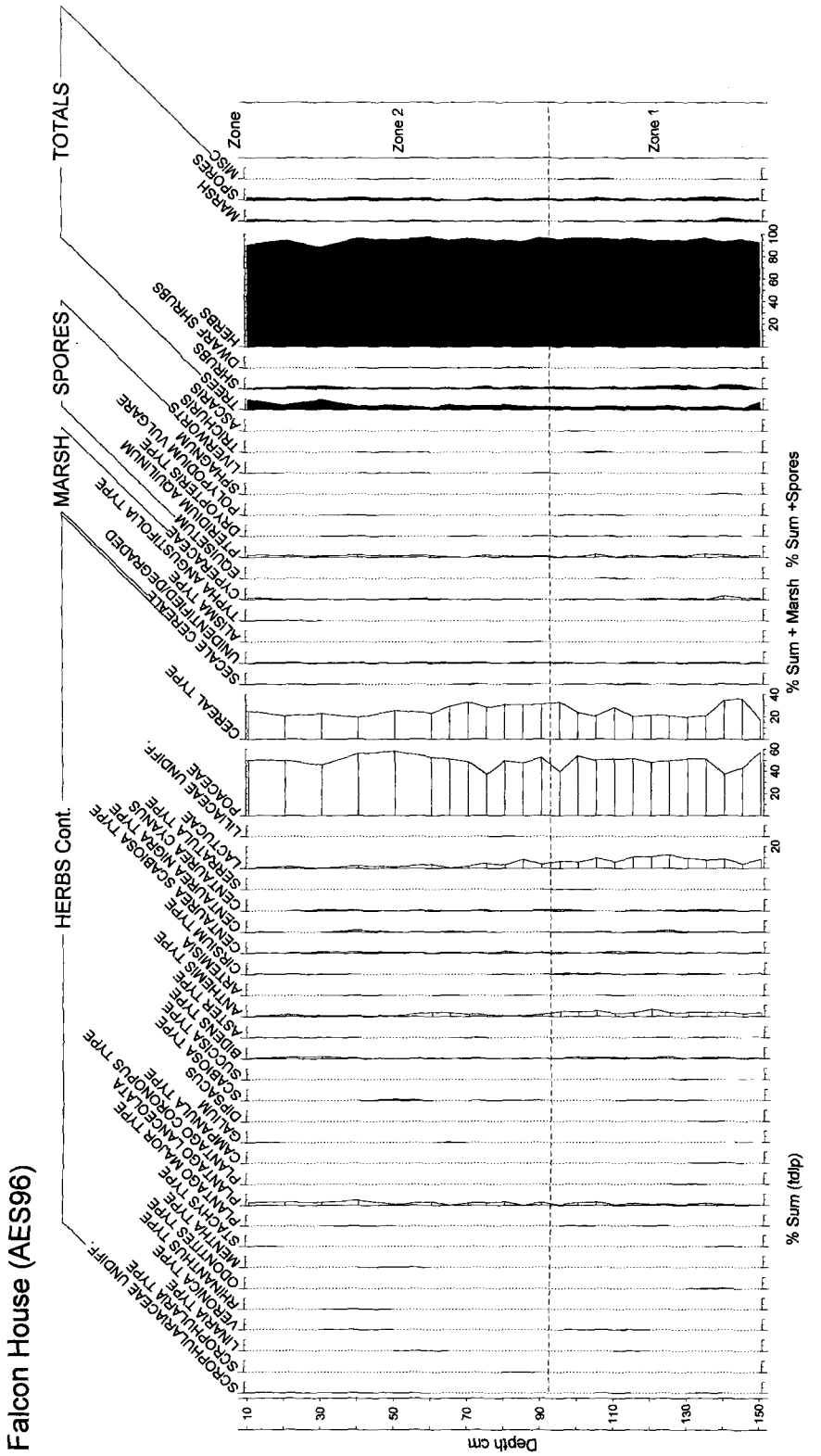


Table 11. (Continued)



according to Bennett *et al* (1994) in accord with Flora Europaea/Stace (1991). The pollen diagram was plotted using *Tilia* and *Tilia* Graph. These procedures were carried out in the Department of Geography, University of Southampton.

Section 229: the pollen data

Pollen was present and was generally well preserved in all samples examined. Absolute pollen frequencies were calculated and values ranged from 30,000 to 70,000 grains per/ml. The pollen sequence is stratigraphically homogeneous but with a diverse and dominant range of herbs comprising up to 95% of total pollen. In contrast are the small values of tree and shrub pollen. The latter attain a maximum of 20% in the upper half of the profile. Two pollen assemblage zones have been recognised on the basis of these changes and lesser changes in the herb flora. These local pollen assemblage zones are distinguished as follows from the base of the profile upwards.

Zone 1: 150–92cm. Herbs are dominant (to 95%) with few trees (av. 5–6%) and shrubs (5%). Trees comprise a small but consistent record of *Quercus* (3%) with sporadic occurrences of *Betula*, *Pinus*, *Fraxinus*, *Populus*, *Ilex*, and *Alnus*. Shrubs comprise small but consistent records of *Corylus avellana* type with sporadic *Erica* and *Calluna*. Herbs are dominated by small diameter, wild Poaceae (to 56%) with Cereal type (to 38%). Lactucae (12%), *Anthemis* type (6%), and other Asteraceae are also relatively important. In addition to these is a diverse range of herbs comprising many families. Taxa which appear more frequent in this zone include: *Dianthus* type, *Spergula* type, *Agrimonia*, *Polygonum aviculare* type, *Fallopia convolvulus* type, and *Rumex*. Taxa worthy of note also include *Centaurea cyanus*, *Secale cereale*, and *Cannabis* type. There are few spores which include *Pteridium aquilinum*, *Dryopteris* type, and *Polypodium vulgare*. Parasite ova of *Trichuris* and *Ascaris* are present.

Zone 2: 92–10cm. Herbs remain dominant (90–95%), whilst there is some increase of tree pollen (to 10%). The latter occurs as a result of increasing *Ulmus* (to 7%) in this zone. Also of note is *Juglans* from 50cm (< 1%). The dominance of herbs is maintained by Poaceae (to 55%) and Cereal type (35–40%). The overall diversity of herb taxa is maintained from Zone 1 but with some reduction in importance of Asteraceae types (especially Lactucae and *Anthemis* type). *Cannabis/Humulus* type and *Centaurea cyanus* remain. The presence of *Borago officinalis* in this zone is interesting and discussed further below. Spores are similar to those recorded in Zone 1 with *Pteridium aquilinum*, sporadic *Dryopteris* type, *Polypodium vulgare* and liverworts.

The excavated profile was shown to comprise a number of contexts relating to periods of cut and fill. The depths of these relative to the pollen profile is as follows:

cm	**context**
0–32	[500]
32–48	[509] (upper)
48–80	[509]
80–88	[529]
88–148	[531]
148–157	[534]

With perhaps the exception of the major division between [534] and [531], there appears to be no substantial variation in pollen numbers or taxonomic diversity across the boundaries of the upper fills.

Discussion of results

The taphonomy of pollen recovered from ditches is complex and thus there may be difficulties in interpretation of the pollen spectra recovered. There are also few published data relating to the analysis of such contexts. However, useful information on the local depositionary environment can be gained from analysis, especially where other 'normal' depositional environments such as peat mires, lakes, or ponds are not available. This has been demonstrated from Iron Age features at Shills, Glasgow (Robinson 1983) and Romano-British sites in Glasgow and Yorkshire (Dickson *et al* 1979; Tinsley & Smith 1974 respectively). Long term changes in agriculture have been identified from field boundary ditches spanning the late Bronze Age to medieval periods at Market Deeping, Cambridgeshire (Rackham & Scaife forthcoming). Pollen present in ditches in urban contexts comprises taxa which may be derived from a number of sources. These sources may include direct pollen transfer from surrounding vegetation via 'normal' airborne or insect vectors or from secondary, derived sources such as domestic waste of various forms. Reworked pollen from older sediment/soils must also be considered. In recent years, pollen analyses of

urban archaeological contexts have given a better understanding of such sources (Greig 1981; Scaife 1982a), enabling some useful conclusions as to depositionary environments to be made. These factors have to be taken into account in the interpretation of the pollen spectra obtained from the Alder/Castle/Falcon House ditch profile.

Profile 228 (assessment; Scaife 1999a) and Profile 229 both exhibit a paucity of tree and shrub pollen types which is commensurate with other pollen data from medieval and later contexts in London. This undoubtedly indicates the absence locally of extensive tree growth, but it must also be considered that the pollen spectra from secondary sources may have had a swamping effect on airborne derived assemblages thus suppressing to some extent evidence for local (tree) growth. However, when compared with existing data for the region, the paucity of trees, excepting possible planted taxa, is consistent throughout with the small percentages of *Quercus* (oak) and other wind pollinated taxa clearly reflecting a farther/regional background.

In local pollen assemblage Zone 2, from [531] upwards, there is a clear increase in *Ulmus* (elm) spanning some 80cm of the profile. This must represent an expansion of local growth, perhaps in larger parks or gardens. *Juglans* (walnut) is an interesting occurrence being regarded as a Roman introduction into Europe as a whole. There is an increasingly large number of English sites which have produced evidence of its presence. Such records come from Roman London and include the Temple of Mithras (Scaife 1982b) and post-Roman London at Cromwell Green, Westminster (Greig 1992) and Tudor sediments at Somerset House (Scaife 1999b). It seems that once introduced into this region it has been maintained throughout the historic period.

Overall, the pollen spectra are typical of medieval and later contexts in that there is little tree and shrubs pollen but a very diverse assemblage of weeds derived from various habitats and via various transport mechanisms (Greig 1982; Scaife 1982a). By far the most important pollen element are Poaceae – wild grasses and cultivated cereals including *Triticum/Hordeum* type (wheat/barley) and *Secale cereale* (rye). These are associated with numerous weeds typical of cultivated and waste ground (ruderals and segetals). The latter notably include *Polygonum aviculare* (knotweed), Brassicaceae (charlocks), *Convolvulus* (bindweed), *Fallopia convolvulus* (black bind-weed), and Asteraceae types (daisy family), including *Centaurea cyanus* (blue corn flower). Other herb types may also relate to this arable cultivation but are of herbs with wide ecological range and/or not palynologically differentiable to lower taxonomic levels. These may thus relate to waste ground areas in an urban context.

The very substantial numbers of cereal pollen and associated weed/segetal taxa imply use of cereals. However, it is most probable that this pollen is of secondary derivation coming from refuse. This might include human and animal ordure, straw floor coverings, roofing materials and waste food or the by-products of cereal crop processing; that is, pollen trapped in the ears of cereals being released during threshing and winnowing (Robinson & Hubbard 1978; Scaife 1986, 1995). The presence of *Trichuris* (whip worm) and *Ascaris* (mawes worm) indicates that there is a faecal component in the sediments and it seems likely that the cereal pollen was present in food (bread *etc*) and has passed through the gut of humans or animals. Alternatively, as discussed for Broad Sanctuary, Westminster (Scaife 1982a), slaughter house offal may also have been disposed of in ditches and river/stream channels (see Armitage above). This may also have been a major source of pollen from ingested grasses and cereal fodder. Other possible cultivated plants recovered include *Linum bienne/usitatissimum* (flax), *Humulus/Cannabis* type (hop and hemp), and, in Zone 2, *Borago officinalis* (borage). The latter is a very interesting and rare pollen record of this introduced Mediterranean herb. Whilst borage spreads rapidly, growing on waste ground, pollen records here associated with strong evidence for a cess/faecal content suggest that its pollen may also be from this source given its culinary importance. This plant is a well known pot herb, with its young shoots being used in salads, pot boiled, and also for candied flowers. However, perhaps a more likely explanation of its presence here is that borage was formerly always used as an ingredient in tankards of wine ('claret cups') and cider to impart a cool (cucumber like) flavour (Gerard 1985; Grieve 1931, 1984). Pollen from the flowers and that deposited on the foliage used would, as with cereal pollen noted, readily pass through the gut. Unfortunately, it was not possible to distinguish between hemp and hop pollen, although both taxa are likely to have been of importance and hemp seeds were recovered in the plant macro analysis (Carruthers, below). Hop, however, is a

strong possibility coming from beer making and consumption and similarly passing through the gut.

THE CHARRED PLANT REMAINS

Wendy Carruthers

Introduction

Excavations on the Alder, Castle and Falcon House site revealed, amongst other features, the medieval city ditch (Butler 1999). Soil samples were taken from several wet to waterlogged deposits for the recovery of environmental information. Five samples from four phases of the medieval ditch fill (13th century to 16th century) and one sample from a Saxo-Norman Phase 5 pit (AD 900–1200) were examined for this report.

Methods and state of preservation

The soil samples were wet-sieved to 500 microns. Five of the six samples contained a fairly wide range of well-preserved plant remains, with some of the more delicate species being well represented *eg Conium maculatum, Urtica dioica.* Mineralised and part-mineralised plant remains were found in four of the six samples.

The three samples with the lowest diversity also produced the fewest mineralised remains, so (as with even continuously waterlogged assemblages) it is likely that there has been some loss of taxa. However, this probably occurred during the medieval period, rather than following excavation, as it is unlikely that the deposits have remained fully waterlogged throughout their history. Despite this, a wide enough range of taxa was recovered to provide an insight into the types of waste being deposited in the ditch and the local environment.

The flots and residues were sorted under a dissecting microscope, and most of the fruits and seeds were stored in test tubes. In a few cases, however, the seeds were so numerous that it would have been too time consuming to have removed and counted every seed. For these taxa an estimate of frequency was made in order to save time.

Results

Table 12 presents the results of the analyses. All of the calculations (% compositions) were carried out using only the waterlogged and mineralised plant remains, as charred material is usually derived from a different range of processes. Where numbers of seeds were estimated, the following average figures were used in the calculations: + + = 13, + + + + = 200, + + + + + = 400.

Discussion

The medieval city ditch

A wide range of plant remains was recovered from the five samples examined for this report, including a small amount of charred cereal remains, and frequent waterlogged and mineralised material. Fish bone was particularly abundant in [495] and [509], and mineralised insect puparia were especially numerous in [495]. Since the number of seeds per litre, diversity and degree of mineralisation were also greatest in these two deposits, preservation conditions clearly were at their best in these lower ditch fills.

Mineralisation takes place in deposits that are rich in nutrients, as well as being moist but probably not fully waterlogged (Carruthers forthcoming; Green 1979). Calcium and phosphates enter solution during the decay process, percolate down the soil profile, and are taken up by plant cells. It is probably this downward movement of minerals that caused the lower ditch levels to have the greatest level of mineralisation, although the soil water content is also critical. At the Late Bronze Age site at Potterne, Wilts (Carruthers forthcoming), a mineralised surface was found to have formed beneath a highly organic midden-type deposit due to this process.

Preservation of the fruits and seeds as calcium phosphate sub-fossils also depends on the amount of thickening in the cell walls. The thin walled seed embryos can more easily absorb the mineral solution and are consequently more often preserved by mineralisation, as are soft-bodied insect pupae (Carruthers forthcoming). Material from this site was of particular interest to the author in demonstrating this method of preservation. For example, most of the hemlock seeds from [509] appeared to be preserved by

Table 12. The charred and waterlogged plant remains

( )=charred; [ ]=mineralised or part mineralised; no brackets = waterlogged; + =occasional (1–5); + + =several (6–20); + + + =common (21–100); + + + + =frequent (101–300); numerous (>300)

Habitat Key: *=introduced; A=arable; C=cultivated; D=disturbed; E=heath; F=food/fibre/medicinal plant; G=grassland; H=hedgerows; M=marsh; P=ponds & ditches; R=rivers & streams; S=scrub; W=woodland; Y=waysides; a=acidic soils; c=calcareous; l=light soils; n=nutrient-rich soils; o=open; s=shaded; w=wet/damp

Taxa:	**Context**	**349**	**388**	**488**	**495**	**509**	**641**
i) Charred Cereal Remains	**Sample no.**	**10**	**11**	**16**	**19**	**26**	**34**
Triticum sp.	Bread wheat-type grain		(4)		(2)		
T. spelta L.	Spelt glume base				(4)		
cf. *T. dicoccum* Schʃbl.	cf. Emmer glume base				(3)		
T. dicoccum/spelta	Emmer/spelt glume base				(12)		
T. dicoccum/spelta	Emmer/spelt spikelet fork				(5)		
Hordeum sp.	Barley grain frag.		(1)				
Avena sp.	Oat grain		(1)			(1)	
Indeterminate cereal			(1)		(5)	[5]	

	Context	**349**	**388**	**488**	**495**	**509**	**641**	**Habitat**
ii) other economic plants	**Sample no.**	**10**	**11**	**16**	**19**	**26**	**34**	
Calendula officinalis L.	Pot marigold achene					1		F*
Cannabis sativa L.	Hemp seed				2	11		F*
Euphorbia lathyris L.	Caper spurge seed				1			F?*
Ficus carica L.	Fig seed	13	40	87	61	77		F*
Fragaria vesca L.	Wild strawberry seed			27				FHSW
cf. Juglans regia L.	cf. Walnut nutshell frag.					1		F*
Linum usitatissimum L.	Flax seed					1		F*
Malus sylvestris (L.) Miller	Crab apple seed					8		FHSW
Prunus domestica cf. *insititia*	Cf. Bullace stone					1		F*
Malus/Pyrus communis	Apple/pear embryo				[1]			FHSW
Vitis vinifera L.	Grape			6	30	26		F*

Table 12. (Continued)

possible economic plants	Context Sample no.	349 10	388 11	488 16	495 19	509 26	641 34	Habitat
Brassica / Sinapis sp.	Charlock, mustard etc. seed	[2]			40	[219]		ACDY
Conium maculatum L.	Hemlock mericarp		1	1		[181]		DwPY
Corylus avellana L.	Hazelnut shell frag.					51		FHSW
Hyoscyamus niger L.	Henbane seed		32	1	3		1	Dn
Malva sylvestris L.	Common mallow nutlet					[21]		D
Marrubium vulgare L.	White horehound nutlet	130	105	3	19	83	1	FGoD
Prunus spinosa L.	Sloe stone					1		FHSW
Prunus sp.	Sloe/cherry/plum kernal			[1]				
Prunus sp.	cf. Sloe/cherry/plum stone frag.					14		F
Rubus *sect.* Glandulosus *Wimmer & Grab.*	Bramble seed		3	22	2	23	36	FHSW
Sambucus nigra L.	Elderberry seed	+ + + + +	31	9	60	45	31	DFHSWn
ii) % of total plant remains		**65**	**76**	**35**	**31**	**50**	**57**	

iii) Aquatics & semi-aquatics		349 10	388 11	488 16	495 19	509 26	641 34	Habitat
Carex sp.	Sedge (trigonous) nutlet	20	19	89	19	36	4	GMP
Carex sp.	Sedge (biconvex) nutlet			6		9		GMP
Caltha palustris L.	Marsh marigold achene				2	2		MPR
Eleocharis subg. *Palustres*	Spike-rush nutlet			2		2	5	GwMPR
Montia fontana L.	Blinks				1			PRw
Myosoton aquaticum (L.) Moench	Water chickweed seed	+ + + +	12	3	+ + + +	+ +	1	MPRn
Polygonum hydropiper (L.) Spach	Water pepper achene							PRws
Ranunculus flammula L.	Lesser spearwort achene			1		2		PR
R. sceleratus L.	Celery-leaved buttercup achene	1	5	1	1		18	GwPR
Schoenoplectus lacustris (L.) Palla	Common club rush						1	PRs
Cladoceran Ephyppia	Water-flea (*eg Daphnia*) egg cases	+ +	+				+ + + +	
iii) % of total plant remains		**27**	**13**	**23**	**31**	**4**	**24**	

Table 12. (Continued)

iv) **Arable & ruderal weeds**		**349 10**	**388 11**	**488 16**	**495 19**	**509 26**	**641 34**	**Habitat preferences**
Aethusa cynapium L.	Fool's parsley					3		CD
Agrostemma githago L.	corn cockle seeds {+frag.}	[1]			3	7{++}		A
Ajuga reptans *L.*	Bugle			1				GwW
Atriplex patula/prostrata	Orache seed	6	1	17	146	157	6	CD
Bromus sp.	Chess caryopsis				(1)			AD
Bupleurum rotundifolium L.	Thorow-wax					3		Ac
Chelidonium majus L.	Greater celandine	2	1					HDY
Chenopodium album L.	Fat hen seed	28		17	14	3	1	CDn
Chenopodiaceae	Mineralised embryo	2						CD
Chrysanthemum segetum L.	Corn marigold					8		AD
Cirsium/Carduus sp.	Thistle achene					[17]		CDG
Daucus carota L.	Wild carrot					3		DG
Euphorbia helioscopia L.	Sun spurge seed		2					CD
Fallopia convolvulus (L.) A.Love	Black bindweed				2	4		AD
Fumaria officinalis L.	Common fumitory			1	1			CD
Galium aparine L.	Cleavers					3		CD
Ilex aquifolium L.	Holly					1		HSW
Lapsana communis L.	Nipplewort achene					12		CDH
Persicaria maculosa/lapathifolia	Redshank/pale persicaria achene							Cwo
Poaceae	Grass caryopsis				(3)[4]	[7]		CDG
Polygonum aviculare L.	Knotgrass achene			30		10		CDo
Primulaceae							2	
Prunella vulgaris L.	Self-heal nutlet					26		DGWo
Ranunculus repens/acris/bulbosus	Buttercup achene			73	19[11]	225	4	DG
Raphanus raphanistrum L.	Wild radish seed					6		CD
R. raphanistrum	Wild radish capsule frag.					2		CD
Rhinanthus minor L.	Yellow-rattle				[10]	[28]		G
Rumex sp.	Dock achene			9	[37]	[130]	2	CDG
R. acetosella L.	Sheep's sorrel			1			4	

Table 12. (Continued)

iv) Arable & ruderal weeds		**349 10**	**388 11**	**488 16**	**495 19**	**509 26**	**641 34**	**Habitat preferences**
Silene vulgaris Garcke	Bladder campion			8[1]	7	15		
Silene sp.	campions	1						
Solanum nigrum L.	Black nightshade seed					1		CD
Sonchus asper (L.) Hill	Prickly sow-thistle achene	1						CDY
S. oleraceus L.	Smooth sow-thistle achene							CDY
Stellaria media (L.)Villars	Common chickweed seed	1		2	1	2		Co
Stellaria gramineae L.	Lesser stitchwort seed						3	G
S. holostea L.	Greater stitchwort			1				HW
Thlaspi arvense L.	Field penny-cress				[2]			AD
Torilis sp.	Hedge-parsley					5		CDGH
Umbelliferae					[5]	[6]		
Urtica dioica L.	Stinging nettle achene	23	25	29	3		1	CDn
Valerianella dentata (L.) Pollich	Narrow-fruited cornsalad			1	1	1		AD
Verbena officinalis L.	Vervain			1				DGc
Veronica hederifolia L.	Ivy-leaved speedwell					1		Co
Viola sp.	violet		1					
iv) % of total		**8**	**11**	**42**	**38**	**46**	**19**	
TOTAL (waterlogged + mineralised)		**c.835**	**278**	**451**	**c.713**	**c.1527**	**121**	
Soil volume (litres)		**30**	**15**	**30**	**27**	**50**	**15**	
Total Plant frags. per litre		**24**	**19**	**15**	**26**	**27**	**8**	
Number of waterlogged/mineralised plant taxa		**16**	**14**	**29**	**31**	**50**	**17**	

waterlogging, from an external examination of the thick-walled mericarp (seed coat), but it was only the thin-walled internal tissues that had been preserved by mineralisation. These plant remains will be of great value in providing information about this incompletely understood process.

Because of this combination of preservation by waterlogging and mineralisation it was not always possible to tell how much mineralisation had taken place with some taxa, *eg* docks, unless every seed had been broken open. It is possible that many of the remains marked as waterlogged (no brackets) had been partially mineralised, since organic debris and moisture had clearly been readily available in the ditch for most of its period of infilling. It is obvious from the range of edible taxa present, and from the recovery of coprolites from [509] and [488], that faecal material was a major component of the waste deposited in the ditches. Because of differences in preservation down the profile it is difficult to determine whether or not the amount of faecal waste deposited changed across the four phases represented (Phases 6, 7, 8, and 10). It should be noted that these preservational differences may also have affected the range of taxa present. What is clear is that non-native fruits such as fig (*Ficus carica*) and grape (*Vitis vinifera*) were being consumed, although grape seeds were not recovered from the Phase 10 sample. The fragment of possible walnut shell (*Juglans regia*) was too small for a positive identification to be made, but walnuts have been recorded from London from the Roman period (Willcox 1977) onwards, and their presence was confirmed in the pollen record (Scaife, above).

A variety of other definite and possible food plants and/or medicinal plants was also represented. These include strawberry (*Fragaria vesca*) (Phase 8 only), apple/pear (*Malus sylvestris* & *Malus/Pyrus*) (Phases 6 and 7), sloe (*Prunus spinosa*) and possible bullace (*P. domestica* cf. *insititia*) (Phase 6), blackberry (*Rubus* sect. *Glandulosus*) (all except Phase 10) and elderberry (*Sambucus nigra*) (all samples). It is also possible that native fruits such as blackberry and elderberry were being used as dye-plants, as they produce purple/grey and violet colours respectively. Elderberry seeds were particularly numerous in [349] (Phase 10), and this does not appear to be due to preservation biases (loss of more delicate seeds through drying out) as is sometimes the case.

The presence of hemp (*Cannabis sativa*) (Phases 6 and 7), flax (*Linum usitatissimum*) (Phase 6), pot marigold (*Calendula officinalis*) (Phase 6), and caper spurge (*Euphorbia lathyris*) (Phase 7) seeds, albeit in low numbers, provides evidence for the use of these plants, since none of the species are native to the British Isles. Although hemp and flax are fibre plants, their presence amongst faecal waste suggests that it was their medicinal and/or culinary properties that were being exploited in this case. Hemp or cannabis has long been used to ease pain. Grieve (1931) mentions an infusion of hemp seeds as being particularly useful in easing gynaecological pains. Flax seeds contain linseed oil, which has a variety of medicinal uses and can be used as a varnish. Grieve (*ibid*) gives details of a poultice being made of crushed seeds, alone or with mustard (*Brassica* sp.) which soothes ulceration. Linseed oil is also useful as a remedy for coughs and colds, and urinary infections. Flax seeds have also been eaten as a food, sometimes mixed with grain. Pot marigold has been recorded from a number of medieval sites across the British Isles, primarily from urban waterlogged contexts (*eg* Whitefriars, Norwich (Murphy 1983); Reading Abbey, Berkshire (Carruthers 1997)). The flower heads can be used to treat headaches and fevers, made into ointments and eyewashes, and used as a flavouring for soups and stews and as a food colouring (Grieve *ibid*). Caper spurge is a more poisonous herb, but the seeds and roots can be used, with caution, as a purgative. Grieve (*ibid*) notes that in France 12 to 15 seeds are taken at a time for this purpose.

The remaining taxa placed in the category of probable economic plants in Table 12 are native weeds and hedgerow shrubs that could have merely been growing in the locality, as they often inhabit areas of grassland and disturbed ground. However, the large numbers of seeds in at least one of the samples examined, along with the confirmed presence of faecal waste in these deposits, suggests that the plants were probably being exploited for their culinary and/or medicinal properties. In addition, most of these taxa have been shown to have been used medicinally, and are commonly found in deposits from medieval religious establishments where they were probably cultivated in physic gardens (*eg* hemlock and henbane: Waltham Abbey (Moffat 1987); hemlock: Dominican Priory, Oxford (Robinson 1985); hemlock and caper spurge: Paisley Abbey, Scotland (Dickson 1996)).

White horehound (*Marrubium vulgare*) has long been valued as a medicinal herb, being an

effective treatment for coughs and lung trouble (Grieve *ibid*). Gerard and Culpepper mention a syrup made from fresh leaves. Common mallow (*Malva sylvestris*) leaves and flowers can be used as external fomentations and poultices, and can be boiled and eaten as a vegetable. The seeds or 'cheeses' are also edible (Grieve *ibid*). Hemlock (*Conium maculatum*) and henbane (*Hyoscyamus niger*), although deadly poisonous, have long been used as medicinal plants. Hemlock is a sedative and antispasmodic. Seeds and other parts of the plant have been used to cure a variety of complaints, from dog bites to epilepsy (Grieve *ibid*). Henbane is an antispasmodic, hypnotic, and mild diuretic, which has been cultivated as a crop plant due to its medicinal value. The seeds are said to have ten times the strength of the leaves; they have been used to ease toothache, and were smoked in a pipe as a remedy for neuralgia and rheumatism (Grieve *ibid*). It is more difficult to confirm whether the final taxon, *Brassica* sp/*Sinapis* sp, was used medicinally or as a condiment, as this group of plants includes common wasteground weeds such as charlock as well as mustard, cabbages *etc.* The large number of part-mineralised seeds (219) in [509], however, does suggest that it was more than just a local weed. Black mustard (*Brassica nigra*) is probably native, and has been cultivated in gardens since at least the 16th century (Tusser 1580). Medicinally, the crushed seeds have been used in poultices to soothe inflammations, as well as for respiratory complaints. As mentioned above, it can also be combined with other plants such as flax to improve their efficacy.

The wide range of medicinal plant species recovered from these ditch samples suggests either that the local inhabitants were of poor health, or that a physic garden or hospice of some sort existed in the vicinity for much of the medieval period. Other sites that have produced this type of assemblage are usually religious establishments, such as Reading Abbey (Carruthers 1997), Waltham Abbey (Moffat 1987), and the Dominican Priory, Oxford (Robinson 1985). It is also possible that the high level of use of medicinal plants is related to status, since presumably tonics, infusions, and ointments would have be obtained at some cost in an urban setting.

The remaining *c.*40 to 70% of the plant remains in each sample were aquatics/semi-aquatics and ruderal weeds. The aquatic/semi-aquatic taxa were primarily marginals, some of which grow in seasonally exposed, often polluted, muddy areas (*eg* blinks, *Montia fontana* and water chickweed, *Myosoton aquaticum*) (Haslam *et al* 1975). The range of taxa was not large, and the percentages of total seeds were, on the whole, low. This suggests that the ditch did not contain standing water for long periods of time allowing a well-developed aquatic flora to become established, but probably experienced periodic episodes of waterlogging due to poor drainage.

The range of weeds of cultivated or disturbed soils was quite wide, although in most cases the total numbers of seeds in this group were not great. Arable weeds such as corn cockle (*Agrostemma githago*) and corn marigold (*Chrysanthemum segetum*) may have been deposited amongst faecal waste as contaminants of bread. The presence of small fragments of corn cockle seed coat supports this suggestion, as the large seed was probably accidentally ground with corn to make flour. Although cereal bran fragments were not positively identified from these samples, the very fibrous nature of [509] suggested that it was probably present. This is the context that produced corn cockle fragments. The remaining weeds may have been deposited in other waste materials, such as hay, which could have been used for flooring, bedding, or fodder. Yellow rattle (*Rhinanthus minor*) is a typical hay meadow plant, and it was frequent along with other grassland taxa such as buttercups, self-heal, and grasses in [495] and [509]. No doubt, if faecal waste was being deposited some of the plant material had been used as toilet paper, although no large quantities of moss were preserved as is sometimes the case. Other weeds may have been growing in the area, particularly weeds of nutrient-rich wasteground soils such as stinging nettles (*Urtica dioica*), chickweed (*Stellaria media*), and docks (*Rumex* sp.). It is, of course, possible that a number of these commonly available weeds had been used for food or medicinally, as many of them can be eaten as leaf vegetables or the seeds mixed with corn to pad out soups, stews, and bread. In addition, many herbs such as self-heal have medicinal properties. However, it is only when unusually large quantities of seeds of these taxa are recovered that suggestions of specific uses can be made, because they are so commonly recovered from archaeological deposits of all types.

