Transactions
Volume 55
150th Anniversary

LAMAS

London and Middlesex Archaeological Society

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.

LAMAS also welcomes the submission of books for review in *Transactions*.

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Front cover: 'Near Highgate': undated watercolour by Charles Earle (1832–1893), *c.* 1860–1870. See Frontispiece. © *Michael Hammerson*

Back cover: Bronze Age 'bronze knife or dagger' recovered from the excavation of a round barrow formerly on Sandy Lane, Teddington, in 1854, described in *Archaeologia* in 1855 and appearing in print in Volume 1 of the *London and Middlesex Archaeological Society Transactions* for 1855–60 (p 140).

LAMAS

Transactions of the

London and Middlesex Archaeological Society

Volume 55
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Frontispiece: 'Near Highgate'. Undated watercolour by Charles Earle (1832–1893), c.1860–1870. The spire of St Michael's, Highgate, is on the horizon behind reapers in the foreground, and the old Highgate Archway is on the horizon at the far right. The viewpoint, which looks north-west towards Highgate, is probably c.200m north of Holloway Prison and c.350m west of Holloway Road. The houses in the middle distance are St John's Grove; Stamford's 1862 map shows the area between Holloway Road and Highgate Road as still essentially open fields. The 1873 Ordnance Survey map shows roads and houses encroaching onto the area to the west of Holloway Road and over the next fifteen years the area was essentially fully built over.

Contents

London & Middlesex Archaeological Society

Registered as a charity

ESTABLISHED IN 1855

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Local History Committee: Chairman, Mrs Eileen Bowlt, JP, BA

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London and Middlesex Archaeological Society

149th ANNUAL REPORT OF COUNCIL FOR THE SUBSCRIPTION YEAR ENDING 30th SEPTEMBER 2004

Council met five times during the year. The 150th anniversary sub-committee has been working throughout the year on the forthcoming celebrations and events for LAMAS members in 2005. Highlights include celebrity lectures, a colour newsletter, and special features in *Transactions* and *London Archaeologist.*

Members of Council and others continued to represent the Society at meetings of the Standing Conference on London Archaeology, the Southwark and Lambeth Archaeological Excavation Committee, the London Archaeological Forum, and the Victoria County History (Middlesex).

Lecture meetings

Meetings on Wednesday evenings at the Museum of London continued to be organised by Cheryl Smith. The season started in October 2003 with a presentation by Ken Welsh of Framework Archaeology on the multiperiod archaeology of Heathrow. Other archaeological topics were Douglas Killock of Pre-Construct Archaeology on 'A religious precinct on the edge of *Londinium*' — a major Roman site in Southwark (December); Phil Emery and Kevin Wooldridge on 'The archaeology of St Pancras burial ground' (January 2004); and Melissa Melikian of AOC on '4th-century "Bling Bling"' — a Roman Cemetery in Southwark. In November 2003 Dr Tony Trowles, Librarian of Westminster Abbey, spoke on 'A vast number of learned volumes' — the history Westminster Abbey Library from 1560 to the present day; in March 2004 Dr Steven Brindle of English Heritage spoke on 'Brunel, the Great Western Railway and the making of Paddington Station, 1836–1855' — with special reference to the recently discovered Brunel bridge across the canal; and in May Dr Heather Creaton of the Centre for Metropolitan History introduced us to 'The inside story: diarists' views of London', based on largely unpublished diaries of Londoners.

At the AGM in February the President, Professor Clive Orton, gave his second Presidential Address, on 'The Third Radiocarbon Revolution'.

Publications and Newsletter

The *Newsletter* appeared three times under the editorship of Meriel Jeater, continuing to include a wide range of reviews and short articles as well as news of the activities of our own and other societies. *Transactions* volume 53 appeared. Council continues to appreciate the hard work carried out by our Production Editor Lynn Pitts.

The Society's website, ably managed by Francis Grew, continues to attract attention. There have been discussions during the year about its future development.

Membership

Paid-up membership for the year was 662, compared with 659 last year and 651 for 2002. 51 new members joined the society, including 24 by way of the Society's website.

Archaeology Committee

The Archaeology Committee met four times during the year, in January, April, June, and October. Reports on archaeological fieldwork and related matters were received from MoLAS, GLAAS, and SCOLA. The Committee considered a number of issues, including the South Mimms archive and the future of the LAARC and GLAAS.

The Committee organised the 41st Annual Conference of London Archaeologists, which was held in the Museum of London lecture theatre on Saturday 27th March 2004. Nearly 200 delegates witnessed the presentation of the eighth Ralph Merrifield Award to Rosemary Yeaxlee for her long service to London's archaeology. Unfortunately, Rosemary was unable to attend in person. Typically, she was leading a weekend outing to Caerleon, but her good wishes and thanks were passed on to the Conference by the Chair, Harvey Sheldon. The morning session continued with a round-up of recent archaeological work in the London area, including excavations at Blackwall, Shadwell, Enfield, and Southwark. The afternoon session was devoted to the archaeology of the recent past, and was addressed by Kieron Tyler, David Perrett, Gustav Milne (for Nigel Jefferies), and Chris Ellmers.

Local History Committee

The Committee held a total of five meetings, in October 2003 and January, March, June, and September 2004.

The Annual Conference on 15th November 2003 was on the subject of 'Lunatick London' and was well attended, despite its rather unusual title. Delegates heard talks on 'Medieval London hospitals' by Christopher Thomas, 'Care of the mentally ill in the 17th and 18th centuries' by Sara Pennell, 'Charles and Mary Lamb' by Lionel Lambourne, 'The architecture and design of Victorian asylums' by Dr Jeremy Taylor, and 'Psychiatry and war' by Drs Michael Neve and Trevor Turner. The Conference concluded with two talks by members of Affiliated Local History Societies: Robert Leon from Camden on St Luke's, and Dr Oliver Natelson from Friern Barnet on Friern Hospital.

The assistance of the Committee was sought over a proposed 20th Century Gallery at the Museum of London, and a projected web site on the same topic. This seemed an ideal opportunity to promote the closer involvement of Affiliated Societies both with LAMAS and each other. Societies were invited to a half-day Conference at LAARC in March 2004, which included an interesting tour of the Collections. The project is on-going.

The Committee received 29 submissions for the Publications Award and met in September to create a short list for final assessment by three independent judges.

Historic Buildings and Conservation Committee

The Historic Buildings and Conservation Committee have had ten meetings and looked at 123 planning applications over the past year. 21 were from Kensington and Chelsea, 15 each from Westminster and Lambeth, 8 each from Camden and Tower Hamlets, 7 from Hounslow, 6 each from Haringey, Harrow and Bexley, and 5 from the City. There were 3 cases from Islington and 1 or 2 each from 14 other London Boroughs.

We have responded to the pressures of Local Planning Authority deadlines by increasing the number and frequency of our meetings, allowing for a faster response rate.

We have also dealt with extremely complex cases, Thameslink 2000 and the Kings Cross/St Pancras development being the most difficult. These two have taken much of the Committee's time because of the impact on so many historic buildings across such a wide area. Other large proposals have included Farrell's scheme for the Royal Institution, the proposals for Smithfield Market, the Royal London Hospital redevelopment scheme, and the new blocks planned around the Lots Road Power Station. We have also looked at the Ram Brewery in Wandsworth, and Brixton Prison. In the West End, the Queens Theatre and the Crown Commissioner's proposals for Regent Street have also taken up much time. The Grade 1 Listed Ickenham Manor, East End Farm, Pinner and other timber framed buildings in the outer Boroughs form a contrast to this work.

Numerous other projects have been considered across the Greater London area and detailed comments made to Local Planning Authorities. The work continues and we look forward to the 150th Anniversary for which we shall be organising a series of Central London walks examining some local historic buildings and some of the issues considered by the Committee.

BY DIRECTION OF COUNCIL

John Clark
Chairman of Council

Nikola Burdon
Honorary Secretary

LONDON AND MIDDLESEX ARCHAEOLOGICAL SOCIETY
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 30th SEPTEMBER 2004
AND BALANCE SHEET AS AT 30th SEPTEMBER 2004

2002/2003 £	**Income**	*2003/2004* £
10,111	Subscriptions	10,116
0	Donations received	0
1,853	Dividends and interest	2,094
673	Sales of publications	315
6,560	Grants for publications	6,250
19,197	TOTAL INCOME	18,775
	Expenditure	
10,707	Transactions	10,114
1,679	Newsletter	1,740
0	Grants to LAARC & publications	500
282	Internet costs	47
180	Lectures and visits	210
(866)	Local history conference	(793)
(375)	Archaeological conference	(526)
0	Historic buildings committee	0
113	Postage, printing & stationery	343
100	Ralph Merrifield award	100
60	Bank charges	60
100	Subscriptions	100
0	Miscellaneous expenditure	740
11,980		12,635
7,217	Surplus/(Loss) for the year	6,140
19,197		18,775

2003 £	**Assets**	£	*2004* £
2,006	Investments		2,006
262	Sundry debtors		25
3,888	Bank & cash balances		9,092
66,319	Building society deposits		75,832
22,000	Library		22,000
94,475			108,955
	Liabilities		
850	Future publications		850
6,500	Provisions		6,000
11,983	Publication fund		12,053
96	Creditors		8,436
	ACCUMULATED FUNDS		
	General fund		
45,976	Balance at 1.10.03	75,046	
(204)	Transfer to/from publication fund	(70)	
57	Transfer to/from provision for Transactions	0	
0	Transfer from grants unexpended	500	
22,000	Library valuation	0	
7,217	Surplus/(Deficit) for the year	6,140	81,616
94,475			108,955

WELCOME!

Welcome to Volume 55 of the *Transactions*, this year commemorating the 150th anniversary of the London and Middlesex Archaeological Society.

Who could have imagined, on a blustery winter's evening in 1855, when a group of like-minded individuals — mostly compiled of the newly defined and rising middle class — sat down at Crosby Hall, that 150 years later the Society they formed that night would still be a strong and vibrant one, with over 600 members and a host of achievements behind it. We have selected nine papers with which to celebrate this special occasion, which reflect upon the past history of the Society, yet also look ahead to future areas of study, and even to future scholars.

John Clark, present Chairman of the LAMAS Council in 'So, What have you done for us lately?' updates Cdr G Bridgmore Brown's 1955 paper on the history of the Society, highlighting the events of the last 50 years. The early members of the Society do indeed seem to have been a jolly lot, and one that enjoyed sometimes extravagant jaunts, significant enough to be reported in the leading newspapers of the time. Eileen Bowlt, in 'Some early LAMAS meetings and outings', details these astonishing events; outings that have fallen by the wayside in recent years but which we are glad to see have made a comeback in 2005 — perhaps not with the same grandeur, but certainly with the same enthusiasm!

In many ways, the present Volume bears a great deal of similarity to the first *Transactions*, reporting on the archaeological finds and news of the day, as Barney Sloane shares in 'Archaeology in London: annual round-up and news for 1855/6' — certainly the thrill of archaeological discovery and even some of the characters involved are recognisable to the present day! The first *Transactions* were also laden with colour plates, which must have been an expensive commitment for the early editors, but which we felt it was appropriate to re-introduce for this special Volume. Peter Guillery's short note, 'Police graffiti, New River Head, Finsbury', gives a charming snapshot of the lives of the police constables patrolling the beat in Victorian Clerkenwell. Clearly, instead of carving their initials on brick walls, they should have been reading their copies of the LAMAS *Transactions*!

Looking over past members of LAMAS is almost a roster of London's leading archaeologists and historians. Study of the past, however, is no recent pursuit, as Robert Whytehead explains in 'The Lesse Set By', where he looks at Robert Fabian's 16th-century work on the location of *Lundenwic*, which has only recently been confirmed as being in the heart of Covent Garden.

From past scholars to future ones, we are very pleased to publish papers from three present doctoral students; David Lewis (we reproduce here his MA dissertation in full), Jeremy Ashbee, and Lisa Yeomans demonstrate the diversity and depth of today's, and tomorrow's, leading researchers.

We end with a very special paper indeed. In 1954 John Betjeman published his famous poem *Middlesex*, in which he reminisced about the idyllic past of the county, and how rapidly change had been effected. Michael Hammerson has chosen to illustrate this change, from rural tranquillity to the hustle and bustle of the area well familiar to us all, using his collection of 19th- and early 20th-century postcards and photographs. This is a unique outing for these images, and one cannot think of a more appropriate airing, as we celebrate 150 years of LAMAS, and look forward to 150 more.

Enjoy!

The Publication Committee

SO, WHAT HAVE YOU DONE FOR US LATELY?

John Clark
Chairman of Council

1855–1955

For the Society's *Transactions* in 1955 the then Chairman of Council, Cdr G Bridgmore Brown, wrote an account of the first 100 years of the London and Middlesex Archaeological Society. It falls to me, his successor, to bring the story up to date.

Bridgmore Brown's article is a workmanlike piece, tracing the Society's origins in the establishment of a provisional committee in July 1855 and the inaugural meeting in Crosby Hall on 14 December that same year where it was unanimously agreed 'That a Society, to be called the London and Middlesex Archaeological Society, be now established'. Perhaps he could have made more of the Society's flamboyant early activities: the excursions or 'country meetings' described by Eileen Bowlt elsewhere in these pages, when a train was hired for the journey, and the meeting ended with the serving of a 'collation' at a local hotel or suitable hall — or in the absence of such a convenience in rural Middlesex, on one occasion a large barn; or the 'conversaziones' held in City livery company halls, with music (on one occasion provided by a string band from the Royal Artillery) as well as suitable displays of 'various objects of art and antiquity'. Perhaps he should have drawn attention to the strictly limited social class from which the first members of the Society came — that middle-class 'Victorian establishment' discussed by Sally Brooks in her analysis of the Society's membership published in *Transactions* 36 (1985). He commented that the Society's annual subscription had been maintained at one guinea (£1.05) ever since 1879 (it did not rise (to two guineas) until 1958) without noting that this — a fall in real terms — might have encouraged a much wider membership. And perhaps he might have noted in passing the whiff of scandal that surrounded the extraordinary dilatoriness of an early Honorary Secretary in paying into the bank subscriptions he had received from members, which resulted in a loss to the Society of 'as far as the Council could ascertain £59 2s 3d' — no small sum in 1857.

Bridgmore Brown recognised that the fortunes of the Society had fluctuated over the years, noting the period in the early 1900s when membership figures had fallen to little more than 100. He himself had joined in 1912, and was one of only two individual members whose membership dated back to before the First World War. He recalled 'the halcyon days of cheap railway travel' between the two World Wars when the Society had once again organised full-day visits to places outside the London area, and regretted that even with the ending of the Second World War 'the delay in restoring excursion facilities on the railways made it impossible to resume summer visits to distant objectives' — but since 1948 visits had been made by coach. Membership figures had risen, he was pleased to report (although it was 1950 before they had again reached a figure, about 350, that approached the 395 reported in 1857) — at the time he wrote, membership stood at nearly 500.

But changes in the Society and its activities reflected much broader changes that had taken place during the years 1855 to 1955. The establishment of the Metropolitan Board of Works, in the same year that LAMAS itself was founded, was the first step towards London-wide

government and to major public improvements that were to entail both the destruction of historic buildings and archaeological discoveries. During the Society's lifetime the first national legislation had been introduced to protect ancient monuments and buildings — a major concern of LAMAS's founders. The Royal Commission on Historical Monuments had published its volumes on London between 1924 and 1930 and on Middlesex in 1937. The London County Council had begun its *Survey of London* series in 1900. The Victoria County Histories had been established, although only one volume on London (in 1909) and one on Middlesex (in 1911) had been published. Local record offices and libraries had become much more accessible for research. One of the Society's stated objectives, the foundation of a museum, had been overtaken by events, with the reopening on a sounder footing of the Guildhall Museum in the 1870s, and the foundation of the London Museum in 1912. LAMAS had been joined in the London area by other local historical and, later, archaeological societies; its Affiliated Local Societies scheme was established in 1954 and by 1955 included 16 societies (from the East London History Group to the Watford and South-West Herts Archaeological Society). Other societies had been formed to campaign for the preservation of ancient buildings, from the Society for the Protection of Ancient Buildings in 1877 to the Georgian Group in 1937. By the time Bridgmore Brown wrote, the days when membership of LAMAS was the only option for those in London or Middlesex who had an interest in and concern for the past of their city and county were long gone.

1955–2005

But what of the broader picture in 1955? To those interested in London's archaeology the first date in the 1950s that springs to mind is probably not 1955 but *1954* — when the discovery of the Temple of Mithras brought to excited public attention the work of the Roman and Mediaeval London Excavation Council on London's bombed sites. When that Council was established in 1946, LAMAS was invited — perhaps out of politeness — to nominate a representative. (The Society did however make a grant, of £10, to the expenses of RMLEC's work.) However, in 1950 the Society invited W F Grimes, Director of both RMLEC and the London Museum, to become President — the first practising archaeologist to hold that position since the brief tenure of General Pitt-Rivers in the 1880s. It was Grimes who presided over the 1955 centenary celebrations, which included a special viewing of the finds from the Temple of Mithras, on display for the first time in the Guildhall Museum, reopened in 'temporary' quarters in the Royal Exchange.

For local historians 1955 is a significant date for another reason — not mentioned by Bridgmore Brown — the reinvigoration of the Middlesex Victoria County History. The post-War period had seen the establishment of national bodies not just for archaeology — the Council for British Archaeology — but for local history — the Standing Conference for Local History. The latter encouraged the setting up of county committees, and the Middlesex Local History Council was formed in 1951. It does not seem to have been seen as a rival by LAMAS, although when it eventually merged with LAMAS in 1965, becoming the Society's Local History Committee, the marriage at first was not an entirely happy one.

The Middlesex Local History Council took the initiative in trying to revive the abortive Middlesex Victoria County History, of which only one volume had appeared in 1911. A successful approach for funding to local councils led to the establishment of the Middlesex VCH Council in 1955. Since then eleven volumes of painstaking and invaluable research on the historic county have been published. Although, as members of LAMAS will know (our Society is still — as successors of the Middlesex Local History Council — represented on the Middlesex VCH Council), there have lately been very serious financial problems, there is still hope that the project begun so well 50 years ago can be completed.

In 1959, LAMAS attempted to reach a new audience by forming a Schools Section, with membership open to schools, but not to individual schoolchildren, in the London area. With changes both in the educational system and in syllabuses this concept had limited success, but was to lead to the later LAMAS Youth Section (or Young LAMAS), which was very active for several years in the 1980s and 1990s until, for various practical reasons, it closed in 1995.

To those who wish to follow the progress of archaeological investigation in London after the Second World War, volumes of our Society's *Transactions* during the 1950s are disappointing.

It was only in 1960 that the first regular reports 'contributed by staff of the Guildhall Museum' (notably Peter Marsden) began to appear. But an increased pace of archaeological discovery and greater public interest can be seen in the Society's lecture programme, which in 1968 included speakers like Glyn Daniel, Sheppard Frere and Rupert Bruce-Mitford.

The 1960s saw the establishment of the Society's special committees. The Historic Buildings Preservation Committee (now Historic Buildings and Conservation Committee) began the still essential task of considering the impact of planned developments on the built heritage of London and responding with advice on particular cases. The Archaeological Research Committee organised its first annual conference in 1964; the Local History Committee — the now integrated Middlesex Local History Council — soon followed suit. Held on Saturday afternoons in the Livery Hall at Guildhall, these events included tea (with dainty iced cakes). At the archaeological conference of 1968, members paid 5s (25p), non-members 7s 6d (37.5p) and heard reports on excavations by Roy Canham, Nick Farrant, Harvey Sheldon, John Kent and Peter Marsden. (The price had risen to 75p by 1976, the last year that the archaeological conference was held at Guildhall.) 1967 saw the first issue of the Society's *Newsletter* (originally *News-letter*) replacing an earlier *Bulletin*. From the beginning this included notices of the activities of our affiliated societies, still an essential element of the *Newsletter*. But that LAMAS was no longer alone in the field was emphasised in 1968 when a new type of archaeological magazine for London, the *London Archaeologist*, made its appearance — thanks to the enthusiasm of Nick Farrant (Fuentes) — and Londoners could find out about recent and current excavations without joining a society!

In many ways the Guildhall Museum's excavations at Baynard's Castle in 1972 marked a turning point, with wider recognition of the special nature and problems of 'rescue' archaeology. Our Society contributed to the first group of published surveys of London's archaeological knowledge and potential in its first Special Paper *The Archaeology of the London Area: Current Knowledge and Problems* in 1976, alongside Rescue's *The Future of London's Past* and the joint Museum of London/Department of the Environment/Greater London Council publication *Time on Our Side?* In 1975 the Society took a more active role as local units were established or reconstituted to carry out rescue excavations in London, with the formation of the Inner London (North) Archaeological Unit — the '(North)' seems to have become optional. This was managed by a committee of LAMAS representatives together with representatives of seven inner London boroughs which, with the Department of the Environment, provided funding. In the next few years the unit investigated over a hundred sites, ranging from Westminster Abbey to a sheet iron sentry box at the West India Dock, as well as publishing booklets on the archaeology of the boroughs for which the unit was responsible. For the first time the Society found itself in the position of employing full-time archaeological staff. Only the hard work of the then Honorary Treasurer, Allan Tribe, made this possible. It was, I suspect, with some relief that after long campaigning to win central funding from the Greater London Council (little did we know) we saw 'our' archaeological unit merge with others in the Museum of London's Department of Greater London Archaeology in 1983.

LAMAS had long had informal links with staff of the Guildhall Museum and the London Museum — members of the museums' staff served in a personal capacity on the Society's committees, and Roy Canham and his successor Alison Laws, the London Museum's archaeologists, had organised the annual archaeological conferences. With the establishment of the new Museum of London in 1976 these links were formalised, by an advantageous agreement made with the Museum's Board of Governors (although the suggestion that this made the Society a wholly-owned subsidiary of the Museum is one that should be strongly denied!). The Society's library and its meetings moved from the Bishopsgate Institute, which had been the Society's headquarters since 1911, to the new Museum of London building in London Wall. The archaeological conference in 1977 was one of the first events to be held in the Museum's Lecture Theatre, and took the now familiar form of a full-day meeting. The two annual conferences remain a major feature of our programme — the local history conference in particular, with displays by our Affiliated Societies, is very popular.

For some while after 1976, with myself as Honorary Secretary and the late Hugh Chapman as Honorary Archaeological Editor, much of the

Society's business centred on the Museum. Apart from the annual archaeological conference, the Society's contribution to the growing pace of archaeological work in the London area became chiefly that of publication — particularly that of the work funded by English Heritage (or Department of the Environment) and other public authorities, carried out by the Museum of London's Department of Urban Archaeology and the local units. Reports appeared in *Transactions* and in a greatly expanded series of *Special Papers*. For a while members might receive two or even three publications in a year: in 1979, *Transactions* plus two volumes (these issued jointly with the Surrey Archaeological Society) on excavations in Southwark; in 1980, *Transactions* plus the Special Paper on the *Roman Riverside Wall*; in 1988, *Transactions* plus *St Nicholas Shambles* plus *Surrey Whitewares*. The pace could not be maintained by what remained an essentially amateur society. Publication of *Transactions* began to lag behind, eventually appearing four years in arrears. The last Special Paper of that series was published in 1992, and the decision was taken to concentrate on *Transactions*. The employment after 1992 of a production editor, first Gillian Clegg and more recently Lynn Pitts, took a major burden off the honorary officers, and *Transactions* appeared twice a year until the arrears were made up.

In many ways the 1980s were to all appearances a golden age for LAMAS. The Society's visits programme was flourishing, particularly through the enthusiasm of Edward Biffin, who provided copious historical notes to accompany each visit and organised evermore ambitious excursions. Trips lasting several days to the Welsh Marches, to Hadrian's Wall, to North Yorkshire were followed in 1983 by one to Belgium. Edward Biffin resigned in 1984, and although, thanks to the efforts of Rupert and Natalia Morris, the planned trip to Normandy in that year did take place, nothing so ambitious has been arranged since. Gradually attendances on the traditional full-day coach trips began to fall off; some had to be cancelled for lack of interest. The series came to an end in 1993, and since then — until the special series organised for this year of 2005 — only occasional one-off visits have been organised. Evening lectures held at the Museum of London have similarly sometimes attracted very small audiences — there does seem to have been a welcome upswing recently.

To judge by the membership figures included in our Annual Reports the peak of the golden age came in 1984, when membership apparently stood at the extraordinary figure of 932. However, it was admitted that many members were in arrears with their subscription — some by several years. Many who should have been struck off long ago were still on the books — the decision by Council to impose the Society's regulations more strictly led to a 'loss' of on-paper members of about 130 over the next two years. But a real fall was to follow. From the 1990s to today membership has remained closer to 600 — although currently rising.

LAMAS's golden age coincided with the last flowering of publicly-funded rescue archaeology. Changes were heralded when hard on the agreement of the GLC to fund archaeology centrally came the news that the GLC itself was under threat. The Society was involved in campaigns to ensure that following the proposed abolition of the GLC there should be adequate provision for London-wide archaeology, for the Greater London Record Office, and indeed for the funding of the Museum of London. Soon the introduction of the PPG16 regime and funding of archaeology by developers, together with competitive tendering by independent archaeological units, changed the archaeological landscape totally. In 1992 LAMAS joined with the Surrey Archaeological Society, the CBA, and the Society of Antiquaries to form the Standing Conference on London Archaeology to represent the interests of London archaeology and to lobby the many public bodies that now were involved.

This is not the place to discuss either the details or the effects of the current system. It has, however, resulted in *more* archaeology requiring publication. Even if it had been suggested, LAMAS would not have had the resources to revive the Special Paper series for this purpose. Our *Transactions* is now just one of a number of media available, alongside the monograph series — not just those of the Museum of London Archaeology Service but of other units working in London — and the *London Archaeologist*. It has never been so difficult to keep up to date with archaeological activity in London. There is no shortage of articles being offered for publication by the archaeological units — these usually come with full funding. It remains a concern that papers on historical topics are not forthcoming, and it is to be hoped that the historical content of *Transactions* can be increased in future.

The years since 1990 have not been without

advances. In 1997, thanks to Francis Grew, our website went live. In the same year the Archaeological Research Committee (now Archaeological Committee — since its brief is far wider than research) introduced the Ralph Merrifield Award, named in honour of our Past-President, to reward contributions to the study or popularisation of London archaeology. The Local History Committee has since taken up the idea of an annual award, by the introduction of a prize for publications by local societies or society members.

The Society's finances are in a good state — the work of our last Honorary Treasurer Rupert Morris has put them on a firm footing. A feature of the Society's activities in recent years has been the selective use of those funds to support external bodies and projects that accord with our objectives and our charitable status. In 1998, like many other groups and individuals, LAMAS contributed towards the costs of the establishment by the Museum of London of the London Archaeological Archive and Research Centre. Recognising the impracticability of reviving our own 'Young LAMAS' organisation we have made a grant towards the Young Archaeologists Club, Central London Branch. We have made grants towards publications — on the Neolithic in South-East England, on London tin-glazed wares, on London coinage (not all yet published). And Council has now decided to reserve funds to support research projects undertaken by LAMAS members on the archaeology or history of our area.

CONCLUSION

In 1955 the then Chairman looked back on a century of fluctuating fortunes and huge changes in the climate within which LAMAS functioned; I look back similarly on 50 years of fluctuating fortunes and climate changes (although my own membership of LAMAS and personal involvement goes back only to 1968!). In the course of this short report I have named a number of individuals — no slight is intended to the work of so many others. The Society has depended and continues to depend on all its officers, its committees, and the unsung contributions of its members at large — not just their subscriptions (though they are vital!) but their presence at our meetings and their wholehearted support for our objectives and our activities.

When LAMAS was founded it was, except for the national archaeological societies based in London and the neighbouring county societies in Surrey and Essex (and later, Kent), the sole society with an interest in the archaeology and local history of the London area. The original constitution set out its interests:

> the Ancient Arts and Monuments of the Cities of London and Westminster, and of the County of Middlesex: including Primeval Antiquities; Architecture, Civil, Ecclesiastical, and Military; Sculpture; Works of Art in Metal and Wood; Paintings on Walls, Wood, or Glass; Civil History and Antiquities, comprising Manors, Manorial Rights, Privileges and Customs; Heraldry and Genealogy; Costume; Numismatics; Ecclesiastical History and Endowments, and Charitable Foundations, Records, and all other matters usually comprised under the head of Archaeology.

Now, for Londoners interested in any one or more of these topics (or any embraced by that useful catch-all at the end) there are dozens of national, local, and regional societies, most of them with publications and programmes of lectures, visits, and social activities. There is the CBA and its regional groups. The British Association for Local History. Easily accessible museums, libraries, and record offices. Evening classes and opportunities for on-line study. Young Archaeologists Clubs. The *London Archaeologist* and *Current Archaeology*. Historical and archaeological magazines in the local newsagent. TV programmes for the armchair-bound.

Does LAMAS still serve a useful purpose?

Our Victorian founders defined the Society's objectives (here abbreviated):

1. To collect and publish the best possible information...
2. To procure the careful observation and preservation of antiquities discovered in the progress of works...
3. To make, and to encourage individuals and public bodies in making, researches and excavations...
4. To oppose and prevent, so far as may be practicable, any injuries with which Monuments and Ancient Remains ... may be threatened...
5. To found a Museum and Library...
6. To arrange periodical Meetings...

Well, in the words of the song, 'we're still here' — and with changes in style and now recognising

that we can do these things best in co-operation with other bodies or by supporting directly or indirectly the efforts of others, we can still pursue these objectives. Where we have perhaps enlarged on our ancestors' objectives is by recognising that we must extend our message beyond the safe middle classes of the 'Victorian establishment'. And perhaps like the 'archaeological establishment' in general we have not yet identified quite how to do that. Will the local Hackney kids who participate so enthusiastically in activities at the monthly Saturday meetings of the Young Archaeologists Club at LAARC — or their counterparts at the Rotherhithe YAC — join LAMAS when they grow up? Or any similar traditional archaeological society?

The next 50 years (indeed the next 10 years) may show us.

Like most of us today, I lack that facility for resounding if pompous phraseology that was to Victorian taste, and can be found extensively in the printed accounts of LAMAS's early meetings — taken from shorthand notes, so we can be confident the words were actually spoken. So, as our Society enters its next 50 years, I'll conclude with remarks with which my predecessor the first Chairman of Council, the Rev Thomas Hugo, introduced the first ordinary meeting of the Society in January 1856:

> ... with consciousness of right motives and a desire of doing good, prepared for any fortune but hopeful of the better, we entrust our bark to the winds and waves, and steer for utility if not for fame.

ARCHAEOLOGY IN LONDON: ANNUAL ROUND-UP AND NEWS FOR 1855/6

Barney Sloane

The London and Middlesex Archaeological Society is 150 years old this year. While the Society has always tried to look forward rather than back (often difficult in the fields of history and archaeology!), there is room, on occasion, for a pause and ponder about where we have come from and how we got to where we are now. In this context, the less-visited sections of journals and volumes, the 'proceedings' or 'notes' pages, as well as the indexed and thus well-read articles, often hide little-known gems provoking wonder, amusement, and reflection; the 1850s were years of no exception. This article therefore offers a gentle trawl through the archaeological journals, reports, and newspapers available at the time of our founding.

Since the first provisional committee meeting to discuss the establishment of the Society took place in July 1855, and the first meeting of full members in January 1856, I have drawn material from both years. The results show at once (and unsurprisingly) that so very much has changed, and yet at the same time that some 'current' ideas and research themes in London and Middlesex archaeology have very long pedigrees indeed. The summary comes in the form of a chronological collation to show the range of interest in each broad archaeological period, and a news board that lifts up some of the less well-known archaeological stories of the time. If the tone seems a little light-hearted, it is not meant to detract from the hugely valuable work of our past antiquaries both in bringing to light lost wonders of the region's archaeology, and in making absolutely certain that the climate was created, and has endured, for us to have a Society and a *Transactions* of which we can be very proud. They should be remembered with very grateful affection.

THE DISCOVERIES

Prehistoric

Probably the most widely reported and presented work was that of J Akerman at the great round barrow that formerly stood off Sandy Lane in Teddington. Already damaged by road widening, and threatened by further development in 1854, the barrow, then measuring 96ft (29.3m) across and 12ft 3in (3.7m) high, was subjected to what we might call a classic work of rescue archaeology in advance of development impact. Akerman and his team cut to the centre of the barrow, recorded a heap of calcined bones, and recovered a beautiful, intact bronze 'knife or dagger' as well as secondary burial evidence, worked flints and a 'half-baked urn'. The event was marked by an article in *Archaeologia* (36, 175–6), and the knife was exhibited widely at the Society of Antiquaries, LAMAS, and the Archaeological Association. It formed the subject of a colour finds illustration published in our *Transactions* (1, 140), with an apology that the technology of the day did not allow entirely accurate colour reproduction. For shame, editor! We also learn that so much exhibiting could take its toll on the artefacts: the knife was readily disintegrating by the end of the year.

The Thames, long renowned as a source of fine antiquities, in 1855 yielded up to the founder and trustee of the London and Middlesex Archaeological Society, the Reverend Thomas Hugo, two fine 'celts' of black flint from Battersea, with others from Blackfriars and Teddington (*Trans London Middlesex Archaeol Soc* 1, 133).

Roman

Naturally, the greatest area of interest shown by

the new Society was in the City of London itself, and the consideration of Roman discoveries was of paramount importance, as shown by the wide ranging study of the detail and context of that remarkable mosaic discovered under the former Excise Office between Old Broad Street and Bishopsgate Street on 20 February 1854 (*Archaeologia* 36, 203–13). Accompanied by a detailed plan and section which would certainly serve for any report of today, the article, by William Tite, attempted to link other mosaic finds in order to prepare a street plan of the Roman city, and then, by considering known Roman extramural cemeteries and known destinations of major regional roads, to establish the true locations of principal gateways in the Roman walls. We now know that his conclusions (involving the assumption that the forum lay under the Mansion House, and the need to 'move' Bishopsgate itself considerably south-eastward) were wrong, but the research framework had been set. The mosaic itself was carefully lifted in its entirety and removed to the Crystal Palace at Sydenham, intended for display in the exhibition. As we shall see, this was not exactly a guarantee of preservation for posterity!

Tite's mosaic was a lucky one. In January 1856, on the eve of his departure from London (see below), Charles Roach Smith penned a short article summarising recent Roman discoveries in London (*Trans London Middlesex Archaeol Soc* 1, 31–4). In it he reveals that another mosaic of 'great extent and good design', exhibiting 'busts (of deities?)' in roundels, had recently been revealed in Paternoster Row, but laments that the excavators for the sewer in which it appeared had cut it to pieces, not permitting even the crudest sketch to be made.

The article is interesting also for the light it sheds on the mid-19th-century understanding of the topography of the Roman city. Roach Smith identifies the wealthiest district as being in the vicinity of Bishopsgate Street and Leadenhall Street, based on frequency and execution of mosaics. He suggests Clements Lane as the site of the basilica based on the find there of an inscribed stone considered to spell PROVINCIA BRITANNIAE. And he locates a temple to the *Deae Matres* at Crutched Friars based on the large stone panel illustrating them, found there. Where, in this emerging civic structure, was London's theatre, for surely there must be one? His answer lay in the critical examination of the topography of the town just outside Newgate — the precipitous descent from Green Arbour Lane (opposite Newgate Prison) down to Seacoal Lane was to his eye uncharacteristic of the general slope of the Fleet Valley, and provided an obvious candidate for the setting of banked seats and flat stage. Alas, his theory remains just that.

No great distance to the south was one of Roach Smith's last published archaeological observations in London before his retirement. At the site of *The Times* newspaper's offices at Blackfriars, he recorded a length of the western Roman city wall surmounted by later medieval work (see below) (*The Builder* 1855, 221, 269).

Examples of other archaeological watching briefs which took place at the time included more Roman walls in Old Broad Street in 1854 and in October of that year Henry Sass reported a considerable length of what he believed to be Roman water piping. This lead conduit was formed in 9ft lengths and had joints sealed with lead strips. It apparently lay 4ft below the surface of the street. Given the depth (some 12ft) of Tite's mosaic below Old Broad Street, it seems improbable that this could have been Roman, and it may instead represent an otherwise unknown medieval (or even later) water system (*Proceedings at Evening Meetings of the London and Middlesex and Surrey Archaeol Socs*, 1860–63, 3–6). In Abchurch Lane in 1855 (*RCHM(E)* 1928, 106); and at Mincing Lane in 1855, where chalk, ragstone and brickearth in layers at a depth of 12ft to 20ft (3.7m to 6.1m) suggested dwellings formed within cob walls (presumably an early identification of clay and timber buildings) (*Arch Journ* 13, 274).

The very large scale excavations along New Cannon Street, between 1852 and 1854, revealed considerable remains at a depth of 12ft (3.7m). Roman walls of ragstone, chalk, and tile on wooden piles, and 20ft (6.1m) of plain red tessellated floor, and then another massive Roman masonry wall 20ft from the frontage, comprising masonry and layers of red and yellow tile, were accompanied by much other Roman 'work', pottery, and a human skeleton. The latter was considered to be Roman, lying east–west accompanied by iron coffin nails 2–7in long. The site was declared by Cuming to be a 'villa' and was, he said, comparable with one he had seen recently at Little St Thomas Apostle (*JBAA* 10, 110, 191, 195–6; *RCHM(E)* 1928, 111).

Also noted at the latter site, and compared with observations from 18th-century sewer cuttings, was a great deposit of charred wood

and ashes at a depth of 16ft (4.9m). Cuming, admirably connecting disparate stratigraphic observations, and anteceding many current debates about large scale Roman city fires, suggested, somewhat emotively, and 'with a fair show of probability that these ashes are the debris of the City, sacked and destroyed by the infuriated Britons in revenge for the outrage offered to the brave queen of the Iceni — the beautiful and ill-fated Boadicea'.

Cuming did not stop there with his remarkable vision to set research agenda. Roman London, he surmised, was a city only as far west as the Walbrook valley. To the west of this line lay the suburbs, composed in part of manufacturing areas, but also containing the grand Roman villas of which the Cannon Street remains was but one. Perhaps recognising inevitable disappointment that this proposal would raise in confident minds, he noted: 'It may be less honour to Londoners that London was not the large Roman city it had been supposed, but truth demanded that we should not conceal that point' (*JBAA* 10, 196). Such heresy exercised at least one meeting of the Society of Antiquaries too (*Archaeologia* 36, 211). Setting aside the fact that he was as mistaken as Tite about the city's topography, the important point is the nature of the approach. For no other period of London's archaeology was this kind of thinking being published at the time, and the idea of developing theories that he and others could test against observed data was arguably considerably ahead of its time for the capital.

Antiquities from the City and its environs were, of course, also collected and displayed. Another reference to the *Deae Matres* was unearthed in Budge Row in 1855, in the form of a white marble cornice just 15½in long by 4in high, carrying the inscription: 'to the mother goddesses, the district restored [this shrine?] at its own expense' (*Proc Soc Antiq London* 4 (1856), 113). The ubiquitous Reverend Hugo had obtained a statuette of the young Hercules with the Nemean Lion, found at the junction of Cannon Street with St Paul's churchyard (*Arch Journ* 12, 286), while the bronze of an archer discovered in Queen Street, Cheapside, in 1842 was still considered current enough for exhibition and display to the new Society (*Trans London Middlesex Archaeol Soc* 1, 133; see also *RCHM(E)* 1928, 46). Slightly lower down on the 'Wow!' factor scale were three Roman lamps, and bits of Roman horse furniture from Queen Street (*Trans London Middlesex Archaeol Soc* 1, 134). Further afield, the Chairman of another brand new county archaeological society, Leicester (antedating LAMAS by just a handful of months, and many happy returns to them indeed!), exhibited three bronze Roman coins, from the Fleet Ditch at the bottom of Holborn Hill. We are told one of these coins bore the name LICINIUS and the image of a fortress (*Leics Archaeol Soc Trans* 1, 34).

Moving outward from the City, in Bow, the discovery of a Roman stone coffin, accompanied by a vase, an urn, and a patera, may (sort of) represent the earliest enactment of the Burial Act (of 1853): the finder being unsure as to how to proceed in the matter of the human remains, a member of the local constabulary was quickly summoned to provide formal direction. His solid and practical advice was to reinter the bones in a nearby gravel pit, advice which was immediately followed: the skeleton was apparently 'huddled into a hamper'(!) and duly disposed of (*Trans London Middlesex Archaeol Soc* 1, 193). From a site not too far from Bow, in Ratcliff Highway, discovered in 1852, Thomas Hugo provided for exhibition and publication a beautiful example of a Roman fibula brooch (*Trans London Middlesex Archaeol Soc* 1, 22; *JBAA* 10, 88) (Fig 1).

Perhaps, in comparison with other displayed antiquities, pride of place for least unique artefact should go to the single (and as far as is reported, unremarkable) Roman brick from the city wall, proudly exhibited to the Society by Henry Ely (*Trans London Middlesex Archaeol Soc* 1, 146). One wonders how long the gathering was engaged by this object.

Saxon

The Saxon period, ever ephemeral and mysterious in London, was represented only by Reverend Hugo's exhibition of Merovingian gold coins from the Thames (unhappily not well located) and a lovely lead Saxon fibula 'brooch' in fine enough a condition to merit an illustration and the disconcerting descriptor 'nearly new'! A Saxon cross was claimed from the site of Christ Church, Newgate Street, but no more information was provided (*Trans London Middlesex Archaeol Soc* 1, 123, 143, 146).

Medieval

Medieval archaeology in contrast was well represented and religious life was, perhaps unsurprisingly, at the top of the archaeological

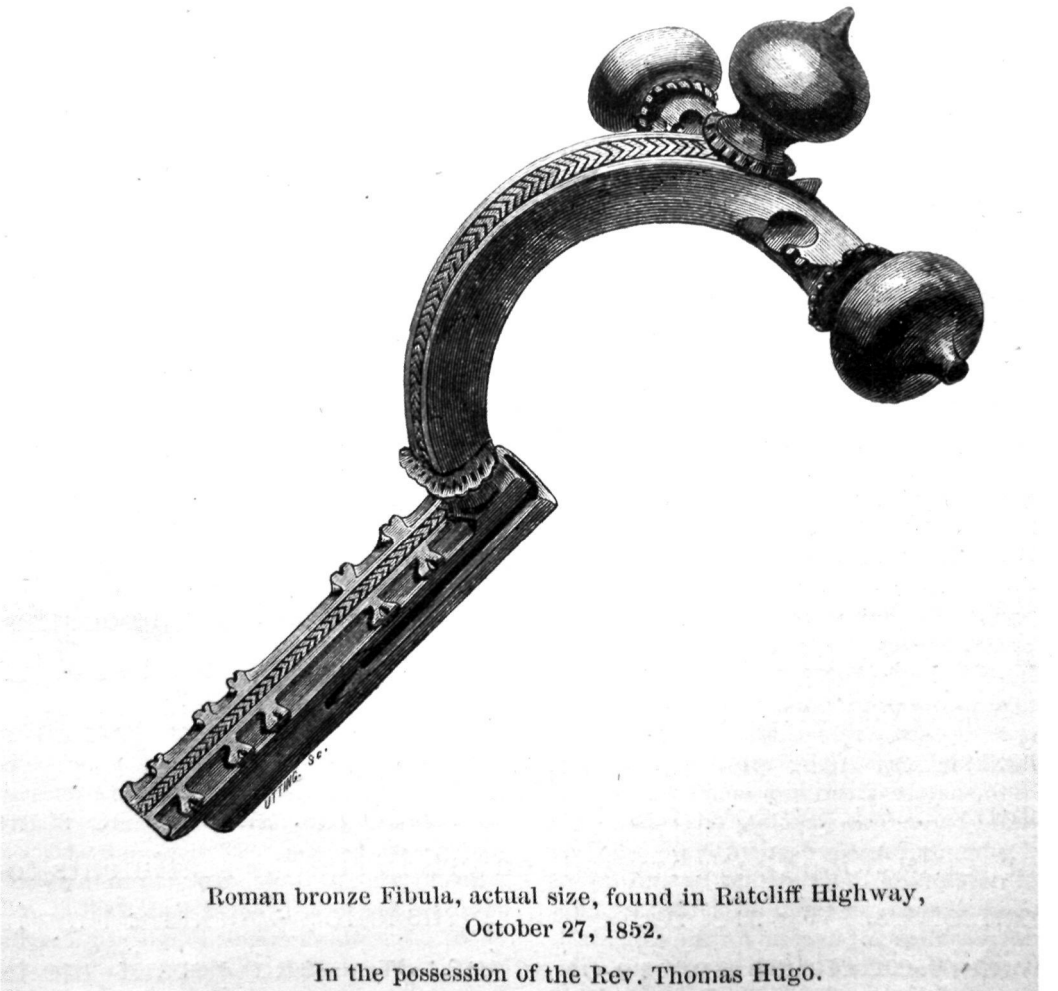


Fig 1. Hugo's Ratcliff Roman brooch (image enlarged here)

agenda. The study of extant antiquities was of obvious importance, with our Society publishing articles on St Helen's Bishopsgate, and work on monumental brasses in the region in its first volume. Religious architectural fragments were also of interest. During late 1854–56, stonework derived from Blackfriars, St John Clerkenwell (Fig 2), Greyfriars, and St Stephen's chapel Westminster was exhibited (*Illustrated London News* June 1855; *Trans London Middlesex Archaeol Soc* 1, 121, 133; *Proc Soc Antiq London* 3, 248). Westminster was ripe for antiquarian pickings following the fire that had gutted the palace in 1838, and the massive rebuilding project still under way in 1855, and the accounts of further medieval antiquities give wonderful (and sobering) details of how they were acquired (*Trans London Middlesex Archaeol Soc* 1, 143). An entire medieval painted panel deriving from the palace's Painted Chamber was purchased in a cellar on the palace site from workmen using the proceeds to 'buy liquor'. At the same time, Tudor painted glass could be obtained from Henry VII's chapel by paying boys to clamber up the exterior water pipes and tease quarries out! To set academic curiosity at ease in the abbey itself, the stone step between the shrine of Edward the Confessor and Henry V's tomb was broken out to free the previously obscured end of a worn medieval grave slab. What was revealed is really quite beautiful and formed the very first colour plate published by LAMAS. It was (so it is

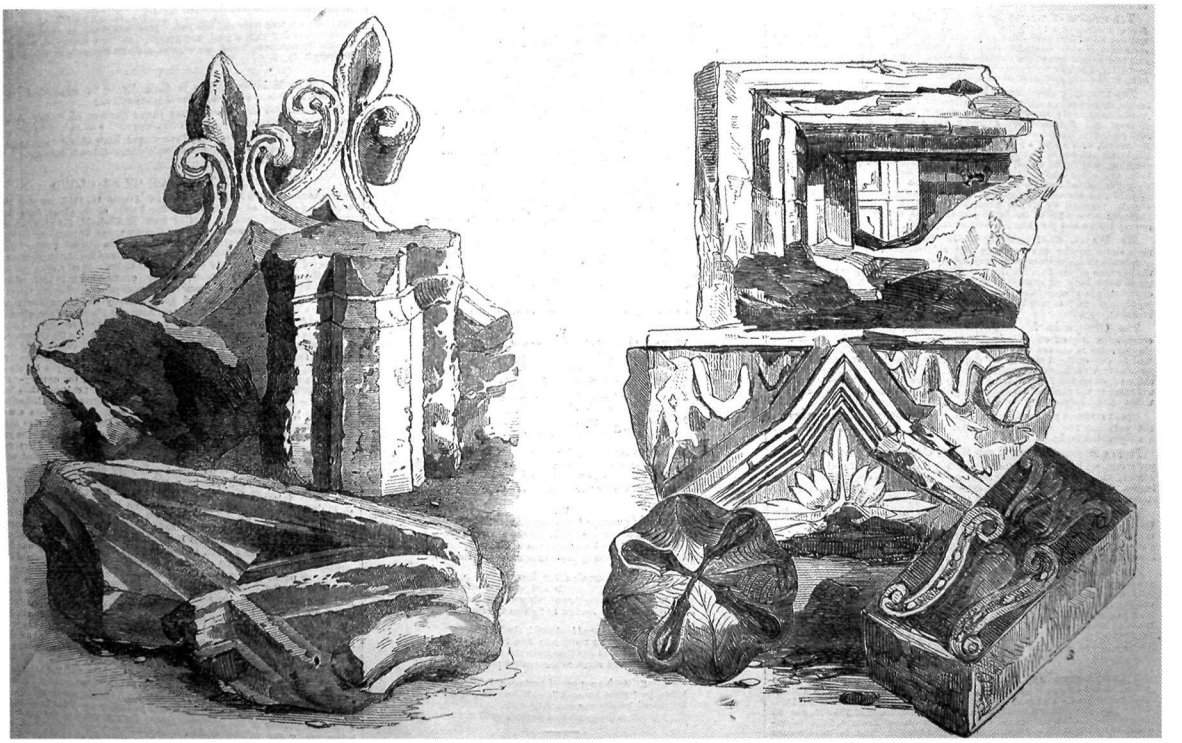


Fig 2. Architectural fragments from St John Clerkenwell (Illustrated London News)

believed) the memorial of the one time Earl of Pembroke, son of William of Valence, and it was inlaid with an extraordinary rich glass mosaic. Whether this can in any way be tied to the fabulous Cosmati pavement not a million miles distant from the slab's location is something I am not able to tell, although the dates of the completion of the pavement (finished 1268) and John de Valence's death (January 1277) are suggestive (Fig 3).

Sharp-eyed antiquarians were also interested in artefacts. Hugo had obtained a beautiful 14th-century ivory triptych piece from the Minories, site of the Franciscan nunnery of St Clare, while the members of LAMAS were invited to examine a sample of the shroud cloth from the body of a knight whose grave had been discovered during repairs to the Temple (*Trans London Middlesex Archaeol Soc* 1, 120, 133). Medieval pilgrim badges were recovered from the Thames: three lead badges from London, one showing the Virgin and child, one a bishop, and one an initial 'T' with Christ crucified, were displayed by Hugo (*Proc Soc Antiq London* 3, 144, 250). The carved figure of an ecclesiastic in slate was found by Mr Gibbs at White Row, Whitechapel (*JBAA* 10, 190).

Secular medieval life was not ignored however. The medieval defences set atop the western Roman city wall (see above) comprised massive ?Norman or Early English work and a later passage or window from the medieval Dominican friary which took in the site following the western city defence extension in the later 13th century. A detailed study of Crosby Hall was included in the first volume of LAMAS *Transactions*, and the foundations of the great mansion known as Tower Royal (originally a 13th-century wine-merchant's mansion, later that of high nobility) were uncovered during excavations along New Cannon Street (*JBAA* 10, 191). Another London inn, the Abbot of Waltham's house near St Mary-at-Hill, was the subject of a historical study in *Archaeologia* (36, 400–17). A fourth great house, Gerrard's (or Gisor's) Hall, about 200m west of the Tower Royal, and dating back to the 12th century, was also affected by the New Cannon Street road scheme. Its crypt, built *c.*1290, was carefully dismantled in 1852 in advance of the building of the new street itself. Like Tite's mosaic, it had been crated and shipped to Sydenham as a gift to the Crystal Palace Company, for future display. There it languished

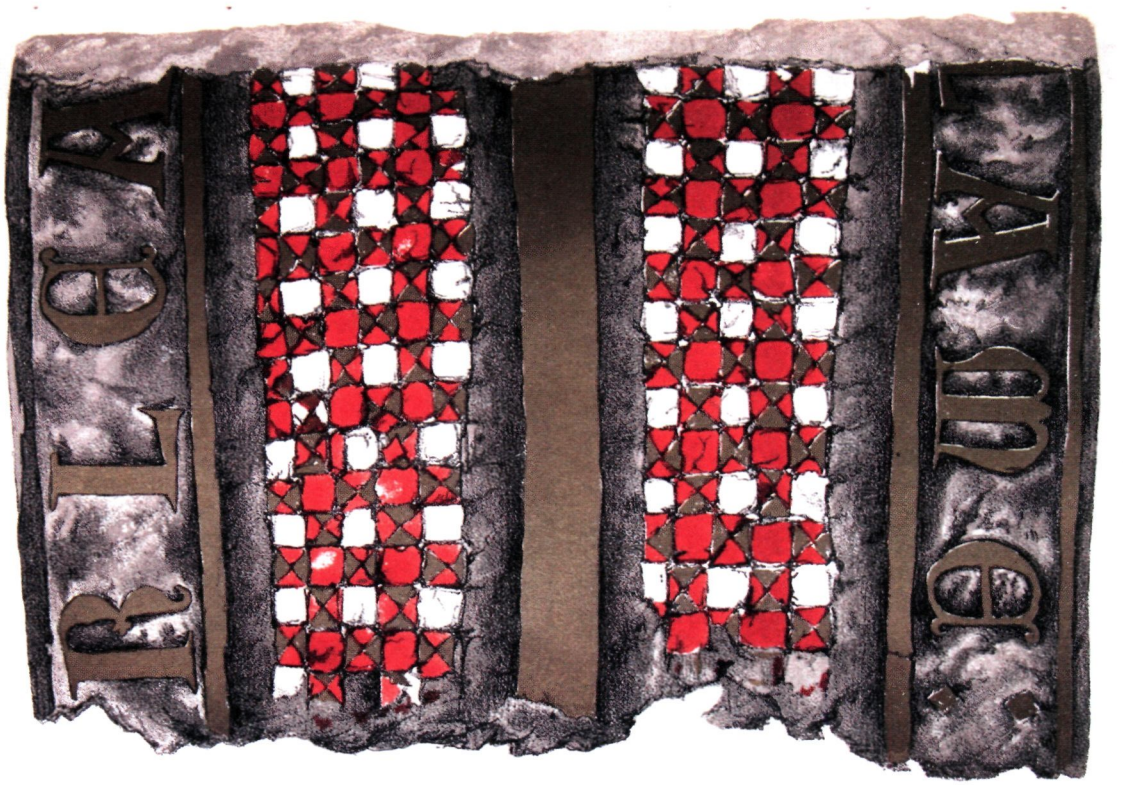


Fig 3. 'Enlaid' graveslab from Westminster Abbey

unreconstructed before being crushed up in the year of the foundation of LAMAS for road metalling and foundation material for the engine house there (*Daily News*, 17 December 1855). Its wasteful fate considerably focused energies to found our Society.

Secular finds were also considered. Sidney Smirke reported on the removal of some 'modern' ashlar to restore the old masonry at Westminster Hall: within cavities in the wall he was surprised to see an immense quantity of small bones and other detritus which he supposed had been dragged in by mice and rats living off the leavings of great feasts. Among this detritus was a fine decorated medieval leather knife sheath (*Trans London Middlesex Archaeol Soc* 1, 119). Hugo recovered 14th-century horse furniture from the Fleet Ditch (*Proc Soc Antiq London* 3, 136) during the extensive reorganisation of the valley of the River Fleet to permit the construction of Farringdon Road, the railway, and the Fleet Sewer. Works here were to go on for more than a decade, and stretched from Clerkenwell down to the City waterfront.

Post-medieval

Little of post-medieval date was reported upon at this time, although there were some notable exceptions. Hugo proved himself an archaeologist unrestricted by period or fashion, reporting the excavation of a Russo-Greek triptych from a grave in the churchyard of Christchurch Spitalfields (*Trans London Middlesex Archaeol Soc* 1, 133; *Arch Journ* 12, 186–7), and reminded members of the Royal Archaeological Institute of a discovery of a remarkable silver reliquary found suspended by a chain of silver from the neck of a skeleton in St Dunstan Fleet Street in 1831. W Pettit-Griffith presented some Tudor terracotta pieces from buildings in St John Clerkenwell, and a piece of plaster ceiling ornament from nearby Berkeley House (*Trans London Middlesex Archaeol Soc* 1, 133). Meanwhile, stone cannon balls had been recovered from the moat of the Tower of London, and an armorial set of helmet and gauntlets from West Drayton church, Middlesex (*Trans London Middlesex Archaeol Soc* 1, 143–4).

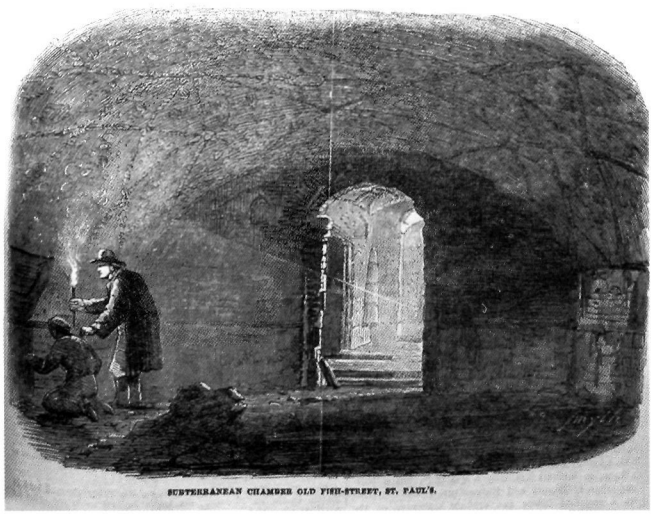
The Transactions of the Leicester Archaeological Society held a report of a singular post-medieval London Thames find: at Waterloo Bridge was found a plate of copper, 1½in square, engraved on one side with the words 'John Wheatley Citizen and Poultirer of London' and on the other with an image of John himself, smoking a pipe at the door to his emporium (*Leics Archaeol Soc Trans* 1, 34). The date of this curio is not clear — perhaps readers could shed light on Wheatley for a future *Transaction*?

The final substantial structure is one reported only in the newspapers of the day, specifically the *Illustrated London News*, and can only be surmised as being post-medieval — it may indeed be earlier in origin. The report actually dates from 14 October 1854 (361–2), but readers will forgive the slight digression. On the corner of Old Fish Street and Lambeth Hill stood a house, apparently built in 1668, with extensive cellarage. During the cleaning out of these cellars a vaulted two-celled chamber was revealed. The inner, smaller, cell had at its head a 'raised seat' canopied in part, and stone recesses to either side suggestive of cupboards or aumbries. One of these contained a 'marble trough' which the correspondent considered to be a baptismal font for infants. The vaults of both cells were 'curiously groined' and the whole was richly decorated with polished marine shells, fragments of antique glass, pieces of quartz and calcareous spar, formed into patterns or devices. The overall view of the outer, larger chamber is given (Fig 4). Was this, as the reporter surmised, a secret Catholic chapel of some kind, or is there some other explanation — again, readers might wish to air their views to the Editor?

NOTES AND NEWS

Archaeology has never been a stranger to controversy, and 1855 and 1856 were no exceptions. Obviously, the most important news was the founding of our Society, and the society archives, available at the London Metropolitan Archive in Clerkenwell (Acc/2899/03/), contain a remarkable scrap book of early newspaper articles relating to the genesis and early meetings. Maev Kennedy's fascinating public lecture in June of this year (2005) provided a wonderful account of some of the people, customs, and places associated with this first year. The origin of the society was, as the Gerrard's Hall fiasco exemplified, essentially to help protect and preserve the antiquities of London from wanton destruction without record or consideration.

Individually, some remarkable antiquarians had already been fighting a lone battle in this regard, and there are none so celebrated as Roach Smith. Active for over twenty years in the



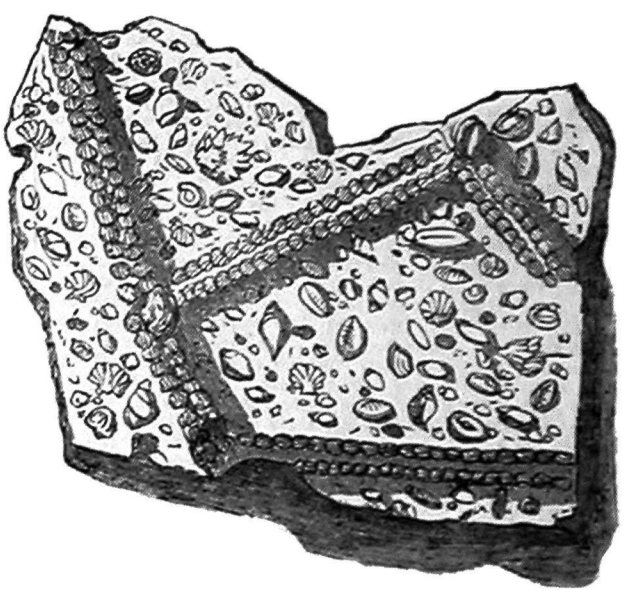


Fig 4. Old Fish Street 'chapel' (Illustrated London News)

City, from his premises in Lothbury and then Finsbury Circus, he had collected a renowned museum of antiquities covering every period of occupation of the City. Wishing to ensure that the collection, well known by antiquarians throughout Britain and the Continent, and visited on at least one occasion by royalty in the person of Prince Albert, should enter public hands rather than be dispersed, Smith had entered into negotiations with the Corporation of London. The City authorities refused to take on the collection, as did the British Museum, following subsequent approaches to them. Roach Smith had valued his expenses in gathering the collection at some £300 but it would appear that officers in the Antiquities Department of the Government considered the worth to be far lower. The issue became a *cause célèbre*, and in July 1855 petitions were submitted to the House of Commons, and a memo to the Treasury, signed by influentials of the day. On 3 May 1856, the *Illustrated London News* (from which this brief extract is drawn) was able finally to publish an announcement that following pressure from the Antiquities Department to the British Museum, a sum of £2000 had been agreed for the purchase, lamenting in summation that 'it is much to be regretted that the directors of our national establishments should appreciate so little whatever is really national'! Roach Smith retired from London that year, but his collection survives to this day (for a fine potted biography of Roach Smith see Hobley in *London Archaeologist* vol 2 pt 13 (1975), 328–33).

Members of our Society also had their trials and tribulations at this time. Our Reverend Thomas Hugo was in 1855 very active in the British Archaeological Association, and held office on their council. In an alarming and embarrassing affair, he had brought forward accusations of a terrible sort against the Association's Treasurer of the day, apparently relating to the misappropriation of funds at a certain excavation. An Extraordinary General Meeting was convened to consider a motion to remove Hugo from office. Factions developed and a considerable debate ensued, but the members decided outright that the hapless Hugo was guilty of impugning the name of the Treasurer and he was ejected from the Association forthwith (*JBAA* 10, 88). It may have been a reporter friend of one of the anti-Hugo camp who quite viciously reported in *The Athenaeum* in October 1858, on the failure of the arranged hosts of a LAMAS outing to Enfield to appear, that 'the unhappy excursionists found themselves floundering in the antiquarian shallows of the Reverend Thomas Hugo'! What irony it would be if Hugo's forced expulsion from the BAA (no matter whether deserved or not) had catalysed his will to establish our own LAMAS?

One penultimate piece of news is not (as far as I am aware) London-related, but deserves wider circulation in the light of the current Treasure Act and the associated very positive agreement made by DCMS to support the Portable Antiquities Scheme from this year onward. It is tucked away in the *Archaeological Journal* (12 (1855), 200), so I think it worthy to quote in full:

> A few weeks since, as a servant was chopping wood, the log of wood which had served for a chopping board for several years suddenly split and out flew fifty guineas of the reigns of Charles II and James II. These were at once sent to the Lords of the Treasury, who, having allowed the British Museum to select such as were required for the national collection, sent back to the proprietor the remnant and also the amount paid by the Museum for the selected pieces. It is hoped and believed that the liberality displayed by the Lords of the Treasury upon this and other occasions will be a means of preserving from destruction many objects of interest and value.

I could not possibly speculate on what the view of the DCMS (or indeed of the current Chancellor) would be on a request to return to this Treasury-led approach, but would very much like to think that in this particular case the largesse shown by Her Majesty's Government found its way in turn down to the lowly woodcutter! Fifty is such a nice, round number, is it not?

AND FINALLY...

Subscription to LAMAS in 1855 was 10/-, or 50p in current parlance. Using the fabulously crude estimate of 2.5% inflation over the last 150 years, that would according to my calculations equal a sum of £20.30. Members should not panic, as Council have no immediate intent to raise it to this dizzying height, but it does demonstrate what a fantastic bargain membership is in the 21st century! Many, many happy returns!!

SOME EARLY LAMAS MEETINGS AND OUTINGS

Eileen M Bowlt

SUMMARY

In 2005, LAMAS proclaims its interests as 'Archaeology, Historic Buildings and Local History'. To celebrate the 150th anniversary of LAMAS's inauguration, a programme of three types of walks has been organised. One dealing with archaeological matters, along the river from Westminster; three to look at buildings of historic and architectural interest within the Cities of London and Westminster; and four called 'Exploring Middlesex' to Ruislip, Harmondsworth, Uxbridge, and Twickenham, covering local history. This short paper shows that the 2005 trips were loosely based upon similar ones undertaken in the 1850s, 60s and 70s and points to the social and physical changes that have occurred in the past 150 years within the LAMAS membership and at the sites visited and notes changed attitudes towards archaeological matters.

INAUGURATION

The inaugural meeting of the London and Middlesex Archaeological Society was held at Crosby Hall (on its original site in Bishopsgate) (Fig 1) on 14 December 1855, as the result of the work of a Provisional Committee set up the previous July. George Bish Webb, Honorary Secretary of the recently founded Surrey Archaeological Society and the Rev Thomas Hugo, Vicar of St Botolph's, Bishopsgate (Fig 2), were the leaders in the formation of the new county society and other committee members were mainly drawn from Hugo's friends in the Society of Antiquaries. The Marquis of Salisbury agreed to be Patron and Lord Londesborough, President, and it was at the latter's suggestion that 'London' was inserted into the title. The Lord Mayor and several Aldermen were appointed Vice-Presidents to ensure a close connection with the Corporation.