Charred plant remains were present in small quantities in [388] (7 cereal grains: bread-type wheat, barley, oat) and [509] (6 grains: oat,

indeterminate cereal), but [495] produced 24 hulled wheat glume bases/spikelet forks in addition to 7 grains (bread-type wheat, indeterminate cereal). Both emmer (*cf Triticum dicoccum*) and spelt (*T. spelta*) were probably represented, although the emmer glume bases were too poorly preserved to be certain of their identity. Although no redeposited Roman ceramics were recorded from [495] (Frank Meddens, pers. com.), it is likely that the hulled wheat remains represent redeposited Roman crop processing waste, since there is no definite evidence for the cultivation of hulled wheats in the medieval period. There is plenty of evidence of Roman activity in the area, including the Roman boundary ditch and City Wall. The few bread-type wheat, barley, and oat grains recovered could be Roman or medieval.

The Saxo-Norman cess pit [641]

The Saxo-Norman cess pit (Feature [642]) contained the lowest concentration of plant remains (8 fragments per litre) and one of the lowest diversities (17 taxa) out of the six samples examined for this report. There were no indications that mineralisation had taken place, but this does not necessarily suggest that the pit contents had been insufficiently rich in minerals. In the author's experience (Jennings Yard, Windsor: Carruthers 1993), total waterlogging of faecal deposits at the time of deposition can prevent mineralisation from taking place. Cladoceran ephyppia (water flea *eg Daphnia* egg cases) were numerous in this sample, indicating that the deposit had been waterlogged at some point in its history. Conversely, the fact that the most numerous taxa, blackberry and elderberry, are tough-coated seeds could indicate that some loss of plant material may have occurred at a later date through drying out. This could have taken place post-abandonment, since several celery-leaved buttercup (*Ranunculus sceleratus*) achenes were present, and this is a plant of seasonally dry, often polluted mud. However, the absence of imported fruits such as fig and grape is unlikely to be due to differential preservation, as these, too, are thick-coated seeds. It suggests that the diet of the Saxo-Norman users had been more limited than that of the people who caused the pollution of the city ditch during the 13th to 16th centuries.

Conclusions

The medieval city ditch was found to contain a wide range of waterlogged and mineralised plant remains. All of the samples examined showed evidence for the presence of faecal waste, the predominant component of four out of the six samples being plants of economic importance. 'Luxury' fruits such as fig and grape were present in the medieval ditch samples, but only hedgerow fruits were found in the Saxo-Norman cess pit. However, differences in preservation made comparisons across the phases difficult.

Medicinal plants appear to be well represented in the medieval ditch samples, suggesting either that the people responsible for producing the faecal waste were in poor health, or possibly that some sort of hospice or physic garden was located in the vicinity.

The remaining plant taxa from the ditch consisted of:

a) marginals and aquatics which indicated that the ditch had been waterlogged, but probably only periodically;

b) arable and wasteground weeds, some of which were probably deposited in faeces as contaminants of cereal products. Some other types of waste, such as hay, may be represented. The local vegetation probably reflected the high nutrient content of the soils, being predominantly nettles, docks, chickweed, and Chenopdiaceae.

Most of the charred cereal remains recovered probably represent small amounts of redeposited Roman crop processing waste.

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SAXO-NORMAN BUILDINGS IN KENSINGTON

Alistair Douglas

With contributions by Nina Crummy, Beverley Meddens and Chris Jarrett

SUMMARY

Excavations at Earls Terrace, Kensington High Street, in the Royal Borough of Kensington and Chelsea revealed Roman, Saxo-Norman, and medieval features and artefacts. A ditch and residual pottery suggest Roman period activity in the vicinity, possibly associated with a Roman road presumed to be aligned along Kensington High Street. During the late Saxon/early Norman period the site was occupied by buildings, perhaps representing a farmstead or part of a larger manorial complex. The discovery of two timber buildings associated with this occupation is of regional importance. Arable farming and stock rearing appear to be activities associated with this rural settlement in both the Saxo-Norman and medieval periods. Pottery and quernstones provided evidence for trade with London and the Continent. The site appeared to have been largely abandoned during the late medieval and early post-medieval periods but may have been used for pasture. By the 18th century it may have been exploited for market gardening. In 1811 the site was developed residentially with the construction of Earls Terrace, which still stands today.

INTRODUCTION

An archaeological excavation was undertaken by Pre-Construct Archaeology Ltd at Earls Terrace, Kensington High Street, in the Royal Borough of Kensington and Chelsea, London W8. The excavation was carried out in two phases, the first in December 1997 and the second in January and February 1998. Prior to excavation the site had been subject to an archaeological evaluation, also undertaken by Pre-Construct Archaeology Ltd, in August 1997. CgMs Ltd, on behalf of Earls Terrace Properties Ltd, commissioned both the evaluation and the excavation. The archaeological investigations were carried out in advance of the construction of an underground car park beneath the road and gardens between Earls Terrace and Kensington High Street. The site is bounded to the north-east by Kensington High Street and on all other sides by Earls Terrace itself (Fig 1). The central National Grid Reference is TQ 2496 7920.

The evaluation comprised four trial trenches each measuring approximately 6m by 4m. The trenches were spread out within the garden area to achieve maximum coverage of the proposed area of development impact. Trench 1, to the west, revealed alluvial deposits at least 0.65m deep indicating a stream, which may have been active during the medieval period. Trench 2 had to be abandoned for logistical reasons. A post-medieval ditch was recorded in Trench 3 in the centre of the site, and in Trench 4, located at the east end, was a ditch running parallel to the alignment of Kensington High Street. Medieval plough soil sealed this feature.

The subsequent excavation trench incorporated the area of evaluation Trench 3 and an area under the road (Earls Terrace). For logistical reasons the work was carried out in two phases, during which the site was divided into a northern and southern area, equating to the areas under the garden and road respectively (Fig 1). The excavation covered an area of approximately 675m^2. Features were recorded according to a site grid, assuming Kensington High Street to lie to the north and this use is retained throughout

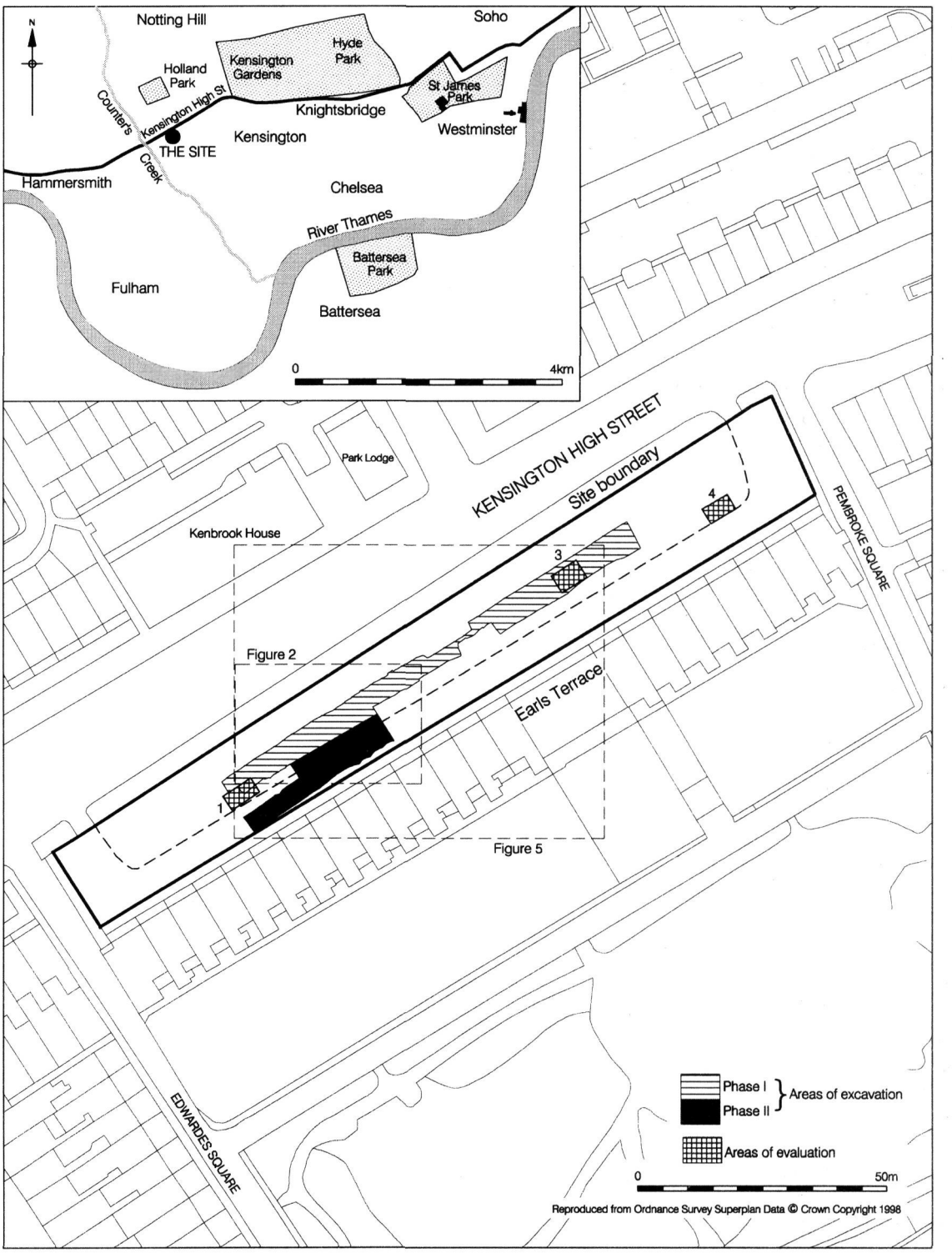

Fig 1. Site and trench location

this paper for ease of discussion. The site records, finds, and the full results of specialist analyses will be archived with the London Archaeological Archive Research Centre (Site code ETR 97).

ARCHAEOLOGICAL BACKGROUND

The site is situated on an east–west ridge of rising ground, part of the Kempton Park gravel terrace, above the River Thames flood plain to the south (British Geological Survey 1998). Modern ground level on the site sloped down from a maximum height of 9.95m OD to the north-east to a minimum of 9.31m OD in the south-west, reflecting the underlying natural drift geology, composed of alluvial brickearth, which sloped from 7.48m OD to 6.48m OD. The site is thus situated just below the 10m contour line, with the ground behind rising fairly sharply to a height of 35m OD less than 1km to the north, levelling out to the south down towards the valley of the former Counter's Creek. The course of this, now 'lost', river is reflected in the modern borough boundary between Kensington and Chelsea to the east and Hammersmith and Fulham to the west.

The name Counter's Creek apparently originates from 'Counters Bridge', which crossed the stream *c.*400m to the south-west at present-day Olympia and is recorded as *Contessesbregge* in 1421 (Barton 1962, 38). The source of the stream was close to Kensal Green cemetery to the north-west and it passed *c.*400m to the south-west of the site, running south-east towards the River Thames. Thus the site would have been situated at the base of a slope, yet elevated above the floodplain, with good grazing land and watering available for livestock in close proximity. The damp nature of the valley in more recent times is well attested in an early 20th-century medical account, in which the environment is described as being likely to aggravate rheumatism (Clippingdale 1909). Clippingdale records that the condition was very common either side of the Creek, from Shepherd's Bush to Chelsea, and the land was so moist as to be 'very suitable for the growth of vegetables but not so suitable for human beings'.

The Thames flood plain was an environment rich in resources such as fish, wild fowl, and sedge, ideal for seasonal grazing. Although the area of the site, which was located on higher and better drained land overlooking the river valley, would have been an obvious focus for activity or settlement for early populations, no prehistoric finds have been recovered from the immediate vicinity.

Two Roman roads running westwards from the City of London (*Londinium*) are thought to have traversed the Borough of Kensington and Chelsea. One left the City at Newgate and is represented by the course of Oxford Street, Notting Hill, Holland Park Avenue, and Goldhawk Road. The other road passed through Ludgate and is thought to be aligned with the Strand, Kensington Road, and then Hammersmith to Chiswick. The latter road may be adjacent to the site on the same alignment as the present-day Kensington High Street. At Chiswick both roads are thought to have converged to form the Silchester road (Margary 1955).

Until recently there was no excavated evidence for Roman occupation within the Borough. However an excavation at St Mary Abbot Hospital located a possible farmstead and at 6–16 Old Church Street Roman agricultural activity, evidenced by field boundary ditches, was uncovered (Howe 1995; Farid 2001).

There is no excavated Saxon archaeological activity in the immediate vicinity of the site, though the presence of a Saxon settlement is suggested by place name evidence. The name Kensington may derive from 'Cynesige's farm' – 'Cynesige' being an early form which could easily be assigned a Middle Saxon date. The settlement is variously recorded as *Chenesiton* in Domesday Book, *Kensiton* (1221–30) and *Kensington* from 1235 onwards (Gover *et al* 1942, 128). An early medieval church is known to have occupied the site of St Mary Abbots church, at the junction of Kensington Church Street and Kensington High Street, approximately 500m to the north-east of the site. It is uncertain when this church was built, but it was probably in existence before 1100 and it seems likely that any early medieval settlement would have been centred on the church (Whipp 1975).

Cartographic evidence from the mid 18th century shows buildings clustered around St Mary Abbots church (Rocque 1747). The land adjacent to the road west of the church, including the area of the site, is shown to be largely open fields and gardens. Residential development of the site occurred in 1811 when speculative developer Louis Changeur built a terrace of town

houses immediately to the south, which still stand today (Hobhouse 1986, 248–57).

THE EXCAVATION

Roman

The evaluation revealed a 2.6m stretch of a ditch, aligned roughly east–west and at least 0.52m wide and 0.25m deep, to the north-east of the excavation area in Trench 4 (Fig 1). Although no cultural material was recovered from this feature, its alignment, parallel to a presumed Roman road, and its stratigraphic position suggest that it may be of Roman origin. Unfortunately this 'road-side' ditch did not extend into the area of excavation. Indeed no features uncovered during the excavation could be attributed to the Roman period. However, the presence of residual Roman pottery, possibly introduced onto the site by manuring, indicates Roman activity in the vicinity.

Saxo-Norman I

A small pit, a single plough mark, and postholes were the earliest features recorded during the excavation phase of work. All the features were cut into the natural brickearth and contained fills of a more leached out appearance, being a paler hue in colour, than the deposits from later phases, and most were also statigraphically earlier than the features associated with the Saxo-Norman buildings. Only one of these features produced dating evidence – a posthole containing a small, possibly intrusive, sherd of Early medieval shelly ware dated 1050–1150. Their attribution to this period is therefore uncertain.

The plough mark was aligned north–south and measured 2.10m by 0.10m by 0.05m deep. To the south were two post pits, which are considered to have been associated. A posthole was located to the west and north of the post pits. A further 6m to the west, two putative postholes were aligned north–south and set 1.2m apart. Both were rectangular in shape, with vertical sides and flat bases, and were filled with pale grey clay. These are thought to have been associated with each other. To the south of these features was a linear cut aligned east–west. It measured 2.4m long, 0.22m wide, and 0.05m deep. Its function is uncertain.

Saxo-Norman II

A second phase of activity during the Saxo-Norman period was also identified. The remains of at least two timber buildings were recorded (Buildings A and B, Fig 2), their plans outlined by the position of slots and postholes. Associated with the buildings were features recorded as drainage gullies, ditches, and pits. Other postholes may have represented fence lines possibly used for livestock control (Fig 2). To the east of the buildings was a north–south aligned ditch that may have marked the boundary to the settlement.

In the southern part of the trench, deposits were recorded which were thought to represent a soil horizon that had survived later agricultural/horticultural activity, including ploughing. The soil, up to 0.2m thick, was composed of mottled grey-red/brown silty sandy clay with inclusions of daub fragments and charcoal flecks, and covered approximately 140m^2. Fourteen sherds of pottery were recovered from these deposits, the latest dated fabric being AD 1000–1150.

Building A

In the north-west of the site was a group of postholes which represented the foundations for a structure (Fig 3). These foundations employed both 'earthfast' vertical posts set in individual postholes and 'post in trench' construction techniques. Frequent instances of both methods being employed within the same structure have been reported in the City of London (Horsman *et al* 1988, 71). The building was rectangular in plan and measured 9m in length and *c*.4.5m in width. It was a two-bay building with the distance between main load-bearing posts being 2.5m from centre to centre.

All the postholes had vertical or near vertical sides and flat bases and were filled by a similar mid grey to mid brown clayey silt sand with occasional charcoal flecks.

The eastern end wall of Building A was represented by a 4.8m long line of five postholes, comprising two pairs of closely set, similar, ovoid pits, 1.2m apart, separated by a smaller, circular cut. Three postholes aligned east–west and spaced 2.5m apart represented the principle timber uprights for the southern wall.

A posthole and an east–west aligned trench may have represented the principal timber uprights for the northern wall. The posthole was

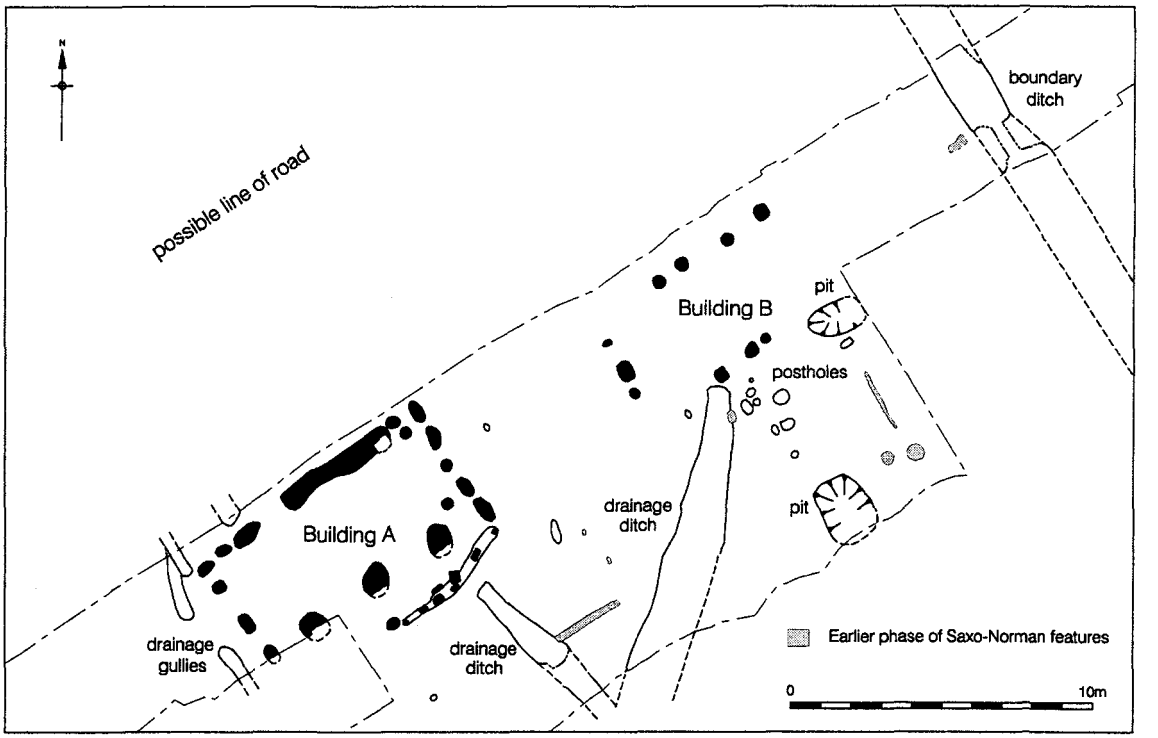

Fig 2. Plan of Saxo-Norman features

directly opposite a similar feature to the south whilst the trench probably held posts that were opposite their counterparts to the south.

The main posts described above would have supported the wall and the roof and would have been joined at eaves level by a tie-beam. The bay divisions are the points at which the building was tied together across its span.

Two postholes set at either end of the north wall and a further two in the south-east and north-east corners of the building probably reflect the position of timber uprights. These do not, however, appear to have been the principal load-bearing timbers, that role being fulfilled by the more substantial elements of the northern and southern walls.

The west wall of the structure was represented by two pairs of postholes, approximately 0.5m apart. A gap of approximately 1m between the two pairs may indicate the entrance to the building. Entrances in the gable wall are known from numerous buildings of 9th-, 10th-, and early 11th-century date, including examples found in London, Lincoln, Dublin, and Rhuddlan (Horsman *et al* 1988, 68).

Approximately 1m beyond the southern wall of Building A was an east–west linear cut 4.4m long, varying in width from 0.4m to 0.2m and in depth from 0.3m at the east end to 0.1m in the west. This may have been a foundation trench for a timber-and-wattle wall. Cutting into the base of this trench were six postholes, which may have represented the location of planks set vertically within the trench. The postholes had vertical sides falling to a flat base and were regularly spaced 1m apart. The exception was the circular cut at the west end that was characterised by steeply sloping sides and a concave base. All the postholes were filled with mid grey sandy silt, with inclusions of charcoal and daub flecks and fragments. The latest date for three pottery sherds recovered from the trench was AD 900–1150. Cutting into the fill of the foundation trench were eight stakeholes, all of which contained grey-brown, sandy clay silt. These stakeholes possibly represented wattling which may have infilled the gaps between the timber uprights set within the foundation trench.

The foundation trench itself appeared to have truncated a rectangular posthole with near

Fig 3. View of Building A, looking east

vertical sides and a flat base, although this posthole may have been contemporary with the timber-and-wattle wall. Immediately to the west was a sub-circular posthole, which is also thought to be associated with this wall. The foundation trench fill was also truncated by a square posthole, which may represent a repair to the wall.

Although there were no surviving wall remains to indicate the type of construction employed, fragments of daub found in the fills of the cut features may indicate a wattle-and-daub infilling between the posts. Other possible building techniques for walls include bulwark construction, *ie* with timber planks of cleft oak or beech, which was common in the City of London in the 10th and 11th centuries (Goodburn 1997). The remnants of another wall to the south may have been an outer wall to the building and the space between the inner and outer walls may have been packed with turf (as shown in the suggested reconstruction, Fig 4). The use of turfs in conjunction with wattle is one of many early medieval wall construction types recorded in London (Goodburn 1997) and elsewhere (*eg* Besteman 1988). At Goltho, where a Saxo-Norman manorial site has been excavated, it was suggested that the posts could have been encased in clay, which formed the walls and protected the timbers from rotting (Clarke 1984, 37). The clay walls of similar buildings excavated at Goltho were estimated to be between 0.46m and 0.50m thick (Beresford 1987, 27). A wall plate is likely to have topped the opposed long walls in order to spread the weight along its length and to prevent it sinking into the wall material (*ibid*). It is thought that the tie beams would have been secured under the plate. This method of 'reversed assembly' is still very common in old, standing timber-framed buildings in North-West Europe.

The roofing material, in the absence of any evidence to the contrary, may have been thatch. The use of lighter timbers in the construction of

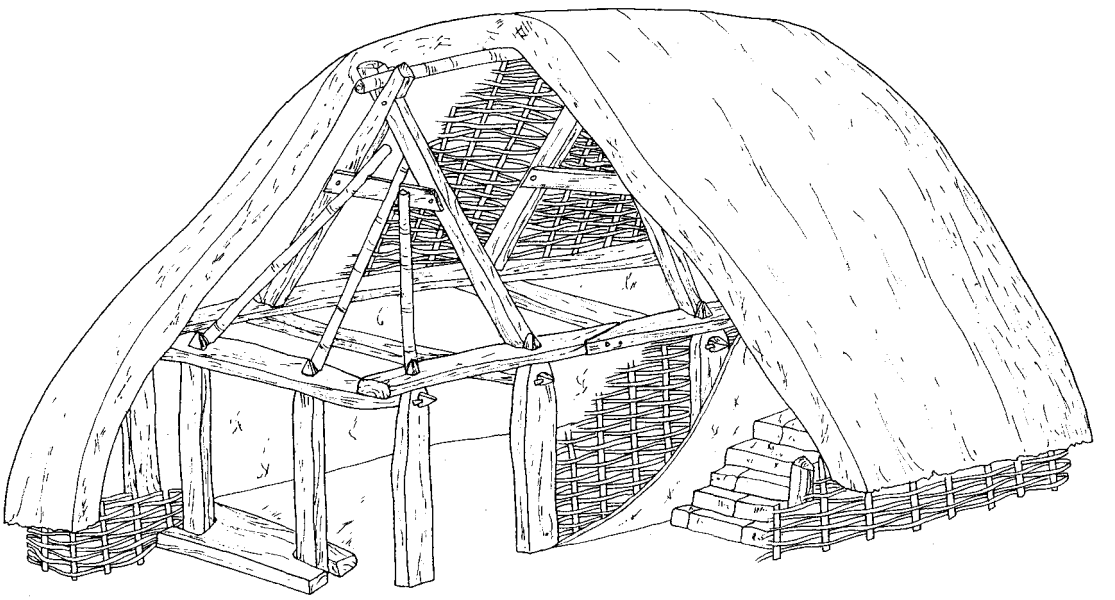

Fig 4. A possible reconstruction of Building A

the walls at the gable ends, suggested by the smaller postholes, may indicate that the roof was hipped. This form of roof construction effectively maximises the length of the two-bay building. Four cut features to the north-west and west of the structure have been interpreted as drainage gullies, which would have taken away the run-off water from the roof of the building.

Evidence for floor surfaces was absent, having been destroyed by later ploughing. However the most common floors in comparable Saxo-Norman timber buildings excavated in the City of London were of beaten earth and it seems likely that this type of flooring would have been used here (Horsman *et al* 1988, 85).

Building B

To the east of Building A was an arrangement of postholes which appeared to be the remnants of a second timber building (Building B). Unfortunately the posthole evidence for this structure only partially survived and was less convincing. This building would have been at least 7m long and 4m wide (Fig 2). The postholes were characterised by vertical or steeply sloping sides with flat or concave bases.

The west wall of Building B was represented by two shallow sub-circular postholes set either side of a deeper and larger rectangular posthole, this alignment covering a distance of approximately 2.0m. Four postholes, set out over a distance of 4.5m, represented part of the north wall of the building, whilst the southern element was represented by an east–west alignment of three postholes, spanning 2.3m. There was no evidence for the east wall of Building B, but this may be accounted for by later activities, in particular a later medieval ditch, having destroyed any such evidence. It is considered that this building would have employed similar construction techniques to Building A.

Approximately 7m to the east of Building B was a steep-sided linear cut at least 4.60m long, 1.56m wide, and 0.60m deep, inclined from the north down to the south. The latest dated pot fabric, twelve sherds of which were recovered, was in the range 1080–1350. This feature may have been a boundary ditch to the settlement represented by Buildings A and B to the west.

To the south of the buildings was a series of drainage ditches, which presumably took excess ground water away from the structures. In addition to several pits there was also a series of postholes, some of which formed obvious alignments, probably fence lines to control livestock. Isolated postholes were recorded which

had no apparent association with any of the posthole alignments already mentioned and their function is uncertain.

Stakes and posts driven directly into the brickearth were recorded over a wide area to the west of the 'boundary ditch'. Their distribution pattern did not show obvious alignments so interpretation is difficult. However the distribution of the stakeholes was not random for they were clustered together, some in pairs, others in triangles, irregular rectangles, circles, and semi-circles, while others formed definite right angles. The stakeholes are thought to represent the repetitive construction of possibly temporary and/or moveable structures, perhaps fence lines or frames intended for a horticultural function. These features were characterised by a similar grey fill and a 'V'-shape to their profile. The diameter of the stakeholes was up to 0.1m and the posts had a maximum diameter of 0.2m, but the cuts are likely to have been enlarged during their extraction. While these stakes and posts were phased to the Saxo-Norman period they were not all necessarily contemporary with the buildings.

The majority of pottery in this phase dated to the late 11th to mid 12th century. However, the largest amount of pottery from this assemblage consisted of Early medieval sandy ware dated 970–1100 (32 sherds or 25% of the fabrics). Late Saxon shelly ware (LSS) could not be identified in this phase and its absence in London from deposits dated after *c.*1050 (Vince and Jenner 1991) would seem to imply that activity in this phase began in the third quarter of the 11th century. The presence of Early medieval shelly ware (EMSH), Early medieval sand and shell ware (EMSS), and Early Surrey ware (ESUR), the latter dating after *c.*1050, would appear to further confirm this date for the beginning of this phase of activity on the site. The presence of later London-type ware (LOND) and its coarse version (LCOAR) would seem to imply that occupation continued until the late 11th or 12th century (see Table 1).

The forms present included bowls, and the spout of a pitcher, in Early medieval sandy ware (EMS), although the main forms were shouldered jars with upright rims, some of which were externally sooted and used as cooking pots. Decoration, when present on the pottery, was confined to applied strips of clay with thumb impressions.

Table 1. Pottery codes and date ranges

Pottery type	Fabric code	Date Range
Early medieval sandy ware	EMS	970–1100
Early medieval shelly ware	EMSH	1050–1150
Early medieval sand and shell ware	EMSS	1000–1150
Early Surrey ware	ESUR	1050–1150
Coarse London-type ware	LCOAR	1080–1200
London-type ware	LOND	1080–1350
Late Saxon shelly ware	LSS	900–1050
Stamford ware	STAM	1050–1150

Medieval

The Saxo-Norman buildings had fallen into decay or had been deliberately dismantled by the late 12th century. The boundary ditch to the earlier settlement was allowed to silt up or may have been infilled. However, the site was not abandoned but appears to have been given over to agriculture and a mixed farming economy continued to dominate the landscape. Plough soil, field ditches, possible plough marks, drainage ditches, as well as rubbish pitting, were all recorded for this period of activity (Fig 5).

Plough soil sealed the southern part of Building A. It was composed of charcoal flecked, mid brown-grey, silty clay sand and covered 15.50m east–west by 3.36m north–south, and was 0.07m thick. The layer sloped gently from east to west. Of the nine sherds of pottery recovered from it the latest dated to 1080–1350.

In the north-east of the trench was a series of ditches, all of which sloped in a roughly north to south direction following the slope of the hill. The most westerly of these features measured at least 6.90m north–south, 1.10m east–west, by 0.43m in depth, but continued north and south beyond the edge of excavation. The fill of light grey-brown, silty sandy clay, contained 35 pottery sherds of which the latest dated to 1150–1300. Cutting into the sides of the ditch were two postholes set opposite each other which may represent the position of a crossing point.