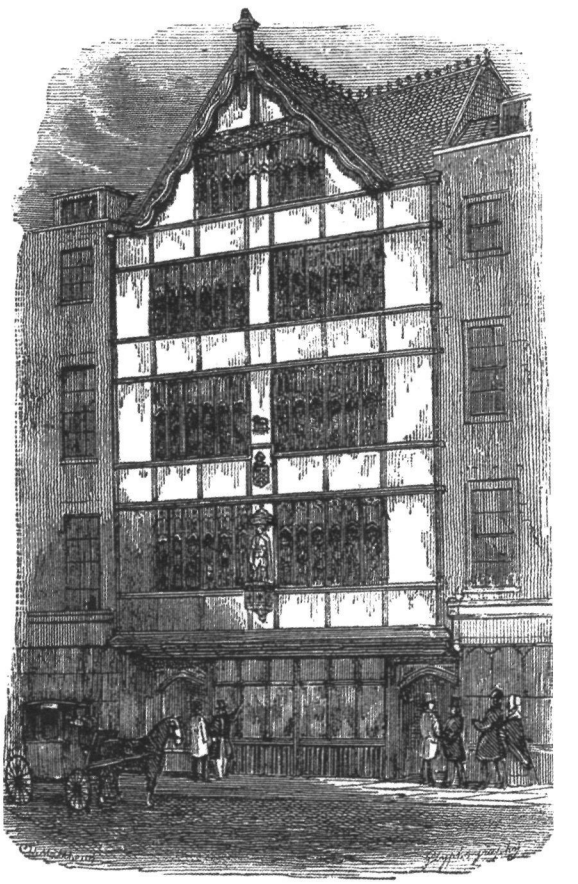


Fig 1. Crosby Hall, Bishopsgate Street, scene of the inaugural meeting of the London and Middlesex Archaeological Society on 14 December 1855 (From Walford's 'Old and New London')

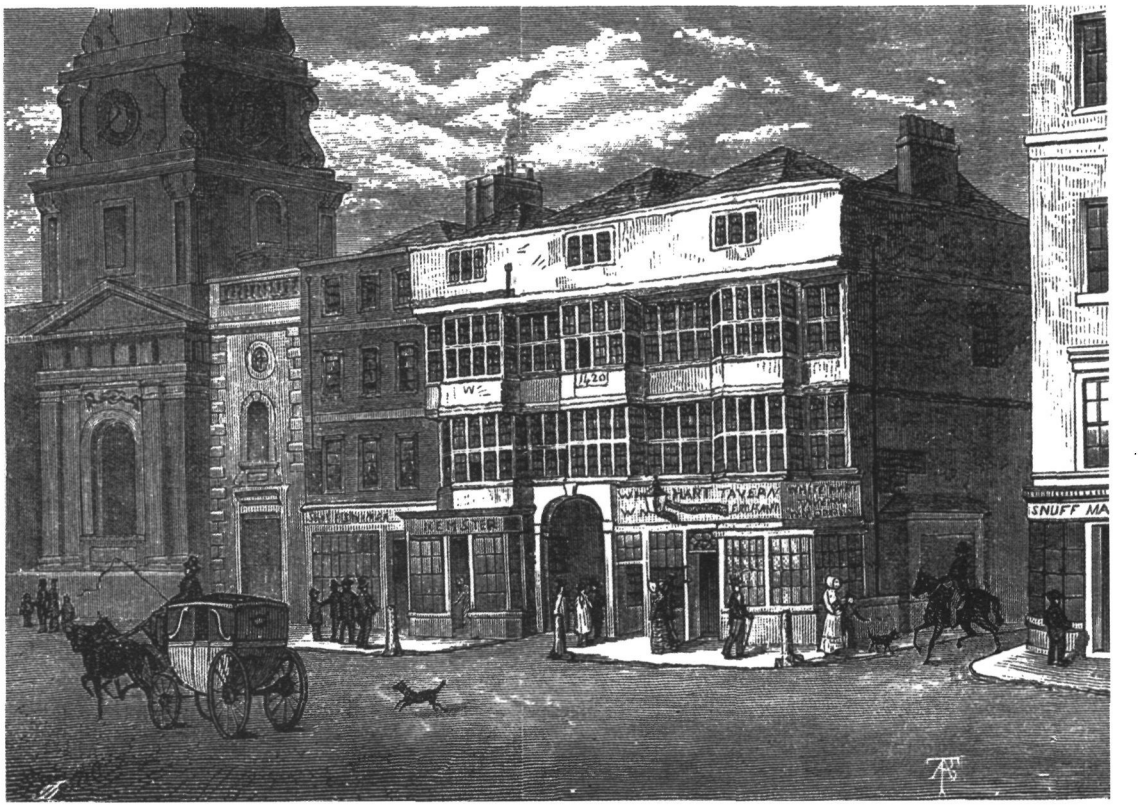


Fig 2. St Botolph's, Bishopsgate Street where the Rev Thomas Hugo was vicar 1852–8 (From Walford's 'Old and New London')

The objects of the Society were all embracing, 'to collect, record and publish information on the Topography, Ancient Arts and Monuments of the Cities of London and Westminster and the county of Middlesex'; to preserve 'antiquities discovered in the progress of works, such as Excavations for Railways, Foundations of Buildings etc'; to prevent injury to monuments and ancient buildings and to collect accurate drawings and descriptions of them; and to found a museum for the reception of works and objects of archaeological interest connected with London and Middlesex.[1]

To fulfil these designs, periodical meetings were to be held in the Cities of London and Westminster and soon after its foundation the Society started making excursions to various locations in the county. Meetings were also held where communications could be read and antiquities exhibited by members and their friends. The appointment of an Honorary Photographer, Professor Philip H Delamotte, in March 1856 was a practical step towards recording the changing scene. The last official photographer was H E Chiosso from 1938–62.

At first there was no particular meeting place for the General Meetings (as opposed to Council Meetings). They were held in places where a Society member either worked or had influence. The first two were held in Crosby Hall and the third in the French Gallery, Pall Mall.

MEMBERS AND THEIR COLLECTIONS

Many of the members did indeed have collections from which objects could be brought to meetings for exhibition and discussion. Sally Brooks has shown that the membership (191 in 1855, rising to 395 in 1857) was drawn mainly from the male middle classes, with about 40% having a professional qualification, among whom was a scattering of clergy with antiquarian interests, who played a particularly large part in the life of the Society.[2] A high proportion were

members of other societies, such as the Society of Antiquaries, as well as LAMAS and many wrote papers on their special subjects, some of which were published in *Transactions*, the first part of which was issued in June 1856.

The Rev Thomas Hugo was the first chairman and an indefatigable writer of papers on a wide range of subjects and places within London and Middlesex, from the buildings of the Ward of Bishopsgate at the eastern end of the City to Moorhall at the western extremity of the county. The Rev Charles Boutell, Rector of Norwood, Surrey, served on the Council and presented a copy of his work on monumental brasses to the Society at the first meeting. He was also an expert on heraldry and his work in that field is still valued by students. In some ways he was a rather strange man. He became Secretary and later left the Society, having apparently misappropriated £56 15s of the Society's funds. He went on to do something similar at the Surrey Archaeological Society. Charles Roach Smith, who had been collecting artefacts ever since finding a Roman coin in his shop till in the 1820s and who is especially famous for his identification of two portions of the Julius Classicianus monument (now in the British Museum), had been on the Provisional Committee and later became an honorary member.

Joint Evening Meetings were established by the councils of LAMAS and the Surrey Archaeological Society in August 1860, to allow members to immediately communicate archaeological discoveries and exhibit artefacts. On Tuesday, 18 September 1860, for instance, Barsett Smith Esq FGS exhibited a deed dated 16 June 1635, relating to the Evelyn family, a lead pipe from Old Broad Street, Roman pottery from Ivy Lane and St Paul's Churchyard, a massive egg-shaped watch *c.*1600s, and two soapstone Chinese snuff bottles. There was also an account of a subterranean chamber in the grounds of 12 Canonbury Place; a coffin with a female skeleton at The Angel, Pentonville Road; a stone coffin at Ironmongers' Hall, Fenchurch Street; some 16th-century silver seals, a grant of arms to the Hare family and two miniatures of the Hare family.[3] Objects of all kinds — 17th-century engravings of London, stone crosses found in Newgate Street, genealogical notes, for example — were donated to LAMAS on a regular basis.[4] By 1860, the Society had rooms at St Mildred's Court, Poultry, but there were many moves and presumably the donated items went with them. The library and stock was moved to the Bishopsgate Institute in 1910.[5]

Some members displayed their collections at home. George Harris, LL.D, FSA, of the Middle Temple, built a new house on an ancient site at Islipps, Northolt, which was ready for occupation in 1866. The extract from his diary for 9 June 1869 runs:

> Today we had a large out-of-doors party of the Council of the London and Middlesex Archaeological Society, whom I invited to explore the objects of interest in this neighbourhood, and to partake of a cold collation on the lawn afterwards. Everything went off capitally, and the whole thing was a great success. In the dining-room I had out for inspection my Rembrandts, the engravings of London and Middlesex, etchings and foreign sketches; in the study my autographs, manuscripts and rare books; and in the breakfast-room hung up my diagrams ...[6]

The following June almost an exact replica of this event was held, but with the Council of the Anthropological Society, of which he became vice-president, as guests.

George Harris was typical of the LAMAS membership of the period. He was a professional gentleman, with sufficient means to indulge his wide interests. Although mainly tending to the historical, George Harris had a scientific bent as well and was joint founder of the Psychological Society in 1875. He also had influence. The Historical Documents Commission was set up as a result of a deputation to Palmerston, which he headed in 1859. He was a keen collector of antiquities, which he was anxious to display to those likely to appreciate them. He was connected with several learned societies and had the confidence to lay his considered ideas before his peers. He read a paper on 'The Ancient Britons' to The Historical Society in London on 12 February 1876. It was the first of a series on 'Domestic Everyday Life, Manners and Customs in this Country from the Earliest Period to the End of the Last Century'. According to his diary the paper, which was illustrated with diagrams, was well received and 'a good discussion followed'. He laid extracts of some other work before Professor Huxley, who considered that the questions raised were so large that he would have to set them aside until he was at leisure to look at them carefully.[7] He seems to have treated Harris seriously. He might best be described as a gifted amateur.

It may be difficult for us to assess the quality of his ideas, but his thoughts on the preservation of ancient buildings strike oddly on modern ears. Writing to Matthew Bloxam, author of *Principles of Gothic Architecture*, in 1875, he asks 'is there likely to be anything done about the rebuilding of the parish church, and are you disposed to give a plan for it? What say you to preserving the tower and adding a Norman church to it? I should like to have the design by you, and would in that case do what I could to organise a committee in London to raise subscriptions'.[8] The church in question can hardly be St Mary's, Northolt, as there was no tower there, only a bell turret added to the medieval chancel in the 16th century.

HISTORIC BUILDINGS

At the first Council meeting there was a report by the Rev Charles Boutell on the mutilated condition of some ancient statues at the western end of Westminster Hall and the loss of others during cleaning.[9] The chairman agreed to make representations to Sir Charles Barry who was supervising the slow rebuilding of the Palace of Westminster after the 1834 fire. A letter was sent in January 1856. The Society had begun its efforts at the preservation of ancient buildings. (The Society for the Protection of Ancient Buildings was not founded until 1877.)

The recording of London buildings was becoming essential in the 1850s as much of the late medieval and Tudor built heritage was fast being torn down as sewers, railways, and wide roads were being planned and built. The Rev Thomas Hugo who lived in Bishopsgate Street was aware that many of the timber-framed buildings in that corner of the City would soon disappear. He read a paper to the Society on 18 February 1857 at the Gallery of British Artists, Suffolk Street, called an 'Itinerary of the Ward of Bishopsgate', describing in detail the houses in all the streets and alleys. His purpose was to 'preserve the remembrance of edifices which the crowbar and the shovel are daily annihilating'.[10] It is not clear whether he had also led a group around the ward, but he had obviously worked out an itinerary for himself. When the paper appeared in *Transactions*,[11] it was embellished with many engravings of the decorative and architectural details of such buildings as Sir Paul Pindar's house (Fig 3), parts of which are now in the V&A.

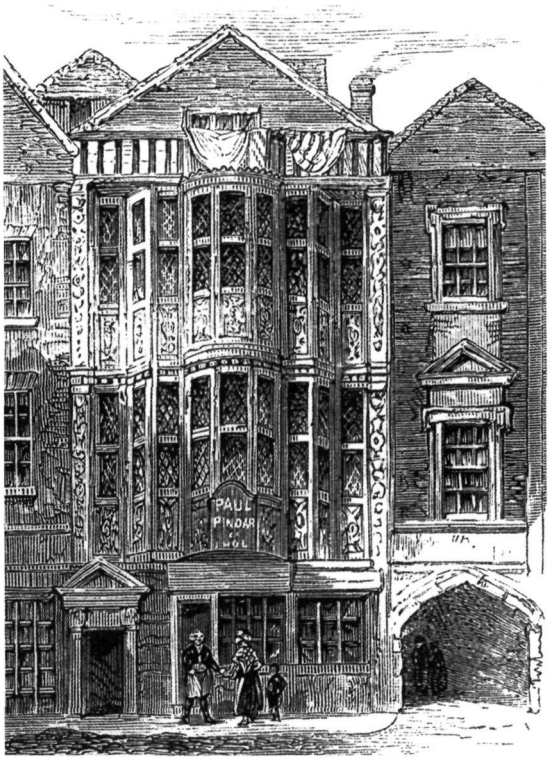


Fig 3. A view of Sir Paul Pindar's house when it was an inn (From Walford's 'Old and New London')

MEETING CUM OUTINGS (LOCAL HISTORY)

The early outings were in fact General Meetings and Annual General Meetings held at various venues of historic interest. They were usually held on weekdays and occupied most of the day, a reflection on the fairly leisured life style of many members. The costs covering transport and either tea or dinner were in the order of 6 shillings, again perhaps reflecting the social and financial standing of the members. Subscriptions had begun at 10 shillings per annum, but had risen to one guinea, plus a 10 shillings entry fee. In January 1856 local Honorary Secretaries were appointed for the principal towns in the county, perhaps with the object of arousing local interest and facilitating such meetings. Mr P Thompson offered to be local secretary for Stoke Newington.

The meetings were not for the faint hearted as they usually involved the reading of several learned papers, followed by a sometimes stren-

uous examination of the site, leavened by a collation of some kind at the end.

The first AGM was held on Thursday, 27 July 1856 at the Architectural Museum, Cannon Row, Westminster[12] where Lord Robert Grosvenor was in the chair. The company then proceeded to the Abbey where George Gilbert Scott Esq (the eminent architect knighted in 1872) addressed the members on the architectural peculiarities of the structure and the Rev Charles Boutell, MA described the most important and interesting of the monuments. 'Every part of the Abbey, from crypt to triforium, was successively visited; and some of the party, including several fair archaeologists, followed their conductors to the very roof of the edifice.'[13] By a special favour the party had entered the Abbey through the great West doors, which had been opened for the first time since Queen Victoria's coronation! In the evening the party reassembled at the Architectural Museum to hear a paper on 'Regal Heraldic Badges', read by Dr Bell, and one on earlier structures at Westminster by the Rev Thomas Hugo.[14]

Four years later on Thursday, 25 October 1860 members went there again and were treated to four papers — on the library, ancient bindings in the library, an ancient organ, and discoveries in the Treasury. An inspection of the Abbey church followed with a paper on 'The Monuments as a Museum of Sculpture' and one on the Order of the Bath at the Henry VII chapel. After afternoon service the architecture and decoration of the Chapter House (Fig 4) was described, followed by a visit to the Jerusalem Chamber, where the Rev Thomas Hugo obliged with another paper. After this marathon a welcome dinner followed at The King's Arms Hotel in New Palace Yard, where George Gilbert Scott took the chair, supported by the Dean of Westminster and 'a numerous party'. The cost on this occasion was 4 shillings for tickets in advance or 7 shillings and 6 pence on the day.[15]

On 21 July 1857 between 700 and 800 people attended a meeting at the Tower of London on a Tuesday. There must have been many 'friends' present as the membership stood at only 395 at this time. Perhaps the greater number of them were members' wives. The Society admitted women from the start, but there were rarely more than eight or nine in the early years. Even so newspaper accounts of meetings mention that the ladies were occasionally more numerous than the men.[16] The Rev Thomas Hugo read his paper on 'The History and Topography of the Tower'. Then the company was divided into ten groups, each in the charge of a warder who conducted them to various parts of the Tower, where a member of Council was waiting to act as guide. Mr F W Fairhurst was stationed at the Horse Armoury, Mr Alfred White at the Chapel of St John, the Rev Thomas Hugo in the Council Chamber, Mr Charles Baily at the Beauchamp Tower, Mr Deputy Lott at the Wakefield Tower, Professor Tennant and Mr Garrard at the Jewel Tower, the Rev Henry Christmas at Traitors' Gate, and the Rev Charles Boutell at St Peter ad Vincula. The write-up in *Transactions* mentioned that 'each had to tell his story ten times over'.[17]

When venturing further afield the Society organised trips by special train. In October 1857, again on a weekday, 'members accompanied by several hundred guests', went to Hampton Court, where, once again, the Rev Thomas Hugo began the day's activities by giving a lecture in the Great Hall and 'afterwards conducted the party to every part of the palace where anything was seen worthy of notice'. 'The Society having thus brought its labours to a close the Rev Chairman informed the meeting that the Committee while catering to the best of their ability for the intellectual had not forgotten the physical man, but had entered into an arrangement with the proprietor of the Prince of Wales Hotel to provide dinner at 5 o'clock, an announcement that was most cordially received. The party returned to London by special train'.[18]

Another special train started from Paddington on the 9 August 1864, stopping at Hayes, Harlington, Cranford, and Heston. In each place the church was examined and at Harlington the stained glass in the Rectory staircase as well. Mr Alfred White spoke about the monuments at Harlington and Cranford, where the rector also produced the parish registers. Mr W H Black explained the sepulchral monuments at Heston and Hayes. The Rev Thomas Hugo as usual made his mark by reading a memoir on Moorhall, Harefield, which had been visited three years earlier. 'The company then adjourned to the new schoolroom kindly lent for the purpose by the rector, where ample justice was done to a handsome collation which terminated the day's proceedings.'[19]

General meetings held in more rural parts of Middlesex were often arranged in conjunction with local clergymen, who lent schoolrooms and sometimes their houses as a venue for

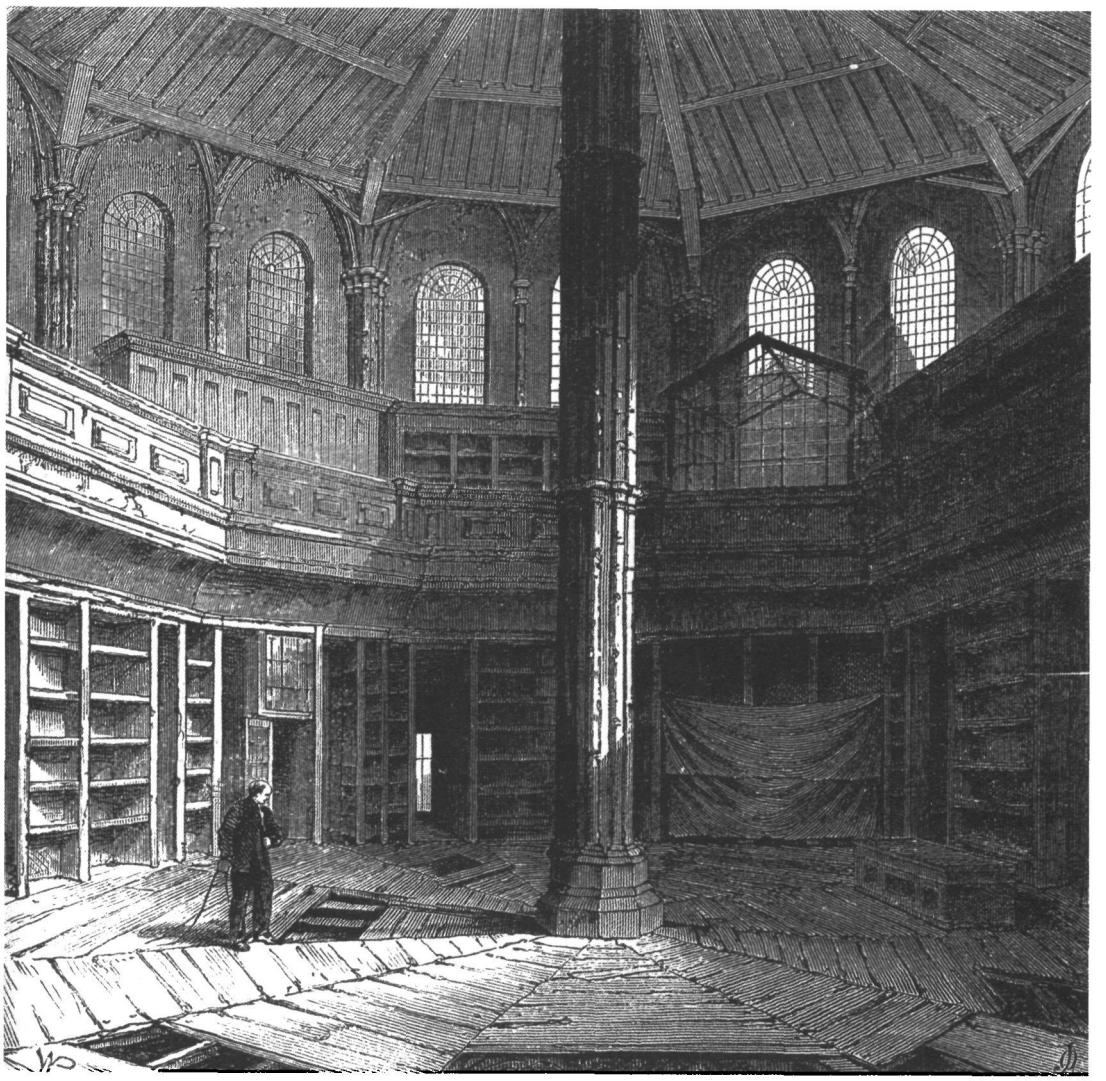


Fig 4. The Chapter House at Westminster Abbey before its restoration: George Gilbert Scott had discovered the floor to be composed of parchment documents trodden into a mass (From Walford's 'Old and New London')

the reading of the necessary papers and were clearly organised by LAMAS members (usually Council members) who had connections with the locality. The vicar of Enfield, Rev John Moore Heath, was away from home in 1858, but graciously permitted members to use the vicarage, where his collection of the works of early Netherlandish and German masters in oil paintings was displayed. John Gough Nichols read a paper on Richard Gough, director of the Society of Antiquaries, who had been a resident of Enfield in the 18th century. The Rev Thomas Hugo and Mr John Tuff also contributed papers on the principle historic sites and antiquities of the neighbourhood. Visits were made to the church, the grammar school, and the palace.

At Bedfont church, visited in the course of a trip from Staines to Laleham church, Littleton church, Littleton House, and the church and Lord Knyvett's Free School at Stanwell, the party were lucky enough to see wall paintings just discovered during works to enlarge the building.

So far as the places which LAMAS revisited in 2005 are concerned, Ruislip, Uxbridge, and Harmondsworth were included in longer

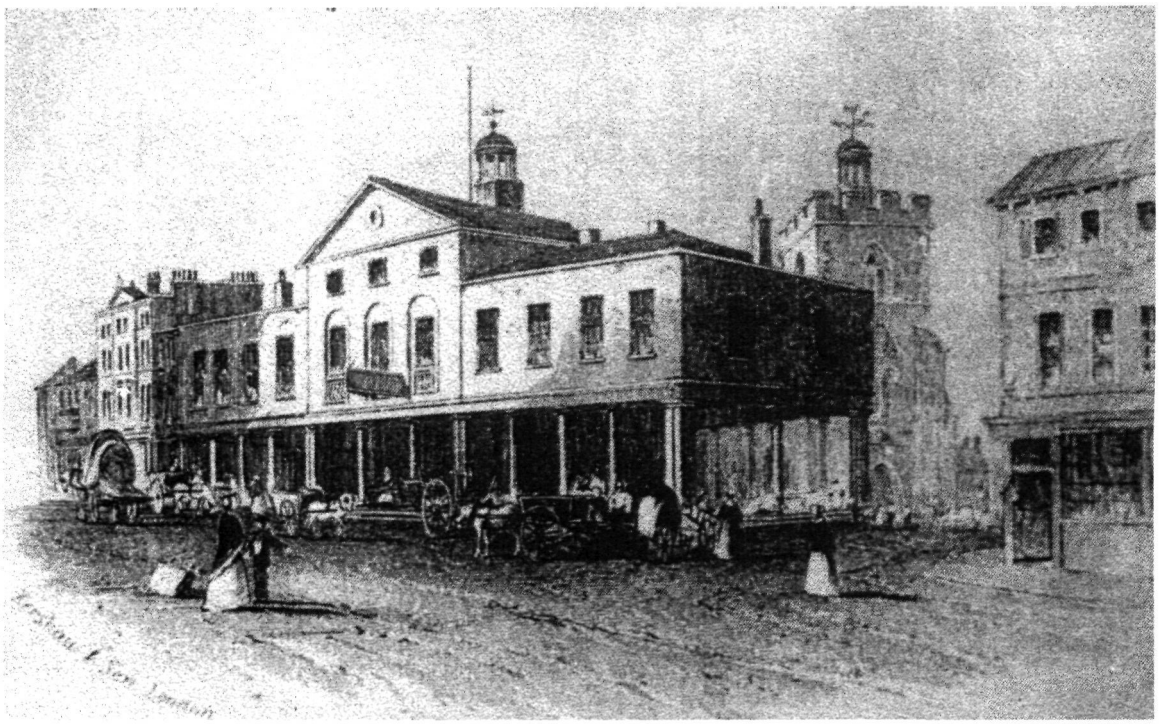


Fig 5. St Margaret's Church and the Market Hall, Uxbridge, visited by LAMAS members on Friday, 23 August 1861

itineraries, sometimes so long that one can scarcely credit that so much was accomplished in one day. Members assembled at noon on Friday, 23 August 1861 at the Market Room in Uxbridge, where the Rev G Parker Price, vicar of St Margaret's, Uxbridge (Fig 5), took the chair and later read a paper on the Uxbridge Treaty of 1844. Mr C J Shoppee, who had been responsible in part for the restoration of St Margaret's, showed some antiquities and curiosities from the neighbourhood, including 17th-century trade tokens. He was an architect and surveyor, living in Doughty Street at this time, but he had been born in Uxbridge where his father was a builder. Other papers were by George Eves on the antiquities of Uxbridge and Mr W Durrant Cooper FSA on some former inhabitants of the town, and Mr Woodbridge exhibited the Uxbridge Panorama dated *c.*1800. Mr Eves was another architect and surveyor and lived in Uxbridge until his death in 1892. Mr Woodbridge was a member of a family of solicitors (still in existence) who lived in an 18th-century house in Uxbridge High Street. Visits were paid to St Margaret's and to the Treaty House.

The party then went in carriages to Denham Church, and thence to Harefield, inspecting Moorhall *en route* (Fig 6). The Rev C T Weatherly talked about the manor and church of Harefield and there was a paper on the armour in the church by Mr C T Baily. The group then moved on to Ruislip church to hear a paper on the monuments there by Alfred White of West Drayton. A call at Swakeleys in Ickenham was unproductive as there was no one to show them around, so the whole party returned to Uxbridge to have dinner at the Market Hall.

Harmondsworth and West Drayton were visited together on 4 September 1872. The church and Great Barn at Harmondsworth (Fig 7) were viewed and papers read by A White and A Hartshorne.

Twickenham does not seem to have featured among the visits.

THEN AND NOW

This year, 2005, the outings concentrated on one place at a time, rather than a long itinerary. One wonders how cursory some of the visits must have been. This year the Market Hall, St Margaret's

Fig 6. Moorhall, Harefield, photographed in 1911. These buildings were owned by the Knights Hospitallers of St John of Jerusalem until the Reformation. The 13th-century flint hall on the left became a barn and the hall house on the right, dating in part from the early 14th century, became a farmhouse. The house was burnt down in 1922 and the barn was demolished by order of the local authority in 1961.

and the Treaty House featured on the Uxbridge trip. The Panorama and the 17th-century trade tokens were displayed in the library, but there was no time to visit Denham, Moorhall, Harefield, Ruislip, and Swakeleys as well.

One reason for this change is that our predecessors concentrated their studies upon 'important' buildings and 'notable' inhabitants of the various neighbourhoods and had less interest in early economies and ways of life than we have. Although there was a great desire to see artefacts, little attempt was made to place them in context. With recent developments in both archaeology and local history, there is now much more to appreciate about the market town of Uxbridge than was then realised. Much has been lost there in the way of timber-framed buildings, but much has been discovered by archaeologists. 'Digs' between the River Colne and the Canal and behind the High Street in recent years have revealed important prehistoric sites, including the nationally important Three Ways Wharf Upper Palaeolithic site, and the medieval layout of the burgage holdings. Many of the timber-framed buildings in Cross Street and in the alleys off the High Street were not in good condition in Victorian times, had never been of high status, and were little more than slums in 1861 and therefore did not catch the attention of antiquarians.

Similiarly with Ruislip the historically important buildings at Manor Farm, such as the Great Barn (dendrochronological date 1293), and the earthworks now scheduled as an ancient

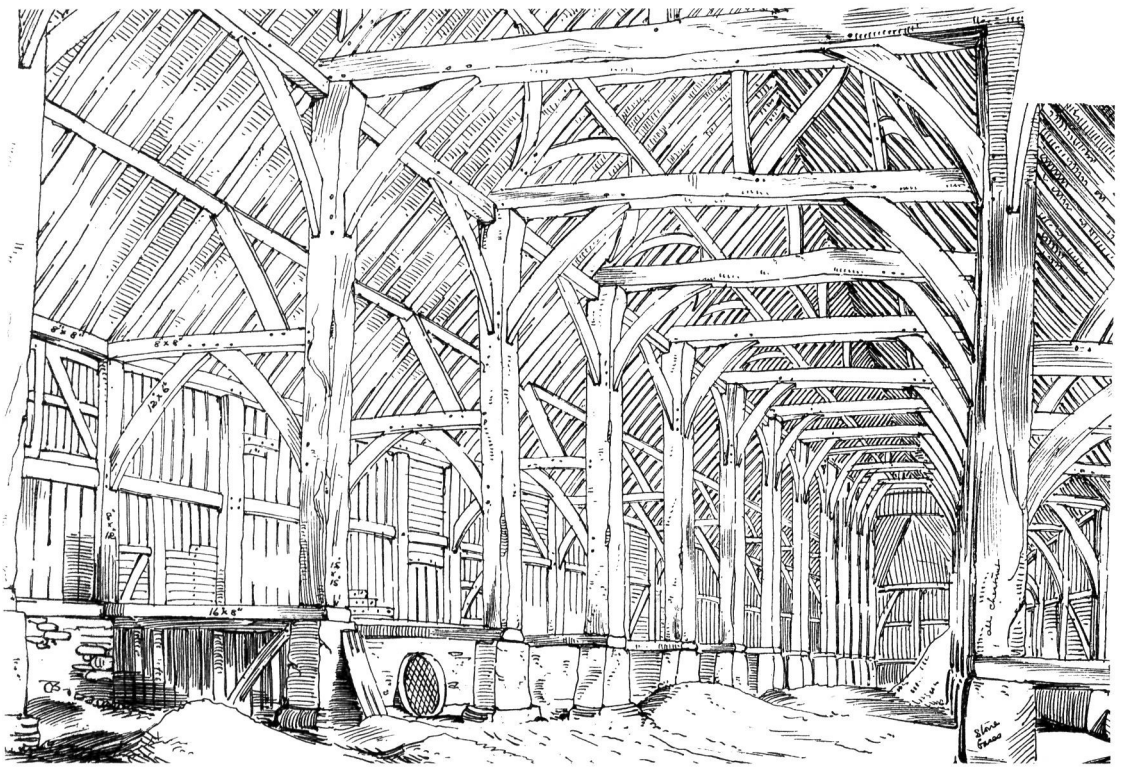


Fig 7. The Great Barn at Harmondsworth (now under threat from the third runway at Heathrow) as it was in the 1880s. It was built for Winchester College in 1424–6. LAMAS has written to the relevant authorities protesting about the likely destruction of this part of our heritage

monument, were part of a working farm until 1932 and simply not considered as worthy of note. Ruislip Woods in 1861 contributed to the income of many poor households, where the women and children were employed in the making of bundles of kindlewood and the men worked at coppicing the hornbeam and making bundles of pea and bean sticks. Gamekeepers controlled the woodlands for the production of game birds for the sporting estates based on Eastcote House and Haydon Hall, so there was no easy public access. The embankment of the 'Park for woodland animals' mentioned in the Domesday Book was therefore ignored at that time. Not so in 2005, when LAMAS members did indeed go to the church, which is still worth a visit, but spent even more time looking at the structure of the Great Barn and other buildings. After a lunch break (the party had to find their own collation) members went through Park Wood to see the Domesday Park embankment.

However, the larger, but younger Great Barn at Harmondsworth, did get attention even in 1872.

The membership of LAMAS has also changed. The membership is larger now than it ever was in the 19th century — 690 members on the register in April 2005.[20] Male and female numbers are more equal, but males are still predominant. The figures for single members are 305 men and 180 women. There are 45 joint members (90 people), but they do not split into half male, half female. There are also 26 'doctors' and one 'rev' of unknown sex, and 133 corporate members (including affiliated local societies).[21]

Members tend to live further out from the centre of London than was the case in the 1850s, a trend that was noticeable in the later 19th century. Sally Brooks found that in 1857 just over 10% of members had an address outside the London postal districts, but the percentage had risen to *c.*27% in 1906.[22]

Although early *Transactions* were filled with a diversity of papers, they were actually written by a fairly small active group, who mostly served on

Council and organised the outings as well. The growth of archaeology as a profession and the close association of LAMAS with the Museum of London have meant that recent *Transactions* contain papers based on scientific method and mostly written by professionals. In that area of LAMAS's interests at least the day of the gifted amateur seems to be over. The proliferation of societies devoted to the study of local history all over the Cities of London and Westminster and the former county of Middlesex has led to those studies mainly being published outside *Transactions.*

Nevertheless LAMAS continues to act as an umbrella organisation and provides a forum for both archaeologists and local historians with its annual conferences. The Rev Thomas Hugo would surely have loved to preside over them and to have contributed a paper or two!

NOTES

1 *Trans London Middlesex Archaeol Soc* 1.
2 S A Brooks 'L.A.M.A.S. – A Victorian establishment' *Trans London Middlesex Archaeol Soc* 36 (1985), 203–22
3 London Metropolitan Archive: Acc 2899: Evening Meetings Book.
4 LMA: Acc 2899: Minute Book 1.
5 *ibid*: Minute Books 2 and 3.
6 Ealing Central library: George Harris LL.D, FSA 1809–1890, printed for private circulation, London 1888.
7 *ibid.*
8 *ibid.*
9 LMA: Acc 2899: Minute Book 1.
10 *Trans London Middlesex Archaeol Soc* 1.
11 *ibid.*
12 The Architectural Museum was formed in 1852, mainly through the efforts of George Gilbert Scott, in the loft of a wharf at Cannon Row. The artefacts were moved to the South Kensington Museum in 1856 and were absorbed into the V & A collection.
13 *Trans London Middlesex Archaeol Soc* 1.
14 *ibid.*
15 *ibid.*
16 Brooks *op cit* (note 2).
17 *Trans London Middlesex Archaeol Soc* 1.
18 *ibid.*
19 *Trans London Middlesex Archaeol Soc* 2.
20 Communication from Patricia Clarke, Subscriptions Secretary, 18 April 2005.
21 *ut supra.*
22 Brooks *op cit* (note 2).

'THE LESSE SET BY': AN EARLY REFERENCE TO THE SITE OF MIDDLE SAXON LONDON?

Robert L Whytehead

> And, in the ende of the same yere, a grete parte of the cytie of London was wasted with fyre; but howe it began myne auctour myndeth nat. But ye shal understande that, at this day, the cytie of London had moste howsynge and buyldynge from Ludgate towarde Westmester; and lytell or none where the chefe or herte of ye cytie is nowe, except, in dyvers places, was howsynge, but they stode without ordre; so ye many townes & cities, as Caunterbury, Yorke, and other dyvers in Englande passed London in buyldynge at those dayes, as I have seen or knowen by an olde boke sometime in ye Guyldehall of London, named Domys daye: but after the conquest it encreaced, and shortly after passed and excelled all the other.

Entry for AD 982, from Robert Fabian's Chronicle, first published by Pynson in 1516, of his authority he also comments:

> Theyse [a list of Portreeves], of olde tyme, with the lawys & customys than used within this cytie, were regestryd in a boke called the Domysday, in Saxon tunge than used: but in later dayes, when the sayd lawes and customes alteryd and chaunged, & for consideracion also that the sayd boke was of small hande, & sore defaced, it was the lesse set by, so that it was enbesylyd, or loste; (Prologue to Part 2)[1]

This tantalising reference to the site of Saxon London has caused historians considerable difficulties in interpretation ever since, though often repeated. Although we can now show from archaeological evidence that Fabian was in essence correct about the location of the Middle Saxon city, by appending his statement to an episode in AD 982, some 100 years after Alfred is said to have restored the walled area, he presented great problems in its resolution.

For historians and archaeologists studying Saxon London the few documentary references to it, coupled for many years with a paucity of archaeological evidence, left much open to conjecture. There was a natural assumption that the Saxon town would have been established within the protection of the City walls (*eg* Page 1929; Eades 1966). Those historians keen to champion the rights and freedoms of the City of London even felt the need to demonstrate continuity of occupation from the Roman period to the present day (Loftie 1892), although others considered a break in occupation from the mid-5th century to the later 6th century to be acceptable (Besant 1908, 142–3).

The few key primary documentary sources for Middle Saxon London appear to refer to a thriving town, one where in AD 604 Augustine might appoint a bishop, and which could expel him in AD 617. Many of the sources in the 7th and 8th centuries refer to trade, exemption from tolls, and the mention of regulation of trade through a 'wic-reeve' for the men of Kent in the Laws of Hlothere and Eadric (AD 673/685); as well as Bede's oft-quoted description of London as 'an *emporium* for many nations who come to it by land and sea' (written *c.*AD 730, in reference to the events of AD 604). More dramatic were the three disastrous fires, in AD 764, 798, and 801, and the Danish attacks of AD 842, 851, 871–2, and 886 (for summary of documentary sources,

including coins: Cowie in Malcolm & Bowsher 2003, 198–201).

Yet archaeological finds from the walled area, or outside it, were sparse, and few were attributable to the Middle Saxon period. Vulliamy commented that 'the archaeological evidence of a peaceful occupation of the site of London during the early Saxon period is pitifully meagre, while some of the objects mentioned above were not found within the walls of the City' (Vulliamy 1930, 233). In Wheeler's view 'archaeologically the culture of sub-Roman Britain ... is largely *negative* in character; i.e. on non-Saxon sites known to have been occupied in the 5th or 6th centuries, little that can be regarded as distinctive of those centuries has come to light'; but he counted some thirteen relics of the period AD 400–850 within the City west of the Walbrook, and three to the east (Wheeler 1935, 104). Merrifield's later summation of the archaeological evidence from the City, with the redating of earlier finds, however, left little hope of finding the Saxon *emporium* there (Merrifield 1983, 236–68). An extensive search of the basement of the Museum of London caused Vince to posit the location of Middle Saxon London, on the basis of some 17 findspots, admitting that 'the total quantity of finds ... discovered to date is very small', and a lack of stray finds of *sceattas* such as were made at the site of *Hamwic* (Saxon Southampton), yet contrasting these with the few finds from the City and the absence of coins there. He also drew on the 'Aldwych' placename (Vince 1983; 1984). Biddle developed this theme, reassessing the documentary evidence in light of the finds evidence (Biddle 1984). Thus the scene was set for the first excavations of *Lundenwic*, some 500 years after its location was apparently first described.

Robert Fabian was born in London, date unknown, to John and Agnes Fabian (a John Fabyan of Coggeshall, Essex left a will dated 1477). He became a member of the Drapers' Company, and was an Alderman for Farringdon Without, and Sheriff of London 1493, but resigned as Alderman in 1502, pleading poverty, to avoid the cost of the mayoralty. He may have then retired to his mansion, Halstedys, at Therdon Gernon in Essex, to complete his Chronicle; he died there on 28 February 1513. He left a detailed will, his beneficiaries being his wife Elizabeth (who bore him 16 children) and five surviving children, four sons and a daughter.[2]

As an Alderman of the City of London Fabian would have had privileged access to the records of the Corporation, that apparently included a 'Domysdaye' book; and also possibly other sources that may not have come down to us, such as: 'an olde regestre within the churche of Paulis of London, wherin is conteyned many thynges concernynge the firste foundacion of that churche, with certain olde cronicles of this lande...' (Ellis 1811, 111). Fabian is said to have been fluent in French and Latin, and for the First Part of his Chronicle drew largely on existing manuscript Chronicles, of the histories of both England and France, including the *Anglo-Saxon Chronicle*. The Second Part commences in the reign of Richard I, from which time he can list the Aldermen of London for each year, and tie his history to that of the government of London.[3]

Fabian's first work, that he termed 'The Concordance of Chronicles', was completed in manuscript in 1485, although he appears to have made further additions up to 1512. Fabian's Chronicle was the first to be printed — by Richard Pynson in 1516, who used the 1485 manuscript, and called it 'The New Chronicles of England and France' (Kingsford 1908, 306); further editions followed — in 1533, with additions to 1508, printed by William Rastell; a third, much edited, edition in 1542, published by Reynes, Bonham *et al*; and in 1559 a restored edition, continued to that date, by Kingston (Ellis 1811, preface; Flenley 1911, 38–40).

Subsequent Chronicles drew heavily on their predecessors, not least Fabian's editions, thus John Stow, in his *Annales or A Generall Chronicle of England*, reproduced Fabian's entry for AD 982, and the fact that most buildings stood between Ludgate and Westminster, without comment (Stow 1631–2, 86). In his *Survey of London* Stow noted that Fabian had access to a Domesday for London (Kingsford 1908, II, 147); but in his *Chronicle* he also compared William I's 'Roll of Winton' (Wilton), named Domesday, with another 'Such a role and very like, did King Aelfred once let forth, in which he taxed all the land of England' (Stow 1631–2, 118).

John Norden in his *Speculum Britanniae* repeated Fabian's entry for AD 982, and implied that the reference to a lack of housing in the walled city was the result of the fire destruction (Norden 1723, 28). He also mentioned an 'Ancient high way to High Barnet from Porte Poole, now Gray's Inn, through a lane east of Pancras Church called "Longwich Lane"'

(Norden 1723, 15). Maitland, too, paraphrased Fabian, only referring to the 'Greatest part of the buildings being without Ludgate' and not 'towards Westminster'. He was anxious to prove that London at that date had not slipped in size of population in comparison to other towns, and pointed to the number of moneyers allotted to the City under Athelstan, being twice that of any town, including Winchester (Maitland 1775, 34).

Lambert, who, in his four-volume *History* published in 1808, avowedly 'omitted nothing interesting in the expensive works of Stowe, Strype, and Maitland', presented a traditional chronicle of events and included Fabian's reference to the location of London in AD 982 (Lambert 1806, 30). More critical was Mackay (1838), who followed Fabian's account (after Stow) and commented: 'Stowe, in narrating this event, gives a brief description of London as it then existed, which is rather curious' (Mackay 1838, 15). Wheatley (1904), too, found it a 'remarkable statement' (Wheatley 1904, 10); but neither knew what to make of it.

Colonel Prideaux (1898) made a further contribution to understanding the location of Saxon London. He stated that, south of Great Queen Street 'the district in former times was generally co-extensive with the area of what was perhaps the oldest suburb of London, the village of Ealdwic or Aldwic, known later as Aldewych, and of which, so late as the days of the Stuarts, some vestiges remained in Oldwich Close, an open space which lay to the south of Lincoln's Inn Fields. This village in the tenth century was largely colonised by the Danes, after whom the neighbouring church of St Clement was named. The high road of the village, which connected it with the Hospital of St Giles was known as the Via de Aldwych, and is represented by the modern Drury Lane, with the exception of the south east extremity, which led to the Holy Well of St Clement, and the name of which still survives in Wych Street' (Prideaux 1898, 81; no sources are cited). Further to this, Gomme suggested that there may be significance in the archaic practice of paying manorial dues at the site of a stone cross which stood in the Strand opposite where Somerset House is now, and that the Strand was also the location for the Maypole (Gomme 1912, 99–102). In addition Sir W Besant is quoted in *An Encyclopedia of London* to the effect that there was once an 'Aldewych Cross' of stone at the north-east end of Drury Lane; it stated that Oldwych Close was later known as White Hart Close (Kent 1937, 6).

The first entire book devoted to *London before the Conquest*, by W R Lethaby (1902), took a topographical approach to the subject. He too found Fabian's location of London 'curious', and rationalised it as referring for its authority to the Domesday of 1087, when he believed there was a suburb to the west of the City, around St Clement Dane's church, given support by FitzStephen's statement that 'the Palace of Westminster was joined to the city by a *populous suburb*' (his italics). He goes on: 'The early existence of this suburb would explain satisfactorily the name of Westminster, and possibly its origin' (Lethaby 1902, 112–13).

Subsequent writers reinforced the idea of a Danish suburb around their church, Gordon quoted Fabian and stated: 'that the Danes had a settlement here is incontestable' (Gordon 1903, 49). Besant referred to 'memories of Danish settlement around St Clement Danes' (Besant 1908, 194). Gomme, keen to promote the independence of London, believed that the Danish settlement lay outside the City walls, unlike, as he pointed out, Rochester or Dublin, through the strength of its citizens derived from 'the power of Roman London', that kept both Anglo-Saxon kings and Danes at bay (Gomme 1914, 126–9). He asserted that for the Danes 'Aldwych stood for them as London, was in fact their London' (Gomme 1914, 113). He it was who suggested the name 'Aldwych' when that road was constructed (Kent 1937, 6).[4]

What references we have are to the church of the Danes: a story of the time of Edward Confessor that Siward killed Tosti, Earl of Huntingdon, and his men who were buried near London, in a field where a memorial church was constructed; in the Chertsey Register, that Danes who had attacked Chertsey Abbey were subsequently slain 'at the place which is called the church of the Danes'; the *Anglo-Saxon Chronicle* account of Harold I's body being reburied at the church (Vince 1990, 63); and possibly an event in the *Jomsvikinga Saga* when Danes who had gathered unarmed for a church service were massacred (Lethaby 1902, 113–14). The street by St Clement Danes church was called 'Dencheman's Street' in the 13th century, but this need refer only to the church and not necessarily a suburb (Wheeler 1927, 15–17).

Wheeler sought a division within the walled city: 'the new Saxon town of St Paul's and the

old Roman city (shall we say) of St Peter's lay side-by-side, essentially distinct from each other, with the Walbrook between them' (Wheeler 1934, 301; Myres 1934; Wheeler 1934). Wheeler relied heavily on William Page's study of early London, the only London history he appears to have consulted, and one that considered very little outside the City walls (Page 1929).[5] Nevertheless he interpreted four loomweights, a round bottomed pot, and an Ipswich Ware rimsherd with stamped decoration, from the Savoy, as probably derived from a sunken-floored hut, and stated that: 'On general grounds it is unlikely that the Savoy hut stood alone. We may suppose that the riverside strip of gravel which later bore a string of palaces between the City and Westminster was already occupied by groups of huts or houses in Saxon times' (Wheeler 1935, 141). The idea of farmsteads adjacent to the City was reinforced by the EPNS *Middlesex* that rendered the variants on Aldwych, from *Vetus vicus* (1199) to *Adwych (1551)* as 'The old dairy farm' (Gover *et al* 1942, 166).

Ivimey described Fabian's statement as 'remarkable information': 'A glimpse of the actual appearance of London in 981 ... though what the sources of his information were so long after the event is not quite clear ... Perhaps — if this is not all merely so much nonsense — the "houseinge towards Westminstre" refers to the Danish settlement at Aldwych and the Saxon village of Charing'. He speculated what the state of the City would have been at that time, and what traces of Roman London 'had survived the unhandy and uncivic Saxons' (Ivimey 1937, 38–9). In the same year *An Encyclopedia of London* developed the concept of a Danish suburb, stating that Alfred the Great, having wrested London from the Danes, 'allotted territory for their occupation outside the City' (Kent 1937, 6). It cited Fleetwood, recorder to Lord Burghley: 'who may have had some authority, now vanished, said that when the Danes were driven out of England, those who had married English women were ordered by Alfred the Great to dwell between the Isle of Thorney and Caer Lud (Ludgate) and there erected a place of devotion called "Ecclesia Clementis Danorum"' (Strype 1720, vol 4, 113).

Post-World War II, excavations in the City initially raised hopes that Middle Saxon London might yet be found there. Grimes's description of 'hut-pits' at Cannon Street, Bucklersbury, and Addle Street demonstrated what careful excavation might reveal. Comparisons were drawn with sunken-featured buildings at Sutton Courtenay (Oxon) and Bourton-on-the-Water (Glos), but the huts at Cannon Street at least had to be dated to the Late Saxon period, as the others have been subsequently (Grimes 1968, 153–60). Grimes asserted that the absence of evidence for what he called 'the "lost" centuries', the 5th–6th centuries AD, was 'one of the outstanding *negative* results of the Excavation Council's work over more than sixteen years'. This 'appeared to corroborate the view that London was indeed largely unoccupied', and raised a 'puzzling ... contradiction that it embodies with the situation in London ... as implied by the records'. He speculated 'that the area of early Saxon occupation was much less extensive than has been thought' (Grimes 1968, 153–4).

Dolley's study of coin hoards from the London area showed that those from the City are dated to the reign of Alfred or later; however he saw the earlier coin hoards, including three from the immediate vicinity of the City in the Strand area, as part of a string of hoards along the Thames (Dolley 1960, 41–3). He pointed to the apparent distinction in Anglo-Saxon London 'as a *wic* as well as a *burh*, a place of commerce as well as a military stronghold' (*ibid*, 45, with n 53, 50).

Green's discovery of a Middle Saxon sunken building and subsequent timber hall in Whitehall was added to the number of apparent farms of that date identified along the Thames (Green 1963, 1004–7). Haslam pointed to the similarities between the Saxon ceramics found at the Whitehall site and those found, redeposited, at Arundel House on the Strand. He suggested that from these finds, together with those from the Savoy and Whitehall: 'A pattern emerges... indecisive in its details, of a series of settlements or farms situated at intervals along the dry ridge forming the north bank of the river between the City and Westminster' (Haslam 1975, 221–2). Hurst's review of the evidence, in the light of recent research on the Continent and at Winchester, posited a cathedral and royal complex 'around which were clustered scattered thanes' establishments', probably in the vicinity of St Paul's. 'That settlement was by no means confined to the area of the Roman city is shown by the finding of Saxon farms at Arundel House, the Savoy and Whitehall which suggests a widely scattered settlement along the Thames with suitable access to the River'. He also pointed

to the comparative archaeological evidence from the two excavated large urban centres at *Hamwih* and Ipswich, centres of trade with the Continent, and the potential of the unexcavated site at Fordwich. He did not believe, on the basis of existing archaeological evidence, that London became a fully urban centre until the 10th century (Hurst 1976).

Biddle drew attention to the significance of the *–wic* place-name ending, both in England and on the Continent, in light of the excavations at *Hamwih*. In particular he pointed to those that lay outside Roman walled places, on the coast or beside rivers, and appear to have been undefended, but related to some other settlement inland, such as *Hamwih* to Winchester, and Fordwich to Canterbury (Biddle 1976, 114–16). However in the cases of London and York he believed that the Roman walled areas would have protected the later trading towns, despite what he called the 'current poverty of archaeological evidence relating to seventh-, eight- and ninth-century London' which was 'negligible' (*ibid*, 116).

Biddle's and Vince's reassessments of the evidence for the location of Middle Saxon London in 1984, followed by excavations from 1985, have gone some way to clarifying Fabian's cryptic comments that earlier historians grappled with.

What can we make of Fabian's account in the light of current knowledge? His description of 'the city of London' having most housing between Ludgate and Westminster would fit with what can be discerned from the archaeological evidence, principally from the Covent Garden area, for a town that reached its greatest extent in the mid- to late 8th century (Blackmore 1997, 127). Occupation evidence has been found from the National Gallery in the west to the Temple in the east, from Shorts Gardens in the north to below the Strand, and Whitehall, to the south. The paucity of excavated evidence for occupation in the City at this period would reflect the lack of housing 'little or none ... stood without order', although documentary evidence would suggest a Royal palace and chapel, possibly aldermens' residences (Vince 1990, 50–7), and of course St Paul's, and other churches (Vince 1990, 58–76). The lack of order described in that settlement may be an implied contrast with the systematic layout of *Lundenwic* now apparent from the Royal Opera House excavations (Malcolm & Bowsher 2003, 145–8).

There is the difficulty of Fabian's entry being ascribed to AD 982. It is believed from the excavated evidence that the trading city along the Strand had been severely reduced by the late 9th century, as a result of Danish attacks, the surviving populace possibly taking advantage of the 'restoration' of the walled area by Alfred. There is little sign of occupation, at least from the excavations in the Covent Garden area, into the late 9th century, let alone the 10th (Malcolm & Bowsher 2003, 141–3; Leary *et al* 2004, 144–5), although Alfred's intervention in London may not have been as welcome as partisan contemporary accounts suggest, and the resettlement of the walled area may have taken some time to achieve (Dyson 1990, 99–110).

Perhaps Fabian does characterise the City in AD 982, after a disastrous fire, which only a Danish 'suburb' escaped. Little excavation of surviving Saxon levels has taken place near St Clement Danes, but distinctive 'Danish' artefacts have not yet been identified to support the idea of a substantial Danish suburb around the church. Nor has evidence for a disastrous fire of that date been found within the City walls, although fire damage is apparent in the Royal Opera House excavations (Malcolm & Bowsher 2003, 156) that can be associated with the 8th-century documentary evidence. To what extent a Danish suburb might have grown up around St Clement Danes, from what date, and in what political context is uncertain. Tatton-Brown favoured an early 11th-century foundation date for St Clement Danes, in Cnut's reign, in what might have been an open market area for the Middle Saxon town (Tatton-Brown 1986, 25). Brooke and Keir associate St Bride (Fleet Street) and St Clement of the Danes, suggesting they served the area 'over which settlement was spreading fastest in the Viking period, in the late tenth and eleventh centuries' (Brooke & Keir 1975, 140).

Could Fabian have appended his statement to too late an entry for a fire of London, and should he instead have related it earlier in his Chronicle, in respect of one of the later 8th-century fires? Just as it seems probable that Bede's description of London as an *emporium* would better relate to London at the time he was writing in AD 730, than as early as the events of AD 604 which he was recounting.

Fabian's authority for his statement, reference to a lost Saxon Domesday, is intriguing. Could this have been the Alfredian Domesday survey to which Stow refers? If so, of course, it must describe London some one hundred years

before Fabian's Chronicle entry. Studies of the Norman Domesday show that it must have been based on pre-existing surveys for assessment of geld (Harvey 1971, 753–73), including those of monastic estates (Clarke 1985, 55). The practice of recording estates, with origins in the Late Roman Empire, seems to have revived in the 9th century on the Continent, possibly due to the influence of Charlemagne (Perceval 1985, 13–16). Could Alfred have been inspired to compile such a survey through his connections with Charlemagne? From his description, Fabian's source appears more like a 'doom', that is a collection of laws (such as those of Hlothere and Eadric mentioned above, or the *Ordinances* of Athelstan's reign AD 924–940 (Vince 1990, 104–5)). It is, however, difficult to know what topographical information such a source might have contained.

In retrospect, Fabian's Chronicle entry might have helped resolve the 'enigma' (Cowie & Whytehead 1988, 75) of Middle Saxon London rather sooner than it was, and points to the potential value of combining both primary and secondary historical material with archaeological evidence.

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NOTES

[1] These excerpts are taken from Henry Ellis (ed) *Robert Fabyan – the New Chronicles of England and France* (1811): entry for AD 982, 202; Prologue, 293. This is based on the 1559 version with added editorial comment.

[2] Biographical details from Ellis *op cit* (note 1), who also reproduces Fabian's will (preface 3–13).

[3] Fabian's authorship is assessed by: C L Kingsford (ed) *Chronicles of London* (1905), thus: 'Robert Fabyan was but one of the last in a long line, and built only a little that was new on the foundations which others had laid' (v), but: 'the first place must be given to Robert Fabyan to whose labours all knowledge of the Chronicles was for three centuries chiefly due' (xxvi); A H Thomas & I D Thornley (eds) *The Great Chronicle of London* (1938), who consider the possibility of another author, as the original manuscript was unnamed, and that Fabian was dependent (as others) on a lost 'Main City Chronicle'.

[4] Sir Laurence Gomme was Clerk to the London County Council.

[5] Page was General Editor of the 'Victoria Histories of the Counties of England', and did devote one chapter to the Sokes surrounding the City.

BIBLIOGRAPHY

BESANT (1908), W Besant *Early London* Survey of London

BIDDLE (1976), M Biddle 'Towns' in D M Wilson (ed) *The Archaeology of Anglo-Saxon England*, 114–16

BIDDLE (1984), M Biddle 'London on the Strand' *Popular Archaeology* July 1984, 23–7

BLACKMORE (1997), L Blackmore 'From beach to burh: new clues to entity and identity in 7th- to 9th-century London' in G de Boe & F Verhaeghe (eds) *Urbanism in Medieval Europe*, 127

BROOKE & KEIR (1975), C N L Brooke & G Keir *London 800–1216: The Shaping of a City*

CLARKE (1985), H B Clarke 'The Domesday satellites' in P Sawyer (ed) *Domesday Book: A Reassessment*, 55

COWIE & WHYTEHEAD (1988), R Cowie & R L Whytehead with L Blackmore 'Two Middle Saxon occupation sites: excavations at Jubilee Hall and 21–22 Maiden Lane' *Trans London Middlesex Archaeol Soc* 39, 47–163

DOLLEY (1960), R H M Dolley 'Coin hoards from the London area as evidence for the pre-eminence of London in the later Saxon period' *Trans London Middlesex Archaeol Soc* 20 Part 2, 37–50

DYSON (1990), T Dyson 'King Alfred and the restoration of London' *The London Journal* 15 No. 2, 99–110

EADES (1966), G E Eades *Historic London* City of London Society

ELLIS (1811), H Ellis (ed) *Robert Fabyan – the New Chronicles of England and France*

FLENLEY (1911), R Flenley *Six Town Chronicles of England*

GOMME (1912), L Gomme *The Making of London*

GOMME (1914), L Gomme *London*

GORDON (1903), C Gordon *Old Time Aldwych, Kingsway, and Neighbourhood*

GOVER *et al* (1942), J E B Gover *et al The Place-names of Middlesex*, English Place-name Society 18

GREEN (1963), H J M Green 'Evidence of Roman, Saxon and Medieval Westminster' *Illustrated London News* 242, 1004–7

GRIMES (1968), W F Grimes *The Excavation of Roman and Medieval London*

HARVEY (1971), S P J Harvey 'Domesday Book and its predecessors' *English Historical Review* 86, 753–73

HASLAM (1975), J Haslam 'The Saxon pottery and the Tudor pottery group from the cesspit' in M J Hammerson 'Excavations on the site of Arundel House in the Strand, W.C.2, in 1972' *Trans London Middlesex Archaeol Soc* 26, 209–51

HURST (1976), J G Hurst 'Anglo-Saxon and Medieval' in D Collins *et al The Archaeology of the London Area: Current Knowledge and Problems* London & Middlesex Archaeol Soc Special Paper 1

IVIMEY 1937, A Ivimey *A History of London*

KENT (1937), W Kent (ed) *An Encyclopedia of London*

KINGSFORD (1908), C L Kingsford (ed) *John Stow: A Survey of London*

LAMBERT (1806), B Lambert *The History & Survey of London and its Environs*

LEARY (2004), J Leary *et al Tatberht's Lundenwic: Archaeological Excavations in Middle Saxon London*

LETHABY (1902), W R Lethaby *London before the Conquest*

LOFTIE (1892), W J Loftie *London*

MACKAY (1838), C Mackay *A History of London*

MAITLAND (1775), W Maitland *The History of London from its Foundation to the Present Time: New Edition continued to 1772* (ed J Entrick)

MALCOLM & BOWSHER (2003), G Malcolm & D Bowsher with R Cowie *Middle Saxon London, Excavations at the Royal Opera House 1989–1999*

MERRIFIELD (1983), R Merrifield *London – City of the Romans*

MYRES (1934), J N L Myres 'Some thoughts on the topography of London' *Antiquity* 32, 437–42

NORDEN (1723), J Norden *Speculum Britanniae, Description of Middlesex*

PAGE (1929), W Page *London: its Origin and Early Development*

PERCEVAL (1985), J Perceval 'The precursors of Domesday: Roman and Carolingian land registers' in P Sawyer (ed) *Domesday Book: A Reassessment*, 13–16

PRIDEAUX (1898), W F Prideaux *Notes and Queries* (9th series), vol 2

STOW (1631–2), J Stow, continued by E Howes, *Annales or A Generall Chronicle of England*

STRYPE (1720), J Strype (ed) *J Stow's Survey of London*

TATTON-BROWN (1986), T Tatton-Brown 'The topography of Anglo-Saxon London' *Antiquity* 60, 21–8

VINCE (1983), A Vince 'In search of Saxon London: the view from the pot shed' *Popular Archaeology* October 1983, 33–7

VINCE (1984), A Vince 'The Aldwych: mid-Saxon London discovered' *Current Archaeology* 93, 310–12

VINCE (1990), A Vince *Saxon London: An Archaeological Investigation*

VULLIAMY (1930), C E Vulliamy *The Archaeology of Middlesex and London*

WHEATLEY (1904), H B Wheatley *The Story of London*

WHEELER (1927), R E M Wheeler *London and the Vikings* London Museum Catalogues 1

WHEELER (1934), R E M Wheeler 'The topography of Saxon London' *Antiquity* 31, September, 290–302

WHEELER (1934), R E M Wheeler 'Mr Myres on Saxon London: a reply' *Antiquity* 32 December, 443–7

WHEELER (1935), R E M Wheeler *London and the Saxons*

THE TOWER OF LONDON AND THE JEWISH EXPULSION OF 1290

Jeremy Ashbee

SUMMARY

A closer look at the accounts of Ralph of Sandwich, Constable of the Tower of London, for the year 1290 reveals the involvement of the Tower in the expulsion of the Jews from England in that year. The Jews had to pay the Constable a toll before embarking for France.

The historical relationship between the Jews and the Tower of London is often portrayed in completely negative terms, with the Jews herded in their hundreds into the 'dungeons' under the White Tower, and thence taken out either to forced conversion or to summary execution.[1] Modern scholarship, by contrast, is revealing that this relationship was in fact a very mixed one.[2] Episodes of mass-imprisonment did occur, as in the confinement of 600 and execution of 269 Jews between 1278 and 1279,[3] and earlier in the century, in connection with allegations of ritual murder, such as the death of 'Little Saint Hugh' of Lincoln,[4] but, for much of the period of Jewish settlement, the Tower was equally involved with the Jews' protection and welfare.

As royal 'property', the Jews of London were entrusted to the authority of the Keeper or Constable of the Tower. There are numerous documented instances in which the Jews and their chattels were taken into protective custody within the fortress;[5] on one occasion, during the 1267 London uprising led by Gilbert de Clare and the 'Disinherited', the Jews were even recruited by the papal legate Ottobuono to assist in the defence of the Tower, in the event, successfully.[6] The Constable of the Tower also held his own judicial sessions for the Jewry inside the fortress, and maintained an officer, the Serjeant of the Jewry, responsible for the regulation of all activities, Jewish and Christian, within the district, located well away from the Tower, in which Jews predominantly lived.[7] Relations between the Jews and the Tower have also left a more tangible legacy in the moat, the outer curtain wall, and the building now known as 'Traitors' Gate', their construction funded in part by a 'tallage' (tax) on the Jews during the 1270s.[8]

The medieval documentation for the Tower of London in the National Archive (Public Record Office) at Kew is likely to deter all but the unwary and the obsessive. Hundreds of rolls, many legible only under ultra-violet light, written in abbreviated Latin or idiosyncratic old French and in a variety of hands, they encompass a huge range of activities. Documents include inventories of contents (from weaponry to prisoners), writs ordering works to be carried out, documents of the Mint and Royal Wardrobe, and, most voluminous, accounts of officials working at the Tower, declaring their income and expenses to be refunded. Most of these accounts are formulaic and repetitive, and a cursory scan can easily leave the small details unnoticed.

Such a document is E101 4/25, unpromisingly labelled as an account of the income and expenses of Ralph of Sandwich, Constable of the Tower of London, running from July 1289 to September 1301. At the very end of the manuscript are several useful entries about building works in the fortress, mentioning repairs to the king's and queen's chambers, the kitchen and bakehouse, a stable next to the Great Tower (now the White Tower), the drawbridge outside *Pycardesgate* (the present Middle Tower), and Ralph's expenses in maintaining Welsh prisoners. The bulk of the

document is at first sight much less interesting, concerned with Ralph's income during the period, and the entries for most years talk about the same things: tolls levied on merchant vessels in the Thames, revenue from the sale of brick-earth from the Tower's moat to the tilers of London, and paltry rents from three 'old and unsound' cottages in East Smithfield. In the middle of these accounts, easily missed, is the following entry:

> *Idem reddit compotum de xxiii li et vi s receptis de consuetudine predicta tempore transfrettationis Judeorum predicto anno xviii videlicet pro transfrettatione m ccc xxxv Judeorum de Londoniis usque Whitsand de quolibet Judeo iiii d. Et de cxxvi pauperibus Judeis de quolibet ii d.*
>
> The same (Ralph) declares receipt of 23 pounds and 6 shillings by the said custom at the time of the crossing of the Jews in the same year 18, namely for the crossing of 1,335 Jews from London to Wissant, each Jew paying 4 pence, and additionally from 126 poor Jews, each paying 2 pence.[9]

The 18th year of the reign of King Edward I (1272–1307), the year of Ralph of Sandwich's receiving this sum of money, was 1290, and the 'crossing of the Jews' refers to the well-documented event of that year, in which the entire community of Jews was ordered to quit the territory of the English King and go into perpetual exile. The expulsion has been extensively analysed by modern historians. The reasons for Edward I's decision continue to arouse debate, invoking political, economic, and financial arguments on the one hand, and hardening cultural and religious attitudes on the other.[10] The historical record is clear that in the decades immediately before the expulsion, the Jewish communities were increasingly hard-pressed, subject to crippling taxation, their lives regulated by ever more restrictive legislation, and, most dramatically, their numbers reduced by episodes of mass-arrest and hanging, connected with accusations of coin-clipping[11] and non-payment of taxes. It has been estimated that by 1290 the total population of Jews in England may have numbered as few as 2000. With a few notorious exceptions, such as the stranding of Jews on a sandbank at Queenborough, the departure of the Jewish population took place in an orderly manner and without incident.[12]

Hitherto it has generally been believed that the Tower of London played little part in the expulsion. This account, on the other hand, shows that the Constable of the Tower took an important supervisory role in the embarkation and departure of a large number. He clearly regarded the embarkation and departure of several shiploads of Jews in the same terms as many other classes of traffic on the Thames, as a fit subject for the extraction of a toll, just like the herring-boats from Yarmouth, the various vessels of Londoners and 'outsiders', and the pilgrims making for Santiago, whose toll-payments to the Constable are documented in this and many other accounts. Like a modern traveller paying 'airport tax', 1,461 Jews, 126 of them impoverished by recent events and only able to pay half the toll, secured the permission of the Constable of the Tower before embarkation. These formalities concluded, they crossed from London to the north coast of France, into whose existing Jewish communities they all but disappeared.[13]

It may be coincidental, but is nonetheless a resonant point of historical circularity, that the most famous monument of the revived post-Cromwellian Jewish community, Bevis Marks Synagogue, first opened in 1701, should stand so close to the Tower of London, the fortress which witnessed the forced departure of that community's medieval predecessors.