Approximately 4m to the east there was a second north–south ditch, which measured 4.06m north–south, 0.90m east–west, by 0.23m in depth, and sloped from north to south. It was filled by grey-brown sandy silt and of the eight pot sherds recovered from this deposit the latest

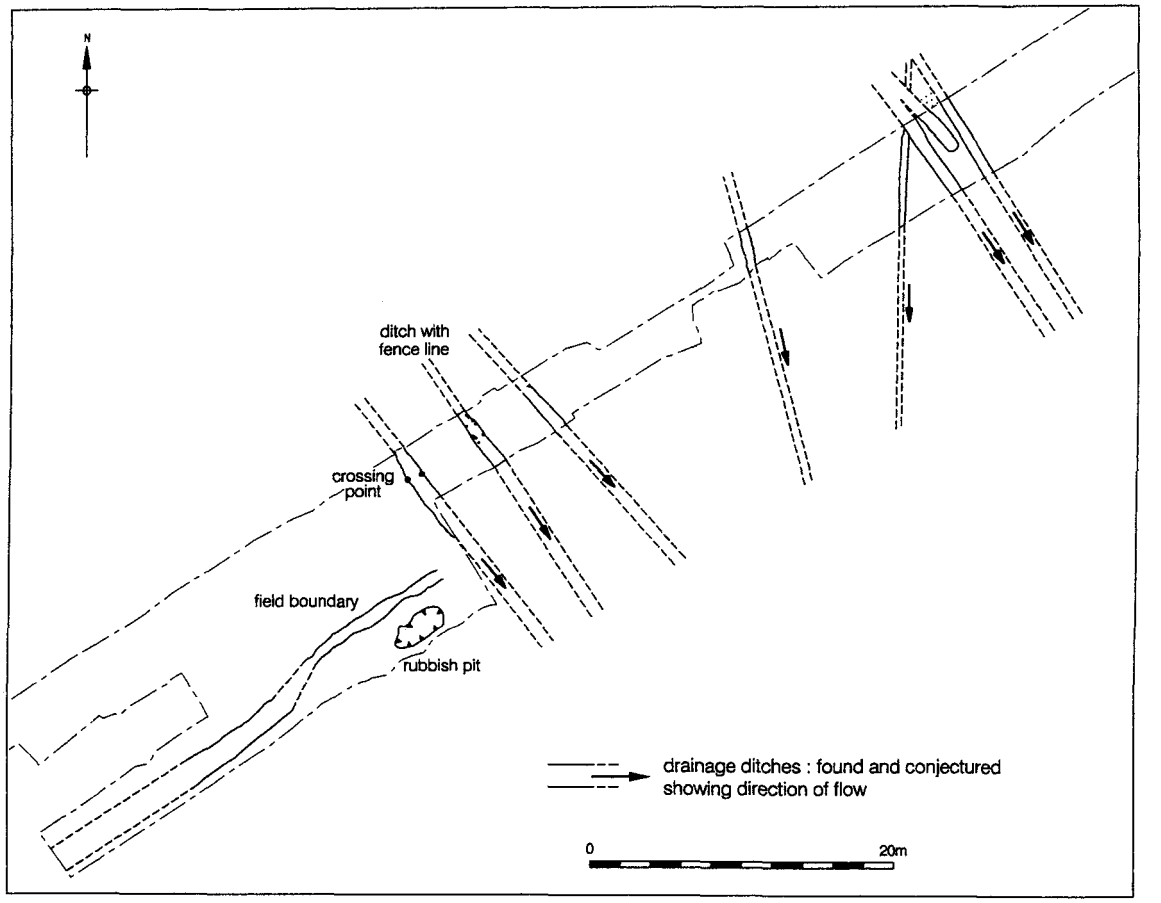

Fig 5. Plan of medieval features

was dated to 1000–1150. Along both sides of the ditch was a row of stakeholes, five on each side, filled with sandy silt similar to that in the ditch. These were interpreted as possible fence lines. Sited 4m to the east was a third north–south ditch, which measured 3.52m north–south, 0.88m east–west, and was 0.24m deep. Its profile showed rounded sides at the top sloping to a flat base. Between the two ditches were four possible plough marks orientated south-west–north-east. To the east and south-west were further ditches, gullies, and a rubbish pit. The rubbish pit contained a piece of a Basaltic lava quern stone imported from the Rhineland. The pottery from these features dated from 1000–1200.

Ploughing activity in this phase resulted in most of the pottery assemblage being residual, largely consisting of EMS by sherd count, along with sherds of EMSH, EMSS, ESUR, and a single sherd of yellow-glazed Stamford ware (STAM). With LOND and LCOAR also present late 10th- to 12th-century activity was indicated. The latest pottery included three sherds of South Hertfordshire greywares (SHER) and a white slipped London-type ware jug, which is dated to between *c.*1240 and 1350, indicating continuing agricultural land-use into the 13th and presumably 14th century at least.

Post-medieval

During the post-medieval period, but prior to the construction of Earls Terrace, the site appears to have continued to be used for agricultural/horticultural purposes. Archaeological features from this period included a fence line, drainage gullies, and a deeper cut probably a field boundary, all on a north–south alignment, and a hedgerow and ploughmarks on an east–west

alignment. These features all indicated continued agricultural land-use, while pottery recovered from a plough soil layer indicated that this activity continued into the late 18th century.

A later phase of post-medieval activity was probably associated with the houses on Earls Terrace which were constructed in *c.*1811. Their construction would have required the southern slope to the site to be terraced with the excavated soil being deposited in front of the buildings. This would account for the deep overburden of dumped material that covered the excavation area. It was of course necessary to construct a retaining wall between the gardens and Kensington High Street. Features and deposits grouped into this phase only existed in the northern part of the trench and comprised planting holes, bedding trenches, and horticultural soils.

DISCUSSION AND CONCLUSIONS

No trace was found of the Silchester to London Roman road which probably lies below the modern High Street. Nevertheless, Roman activity in the vicinity of the site was confirmed and the excavation at Earls Terrace, along with the excavations at Old Church Street and Cheyne Hospital and at St Mary's Hospital, continues to add to the growing archaeological evidence for the Roman presence in the area (Farid 2001).

The natural geology of river gravels capped by brickearth would have been fertile, well-drained, and easy to work (Bird 1996). Roman agricultural exploitation of the area is therefore likely. The recovery of Roman pottery and roof tile (*tegula* and *imbrex* fragments), although residual, does suggest Roman activity at or near the site. The presence of a ditch that respected the alignment of the presumed road (if not a 'road-side' ditch then a field boundary) suggests that the land was being managed. The emerging picture is a familiar one for the Thames river basin, of a cultivated countryside with rural settlements scattered throughout (Vince 1990).

The presence on the site of two Saxo-Norman timber buildings is an important find. They were built on the same alignment as the modern road, possibly indicating the continued use of the Roman road. Indeed The Strand, a continuation of this road closer to London, was being referred to as Akemanestraete (the Bath Road) in AD 1002 (MoLAS 2000, 184).

Soil conditions on the site were hostile to the preservation of organic remains and ensured that the timber elements of the buildings had decayed. Therefore the only evidence for the superstructure was in the form of slots and postholes marking the position of removed or rotted wood, and quantities of daub recovered from the backfilling of postholes and the overlying ploughsoil. However, sufficient information was retrieved to render possible reconstruction of the buildings. The below ground elements of early medieval timber buildings can be classified and dated as readily as their superstructures (Addeyman & Hill 1979). In this case the earth-fast type of foundation used in both buildings was commonly in use from the late 9th to the early 11th century (Horseman *et al* 1988).

The construction materials for the buildings were probably those readily available in the locality – clay tempered with straw to make the walls and oak for the timbers. However, if the timbers were encased in clay to protect them from the damp, insects, and wood-rotting fungi then other 'inferior' species such as ash could have been employed (Beresford 1987, 26). Thatch for the roof could have been straw, sedge, or reeds.

The use of earth-fast posts to ensure structural stability and support the weight and thrust of the roof was a much simpler method than the 'true' timber-framed houses that would be developed subsequently (Milne 1992, 103–5). An obvious advantage of this construction technique would have been the employment of local and unspecialised labour.

The structural stability and permanence of the buildings should be considered in order to establish their longevity. Horsman estimated that isolated buildings could survive 80–100 years (Horsman *et al* 1988, 110). In this case the precise dates of construction and destruction are not known, although analysis of the latest ceramics recovered from the structural features of the buildings has confirmed that both are Saxo-Norman in origin. If the pottery date of 1080–1150 reflects the time the buildings were abandoned, then they may have been built *c.*1000–1070. Whatever the life span of such buildings they would have had to be replaced from time to time. The large dimensions of the postholes that represented the north and south walls of Building A are a little surprising but

their size was perhaps the result of the digging out of the timber uprights, which may be an indication that the structure was, at least in part, rebuilt or deliberately dismantled. It is important to note that these were the load-bearing timbers and that they would have had to be maintained if the building's structural integrity was to be ensured. At Goltho, for instance, posts were frequently dug out to clear the site for another building (Beresford 1987, 26). Of course, subsequent replacement of the whole building would not necessarily have been on the same spot. In this instance the two buildings may not have necessarily been contemporary, one may have superseded the other.

Caution should be exercised in trying to estimate the size of a post from the dimensions of the posthole/pit. Wide post pits do not necessarily imply that posts were of that size since a wide pit is easier to dig and allows the adjustment of the post to a precise location (Beresford 1987, 75). If the posts were removed, normal weathering would quickly change the shape of the pits. It may be that the timber uprights would have tapered out towards the bottom reflecting the original shape of the tree, a technique commonly used during this period, and one which would have given increased stability to the post (pers comm Damian Goodburn).

To what use may the buildings have been put? They could represent cots (dwellings of the poorest members of the peasant community). They conform to the dimensions and plans of buildings previously interpreted as such, for example at Goltho and Barton Blount, where cots were rectangular in shape with a maximum width of 5m and a length no greater than 10m (Clarke 1984, 33). However, if the buildings had been for domestic habitation then an open hearth, usually positioned roughly in the centre of the living area, would be expected (*ibid*, 39). In London it was common for a domestic building of this type and period to have a brickearth slab hearth (Horsman *et al* 1988, 97). No such hearths were discernible, though it may be that any such feature was destroyed by later activity such as ploughing, particularly as the floors did not survive. Other possible non-domestic uses may have been as byres for animals, although the lack of any drainage feature to take animal waste out of the buildings makes this unlikely, or as storerooms for crops and/or seed corn.

If these buildings were barns or storerooms then they might have been part of a larger complex of buildings. The excavation could not determine whether they represented an isolated farmstead or part of a larger Saxo-Norman manorial estate. However, if there was a settlement, as is suspected, centred on St Mary Abbots church then the present site could represent the linear development of that, possibly consisting of a street composed of an orderly succession of the tofts and crofts of the peasants (Clarke 1984, 31). The toft was a small rectilinear enclosure, which contained a dwelling and associated out-buildings. The croft was the continuation of the enclosure as far as the village boundary. The 'boundary ditch' may have defined one such 'toft'. The village was not only the centre for ecclesiastical organisation in the countryside but also of local manorial administration, so it is also possible for the settlement to have been part of a manorial estate in the neighbourhood (Bond 1985).

It is perhaps of interest that the 'boundary ditch' identified ran at right angles to the presumed line of the Roman road, suggesting that the road was still in existence at this time and exerting its influence on the developing land divisions and settlement layout.

The likely function, trade contacts, and relative status of the settlement should be considered. It seems likely that the settlement would have undertaken both arable and pastoral agriculture. Plough marks of earlier and later date indicate that the land was suitable for arable farming. Quernstone fragments from hand querns indicate domestic grinding. The fence lines identified may indicate that at least some form of animal husbandry was undertaken, further suggested by the recovery of animal bone including that of cattle, horse, sheep/goat, and pig.

The stakeholes that were phased to the Saxo-Norman period were thought to have represented temporary fence lines or other structures, perhaps for a horticultural purpose. The seasonal pattern of horticulture and the relatively flimsy nature of the structures might necessitate continual rebuilding and realignment, which would account for the plethora of these features in parts of the trench. However planting with a digging stick might also produce features similar to stakeholes. Certainly, most peasants grew vegetables and fruit in an enclosure at the back of the house and farm buildings (Dyer 1994, 116). Dyer maintains that the peasants valued their gardens

and would have surrounded them with fences, hedges, and ditches. There is documentary evidence for viticulture with a reference in the Domesday Book to three arpents of vines in the property of Aubrey de Vere (Farid 2001). A ready market for any surplus garden produce would have been easily accessible in the City of London.

The fragments of Mayen lava querns retrieved from deposits dated to the Saxo-Norman and medieval periods dominate the assemblage of stone items recovered from the site. These finds certainly demonstrate the trade link to London. Mayen lava querns from quarries in the Eifel region of Germany were first imported into Britain as part of the standard equipment of the invading Roman army in AD 43. Rapidly gaining in popularity in the domestic market the trade continued throughout the Roman period. The trade had certainly been re-established by the 7th century in Southampton (Addyman & Hill 1979, 79). By the late Saxon period it was flourishing in southern and eastern England, coming from entrepôts such as Dorestad as either finished or roughly shaped blocks (Parkhouse 1977). London was almost certainly the main port of entry into England, and a large deposit of unfinished querns of 10th- or 11th-century date came from Thames Exchange, Upper Thames Street, in the City of London (Freshwater 1996). Substantial fragments of broken querns were often used as building material while small fragments were a useful source of rubble (Buckley & Major 1988, 36). Of the pieces recovered from the site only one is of any size, and only this one retains a dressed surface, in this case an edge.

The disproportionate representation of horse within the animal bone assemblage for the Saxo-Norman and early medieval periods may be an indication of the relative prosperity of the inhabitants. This is supported by the recovery of fragments of horseshoe, indicating that at least some of these animals were shod (Crabtree 1989, 26). In comparison, the frequency of the horse component in the animal bone assemblage from the deserted medieval village of Thrislington in County Durham showed higher proportions of horse from the higher status manor than the lower status toft areas of the site (Rackham 1989, 151–4). There is evidence that the presence of horse increased in importance from the 11th century onwards when it became progressively more common among all ranks of society (Serjeantson *et al* 1992, 12–13). In the case of Earls Terrace 5.7% of the animal bone recovered from the Saxo-Norman phase was horse, increasing to 9.5% in the subsequent medieval phase.

In the City of London horse bones rarely account for more than 1% of the identified bones from archaeological excavation (Clark 1995, 20). The recovered quantity of horse bone and the location of the site may not be coincidental but rather a reflection of the differences in urban and rural life and perhaps more particularly differences in the disposal of horse carcasses as opposed to other waste. Other explanations for the significance of the equine remains should also be considered. Horsemeat was not normally for human consumption, the more usual fate for the old or mortally sick horse was to be buried where it died, or slaughtered for its hide (Clark 1995, 19–20). This would suggest that the horses were on site prior to their disposal, or had been brought in specifically to be discarded. Unfortunately the animal bone assemblage was too small and badly preserved to be able to confirm or contradict this. It should be noted that the skinning and burial of horses was prohibited within the City walls and carcasses were usually removed from the City for disposal.

The site in the 11th century may have been either part of a manorial estate or an isolated farmstead, but it was certainly practising both arable farming and stock rearing. By the 13th or 14th century the buildings were no longer standing and the boundary ditch to the earlier settlement was allowed to silt up or had been deliberately infilled. This may be an indication that property boundaries had altered. However the site was not abandoned but in the area of the excavations appears to have been given over to agriculture. The presence of agriculturally worked soils, field ditches, and plough marks indicates that arable farming was being carried out. The continued recovery of animal bone and the discovery of rubbish pits suggest that domestic habitation was still continuing in close proximity to the site.

There is a break in the archaeological record for the site between the 14th and 18th centuries. This may reflect the collapse in the population from the early 14th century (Daniell 1997, 191–2), which following the arrival of plague in the winter of 1348 may have declined by as much as a third (Fossier 1986, 53). This apparent abandonment of the site may indicate that the linear medieval village was contracting towards St Mary Abbots church, although the limited

size of the excavation area leaves this possibility uncertain.

In the 18th century the presence of postholes, stakeholes, pitting, and fence lines indicates a reoccupation of the site and agricultural/horticultural activity being undertaken. The establishment of a hedgerow may be an indication of enclosing the land and the shift towards market gardening. This archaeological evidence is consistent with the cartographic sources showing the fields and gardens of the neighbourhood and buildings clustered around St Mary Abbots church (Rocque 1747).

The speculative development of Earls Terrace at the beginning of the 19th century transformed the site from part of a rural parish to a fashionable suburb of the metropolis.

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TWO MEDIEVAL JEWISH RITUAL BATHS – *MIKVA'OT* – FOUND AT GRESHAM STREET AND MILK STREET IN LONDON

Ian Blair, Joe Hillaby, Isca Howell, Richard Sermon and Bruce Watson

SUMMARY

Two medieval Jewish mikva'ot or ritual baths have been discovered in the part of the City of London known as the Jewry. One was discovered at 81–87 Gresham Street in 1986 and the other at 1–6 Milk Street during 2001 (see cover illustration).

INTRODUCTION

The word *mikveh* (plural *mikva'ot*) is Hebrew for 'a collection of water'. It also refers to a small subterranean bath filled with water collected by natural means, containing a minimum of 40 *seah* (*c.*750 litres). People immerse themselves in a *mikveh* to achieve spiritual cleanliness or purity in various ritual contexts.[1] For this reason medieval *mikva'ot* were located either close to or within synagogue precincts, and they are always found within the area of Jewish settlement. People can become ritually unclean through contact with the dead or with defiling objects, or, in the case of women, through menstruation and childbirth. *Leviticus* (15) details the Mosaic Law of 'the uncleanliness of men and women in their issues and their cleansing' (*Encyclopaedia Judaica* 11, 1533–44; 15, 751). A *mikveh* is a uniquely Jewish institution, and such is its importance that Jewish practice requires a community to build one before it constructs a synagogue.

THE LONDON MEDIEVAL JEWRY

William I 'transferred' Jews to London from the important Norman community at Rouen (William of Malmesbury 1998, I, 53). The documentary evidence for London's 12th-century Jewry, though slim by comparison with that for the 13th century, is important. The single extant Pipe roll of Henry I's reign, for 1130–31, provides valuable information on the Jewry's financial relationship with the Crown. The first rolls for Henry II's reign show that by 1159 Jews were well established in ten other towns. By the 1200s an abundance of public records becomes available (Hillaby 1994, 1–2, 8–15).

After Henry II's death, in whose reign (1154–1189) William of Newburgh tells us the Jews were 'happy and respected', the English community experienced very hard times. The attack on London's Jewry in 1189 was followed by massacres at York and a number of other towns in 1190. In the later years of John's reign his endless demands for money impoverished the Jewish community; almost all their stone houses were expropriated. The early years[2] of Henry III's reign (1216–1227) witnessed a marked revival in the Jewry's fortunes, but by the mid 13th century heavy taxation led once more to expropriation until, in 1290, the much reduced community was expelled, with the royal clerks compiling a final account of all Jewish property (Hillaby 1992, 97–107, 132–7, 151–2, table 8; *idem* 1994, 15–40). From 1290 until 1658, when

the Lord Protector, Oliver Cromwell, readmitted them, the Jews were forbidden to reside in England.

From the detailed documentary evidence available the parishes and streets most favoured by London's Jews can be plotted with some precision. St Olave's Old Jewry and St Lawrence Jewry with St Mary Colechurch and St Martin Pomary and in particular Colechurch (Old Jewry) and Ironmonger Lanes, Catte (Gresham) and Milk Streets were the principal areas of settlement (Fig 1). Some Jews lived at the southern end of Bassishaw and Colman Street, the south-east of Lothbury Street, and about the junction of Wood with Catte Street. The two magnets for residence were the *Magna Scola* (great synagogue), at the corner of Old Jewry and Lothbury, behind the homes of such plutocrats as the Londoner Abraham son of the Rabbi, Aaron of Lincoln and Jurnet of Norwich, and the Guildhall. Indeed the house of Aaron of Vives, associate of Henry III's avaricious son Edmund Crouchback, 'adjoined' the Guildhall on the west. Aaron also owned a plot 'on the way to Hustings', by Guildhall Yard (Hillaby 1992, 90–6, 100–2, 146–8, 151–3; *idem* 1993, 189–91).

There are a number of misconceptions about Jews and Jewry. Firstly, although described as 'in Jewry' the area where they resided was no ghetto. This latter term appeared first in Venice in 1516 and became general throughout the Catholic world after the bull *cum nimis absurdam* in 1555. In medieval London Jews and Christians lived side by side for purely secular reasons. The Jews chose to live in the 'central business district' of London as leading members of their community played an important part in the financial affairs of both city and kingdom. The Jews were not only moneylenders but exchangers, pawnbrokers, and traders in precious metals, jewellery and furs. They were intimately associated with and lived close to their Christian counterparts, such

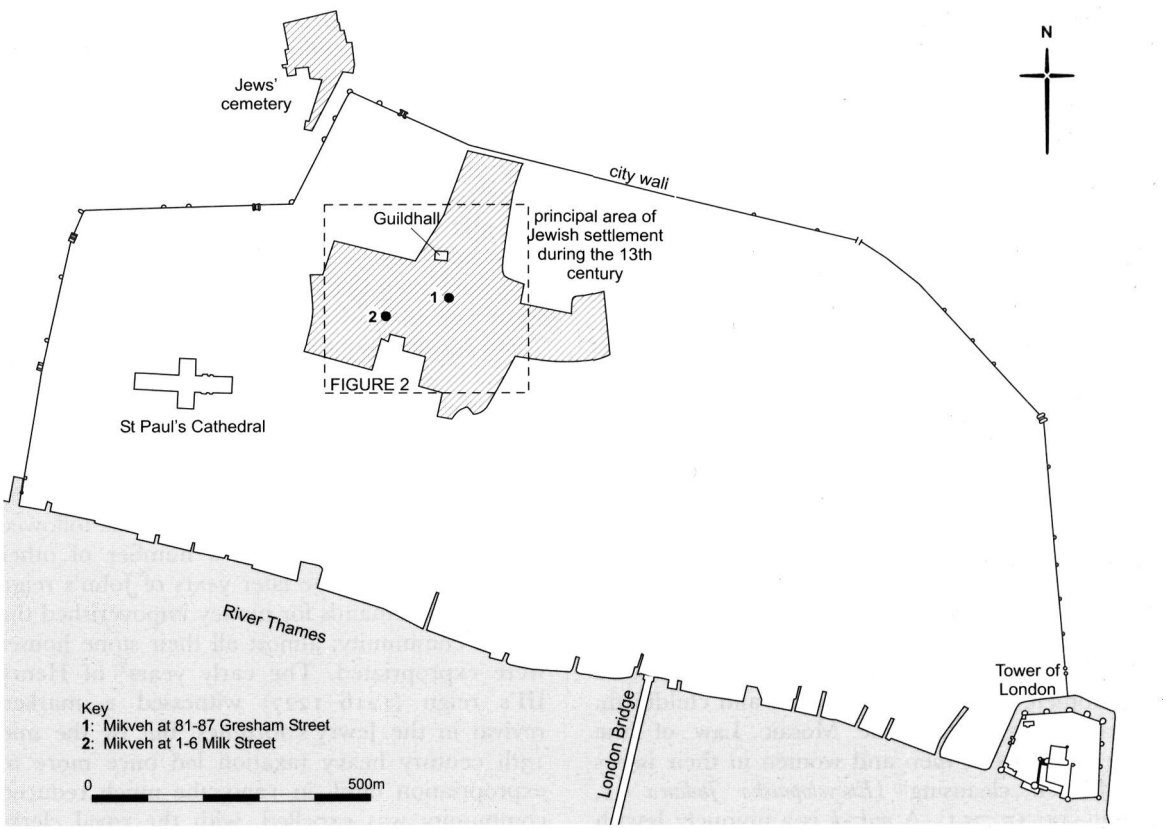

Fig 1. The City of London (c.1270), showing the line of the city walls, the principal area of Jewish settlement (defined from post-medieval parish boundaries), the extent of the Cripplegate cemetery, and the location of Fig 2. (1: Mikveh at 81–7 Gresham Street (found 1986); 2: Mikveh at 1–6 Milk Street (found 2001))

as gold- and silversmiths (Stacey 1995, 79, 83–5; Biddle 1976, 439, 496–7; Hillaby 2002, 88).

Also a myth is 'the time-hallowed view' that the Jews were the pioneers of domestic building in stone (Dobson 1996, 46, n 153). The wealthier Jews certainly lived in such houses. Stow (1908, I, 9) records that in 1215 the baronial opposition repaired the city walls with stone taken from Jewish houses. However, documentary evidence at York suggests that the occupancy of such buildings was normal amongst the more wealthy merchants during the 12th and 13th centuries (RCHM 1972, lxi), a trend confirmed at other urban centres including Gloucester, Southampton, and Worcester (Hillaby 1990, 97; *idem* 2002, 88; Platt 1973, 39–41; Platt & Coleman Smith 1975, 83–5). In London fitz Ailwin's 1189 *Assize of Building* refers to 'many citizens' building stone houses after the Great Fire of 1136 (*Liber Albus* 1861, 284–5; Schofield *et al* 1990, 160–1), confirming the commonness of this practice amongst the richer Londoners.

Both myths sadly occur in the rationale behind a provisional attempt to identify the medieval Jewish community in London from their material culture (Pepper 1992). Five artefact types – lead tokens, bone counters, coin scales, ceramic hanging lamps and window louvres – were selected. The first three artefacts relate to money lending or mercantile activity, while the presence of louvres implies the existence of houses with either stone-built ground storeys or cellars. However, as noted above, the occupation of stone houses was widespread amongst the richer Londoners, so this criterion is invalid. Comparison of the four excavations within the Jewry with other City sites revealed a marked concentration of these artefacts (Pepper 1992, 6). However, as the date of the artefacts was not considered, it is likely that some postdate the expulsion of the Jews. Furthermore, while the chosen artefacts are good indicators of mercantile activity, they are not exclusively Jewish. The dietary evidence provided by faunal assemblages from rubbish pits (presumably due to lack of available data) was not considered by Pepper (1992).[3] In conclusion, evidence of social differentiation using aspects of material culture cannot be reliably applied to England's medieval Jewries in London and elsewhere.

The Jewish cemetery at Cripplegate, just outside the walled city (Fig 1), was partly excavated in 1949 and 1961 (Grimes 1968, 180–1; Honeybourne 1959–64). Existing basements had extensively disturbed the site, except for a small area between Well Street and St Giles churchyard where a row of seven truncated, empty graves was found (Shepherd 1998, 85). The clearance of the cemetery was presumably undertaken by Christians after the 1290 expulsion, as such an action would have been against the laws and customs of the Jewish community. Although the excavations revealed no tombstones, six fragments with Hebrew inscriptions (now lost) have been found incorporated into the city wall and its gatehouses: one in 1586 when Ludgate was rebuilt, four in 1617 when Aldersgate was demolished, and the last discovered in London Wall during 1753 (Honeybourne 1959–64, 153–4, pls 26–7, which reproduces three). In 1232 the *Domus Conversorum* was established for converts at New Street (now Chancery Lane). In 1337 the chapel was assigned to the Keeper of the Rolls and in due course it became partly an office and a record repository (Trice Martin 1894). It was demolished in 1895.[4]

In summary, whilst the documentary evidence relating to the London Jewry is rich, the archaeological evidence unearthed to date is limited. Thus, the Gresham Street and Milk Street discoveries represent important evidence of this community.

THE DISCOVERIES OF 1986 AND 2001

During 1985–86 archaeological investigations were undertaken at Guildhall House, 81–7 Gresham Street, to the south of the Guildhall (Fig 2).[5] The excavations revealed the truncated chalk-rubble foundations of two 12th-century buildings fronting onto Catte (Gresham) Street. Due to the degree of truncation caused by the construction of post-medieval basements, it is not certain if either of the medieval buildings possessed cellars. Adjacent to one of the foundations was a truncated stone-lined structure. Initially this feature, excavated during March 1986, was interpreted as a subterranean strong room.[6] Research in 1990 first suggested that this structure should be re-interpreted as a *mikveh* (Sermon 1990).

During the excavations at 1–6 Milk Street (October 2001), a second truncated *mikveh* was uncovered (Fig 2). [7] Thanks to funding from the Bevis Marks Synagogue Trust the *mikveh* has been dismantled, and it is proposed to rebuild it in a suitable setting. During 1976–77 this site had

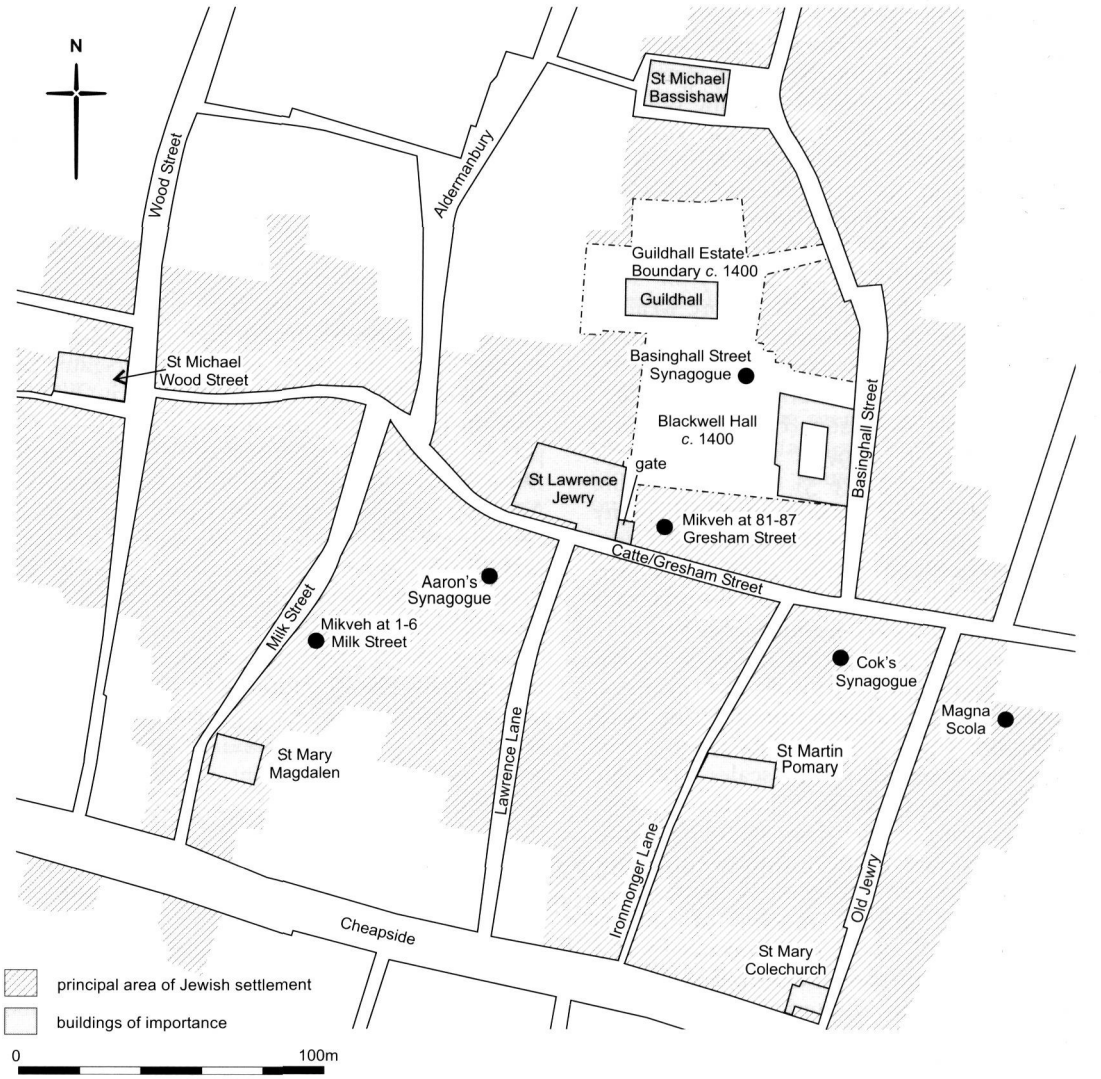

Fig 2. The central portion of the London Jewry showing the extent of the principal area of Jewish settlement, churches, and other important buildings. Only the approximate position of the Magna Scola and the other synagogues is shown, as the precise location of these structures is uncertain.

been partly excavated in advance of the previous redevelopment, but archaeological work carried out within the vicinity of the *mikveh* was very limited (Schofield *et al* 1990, 113), so it remained undiscovered and more amazingly was undisturbed during the 1978 redevelopment.

THE GRESHAM STREET *MIKVEH* (Fig 3)

The structural remains of the Gresham Street *mikveh* consisted of a rectangular arrangement of two courses of high-quality, squared Upper Greensand ashlar blocks (size varied from 80 x 150 x 220mm to 300 x 300 x 250mm), bonded with grey-yellow lime mortar, set within a slightly larger construction pit. While it is certain that the *mikveh* was intended to be subterranean, its original depth and the height of the associated floors is not known, due to modern truncation.