NOTES

1 G Parnell *The Tower of London* (1993), 54.

2 V D Lipman 'The jurisdiction of the Tower authorities outside the walls' in J Charlton (ed) *The Tower of London. Its Buildings and Institutions* (1978), 144–52.

3 National Archive, Public Record Offfice (PRO), E352/74 rot 1 m1d, E101 249/22, printed and translated in H G Richardson (ed) *Calendar of the Plea Rolls of the Exchequer of the Jews* vol 4 (1972), 148–94; E372/123 rot 10 m1d.

4 H R Luard (ed) *Matthei Parisiensis Monachi Sancti Albani Chronica Majora* vol 5, Rolls Series, 7 vols (1872–83), 552.

5 *eg* H R Luard (ed) *Annales Monastici, volume 3, Annales Prioratus de Dunstaplia etc* (1866), 57; Z E Rokéah (ed) *Medieval English Jews and Royal Officials. Entries of Jewish Interest in the English Memoranda Rolls 1266–1293* (2000), 107.

6 C Roth, *The Jews in the Defence of Britain, Thirteenth to Nineteenth Centuries*, Presidential Address delivered before the Jewish Historical Society of Great Britain in 1940 (1943); H R Luard (ed) *Flores Historiarum*, vol 3, Rolls Series (1890), 14–16.

[7] H G Richardson, *The English Jewry under Angevin Kings* (1960), 155–60. For the London Jewry, see particularly J Hillaby, 'London: the 13th-century Jewry re-visited' *Jewish Historical Studies* 32 (1993), 89–153.

[8] *eg Calendar of the Patent Rolls of Edward I, 1272–1281* (1901), 100; Rokéah *op cit* (note 5), 186; Richardson *op cit* (note 3), 131.

[9] PRO, E 101/4/25 m1. This item has been mentioned in print, but the reference to the 'poor Jews' has, to my knowledge, not been discussed before. See R R Mundill 'Medieval Anglo-Jewry: expulsion and exodus' in F Burghard, A Haverkamp and G Mentgen (ed) *Judenvertreibungen in Mittelalter und früher Neuzeit* (1999), 75–97, esp 94.

[10] For recent commentaries, see R R Mundill, *England's Jewish Solution. Experiment and Expulsion, 1262–1290* (1998); 'Edward I and the final phase of Anglo-Jewry' in P Skinner (ed) *Jews in Medieval Britain* (2002), 55–70.

[11] Z E Rokéah 'Money and the hangman in late-13th century England: Jews, Christians and coinage offences, alleged and real' *Jewish Historical Studies* 31 (1990), 83–109.

[12] Mundill *op cit* (note 9), 93.

[13] *ibid*, 94, reports the observation that Jews of English origin formed an identifiable group in two particular areas of Paris.

'FOR THE POOR TO DRINK AND THE RICH TO DRESS THEIR MEAT': THE FIRST LONDON WATER CONDUIT

David Lewis

SUMMARY

This paper traces the history of London's first piped water supply that operated for at least four hundred years from c.1260. The London water supply system or 'conduit' was a complex and expensive piece of infrastructure — construction costs were probably equivalent to those of a cathedral — yet it has undeservedly been omitted from many accounts of the urban history of the city. This paper contends that an appreciation of medieval water transportation technology not only demonstrates the true scale of the enterprise that conceived of the London conduit in the first instance, but also explains the subsequent difficulties in building and developing the system.

Although there are few documentary sources on which to construct a comprehensive account of the medieval London conduit, the recent excavation of a small section of the original pipe-work (Paternoster Square, 2001) has provided important new evidence on how the system was built, its capacity, and the likely reasons for the incorporation of ever more remote sources of supply. The development of the system is tracked from a single public fountain in the City (Cheapside) in the 13th century, to a network of elaborate fountains by the 15th century that used only the forces of gravity to transport water (eventually) more than 6km through underground pipes, from springs near the modern site of Paddington Station to the fountain heads. Although the physical remains of London's first water conduit are now almost entirely lost, this paper seeks to reappraise this important part of the medieval City and to rediscover why the conduit was the subject of such celebration at the time, attracting financial donations from the City's wealthiest medieval merchants.

In his book on the history of water supply in England, Norman Smith notes that 'before 1600 London had made little attempt to pipe or channel water supplies from clean sources outside the City' (Smith 1975, 96). Whilst this opinion is at the very least contentious, it reflects the fact that most narratives on the history of medieval London pay scant attention to the availability of clean water; a surprising omission considering the fundamental importance of water for many facets of life. In mitigation perhaps it might be contended that as the City is located on the Thames — and a number of other river systems — water would have been readily available. Moreover, given the maritime climate of the British Isles and the geological basin that forms London's underlying rock strata, rainwater would have filled the many City wells that are known to have existed. The supply of water should therefore have been the least of the problems facing the medieval City authorities.

Whilst it is undoubtedly true that there was no shortage of water, the real issue was not availability, but purity. As early as the mid-13th century many of the London water sources were becoming heavily polluted, and the City authorities perceived that they needed to take action to provide clean water; well and river water might have been suitable for washing, but were rapidly becoming unsuitable for personal consumption. The pressure of population growth, including industrial activity within the City, was poisoning the local environment. Although the exact date is unclear, probably by 1260 the City had built, at considerable expense, an underground piped water system that brought spring water from about 5km to the west of the City, a system known as the London conduit or

later the Great Conduit. The system used only the forces of gravity to move water through the pipes that ascended Ludgate Hill — apparently contradicting the forces of nature — to reach an elaborate conduit fountain at the eastern end of Cheapside. Although the development of the system was tentative at first, it was gradually extended, so that by the 15th century it represented a significant distribution network that stretched from Fleet Street to Gracechurch Street (Schofield & Vince 1994, 52). Regrettably, this early public utility, incorporating a complex of water filtering devices, pipes and cisterns, was largely destroyed in the Great Fire or in the subsequent reordering of the City infrastructure. In addition, and probably at the same time, it seems that the primary records of the system, most likely consisting of wardens' accounts, journals, and plans, were comprehensively destroyed. Although the London conduit was probably the first purely urban water system in England, the paucity of either direct documentary or archaeological evidence has consigned it to a minor footnote in the history of the City. It is not known, for example, who designed and built the system, although undoubtedly the application of complex hydraulic technology within an established city environment would have required considerable expertise.

Evidence of the London conduit however is not entirely lost. Most significantly, the recent archaeological discoveries of the undercroft of Great Conduit house or fountain (1994) and a section of the conduit pipe (2001) allow the London conduit to be reassessed and compared to other conduit water systems that are better preserved and even, in some cases, documented (Birch *et al* forthcoming; Rowsome 2000, 61). The relatively few documentary references to the conduit that have survived, such as the City letter books, property deeds, and wills, add further detail, together providing sufficient information to piece together the likely history of the system.

From a review of the available source material and considering the likely existing knowledge of conduit technology, the construction of the London conduit was an extremely bold project. There could have been little certainty at the outset that the system would work, although its construction consumed large quantities of raw materials (particularly lead and timber) and required a substantial labour force, of both skilled and unskilled workers. It represented a considerable financial risk. The fact that it subsequently operated for three hundred years until the Great Fire represents a major achievement that should be ranked in importance beside the building of London Bridge or the Guildhall. Clearly it deserves to be better understood.

THE DEVELOPMENT OF THE LONDON CONDUIT

The availability of drinking water from springs and streams was one of the principal reasons why the Romans decided to site London on the terraces above the marshy north bank of the Thames. Geologically, London sits on a basin of chalk approximately 200m thick, with a northern rim coming to the surface at the Chilterns and a southern rim at the North Downs. Overlaying this deposit of chalk are relatively thin beds of tertiary sands and pebbles, which themselves are overlaid first with a thick layer of London clay and then with a clay and sand mixture known as Bagshot sand. The water-bearing strata for London are found in the tertiary deposits and where these levels are exposed or cut, fresh water springs form. The dissection of these levels in the London basin by the Thames accounts for the number of fresh water springs found close to its banks, such as the St Clements well spring near Fleet Street. The cutting action of the Thames is not consistent however, and particularly in the area occupied by the western part of the City, the number of natural springs is limited. With the growth in the population of London from the 11th century and the parallel increase in demand for fresh water, there was an ever mounting pressure to access new convenient sources of water.

At first this demand was met through digging wells, but for these to be certain of reaching the tertiary levels that held pure, filtered water they would need to be, in most cases, greater than 16m deep. These wells were thus known as 'deep wells'. To be sure of only containing pure water, these wells would additionally require an interior lining of stone to prevent the ingress of surface and ground water that could be polluted with soakage from stables and cess pits, decaying matter from burial grounds, and the residue from water intensive industries such as tanning and metal working (Foord 1910, 250). Inevitably such wells were expensive to construct and were consequently infrequently built. A more common type of City well was the insubstantial 'shallow

well'; this appeared to provide clear water, in exactly the same way as a deep well, but with the significant advantage of being both quick and cheap to build. One 13th-century description notes their rudimentary construction: that the well wall bracings consisted of knocked-through wine barrels stacked one on another 'five or six barrels deep', making the well perhaps 6m deep in total (Keene 2001, 173). With insufficient depth to reach clean water, no protection from contaminated surface water, and the minimum filtering of ground water from other levels, the water in such wells was inevitably impure. 'Shallow well' water might have been clear and possibly palatable but it was poisonous, and at worst could have brought 'death in the cup' (Foord 1910, 250). The impurity of City water was dramatically underlined in the 1860s when it was noted that once mains drainage was installed, the City wells comprehensively dried up (Church 1877, 16). The water contained in these wells, from the Middle Ages onward, was nothing more than what we would now classify as drain water.

The connection between clean water and health was appreciated by London citizens, Stow notes that citizens were 'forced to seeke sweete waters abroad' — City water was known not to be wholesome (Stow 1908, I, 16). For direct consumption or for the preparation of food the preference was for water obtained from unpolluted sources such as spring water from Clerkenwell, Skinner's well, or one of the other perpetual springs close to the City. But as water is heavy to carry — a typical three-gallon wooden pipe would have weighed approximately 30lb — the personal transport of water from these sources must have been at best inconvenient, and at worst rendered pure water inaccessible for many households. The temptation to use an impure, but more convenient source, such as a 'shallow well' shared between tenements, must have prevailed in many cases. As an alternative, water could be purchased from one of the City water-bearers who made a trade of supplying Thames river water from horse drawn delivery wagons. Presumably such water was considered of better quality than simple well water, although the purity was entirely dependent upon which part of the river the water was taken from. Thames water could be variously polluted, with sea salt, due to the tidal action of the river, or contaminated by the poisonous water of the Fleet and Walbrook tributaries that were effectively open drains running through the City. Equally river bank water was rendered unfit for consumption by mixing with groundwater and other floating debris (Riley 1868, 223). Clean Thames water could be taken from a central section of the river on an ebb tide, but as this part of the river was also subject to dangerous currents, some skill was required in correctly collecting the water. There could be no guarantees, however, that a water-bearer had necessarily taken the trouble to ensure a pure supply. In recognition of the hazards of collecting water, and in an attempt to control the quality of the water-bearers' product, the water-bearers became the object of 'craft' designation, with their charges being standardised by the City authorities in 1350 (Keene 2001, 169).

It would have been impossible to ensure that Thames water (however it was collected) was consistently of any better quality than well water, as fundamentally London rivers served a conflicting dual purpose. They were both a source of water for consumption and also the primary means of waste disposal for the City — this duality becoming increasingly untenable as the City population expanded in the 13th century (Keene 2001, 162). One solution might have been to simply specify the use of water resources: Worcester, for example, regulated that waste had to be thrown into the River Severn downstream from the town, allowing clean water to be taken from the river upstream. However, such a solution was not viable in London because of the city's size and the potential difficulty of enforcement (Holt 2000, 97).

The concern to obtain clean — and preferably 'sweet' — water was not limited to the demand for drinking water, as plain water was only regularly consumed by the poor. Good quality water was also needed to brew ale — the drink consumed by the majority of the City's population. Whilst ale was (mostly) rendered safe to drink through a production process that required malted grains to be boiled with water, poor quality water would produce inferior tasting ale. Where ale was brewed for commercial purposes the importance of 'taste' and a finished product that would readily sell could be appreciated. But the concern for taste would not have been restricted to commercial brewers; ale was widely brewed and consumed domestically, being a major part of the medieval diet. A household of five people, for example, could require one-and-a-quarter gallons per day or eight-and-a-quarter gallons per week (Bennett 1996, 17–19). Barbara Harvey

notes that 19% of the energy in a monk's diet at Westminster Abbey was supplied through the consumption of ale, compared to *c.*5% from this source in the general population today (Harvey 1993, 58).

Clearly the pressures of a growing London population (possibly *c.*80,000 by 1300) and industrial expansion were contaminating water sources, and some action was necessary to ensure public access to pure supplies. Uniquely amongst English cities in the 13th century, the London government turned to technology to create a new source of piped water within the City.

WATER TRANSPORTATION TECHNOLOGY

The diversion of naturally occurring water sources to centres of population was not a new technology; since the 12th century the monastic communities in England had used either stone lined open trenches or closed lead pipes to obtain a supply of running water within their domestic buildings. Of the two methods of transporting water, stone lined trenches had the advantage of being technically unsophisticated, but the disadvantage of being expensive and potentially difficult to construct. They depended on having both a conveniently situated and geographically aligned source and destination point, given that water would only flow along a trench if there was a downward slope between the two points. Without the construction of expensive aqueducts to overcome river valleys or other geographic features, stone lined trenches were in most cases not a viable means of transporting water over substantial distances. The Romans, who are associated most with this method of water transportation, were only able to construct their urban water systems with an army of slave labour, a resource unavailable to medieval urban government. Occasionally medieval trench conduits were built, but in these cases the diversion of water was over a relatively short distance and in a location where geography allowed a trench to be constructed without the requirement to build water tunnels or aqueducts. Exceptionally, there are also examples of a trench system being used in conjunction with a piped supply, such as at St Mary Spital, London (Thomas *et al* 1997, 43).

Closed lead pipes or 'conduit' systems on the other hand were considerably more flexible; the source could be several miles from the destination and the underground pipe could rise and fall as the local topography required — the pressure within the pipe providing the energy to make water flow uphill, if necessary. The critical requirement for these systems to work was the creation and preservation of 'head' water pressure within the system, by tapping a source spring that was at an elevation above that of both the intermediate pipe and the destination fountain. Typically water would be collected at a source spring (or springs) into a receipt tank (or head cistern) that provided both a reservoir against intermittent supply from the spring(s) and also a source of consistent pressure within the pipe. The greater the difference in height between the source and the destination, the greater the head pressure within the pipe and thus the greater the volume of water that could be transported. The disadvantage with lead conduits, however, was that they entailed the resolution of a range of construction issues that did not apply in open trench conduits, and, in addition, post-construction they required a considerable amount of continuous maintenance. Take for example the lead pipes. The pipes had to be perfectly sealed to preserve pressure within the system; any imperfection in manufacture or subsequent damage could result in local flooding and a complete loss of water at the destination fountain. Not only was the production of perfectly sealed pipes difficult, but the buried pipes could be accidentally damaged by inadvertent excavation, excessive surface pressure from urban traffic, or frost damage in the winter. These dangers could be minimised by burying the pipe in a deep trench, but if the pipe needed to be accessed for maintenance work, a deep trench would incur excessive location and re-excavation costs. A balancing of opposing technical issues was not limited to the pipes, a range of other operational aspects of the system also required careful balancing. Without the correct resolution of these issues, lead pipe conduits would either perform poorly, or not at all.

The manufacture of robust water pipes was the initial technical difficulty in implementing a conduit system. Although some early conduits in towns outside London used earthenware and wooden pipes, all the contemporary descriptions of the first London conduit indicate that the pipes were made of lead. This metal was chosen because it is very malleable and has a relatively low melting point, a necessary condition if the joints between the sections of pipe were to be sealed with molten metal as the pipe was laid. The method of making lead pipes was first to cast

a flat sheet of lead on a sand-bed approximately 4m by 22cm, in a similar method to making lead roofing sheets. Next, the partly cooled sheet would be pressed around a circular wooden mandrel, forming a tube with a pear-shaped oval cross-section. Finally the upper seam joint would be sealed by either casting additional metal along the seam or soldering between the two sides of the formed sheet (Homer 1991, 64; Hodge 2002, 313–15). The casting method was used for the Waltham Abbey conduit pipes (built in 1220–22) and is described in British Library Harley ms 391 (Skelton & Harvey 1986, 66). The manuscript describes how this involved packing the pipe with sand and then building a clay mould along the horizontal seam into which molten metal was poured. The finished pipe would have a distinctive ridge along the seam joint. As this production process required a number of additional steps to simply soldering the joint, it would have been a slower, and therefore more expensive, method of pipe production. Although cast joints appear on the earlier conduit systems, there is no clear evidence that there was necessarily a switch to soldered joints at a later period (Magnusson 2001, 67–9).

Making conduit pipes was deemed to be an especially skilled task. The plumbers ordinances of 1365 state that working 'a clove of lead for gutters or roofs of houses take only one halfpenny, for working a clove of lead for belfries and conduit pipes, one penny' (Waldo 1923, 22–3). The section of London conduit pipe excavated at Paternoster Square in 2001 appears to have been produced with a cast joint, as there is a clear ridge of metal on the upper surface of the pipe that seems to indicate the use of a clay mould. The almost circular appearance of this pipe, compared to the likely pear-shaped cross-section when it was originally fabricated, probably resulted from the internal pressures when it was in use (Hodge 2002, 311). Lead pipes would have been placed in the ground with the seam joint uppermost, to facilitate repairs, if and when they were necessary. The 1350 London conduit warden accounts covering two years record 'one fozer (fodder) of lead for repairs, 8 marks 12 pence'. This is almost a ton of lead, a considerable quantity for simple maintenance of the system, suggesting that repairs to leaking joints were made by pouring substantial quantities of molten lead onto the leaking section in the hope of reinforcing the pipe by the quantity of metal used. There is no mention of lead-tin solder in these accounts (Riley 1868, 264–6). The installation in 1447 of conduit pipes to provide a Westminster 'town' water supply as an extension of the Palace of Westminster system used soldered pipes, as the clerk of the King's works sold 46lb of solder for the project (Magnusson 2001, 68). Recording repairs to the Aldermanbury conduit in 1585/86, the Chamberlain's accounts refer to money paid to John Martin (plumber) for 'burnt pipes' (soldered pipes) and solder 'at 56/- the hundred' (Masters 1984, 78). It would also seem that the flat sheet of lead used to make conduit pipes was, in some cases, shaped rather than being formed around a mandrel. The 1588 grant of arms to the Plumbers Company states 'on a chevron sable towe soodring irons in saultor with a cutting knife and a shaver argent'. The cutting knife was sufficiently important an instrument in the plumber craft that it was included on their arms. The text notes that 'a cutting knife is a tool for shaving and making pipes hollow' (Waldo 1923, 14).

The London plumbers were located in Candlewick Street, which 'for many years past had been let to men of the trade' (Homer 1991, 65). In 1371 the smoke from their furnaces was deemed a danger to the local population and they were enjoined to maintain sufficiently high chimneys (Riley 1868, 355). Presumably the plumbers would have been engaged in maintaining the lead roof of St Paul's and in making conduit pipes, in a similar arrangement to that of the plumbers who built the Exeter Cathedral conduit (Magnusson 2001, 74). The plumbers' premises would have been relatively substantial to accommodate not only the furnaces but also the casting tables and workshops required to form the finished pipes. Lead sheets had to be cast indoors in order to carefully control the cooling process, otherwise the castings had a tendency to crack whilst being formed and were then useless for making sealed pipes (Rodwell 1981, 116). The typical dimensions of a medieval water pipe would be between 2cm and 10cm in diameter. The pipes excavated at Paternoster Square were well within the typical range of medieval water pipes and their location is reported as:

> The pipe was laid *c.*2m below contemporary ground level, parallel to the south side of Paternoster Row. Survived in two truncated sections measuring three metres and four metres in length respectively. The lead was between 4mm and 6mm in thickness, and

> the pipe had a diameter of 95mm. Recorded at the west end at 12.26 mod and at the east end at 12.22 mod. (Birch *et al* forthcoming)

Although there appears to be no standardisation of pipe dimensions between different conduits, presumably within a single system the dimensions of the pipes were fixed, to aid both construction and repair.

Sections of pipe would be transported to the installation site and joined either by simple butt joints or by flaring one pipe end and inserting the next pipe (male/female joints). The joints between sections would then be sealed by wiping molten metal across the joint. The use of molten metal to provide the seal would have required a mobile furnace to be built close to the installation site and the construction of an elementary mould around the pipe joint, probably in the base of the protective trench, to guide the flow of the molten metal. Clearly the construction of the conduit pipe would have been a slow process as the furnace and its fuel was moved from site to site. Of the possible methods of joining pipes, simple butt joints may have been less demanding to make, but they were weak and ideally needed additional protection. Pipes could be encased within a further stone or brick housing, but such arrangements added further expense and were omitted where either finance was tight or it was considered that the pipe was safe from damage. The Dover conduit, for example, was constructed with butt joints protected in a stone lined conduit channel one foot square (McPherson & Amos 1931, 170). Whereas the Windsor Castle conduit was buried unprotected in land outside the castle, only being given a brick 'paving' once it entered the busy upper ward of the castle, close to the distribution fountain (Tighe & Davis 1858, I, 602). A common improvement to medieval conduit systems was the subsequent installation of a protective housing for the pipe, to reduce the incidence of maintenance and consequently improve the reliability of the supply. The Exeter conduit was relaid in a stone lined channel in the mid-14th century to protect the pipe, with the new channel being wide enough to gain access for repairs (Holt 2000, 92–3). If the pipe was not to be provided with a housing throughout its length, then typically critical components would be provided with some protection. The London Greyfriars conduit trench incorporated a marble stone, to mark both the position of underground taps and to afford some protection (Norman 1899, 259). Flared joints between sections of pipe may have been stronger and thus required less protection, but they suffered from the disadvantage of not producing a smooth interior surface to the pipe. This would have made cleaning more difficult and probably also encouraged the development of additional internal deposits that could eventually create a blockage (Hodge 2002, 98).

Conduit pipes thus incorporated two joints — a horizontal seam joint along the pipe and an end joint between pipe sections. The seam joint would have been subject to the greatest internal pressure from the operation of the pipe, whilst the joint between sections, although under less stress, was potentially weak as it had to be made *in situ* (Hodge 2002, 314–15). Of the two joints, it would appear that the quality of the joint between sections was the most critical in ensuring that the conduit system remained 'closed' and therefore operated effectively. It is not known how the London conduit pipes were joined or if other external protection was provided when the pipe was first installed. Unfortunately, the pipes excavated at Paternoster Square did not include a joint between two sections of pipe, although one piece was approximately 4m long and it might have been anticipated that such a substantial section would have had at least one joint. A possible explanation might relate to the common practice of recovering (valuable) 'old' pipes to reuse the lead for other purposes. When the pipe was removed it is likely to have been crudely pulled from the soil fracturing it at the weak joint between pipe sections, resulting in only complete pipe sections remaining buried and unrecovered — perhaps locked in place because of other obstructions built on top of the pipe. The recently excavated pipe therefore represented a section that for some reason could not be recovered and was simply left in the ground, after the pipe sections on either side had been extracted.

Clearly, a calculation had to be made between casting longer pipes that would have been heavy and difficult to transport intact to the installation point without damaging the seam joint, and shorter pipes that would have been easier to transport but required more joints between sections. It seems that the conduit builders preferred longer pipes, on average 3–4m long (Magnusson 2001, 70).

The standard method of construction was to lay the pipe from the source to the destination,

so that a check could be made as the pipe was laid that the water continued to flow. Although the pipe did not have to continuously slope downwards, if possible, the trench followed a downward path, to avoid any sudden change in gradient that might give rise to maintenance difficulties when the pipe was in use. As already noted, the depth of the trench in which the pipe was buried was a further important consideration to avoid freezing in the winter or mechanical damage from, for example, passing heavy carts. Too deep a trench, however, would subject the pipe to pressure from the weight of soil above, leading to potential fracture. The London Greyfriars conduit, built in 1432, seems to have been buried in a 1–1.5m trench that provided a satisfactory combination of protection from damage and reasonable accessibility (Norman 1899, 259, 265). The pipe was said 'in the depth of winter never to fail', yet the succession of cocks that were used to close the system for maintenance were accessible from ground level. However, this system passed mostly through open fields with little likelihood of surface mechanical damage and could therefore safely operate with a shallow trench. The London conduit passed along busy urban streets, probably at a depth of 2m (Birch *et al* forthcoming). Stow refers to the poor quality of the road between the City and Westminster (Fleet Street/Strand), 'being very ruinous and the pavement broken, to the hurt and mischiefe of the subjects' (Stow 1908, I, 265). It is likely that the conduit pipe laid under this road suffered from surface pressure which, combined with the increased internal pressure in the pipe from the gradient towards the Fleet river, would account for the persistent complaints of leaking conduit pipes in the locality. Certainly, later London conduits, such as the conduit built in 1535 at Aldgate (known as the Dalston conduit), buried the pipe much deeper, at depths between 2.6 and 6m (Foord 1910, 269).

Although a conduit pipe could simply be buried unprotected, normally the trench was crudely lined with either stone or clay which would serve a double function — stability whilst the pipes were joined and a rudimentary foundation once the pipe was buried. The conduit pipes found at Paternoster Square were described as being laid in a foundation of clay and this would fit with the construction techniques in other conduit systems (Birch *et al* forthcoming; Magnusson 2001, 83). A clay lining, however, was likely to be of mixed benefit. It would certainly have held the pipe in position as molten metal was poured to join sections of pipe, but, if the clay subsequently hardened, it could assist in fracturing the pipe. There are no references in the London letter books to the construction techniques used in the London conduit and equally the one set of surviving warden's accounts for 1350 makes no mention of stones or tiles purchased to line the trench or lay over the conduit pipe for protection. However, 16th-century London Chamberlain accounts do mention stones purchased to 'pave over the pipe that leads from Ludgate to Old Bailey', including gravel, presumably used to line the trench; this indicates that at least part of the pipe was provided with better protection at a later date (Masters 1984, 77). It seems that the London conduit, at least initially, was of relatively basic construction, presumably to minimise cost on what was a highly speculative venture.

Although the principles of conduit technology would at first sight appear to be quite straightforward, the practical execution of a system required an experienced conduit builder, who understood the difficulties of converting theory into practice. Each conduit site had different local geography and construction must have involved a good deal of trial and error. Where records have survived of early conduit systems, the architect of the system is often mentioned, such as Master Lawrence of Stratford, who built the Waltham Abbey conduit (Magnusson 2001, 65). The concentration of the first systems within monastic communities is probably explained by the requirement of these institutions for large quantities of running water, particularly under the Benedictine rule governing personal hygiene. This demand was exacerbated by the regulation of monastic life that resulted in 'peak period' consumption between offices. To meet this requirement the monasteries invested in water transport, storage, and distribution systems, which were initially based on Roman designs found in the revived stone buildings used as early monastic institutions (Magnusson 2001, 6). In addition, it appears that the monasteries took a longer term view of the substantial investment required to implement new water systems, certainly in comparison to temporal authorities, further concentrating the initial development of water technology in these institutions (Holt 2000, 88). The closely connected continental monastic communities

disseminated their knowledge of water systems through their network of related houses, and thus the first conduit systems came to England through the monasteries. Personal connections between institutions accounted for their further development (Magnusson 2001, 20). The Lichfield Cathedral conduit, for example, can be traced to Walter Durden who was appointed bishop in 1166, having previously been prior of Christ Church Canterbury, where he initiated the installation of a conduit, completed under Prior Wilbert in 1167 (Holt 2000, 91). Some of the early civic water supplies resulted from these monastic systems, such as at Westminster, Exeter, and Canterbury, where a pipe was extended outside the monastic buildings for public use or, alternatively, where the overflow from an internal fountain was used as a basic civic supply (Brown *et al* 1963, I, 550).