The internal dimensions of the structure were 1.65 by 1.15m and the internal depth was 56cm. Between the back of the ashlar lining and the

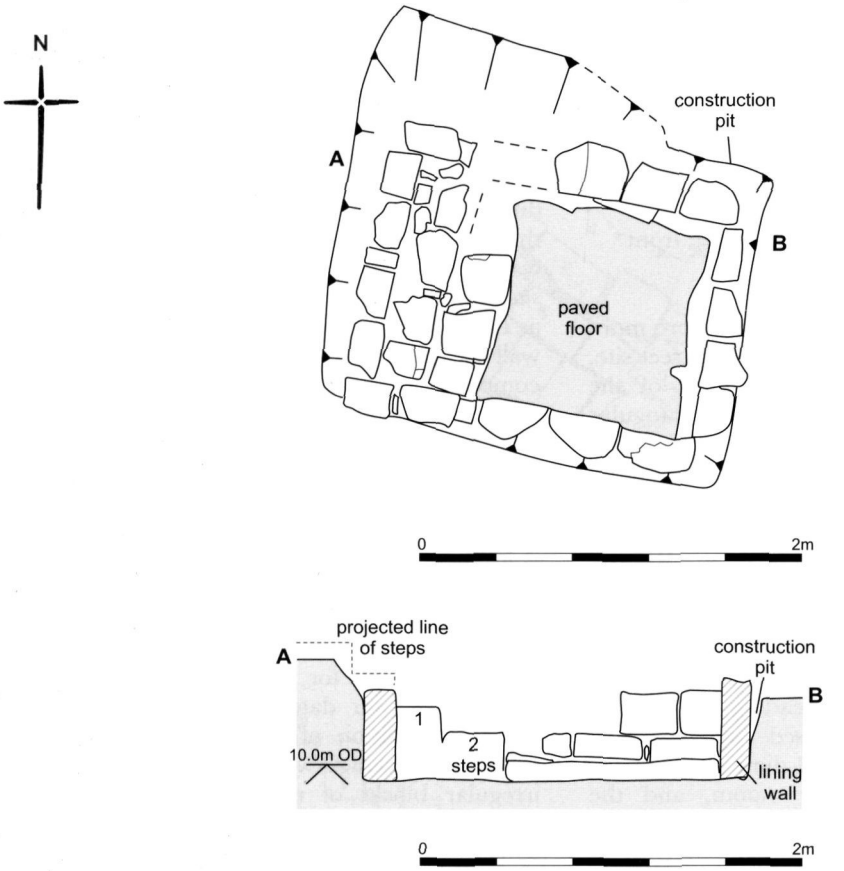

Fig 3. Plan and cross-section of the Gresham Street mikveh

construction pit was a mass of rubble packing. A sherd of a London-type ware serving jug (1080–1200), recovered from the packing, dates the construction of the *mikveh* to the 12th century. Within the internal area of the masonry there was a compact layer of pebbly sand. Along the western internal face this deposit was sealed by a spread of rubble, which served as a base for Greensand blocks arranged on two levels to form stairs providing access to the structure. Assuming that the structure was originally 1.20m deep, there would have been an additional five steps.[8] The upper step comprised four squared blocks and the lower one three. In the spaces between some blocks were found the remains of three lengths of decayed wood, which indicate the presence of wooden treads on top of the uneven steps.

Abutting the steps a single layer of reused Greensand blocks of varying size formed a floor, measuring 1.05 by 1.15m. The roughly horizontal surface formed was at a lower level than that of the lowest step. The blocks were laid in a continuous bed of lime mortar, which also filled the gaps between the blocks. To have functioned as a *mikveh* it must originally have been watertight, as leakage would have invalidated its usage (*Encyclopaedia Judaica* 11, 1536). There is no evidence for how the structure could have been made watertight. There were no traces of mortar on the internal faces of the masonry to suggest the presence of internal render or a stone-slab lining and flooring to seal the structure. Possibly the original mortar has degraded back to sand and the internal lining and flooring were removed at the same time as the upper portion of masonry. The disuse of the *mikveh* is represented by the removal or robbing of the upper portion of the masonry lining, reducing it to its present height. The space created by the stone robbing was backfilled with soil, containing 13th-century pottery.

The 1290 expulsion returns and other documentary evidence confirm that some of the properties situated either on or near to 81–7 Gresham Street were occupied by Jews during the 13th century (Hillaby 1992, 91, 127, 141, 148; Blair *et al* 2002, 25).

THE MILK STREET *MIKVEH* (Fig 4; front cover illustration)

The remains of the Milk Street *mikveh* were more substantial than those at the Gresham Street site, and the overall appearance and form of the structure contrasts markedly with the rectangular plan of the *mikveh* discovered in 1985. The *mikveh* was substantially built, using high quality squared Greensand ashlar blocks bonded with lime mortar, set within a construction pit. The stone has been provisionally identified as Reigate Stone, from the Cretaceous, Upper Greensand beds of Surrey.

The *mikveh* was aligned roughly north–south and was seen in plan and elevation to consist of a minimum of seven steps leading down from the north into an enclosed apsidal-ended chamber. The overall internal dimensions of the structure measured 3.00 by 1.20m, and the maximum internal depth was 1.45m. The apsidal end of the *mikveh* measured 1.20 by 1.20m, although most of the ashlar blocks at this end of the structure had been robbed to the level of its lowest course. The highest survival of the lining was along its east side, where a staggered profile of six regular courses of ashlar survived. The individual blocks of stone varied in size from 0.20 by 0.15m to 0.45 by 0.25m, and, in order to compensate for slight variations in the height of adjoining stones, pieces of peg tile had been selectively used as levelling material.

The stonework of the open apsidal 'bath' was particularly finely carved, with very narrow and tight-fitting joints between the individual ashlar blocks, presumably to make the structure watertight. There was no evidence to suggest that the bath had ever been rendered internally, and it is likely that such a coating was never required. The base of the *mikveh* was founded directly onto natural brickearth and no clear evidence was found to indicate the nature of its original floor. Given the high standard of the remainder of the structure and the slipperiness of brickearth when wet, it is inconceivable that the bath would not originally have had a stone or tile floor, which was later robbed. The gap between the back of the lining and the construction cut was packed with a mixed silty-mortar-and-rubble fill. The fill contained the base of a mid 13th-century London ware baluster jug. The uppermost four steps leading down into the *mikveh* had been substantially robbed, although their original profile could be discerned where they had been broken off in the face of the east wall. Only the bottom three steps remained *in situ*, probably by virtue of having been utilized as the base for a later east–west aligned blocking wall (see below). Each of the lower steps was composed of between three and five squared blocks of Greensand ashlar, with slightly uneven and pitted surfaces possibly caused by wear during the functioning life of the *mikveh*. There was no evidence to suggest that the steps had originally had wooden treads. The packing fill behind one of the steps contained a small assemblage of mid 13th-century London and Kingston ware pottery, contemporary with that from the construction fill, and providing a construction date for the *mikveh*.

At some later date the *mikveh* was modified with the addition of a crudely built east–west internal blocking wall composed largely of irregular blocks of reused Greensand, with a depth of 46cm and a width and length of 1.10m. This wall was built directly onto the lowest three steps (Steps 5–7) and was butted against the walls flanking the stairs. Although the addition of this wall effectively closed off the open end of the apsidal bath from the stairway, it is uncertain if it was a deliberate modification to deepen the bath during the functioning life of the *mikveh*. An alternative, although perhaps less likely, explanation for the original function of the blocking wall is that it constitutes the foundation to a wall of a later building which was built over the *mikveh* after the structure had been abandoned following the expulsion of 1290.

The disuse and partial dismantling of the *mikveh* was indicated by a number of mortar-and-rubble-based deposits which filled the lower levels of the apsidal end of the structure and part of the stairwell, partially sealing the later blocking wall. The robbing fills all contained pottery dated 1280–1350, and it is likely that the *mikveh* had been infilled at some point in the very late 13th or early 14th century.

The 1976–77 excavations at 1–6 Milk Street revealed the stone foundations of a number of 12th- and 13th-century stone-built cellared

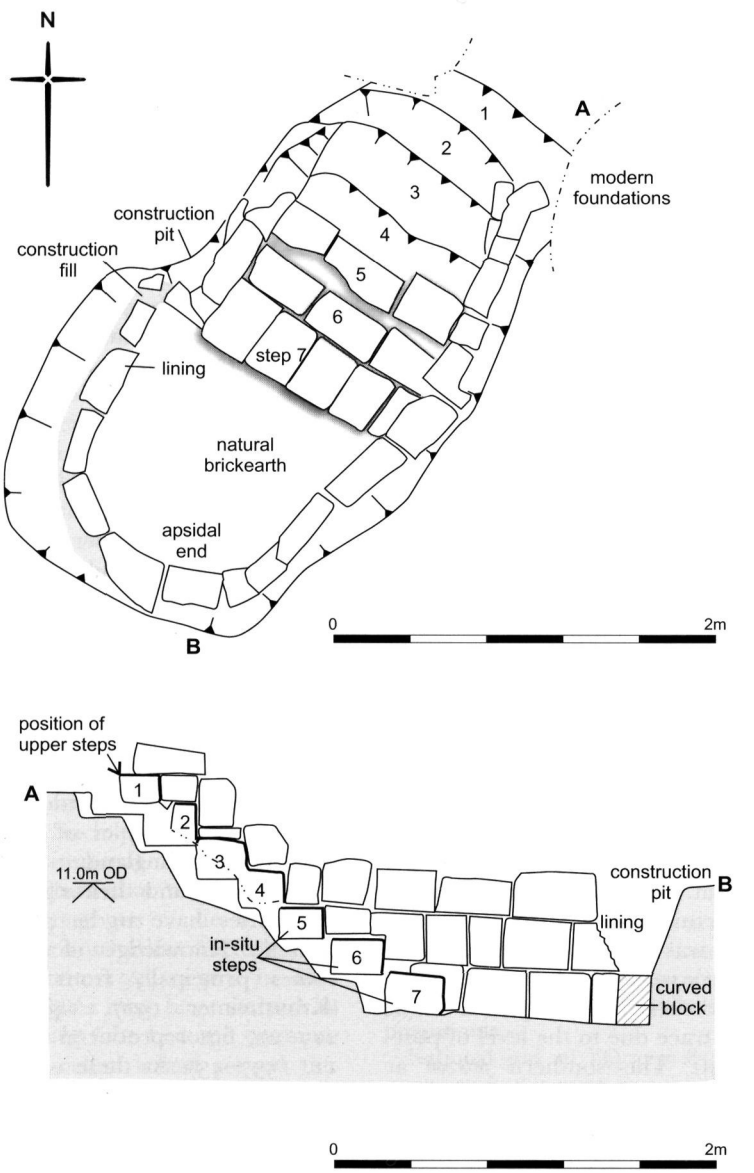

Fig 4. Plan and cross-section of the Milk Street mikveh

properties fronting onto the west side of Milk Street (Schofield *et al* 1990, 118–25). To the rear of these properties were various cess and rubbish pits and wells, presumably situated within gardens or yards. The most imposing structure discovered was a 12th-century stone undercroft. In 1276 this property belonged to Bonamicus, Jew of York, and in 1290 to his son Jacob (Hillaby 1992, 127, table 8; Schofield *et al* 1990, 140, Building 6).

In 1290 the property where the *mikveh* was discovered was occupied by a Jew, Moses Crespin, who had inherited it from his father Jacob (who had died *c.*1244). The Crespin family were leading London financiers during the early 13th century (Hillaby 1992, 127–30). After the expulsion, this property passed to Martin Ferraunt and, during the 14th century or later, it was rebuilt. During this rebuilding one of the new cellar walls sealed the remains of the *mikveh* (Schofield *et al* 1990, 145, Building 10).

THE MEDIEVAL *MIKVA'OT*

Archaeological evidence confirms that both structures were subterranean, lined with high-quality Greensand ashlar masonry, and entered by stairs. The Gresham Street example was built during the 12th century and partly dismantled during the 13th century, while that in Milk Street was built during the mid 13th century and partly dismantled during the very late 13th or early 14th century. The design of these structures is quite different from contemporary stone-lined cess pits, which tend to be larger, lined with chalk rubble, and never have stairs (Schofield *et al* 1990, 173–6). The close jointing of the ashlar lining of the Milk Street example strongly suggests that it was intended to hold water, while the presence of steps indicates it served as a bath. Those who bothered to bathe in medieval London generally used local streams or wooden tubs, not purpose-built subterranean stone-lined structures. Documentary evidence (discussed above) confirms that both structures were located within the London Jewry (Fig 2), and that a wealthy Jewish family occupied the Milk Street property during the 13th century. While the evidence for the Gresham Street property has not yet been fully researched, it is clear that several properties within the immediate vicinity were occupied by Jews. It is on the basis of this evidence that we put forward the interpretation that both these structures are medieval *mikva'ot*.

Neither structure was deep enough to fill with ground water, so they were presumably supplied with roof water from cisterns at a higher level (of which there was no trace due to the level of post-medieval truncation). The southern *mikveh* at Masada (Israel) was supplied with water from an adjoining cistern via a pipe (Yadin 1966, 164–7). The capacity of the Gresham Street *mikveh* was at least 640 litres of water, while the Milk Street *mikveh* could have contained at least 2,520 litres of water (up to Step 2), providing a depth of 1.15m, enough for complete immersion. The modification of the *mikveh* created a 0.80m deep self-contained immersion pool, capable of holding 988 litres of water. To achieve this same depth of water in the original structure an additional 480 litres would have been required, demonstrating the potential benefit of the modification.

Interestingly both the Gresham and Milk Street *mikva'ot* were apparently located within cellars below private houses, not synagogues. This raises the question whether wealthy Jews, for reasons of piety or status, constructed private *mikva'ot* so as to be able to prepare themselves in the privacy of their homes for public worship, or perhaps worship in private synagogues (created by converting suitable rooms within their homes). In 1281 the Franciscan archbishop John Pecham claimed that, 'to the mockery and great scandal of Christian religion, almost all the most important London Jews had their own synagogues' (Douie 1952, 324–5). However, this does not necessarily mean that the two London *mikva'ot* served private synagogues situated within the same properties; as there is documentary evidence for the existence of four synagogues near to both *mikva'ot* it could be argued that there was little need for additional facilities within the locality (Fig 2).[9]

A rock-cut chamber which fills with spring water at Jacob's Well Road, Bristol has been published as a medieval *mikveh* (Emanuel & Ponsford 1994). However, it has recently been reinterpreted as associated with a *bet tohorah* (a cleansing house where the dead were washed and prepared for burial) (Blair *et al* 2002, 32; Hillaby & Sermon forthcoming). If this reinterpretation of the Bristol structure is correct it means that the two London *mikva'ot* are the only two known examples of this type of medieval monument in England.

To understand their significance, the London discoveries have to be placed in a European context. Knowledge of the medieval *mikva'ot* comes principally from the Rhenish Jewries (Krautheimer 1927, 148–50, 164–5, 187–8, 217–21; figs reproduced in *Encyclopaedia Judaica* 11, 1537–43). As these were for communal use they were built close to the synagogue and other facilities, such as the bakehouse, oven, butchery, and *hospitium*. Reflecting communal pride and confidence in the face of great adversity, they were also monumental in construction.

Such monumental *mikva'ot* took two forms. The first had a single vertical shaft providing air and light and access to the bath by a staircase down its four sides. A recent reinterpretation of the Cologne *mikveh* has revealed that it incorporates parts of two earlier structures, rebuilt first after the AD 700 earthquake and then again following the 881 Viking attack. Final rebuilding took place some 15 years after the Crusader attack in 1096 (Doppelfeld 1959, 92ff; Gechter & Schütte 2000). There are further examples at Friedberg in Hesse, *c.*1260, and at Andernach on

the Rhine, *c.*1300 (Krautheimer 1927, 187–8, 219–21). The second form had an additional, diagonal, shaft to provide less precipitous access. Speyer, *c.*1110, is the finest example of this type (Hildenbrand 1920), with others at Worms, 1185–86, and Offenburg in Baden (Krautheimer 1927, 148–50, 164–5, 217–18).

The dominant feature of both forms is their great depth: at Speyer the ritual bath is 10m below ground level, at Offenburg 15m, at Cologne slightly more, but at Friedberg 25m. The stairs are also highly impressive: 40 steps down the diagonal shaft at Offenberg and 44 down the central shaft at Andernach (Franzheim 1984, pls 31–7; Krautheimer 1927, figs 62, 82, 83, 84).

The illustrations reproduced by Krautheimer (1927) have greatly influenced the European perception of medieval *mikva'ot*. However, recently German archaeologists have also discovered a number of much smaller medieval *mikva'ot*, characterised by a few steps descending into stone-lined or rock-cut subterranean baths. Designated 'cellar' *mikva'ot*, these are on a much smaller scale than monumental *mikva'ot*. Although some may not be directly linked with communal synagogues, as at Cologne, they could possibly have been connected with synagogues located within private houses. Such private synagogues could have been for communal use, but a 13th-century *takkanot*[10] laid down that 'if one lends (a room for use as) a synagogue ... he may not forbid its use to any person unless he forbids it to all others' (Finkelstein 1924, 130). In fact many medieval synagogues may have started as private facilities, and over time become communal. At Eppingen the cellar *mikveh* served the 15th- or 16th-century synagogue above (Hahn 1987).[11] At Rothenburg-ob-der-Tauber the *mikveh* is under a private house and is close in design to the two found in London, but it is interpreted as serving a nearby synagogue as there is external access to the cellar where the *mikveh* was found (Kunzl 1988, 192–4). The most recent discovery of a cellar *mikveh* in Germany was at the Postplatz of Sondershausen, Thuringia, during 1998–99. It was constructed in *c.*1300 and consists of a small stone-lined bath entered by an L-shaped flight of six stone steps (Nicol 2001, fig 1).

The survey of Jewish Built Heritage in the United Kingdom and Ireland found that although there are several historic *mikva'ot* in the provinces and one in Ireland, no pre-War *mikva'ot* have survived in London (Kadish 2001, 16). Thus the discovery of two medieval examples in the capital is all the more remarkable. To serve the needs of West London's Orthodox Jewish community a new *mikveh* was being built at Naima Jewish Preparatory school at about the same time that the Milk Street *mikveh* was being excavated, demonstrating that the *mikveh* still plays an important role in contemporary Jewish life.[12]

NOTES

[1] See *mikva'ot* (ritual baths) sixth tractate in the order of *Tohorot* (Purities) in the *Mishnah*, chapters 1–10.

[2] Henry succeeded his father at the age of nine in 1216, and he did not take control of the government until 1227. Before Henry's personal rule began his government pursued a supportive policy towards the Jews.

[3] It is possible that the Jewish community might be identified archaeologically by food waste due to their dietary regulations. The absence of eel, pig bones, and shell fish would be expected as these species are considered unclean, see dietary laws in *Encyclopaedia Judaica* 6, 26–39. This approach has worked in post-medieval Amsterdam, see Ijzereef 1989, but it is unlikely to be successful in medieval London due to the mixed nature of Christian and Jewish settlement.

[4] Its site is now occupied by the old Public Record Office. Part of the 13th-century chancel arch has been re-erected in the south-east range of the PRO. For a description of the chapel's architecture see the 57th *Report of the Deputy Keeper of Public Records Appendix – the Rolls Chapel* (1896), 19–47.

[5] National grid ref TQ 3249 8131, site code GDH85.

[6] Unpublished Museum of London Archive Report, GDH85, group 32; a final report on this site is being prepared as part of the Guildhall Yard post-excavation programme.

[7] National grid ref TQ 3237 8126, site code GHT00; summary forthcoming in 2002 'Excavation Roundup' in *London Archaeologist*.

[8] This is the minimum depth to provide a sufficient volume of water to have enabled an adult to completely immerse themselves by crouching down.

[9] The *Magna Scola* near the junction of Catte (Gresham) Street and Lothbury was built during the early 12th century. A synagogue was built during the 13th century by Cok son of Hagin the archpresbyter, at the rear of his Catte Street house, which occupied all the frontage between Old Jewry and Ironmonger Lane. In 1280 Aaron son of Vives gave a tenement on the south side Catte Street – between Ironmonger Lane and Milk Street – to the London community as the site of a new synagogue (Hillaby 1992, 100–2, 141–2, 149–50; *idem* 1993, 189–91, 195–7; *idem* 1994, 12). A synagogue to the north of Catte Street, off Basinghall Street, close to the Guildhall had by 1232 been closed by Henry III and converted into a chapel

of St Mary (*LR* 1916, 199; Stow 1908, I, 277–7, 286). Stow refers to a synagogue on the north side of 'Bradstrete' (now Threadneedle Street), which Henry III closed and gave to the master and brethren of the hospital of St Anthony of Vienne (Stow 1908, I, 280, 283; *CR* V 142; *CR* VI 1249, 202). Stow's claim (1908, I, 284) that St Stephen's, Coleman Street 'was sometime a synagogue' cannot be substantiated. Mention is made in 1181 of *'ecclesia sancti Stephani in Coleamanestrate'* (Gibbs 1939, 232, 239), its graveyard in 1228 (*ChR* 1903, 70–1), and St Stephen Coleman in 1276 (*AD* 1890 A, 214). In Pope Nicholas' Taxation of 1291 it is 'St Stephen in the Jewry' (Astle *et al* 1802).

[10] At this time the communal ordinance of a rabbinic synod.

[11] To avoid confusion the German *(mikwe)* for *mikveh* is not used in this text.

[12] *The Mikveh in Our Community*, 2001.

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MAUD DE ROTHING *c.* 1290–1355: A WOMAN OF MEANS AND WAYS

Jack Williams

SUMMARY

The story of Maud de Rothing forms an important part of the story of the family of her eventual husband, Augustine le Waleys of Uxbridge, and herself. Their adult life covered most of the first half of the troubled 14th century, whilst that of the two following generations spanned the remaining half of that century. No family archive has been discovered, but collectively they spent a good deal of their existence in the public domain and hence in the public records. Unusually, wills exist for the critical players, with the unfortunate exception of Augustine himself. Augustine led a very careful professional life, having served the Crown for well over thirty years without major mishap. He consequently appears as a somewhat colourless individual. Maud, on the other hand, seems to have used and tested the legal limits of what was possible at that juncture for a London woman who had both some independent means and determination. The consequences of some of her activities rumbled on for nearly a decade after her death, affecting the lives of her sons-in-law, two of her grandsons, and possibly also the initiation of the Prerogative of Canterbury. One son-in-law was John Malewayn, a merchant-financier of the City of London, second only in importance to the de la Pole brothers. One grandson, John Turk, was a cleric and was for a brief period Vice-Chancellor of Oxford University and died a canon of Salisbury Cathedral. A second, Robert Turk, was a City merchant who became additionally a landowner, a shire knight, member of parliament for Essex, and a benefactor of a Cambridge college. Maud's history is in no way overshadowed by theirs.

HER LIFE

The history of Maud de Rothing is written mainly in legal records dealing with the acquisition and disposal of property.[1] Maud's first appearance in these records in 1304 details the transfer to her of property in St Nicholas Shambles, London; her last appearance in legal records in 1362, seven years after her death, is concerned with the final distribution of her properties in London. The time intervening she spent in accumulating a considerable holding of property jointly with her second partner and husband Augustine le Waleys and, after his death, in attempting to dispose of it as she saw fit.

She was twice 'widowed', but differs from the London widows described by Hanawalt and Barron,[2] as she spent only about two years of her long life as a legal widow. She also differed from these other widows in not having married into the nobility or trade but having taken partners who came to hold reasonably senior appointments in the service of the Crown. The absence of any archive of family documents means that any portrait of her must come primarily from the shadow-play provided by legal activities, and hence, at best, take the form of a silhouette in slight relief. Nonetheless she seems to have been a determined lady who took full advantage of the opportunities available to her. Her family tree up to the time of her death is given in Fig 1.

Maud was born about 1290. Little definite is known about her origins, other than that her father was Henry de Rothing of Saint Margaret Rothing (Roding Saint Margaret, Essex). There is no evidence that she was married to John de Shaddeworth (Chaddeworth), a servant of the Crown, by whom she had a daughter, Idonea, prior to his death in 1313. The earliest date at which she is recorded as the wife of Augustine le Waleys, another Crown servant, is 1320, when

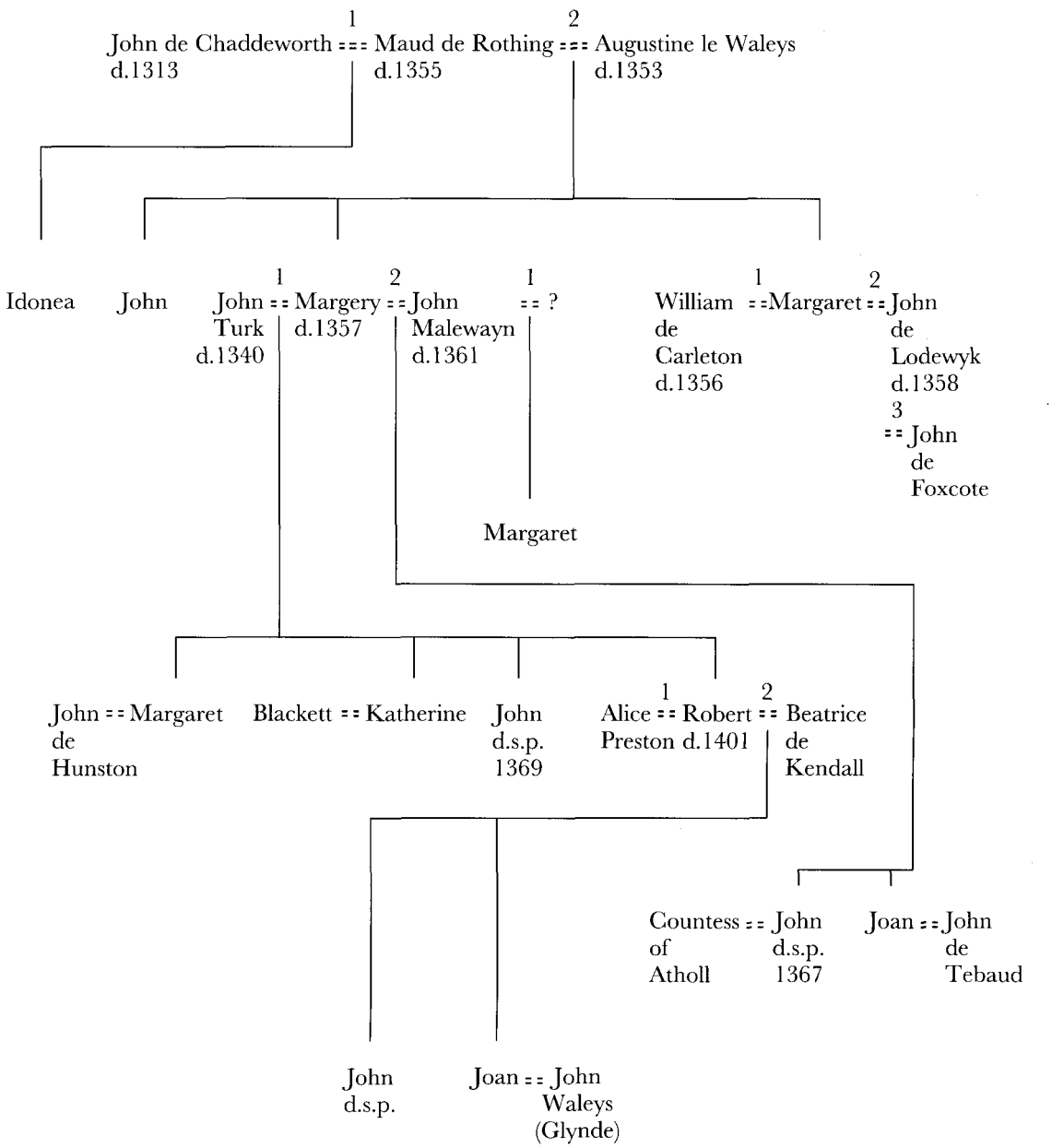

Fig 1. Family tree of Maud de Rothing

she would have been about thirty years of age. By this time she had borne an illegitimate son, John, of whom Augustine was most likely to have been the father. Over the next four years she bore him two daughters, Margery and Margaret, who were his legitimate heirs. Their marriage of thirty-three years ended with Augustine's death in 1353.

By 1313 Maud had acquired property in her own right in five parishes, either inside or just outside the City. Between 1313 and 1320 she and Augustine jointly, but as named individuals, had augmented her original holdings in the areas of St Bride's and St Katherine Alegate (St Katherine Cree, Aldgate) within the City. They had also jointly, again as named individuals, been enfeoffed of the manor of Latton Merk (Markshall in the parish of Latton, Harlow,

Essex), with reversion to Augustine's heirs. After 1320 they continued to acquire property jointly, but now as man and wife, both in the City of London and in the surrounding counties. At the time of Augustine's death they held jointly properties in five counties, in six parishes in the City, and in one parish in the suburbs.

In her widowhood Maud held Latton Merk by right of joint ownership. She attempted, unsuccessfully, to divert descent of two of the other holdings, one in Suffolk and the other in Kent, to her illegitimate son John. She did, however, retain some dower rights in the manor of Brandestonhall in Great Waldingfield, Suffolk. She also retained all the properties in or near the City, with the possible exception of the family home in St Andrew's (St Andrew Undershaft), Cornhill, which had to be partitioned between her two daughters as the proper heirs of Augustine. Even here she retained a foothold, probably by right of freebench, for she died there in 1355. She also inherited the proceeds of some sizeable debts of money owed to Augustine.

Maud left two testaments, one enrolled at Canterbury and the other, a year later, in London. They differed in form very slightly, but probably not significantly. Proving of the Canterbury testament caused controversy between Canterbury and London over prerogative rights of probate. It also lead to a threat of excommunication of one of her sons-in-law, John Malewayn, for retaining documents pertinent to probate. However these problems were resolved within a year, whereas the consequences of implementing her will dragged on for another seven years.

Her testaments were simple to the point of being bleak. The only personal bequest was to Holy Trinity, Christchurch, where she wished to be buried alongside Augustine. Her 'mobilia et immobilia' she willed to good causes without specifying them. Of the properties she held at the time of her death, most of which she was entitled to devise as she wished, she said nothing. Surprisingly she chose not to remember her son John, despite her efforts of two years earlier to provide for him. This lack of instructions did not deter one of her executors, John of Arderne, prior of the Augustine friars in London, from acting unilaterally in devising all the London properties to the king who promptly turned them over to funding the new house of the nuns of Dartford that he was in process of setting up. It was not until 1363 that the illegality of these devisings was established and the dispute between the family and the Crown resolved when a court settlement between the family and the prioress of the nuns of Dartford was reached. The legal basis for this settlement is not fully transparent.

Thus Maud seems to have been a woman worthy of remark. By 1320, the first recorded date at which she was described as a married woman, she had had children by two different men of some status and also held quite a lot of property, as of right, in her maiden name. The practice of holding property jointly with Augustine she extended throughout their long married life. She probably took the initiative in this matter, for whilst Augustine was clearly relatively successful in his long career as a servant of the Crown, he seems to have achieved this by being careful, keeping a low profile, and providing no obvious evidence of controversial initiatives. Maud seems to have been determined to provide for herself financially from an early age. She succeeded in doing so to the extent that she still controlled nearly the maximum fraction of the property holdings amassed by herself and Augustine that was feasible within the law. Whether her will was written with deliberate malice in mind, whether it was written by an elderly woman *in extremis*, or whether it was the result of external pressures has not been established. Whatever the driving force, the outcome provided lively proceedings for the family and a number of other groups of people over the next eight years.

The portrait of Maud de Rothing that emerges from the documentation examined shows little detail or depth. Nonetheless certain aspects of her personality come through. That portion of the records that relates to her during her lifetime demonstrates the considerable freedom available to a female citizen of London to accumulate property which was hers to dispose of. Whether Maud explored these legal limits herself or persuaded others to do it for her, the outcome shows that she was very successful in establishing considerable holdings of property for herself. To do this she must have been an intelligent and knowledgeable individual with a strong personality. The records of what happened after her death demonstrate not only the vulnerability to fraud of an inadequately defined testament, but also the ability of the customs of the City to correct the resultant wrong at least partially and to prevail even in the teeth of Crown interest. She led a colourful legal life, some of which

colour, knowingly or otherwise, she ensured would last well after her death.

The limited details of her personal life and the greater volume of information on her property acquisitions are set out chronologically in the next three sections. This is followed by an account of the settlement of her estate after her death, which is then discussed in the context of her likely relationships with her family and third parties.

ORIGINS AND FIRST RELATIONSHIP

In a deed of 1304,[3] and in one of 1308[4] Maud de Rothinge is identified as being the daughter of the late (*quondam*) Henry de Rothing. In a subsequent deed[5] she is further described as being of Rothing St Margaret of Essex. Henry de Rothing has not been identified. In the records of London property deeds he appears only as the father of Maud de Rothing. A Henry de Rothing died in 1301 holding lands in Norfolk having as heir his son Alexander, but there is no evidence of him having any connections with Rothing St Margaret or with London. The tenant-in-chief in the former venue had been a branch of the Merk family, but Merkshall in St Margaret Rothing in the Hundred of Ongar had been in the hands of the Spigurnel family for some time. But Henry Spigurnel of that family died in 1327, and so could not have been the Henry mentioned in the London deeds.

It has been asserted[6] that Maud was the sister of Richard de Rothing who had been apprenticed to Thomas de Rothing, who had held land in Rothing St Margaret.[7] There was an indirect connection between Maud and Richard, for the latter was admitted to the freedom of the City of London in 1311, without payment, at the instance of Sir John de Sandale by announcement of John de Shaddeworth (Maud's first husband), clerk to Sandale.[8] In 1341, Richard de Rothing prosecuted the execution of a recognisance of debt for Margery, the elder daughter of Maud by her second husband, Augustine le Waleys.[9] A Richard de Rothing was a witness to the acquisitions of property in London involving Maud and others in 1320, 1337, and 1343.[10] There is thus some tenuous evidence for an association between Maud and Richard, but direct evidence of kinship has not been found.

There is no evidence for the marriage of Maud to John de Shaddeworth.[11] The latter was a senior officer of the Exchequer by the time of his death in 1313.[12] His will, proved on 11 November 1313, left land and houses in the parish of St Katherine near Alegate to Maud de Rothing and his daughter Idonea.[13] In a property deed of 1318, tenements in the same parish are passed by a tailor and his wife to Augustine le Waleys and Maud de Rothing and Idonea, daughter of the said Maud.[14] John de Shaddeworth had acted for Maud as early as 8 December 1310, when at his instance the mayor pardoned the fee due on a bond of eight marks in her favour.[15] There is no mention of John de Shaddeworth on any of the five property deeds involving Maud dated between 1304 and 1312, the year before his death. As a single woman, she could have held property in her own name; but as a married woman, her husband would have had automatic right to her property and therefore would presumably have been mentioned on the last deed of 1312 which involved Maud tranferring property to another party. This implies that she was married to Shaddeworth no earlier than 1312, if at all. Thus, being a single woman in 1304, for valid acquisition of property the latest she could have been born was sixteen years earlier *viz* 1288.

In 1304 land and houses in St Andrew Hubbard, East Cheap, were transferred to her by John de la Barre, clerk.[16] A year later the executors of Hugh de Bedeforth gave her the quitrent for shops in St Nicholas Shambles (Fig 2).[17] In 1308 she acquired a house in Spoonlane, St Michael, Queenshithe, from Adam Laurenz of Corfe, Dorset, and Maud de Chedzey his wife.[18] In 1312, Maud de Rothing transferred this house to Cecilia Ripoun, daughter of Stephen Raskel.[19] Deeds to be found in the archives of the Dean and Chapter of St Paul's show that Maud also held property in the parish of St Bride's in her own right.[20] This property might be the same as that transferred to her by John de Wynton and his wife Maud in 1312.[21] She may also have held other property in Essex, as will be seen later, but even at the level of her holdings in London she was a well-to-do 'widow' of twenty-five by the close of 1313. In 1317 she was granted a portion of shops in Fleet Street by Adam de Garboldesham and Cristine his wife.[22]

PARTNER AND WIFE OF AUGUSTINE LE WALEYS OF UXBRIDGE

Like John de Shaddeworth, Augustine le Waleys of Uxbridge was a king's clerk but of a status

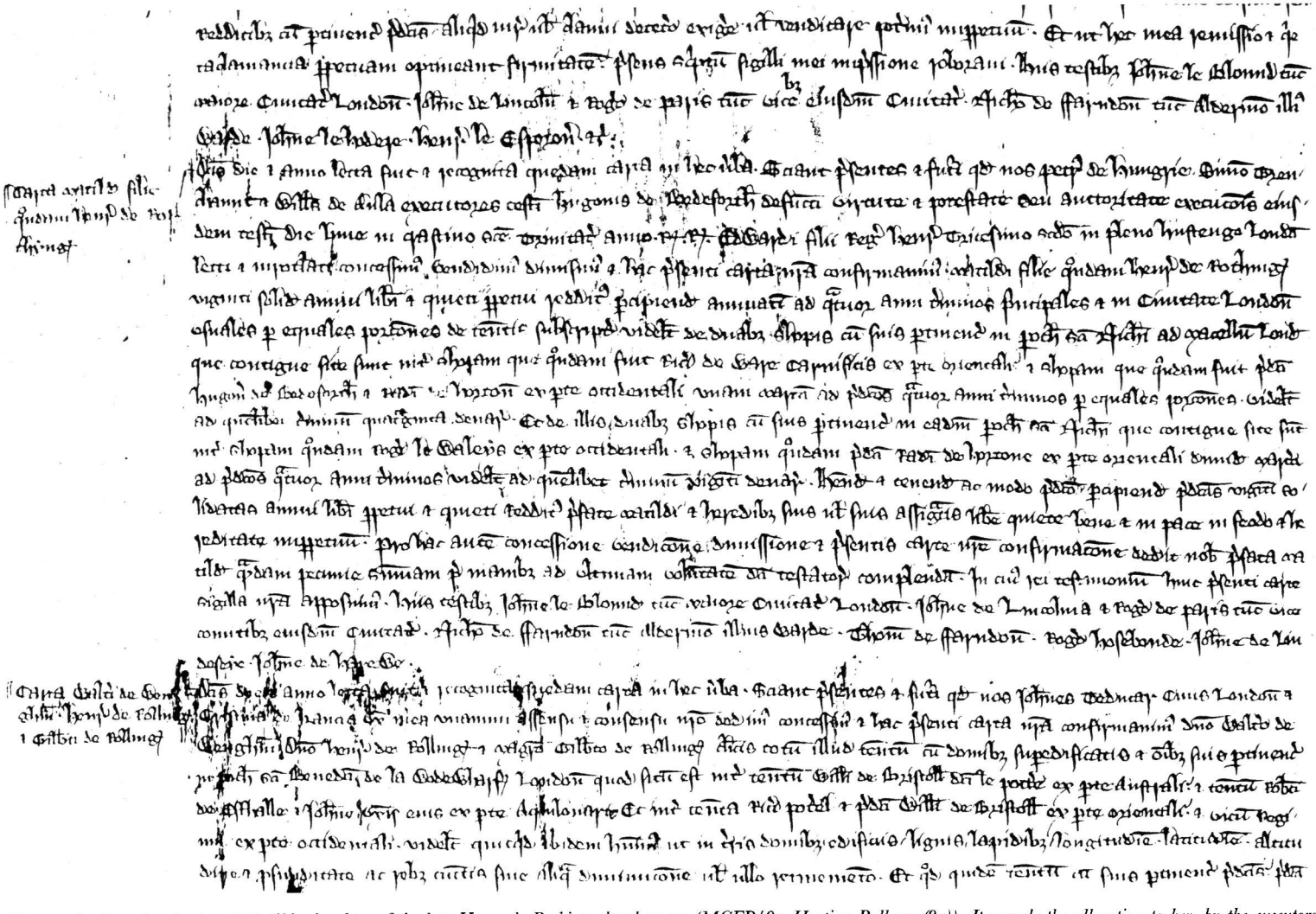

Fig 2. Section of a charter of Matilda daughter of the late Henry de Rothing, dated 1305 (MCFP/81 Husting Roll 33.(87)). It records the allocation to her, by the executors of Hugh de Bedeforth, of a quitrent of 20s per annum, payable quarterly, for two shops in the parish of St Nicholas Shambles. (Corporation of London Record Office)

much junior to that of Shaddeworth at the time of the latter's death. His first known appointment was as clerk to Justice William de Bereford in 1314.[23] He would therefore have been of an age with Maud. The earliest date at which Maud and Augustine are referred to as man and wife is in 1320.[24] Their relationship probably started earlier than this. The inquisition following Augustine's death in 1353 gives two daughters as his heirs, but in that portion relating to Brandeston Hall in Suffolk reference is made to '... John Waleys, son of Maud Waleys, a bastard ...'.[25] Shaddeworth could possibly have been the posthumous father, but it seems unlikely that Augustine would have given his surname to John and not to his elder sister Idonea. A simpler explanation, admittedly not necessarily the correct one, would be that John was Augustine's son, born outside wedlock, and therefore illegitimate in common law despite the subsequent marriage of his parents.[26] Of their two daughters, Margery was probably born in 1322, and Margaret two years later,[27] although Maud's inquisition post mortem (inquiry into succession of property held of the Crown) places their births three years later.[28] Idonea was still alive in 1318.[29]

Augustine held some property in his own right before his association with Maud. A commission of oyer and terminer (which made inquiry into more devious offences) was issued on 20 January 1315 in respect of a complaint by Augustine of Uxbridge that his close at Stepney had been entered by named individuals, who had broken his house, driven off his cattle, and taken his goods.[30] The outcome of the action is not recorded. No firm evidence on how Augustine got this property nor on how it descended has been found.

Description of Augustine by the toponym 'Uxbridge' was common at this time, so it may be assumed that he held property there as well as in Stepney before his marriage. Uxbridge was a market town lying in the manor of Colham, but was held of the honor of Wallingford by a succession of tenants in chief. At his death Augustine held four messuages in Uxbridge and two acres of land in Colham of Nicholas de Canteloupe; ten acres of land in Uxbridge of John de Charleton; and fifty acres of land in Harefield of Simon de Swanland.[31] Some of these holdings were acquired after his marriage to Maud, *viz* land in Denham (presumably Harefield) and premises in Colham in 1329,[32] premises in Uxbridge in 1351,[33] and land in Colham in 1352.[34] The latter two were held jointly with Maud, but all the properties were held in demesne as of fee. It seems likely that his inherited holdings were no more than a modest three messuages. He had a small holding in Walworth, a messuage and twenty acres of land. This was held as of fee, of the prior of Christ Church, Canterbury, for a rent of 6s 8d yearly and some ploughing service. When this was acquired has not been traced. Some of the Kentish estates may also have been in Augustine's possession before his partnership with Maud.

Thus the property held by Augustine at the start of his relationship with Maud was not obviously greater in amount or value than that held by her, and lay outside the City of London.

PROPERTIES ACQUIRED BY MAUD AND AUGUSTINE JOINTLY, OR AS MAN AND WIFE

The property they acquired after their association is considered conveniently as that held in the Shires and that held in the City of London at the time of their deaths. For the sake of completeness, the history of those properties held in London by Maud as of her own right, and already mentioned, will be included in the section dealing with property in the City.

Properties in the Shires held jointly

Latton Merk (Markshall), Essex

On 4 January 1317 the king issued a licence for the enfeoffment by Elias, son of John, of Colchester and Juliana his wife of Augustine of Uxbridge, king's clerk, Maud de Rothinges,[35] and the heirs of the said Augustine of their manor of Latton Merk, Essex, and the advowson of the priory of Latton held in chief of the honor of Boulogne, which was in the king's hands.[36] The manor was part of the dower portion which fell to Juliana on the death of her husband Henry de Merk in 1270.[37] Juliana next married John de Charteney, by whom she had a son, and finally Elias of Colchester. By 1317 the tenant in chief, Thomas de Merk, had died leaving an underage son, who was in the king's hands. On 21 March 1317, Juliana's son John de Chartneys released his right in the manor to Augustine and

Maud.[38] By four days later Augustine had paid homage to the king for the property.[39]

Three associated fines, all at the same time and place, record the final process of transfer of Latton Merk to Augustine le Waleys and Maud de Rothing in the Easter term 1317.[40] The first fine transfers a sizeable portion of lands and property in Belchamp Canonicorum (Beauchamp St Paul) from Augustine and Maud to Elias and Juliana; the second transfers a comparable portion to Elias and Juliana from Augustine alone. In both case a purely nominal charge was made, and reversion on the death of Juliana was to the deforciants (the sellers) and then to the heirs of Augustine. The bulk of the land in these two manors was held by the Dean and Chapter of St Paul's, with about half as much held by John de Botetourte. The property transferred represented about half the sum of these latter two holdings. Elias and Juliana gave the manor and advowson of the priory to Augustine and Maud to hold of the king and his heirs with reversion to the heirs of Augustine for a consideration of 100 marks of silver. After the death of Juliana, in 1338 Augustine and Maud sold their rights in the holdings in Belchamp Canonicorum and Ovington to John and Katherine Dyer for 100 marks.[41] It is possible therefore that no money actually changed hands in the initial transaction. The separation of the holdings of land transferred to Elias and his wife into portions with differing deforciants suggests that Augustine probably held one portion initially and he and Maud then augmented it with a further joint purchase just before their joint acquisition of the manor. The penultimate act was played out in the Michaelmas term of 1324, when Thomas de Merk's son Ralph, having just come of age, released the manor to Augustine and Maud with reversion to the heirs of Augustine.[42] The final acts would however seem to have been a licence granted to Augustine and Maud in 1348 to settle the manor and advowson on themselves and their heirs[43] and also a licence for Augustine and Maud to enfeoff Robert atte Brome, clerk, of the manor of Latton and its priory, held in chief, and for him to regrant the same to them and their heirs, dated 20 October 1348.[44]

Brandeston Hall, Suffolk

Sir Roger Bavent II and his wife Hawisia granted the manor of Brandestonhall, with all other appurtenances in Great Waldingfeld, Lavenham, and Brent Eleigh, to Augustine le Waleys of Uxbridge, his heirs and assigns in fee simple, on 3 August 1337.[45] This grant was preceded on 21 July by an acknowledgement of a loan of £200 by Augustine to Roger, which acknowledgement was repeated ten days later.[46] This grant was the first in a succession of property transfers made by Bavent to people who had loaned him money. Eventually his financial predicament became so acute that he was rescued by the Crown to whom he surrendered all his considerable properties. The charter devising Brandestonhall to Augustine was inspected and confirmed on 12 May 1348.[47] Towards the middle of 1351 the control of the issues and profits of the Bavent estates was being directed towards support for the establishment of the Dominican House of the nuns of Dartford. This matter was also to involve the settlement of the estates of Augustine and Maud after their deaths.

The Kentish Estates

At his death, Augustine had holdings in Ridley, Welle (Well near Northfleet), and Orpington. They lay reasonably close to one another, all in the lathe of Sutton, but in the separate hundreds of Axstane, Rokesly, and Blackheath respectively. Their acquisition cannot be accurately dated and their assembly gives the impression of being opportunistic rather than contrived.

The manor of Ridley was released to Augustine alone together with other lands in Meopham and Essche (Ash near Wrotham) by Bartholomew de Watton on 24 August 1339.[48] Other lands held in dower by Sybil, widow of John de Watton, would also revert to Augustine. Another release of the same properties was made by John Savage to Augustine and Maud on 29 October 1345.[49] Why this was necessary is not clear. It did not appear to be a particularly lucrative possession. The inquisition post mortem of Augustine points out that after dower rights were extracted and the 100s due to Juliana de Leyborne, tenant in chief, were paid it was worth only 40s per annum.[50] Nonetheless Augustine contributed 27s out of a total of £48 16s 10½d for the hundred, to the undated fifteenth recorded in Rough's Register.[51]

Forty acres of land in Welle were held by Augustine of John de Rokesly, clerk, by service of gavelkind (form of land tenure by which land

was divided equally between a tenant's sons, mainly a Kentish system) and suit of his court at Lullingstone. For this he contributed 6s out of a total of a little more than £46 for the hundred to the fifteenth already mentioned. As will be seen later, the Rokesley family were a source of property in London to Augustine and Maud. When this holding was obtained is not known.

The property held in Orpington was known as Bucklers.[52] It was 20 acres in extent and was valued at 7s in the assessment for the fifteenth and was worth but 12s a year. When it was acquired from the prior of Christchurch, Canterbury, is not known, but Augustine had contacts with the cathedral between 1317 and 1321.

In summary, the lands in Kent were of secondary financial worth and may originally have been granted to Augustine alone, some possibly before their marriage.

Havering atte Bower

On 20 July, barely a year before Augustine's death, Queen Phillipa granted him, Maud his wife, and their heirs the lands of William de Dagenham that came to her as escheat. Confirming the grant on 18 October following, the king granted a further grace that after the death of the queen the lands should be held of the king and his heirs for ever.[53] Havering was a royal demesne and holdings there were highly prized. The holdings of the Dagenham family were probably first acquired by Thomas of that name who was bailiff of Havering around 1317. Thomas had been succeeded by his son William by 1321, when the latter transferred a large estate in Dagenham to John de Cockermouth, a king's clerk.[54] When John Molyns as steward of the queen's household was inquiring in 1352 into monies due to the queen from her holdings, the largest fine recommended was that for Dagenham's at £100, arising from some 420 acres of land. Adam de Colkirk seems likely to have been the tenant at the time.[55] The gift was obviously one of substance.

Miscellaneous

There were a number of properties which Augustine and Maud held that were transferred during their lifetimes. One of particular interest is that of 2 acres of land which they held in fee simple of Thomas le Bond in Tottenham and which they granted to Adam Fraunceys through the agency of Walter, vicar of Tottenham, in 1336.[56]

Properties in London

The inquisition post mortem on Augustine gave no indications of his holdings of property in London, though it is quite obvious from City records that he was resident there, was a citizen, and had been involved in a multiplicity of transactions concerning property. The inquisition post mortem for Maud shows that she held property in seven parishes within the City. The implication is that all the properties were held jointly and that on Augustine's death, under the law of the City, they passed automatically into Maud's hands. The acquisition of these seven sets of properties can be followed.

St Martin Ludgate and St Bride's (Figs 3–4)

The church of St Martin lies hard up against the City wall but the parish extends beyond the walls and, along Fleet Street, abuts the parish of St Bride. Mention has already been made of reference to holdings of Maud alone and of Maud and Augustine jointly in St Bride, associated with a tenement called 'Helle'.[57] It is probable that Maud's holdings were those specified in the charter of John de Wynton of 1312 as being four shops and tenements adjacent to a tenement called Helle.[58] Maud received a portion of shops in Fleet Street in 1317 from Adam de Garboldesham and his wife.[59] In the same year Augustine le Waleys and Maud de Rothing were given the quitrent of a tenement in the parish of St Bride by the executors of Hugh de Pourte.[60] Houses and shops in this parish were transferred to the executors of William de Chaddleshunt, a wealthy canon of St Paul's, in 1321 by Augustine le Waleys and Maud de Rothing.[61] In 1322 further property in the same parish was given to the Dean and Chapter of St Paul's by Augustine le Waleys and Maud his wife, for the maintenance of a chantry for the canon,[62] which chantry he shared with Piers Gaveston. As none of these latter holdings were mentioned in the settlement of Maud's estate, it seems reasonable to assume that they constituted

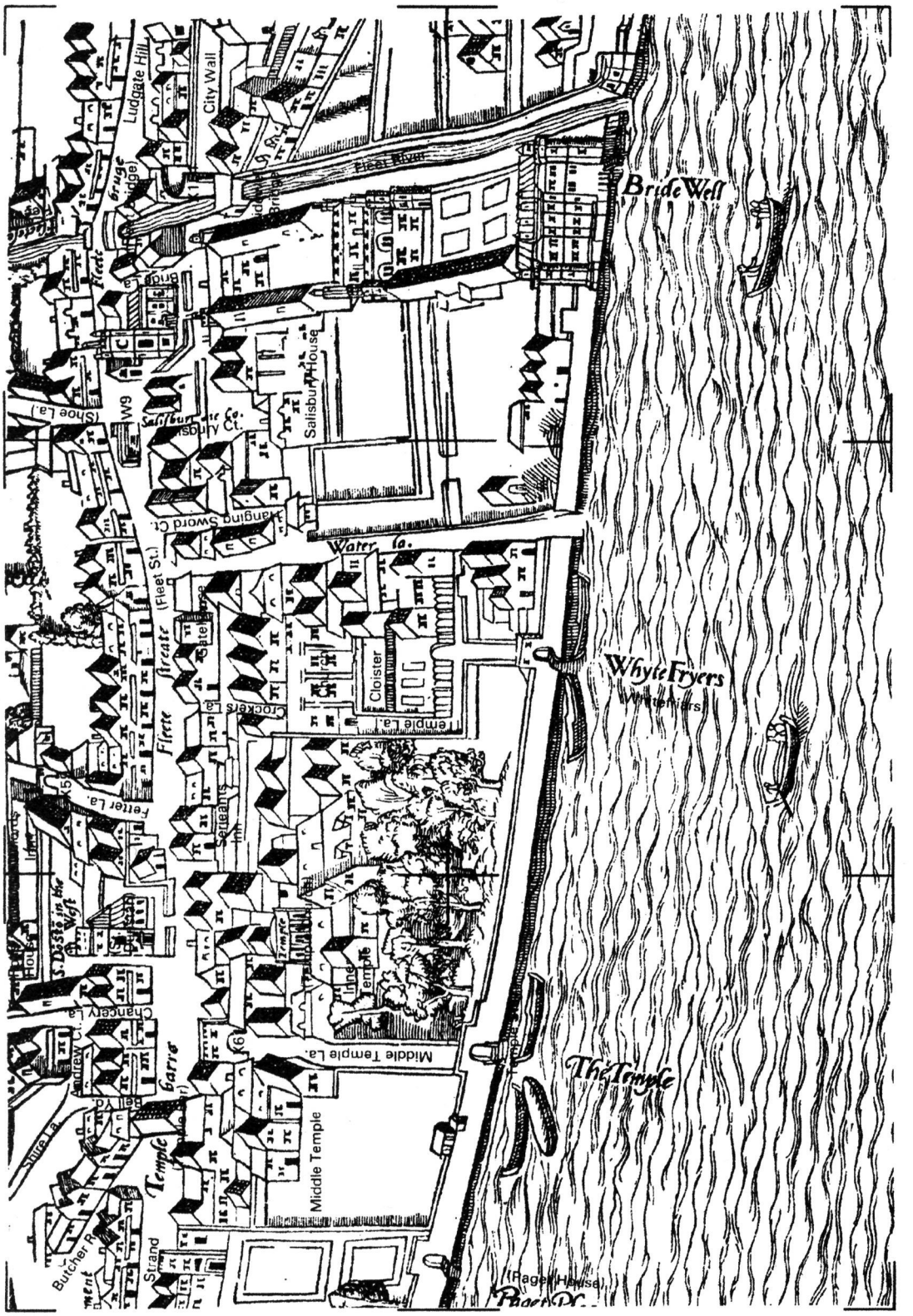

Fig 3. Ludgate area of the 'Agas' map taken from The A–Z of Elizabethan London *compiled by A Prockter and R Taylor. (Guildhall Library, Corporation of London)*

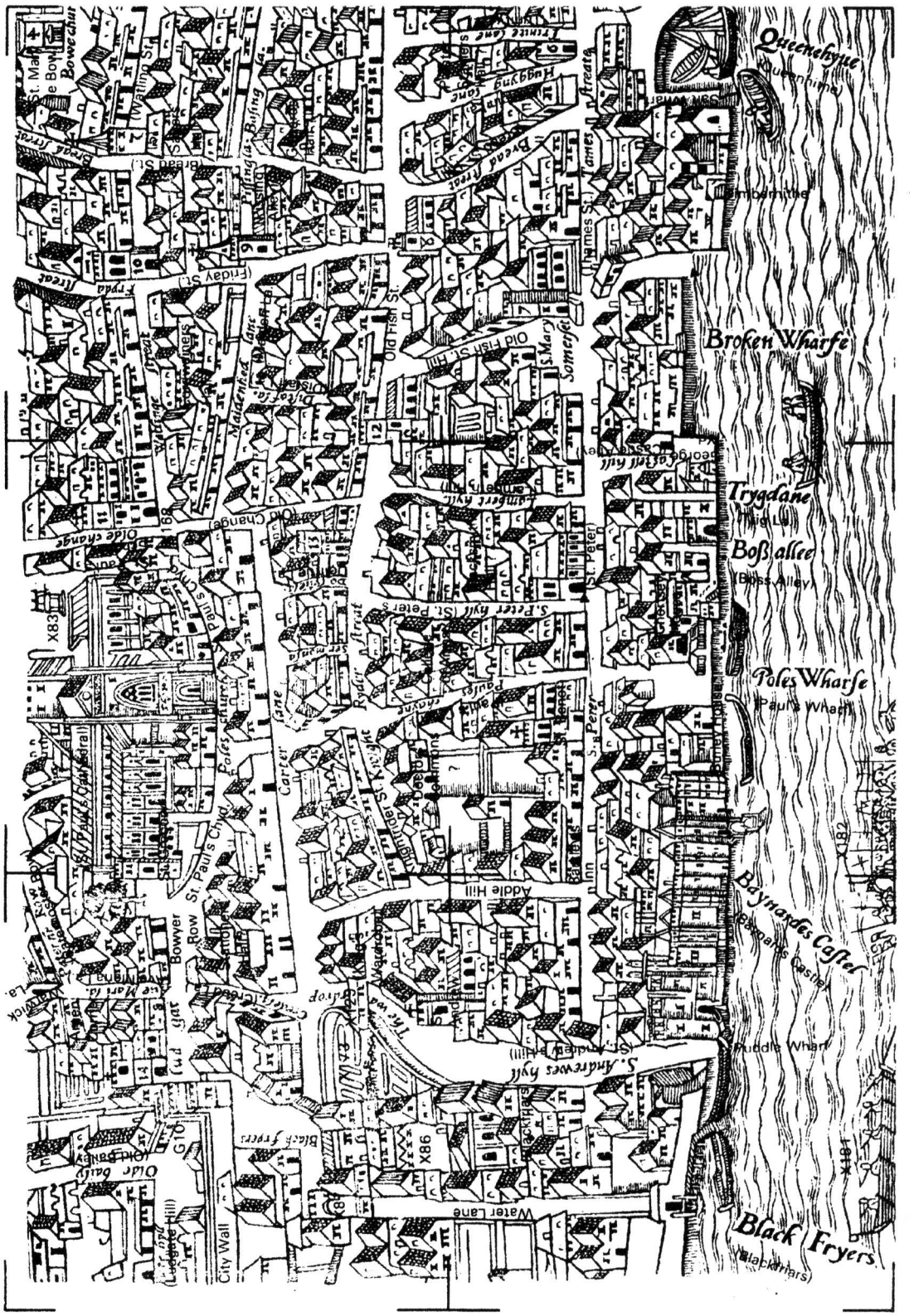

Fig 4. Ludgate area of the 'Agas' map taken from The A–Z of Elizabethan London *compiled by A Prockter and R Taylor. (Guildhall Library, Corporation of London)*

credits and debits in the balance of holdings which cancelled each other out. The nature of the relationship between Chaddleshunt and the Waleys has not been resolved, but it may be recalled that the means whereby the latter obtained their holdings in Beauchamp St Paul and Ovington, manors held largely by the Dean and Chapter of St Paul's, was not resolved either.

These holdings in St Martin Ludgate have also been mentioned because they feature in the description of the property still held there by Maud at the time of her death. In the final settlement of her will, this holding is described as a 'messuage and four shops in Fleet St., in the suburb of the said city in the parish of St Martin without Ludgate, lying between the highway to the north, the city wall to the south, tenements of the Hospital of St Mary Bishopgate to the east, and to the west a tenement called Helle pertaining to a chantry in the church of St Paul'.[63] This implies that the holding in Ludgate was hard up against the boundary between the two parishes and also that for a period the Waleys had held a sizeable block of property along the southern side of Fleet Street just outside Ludgate and to the east of the Fleet. Whether this property in the parish of St Martin equates to all or part of that obtained in 1317, and listed in the previous paragraph, has not been determined. It was worth 40s yearly, less 9s quitrent to the prior of St John of Clerkenwell. In a perambulation by the mayor and aldermen without Ludgate on 8 August 1352 Augustine was found to have encroached on common land against the Fleet and built himself a lodge for which he had to pay 6d per annum.[64]

St Katherine, Alegate (Fig 5)

At her death, Maud held a messuage and seven shops in this parish for which a quitrent of 46s was due to the prior and convent of Christchurch (Holy Trinity, Aldgate). The history of this holding is documented in the cartulary of this latter institution. It resulted from the consolidation of two adjoining properties.

The older of the two initial grants by Christchurch was made to the Joie family in the first half of the 13th century. It descended through this family until the end of the century when it came into the hands of Simon Orfeur.[65] It then passed to Augustine, though how and at what date is debatable. Augustine and Maud lost an action against the prior in the Hustings in 1334 for non-payment of the established rent of 6s.[66] In the plea the tenement is stated to be held 'in the right of Maud', which suggests that this was the property left to her and Idonea by John de Shaddeworth in 1313,[67] and quitclaimed to Maud de Rothing and Idonea together with Augustine by Edmund, tailor, in 1318.[68] This supposition conflicts with an associated statement in the cartulary that rent was paid for this property by Augustine in 1 Ed. II as well as 8 Ed. III.[69]

The major block of property, which abutted the holding of Katherine Joie to the west, was granted to William de Southfolk in 1274 for a rent of 40s.[70] It was divided into two portions for which the abbot of Shepperton paid 31s 6d and Christine daughter of William paid 8s 6d. The latter granted her portion to John de la Marche, potter,[71] who in 1316 conveyed a house in St Katherine Alegate to Augustine le Waleys and Maud de Rothing.[72] This could well have been the same tenement quitclaimed to them by Nicholas de Reding, cordwainer, a little later in the same year.[73] By 1326 Augustine had acquired the tenement of the abbot of Shepperton for which he was paying 40s rent. In August of the same year he was attached for an inquest into the death of a neighbour, John de la Marche.[74]

Together the tenements stretched for 41 ells (*c.*154ft) along the north side of Alegatestreet (Aldgate Street) and a little more in depth up to the land of the priory. It abutted the priory garden on the west. This represented more than half the southern frontage presented by Christchurch on Alegatestreet.