Despite the difficulties in building conduit systems, they provided the significant advantage of flexibility over other means of transporting water in both the path of the pipe and the location of the distribution fountain. The Christ Church Canterbury plans (Fig 1) show this exact scheme, with the water moving from the source to a network of distribution points within the monastic buildings — some of these clearly requiring the water to move 'uphill'. Also clearly visible on the Canterbury plan are

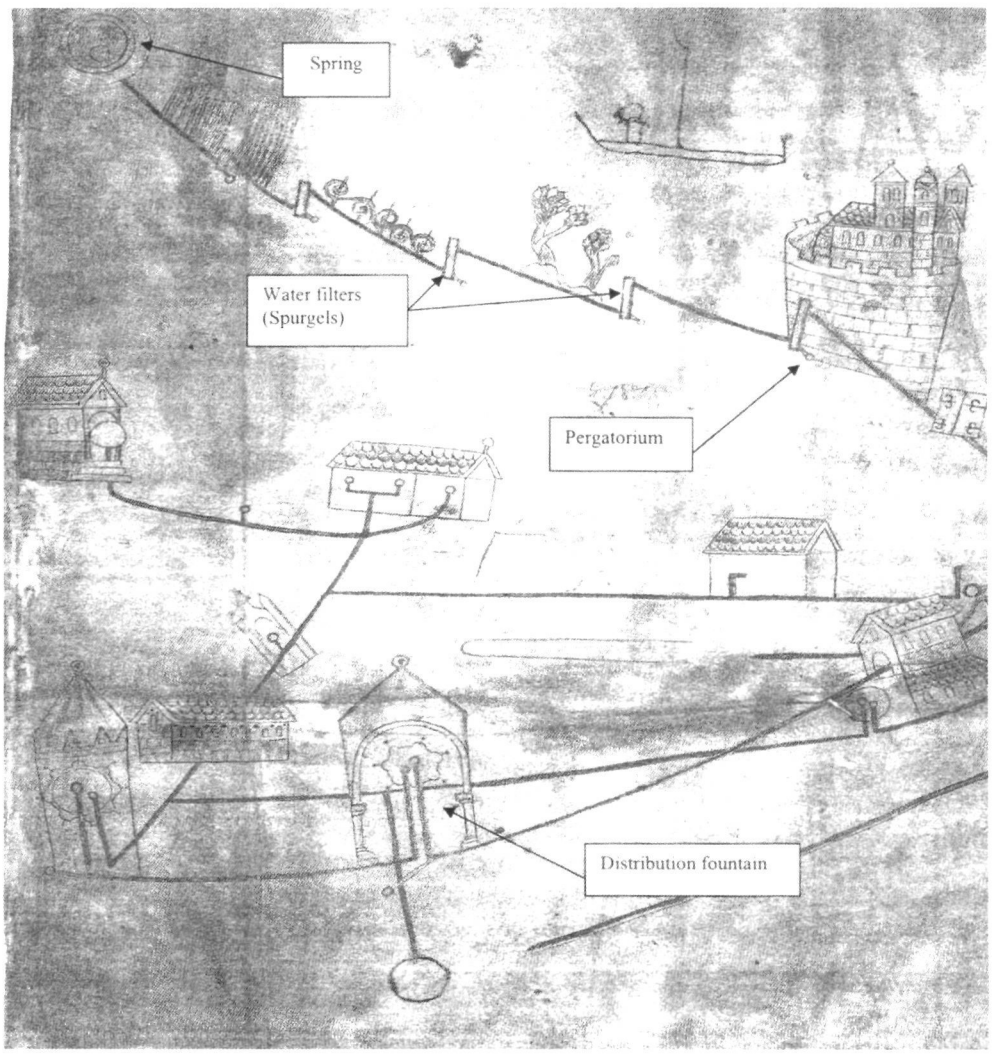


Fig 1. Christ Church Canterbury, conduit plan, 1153–61 (Trinity College Cambridge, ms R. 17.1, fols 284v–285r) (By permission of the Master and Fellows of Trinity College, Cambridge)

the succession of water filtering devices, known as 'spurgels', located between the source and the first distribution point; mostly located in field settings. As conduit water was collected from field springs, it generally contained a substantial quantity of suspended matter, such as fine grit or sand, that had to be removed both for the purity of the water and to prevent its accumulation within the pipe, leading to pipe blockage. The first level of filtration was a simple mesh covering the source pipe that removed any larger pieces of debris. The plan of the Waltham Abbey conduit clearly shows this feature (Fig 2). Finer suspended matter would then be removed

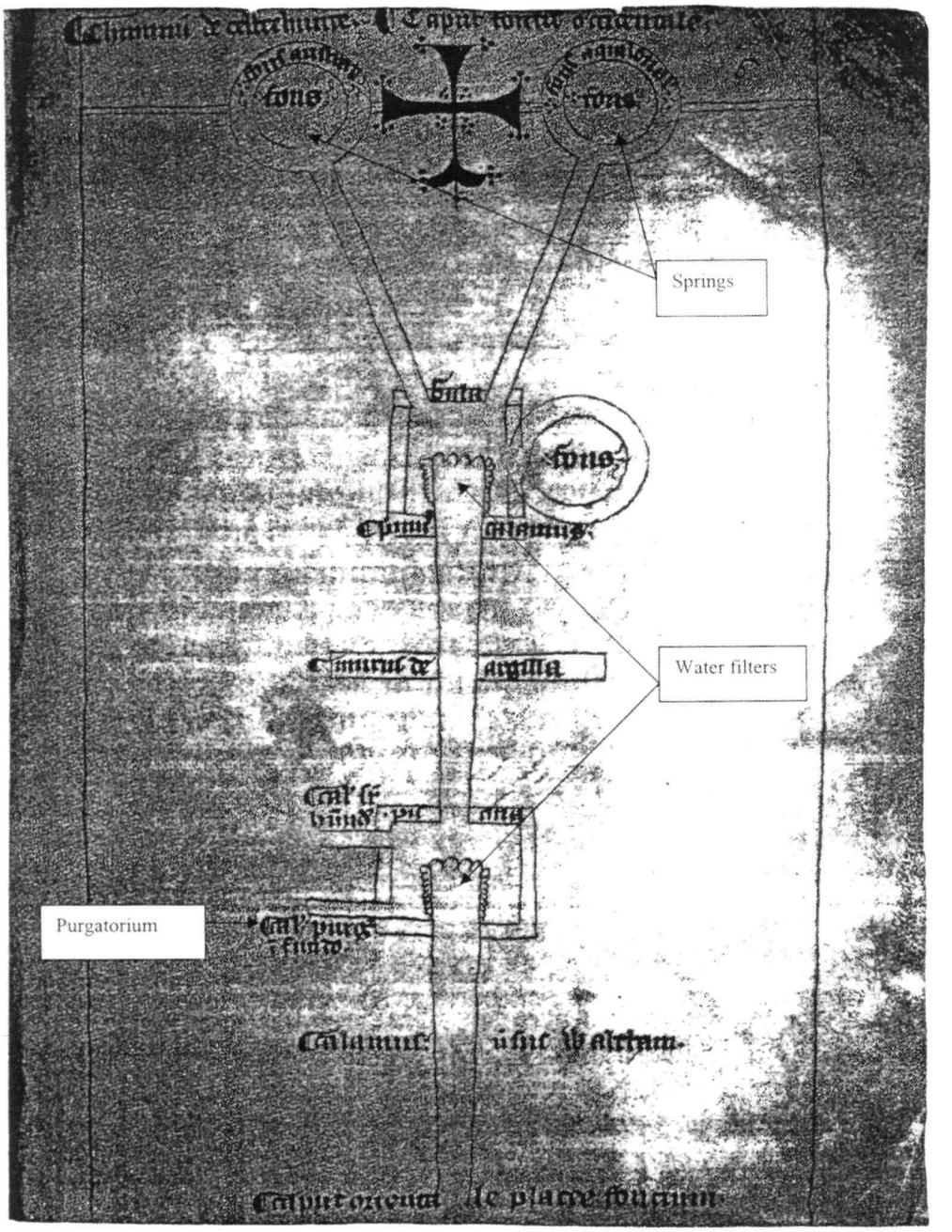


Fig 2. Waltham Abbey conduit plan (Harley ms 391, Co 6r) (By permission of the British Library)

through a succession of sealed separation tanks or 'spurgels'.

Spurgels operated by allowing unfiltered water to enter a tank through a pipe set approximately in the centre of one side of the tank. As the tank filled, 'cleaned' water would be drawn from a pipe set at the top of the opposite side of the tank; any suspended debris falling to the bottom (Fig 3). The tank was cleaned by draining off the collected sediment through a tap in the base; these are clearly visible on the Canterbury and Waltham Abbey conduit plans, marked as *purgatorium*. A succession of spurgels could be linked together to increase the effectiveness of the cleaning process. The cleaning tanks were referred to under a number of different names in medieval documents, such as *expurgatorium, spurgellum, suspiral,* or *separall* — although often called *spurgels* (Magnusson 2001, 85). Despite filtering water through several spurgels, some sediment could still enter the pipe and over time create a blockage, particularly if the water pressure was low. Any sediment needed to be removed by regular maintenance and cleaning of the pipes. In addition, the water would deposit dissolved calcium salts, known as 'sinter', inside the pipe, especially if the water was 'hard', also potentially accumulating and creating a blockage. A layer of sinter, however, did have some beneficial effect, as it provided protection against the leaching of poisonous lead into the water, but excessive accumulations had to be removed. It seems that the method of cleaning the pipes was to scour them with the aid of a heavy gauge wire, access to the pipe normally being gained at the spurgel. A reference is made in the 16th-century London Chamberlain's accounts to 'seventy-seven feet of great wire' delivered to the conduit head by John Frenche, girdler, and a payment to William Palmer of £4 1s 10d, for 'scouring the City's latten squirts' (cleaning the conduit taps) (Masters 1984, 27).

A further maintenance requirement was the prompt repair of any leaks to the pipe or spurgels, as the operation of the system depended on the careful preservation of water pressure within

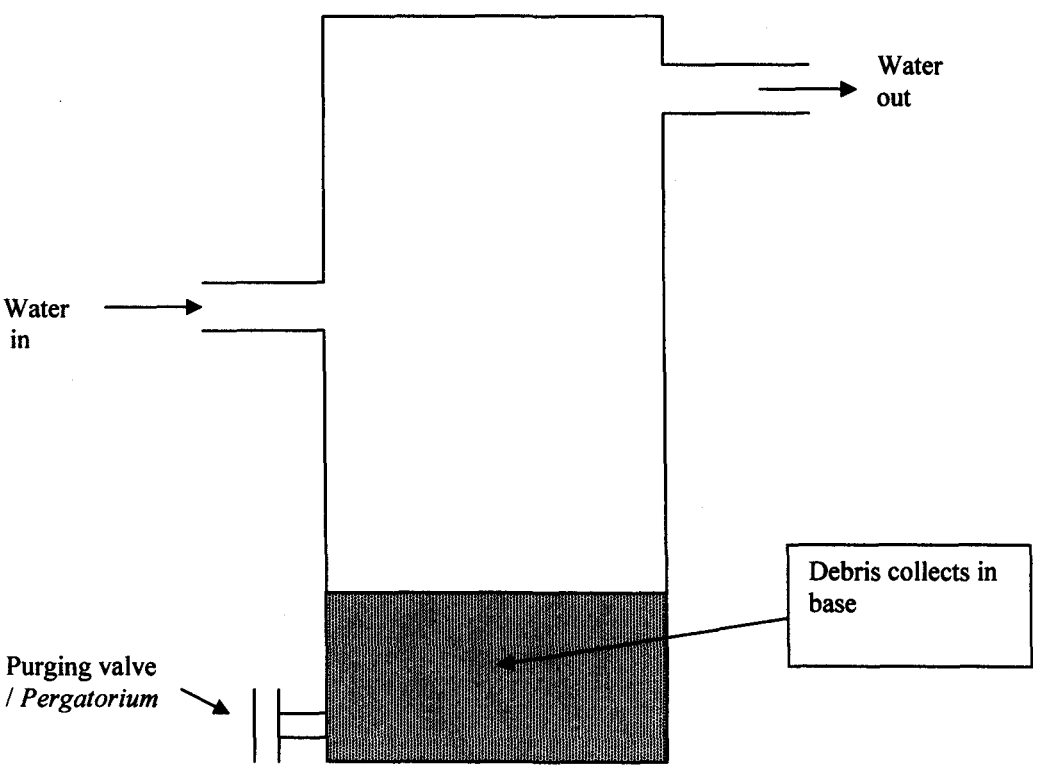


Fig 3. Schematic operation of a medieval conduit water filter or spurgel

the pipe. Leaks could most obviously be caused by damage to the pipe from external forces, such as physical movement of the soil or other mechanical damage. Perhaps less obviously, excessive water pressure within the pipe could also give rise to pipe failure. The water pressure in closed pipe systems varies over the length of the pipe, being at a maximum where the difference in elevation of the pipe from the source is at its greatest. Typically this would occur in sections of pipe that passed through a valley floor. Excessive internal pressure could give rise to premature failure of joints between sections of pipe or substantial leaks from areas of minor damage to the pipe. Low lying sections of conduit pipe could therefore require disproportionate amounts of maintenance. To guard against this problem the designers of conduit systems turned to a secondary feature of the 'spurgel' separation tank. Spurgels have the effect of dissipating water pressure due to their dimensions, and by inserting additional spurgels in a low lying section of pipe the internal pressure can be reduced, creating an artificial new 'head' within the system. In Fig 4, the pressure in the pipe between System A and B is halved by inserting an intermediate tank.

The medieval designers of the London conduit were well aware of this aspect of conduit technology, as in 1388 the City ordered that a conduit 'penthouse' be built in Fleet Street. This was the section of lowest elevation of the London conduit and therefore the part most likely to suffer pressure leakage (Appendix 1). The objective of the additional 'penthouse' was to avoid the regular inundations of local properties from burst conduit pipes 'in order that it might be seen whether the damage could by such means be averted' (CLBH, 503). The word 'penthouse' is Riley's translation of the Latin word *aventum*, a term that implies some function of venting the pipe — an operation that it was believed a spurgel performed (Riley 1868, 503). The concept of water pressure is a modern notion. To the medieval mind a pipe failed because of excessive quantities of trapped and compressed air within the pipe that needed to be released and spurgels were thought to provide this venting function (Hope 1902, 301). Presumably the belief that compressed gasses were the source of pipe failure arose from the observation that air bubbles could be seen rising from falling water and that these needed to be dissipated, as they would have been if the water was not trapped within the pipe.

The design of the Charterhouse conduit, installed in 1430, provides an interesting case study of how spurgels were used for pressure regulation. This conduit had a drop of 21m over the course of a 1.2km pipe and included a succession of eleven spurgels. This can be compared to the London conduit that originally contained only three spurgels (two in the original design and an additional one added at Fleet Bridge) in a drop of 15m over a 4.8km pipe. The insertion of spurgels into the system was therefore a further feature of conduit design that required the balancing of opposing requirements. A greater number of spurgels would allow the water to be better filtered and avoid the potential problem of debris being deposited in the inaccessible underground pipe,

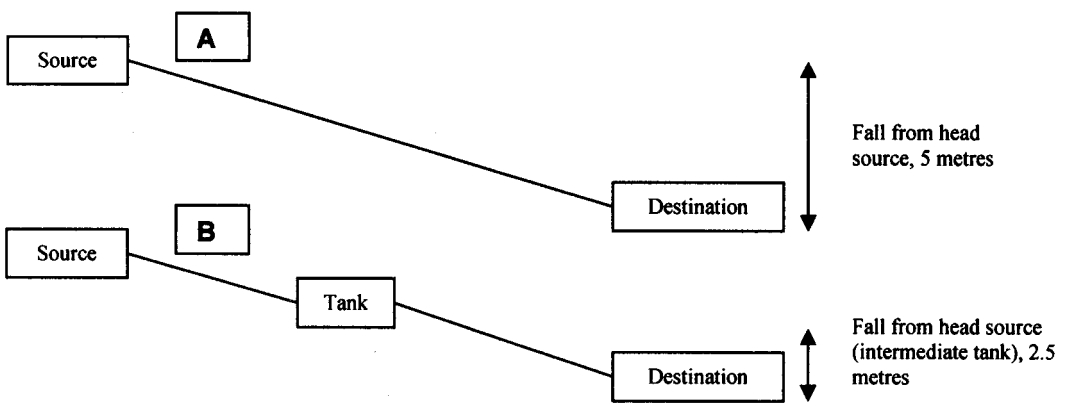


Fig 4. Schematic diagram to show the reduction in pipe pressure, by inserting an intermediate tank

but, on the other hand, the greater the number of spurgels, the lower the pressure in the system. A lower pressure system would deliver less water and be less capable of successfully crossing steep river valleys. It could be deduced from the apparent design of the London conduit, with the limited number of spurgels, that the preservation of pressure took precedence over the requirement to filter the water, probably because of the unknown forces required to lift water from the Fleet valley to Cheapside. Whether this would have represented a risky decision would in part depend on the soil surrounding the field springs, as inevitably some of this soil would be carried by the water and would need to be removed. Very fine, light, or sandy soil would require more filtering than other types. If insufficient spurgels were included in the London system, the conduit risked failure from blocked pipes. The incorrect balancing of filtering versus preservation of pressure appears to have been the problem with the extremely expensive Windsor Castle conduit (costing over £3,000 in 1552–59) which operated for little over fifty years, being reported as 'broken' as early as 1609. It operated in an area of very fine soil, but only incorporated three spurgels, the water pressure being preserved to power an elaborate fountain inside the castle (Hope 1917, I, 290). The criteria for selection of the appropriate springs to feed a conduit system therefore had to include a combination of elevation above the intended site of the distribution fountain, year-round productivity, and the absence of suspended matter in the spring water or, alternatively, sufficient additional elevation to allow it to be removed. It would seem that there were few potentially useful spring sites to feed the London conduit.

Perhaps the most critical issue in constructing the London conduit was the location of the source spring at Tyburn, to the west of the City. This site would require a conduit pipe 4.8km long to connect to a conduit house in Cheapside, probably longer than any other English system. It would have been unknown at the outset whether such a pipe could be made and installed, whilst remaining perfectly sealed. Monastic systems generally had a short run from source to destination, involving fewer pipe sections and consequently less loss of pressure from leaks at the temperamental joints between sections. The Canterbury and Charterhouse systems, for example, ran for less than 1.5km. It would have been difficult to predict the effective pressure within a long pipe, such as the London conduit, and ultimately whether there was sufficient pressure to transport the water over the intended route. The existing experience of building monastic conduits, where these were built in an urban setting, had only installed pipes under streets that sustained the pressures of a much lower population density than London. Moreover, monastic conduit systems could often be optimised by avoiding difficult topographic features such as river valleys or steep inclines by routing the pipes through open fields. The pipe for the London conduit had to follow the existing street pattern — there was no flexibility to avoid such difficult features as the Fleet Valley. Clearly there were significant differences between the installation of a monastic system and the London conduit that would stretch the existing knowledge and experience of conduit building.

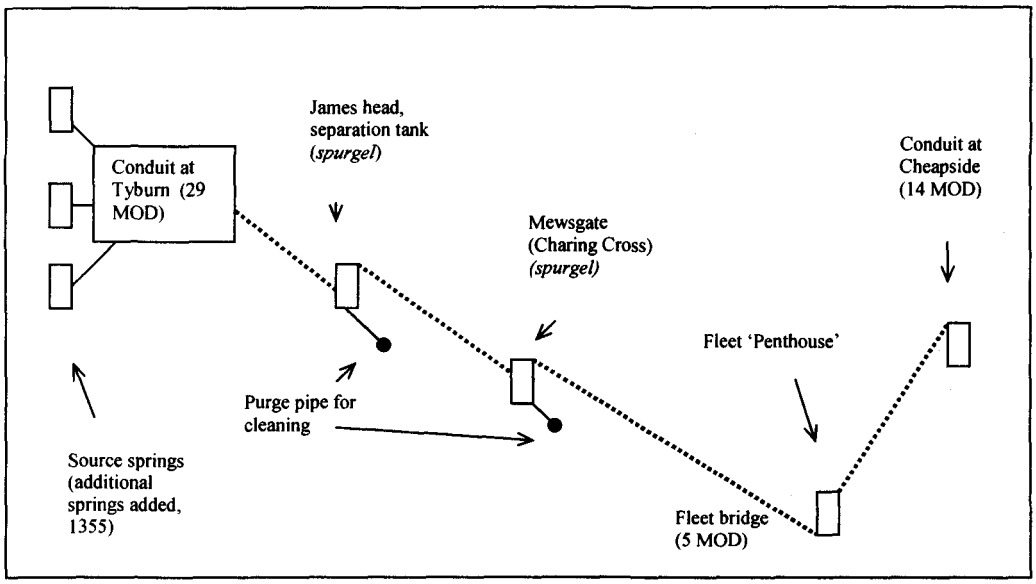
Despite the practical problems, conduit systems had been successfully installed in a number of continental European cities, in some cases initially sharing resources with the monastic communities or in other cases reviving systems originally developed by the Romans. Early systems were installed in Essen (1039–58), Magdeburg (1125–60), Paris (before 1119), and Salzburg (1136) (Magnusson 2001, 6). Whilst the motivation for installing a conduit system in London was most likely the improvement of City health, particularly for the poor, there must also have been some pressure on the City authorities to demonstrate the status of London by emulating continental developments. Although there are no surviving plans of the London conduit, the plans of the Canterbury (1153–67), Waltham Abbey (1220–22), and London Charterhouse (1430) conduits give an indication of how the London conduit might have worked.

The grant of land to the City for a conduit source was made by Gilbert de Sanford in 1236, and the first reference to the, presumably operating, conduit in Cheapside was made in 1261. From these dates it would seem that the system took approximately twenty-five years to plan and build (CCR ii, 38). The conduit head at Tyburn (opposite the modern Bond Street tube station) probably gathered water from several very close springs, that together made a sufficient supply, into a collection reservoir tank or cistern. The original grant states '...all those springs and waters arising from those springs

which they have made to unite into one place' (CLBA, 14). The cistern fed a single lead pipe that was laid, for the most part underground, to the conduit head in Cheapside. The exact course of the pipe is unknown, but four sections of pipe have subsequently been found and these give an indication of the likely route. Two sections were found in Fleet Street (1743) and St Clement's church (1765) during building work, and a further two sections close to the northern boundary wall of St Paul's Cathedral in Paternoster Square (2001) (Foord 1910, 266). The conduit warden accounts refer to mending the pipe between the Mews (Charing Cross) and the mill in the field (Windmill Street), suggesting a course of the pipe to the north of the modern day Strand. The pipe is assumed to have initially followed the course of the Tyburn valley, south towards the Thames, as using the valley would have provided a ready made gradient for the pipe and have saved the cost of digging new trenches. On reaching the brow of a hill known as 'James head' (St James's), the pipe entered an inspection tank or 'spurgel'. The pipe then turned sharply east, following a path beneath the road to the King's mews at Charing Cross, where there was a further spurgel, and then north of present day Strand and Fleet Street to the Fleet valley (Morley Davies 1910, 47). The Fleet would have been crossed at Fleet Bridge, as there are references in the letter books in 1350 to 'mending the spurgail broken at Flete bridge 6s.3½ d., for mending the pipes there 6s.8½d.' (Riley 1868, 265). The pipe would then have ascended Ludgate Hill and passed around the precinct of St Paul's to Cheapside. The conduit 'house' was located outside the church of St Mary Colechurch, at the extreme eastern end of Cheapside, on land close to the birthplace of Thomas Becket. The technical design of the conduit head or fountain, apart from its elaborate decoration, was likely to have been an elevated lead cistern that received water from the conduit pipe and in turn delivered water through brass or latten taps at street level. Users would fill portable vessels from these taps, with a stone basin beneath to collect any spilled or wasted water. The water collected in the stone basin could also be used by those without access to the taps.

The volume of water passing through the conduit is thought to have been relatively insubstantial, Keene has suggested that it was only sufficient to support 45 households or about 1% of the City population in 1350 (Keene 2001, 178). However, calculations based on the dimensions of a section of pipe excavated at Paternoster Square would indicate that the pressure at the Cheapside conduit head would be *c.*20 psi or equivalent to a delivery of 1.25 gallons per second, given the location of the source spring, the likely elevation of Cheapside in the mid-14th century, and assuming the conduit pipe was entirely 'closed'. Engineering calculations would, therefore, indicate that the problem with the London conduit was not insufficient water pressure, but excess (Appendix 1). There would have been some difficulty in containing the pressure within the pipe, especially in the spurgel at Fleet Bridge. The assumption that a medieval pipe, especially one almost 5km long, could be completely 'closed', is certainly unrealistic, but even assuming that 20% of the pressure was lost at the point of highest pressure in the system, the Fleet valley, the water pressure at Cheapside would still have been *c.*13.4 psi or equivalent to a delivery of 0.84 gallons per second (Fig 5). This volume of water is significantly more than was required to support 45 households, especially given the relatively restricted use of fresh water. As the contemporary records imply that there was a shortage of water at the conduit head, there must have been some other factors accounting for the poor quantities delivered. This could have been either that the Tyburn source did not provide a sufficiently regular supply; that the pipe was partially blocked in places and did not run freely; or that the pipes leaked significantly more than 20%; or possibly a combination of all these factors. Whatever the cause, there appeared to be an excess of demand over supply.

Despite the apparent deficiency in water supply, the conduit buildings played a special role in civic and royal pageants when the City reaffirmed its loyalty to the monarch. The conduit head was elaborately decorated, becoming one of the regular stopping points of the celebrations — running with wine in 1273 for the coronation of Edward I and being decorated for the passing procession of Henry V on his return from Agincourt in 1415 (Foord 1910, 253, 259). Although there are several references in the City record to the conduit 'flowing with wine', it is uncertain how this was achieved. There is no indication on the monastic plans of a 'master tap' to close the system at the source, allowing wine to be poured into the



Water pressure (psi) in the pipe. *Appendix 1.		5.5		33		20

* using a factor of 4.3 psi, per 10 feet of fall.

Fig 5. Schematic London conduit map based on Stow's description

conduit in substitution for water. Simply closing the pipe at the conduit head would have caused extreme pressure elsewhere in the system. The most likely means of stopping the flow would have been to entirely divert the Tyburn source, emptying the system of water and, having closed the pipe between Cheapside and the Fleet valley so that the wine did not flow backwards down the pipe, simply pour wine into the top cistern of the conduit building. Wine would then issue from the taps below, appearing to make the entire conduit 'flow with wine'.

The attitude of the City to public infrastructure projects, such as the conduit, was that they should 'live of their own', be self-financing and managed by dedicated officials (Tucker 1995, 244). Conduit wardens, elected by householders in the vicinity of the conduit, were responsible for the maintenance of the conduit, regulation of the conduit head, and the collection of any fees for the use of conduit water (Keene 2001, 176). The London conduit wardens appear to have also had some function with regard to maintaining the pipes, as their names indicate they were drawn from the non-ferrous metal trade, such as William le Latoner (1325), Geofery de Gedelstone (1325), Thomas le Peautrer (1333–35), Robert le Foundour (1350, 1352–53), and Arnold le Peautrer (1353) (Magnusson 2001, 119; CLBC, 11). Unfortunately, other than the 1350 accounts that were presented by a warden who was subsequently judged dishonest and are therefore recorded in the City letter books, no other conduit accounts survive to confirm this arrangement.

The undercroft of the conduit head in West Cheap was accidentally discovered in 1994 under the current road junction of Poultry and Cheapside, close to the Tesco supermarket (Birch *et al* forthcoming). Although a full excavation was not carried out, a significant amount of additional information was gathered on the building. The internal dimensions are 1.6m high, 2m wide, and 6.5m long. Curiously the walls on three sides are

2m thick, compared to an expected thickness of approximately 1m for a building of these dimensions. Possibly the additional structural strength was thought necessary to support the various lead cisterns that were enclosed within the building; it perhaps also points to a degree of over-engineering, reflecting the uncertainty of the required tolerances in a conduit building project that was itself at the margins of existing knowledge. An unusual feature of the excavated remains was evidence of water damage within the undercroft. The excavation team speculated that the undercroft also acted as some form of reservoir in addition to the cistern above road level. However, if this was the case, there must also have been some mechanism to raise the water from the undercroft to the above ground cistern. There was no evidence of such a device. The street level at the time the building was in use could be accurately estimated as 14m above sea-level.

The conduit seems to have operated effectively, albeit that the volume of water was insufficient. Complaints recorded in the letter books refer to wasting the conduit water or its inappropriate use for industrial purposes, underlining the problems of supply (CLBF, 200; Riley 1868, 77–8). Unsurprisingly, one of the industrial uses for conduit water specifically mentioned, and apparently a cause of local friction, was the commercial production of ale and beer, near Saint Paul's Cathedral — the producers competing with the local inhabitants for access to the water (Bennett 1996, 20). The first attempt to improve the level of water supply was made in 1355, when additional springs close to the existing Tyburn source were connected to the head cistern. This would have had a potentially double effect. Firstly, by increasing the head pressure, more water would have flowed through the existing pipes and secondly, by increasing the rate of flow, any underground blockages in the pipe would have been cleared, making the pipes more efficient. It seems that the 1355 improvements did increase the supply of water, as an additional destination fountain was tentatively approved in 1390 for the 'substantial men of Farringdon' (CLBH, 521). Such an extension would not have been contemplated if the supplies to the existing conduit head were still considered inadequate. By the close of the 14th century, therefore, the London conduit system consisted of a number of enclosed springs in the vicinity of the original Tyburn source, a single lead pipe, laid mostly underground from Tyburn to Cheapside, with an extension to Farringdon made close to the church of St Michael le Quern, and an elaborate, castellated conduit fountain at the eastern end of Cheapside.

LAW AND FINANCE

The legal issues associated with the construction of a conduit system can be analysed into three parts; firstly, obtaining property rights over the source spring and permission to construct a collection cistern; secondly, permission to lay pipes between the source and destination either from private landlords or from the King (if the pipe was laid beneath the King's highway); and finally, property rights to construct a conduit house to distribute the water to the public.

The 1236 grant by Gilbert de Stanford of the lands at Tyburn allowed springs on the site to be enclosed and a collection cistern built. The construction of a cistern would have taken relatively little space and presumably the rest of the land at Tyburn could continue to be used as it had been previously, provided that the springs were not contaminated or otherwise compromised. Clearly, once the collection cistern had been built to gather water from a group of adjacent springs, it was important that the same springs were not diverted for another purpose, leaving insufficient water for the conduit to operate. This concern was specifically mentioned with regard to the 1420 extension of the London conduit, that was planned to enclose springs also used by the Westminster Abbey water conduit. The Abbot had the right, by charter, to disconnect the London conduit if it proved detrimental to the Westminster supply.

The wording of the grant by Gilbert de Stanford implies that royal permission to build the conduit had been obtained, as a clause states (referring to the king) 'for his honour and reverence' that the conduit should be built 'for the common benefit of the City and citizens of London' (CLBA, 14). The charter, however, appears to be deliberately vague about the likely course of the conduit pipe and the arrangements for collecting water, presumably to give a free hand to those building the system. Equally the 1355 extension to the Tyburn source to incorporate additional springs on the same site, granted by Alice Chobham, was similarly vague — 'to have a plot of land twenty-four feet square for a spring, wherever they might choose' (CLBG, 210).

The right to lay the pipes under private property would have required a documented wayleave from the property owner, whereas the right to lay pipes under the highway required a royal licence that would normally have been recorded in the national record. Royal grants would be subject to an option to order an inquisition '*ad quod damnum*' to determine if there was likely to be any damage to royal interests by granting permission to construct a conduit. It seems, however, that not all royal authorisations were recorded, as there is no grant for the construction of the London conduit. The grant for the Chester conduit provided a considerable degree of latitude 'to open and pierce and reclose the said land, the City wall and the highways where necessary' — presumably, as in the construction of the collection cistern, to give the conduit builders some flexibility in their work (CPR (1272–81), 165).

Once the pipe had been laid, there was always the danger that new buildings would encroach on the site of the conduit pipe, rendering subsequent maintenance of the pipe — or indeed, its replacement — either difficult or impossible. This point was specifically mentioned in the 1443 grant for the extension of the London conduit, 'whereas both our land of Mews and others', over and under which the water pipes are situated, are lately enclosed by walls and other edifices, so that the Mayor, Alderman and Citizens cannot examine or repair them without much trouble and difficulty...' (CPR (1441–46), 198).

Land for building the conduit fountain on Cheapside was donated by the City in *c.*1240. There had been an earlier plan to construct a basilica on this site, dedicated to the birthplace of Thomas Becket, but this plan had not come to fruition and a much smaller scale church was built instead, leaving a vacant plot for the conduit house (Keene 2001, 178). The location of the conduit house, with its flowing water, had obvious religious symbolism, enhanced by the association with Saint Thomas.

Maintenance income

The financial arrangements to pay for the maintenance of the London conduit can at best be described as haphazard. It seems that no serious consideration was given to the requirement to establish a source of funds for this work. Whether this was the result of ignorance — that the conduit once built would operate without substantial additional expense — or design — that water charges were assumed to be sufficient to cover maintenance costs — is not known. One financing scheme after another was tried, found to be inadequate, and replaced. The result was that a system, which probably operated below expectation from the start, slowly deteriorated during the 14th century, albeit that the source springs were enhanced in 1355. Repairs to the system were carried out as and when the funds became available; if there were insufficient resources, then the conduit was allowed to decay. By the early 15th century, it was reported 'whereas the fountain heads and conduits serving the City ... diminish and dry-up' (CPR (1441–46), 198). The inadequacy of routine maintenance eventually threatened the system with complete collapse.

In striking contrast to London Bridge, the other major piece of City infrastructure, the conduit had virtually no fixed source of income, although they had economic features in common — namely, the requirement for a high level of continuous expensive maintenance, to be funded through the collection of a large volume of relatively insignificant usage charges. London Bridge was endowed with a substantial portfolio of London properties, donated by citizens wishing to be associated with the cult of Saint Thomas, to whom the Bridge chapel was dedicated. Bridges were often seen as objects of pious offering, but this does not appear to have applied to the conduit, notwithstanding the fact that the poor were seen as major beneficiaries of clean water and that such associations normally elicited giving (Webb 2000, 230). The location of the conduit head, outside the birthplace of Saint Thomas, also appears not to have gathered many bequests, although the possibility of such a source of income was surely contemplated. The substantial value of properties attached to the Bridge did result in the rather unexpected outcome that the Bridge wardens were almost as much involved with managing and exploiting the landed endowment as they were with maintaining the fabric of the Bridge (Harding & Wright 1995, 11). Rental income from Bridge properties located near St Paul's accounted for at least three-quarters of the Bridge's total revenue of £796 per annum between 1404 and 1537, whilst the income from crossing charges at 2d per cart and 1d per ship passing under the Bridge amounted to only £7 in 1420 (Harding & Wright 1995, 17). If the Bridge wardens had only

to rely on the insecure usage charges to fund the repairs, then the Bridge would soon have fallen into disrepair, as they were simply inadequate.

The conduit wardens, like the Bridge wardens, were also responsible for substantial repair costs, but were expected to maintain the system with usage charges and a small number of relatively low value endowments established in the late 14th century. The majority of water charges were levied on brewers, fishmongers, and cooks who took conduit water in connection with their businesses. The difficulty with relying on variable usage charges was that they varied in an exact contrary pattern to the incidence of maintenance expense. When the system failed and needed substantial repair, income to meet the repair costs declined because of a reduction in the available water on which to levy charges. The concept of building a reserve or contingency fund within conduit finances to pay for exceptional costs appears not to have been considered. In the one set of surviving conduit warden's accounts, for 1350, although a surplus was declared, it was not allocated to a reserve to meet repair costs in later years but appears to have been available for distribution. In common with other public works, the accounts for the conduit were prepared on a simple cash receipt and payment basis.

The first reference to conduit finances occurs in 1310, when the conduit warden, William Hardy, was enjoined not to sell water on pain of losing his freedom (CLBD, 237). The clear intention was that conduit water was supposed to be supplied without charge and that there had been some attempt, presumably by the conduit warden, to profit from water sale. This policy was changed in 1312, when the cooks, brewers, and fishmongers were granted an 'easement' to use conduit water in exchange for an unspecified fee; the money was to be used to repair and maintain the conduit (CLBD, 107). The next reference in 1333–35 notes that £6 18d had been received by the conduit wardens for tankard 'quitrent', with the implication that, whilst the water from the conduit was free, the use of tankards to transport the water incurred a charge (CLBD, 237). By 1350 when the conduit warden's accounts are recorded in the letter books, two years revenue from tankard quitrents amounted to £11 15s 4d.