St Andrew atte Knappe (St Andrew Undershaft), Cornhill (Fig 5)

Maud continued to live in the messuage, mentioned in her inquisition, in this parish after Augustine's death, so presumably it had become their main residence by this time. It was defined as having been purchased from William de Salopia and his wife Ellen[75] and worth 80s yearly less 5s rent to the prior of Bermondsey annually and 4s also annually to the church of St Andrew. The transfer which took place to Augustine le Waleys, Maud, and the heirs of Augustine in 1333 is recorded as being of houses and land.[76] William had only received them from John de Hadham earlier in the year.[77] The Waleys would seem to have been in residence by 1338, for on

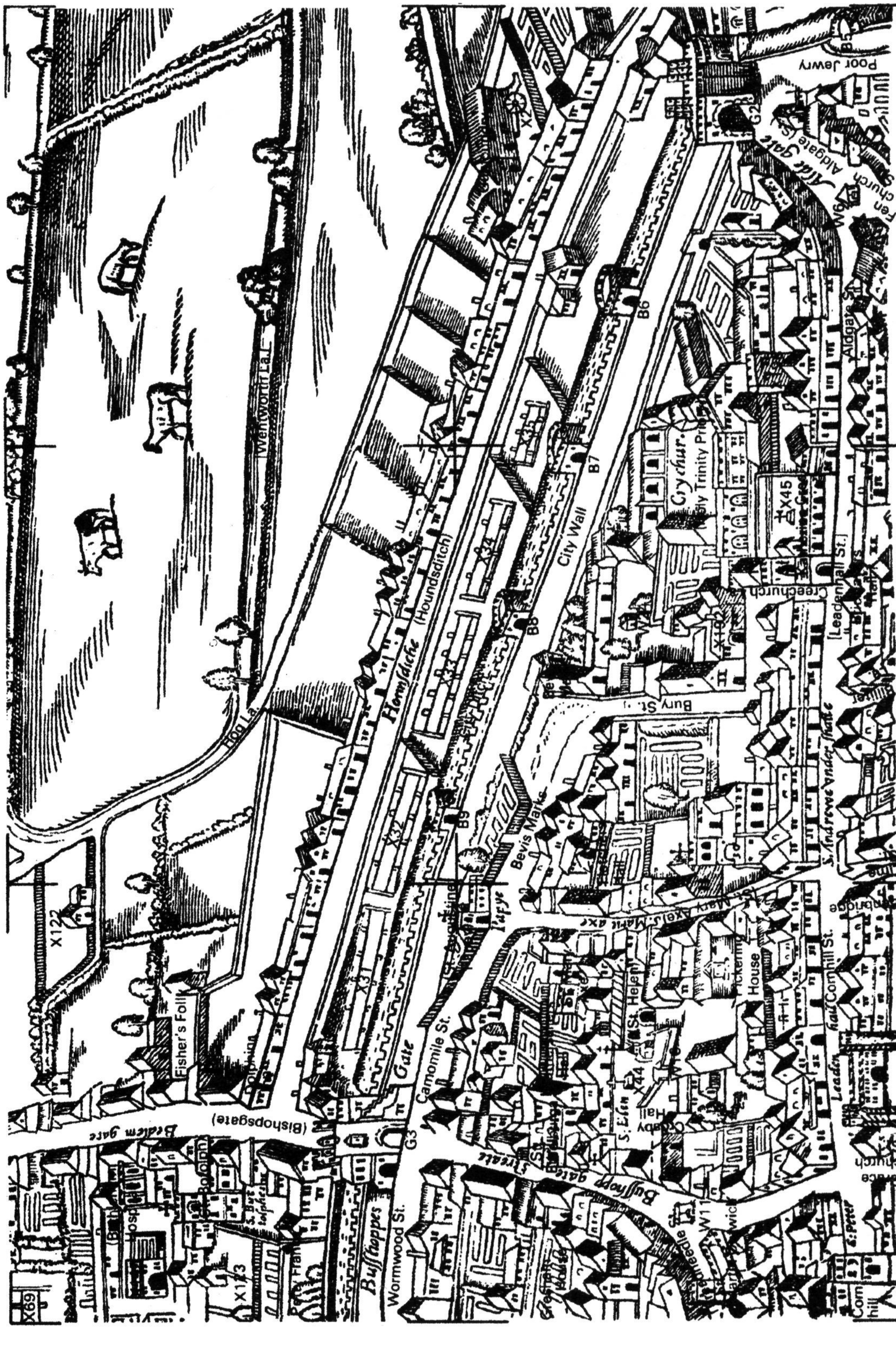

Fig 5. Alegate area of the 'Agas' map taken from The A–Z of Elizabethan London *compiled by A Prockter and R Taylor. (Guildhall Library, Corporation of London)*

17 July that year they complained via the assize of nuisance that their neighbours, Joan widow of Robert de Alegate and John de Northburgh in one dwelling, together with John de Hadham in another, had breached City ordinances relating to the placement and glazing of windows overlooking the Waleys' property.[78]

During the 1340s their property holdings in this parish were steadily augmented. In 1343 they acquired from the executors of Walter de Chelmsford, who had died in 1339, his tenement held of the prior of Holy Trinity for 5s yearly. By this time a cleric, Robert atte Brome, had become a partner in their acquisitions.[79] Robert was sometimes described as rector of Henley and sometimes as a cleric of Rotherhithe and together with Walter de Anemere had been nominated as his attorney by Augustine on 24 June 1338, before he went overseas with the king.[80] Robert figured in all the subsequent property transactions of Augustine and Maud, as did their heirs and assigns. Two years later the consortium acquired another small portion of adjoining property in this parish from John de Horwood, worth 3s 4d in rent to Holy Trinity. The final tenement in this block of property, which had originally been held by Thomas de la Marche in 1325,[81] was obtained at some unspecified time.[82] The total worth of the rent to Holy Trinity was 14s 10d.

In 1346 they obtained a tenement from the executors of John Stignere (Skinner?) together with the reversion of rents in the same parish.[83] The same year they jointly transferred a tenement on Cornhill to Thomas de Alford and his wife Cecilia. Two years later they jointly received the quitclaim of messuages in the parish from Thomas son of Robert de Alegate, presumably on the death of his mother Joan. The final acquisition was in 1351, a brewhouse and shops from Thomas de Baldesworth, goldsmith, and his wife Maud. In all of these cases the heirs of Augustine, Maud, and Robert atte Brome were specified.

How the properties obtained after 1340 were legally divided between the Waleys and Robert atte Brome is unclear, but the holdings of the former were consistently given subsequently as a messuage and eight shops, the messuage being unambiguously identified as that obtained before Brome came upon the scene.

St Martin Orgar

The tenement on the northside of Thames Street opposite Ebbgate in the parish of St Martin Orgar is the only one of the properties not valued. Evidence on the origins of the purchase is a little confused. The final settlement of the estate in 1363[84] attributes the purchase to Augustine alone, the vendor being Gregory de Rokesly. Maud's inquisition post mortem says that the vendor was Roger de Rokesley the elder, the purchasers being Augustine and Maud with reversion to Augustine's heirs. It is clear that Joan de Rokesley quitclaimed a tenement in the parish to them, their heirs and assigns in 1337.[85] In the absence of a record of the initial property transfer, resolution of the nature of the legal descent is not possible. The Waleys took an interest in the property as is evinced in an assize of nuisance brought by them in 1339 against their neighbours, relating to window height and drainage gutters.[86]

St Magnus the Martyr

These holdings constituted a messuage and a shop at Oystergate worth 40s yearly, less 9s quitrent, to Hugh le Blount. They were situated on the corner of Bridge Street and Thames Street, less than a block away from the holding in St Martin Orgar. They were obtained from Roger and Joan de Rokesley in 1320 jointly by Augustine and Maud his wife, their heirs and assigns.[87] Joan quitclaimed a holding in this parish to them at the same time as her holding in St Martin Orgar.

St Dunstan's in the Tower

The provenance of the messuage and two shops in this parish, worth 30s a year, less 2s 6d quitrent for the work of London Bridge, has not been established. A messuage late of Henry Wymond is also mentioned in Maud's inquisition. By the time of settlement of her estates only one tenement is mentioned, lying between the tenements of Sir John de Monte Acuto and William Haunsard.

Other properties

In 1326 Maud and Augustine transferred property in the parish of St Stephen to Sir Thomas de Usefleet,[88] but no evidence has been found of the origins of this holding. Similar considerations

apply to the property in St Mildred's Poultry which they granted to John Deynes in 1347.[89]

WIDOW OF AUGUSTINE LE WALEYS

Augustine died on 24 or 25 July 1353. The escheator stated that Augustine held no lands in Hertfordshire. A writ to the escheator for Essex, John de Coggeshall, was issued on 24 August following.[90] An inquest held at Latton on 8 September found that Merkshall (Latton) had been held jointly by Augustine and Maud and their heirs by the gift of Robert de Bromme. Augustine's heirs were Margery and Margaret, his daughters, who were of full age. On 10 September of the same year Coggeshall was instructed not to intermeddle further with the manor or the advowson, restoring their issues to Maud as the king had taken her fealty. Writs were then issued to the escheators for Essex, Surrey, Middlesex, Kent, Suffolk, and to Adam Fraunceys, mayor of London, on 24 August 1354. The inquest held at Harlow on 15 November repeated the findings of the previous inquiry, but did not mention the joint holding with Maud. The new escheator for Essex, Hugh Fitzsymonds, apparently interpreted this literally, despite the previous ruling. On 1 December, he was ordered not to intermeddle with Maud's possession of manor and advowson.

The other escheators returned their findings for Suffolk on 20 October, Kent on 3 November, Middlesex on 13 November, and Surrey on 16 November. All these findings described the holdings, of whom they were held, for what services, and that the heirs were the two daughters already named. On 6 December writs of plenius certiorari (a prerogative writ directed from a higher to a lower court instructing them to pass the matter to the former for swifter action) were issued to the escheators of these latter shires, on the petition of Maud that she had been jointly enfeoffed with Augustine of the properties described. They were being held by the escheators on pretext of inquisitions and removal of the king's hand was requested. The new inquests not only reinforced the findings already made, but revealed attempts by Maud to manipulate the descents of the properties not only for her own benefit but also for that of her bastard son, John.

The inquisition for Suffolk was taken at Bildeston on 9 February 1355. It was found that Augustine made a charter to John Waleys on condition that he should enfeoff Augustine and Maud of the manor of Brandestonhall in Waldingfield, to hold to them and the heirs of Augustine. John, with the active connivance of his mother Maud, made a charter of feoffment to her and Augustine and their heirs to which Augustine did not consent. In fact Augustine entered into and took seisin of the manor, received the issues and profits of the manor and died seised of it. The tenants of the manor did not attorn (transfer their homage) to John or anyone other than Augustine. Margery and Margaret his daughters were his heirs.

A similar manipulation was attempted for the manor of Ridley in Kent. The inquisition taken at Dartford on 1 February 1355 revealed Robert atte Brome in the role previously taken by John Waleys. Augustine did not consent to the revision proposed, and died seised of the manor, which was held of Juliana, Countess of Huntingdon.

The inquisitions for Surrey, taken at Walworth on 11 February, and for Middlesex, taken on 27 January, reiterated the previous findings and gave no basis for Maud's complaints.

On 20 February following, the keeping of all the lands in Kent, Surrey, Middlesex, and Suffolk which Augustine had held in chief was committed to John Malewayn. The latter was to hold them as long as they remained in the king's hands, answering to the Exchequer for their issues and profits.[91] This writ was not implemented because it was surrendered for reasons not given, probably because of Maud's death on 15 April. A great deal happened between May and September, the least disruptive of which was the instruction to the escheators of Kent, Middlesex, Surrey, and Suffolk on 20 May to release the holdings of Augustine to his proper heirs. Complicated as matters had been, they became very much more so, not least as a result of the provisions of Maud's wills.

No mention was made in any of the inquisitions of the property in Stepney.

THE SETTLEMENT OF MAUD'S ESTATE

Maud died on 15 April 1355 and the writ for her inquisition was issued to the escheators for Essex, Surrey, Middlesex, Kent, Suffolk, and London on the following day.[92] Following the settlements of Augustine's estates just described,

Maud held of her own right the manor in Essex, their tenements in the City of London, and probably some dower rights to goods and chattels in Brandestonhall, as will be seen later.

Latton Merk

The inquisition for Essex was held at Harlow on 3 May. The finding was that her heirs for the manor of Latton Merk and the advowson of the priory were her two daughters. On 8 May the escheator for Essex was ordered to prepare a partition of the manor of Latton between Margery and Margaret, but homage of their husbands was to be respited until the following Michaelmas 'by reason of them having offspring by their wives'. Final settlement of this partition was much delayed for other reasons, some of which will be described later. Partition of the manor was made at Latton on 10 September 1355 in the presence of William Doverton, clerk, attorney of John Malewayn and Margery his wife. William de Carlton and Margaret his wife were warned to be present, but did not wish to attend. The reason for non-attendance is not given but shortly afterwards, 6 October, William, together with John de Ardern, was given protection by the king under cover of the secret seal, whilst in pursuit of 'some secret business lying near his heart'.[93] Margaret's half share was retained in the king's hands because they had not sued it out, but John and Margery's half was delivered to them by writ of the king. Margaret did not attempt to recover her portion until 20 October 1356, giving the reason for failure to obtain seisin to be the death of her husband. She eventually received her inheritance on 30 October on payment of a mark into the hanaper, homage being prorogued until Michaelmas 1357.[94]

Brandestonhall

The situation with respect to the descent of Brandestonhall proved more complicated. In common with Merkshall, Margery and John Malewayn would seem to have obtained their half share, but Margaret and William Carleton did not. When Margaret obtained her share on 22 April 1357 the main argument in support of her claim was that the whole property had been improperly taken into the king's hands by the Exchequer. Margaret's portion had been aggregated with that of Margery, which latter had been taken because of debts of John Malewayn to the Crown.[95] The latter had acted as one of the sureties of the last conglomeration of merchants who had farmed the customs for wool and whom the king believed still owed him a large sum of money. John and his fellow mainpernors (sureties) were taken into custody and had their estates taken into the king's hands. This particular process of law was in full spate early in 1356.[96] John was released from prison on 9 February 1357.[97] His lands, possessions, and goods were restored on 9 July following.[98]

An inquisition into the goods found in the manor of Brandestonhall when it was taken into the king's hands was carried out by William Carleton and John Gategang on 5 November 1355. The latter was also involved in the sequestration of John Malewayn's property elsewhere,[99] so it seems reasonable to assume that the action in Suffolk represented one of the opening rounds in the exercise already mentioned. The involvement of William Carleton is doubtless of significance but his personal motives are not transparent. They found that Guy St Cler, the escheator for Suffolk, had already purchased 40s worth of chattels of the manor from Maud's executors. As this manor did not appear in Maud's inquisition post mortem, their action seems a little unusual. Maud's involvement could only be explained if the goods and chattels at Brandestonhall constituted her dower portion of Augustine's estates. The two commissioners received the rents and profits until the following Easter (24 April 1356), when Guy St Cler entered as sheriff and escheator in pursuance of a writ. He raided some of the manorial assets of lands and chattels, ostensibly to pay off his debts for the ward of Dover castle. On 21 October St Cler was instructed to deliver the holdings to John de Woodrow, keeper of the house of nuns of Dartford.[100] This he did at Christmas 1356.

The king then granted this manor together with a great deal more property previously held by Roger Bavent to John de Wynewyk, William de Thorp, and William de Peche for life on 6 April 1357, with remainders to the nuns of Dartford.[101] Less than two weeks later Margaret, wife of the late William de Carlton, established her claim to a moiety of the manor and appurtenances. John Malewayn's property rights and therefore those of his wife Margery were reestablished some two months later.

The properties in London

The properties over which Maud had rights of disposal in her will according to the customs and usages of the City of London were those which she had owned herself and those which she and Augustine had held jointly.

The messuage in St Andrew's Cornhill, in which Maud seems to have been living at the time of her death, was presumably the property in which Maud had chosen to exercise her widow's rights of occupancy according to the laws and customs of freebench. Simon Fraunceys, mayor and escheator, was issued with a writ of certiorari as to rents held by Maud on 8 April 1356. The inquest held on 18 May found that she had no rents in the City or suburbs. Fraunceys' successor Henry Picard was then instructed, on 1 December, to enquire as to the lands and heir of Maud and who had been in possession of her lands since her death. This he did on 1 February 1357, declaring Margery and Margaret as the heirs of Augustine with rights of reversion of the messuage in the parish of St Andrew's Cornhill obtained from William de Salopia, and also the messuage in Ebbgate, parish of St Martin's Orgar purchased from Roger de Rokesle and his wife Joan. On 3 April, Picard was instructed to partition only the holding of the messuage in St Andrew's parish, and to retain in the king's hands Margery's portion by reason of the debts of her husband to the Exchequer. As Margaret had paid homage and fealty for her pourparty of her father's lands on 8 May 1355, she was to receive her portion and the issues as from this date. Walter Forester, one of the sheriffs, had received the issues from May 1355. Picard reported the partition accomplished on 21 June 1357. Picard was directed to restore to John Malewayn all his possessions in London and in the king's hands on 9 July following.[102] This restoration seems a little tardy as Malewayn had been released from prison on 9 February preceeding. The property that the latter held in London was far more extensive than Margery's inheritance from this settlement, so it seems reasonable to assume the matter of her inheritance was subsumed in the general instruction to Picard.

Nothing further was said at this juncture about the tenement in St Martin's Orgar, neither was anything said about the distribution of the remaining properties in the City and of those in Fleet Street, just outside the walls. This is not surprising, for the proving and implementation of Maud's wills created a succession of difficulties that took a further five years to resolve.

Maud's testaments

Her testamentary dispositions exist in two documents, one of which was proved on 6 June 1355 at Canterbury and is registered there.[103] The second document, enrolled at the Hustings on 6 September 1356, is not to be found in the Hustings Roll, but in association with the documents relevant to the ultimate settlement of the affair.[104] These two documents, both described as testaments, are for the main part worded identically but differ in two points that will be discussed later. Both have the hallmarks of a deathbed deposition which would accord with the date given of 12 April 1355. Neither are witnessed. They ask that she be buried in the monastery of Holy Trinity close to the tomb of her husband Augustine; she bequeathed £20 silver towards the fabric of the church. Her executors were named as John de Ardern, prior of the Augustine friars of London, and Robert atte Brome, rector of the church of Stevenage. In the testament granted probate at Canterbury, she instructed her executors to dispose of her goods, movables and immovables to defray her mortuarial expenses and also for good works to the glory of God and the benefit of her soul. However the testament enrolled at the Hustings over a year later writes only of the disposal of her goods and movables. This instruction to dispose of her goods may explain the actions of her executors at Brandestonhall. A second difference between the two documents lies in the exclusion of the words immovables from the later enrollment. Whether either difference was of legal significance in the disputes that followed is doubtful but it indicates possible tampering with the document by one or more parties. More importantly, neither document gives any instructions respecting disposition of her property in London for specific purposes.

Before her testament was granted probate, a struggle to establish the prerogative right of the Church of Canterbury in such matters took place. Churchill draws attention to this matter and points out a marginal note on one of the sets of documents involved, 'that about this testament there was great contention between Canterbury and London'. Archbishop Islep

sought the counsel of a number of his colleagues including the Dean of the Arches and the Official of the Court of Canterbury, who also mention that William Wittlesey and John Barnet had been consulted. The advice given was that the archbishop ought to make his prerogative prevail. As noted, the prerogative was exercised on 6 June by the Archdeacon of Huntingdon, William Wittelsey, for Maud's will. A commission was issued six years later empowering one of his officials to admit and receive the probate of testaments of all people dying within the City of London or elsewhere having goods in more than one diocese of the province. Churchill comments that this was the first commission of its kind to be found in the archiepiscopal registers and provided the form from which developed the commission of the later Keepers of the Prerogative. She further ventures that, 'As to the reason for this step we can but surmise. It may be that it was taken as the outcome of the dispute over the Waleys testament and that following the advice of the Offical, the Archbishop was preparing to exercise on all occasions his right to prove the testaments of those having goods in more than one diocese of his province'.[105] The perturbations caused by Maud's testament did not end there. On 13 June 1355 the archbishop found cause to issue sentence against those hindering the executors from implementing the will.[106] He found it necessary to strengthen his determination on this point, and named the offender John Malewayn in a letter issued on 28 November over the name of his rector Nicholas Warwick. The validity of the will is attested and the name of William de Carleton is added to the list of executors as 'ex officio nostro coexecutori adiunction forma iuris commissa et admissa pariter per eosdem'. John Malewayn was stated to have held that Maud had died intestate, notwithstanding that the will had been deemed proper. It was alleged further that at some risk the deceased had lodged an unsealed copy of the testament with Adam Fraunceys. When the episcopal officer approached Adam for this document it transpired that it had been handed over to John Malewayn. He was given twelve days in which to hand over the material and other pertinent documents under sentence of major excommunication.[107] This he must have done as he was certainly buried in consecrated ground. Whether this material was the will to be later enrolled at the Hustings can only be a matter for speculation. The truth of the matter is not obvious. All of the executors, the archbishop and the monarch had interests to be preserved, particularly if the document held by John contained the donation of property to the nuns of Dartford. At the time of perpetrating the alleged deceit he would have been a very powerful figure, but by the end of 1355 he was deeply in trouble and about to spend some time in prison. The delay in enrolling the will in the Hustings was not unusual, but in the light of later events will be seen to be suspicious and certainly very convenient for the executors.

The 'bequest' to the nuns of Dartford.

Written evidence for a specific bequest by Maud to the nuns of Dartford is not to be found in either of the wills. That they received all of the properties initially is not in doubt. The propriety of the means whereby they did so was eventually questioned and its invalidity established, but only some seven years later.

On 16 September 1356 the sheriffs of London were ordered to deliver all the issues of the rents of the houses in London which had belonged to Augustine Waleys, deceased, then in the king's hands and in their keeping, to John Woodrowe the king's confessor. He was the administrator of the 'new works' at Dartford associated with the nuns and was to use the rents for the benefit of this house.[108] John de Ardern, as principal executor of Maud's will and 'by authority of that will', on 23 November granted to the king, for the use of the new works at Dartford, all the property that Maud held in London on the day of making her will, except a tenement at the corner of Lime Street in Cornhill.[109] This latter seems to have been the holding at St Andrew's Cornhill that had already been partitioned between the two heiresses. In 1358 the king granted these properties that had been devised to him to William de Thorpe and William de Pecche to hold in survivorship, with remainder to the nuns of Dartford.[110] An inspeximus of an indenture made between Maud prioress of Dartford and the convent of that place and John Turk, witnessing a partition between them of the London properties late of Maud Waleys, was eventually made on 4 December 1363.[111] Behind these bald descriptions of the sequence of events lie two bursts of legal activity, details of which are to be found in other archives.

The first set of three documents, although

undated, may be placed approximately in a sequence of legal processes.[112] They appear to have been written in the same hand, in French, and addressed to the king. One plea concerns Margaret alone, and relates to her claim for her half share of the manor of Brandestonhall. The basis of her case was that her portion of the inheritance from her father was sequestrated unreasonably with the portion already held by Margery and John Malewayn until question of the debts of the latter to the king was settled. This claim was accepted by 22 April 1357.

The remaining two pleas concern the residual properties in London and involve John, Margery, and Margaret, who was a widow at the time. It seems reasonable to assume that they post-date the inquest held by Henry Picard on 1 February 1357 and the consequent partition of the messuage at St Andrew's Cornhill on 21 June already referred to. At this date John Malewayn's properties had not been freed by the king and it seems unlikely that John would have risked a petition to the monarch reclaiming his wife's inheritance before being cleared himself. This happened on 9 July, so the pleas may be placed after this latter date. Picard's inquisition had stated that both a messuage at Cornhill and one at St Martin Orgar should properly descend to Margery and Margaret. The first allocation was accepted but the second was not. The first plea relates to the restitution of the rights of the heiresses to the property in St Martin Orgar (Ebbgate). Why this latter property and that at Cornhill should be singled out from the rest for reversion to the heiresses is obvious only if the statement in the inquisition, that the original purchase stipulated reversion to 'Augustine's heirs', is true. No transfer deed for this property has been found, so the statement has not been confirmed. The property at St Magnus (Oystergate), obtained from the same vendors, was transferred to Augustine and Maud jointly as man and wife with reversions to heirs, and this was not treated as a special case by Picard.

The plea for the Ebbgate property first pointed out that Picard's inquisition had found Margery and Margaret to have the reversion of this particular property, and then rehearsed the arguments that were to be used in all the subsequent pleas relating to the remaining properties in London. It was argued that John de Ardern in his role as executor, although he had no title in the messuage, had speciously used Maud's will as a pretext to alienate the holding to the king. This was against the law and good faith and disinherited Margery and Margaret. No permission had been granted to the executors of Maud's will to alienate the holding, nor had verbal authority been given.

The companion plea related to eight shops in the parish of St Andrew's Cornhill, a messuage and seven shops in the parish of Holy Trinity Alegate, two messuages and two shops in the parish of St Dunstan's in Tower ward, a messuage and a shop in the parish of St Magnus the Martyr Oystergate, and a messuage in the parish of St Martin Ludgate. These were exactly as specified in Picard's inquisition. The plea was elaborated slightly compared with that for the Ebbgate holding, stating that the will gave the executors disposal rights relating only to Maud's goods and chattels. Additionally, the specific point was made that Ardern had carried out the alienation against the wishes of his co-executor (Robert atte Brome). It was also stated that if the king was still displeased with John and Margery this was not to stand in the way of Margaret receiving her just dues. Both pleas obviously fell on deaf ears as the king granted rights in the properties to William de Thorpe and William de Pecche early in 1358.[113]

The final settlement

The situation described in the previous section persisted until 1362, by which time John and Margery Malewayn had died. In an undated plea to the king and his council (written in French), John Turk, son and heir of Margery Malewayn, and Margaret together with her third husband John Foxcote sought restitution from the king of their inheritance consisting of the properties in London that Maud held at her death. The arguments recited are those of the previous unsuccessful petitions made during the lifetimes of John and Margery Malewayn, but modified slightly to contend that the alienation practised by John de Ardern was against the good usages of the City of London. The plea concludes with the statement that the inheritance has been outstanding for over seven years, which dates this new plea to 1362. Action followed. The king instructed the mayor, the recorder, and the court of the Guildhall in a writ, dated 8 November 1362, to produce the enrolled version of Maud's will at his council. This was presumably done; for in a writ from the king to

the sheriff dated eight days later the arguments of the plaintiffs are recited again, but this time it is also stated that none of them held property that was previously held by John Malewayn. The will of the latter and his inquisition post mortem had been cleared in the previous year, his son John, still under age, being his heir. Whilst Robert Turk was a beneficiary under the will his brother John was not. The Sheriff was further instructed to determine who held the properties and to produce the plaintiffs together with the writ at the king's court in the Chancellery on 7 December. Again this must have been accomplished, for a writ issued by the king on 10 December to the sheriff states that it has been found that the person holding the properties in dispute was Maud, prioress of the new works at Dartford. The sheriff was instructed to produce all the parties concerned together with the writ at the king's court in the following Hilary term.[114]

On 18 June 1363, Henry Greene and his fellow justices appointed to hear pleas before the king were ordered to render judgement in a cause between John Turk and Maud, prioress of the new works at Dartford. John had showed before the king in his court that he had sued Maud and an inquisition taken was returned to the above justices by writ of *nisi prius*, *ie* the lower court had heard the case and it was properly referred to the higher authority, who should proceed to judgement.[115] By judgement of this latter court, John Turk recovered from the prioress of Dartford and convent of that place a moiety of ten messuages and eighteen shops in the City of London and a messuage and four shops in Fleet Street. Seisin was delivered to John and a partition agreed between him and the prioress, the indenture being sealed on 30 November. An inspeximus of this indenture was confirmed on 4 December 1363 at Westminster but somewhat begrudgingly '... notwithstanding that the said priory or house of Dartford is of the king's foundation and all the said tenements were lately granted by him to that house, or that the portion assigned to John by the indenture exceeds that assigned to the prioress and convent, or that the partition was made without the king's licence'.[116]

Reconciliation of the totals of properties dispensed in the indenture with those in the inquisition for Maud Waleys is not straightforward. The properties listed for the City of London in all the documents agree as far as parochial location is concerned. Maud's inquisition lists a total of six messuages and eighteen shops, which is all that is also enumerated in the unsuccessful pleas for restitution made by the Waleys family in 1357. This is to be compared with the ten messuages and eighteen shops in the City and a messuage and four shops in Fleet Street mentioned in the indenture given above. Together with the holdings in Fleet Street, which agree in extent in both documents, the properties distributed in the indenture total six tenements and six shops of which the prioress received two tenements and six shops in Alegate, and a tenement in Ebbegate as well as the messuage and four shops in Fleet Street. Superficially this would not seem to sit comfortably with the complaint by the Crown that the portion assigned to John by the indenture exceeded that granted to the prioress, as he received only three tenements.

Using Maud's inquisition as a basis for evaluating the balance of the settlement, a slightly different picture emerges. The various situations could be reconciled if it was assumed that the tenement in St Andrew, Cornhill, that John received equated to the eight shops listed in the inquisition post mortem. In like fashion, the tenement he received in St Magnus would equate to a messuage and two shops and that in St Dunstan's to two messuages and two shops. On a similar basis, the prioress would have received one messuage and seven shops in Alegate, a messuage in Ebbegate, and a messuage and four shops in Fleet Street. Thus John would have obtained three messuages and eleven shops whilst the prioress also had three messuages and eleven shops, superficially equating to the halving described in judgement of the dispute. However, in terms of value, according to the inquisition post mortem, John's portion net of rents owed amounted to at least 181s per annum, whilst that of the prioress came to at most 40s plus the value of the property in Fleet Street. This might explain the complaint by the Crown. There is still a discrepancy of two additional messuages to be explained, but given the complexity of the joint holdings in St Andrew's Cornhill by Augustine, Maud, and Robert atte Brome, some residual confusion must be expected.

Perhaps too much should not be read into the equipartitioning of the holdings as a legal basis for the settlement. It may just have been a description of the result rather than of an objective. The properties given to the prioress in Fleet Street in the settlement were those acquired

by Maud before her marriage, as were virtually all those in St Katherine Alegate. The situation with respect to the tenement in St Martin Orgar is less clear-cut. As has been explained, no deeds covering the original devising of this property by Roger de Rokesle have been found. It was a property that the family chose to single out for special attention in their first set of pleas to the Crown, so it seems likely that they felt that they had good grounds for their claim. Perhaps this was a nod that the judges felt that they should make in the direction of the Crown.

The final settlement would thus appear to be something of a judgement of Solomon, with the king receiving less than he would have liked, but having the gift of this reduced portion legitimised, whilst the family received less than they might have expected, but were probably relieved to have the matter settled at last. Further, the customs of the City were maintained.

Maud would have been entitled to a third of Augustine's goods and chattels including money and these she could have disposed of in her will as of right. Augustine in his time had made a variety of monetary loans to a range of individuals. At one stage he loaned the Knights Hospitallers a thousand marks. How much money he held at the time of his death is not known. No evidence has been found for the calling of debts by Maud. However there are records of three large loans being settled in favour of her executors. Whether these represented her portion of Augustine's goods and chattels as of right is not known. In 1355 the executors acknowledged the receipt of £300 from Thomas Dolsely, pepperer, in settlement of all debts,[117] gave an acquittance for £200 to a Thomas de Brandon, and likewise for £40 to William Tithyncombe, a London poulterer. Even later, 1 November 1358, Robert atte Brome, acting as executor of the wills of both Augustine and Maud, gave a general release of debt to Richard de Mallynge.[118] These were possibly only a portion of the total owed, but still substantial in themselves. Where this money went is not known. Presumably the nuns benefited to some extent, but this is not recorded. In her will, Maud made no specific monetary bequests other than that to Holy Trinity already mentioned.

FAMILY AND OTHER RELATIONSHIPS

It is difficult to see how Maud, as Augustine's widow, could have been better placed with respect to property holdings than she found herself. There is no corpus of information that enables categorisation of her situation as the norm or as extraordinary in this situation. A generation later, Joan Pyel was left her husband's London holdings for life, with reversion to Irthlingborough College. This was a substantial bequest but, unlike Maud, the holdings were not Joan's as of right.[119] How did Maud find herself in this position whereby virtually all of the extensive list of properties were held jointly with Augustine? Certainly this very favourable situation could not have been achieved without Augustine's active cooperation.

Husband and wife

So what was the nature of their relationship? There is no direct documentary evidence on this matter. There is no record of his will or of any other writings which might help. Whether the existence of an illegitimate son at the start of their married life cemented or soured their relationship can only be a matter for conjecture. They were married for at least thirty-three years and were together for about four years prior to that. The only personal request in Maud's will was to be buried alongside her husband. It seems reasonable to assume that they had reached a satisfactory *modus vivendi*. Whether this outcome was a result of complaisancy or of an actively enlightened attitude on the part of Augustine cannot be established definitively.

The outstanding features of Augustine's career as a servant of the Crown were continuity and duration. He is first noted in the records as clerk to Justice Bereford in 1314[120] and his last appointment was as steward of the queen's household which ended in 1352.[121] His first major appointment was as keeper of the exchanges of London and Canterbury in January 1318, but as warden he accounted for the issues from the two mints from April 1317 until August 1320.[122] During this time he also acted with three lords of the treasury in assessing the twelfth granted to the king by parliament for the Scottish venture, and also collected the armour to be provided by the City.[123]

At the beginning of 1327 his only recorded fall from grace occurred, when he spent a short time in the Fleet as one of the mainpernors (sureties for the appearance in court) of the executors of John de Sandale.[124] By May of the same year he

was in Newcastle as keeper of the king's victuals, and was also undertaking other assignments.[125] At the end of the year he was purveyor of the necessaries for the consecration of the Bishop of Worcester,[126] and at about the same time he was authorised to construct halls in the palace of the archbishop of York for the king's marriage.[127] In 1328 he was listed as a king's clerk,[128] and was in charge of repairs to houses at Dunstable for the residence of the king during a tournament held there in October 1329.[129] On 11 May 1330, Augustine was appointed as collector of the new customs in the port of London and surrounding districts on the Thames.[130] In common with all other collectors he lost this appointment a year later, but was then reappointed on 26 January 1332.[131] On 31 May 1335, Augustine le Waleys, the king's servant, was granted this post for life.[132] Such life appointments were rare and were looked upon with grave suspicion.[133] Augustine surrendered this appointment in March 1346.[134] In compensation he was granted the post of controller of customs in the same port, with the concession that, as he was in constant attendance upon the queen, a substitute would be allowed.[135] His commissions in the household of Lionel, the king's son, followed shortly, the last of these being in 1347.[136] In 1348 he was acting as lieutenant of the steward of the queen's household,[137] and rendered account as controller of the said household from 25 January 1349 to 1 February 1350.[138] His subsequent appointments have already been given.

Augustine clearly did not achieve the advancement that some of his fellow king's clerks did, but neither did he suffer any of their catastrophic reversals of fortune. He skated very successfully on the thin ice of royal approbation of two monarchs not notable for their tolerance of error and was obviously favoured by Queen Phillipa.

He seems to have been a very careful man and there is no evidence of him having shown any initiatives. This does not argue in favour of the hypothesis that he was responsible for deliberately setting the course that led to the very favourable status of property ownership achieved by Maud. Their legal married life had started by July 1320. However, they had been acquiring property jointly but in their single names from 1316 onwards so the path subsequently followed had been set well in advance of marriage. It is just possible that Augustine might have seen a way of providing Maud with property which she could gift to their illegitimate son John, if she survived into widowhood.

Another explanation is that Maud was the dominant partner in the relationship from its inception, and determined the policy pursued. This infers that she was fully aware of the legal limitations within which she might manoeuvre, but in turn raises the question of how she came by this knowledge or who was advising her. Family would be an obvious source of such advice, but little is known of her antecedents. It is possible that Richard de Rothing, if he was indeed her brother, provided a guiding hand. As many of the properties had been acquired jointly before Robert atte Brome had come upon the scene and Maud had been a property holder in London whilst still unmarried, it seems unlikely that Robert atte Brome did more than join a well established venture.

Following Augustine's death Maud tried to manoeuvre a share of the inheritance for her son John with the help of John himself and also of Robert atte Brome. This behaviour could be interpreted as showing a preference for her illegitimate son over her two legitimate heirs. It might equally well be argued that she knew that due process of law would take care of her daughters' financial interests, whilst the well-being of her son needed special attention. There is no evidence that Augustine made any successful attempts to gain his son preferential treatment in official postings. Had he gone along with the courses of action attempted by Maud with respect to the holdings in Suffolk and Kent, they might have been successful and John would have been provided for. Augustine had in 1348 agreed to enfeoff Robert atte Brome of Latton Merk, provided he regranted to Augustine, Maud, and their heirs, which ensured Maud's rights there. Perhaps by four years later Augustine was too advanced in years and unable to act quickly. It could also have been that he felt that given the quantity of property over which Maud would have disposal rights as a widow, she could make provision for John to an extent that would be perfectly adequate. Augustine may have already devised his considerable property in Stepney to John.[139] If Maud's manoeuvres had suceeded, the legitimate heiresses would have been relatively badly treated. It is possible that these attempts argue in favour of a knowledge by Maud of the rules of inheritance and an attempt on her part to test their boundaries. It is also possible that she was advised in this matter by Robert atte

Brome. Canon law permitted, if not encouraged, clerics to give legal advice to widows, but whether this stretched to include potential widows is perhaps more debatable. Canon law certainly recognised the legitimacy of a child born outside wedlock but whose parents subsequently married, so Brome would have felt no ethical constraints in acting in the manner he did. It is also possible that John Waleys himself was the driving force behind the actions attempted.

Testamentary dispositions are often a great help in deciphering family and other relationships. Maud's wills were brief in the extreme. The only information to be gained is from what was not said in the wills. Overlaying this situation is the question of whether her wills truly represented her feelings towards her family, or did they represent the outcome of other pressures? Given her earlier attempts to provide for her son, John Waleys, his absence as a beneficiary is surprising. She could have devised all or part of her property holdings or goods and chattels to him without legal hindrance. Knowing nothing of him and therefore of his financial situation, it is not possible to make a judgement on whether she deemed him to be adequately provided for without further bequests. No other motive has presented itself. Maud may have believed with justification that her daughters were well enough provided for by their husbands. She may also have disliked her daughters, or their husbands, or both. O'Connor has pointed out that Joan Pyel made no bequests to her family, though generous in other directions.[140] This he attributed to a coolness in relationships, perhaps exaggerated by geographical separation. Maud probably lived in St Katherine Alegate, whilst the Malewayn household was in St Dunstan's nearby, so no argument invoking distance of separation can be deployed in support of an estrangement.

Sons-in-law

John Malewayn was certainly a wealthy and politically important person, although he was to suffer reverses on both counts shortly after Maud's death. Judged both by his testamentary dispositions and those of other members of his extended family subsequently, the household of Margery and himself, consisting of three of her children by John Turk, his daughter by his previous marriage, and their own son and daughter, seems to have been a close and happy one.[141] Nonetheless he saw no reason to make any provision for Margery's eldest son, John Turk, presumably because he was expected to inherit his mother's portion eventually. There were no areas of professional interest where the interests of Malewayn and Maud would have collided. However in the February of 1353, preceeding her death in April, Malewayn had been given temporary custody of those lands of Augustine that had been inherited by his daughters, holding them on behalf of the king until they had been partitioned. Maud might conceivably have been aggrieved by what could have been interpreted as his interference. The actions of Malewayn in attempting to pervert the proving of Maud's will could be seen as a natural expression of a desire to see his wife's inheritance maximised. He was quite capable of such actions, as was shown by his manipulation of the marriage of his daughter by his first marriage.[142] However, whatever such machinations might have accomplished, they were not totally selfish, inasmuch as they would also have been to the benefit of Maud's other daughter, Margaret, the wife of William de Carlton. He might also have mistrusted the motives of the executors nominated in the will, in which case his prescience was justified by subsequent events.

There is even less evidence bearing on the possible relations between the Carleton household and Maud than for the Malewayns. William de Carleton seems to have been moderately well-off, holding lands in Southchurch (Essex),[143] in Kilthorp (Rutland),[144] and holding as well, for life, the bailiwick of the stewardship of the forest of Essex, having held it for some time by 1338.[145] He held a number of modest Crown appointments,[146] but by 1344 he had become involved with the affairs of the Bavent family which were to occupy him for the rest of his life. This impinged on the Waleys family only through the part the Bavent estates played in endowing the nuns of Dartford, with which endowment the settlement of the Waleys estate became so involved after Maud's death.

It is possible, therefore, that William de Carleton could have influenced Maud to make a specific bequest to the foundation at Dartford, one which was not committed to paper, but may have been made orally. William may have felt that this loss of property by his wife was a price worth paying to improve his standing with the king. He was not named as an executor in the wills, but was nominated as a co-executor by the

probate court at Canterbury. The only evidence of royal preferment was his appointment in October 1355, together with John de Arderne to pursue a secret matter near to the king's heart.[147] Whatever gain this brought him was short-lived as he was dead by 1357, and his wife had to fight hard, aided chiefly by the Malewayns, to recover even a small portion of her legal inheritance. He did act with William de Gategang on behalf of the Crown in assessing the goods and chattels at Brandestonhall as has already been noted. They also acted together in assessing and holding the forfeited estates of John Malewayn during his impeachment.[148] Whether he was involved to protect the family's interests or whether he was acting on behalf of the executors is not clear. Overall it is difficult to see him as being other than neutral in the events involving both the drawing up and the management of Maud's will. Other possible sources of influence on Maud were her executors Robert atte Brome and John de Ardern.

The clerics

Robert atte Brome had a long time in which to build up a relationship with the family, starting at the latest with his appointment as Augustine's attorney in 1338.[149] He seems to have taken full advantage of this situation, for he was involved as a partner in every subsequent property acquisition in London by Augustine and Maud. Following Maud's death he showed immoderate haste in disposing of those portions of their joint assets to which he might have laid legitimate claim.[150] He had a limited career in the Church;[151] such preferments that he did get seem to have been engineered by Augustine, even if the last one took effect a few months after the death of the latter. Where the initial connection between the two men was made has not been elucidated. There is no evidence of Robert attempting anything reprehensible during Augustine's lifetime. His collusion with Maud in attempting to provide for John Waleys has already been discussed. Following Maud's death he seems to have tended his own affairs, separating himself from the transfer of the Waleys' estate to the Crown. Whilst Robert loaned and was loaned money by Maud's younger daughter Margaret and her first and third husbands, William de Carleton and John de Foxcote,[152] he does not appear to have had any personal dealings with Margery and John Malewayn or their children. The latter did however act as a witness, together with Willam de Carleton, in a grant of a manor and lands in Buckinghamshire by Peter de Veel to Robert atte Brome.[153] There are two interesting bequests in Robert's will, which disbursed over £300 in total. The single largest item was a grant of £120 to the king out of money owed to Robert by Thomas Dolsely, with the proviso that his executors were paid £20 out of this sum. Reverting to the clearance of a debt of £300 by Dolsely to Maud by Robert atte Brome and John de Arderne in 1355, perhaps one is entitled to wonder what sort of an arrangement was reached between debtor and executors. The second bequest is to John de Foxcote for £20. The residual impression is thus that Robert atte Brome served the family, was well rewarded for doing so, but probably was not actively involved in the manipulations designed to channel the family's inheritance to the nuns of Dartford. At no stage was he named directly in the documents concerned with the recovery of the family's just dues. However in one plea it was stated that the other executor, who could only have been Robert atte Brome, had not been consulted by John de Arderne when he devised Maud's London holdings to the king. This places the responsibility for much of the troubles in the settlement of Maud's estates squarely upon Arderne.

Superficially, the involvement of John de Arderne seems an unlikely occurrence. The Waleys family was deeply involved with the community of Augustine canons of Holy Trinity Christchurch, who had no connection with the Augustine friars of London, of whom Arderne was prior by 1352.[154] Gwynn has suggested that the latter was responsible for securing the valuable benefaction of Earl Humphrey Bohun to the Augustine friars in 1354,[155] which permitted the lavish rebuilding of their church at Broad Street and Lothbury. By April 1355 when he was named as prior of the house in both copies of Maud's wills, he was a person of some prominence and it is conceivable that he had become Maud's confessor. In 1351 she and Augustine had been granted an indult (licence to do something not permitted by Church common law) to choose a confessor at time of death[156] and friars were acting as confessors at this time adding to the general opposition to their activities. Who introduced him into the Waleys' household can only be guessed at, but he was associated

with William de Carleton only a little later on secret business of the king, as has already been mentioned, so Carleton must be a prime candidate. Someone must have presented Carleton's case to be nominated by Canterbury to join the executors, and Arderne would have been well placed to reciprocate a favour. By 30 October 1356 Carleton had died[157] and on 23 November of that year John de Arderne was named as principal executor of Maud le Waleys. In this capacity, he granted all of her London holdings at the time of making her will, with one exception, to the king for the new works of the preachers at Dartford.[158] As has been seen his justification for doing this '... by the authority of that will ...' was dubious at best. At this time John Malewayn had been impeached and was incarcerated in Somerton Castle. Arderne thus had no opposition to face from members of the family and his fellow executor, Robert atte Brome, whom he did not consult, seemed to be more concerned with capitalising on his own proceeds from the joint holdings with the family.

Arderne's career had reached a critical point at this time. FitzRalph, archbishop of Armagh, had arrived in England earlier in the year and was gradually building up momentum, through the medium of public sermons, in his dispute with the mendicant friars on questions relating to their poverty and their interpretation of their orders' responsibility for pastoral care. He had pursued these activities in Ireland and had come to England in the spring of 1356 in the hope of gaining royal support.[159] The history of his progress in England is documented by both Gwynne and Walshe, and what follows is drawn from their writings.[160] Criticism of both the lifestyle and the secular influence wielded by the friars was widespread. FitzRalph's views on these topics were well known prior to his visit to London which started on a moderate note in Coventry on 12 June, making reference only to abuses of confessional procedures; he eschewed any anti-mendicant polemic in his sermon to a community of nuns in the East End of London, possibly the Augustinian cannonesses of Clerkenwell or Shoreditch, on 23 June. His first sermon preached at St Paul's Cross three days later was again restrained, making only oblique reference to the mendicant controversy. What happened during the summer is not clear, and Walsh opines that it is not clear whether the friars were fully aware of the contents of FitzRalph's 'De Pauperie Salvatoris' which presents the full case against them. On 16 and 18 October and on 1 November, FitzRalph delivered three sermons at Deddington near Oxford which continued the gentle build up of the case against the friars. By December he had returned to London, and in the three sermons preached on 18 December, 22 January, and 26 February he presented in the vernacular his full case against the mendicants. The response of the four mendicant orders was incorporated into an appelacio in the name of John de Arderne, who had acted as proctor for the other orders, and delivered to the archbishop's household on 10 March. Two days later the archbishop replied from the pulpit of St Paul's with a full-blown polemic, again drawing attention to their worldly wealth and scorning their humility.

'Is there no ambition in their anxiety to receive privileges as confessors and preachers? Or is it no small honour to count kings and queens, dukes and duchesses, earls and countesses and other noble men and women among your spiritual children?' In this sermon FitzRalph stated that the friars were asking for an injunction from the king to prevent further preaching against their privileges. Nonetheless the archbishop preached one more sermon at St Mary Newchurch, south of the river, on 26 March, specifically attacking the role of friars as confessors. Six days later the king issued a mandate forbidding FitzRalph to leave the country without a licence and a few days later orders for a watch for any religious person or Augustine friar attempting to leave the country without a special licence. Both the archbishop and John de Arderne found their way to Avignon. At the papal court the arguments continued, but Arderne took no further part. The archbishop's case was partially lost with the issue, on 14 July 1359, of a papal bull to the effect that the friars could continue to take confessions.

Given the timetable of events in the autumn of 1356, it is possible that John de Arderne took the opportunity of his position as chief executor to alienate to the king, illegally, the properties that Maud held at the time of her death, with the intention of currying favour with the monarch in anticipation of the coming struggle with FitzRalph. From his association with Carleton, the prior would have known of the determination of the king to adequately fund his foundation at Dartford. Whilst the king's confessor was a friar, the attitude of the Crown to the mendicant friars was not always favourable. On 12 April 1350

there had been a countrywide mandate issued to escheators to seize such properties of the mendicant friars as had been built on royal lands, given to them for extending their dwellings, but which had been used to erect dwellings for rent to laymen, 'whereas they ought to live by begging according to their rule'.[161] The activities of the Augustine friars in property dealing came under scrutiny again shortly after the first attempts by the family to regain their share of Maud's holdings in London. On 12 March 1358 a commission was issued to John de Stodeye, mayor and escheator of London, John Pecche, and John de Cicestre,[162] and Adam de Bury,[163] to make inquisition whether the Austin friars of London had acquired in mortmain (held inalienably) divers tenements in the City and entered into them without licence. Such lands were to be taken into the king's hands by the escheator. The commission was repeated to the same persons in October 1361.[164]

John Malewayn had died in June of that year, but action for successful recovery of Maud's holdings was reinstituted by her grandson John Turk and his aunt, Margaret, in the following year, as described earlier. Gwynne has suggested that John de Arderne may have been responsible for the trouble over property but it seems possible that the City itself had brought the matter to the king's notice, spurred on by the happenings to Maud's property. Where John de Arderne was during these later proceedings has not been determined. It is clear that he had left the country without licence, but whether he would have been penalised on his return is not known. He was still the prior in August 1358, and probably as late as Christmas of that year.[165] At this time Robert atte Brome was acting as sole executor of both Augustine's and Maud's wills.[166] By September 1359 Arderne was described as the provincial procurator.[167] He is last heard of in a letter from the Pope to the bishop of Chichester and the canons of Lincoln in January 1364, ordering them to obtain the return of books and other goods that John de Arderne had removed from the priory in London.[168]

Responsibility for the difficulties in the settlement of Maud's affairs therefore is placed properly with John de Arderne. He took opportunistic advantage of the situation that arose from the death of one son-in-law and the incarceration of the other to alienate Maud's property, illegally, to a compliant king. His intent was probably to place himself in a favoured position to seek support for the mendicant friars in their struggles to come with the archbishop of Armagh, but, given the very comfortable existence of a prior of such an order and his own general behaviour, self-interest was also likely to have been involved. It took the City of London a little time to counter his activities, but the chronology of events and the subsequent outcome strongly suggest that John Malewayn's actions achieved some measure of justice for his wife's eldest son, albeit after Malewayn's own death. The influence that Arderne may have had on the actual formulation of Maud's will cannot be assessed, but its lack of personal bequests was unusual.

CONCLUDING REMARKS

The nature of the records in which Maud's history is written limits the number of standpoints from which she may be viewed, but from all of them she appears remarkable and occasionally unique.

Her age of about sixty-seven at death was not unique, but certainly at the top end of the distribution curve of numbers versus age-at-death. What may qualify as unique is her marriage of at least thirty-three years duration, after its inception at the late age of *c.* thirty-two, following a less formal relationship of about five years with her husband-to-be, Augustine le Waleys. In contrast, her eldest daughter was married when twelve and had three children by the time she was eighteen. At the time of her marriage Maud had acquired a son and a daughter born outside wedlock, as well as sizeable property holdings either in her own right or jointly with Augustine. Both of these features surely qualify as unusual. By the end of her married life she had joint rights with her husband in all but one of their holdings in seven London parishes. This ensured that after his death she had rights to disposal of all these holdings as she wished together with those of such material further accruing to her as legitim (portion of her father's movable estate to which she was entitled on his death). She could scarcely have achieved more in the way of control over the London holdings of herself and her husband. When he died she attempted to divert the inheritance of two of their manors in the shires to their bastard son, but failed. She lived for only two years after her husband, and during this time did not

transfer any of the property over which she had rights of disposal. Her wills failed to specify its disposal also.

She can scarcely be credited with what happened after her death, but nonetheless the argument over the right to established probate of her will may have been instrumental in defining the prerogative of Canterbury in this respect. Her failure to specify the mode of disposal of her London holdings in her will allowed one of her executors to devise them illegally to the Crown. This led to a legal battle of some seven years duration to ensure that the family obtained redress within the customs of the City of London.

Why she chose to adopt the early life-style that she did is obscure. No family history has been uncovered. Such documentation as exists defines her father as such and nothing more. If she herself was responsible for the manipulations of property holdings, which optimised her control of them as a widow within the considerable legal degrees of freedom permitted by the customs of the City of London, where did she gain her expertise? If she was prompted by others to do so, who were they? Her father had died by the time the process began. She would certainly have needed the consent of Augustine to the jointures they established. It is not difficult to believe that she was on several counts a rather unusual woman, one well worthy of note.

NOTES

[1] She is generally referred to as 'Maud' in the documents of central government, but as 'Matilda' in the records of the City of London.

[2] B A Hanawalt 'The widow's mite: provision for medieval London widows' in L Mirrer (ed) *Upon my Husband's Death* (1992), 23; C M Barron 'The "Golden Age" of women in medieval London' in *Women in Southern England*, Reading Medieval Studies 15 (1989), 35–58; see also the case histories presented in C M Barron & A F Sutton (eds) *Medieval London Widows, 1300–1500* (1994).

[3] Corporation of London Records Office, Hustings Rolls (hereafter abbreviated to CLRO, HR), 33.(29).

[4] CLRO, HR 37.(30).

[5] CLRO, HR 41.(4), 41.(7).

[6] G A Williams *London 1216–1337: A Study of the Main Factors in the Social and Constitutional Development of the City* PhD thesis University of London (1959–60), 276.

[7] Calendar of Close Rolls (hereafter abbreviated to CCR) 1307–13, p 121, July 20 1308.

[8] Calendar of the Letter Books of the City of London, ed R R Sharpe (hereafter designated as 'Letter Book ...'), Letter Book D, p 131.

[9] CCR 1341–43, p 107, February 20, Norwich, 1341.

[10] CLRO, HR 49.(4), 61.(100), 70.(52).

[11] Shaddeworth might have been a cleric and therefore unable to marry Maud, but no direct evidence of him holding appointments in the Church has been found.

[12] For example, he acted as deputy to John de Sandale in a matter of dispute between the moneyers of London and John de Sandale in the latter's role as master of the Mint (*Liber Albus* II, part I, p 188). He had accompanied Sandale on his mission to Scotland earlier (Calendar of Patent Rolls (hereafter called CPR) 1301–1307, p 391). He is noted as having made payments to the king in January and February 1313 (J Davies *The Baronial Opposition to Edward II, its Character and Policy* (1967), 197). He was responsible for the dispersal of the properties of the Knights Templars in Essex and later in London (R Graham *JBAA* 35 (1929), 112ff, *Corrodia Petita de Domibus Templariorum* 1 & 2 EII, 144, 146, 155, 164, 174–6, 205).

[13] R R Sharpe, *Calendar of Wills Proved and Enrolled in the Court of Husting (London)* (1899), Part I, 243.

[14] CLRO, HR 44.(70).

[15] Letter Book D, p 39.

[16] CLRO, HR 33.(29).

[17] CLRO, HR 33.(87).

[18] CLRO, HR 37.(30).

[19] CLRO, HR 41.(4, 7).

[20] *Historical Manuscript Reports* No. 9, Appendix 1, p 7a.

[21] CLRO, HR 41.(7).

[22] CLRO, HR 46.(105).

[23] Public Record Office (henceforwards called PRO), E 368/89, m.9d.

[24] CLRO, HR 49.(4).

[25] Calendar of Inquisitions Post Mortem (hereafter called CIPM), vol X, no. 141, pp 128–32, at 130.

[26] R B Helmholtz 'Bastardy litigation in medieval England' *American Journal of Legal History* 13 (1969), 360–83, at 383.

[27] CIPM, vol X, no. 141, p 129.

[28] CIPM, vol X, no 190, pp 165–7, at 165.

[29] CLRO, HR 47.(40).

[30] CPR 1313–1317, p 248.

[31] CIPM, vol X, no. 141, pp 128–32, at 131.

[32] Calendar of Feet of Fines for London and Middlesex, p 224, no. 49.

[33] *ibid*, p 131, no. 296.

[34] *ibid*, p 132, no. 308.

[35] *ie* Maud and Augustine were not married and this was not a dower settlement.

[36] CPR 1313–1317, p 607.

[37] Assigned by Andrew de Merk together with a portion of Marks Tey.

[38] CCR 1313–1318, p 458. Witnesses included Sir William de Ayremynne, Sir John Heyden, Robert and Thomas de Sandale.

[39] *ibid*, p 397.

[40] Feet of Fines of Essex, vol II 1272–1326, part IV, p 173, nos 577, 578, 579.
[41] *ibid*, vol III, part II, p 45, no. 424.
[42] *Abbreviato Placitorum*, p 349.
[43] Inquisition ad quod damnum, Index Series part II, XXII, file LXXXVIII, no. 17.
[44] CPR 1348–1350, p 194.
[45] Suffolk Feet of Fines, *Proceedings Suffolk Institute of Archaeology* (1900), p 183, no. 3.
[46] CCR 1337–1339, pp 144, 147.
[47] CPR 1348–1350, p 92.
[48] CCR 1339–1341, p 255.
[49] CCR 1343–1346, p 655.
[50] CIPM, vol X, no. 141, pp 128–32, at 131.
[51] K M E Murray (ed) 'The Register of Daniel Rough' *Kent Record Society* 16 (1945), 114–15.
[52] *Hasted's Kent*, vol II, p 187.
[53] CPR 1350–1354, p 345.
[54] *Victoria County History. Essex*, vol V, p 272.
[55] M K McIntosh *Autonomy and Community; The Royal Manor of Havering 1200–1500* (1986), 59.
[56] S J O'Connor (ed) 'A calendar of the cartularies of John Pyel and Adam Fraunceys' *Camden Fifth Series* 2 (1993), f. 471–2.
[57] *Historical Manuscripts Report* no. 9, appendix 1, p 7a.
[58] CLRO, HR 41.(7).
[59] CLRO, HR 46.(105).
[60] CLRO, HR 46.(97).
[61] CLRO, HR 50.(11).
[62] CLRO, HR 50.(142).
[63] CPR 1358–1361, pp 437–8, at 438.
[64] *Munimenta Guildhallae Londiniensis, Liber Custumarium*, vol II, part II, Rolls Series Vol 12 C, p 454.
[65] G A J Hodgett (ed) 'The cartulary of Holy Trinity Alegate' *London Record Society* 7 (1971), nos 50, 51, 52, 51 contd, 53.
[66] *ibid*, no. 54.
[67] R R Sharpe *Calendar of Wills Proved and Enrolled in the Court of Husting, London* (1899), part I, p 243.
[68] CLRO, HR 45.(87).
[69] Hodgett *op cit* (note 65), no. 51 contd., after 53.
[70] *ibid*, no. 47.
[71] *ibid*, no. 48.
[72] CLRO, HR 45.(87).
[73] CLRO, HR 45.(93).
[74] R R Sharpe (ed) *Calendar of the Coroners Rolls of the City of London* (1913), 161.
[75] CIPM 1354–1358, no. 190, pp 165–7, at 166.
[76] CLRO, HR 61.(60).
[77] CLRO, HR 61.(50).
[78] 'London Assize of Nuisance 1301–1431' *London Record Society* 10 (1973), nos 340, 341.
[79] CLRO, HR 71.(55).
[80] Treaty Rolls, vol II (1337–1339), nos 373, 767.
[81] Hodgett *op cit* (note 65), p 158, no. 815.
[82] *ibid*, p 159, no. 815 contd.
[83] CLRO, HR 73.(120), 73.(121), 73.(122).
[84] CPR 1358–1368, pp 437–8.
[85] CLRO, HR 64.(100).
[86] 'London Assize of Nuisance 1301–1431', *London Record Society* 10 (1973), no. 349.
[87] CLRO, HR 49.(4).
[88] CLRO, HR 54.(105).
[89] CLRO, HR 74.(46).
[90] CIPM vol X, no. 141, pp 128–32.
[91] Calendar of the Fine Rolls (hereafter called CFR) 1347–1356, p 420.
[92] CIPM vol X, no. 190, pp 165–7.
[93] CPR 1354–1358, p 282.
[94] CPR 1354–1358, p 287.
[95] PRO, Special Collections SC 8/211.
[96] L.T.R. Mem Roll E.368/128, mm.17–20.
[97] CCR 1354–1360, p 389.
[98] Calendar of Inquisitions Miscellaneous (hereafter called CIM) 1348–1377, p 267; CPR 1354–1358, pp 579, 605.
[99] PRO Exchequer Accounts Various, 508/23.
[100] CFR 1356–1368, p 16.
[101] CIM 1348–1377, p 241.
[102] CIPM vol X, no. 190, pp 165–7.
[103] Lambeth Palace, Reg Islep, f. 101v.
[104] PRO Special Collections, SC 8/212.
[105] M Churchill *Canterbury Administration* (1933), part II, 388–90.
[106] Lambeth Palace, Reg Islep, f. 108.
[107] *ibid*, f. 109v. The author is indebted to Dr R Catto for transcription of this document. Any errors in the translation or interpretation are those of the author.
[108] CCR 1354–1360, p 279.
[109] CCR 1354–1360, p 327.
[110] CPR 1358–1361, p 145.
[111] CPR 1361–1364, p 437.
[112] PRO Special Collections, SC 8/211.
[113] CPR 1358–1361, p 145.
[114] PRO Special Collections, SC 8/212. The three documents described, together with the enrolled copy of Maud's will, are to be found in this file.
[115] CCR 1361–1364, p 466.
[116] CPR 1358–1361, p 437.
[117] There is an item in the will of Robert atte Brome of 1372 that mentions a debt owed to him by Thomas Dolsely of £120.
[118] Letter Book G, p 101.
[119] S O'Connor 'Joan Pyel d.1412' in C M Barron & A F Sutton (ed) *Medieval London Widows 1300–1500* (1992), 71–5.
[120] Exchequer, Lord Treasurers' Remembrancer Rolls, E.368/89 m.9d.
[121] He replaced Sir John de Lewknor some time between July and the beginning of November 1351, and had been replaced by John de Molyns by February 1352 (CPR 1350–1354, pp 122, 192, 228).
[122] CFR II, 1307–1319, p 351, 363; CFR III, p 31; Lists and Indexes XI, Lists of Foreign Accounts, Mints and Coinage, p 58; T F Tout, *The Place of the Reign of Edward II in English History* (1936), 365.
[123] Letter Book E, pp 109, 124.; Letter Book K, p. 106.

[124] Exchequer, Cal Mem Roll, Michaelmas 1326–1327, no. 998.
[125] Exchequer, Cal Mem Rolls, Michaelmas 1326–1327, nos 129, 892, 1671, 1672; CCR 1327–1330, p 489; CCR 1330–1333, p 428.
[126] CPR 1327–1330, p 182.
[127] Lists and Indexes XI, List of Foreign Accounts, Wardrobe and Household Miscellaneous Expenses, p 125.
[128] Exchequer, K R Account 383/10.
[129] Lists and Indexes XI, Foreign Accounts, Wardrobe and Household Miscellaneous Expenses, p 114.
[130] CFR IV 1327–1337, p 176.
[131] *ibid*, p 297.
[132] *ibid*, p 447.
[133] M H Mills 'The collectors of customs' in W A Morris & J A Strayer (ed) *The English Government at Work 1327–1336, Vol II Fiscal Administration* (1947), ch IV, 168–200, at 174.
[134] CFR 1337–1347, p 456.
[135] CPR 1345–1348, pp 59–60.
[136] *ibid*, pp 178, 182, 183, 185, 307, 314.
[137] CPR 1348–1350, p 144.
[138] Exchequer, Accounts Various, E/36/205.
[139] The Pell Rolls, p 172, record (4 February 1359) a payment of £10 to a John Waleys for accommodating, in his house at Mile End, the king and his household accompanying the body of Queen Isabella on its last journey. If Augustine had inherited his property in Stepney from Henry le Waleys, and passed it on to his illegitimate son John, it would have been large enough to accommodate the royal guests, for it had been large enough to accommodate Edward I and his Parliament in 1298 (John Stow *Survey of London* (1908 version), vol I, p 54). The property was held of the bishop of London.
[140] O'Connor *op cit* (note 119), 75.
[141] CLRO, HR 89.(144).
[142] He exchanged wardships with another alderman so that he was able to marry his daughter to John de Mockyng, the underage heir to the wealth of Nicholas de Mockyng. The full account of the proceedings, all legitimate, are found in the City of London Letter Book G.
[143] CCR 1333–1337, p 336.
[144] *ibid*, pp 207, 279; CPR 1334–1338, p 515.
[145] CFR 1337–1347, p 103.
[146] CPR 1330–1334, pp 316, 405; CPR 1343–1345, p 350.
[147] CPR 1354–1358, p 282.
[148] PRO Accounts Various, E/101/508/21, 22, 23. Foreign Accounts, P 29. Ed.III. 44, 45, 46.
[149] Treaty Roll 12, m.7 no. 373.
[150] CLRO, HR 84.(101), 84.(102) [1356]; 85.(40), 85.(41) [1357]; 86.(38), 86.(41), 86.(42), 86.(64), 86.(85) [1358].
[151] CPR 1338–1340, pp 59, 173. CLRO, HR 73.(120). Papal Letters III, pp 481, 510. Calendar of Papal Registers, p 251. *VCH Herts* II, 443.
[152] CCR 1349–1354, p 523; CCR 1354–1360, p 314; CCR 1360–1364, p 428.
[153] CCR 1349–1354, p 466.
[154] 'London Possesory Assizes', *London Record Society* 1 (1965), no. 111.
[155] S J Aubrey Gwynn *The English Austin Friars in the Time of Wyclif* (1940), 78–9.
[156] Calendar of Papal Registers, Papal Letters III (1342–1362), p 409.
[157] CCR 1354–1360, pp 287–8.
[158] CCR 1354–1360, p 327.
[159] Gwynn *op cit* (note 155), 85.
[160] *ibid*, 84–9. K Walsh *A Fourteenth-Century Scholar and Primate: Richard FitzRalph in Oxford, Avignon and Armagh* (1981), 406–51.
[161] CFR 1347–1356, p 226; see also p 181.
[162] They were to become two of the four sureties for John Malewayn following his release from imprisonment after impeachment.
[163] He was to become joint farmer of the subsidy on cloth with John Malewayn in September 1358.
[164] CPR 1360–1365, p 151.
[165] F Roth, *Sources for a History of the English Austin Friars* (1958), 185, note 438.
[166] Letter Book G, p 101.
[167] Roth *op cit* (note 165), 188, note 446.
[168] Calendar of Papal Letters IV, pp 42–3.