Despite these charges, it was thought necessary about this time to implement a new revenue stream to support the maintenance costs; properties in the vicinity of the conduit head in Cheapside and Poultry were charged half a mark per year as a fixed fee (Riley 1868, 264–5). This source of income appears, however, to have been either judged inequitable, as those who used the conduit waters lived outside the vicinity of the conduit head, or uncollectable, as a meticulous list of those who had not paid was kept by the wardens. There is no further reference to this method of collecting revenue.

The next solution to the problem of matching conduit income and expenditure was to lease out the entire conduit pipe for twenty marks a year for ten years from 1367, with the lessee enjoying 'the profits and advantages' above ground. This presumably included routine maintenance tasks such as cleaning the conduit heads, with the lessors (the City) retaining the repair costs of the underground pipe, 'provided the Sheriff, Aldermen and commonalty could take water without charge, as old accustomed' (CLBG, 223). It seems this scheme also failed to solve the financial problems of the conduit, as it was not renewed after the initial term expired. The underground repair costs must have been greater than the twenty marks lease income received by the City and the conduit was therefore taken back into public control at the end of the lease.

The next reported solution, in 1378, was an attempt to increase revenue through voluntary donations. The City tried to persuade the 'good men of each ward to make a free gift according to their wealth and zeal for the City' to support the cost of the conduit. Where such moral pressure was insufficient to raise funds from those who were thought capable of paying, an assessment was to be made against those who 'maliciously refused' (CLBH, 116). In addition, perhaps recognising the real problem, it was noted that an inquiry was to be held to achieve some better method of raising money for the conduit. The exact result of the inquiry is not known, but in the following year each resident of the City wards was asked to supply one day's free labour during a five week period between 16 May and 21 June, to work on the City conduit and ditches (CLBH, 127–8). Presumably the idea was the reverse of the 1378 'solution', that if revenue could not be increased, perhaps costs could be reduced, by substituting free labour for paid. Labour costs, based on the 16th-century Chamberlain's accounts, represented the only substantial element of cost that was not related to raw materials, such as lead and timber, and

therefore seeking to reduce this element of the conduit's maintenance costs would seem to be a reasonable means of achieving some saving (Masters 1984, 78). Again, the exact outcome of this experiment is not known, although it seems not to have resolved the problem, as there are further references to the pressing need for maintenance expenditure. In 1383 the rooms and walls over Cripplegate were reported as being 'ruinous and infirm' but could only be repaired if there was any surplus 'over and above reasonable outlay on the conduit' (CLBH, 477). The conduit was to receive preferential access to City's resources.

The lack of conduit warden accounts makes it difficult to draw any definitive conclusions on the effectiveness of the financial administration of the conduit. Accounts for public utilities were normally rendered following the end of the responsible warden's term of office and were not necessarily produced annually (Harding & Wright 1995, 10). It seems that in the late 14th century the urgent need for more funds to support the conduit was partly met from bequests. An examination of the wills proved in the Court of Husting shows that of nine bequests made to the conduit between 1259 and 1499, five were made in the period 1380–1400 (McEwan 2000, 38). The repeated changes in gathering revenue, the call in 1379 for free labour to work on the conduit, and the later reliance on bequests and other donations suggest that the conduit was not covering its costs (CLBH, 127–8). The City records specifically note that modifications to the conduit were to be at the cost of the local inhabitants, as if the conduit wardens had no available reserves or surplus funds (CLBH, 326).

In 1415 there is reference to a different charging mechanism — the collection of additional revenue from 'industrial' users of the conduit. Brewers were to 'rent' the upper pipe of the conduit, for both malting and brewing, with the lower tap (*ie* the waste water) being allowed for the 'common people' without charge (CLBI, 617). After 1420 the conduit was subject to substantial renovation and presumably the issue of maintenance expenditure was then less pressing and this would account for the silence on this topic in the letter books, until the 1470s. It would appear that later in the 15th century routine conduit maintenance costs were being paid by the City authorities, as there is reference in the City journal to a fourth part of the fifteenth being collected in 1471, a further fifteenth in 1472, and a quarter of a fifteenth in 1475, for 'the repair' of the conduit (Journ. 8, fo 23,27,101).

CONSTRUCTION FINANCE

The total cost of constructing the first conduit is not recorded, but it would probably have been *c.*£1,900, based on the known costs for the conduit extension in 1442 (Appendix 2). The major part of the capital construction cost must have been raised from pious donations, possibly, as with London Bridge, associating the donor with the cult of Saint Thomas (Barron 2004, 256). The contribution of £100 recorded from the merchants of Amiens, Corby, and Nele in Picardy for a licence to offload and warehouse woad within the City, represented a relatively small drop in the financial ocean of the overall project (Keene & Harding 1987, 612). This is the only reference to the construction costs of the first conduit in the letter books.

The finance and control of the London water conduit changed significantly in the 15th century, switching from a mixture of City and private funds to, almost exclusively, wealthy merchants, most of whom were at some time either aldermen, sheriffs, or mayors of London. This change begs two questions: why was there a switch from public funds to private donation and why was the provision of water selected as a worthy project for charitable giving?

The answer to the first question is complex. The Cheapside conduit head was a very symbolic building; it demonstrated the modernity of the City in the application of technology and the generous provision made for the poor; its importance was acknowledged in City pageants. Early 15th-century London was a boom town that had made a number of leading merchants extremely wealthy. Key amongst these were perhaps Whittington (Mercer), Estfield (Mercer), and Eyre (Draper). These merchants wished to leave their mark on the City, both as an act of piety and as a gesture of civic pride. Estfield, in particular, is associated with the development of the London conduit, although there is no obvious reason why he selected 'water' as a suitable vehicle for donation, other than the obvious religious associations and the benefits clean water brought to public health. Perhaps, in the often mixed motivations of 15th-century public giving, it was the position of the conduit on Cheapside,

located immediately outside the Mercer's Hall, an area in which many mercers lived, that would act as a visual reminder to his business associates for post-mortem prayer. Undoubtedly Estfield would have seen the daily competition for water at the conduit taps and he must have decided that an improvement to the City water supply would be a worthwhile act of charity. Estfield appears to have become increasingly involved with water-related projects during the early years of the 15th century, eventually becoming directly involved in financing the expansion of the conduit — paying in 1443 for new source springs, located in Paddington, to be incorporated into the system. He left bequests in his will in 1446 for the completion of a new conduit to the church of St Mary Aldermanbury, where he was to be buried. His executors subsequently built the new conduit by 1471 (Cal Wills II, 509–11).

By the 15th century it seems that the City understood the necessity for sound finances to support public works. The 'new work' of the Guildhall, in 1413, demonstrated the new thinking, as it was funded by a collection of 'pious alms of citizens and helping hands of divers generous and benevolent persons' and a further hundred marks of the City's profits from London Bridge (Riley 1868, 589). Significantly, public funds were used to supplement private donation. The City did not commission new civic amenities until a means of financial support had been agreed.

EXPANSION OF THE CONDUIT SYSTEM

The early 15th-century conduit system, although increased in capacity in 1355 through the addition of new source springs at Tyburn, was almost two hundred years old by 1440 and would surely have appeared to be a very tired piece of City infrastructure. The cumulative effects of inadequate maintenance, probably resulting in silted and leaking pipes, would have significantly reduced the flow of water through the conduit. The inadequacy of supply was leading to disputes between tradesmen and ordinary consumers as each group competed for access to the water; in 1415 some of these disagreements were recorded in the letter books (CLBI, 617). The convenience of the conduit had stimulated its own demand and whilst increasing numbers of people wanted access to the water, at the same time the supply diminished and became more unreliable. The system was in need of a complete overhaul.

The difficulty with increasing the supply through the existing conduit pipe was that the source at Tyburn had already been fully exploited and the option of simply linking in more springs in the immediate vicinity of the head cistern was not available. In addition, the existing pipe was in need of substantial repair that would require its excavation, recasting, and relaying. The system needed to be completely renewed. At this point it is not known whether a radical solution to the failing conduit was contemplated, such as finding a completely new source that might have been available to the north of the City. Any new system, however, would have involved investing in a new pipe and trench, with the implicit risk that the new source would not provide the necessary pressure to ensure an improved supply. It seems that a two stage improvement was planned: firstly to incorporate new source springs — these would simply consist of tapping the Westminster Abbey supply in Oxlease, 2 km west of Tyburn, close to the modern site of Paddington station; and secondly, to excavate and relay the problematic section of pipe in Fleet Street (CLBK, 233). In order to minimise the amount of pipe and trench that was required to connect Oxlease to the existing conduit system, a new pipe would need to be laid south of Oxlease (probably partly following an existing river bank) to link with the spurgel at Charing Cross. By 1430 negotiations had been concluded with the Abbot and Prior of Westminster, but conditions were attached. Firstly, that 'should the ancient supply of water to the Abbey of Westminster from the manor of Hyde be interfered with, the granters shall be entitled to resume possession of the head and springs now granted' (Morley Davies 1910, 26). In addition, it was established that any water extracted for use in the London conduit incurred a charge. Presumably this condition was included as double protection, that if the London conduit refused to resite their conduit having diminished the Abbey supply, the Abbey could then charge a usage fee, sufficient to pay for the construction of a new Abbey supply. The initial charge was set at an immaterial two peppercorns per year (Foord 1910, 269).

A second condition was that any new pipes were not to cross the manor of Hyde — the reason for this is not known, presumably it was not just a question of the disruption that laying new pipes might cause. However, this condition was problematic as the most direct route to the spurgel at Charing Cross was through the manor

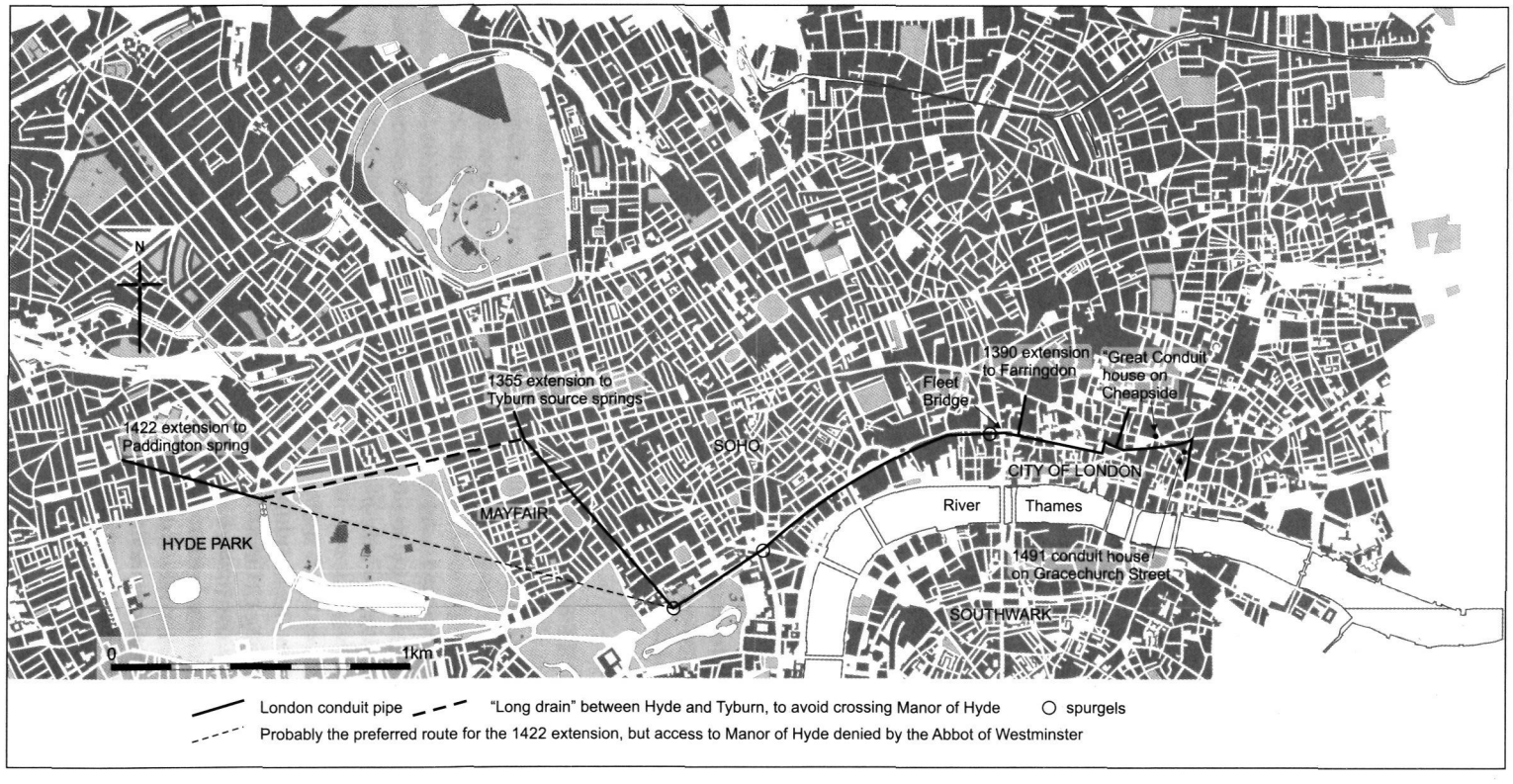


Fig 6. Map of the probable line of the first London Conduit, overlaid on a modern map of the city.

of Hyde (Fig 6). The alternative of laying a pipe to the cistern at Tyburn, to link in with the existing system, would have involved the pipe mounting the high ground at the junction of the manors of Hyde and Tyburn (present day Hyde Park corner). As the difference in elevation between Oxlease and Tyburn was only about 3m, a closed pipe in this location would not have transported a sufficient quantity of water over the intervening high ground to significantly increase the total capacity of the system (Morley Davies 1910, 24–8).

To solve this problem a 'long drain' (an open trench conduit) was to be built between Oxlease and Tyburn with sufficient capacity to increase the head pressure at Tyburn. This 'solution' was not without technical difficulties; the drain would have to operate within a very shallow gradient, over a relatively long course, and, given the crude instrumentation available to the builders, construction would have involved a considerable amount of trial and error. A committee had been formed by 1439 to plan the new works and raise the required finance; investment in the conduit was clearly seen at this point as a project to be managed by the City authorities (Barron 1971, 270). Estfield was chosen to supervise the work and this appears to be his first recorded involvement with 'water' projects. The new work on the conduit is not mentioned in the City journal for a two year period at this time, and it could be speculated that the construction of the 'long drain' accounts for the apparent delay (CLBK, 243, 249).

At the same time it seems that the pipes in Fleet Street and Strand were being repaired on the basis that the new conduit would extend from Tyburn to the Charing Cross spurgel and from there to the City using the repaired 'old' conduit pipes (Barron 1971, 270). Stow refers to 'water conveighed ... in pypes of lead into a pype begunne to bee laide besides the greate Conduit heade at Maribone [Tyburn], which strecheth from there unto a separall ....made against the Chappell of Rounsevall by Charing Cross, and no further' (Stow 1908, II, 41). In 1442, William Cliff (the City building surveyor) promised to account for his work on the Fleet Street conduit, but was unwilling to estimate the likely future expenditure (Barron 1971, 270). It could be that the construction work was more costly than anticipated, as the 1,000 marks tax revenue raised by the wards in 1440 seems to have been exhausted by 1442. Conventionally, the project is thought to have ground to a halt at this time.

An alternative explanation might be that new plans were drawn up to radically increase the capacity of the conduit by laying additional lead pipes from Tyburn to the City, including intermediate spurgels (Barron 1971, 271). The reason to suppose that there might have been such a plan is two fold. Firstly the 16th-century drawing of the conduit by Treswell clearly shows the system in the vicinity of western Cheapside comprised of a number of supply pipes and not the single pipe of the original system. Secondly, the 1443 royal grant for the construction work, including laying pipes under the King's highway, (*ie* after the initial project appears to have stopped in 1442) records 200 fodders (*c.*190 tons) of lead being purchased for the project. As the standard practice was to recover lead from the old pipes in making the new, this amount of lead is far in excess of the amount required to repair a single pipe. For the repairs to the Windsor Castle conduit in 1603, that used a pipe of similar dimensions to the London conduit, 56 tons of new lead were required to recast two miles of pipe, two thirds of the total lead required being met from melting the old pipe (Hope 1917, 230). Even if it is assumed that there was little or no recovery from removing the 'old' London conduit pipe, the lead ordered in 1443 would have been sufficient to install a double pipe from Tyburn to Cheapside, based on the dimensions and weight of the recently excavated section of conduit pipe (Appendix 2). As no accounts of the extension to the conduit exist, what exactly was installed in the early 15th century has to remain speculative; however as the technology of pipe manufacture only allowed pipes of a *c.*10cm diameter to be made, the only way of increasing the capacity of the system would have been to lay a double pipe. The evidence of the Treswell drawings and the purchase of substantial quantities of new lead would support this conclusion.

Initial financing of the extension to the conduit appears not to have been resolved until 1446 when it consisted of a mixture of City funds, private loans (including 250 marks from Estfield), and bequests (Barron 1971, 274). The element of public finance in the project was to be deferred and collected over the period 1446–50, presumably to meet the planned construction costs as they arose (CLBK, 318). However, with the exception of the inhabitants of Cheap ward,

who had a vested interest in completion of the project, the funding was either not collected by the aldermen or appears to have been diverted to other purposes. It has been speculated that Estfield, who had died some time before 29 April 1446, provided funds for the completion of the conduit project by a verbal codicil to his will and, knowing this, the wards diverted funds to other priorities (Barron 1971, 275). Certainly, however, the executors of Estfield adopted the management of the project from 1453 after lengthy negotiations with the City, including permission to lay new pipes between Fleet Street and Cheap (Journ. 5, fo.185). Stow notes that this work was completed in 1471 (Stow 1908, I, 17; CLBK, 355–7; CLBL, 158, 207). The transfer of the conduit project from the City authorities to private hands points towards a changed attitude in the management of public works programmes. A development also reflected in a number of other projects, such as the grain store at Leadenhall built by Simon Eyre (1445) or Whittington rebuilding Newgate prison (1431) (CLBK, 49–52).

The extension of the conduit to incorporate the source springs at Oxlease took over thirty years to complete and cost between a phenomenal £3,200, and possibly as much as £5,000, but dramatically increased the supply of conduit water to the City (Barron 1971, 277). The new conduit was over 6.5km long from Paddington to Cheapside and was efficient enough not only to supply the original conduit in Cheapside, but also a number of new distribution points.

Little Conduit on Cheapside

Although Stow attributes the building of the Little Conduit 'close to Powles gate' to Estfield in the 'ninth of Henrie the sixth' (September 1430–August 1431), this point is not clear from other City records (Stow 1908, I, 268). The letter books refer to the Little Conduit being built at the same time as an extension to the church of St Michael le Quern 'half on the common soil' and the Little Conduit being 'repaired' at the City's expense in 1430, implying that it was built some time before this date — previously the repair costs being met by local inhabitants (CLBK, 110; CLBL, 106). A possible earlier construction date might be 1390 when the 'substantial men of Farringdon, near St Michael le Quern' were granted permission to construct a conduit — the Little Conduit forming part of this development. Undoubtedly, however, the Little Conduit was located at the extreme western end of Cheapside and was fed from the same pipe as the first conduit house at the eastern end of Cheapside, that became known as the 'Great Conduit' following the construction of the Little Conduit.

The Little Conduit was drawn by Ralph Treswell in 1585, in one of his earliest drawings of London (Fig 7). The dimensions on this plan show the Little Conduit as being approximately 32ft long, compared to the Great Conduit (excavated in 1994) that was approximately 34ft long — the 'Little' Conduit was, therefore, only a slightly smaller building than the Great Conduit (Schofield 1987, 56–7). The Treswell plan also shows that three pipes were laid under Cheapside, one of which enters the Little Conduit with the other two passing (presumably) to other distribution points on Cheapside. Surprisingly the plan does not show the 1390 extension of the system to Farringdon, suggesting that Treswell was either not aware of the underground pipe or that the pipe was joined at some other point (CLBH, 521). The Treswell drawing of the Little Conduit and the church of Saint Michael le Quern is itself mysterious, as it was unrelated to other Treswell drawings of London streets and apparently was not part of a larger scheme. Equally it is not known who commissioned the drawing. It could have been made simply to note the path of London conduit pipes, avoiding confusion with any other pipes that may have been laid by 1585, allowing them to be located for repair. It has been suggested that early monastic water supply maps have survived for this same reason.

As the term 'little' did not refer to the size of the conduit building, it possibly referred to the quantity of water delivered there, as there are no references to disputes over access to the water; it may only have supplied 'domestic' quantities of water. Regulation of the volume of water was achieved by attaching a very narrow diameter pipe to the main supply, often referred to in the letter books as a 'quill' of water — the 'quill' referring to the thickness of the pipe that was probably no more than a swan or goose quill (8mm). The technology to restrict the flow of water by means of a valve did not exist (Magnusson 2001, 70). It would also probably have been symbolically important not to divert an excessive quantity of water into the 'Little' Conduit, in substitution for water delivered to the 'Great' Conduit, given the problems of supply being experienced in the early 15th century.

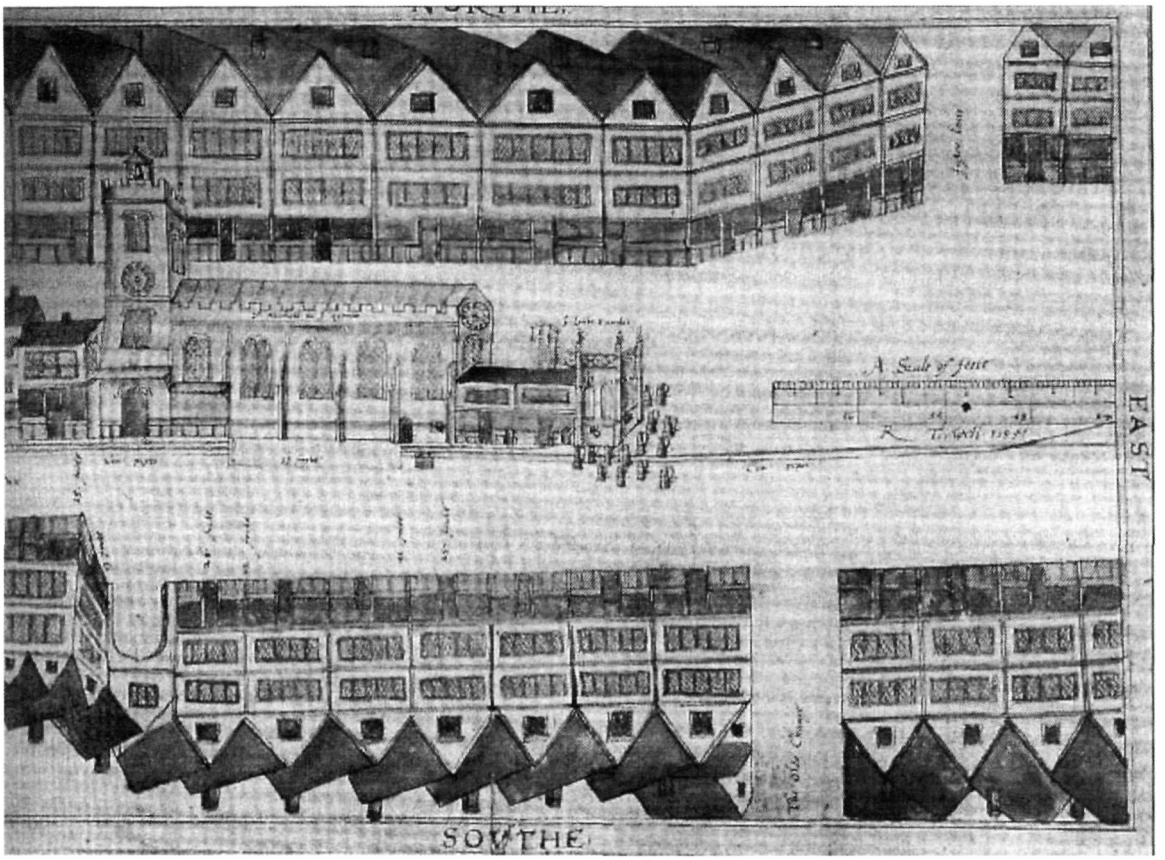


Fig 7. The Little Conduit at St Michael le Querne, Cheapside (BM Crace Collection 1880-11-13-3516) (By permission of the British Library)

Standard on Cheapside

The Standard was located in the centre of Cheapside, opposite Honey Lane, and was originally a place of public execution (Stow 1908, I, 265). It appears to have been built of wood and Stow refers to it first having 'water conveyed to it' in 1285, the same date he gives for the building of the Great Conduit, implying (improbably) that the Standard was part of the original conduit plan (Stow 1908, I, 17). How the Standard worked as both a place of execution and a water conduit is uncertain. Presumably, if Stow was correct, the Standard would not have included a lead cistern, but simply a succession of running taps that only flowed when there was sufficient pressure in the main pipe. Wooden framed conduits were not unknown, however; Stow mentions a wooden standard in 'Old Bayly' forming part of the supply to Ludgate prison '...delivering fayre spring water' (Stow 1908, II, 38).

The Standard on Cheapside therefore could have been initially a wooden structure rather like a scaffold, being (re)built with stone following a bequest from John Wells (ex-mayor) *c.*1442 (Stow 1908, I, 26). The new Standard was decorated with an image of Wells being embraced by angels and contained a small lead cistern 'having one small cock continually running, when the same was not turned or locked' (Foord 1910, 259). The regulation of water pressure at the Standard would have been achieved by using a narrow diameter 'quill' attached to the main pipe, in a similar arrangement to that at the Little Conduit. The rebuilding of the Standard in 1442 confirms that it formed part of the general improvement to the conduit that included the work being carried out on the Fleet Street/Strand section

of the conduit pipe. Although there are no references indicating that the rebuilt Standard delivered greater quantities of water, the fact that work was simultaneously being carried out to increase the conduit's capacity might suggest that the 'new' Standard relied on the conduit's general improvement.

Cornhill conduit

Extending the conduit to Cornhill had been an ambition of the City fathers since the late 13th century, as Cornhill, in common with Cheapside, was on the traditional processional route through the City and the location of a market. The first reference to a conduit in Cornhill occurs in 1378 when 500 marks were given under the will of Adam Fraunceys (ex-mayor) for carrying conduit water to 'cross-ways on the top of Cornhill' (CLBH, 108). This gift presumably formed part of general improvements planned for the Cornhill market, which until 1394 had operated under relatively restricted opening hours, with the City granting permission after this date for the market to open in the evening on feast days (Archer *et al* 1988, 9).

The early references in the letter books to a conduit on Cornhill refer to the crossways junction of Gracechurch Street and Cornhill, but as this is the highest point in the City (*c.*20mod), there would have been insufficient water pressure within the system to operate a water fountain at this location, even allowing for the 1355 improvements to the head cistern at Tyburn (Appendix 1). It seems that at some point a compromise was reached and that an existing building, called the 'Tun' or 'Tonne', part way up Cornhill was to be modified and incorporated into the conduit system. As the Tun was at a lower elevation than the crossways, it accessed greater pressure from the pipe and therefore was more likely to provide a reliable supply. The Tun on Cornhill was built in 1282 by Henry Wales (Wallis), ex-mayor, as a prison for 'night walkers', prostitutes, and other offenders, obtaining its name from its barrel shape (Schofield 1984, 110). It was located close to Birchin Lane and Stow refers to it being 'cisterned' in 1401, presumably the installation of a lead cistern at some height above street level with exterior taps, in a similar arrangement to the Great Conduit (Stow 1908, I, 17, 188). The homecoming of Henry V from Agincourt in 1415 mentions the pageant at the conduit in Cornhill, and this gives the latest date for its conversion from a prison to a public utility. It is likely that it was either a relatively small fountain or that it ran intermittently, as it was fed from the same pipe as the Great Conduit, which at this time was suffering from a shortage of supply. Calculations suggest that it was operating below 5 psi, equivalent to delivering half a litre per second, at best (Appendix 1).

Stow notes that in 1475 the cistern of the Tun was enlarged together with an 'East end of stone, and castellated in (a) comely manner', the improvements being paid for by the ex-major Robert Drope (Stow 1908, I, 191). Again the enlargement of this fountain could only have been contemplated once the overall capacity of the system had been increased through the incorporation of the Oxlease source.

Gracechurch Street conduit

The conduit on Grasses Street (or Gracechurch Street) was located between the crossways intersection and Grace church. It was built following a bequest from Sir Thomas Hill, ex-mayor, in 1484, who left 'one hundred marks towards the conveyance of water to this place' (Stow 1908, I, 211). Dame Elizabeth Hill (Thomas Hill's widow) was granted permission by the City authorities to 'turn up the soil in Gracechurch Street for the purpose of the conduit' in 1491, and Stow reports that the building of the conduit head was apparently completed in the same year (CLBL, 280). Hill's executors also reported completing building it in 1491. In common with the Cornhill conduit, the Gracechurch Street fountain was located, significantly, on the main processional route for City ceremonials between London Bridge and Cheapside. It would appear that building conduit fountains had become a fashionable means of post-mortem commemoration for late 14th-century civic office holders.

The Gracechurch Street conduit was obviously a local landmark, as Stow notes that the City watch was directed to pass 'the Grasse Street conduit' on returning to Cheapside (Stow 1908, I, 102). It was connected to the Great Conduit via the Tun on Cornhill, but, due to its elevation, it appears to have had a poor or intermittent supply of water. In the case of this fountain, however, the cause of insufficient supply was not solely related to the capacity of the system. It seems that with the post-1470 improvement to

the conduit, it was realised by Londoners that an underground pipe could as easily provide the convenience of a domestic supply as provide a public function. The practice of private, and probably illegal, tapping of conduit pipe became common in the late 15th century and clearly the City authorities disapproved. A case was recorded in the letter books in 1478 concerning a brewer, William Campion, who seems to have tapped into the conduit main below Fleet Street, probably by using a narrow diameter pipe or 'quill' that provided a ready supply of water for his business, saving the cost and effort of transporting water from his local public water fountain. As a discouragement to others, who may have contemplated emulating Campion, he was paraded through the streets on horseback, with a 'vessel like unto a conduit' on his head, that ran with water; the water being refilled as it was wasted (CLBL, 160).

Although an example was made of Campion, private tapping of the conduit was a more general problem. The licences granted in the mid-16th century to tap the conduit mostly concerned residences in the Strand, owned by aristocratic or wealthy merchants, and not simply the occasional resourceful artisan. The problem with taking private supplies from the 'high pressure' section of the system in the Fleet Street/Strand area was that public fountains further along the pipe, and at a higher elevation, would suffer an off-setting reduction in pressure and therefore an interrupted supply. By 1543 it was noted that water in the Cornhill, Aldermanbury, and Gracechurch Street conduits had stopped, due to the reduction in pressure caused by private tapping into the conduit pipe (Foord 1910, 276). The problem of regulating access to conduit water so as to provide an adequate public supply, whilst also granting some private supplies, concerned the City authorities into the 16th century.

The Standard on Fleet Street

The Fleet Street Standard, built in 1471, according to Stow, was located opposite Shoe Lane close to Fleet Bridge. In 1478 the local inhabitants had obtained a licence from the City authorities to install two new cisterns to be linked to the Fleet Street Standard. The first was to be decorated 'as a fayre tower of stone, garnished with images of St Christopher on the top, and angels round about lower down, with sweet sounding bells before them, whereupon by an Engine placed in the Tower, they, divers hours of the day and night chymed such Hymme as was appointed' (Stow 1908, II, 41). Clearly this conduit fountain was intended for display. The second cistern apparently collected the waste water, in a similar arrangement to the Great Conduit, and was located near Fleet Bridge. Stow does not mention whether the two cisterns were connected, although it is probably safe to assume that they were. The local inhabitants paid for the installation of the Fleet Standard, presumably the sounding of hours was associated with either the hours of prayer or the Inns of Court, located in the area. A conduit warden was appointed to maintain the Fleet Street conduit in 1485, together with a separate warden for the Aldermanbury conduit (CLBL, 228).

A further extension was made to the conduit at Fleet Bridge in 1475 to supply the nearby prisons at Ludgate and Newgate. William Cliff, the City building surveyor, and the aldermen William Hulyn and Hugh Middleton supervised the building of the extension. Although authorisation for the work was received in 1459, the Paddington source was not connected until 1471, and so the completion of the prison extension was not finished until 1475 (Barron 1971, 277). The City agreed to pay for the maintenance of the new pipes (CLBL, 130). Ludgate prison had been enlarged, improved, and endowed by Agnes Foster (widow of mayor Stephen Foster) in 1463, being reserved for Londoners, to save them from suffering the dirty and cramped conditions at Newgate prison. As part of the endowment to Ludgate, prisoners would not have to pay for either lodgings or water and Stow notes that the water to the prison was provided 'by certain verses grauven in Copper, and fixed on the side quadrant' (Stow 1908, I, 39–40; Archer *et al* 1988, 98).

CONCLUSION

Stow attributes the development of the London conduit system to the charitable objectives of providing good quality water to those who could not otherwise afford it. Although there is no specific mention of the motivation for such giving, inferences can be drawn from the way the conduit was developed that place it exactly within the pattern of pious donations seen elsewhere in the 15th century. In addition to constructing a funerary monument in a

crowded London church that competed with many others, perhaps post-mortem prayer could be encouraged by making a unique contribution to the City infrastructure — especially eliciting the potent prayers of the poor. The placing of both the Little and Great Conduit heads next to the churches of St Michael le Quern and St Mary Colechurch respectively, and close to the birthplace of Saint Thomas, was surely intended to illicit remembrance.