ACKNOWLEDGEMENTS

The author wishes to acknowledge the help and encouragement given him by Dr Caroline Barron of Royal Holloway College, University of London. The efficiency of the staff of the CLRO in providing information, and the tolerance they displayed in doing so, is gratefully acknowledged.

ON A BRASS FORMERLY IN THE CHURCH OF SAINT DUNSTAN-IN-THE-WEST

Philip Whitmore

During the removal of the church tower of Saint Dunstan-in-the-West in 1832, prior to its rebuilding, a small, irregular-shaped piece of brass measuring 104 by 92mm was found (Fig 1). It comprised a crown of thorns surrounding the letters 'Ihū' in black letter. The fragment is known only from a reverse impression, now in the possession of the Society of Antiquaries.[1] It seems likely that the brass was lost shortly after its discovery, although Charles Spence[2] is known to have produced a wood-cutting of it in 1848, which he exhibited before a meeting of the

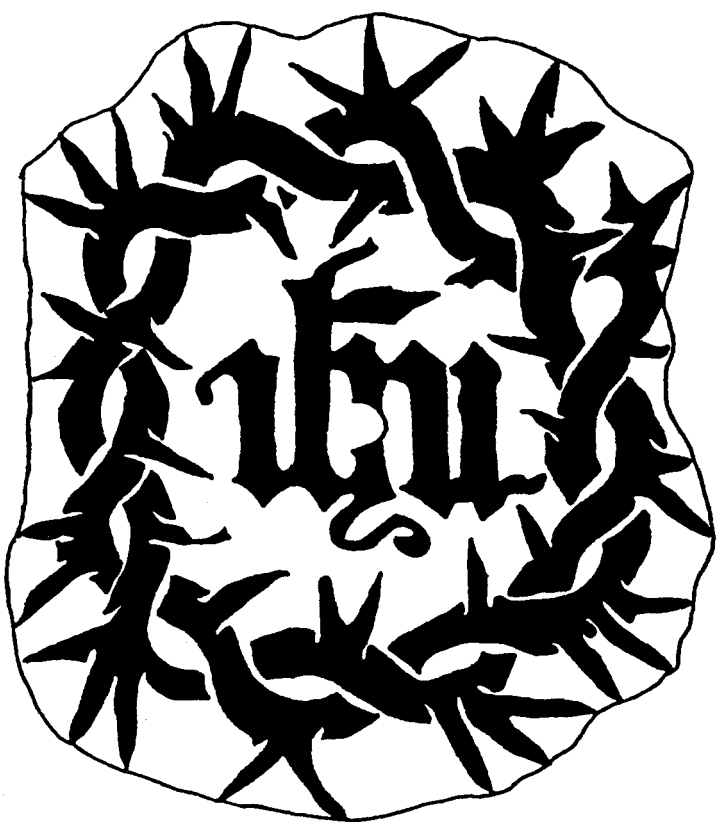

Fig 1. Brass from the church of Saint Dunstan-in-the-West. (Reproduced by courtesy of the Society of Antiquaries of London)

Plymouth branch of the Exeter Diocesan Architectural Society. The Reverend Herbert Haines fails to mention it in the Private Possession section in his 1861 *Manual of Monumental Brasses.*

Placing the fragment in context is difficult. It may be that the slab in which the brass was set was powdered with small plates, some bearing 'Ihu', while others bore the word 'mcy' or 'mercy'. The fragment is very similar to the wreath of intertwined ivy stems with berries that forms part of the brass to John Fortey, 'wolman', 1458, at Northleach, Gloucestershire.[3] This brass has six wreaths on the marginal inscription, one at each corner, and one in the middle of each of the two longer sides. Robin Emmerson has assigned this brass to London Series B;[4] possibly the fragment from Saint Dunstan's also belonged to this series. The plate is difficult to date, but a suggested date is *c.*1460.

Stow[5] mentions a number of 'plated stones' in the church that are of a date similar to that suggested for the now lost fragment. However, there seems little likelihood of identifying the person commemorated by the brass.

NOTES

[1] Red Portfolio C-K.
[2] *Transactions of the Exeter Diocesan Architectural Society*, III pt II, 69.
[3] *Monumental Brasses: The Portfolio Plates of the Monumental Brass Society* (1988), pl 179.
[4] See Robin Emmerson, 'Monumental brasses: London design *c.*1420–85' *JBAA* 131 (1978), 71.
[5] Strype's edition of Stow's *A Survey of the Cities of London and Westminster* I (1754), 734–6.

COCK AND CROWN YARD IN ACTON

Tom Harper Smith

SUMMARY

This paper traces the development and eventual disappearance of the yard of a medieval inn in Acton High Street.

Like many people with an interest in their local history, we are often asked for information by folk looking for their ancestors. Surprisingly, several of these were looking for Cock and Crown Yard. This led us to a realisation that this area of Acton had never been properly researched.

It all began with the Norman Conquest. William of Normandy found among his new possessions a hunting lodge in a place called Wudustoc, known to us as Woodstock, north of the Thames ford known then as Oxenford. It was a delightful spot, quickly enclosed with a large park where one of William's castles was soon erected. The mound is still there. It became a place of retreat from London for the early English kings. In particular Henry I and Henry II spent a great deal of time there, holding courts and assizes. A study of King John's itineraries shows he often went there.[1] Constant use produced a road from London. There was a long spit of gravel for most of the way, except near Illing (Ealing) where it made a kink to the north. This use of Woodstock meant much travel. It has been estimated that the court used 40 wagons to move material from London, let alone the curious long covered wagons for the court ladies that are shown on a number of early manuscripts.

In the 12th century, the bishops of London built churches by the roadside where it ran through parishes over which they had control. The church at Acton was dedicated to the Visitation of Mary to Elizabeth and that at Ealing to the Assumption. The parish church of Ealing shows where the road ran in early times, as does the parish church of Hillingdon owned by Evesham Abbey and dedicated to Saint John the Baptist. Some of the rectors of Acton served the King and there are documents sealed in Acton as a result.[2]

From the end of the 12th century the establishment of colleges in Oxford added to the traffic on the road, especially since a number of the colleges were endowed with properties in London. It is indeed this that first introduces us to the 'Cock'. The accounts of Merton College from 1350 to 1450 have survived. Twice a year three dons made the journey to London on horseback to collect the London rents and check their properties. It took them two and a half days and every time they stayed at the Cock or the Tabard Inn in Acton. The road produced not only churches but also inns.[3]

A conveyance of 1380 now in the London Metropolitan Archives shows us where those two inns were. It is very detailed. It shows a collection of premises across the High Road just to the west of the church. On the east there is a lane followed by a farmhouse and then the Tabard. Then come three cottages, with their names and details of the owners' holdings in the common fields. Finally, on the west there is an alley or lane leading to the Cock. This presumably was the first beginning of the Yard.

There are no further references to the Tabard, but the Cock appears in 1377,[4] 1405, 1506, and 1552 – the last in 'Victuallers Recognizances'. It is sometimes called 'The Cock in the Hoop' because of the custom of hanging a 'hoop' or wreath around the inn sign to announce a new brew of ale. In 1636 the inn is mentioned in a poem by Walter Taylor.

After the Restoration there was hardly any small change, so shops and inns produced their own 'trade tokens'. There were three with the

Cock on; Anne Finch was the landlady in 1664 and 1667.[5] From 1735 onwards the Cock appears in Victuallers' Licence Lists almost every year with the name of the current publican.[6] In 1747 the name was changed to the 'Cock and Crown'. Perhaps this was an act of loyalty after the Jacobite rebellion was put down in 1746 by the Duke of Cumberland.

In 1793 the premises of the 'Cock and Crown' were recorded in the Churchwardens' Rate Book as 'Empty' and in 1795 as 'No longer an inn'. It was owned at the time by Sich, brewers at Chiswick, who decided to give it up.[7] The American War of Independence resulted in shortages and corn laws were introduced, a situation worsened by the Napoleonic Wars. The result in Acton was a reduction in the number of public houses from fifteen in 1773 to eight in 1798. There were four flourishing houses nearby at the time, the Three Bowls, the King's Head, the George and Dragon, and the Red Lion. They all had some connection with the coaching trade, which the Cock did not, nor did it ever house parish bodies like the Church Vestry or take part in the Beating of the Bounds.

In 1800 'Cock and Crown Yard' was said to be 'opposite the King's Head' and in 1811 was described as 'land formerly the Cock and Crown'.[8]

In 1802 William Charlton enters the scene. He was a plumber, painter, and glazier who lived in a fair sized house three doors to the west of the entry to Cock and Crown Yard. In 1802 he owned one tenement 'in the yard'; during that year this increased to at least five, with possibly two more, since residents are named. In 1811 William Charlton died and his widow took over control of the five tenements, while his son Francis dealt with the business and shop in the High Street. By 1829 Mrs Charlton had increased her holding to seven 'tenements in the yard' and by 1830 to eight. They were marked 'not assessed for rates'. Later in 1830 she held ten tenements.[9]

Knowing their trades, it is possible that the 'tenements' were old buildings in the Yard which William or Francis Charlton were able to improve. Francis Charlton who took over the Yard after his mother's death was an important person in Acton. He was people's churchwarden for two years and at one time or another filled most of the parish offices. He appears often in the Parish Vestry Minutes.[10] His sister married into the Perry family who carried on both the family business in the High Street and control of the tenements in the Yard. It was in fact a Perry daughter who dealt with the eventual sale and demolition of the cottages.

Where these tenements were and what they were like we do not know at this stage. It is not until the 1851 Census that some information emerges (they do not appear in the 1841 Census).[11] Acton at that time was still an agricultural village with a population of 2,500. It had grown from about 1,400 when the Yard began to have residents, so it is likely the tenements in Cock and Crown Yard would be regarded as useful, if not desirable. There are several men in 1851 who work on the farms, but most of them are in other trades. They come from a variety of places, but the children up to twenty years old were born in Acton. Several of the women are described as laundresses or washerwomen. One actually runs a small laundry. At this stage the Acton laundries had not really begun, so it is likely they took in washing. There are eleven 'tenements', three of the tenements are said to be empty. In all 43 persons are housed there.

Between 1851 and 1861 Acton underwent a great change. The four common fields were enclosed in 1859. Those who held strips or pieces could purchase one larger area in exchange. So a great deal of land became available to speculators and builders.[12]

Only one family recorded in 1851 was still there in 1861, but residents included a number of labourers, probably working in the building trade. There are twelve 'tenants' then, with four tenements vacant and 47 persons in all. If the figures do not seem to add up, it is because different residents use more or less rooms in a building.

In 1871 there were 17 'tenements' with 56 persons. By then many new houses had been built but rents in the Yard will have been much cheaper. After all they paid no rates and here you could get from one to four rooms. By 1881 there were 74 persons in 15 'tenements'. By then, too, 18 new pubs had been built many within the areas of the new housing.

The 1891 Census gives the number of rooms inhabited by each tenant. Only 13 tenancies are shown with one empty; 40 persons are listed. No family has more than four rooms, but in general they have more space than before. The 1891 Census also, for the first time, gives the addresses. There are three without numbers – the first, and seven with numbers one to seven. Two tenants

are shown at Nos 2, 3, 4 and 7. There are a greater number of labourers, a greater spread of places of birth for the adults, and hardly any women in laundry work, despite the enormous number of laundries by then in South Acton. This is probably because the proprietors usually took workers from their own vicinity.[13]

Very few tenants stayed more than ten years and it is difficult to trace families. One family can be traced. Benjamin Buggy was born in Acton in 1810. He became a worker in the Gravel Pits at Notting Hill. His first wife died. In 1854 he married Elizabeth Gibbs in St Mary Abbotts, Kensington.[14] She was born in the Steyne, Acton. It is possible she was in service there. They moved back to the Steyne in 1861 and then to Cock and Crown Yard by 1871. Benjamin died of bronchitis in 1871.[15] He was described as a labourer. Elizabeth stayed there at No. 6 with her daughter, also Elizabeth. The

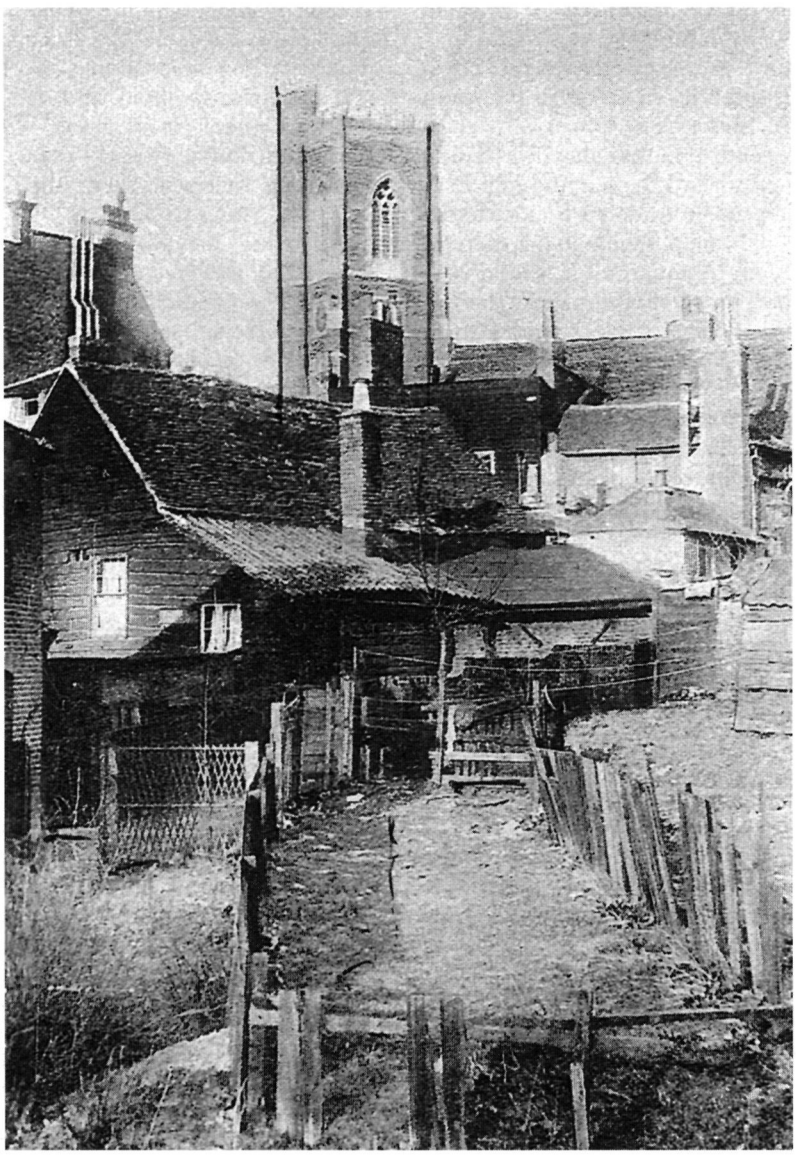

Fig 1. Seymour Cottages and gardens in Cock and Crown Yard with Acton parish church on the opposite side of the High Street (from Old Acton*)*

other children moved away. Elizabeth, the daughter, married Thomas Simmonds, born in Ealing. They lived in the family house at No. 6, and had four children.

In 1891 there were proposals to extend the Tramways which ended at the Windmill. London United Tramways would take over the line. To make two tracks would involve widening the High Street in places. In 1893 the Mount, on the north side of the High Street, with its cottages to the west of the church, was demolished and the King's Head rebuilt further back in King Street, but on its own land.[16]

Looking for further improvements the Local District Council turned its attention to the south side of the High Street. The proposal was to construct a new road, opposite the new King's Head, which would turn to the left and join Park Road North as an easier route to South Acton. It was hoped it would help people living there to shop more easily in Acton too. It would also provide an excuse for demolishing the houses and shops on either side of Cock and Crown Yard as well as the yard itself. There was talk of 'slum clearance'.

At that time the 'tenements' in the yard were in the hands of William Wagg and Benjamin Seymour of 262 Goldhawk Road and were called accordingly Wagg Cottages Nos 1, 2, and 3, and Seymour Cottages Nos 1–7. Subsequent documents and plans show those Wagg Cottages were in the north-east corner of the Yard, No. 1 separate from the other two; Seymour Cottages were on the west side soon after entering into the Yard.[17]

The Council had to make a case for obtaining and demolishing the cottages. They brought in the Inspector of Nuisances, W.T. Bovey, and D.J. Ebbetts, the surveyor to examine them and make a report. No money could be borrowed by Acton Council without the approval of the Local Government Board, and before that everything had to follow the proper procedures. They inspected Nos 1–7 and No. 12. This was Seymour Cottages. They reported as follows:

> These cottages are in very old buildings having little height in the rooms which are partly in the roof; they are in a very dilapidated state requiring expensive repairs throughout. The woodwork is decayed, broken and defective, the floors are dirty and greasy and the plastering is in many places loose, bulging and cracked. The access to the first floor is by means of narrow winding stairs and the danger of fire would be very great. The amount of air space is very limited on account of the small height. In our opinion these houses are not reasonably capable of being made fit for house habitation and we consider they should be immediately closed.[18]

A provisional order for a closing Act was made by the Council on 9 February 1903. In March 1904 Edwin Bridger Athawes, Estate Agent, made an offer for the Yard but was refused. On 5 December 1904, following an application to the Local Government Board, the Council bought from Benjamin Seymour Nos 1–7 Cock and Crown Yard, via Mrs Rayner for £428.6s.6d. The Charlton descendants, the Perry daughters, still held the freehold and the sale agreement was with them 'in common' with Seymour. At the same time through Joseph Narroway, who had some interest in them, the Council acquired Nos 1–3, Wagg Cottages.[19]

All this, including a full report of the Inspection, was given publicity in the local paper. Clearly the Council wanted as much support as possible. Hence such remarks as in Rowland's *Street Names of Acton*: 'A much applauded act of slum clearance'. The Council did not say it was about to clear a whole row of 18th-century houses, if not 17th-, many in good condition.

The order of 1905 said the dwellings in December 1904 were occupied by '30 or more people belonging to the working classes'. In 1907 the Council made application to the Local Government Board for permission to recover £2,463.2s.11d. which they had expended so far under the 'Cock and Crown Yard Improvement Order'. The Board replied saying they must first be assured that the inhabitants of the Yard had been rehoused. There are two lists of these, one in 1904, another in 1905.[20] Did some people move out and others jump in to fill the vacant rooms? One of the problems was that a number of the tenants owed rent. To get rid of them the Council said it was ready to accept whatever was offered. The Council's eagerness appeared again here. They told the Local Government Board that there was a great deal of suitable accommodation nearby. Their lowest rent was £18 a year i.e. 7s a week. At the time the lowest working class rent was 3s.6d a week, so it would make a big difference to move from Cock and Crown Yard where possibly the rents were the lowest. And some of the tenants had other perks. Mr Dudman the tenant of No. 1 Wagg Cottage used the gardens of the Wagg Cottages to grow vegetables. The Council allowed him to continue

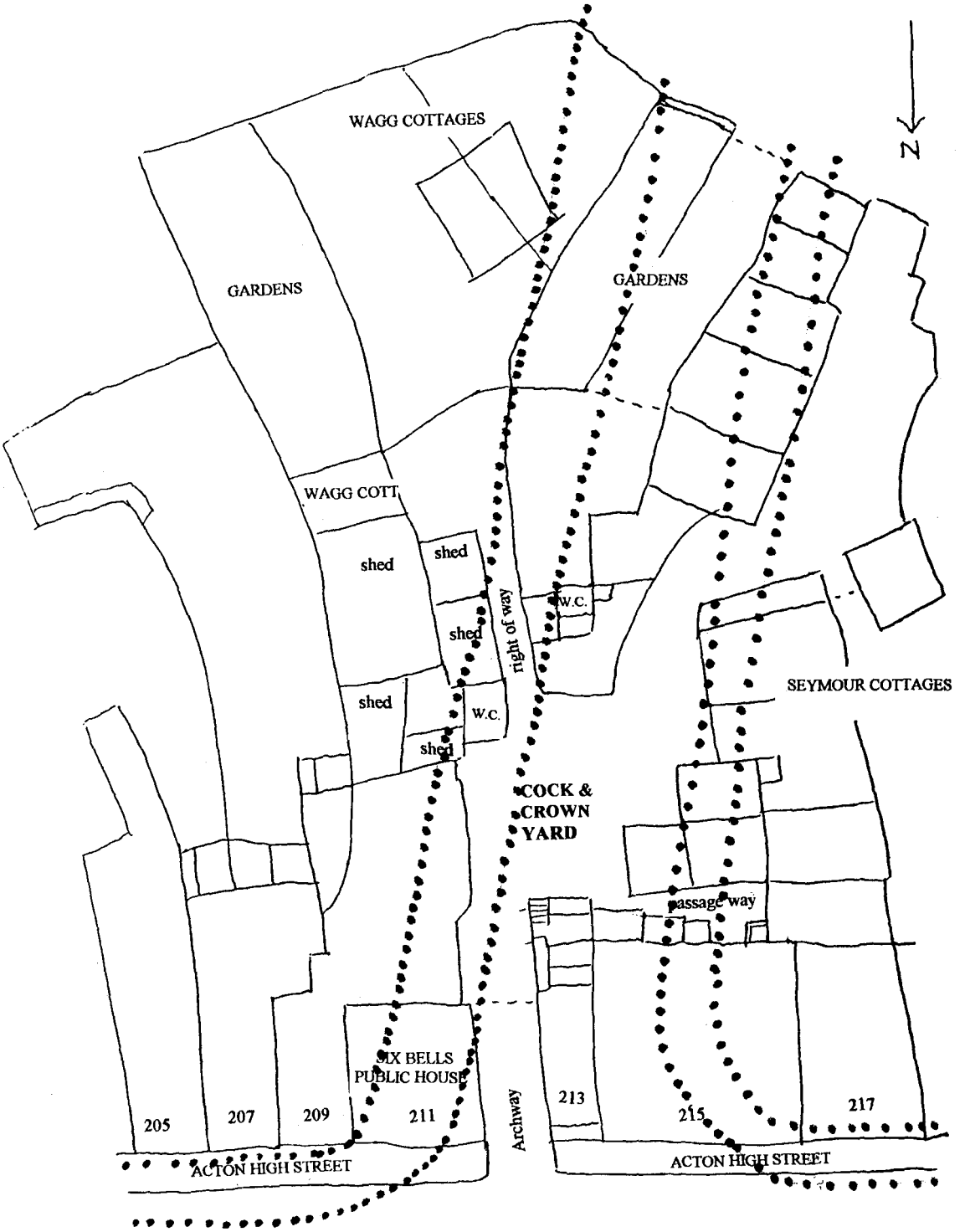

Fig 2. Map showing line of proposed new road based on items in Acton Terrier 1 (Ealing Local History Library)

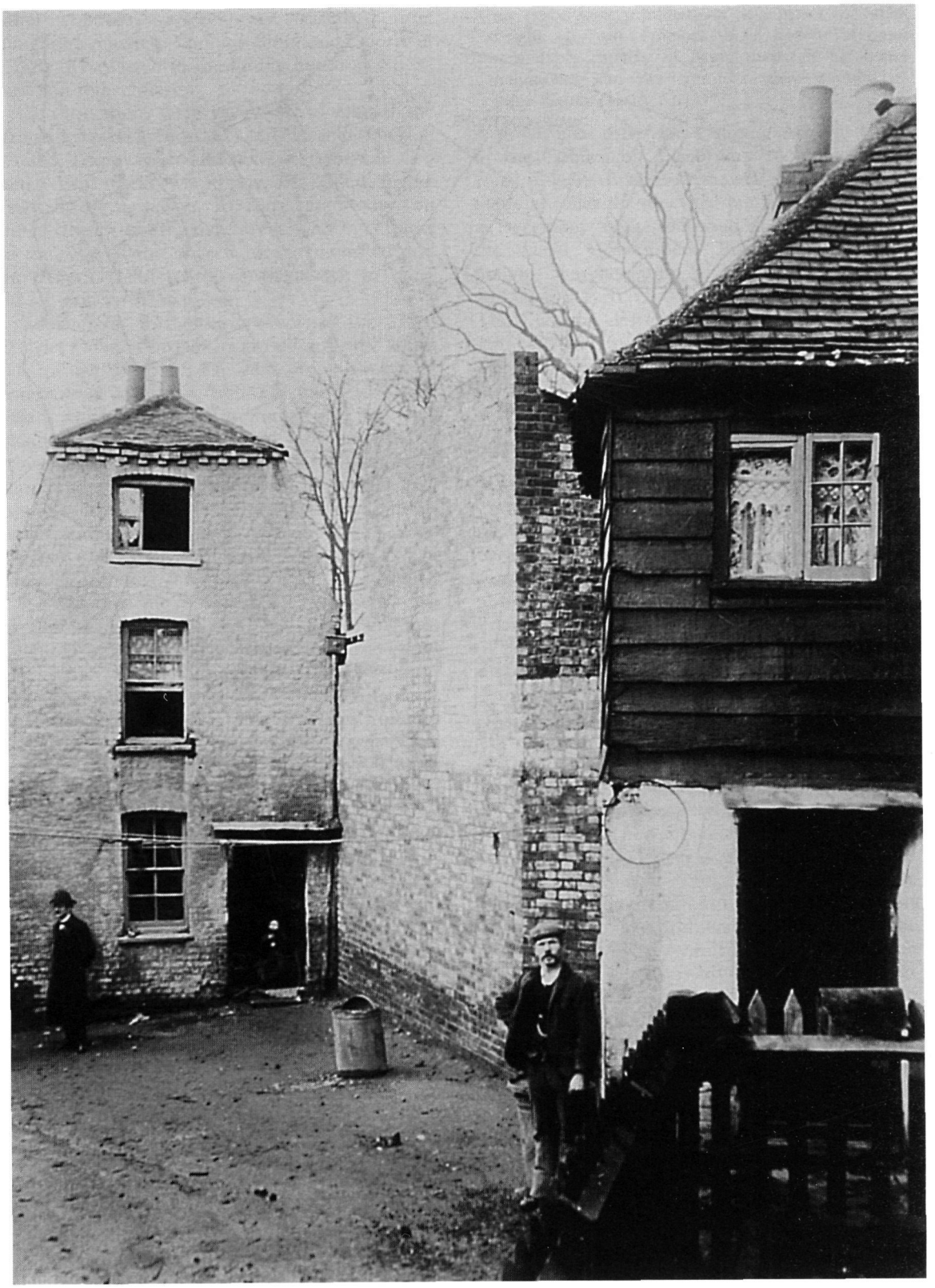

Fig 3. View of Cock and Crown Yard showing on left the remains of the much rebuilt inn and on right part of Seymour Cottages (Published by permission of Ealing Public Libraries)

Fig 4. View of Acton High Street c. 1905, showing Six Bells and entrance to Cock and Crown Yard (Published by permission of Ealing Public Libraries)

to use the garden of No. 1 until the harvest, provided he left the house. Further research showed he was the local greengrocer!

As it turned out, and no doubt to the joy of the Council, all the tenants found their own accommodation. So where did they go? They were not on the whole the sort of people who appeared in the local directories. Indeed the very places they moved to were not likely to be entered. And you had to pay to get in! We were fortunate to find six of them. One went to Elizabeth Cottages, next door to the Midland Bank, but they were to have a very short life, another to the Steyne, yet another to Nelson Place, built on the site of Bank House on the edge of the Steyne. One went to Mill Hill Terrace, over the wall from the Yard, one to Mill Hill Road nearby, and one down into South Acton. Of course they may only have taken rooms.[21]

When proposing the demolition of the Yard, the Council ordered that twelve photographs of it should be taken. These have never been discovered. In fact we have collected only three photos taken inside the Yard from various sources. They are clearly by Upjohns whose premises were still next door to the Midland Bank. It would have been the younger Upjohn, for his elder brother had by then set up in the West End. The posed figures, added afterwards, are a sign of their work. Indeed he uses the same ones. There are several pictures of the entrance to the Yard, including two which show Charlton's house when it had been changed into the 'Bon Marche' about 1870. There is also a small reproduction of a poster that shows the Yard from behind with its gardens.[22]

Seymour Cottages were demolished in 1907 to make material for road building, which suggests they were built of more than wood. It was hoped to refurbish Wagg Cottage No. 1, but the Council decided it would cost too much and so it, too, was demolished.

Slowly the premises west of the Midland Bank were sold to the Council from Upjohns at No. 201 High Street to the Boster's sheds at 219. At 211 was the Six Bells public house, established in the 1840s, and possibly enlarged at a later date. It stood just to the right of the entry to the Yard. It was to have to wait some time before being rebuilt – from 1905 to 1914 – for both the Council and the Licensing Authority continually delayed it. Some parts of houses in Mill Hill Road were also required.[23]

Having reached this stage the Council met new problems. They laid the curbstones for the

new road only to discover they had not left space on the west side for pavements and shops. So they had to turn to Miss Clara Williamson who still owned that piece of 'Woodlands'. The rest had already been sold to the Council and Middlesex County Council partly for the erection of a school and partly for a recreation ground. And so finally the road was laid and named Crown Street; of course, there were new problems at once.

Crown Street was intended to link with Park Road North, but the latter road was never sufficiently widened. Indeed in 1965 it was planned to become a footway through the tower blocks of South Acton. So instead Crown Street merely became another way of reaching Gunnersbury Lane via Mill Hill Road.

There was much discussion and disagreement as to whether costers would be allowed in the new street. Their stalls were allowed in the end, but were found to be a nuisance since they blocked the road. A place was found for them on a piece of the Woodlands land towards the south-west end. There was a reluctance, too, to take space and erect shops. It was not until Poore and Sons decided to expand after the Great War that the west side of Crown Street was developed using material from the War – old Army huts. In 1926 they added 129ft frontage on the south and east and opened a covered market there in 1928. In 1933 they replaced the shops on the west which masked the open market they had set up in 1921. Poores called it the first Town Shopping Centre in Acton.[24]

All this was eventually replaced by a block of flats with a few shops below on the east side, and a surgery and chemist's shop on the west with flats above. The road is now mainly used as a cut through to and from Gunnersbury Lane into Acton High Street.

NOTES

[1] P Hindle *Medieval Roads* (1982).
[2] PRO C 54/43 m 16 Cal. Chart. Tolls 1257–1300.
[3] 'Journey by Warden and Fellows of Merton 1315–1470' in GH Martin *Road Travel in the Middle Ages.*
[4] PRO Cal. Close Rolls Edward III 1374–77, Richard II 1377–81.
[5] *Acton Gazette* 22/8/1924.
[6] LMA MR/LV Victuallers Annual Licence Lists 1716–1829. LMA PS W W4 1-4 Petty Sessions Records 1873–1923.
[7] LMA DRO 52/286.
[8] LMA DRO 52/288.
[9] LMA DRO 52/288–300.
[10] ELHL Acc. 84/3 Vestry Minute Book. (ELHL: Ealing Local History Library)
[11] PRO RG 12/1035.
[12] Acton Inclosure Award 1859, copy at LMA and elsewhere, for more details of development *VCH Middlesex* Vol VII, 1 ff.
[13] ELHL photocopies of Acton Census Returns 1851 to 1891.
[14] Kensington Marriage Register, General Register Office: 1854 no. 43.
[15] Brentford District, Acton sub-district no. 322: Death Cert. 17/2/1872.
[16] *Acton Gazette* 20/2/1892, 11/2/1893, and 17/11/1894.
[17] ELHL *Acton Terrier* 1, 63, 154.
[18] ELHL Minutes of Acton Urban District Council 1903–1910.
[19] ELHL *Acton Terrier* 1.
[20] PRO HLG 1/65.
[21] *Kelly Directories.*
[22] Photographs *eg* in Rowland *Acton As It Was* (1990).
[23] ELHL Minutes of Acton UDC.
[24] T and A Harper Smith, *Poores of Acton. The Story of a Business* (1994); reports in *Acton Gazette.*

INDEX

P. Ellis

Page numbers in italics denote illustrations

NOTES FOR CONTRIBUTORS

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