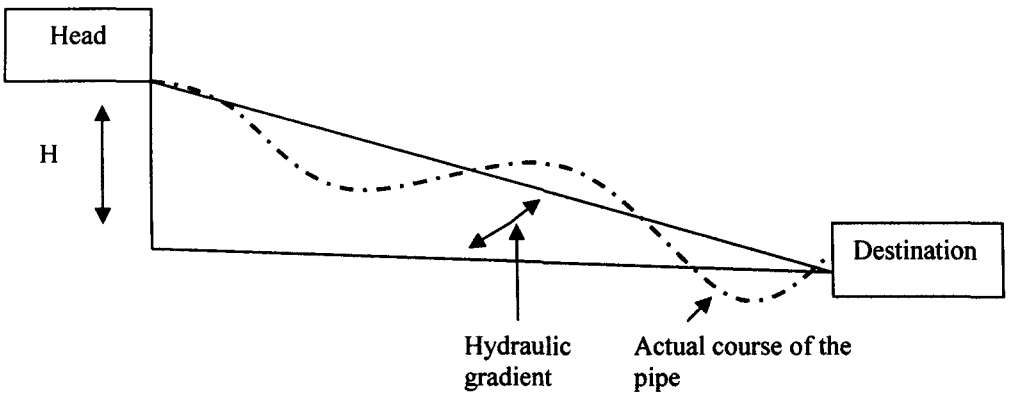
It is significant that the pattern of expansion of the conduit largely followed the processional route of those entering the City on special pageant days, providing the maximum opportunity to remind Londoners, and perhaps a wider circle from outside the City, of those responsible for providing the City infrastructure. This is not to imply that the pious provisioning was the only motivation. No doubt competition between wealthy merchants to out-do one another in their giving and an element of civic pride played their part.

During the course of the 15th century the attitude of the recipients of City infrastructure projects was seen to change. Profits from trade during the 13th and 14th centuries had been tainted with the possibility of containing an element of usury and were therefore thought 'distasteful'. The use of these same profits to finance the construction of public buildings and monuments potentially cast these projects in a similar light. By the 15th century, however, profits came to be seen differently; they were the means of performing good works and were therefore to be encouraged, or as Little states, 'philanthropy held one of the keys to the justification of profit-making' (Little 1978, 213). The London economy was fast growing in the early 15th century, overseas trade was increasing, and a number of individual merchants were becoming extremely wealthy. As much as anyone else, these individuals wished to shorten their time in purgatory and to achieve this, they constructed their monuments within the urban space from which they derived their wealth. Simon Eyre in building the grain store at Leadenhall, Whitington in numerous public buildings, including a college of priests, a library, and the Guildhall, William Estfield in augmenting the conduit system, Hill, Drope, and Foster all left their mark, amongst many others.

Setting aside the problems of finance and the possible motivations for its building, the London conduit represented a remarkable engineering achievement. It transported fresh, wholesome water through almost 7km of underground pipes, with some sections rising against the force of gravity. It represented the earliest English application of hydraulic technology to overcome the problems of pollution resulting from urban growth, yet seems to have undeservedly faded from the historic record since its physical removal. What was at one time a complex and unique technology has become as understated as Stow's simple description of the motivation for its installation: 'For the poor to drink and the rich to dress their meat'.

APPENDIX 1.
ENGINEERING CALCULATION OF THE CAPACITY OF THE CONDUIT PIPE

(Calculations kindly provided by Gordon Fitch, MSc(Eng))



Irrespective of the actual course of the pipe, the hydraulic gradient governs the head pressure and therefore the static pressure in the pipe at any point, calculated by the formula:

$$\text{Difference in height between source and destination} = \frac{2 \times \text{friction factor} \times \text{length of pipe} \times \text{velocity of flow}^2}{\text{gradient factor of the pipe} \times \text{diameter of the pipe}}$$

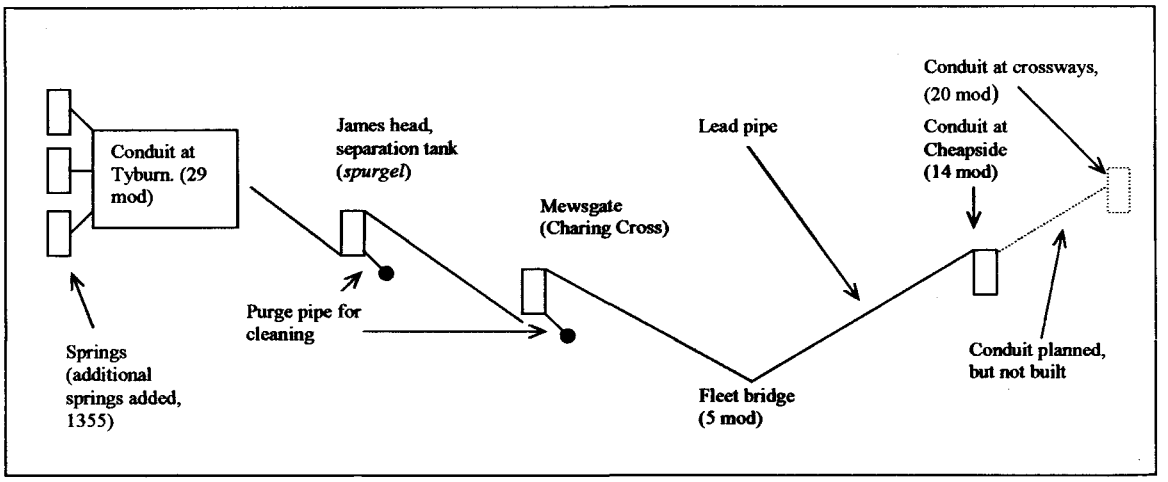
$$\text{or } \Delta H = \frac{2FLV^2}{GD}$$

$$\text{and } V = \sqrt{\frac{\Delta H\, GD}{2FL}} \text{ feet per second,}$$

$$V = \sqrt{\frac{48 \times 32.2 \text{ ft/sec}^2 \times 0.29 \text{ ft}}{2 \times 0.0075 \times 15{,}682 \text{ ft}}}$$

V = 4.3 psi per 10 feet of fall or 1.25 gallons per second

As a large part of the data within this formula is fixed, once the characteristics of the pipe are known, there is a direct trade-off of the difference in elevation between source and destination and the velocity of flow.



Pressure (psi), using a factor of 4.3 psi per 10 feet of fall, assuming no pipe leakage	0	5.5		33		20	3.8
Pipe pressure (psi), assuming 20% loss of pressure at Fleet Bridge				26.4		13.4	0

Fig 8. Schematic London conduit map based on Stow's description of the system, including the planned extension to the top of Cornhill

Conduit section	**Elevation**	**Information source**
Source springs, Tyburn	29 mod	Spence 2000, 24
Fleet Bridge	5 mod	*ibid*
Cheapside conduit head	14 mod	Birch *et al* (forthcoming),

APPENDIX 2
CALCULATION OF THE LENGTH OF THE LONDON CONDUIT

Stow's description of the length of the conduit: 'The water course from Padington to James hed hath 510 rods; James hed on the hil to the Mewsgate 102 rods; from the mewsgate to the crosse in Cheape 484 rods' (Stow 1908, I, 17). (NB The field next Oxlease was called 'Hill Field', suggesting that this was a local high point.) Total 1096 rods @ 20ft to a rod* = 21,920 feet, or 6.68km. As a deep trench, presumably in almost a direct line, would have been excavated from 'the close' at the Paddington spring to Tyburn of 1.9km, the 'old' conduit from Tyburn, was therefore 4.78km.

*The length of a rod varied by region; Morley Davies estimates Stow's rod as 19ft, although this assumes a direct measurement from Charing Cross to Cheapside. The conduit had to skirt St Paul's precinct and therefore Morley Davies's calculation may be a slight underestimate of the length of a 'rod' as used by Stow (Morley Davies 1910, 18, 46).

EXTENSION OF THE CONDUIT IN 1442 TO INCORPORATE SPRINGS AT PADDINGTON

200 fodders of lead ordered to be purchased 25 June 1442, by writ of privy seal (CPR Henry VI, 1441–46, 198). 200 fodders of lead are equivalent to approx-imately 190 tons.

Waste allowance in manufacture of the pipes approximately 7.7%. ('waste of a wey of lead when newly molten [he shall have an allowance of] two cloves, as has been the usage heretofore'.This is about 14 pounds in 180 (7.7%), the weight of clove and wey varying (Riley 1868, 322).)

Finished weight of pipe therefore 175.2 tons.
The recently excavated conduit pipe found at Paternoster Square weighed 19.5kg (43lbs) for a 1m (3.3ft) section. 175.2 tons (178,003 kg) of pipe would therefore have been approximately 9.128km (5.7 miles) long.

Two pipes from Tyburn to Cheapside would have required 9.56km of pipe, allowing for the inaccuracy in some of the weights and measures used. It seems reasonable to assume that the purchase of lead was sufficient to build a double pipe from Tyburn to Cheapside. This would accord with the drawing of the Great Conduit by Ralph Treswell, showing three pipes. One pipe being the original conduit and the other two relating to the 1442 extension.

Cost of one fodder of lead in the 1350 warden's accounts, 8 marks 12 pence (total 1,292d).
Cost of 200 fodders, 258,400d or £1,076 13s 4d.

The cost of the 1442 extension was *c.*£2,790 (Barron 1971, 277). Approximately £1,100 represented the cost of lead pipe and £1,870 other installation costs — mostly labour wages and timber.

The first conduit pipe was a single pipe with an approximate cost of £550 (50% of the 1442 pipe cost), assuming labour costs in 1250 were 30% lower than in 1442, the total cost of the first conduit would have been *c.*£1,900.

BIBLIOGRAPHY

Abbreviations

CCR: Calendar of Charter Rolls (1906)
CLBA, CLBB, *etc*: R R Sharpe (ed) *Calendar of Letter Books of the City of London* (1899–1912)
CPR: Calendar of Patent Rolls (1909)
Cal Wills: R R Sharpe (ed) *Calendar of Wills Proved and Enrolled in the Court of Husting, London 1258–1688* (1890)
Journ: Journals of the Court of Common Council

ARCHER *et al* (1988), I Archer, C Barron & V Harding *Hugh Alley's Caveat*
BARRON (1971), C M Barron *Government of London and its Relations with the Crown* unpub doctoral thesis, University of London
BARRON (2004), C M Barron *London in the Later Middle Ages: Government and People 1200–1500*
BENNETT (1996), J M Bennett *Ale, Beer and Brewsters in England*
BIRCH *et al* (forthcoming), M Birch *et al Excavations at 1 Poultry: The Late Saxon, Medieval and Post-Medieval Sequences*
BROWN *et al* (1963), R A Brown, H M Allen, H M Colvin & A J Taylor *The History of the King's Works*
CHURCH (1877), A H Church *Plain Words about Water*
FOORD (1910), A S Foord *Springs, Streams and Spas of London*
HARDING & WRIGHT (1995), V Harding & L Wright (eds) *London Bridge: Selected Accounts and Rentals, 1381–1538*
HARVEY (1993), B Harvey *Living and Dying in England 1100–1540*
HODGE (2002), A T Hodge *Roman Aqueducts and Water Supply*

HOMER (1991), R F Homer 'Tin, lead and pewter' in J Blair & N Ramsay (eds) *English Medieval Industries*, 57–80

HOLT (2000), R Holt 'Medieval English water related technologies' in P Squatriti (ed) *Working with Water in Medieval Europe: Technology and Resource Use*

HOPE (1902), W St John Hope 'The London Charterhouse and its old water supply' *Archaeologia* 8, 293–312

HOPE (1917), W St John Hope *Windsor Castle and Architectural History* (2 vols)

KEENE (2001), D Keene 'Issues of water in medieval London' *Urban History* 28, 161–79

KEENE & HARDING (1987), D Keene & V Harding 'The Great Conduit: St Mary Colechurch' in D Keene (ed) *Historical Gazetteer of London Before the Great Fire*, 36

LITTLE (1978), L K Little *Religious Poverty and the Profit Economy in Medieval Europe*

MAGNUSSON (2001), R J Magnusson *Water Technology in the Middle Ages*

MASTERS (1984), B R Masters (ed) *Chamberlains' Accounts of the Sixteenth Century*

McEWAN (2000), J McEwan *The Water Conduits of Medieval London* unpub MA thesis, University of London

McPHERSON & AMOS (1931), E R McPherson & E G J Amos 'The Norman waterworks in the keep of Dover Castle' *Arch Cant* 43, 166–72

MORLEY DAVIES (1910), A Morley Davies 'London's first conduit system: a topographical study' *Trans London Middlesex Archaeol Soc* 2, 9–58

NORMAN (1899), P Norman 'On an ancient conduit-head in Queen Street, Bloomsbury' *Archaeologia* 6, 257–66

RILEY (1868), H T Riley *Memorials of London and London Life in the XIIIth, XIVth and XVth Centuries*

RODWELL (1981), W Rodwell *Archaeology of the English Church*

ROWSOME (2000), P Rowsome *Heart of the City: Roman, Medieval and Modern London Revealed by Archaeology at 1 Poultry*

SCHOFIELD (1984), J Schofield *The Building of London*

SCHOFIELD (1987), J Schofield (ed) *The London Surveys of Ralph Treswell*

SCHOFIELD & VINCE (1994), J Schofield & A Vince *Medieval Towns*

SKELTON & HARVEY (1986), R A Skelton & P D A Harvey *Local Maps and Plans from Medieval England*

SMITH (1975), N Smith *Man and Water*

SPENCE (2000), C Spence *London in the 1690s, a Social Atlas*

STOW (1908), J Stow *A Survey of London* (ed C L Kingsford, 2 vols)

THOMAS *et al* (1997), C Thomas, B Sloane & C Phillpots *Excavations at the Priory and Hospital of St Mary Spital*

TIGHE & DAVIS (1858), R R Tighe & J E Davis *Annals of Windsor* (2 vols)

TUCKER (1995), P Tucker *Government and Politics: London 1461–83* unpub doctoral thesis, University of London

WALDO (1923), F J Waldo *History of the Worshipful Company of Plumbers*

WEBB (2000), D Webb *Pilgrimage in Medieval England*

SPATIAL DETERMINANTS OF ANIMAL CARCASS PROCESSING IN POST-MEDIEVAL LONDON AND EVIDENCE FOR A CO-OPERATIVE SUPPLY NETWORK

Lisa Yeomans

SUMMARY

The manufacturing industries in post-medieval London utilised vast quantities of animal carcasses; these were intensively processed and converted into a wide variety of products forming essential articles of day-to-day life in the capital. The aim of this short article is to show how archaeological and historical evidence can highlight the co-operation needed between the many trades dependent on these raw materials and how this was achieved by using a processing sequence involving onward trade of by-products between craftsmen. Modifications identified on discarded animal bone waste, and faunal assemblage characteristics, can be used to substantiate collaborations between different craftsmen and to identify the sequence of carcass distribution. The large scale spatial arrangement of London affected the location of industrial areas but carcass supply chains also influenced the layout of local neighbourhoods. The leather industry became widespread, taking advantage of locations suited to its manufacture and influencing associated trades at the local level. The horn industry was more spatially restricted, and the conclusions reached in this paper suggest that the role of the Horners Company in protecting their trade was a major factor.

INTRODUCTION

Certain animal products were specially imported into London for use in the manufacturing industries. These included high quality hides such as goatskin from rural areas and the Continent, furs, and horn imported from America and Africa, as well more exotic materials such as ivory. However, much of the animal material consumed by London's industries derived from two sources: carcasses of livestock driven into the city for meat, and animals living in the city as work animals.

Carcasses needed to be intensively processed to provide London's population with leather for shoes, tallow for candles, and horn for lantern-panes, cutlery handles, drinking vessels and combs, as well as bone that was manufactured into many items. Hence butchery waste was in much demand and regulations were instigated in the medieval and post-medieval periods to help ensure supply to the craftsmen requiring the materials. This is demonstrated by ordinances from numerous towns across England stating that butchers were to bring hides into market along with the flesh so leather producers could obtain raw materials (Clarkson 1960). Likewise the London Horners Company had purchase rights over all rough cattle horn sold within an increasing radius from the City. Some of these ordinances and concessions did not differ in nature from the laws governing supply in the Middle Ages when trade rights were much guarded privileges. Other industries were less constrained by trading rights, provided they did not infringe on other crafts and the quality of goods produced was controlled. The spatial distribution and expansion of the industries in

London witnessed a notable shift during the 16th and 17th centuries, the period in which the present study is set.

POST-MEDIEVAL INDUSTRY RELOCATION

Towards the end of the medieval period the City authorities began imposing new legislation banishing many of the noxious animal processing industries that had previously taken place within the walls. For example, in 1455 the cutting of 'green horns' was prohibited in the City. Butchering of animals in the City had long been a cause for complaint and in 1361 the King, in a writ to the Mayor and Aldermen, protested against the slaughtering of animals within the walls and ordered that such activities be limited to Stratford or Knightsbridge (Sabine 1933). This did not conclude the matter as the butchers' activities in the City continued to be a subject for complaint. In 1391 another order by the King seems to have been more forcefully imposed, leading butchers to raise prices and thereby compelling the City to allow butchers' houses close to the Thames, into which the entrails could be directly cast. Numerous efforts, although ineffective at eliminating slaughtering in the City, would have increased the use of areas outside the City for this task. The saga of butchers causing nuisance, complaints against their activities and the effects of these, is covered by Sabine (1933) and Jones (1976). As the population began to expand rapidly in the later 16th century (Harding 1990), greater pressure would have been placed on the resources in the City. Access to the Fleet and Walbrook would have been reduced as the tributaries were paved over, limiting the tanners' all-important water supply. Gradually, therefore, the various trades processing animal carcasses shifted towards the suburbs. Additional factors, including cheaper rent, potential for expansion, good water supply, improved access to raw materials, and less stringent monitoring by the establishments, facilitated this relocation. Rebuilding after the Great Fire also provided an opportunity to remove industrial activity from the City.

A new spatial distribution of the industries which processed animal products was arranged to allow good communication routes between various crafts. For instance the developments around Aldgate, east of the City, grew up around the long established slaughterhouses. Their presence caused the horners, relocated from the City, to centre their trade within the adjacent streets (Keene nd). Horners' workshops could either prompt intensification of associated crafts or could be placed in response to rises in demand because other favourable conditions caused growth. Before describing how the livestock and meat markets served as the main points of entry for the animal carcasses and the other influential, spatial characteristics of suburban London, some discussion is required of the carcass processing sequence which reduced animal carcasses into the various constituent elements required by different craftsmen.

CARCASS REDUCTION SEQUENCE

O'Connor (1993) proposed a hypothetical model (Fig 1) to convey possible carcass reduction/utilisation sequences which shows the various processes animal carcasses can undergo to yield different raw materials, and illustrates the potential uses of carcasses and possible resulting faunal assemblages. Developing the model for post-medieval London by adding details on how different craftsmen procured raw materials from carcasses at different stages in the sequence, and the sources where they gained them, helps increase the understanding of one variable influencing industry location. This can then be compared to both the large scale and local spatial distribution of craftsmen to assess the extent to which easy access to raw materials influenced craft location.

ZOOARCHAEOLOGICAL EVIDENCE FOR A CARCASS UTILISATION SEQUENCE IN POST-MEDIEVAL LONDON

Some modifications to bones and faunal assemblage characteristics allow links between craftsmen to be interpreted, providing additional, case specific details to the model of the carcass utilisation sequence. Evidence from post-medieval London is described to show the potential of such analytical methods.

Use of waste cattle horncores

Historical evidence, in the form of the 1641 list of the Company of Horners and occupations given in the parish registers, proves that many members of the Horners Company lived on or close to Petticoat Lane in Aldgate in the mid-

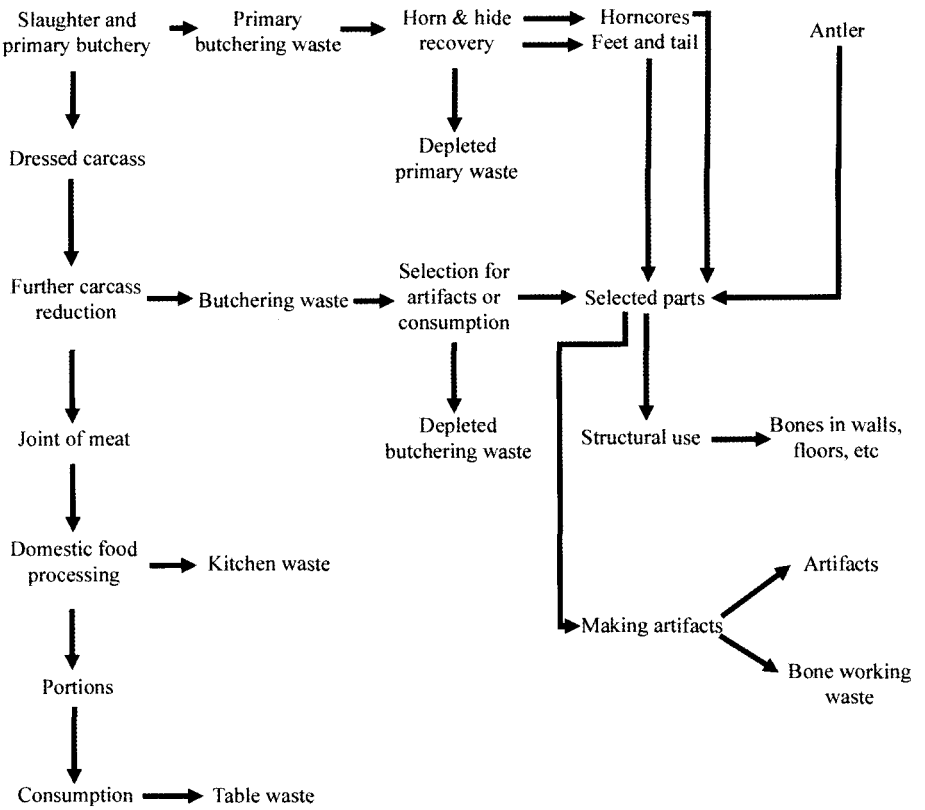


Fig 1. Hypothetical flow diagram to illustrate carcass/skeleton utilisation (from O'Connor 1993, 64)

17th century. Large accumulations of cattle horncores recovered from sites in the vicinity are confirmed as horners' waste because the tips of some horncores were sawn-off and other cores were sawn into segments. Removing the tips in this manner would have helped accelerate the breakdown of the bond connecting the core to the horn-sheath, whilst sawn segments of horncore provide evidence that the horners were readily preparing horn sections of the desired length. The evidence indicates that the horners were, at least some of the time, purchasing complete horns and preparing them at their workshops. Inventories of horners' premises corroborate this and describe large quantities of unwrought horn; for instance, the inventory of Thomas Mann's property in 1673 describes 'a pcell of white pieces unwrought cont 800, a pcell of dozen pieces unwrought cont. 300, a pcell of black pieces cont 4000 and a pcell of shavings' stored in the 'presse shope behind the howse' (Fisher 1936). Such unwrought items would have been obtained at the nearby slaughterhouses, whilst additional horn-sheaths seem to have been purchased in a ready state from the tanners south of the Thames or in other parts of East London.

Cattle horncores still had their uses even after the horners had removed the sheath. Fig 2 shows the positions of post-medieval sites producing assemblages interpreted as horners' waste and indicates where horncores have been reused to line pits; horncores would have provided support to the sides of the pits without compromising drainage. Supply of horns to horners did not, therefore, end the supply sequence. This fact is reinforced by the description of Holtzapffel (1843) who informs us that after the removal of the horn-sheath the horncore 'is not thrown away, but burnt to constitute the bone earth used for the cupels for assaying gold and silver'. The porous structure of horncores allows them to burn easily to ash which, when made into crucibles for the assaying of gold and silver, absorbs lead oxide. Furthermore Kalm (1748) notes a method of constructing earthen walls

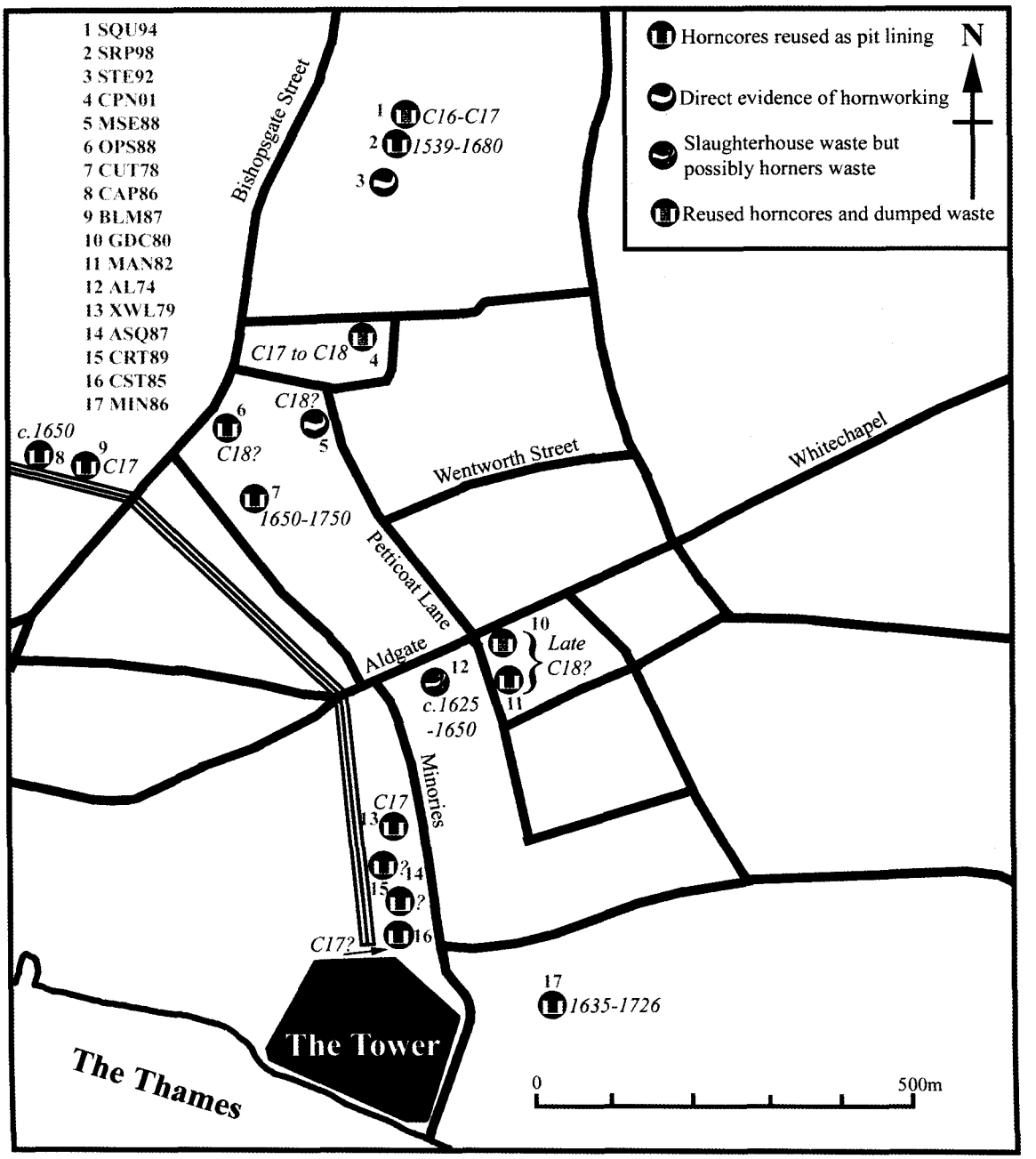


Fig 2. Characteristics of archaeological assemblages of horners' waste

from horncores, demonstrating the wide range of uses for horncores.

Supply of sheep horn

Use of sheep horn was also common in post-medieval London and faunal evidence shows that the horns were removed from the skull in a standardised manner by chopping the complete horn from the frontal bone. Traces of this process are detectable on both removed horncores and frontal bones. Whilst these clearly

demonstrate that sheep horn was being used, the presence of such bones alone does not indicate who was responsible for preparing and trading the horn. A number of options may have existed: the butcher could have sold either the complete horn or the horn-sheath, separate from the hide, direct to the horn user; alternatively, the skull may have remained attached to the hide when it was distributed to the leatherdresser who could then sell on the horn-sheath, again either removed from the horncore or complete, to craftsmen using it as raw material.

The distribution sequence used to supply sheep horn can be determined by examining additional characteristics of the faunal remains. A flow diagram (Fig 3) indicates how various attributes of a faunal assemblage can be used to interpret the processing sequence that led to the removal of sheep horn, and the trade between craftsmen. Four important attributes are used: (1) the part of the skull discarded with evidence of horn removal; (2) the presence of naturally polled animals in the sample — important since it demonstrates that waste is not that of a hornworker who would have had no use for such animals; (3) the relative frequency of mandibles compared to the horncores; (4) the relative frequency of metapodials compared to the horncores. A high proportion of mandibles and possibly metapodials is typical of primary butchery waste, whilst a high proportion of metapodials without frequent mandibles is typical of leatherdressers' waste. The use of these multiple attributes aids the interpretation of zooarchaeological patterning, suggesting one process amongst many possibilities.

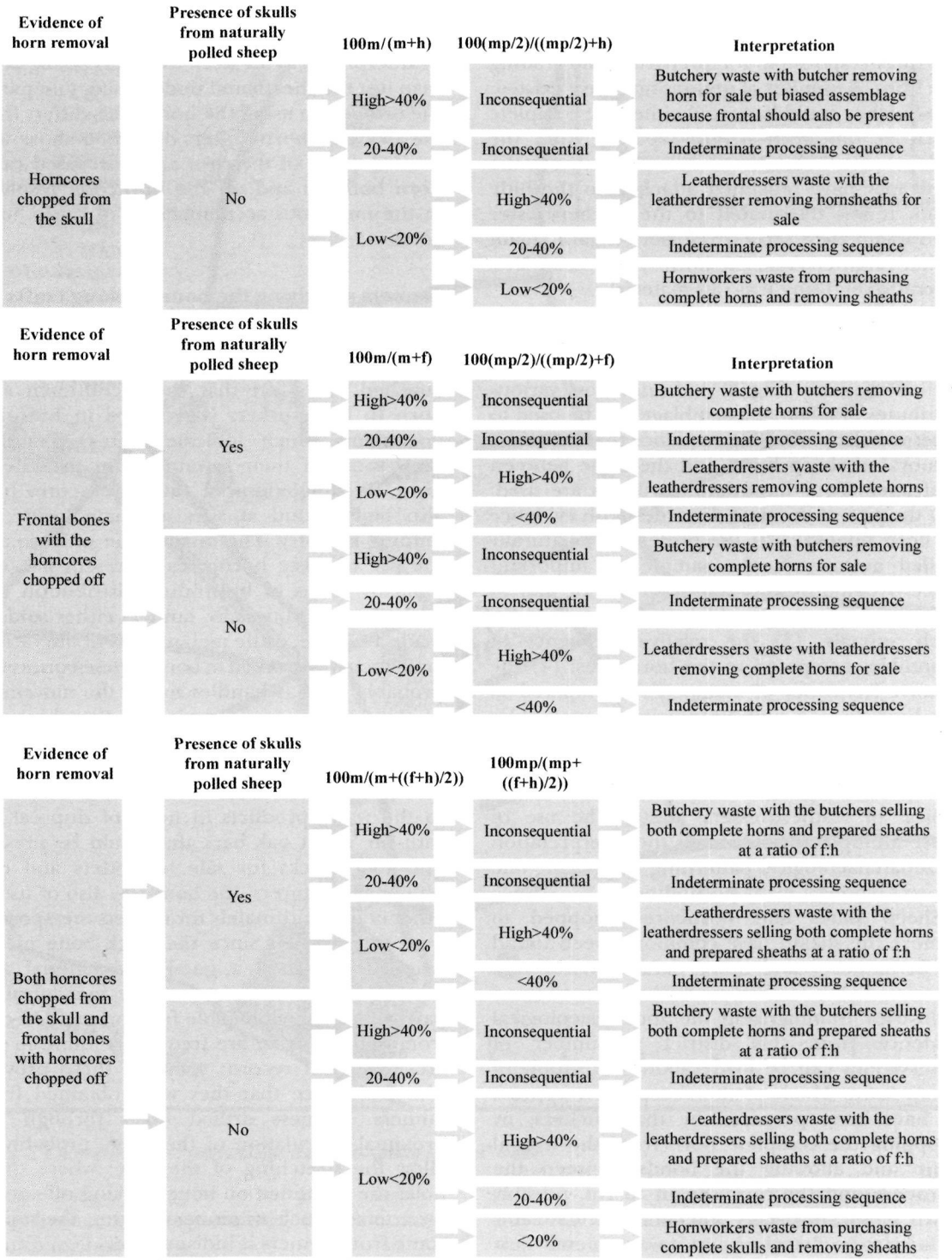
Sheep skulls and horncores chopped to remove the sheath have commonly been found in Bermondsey and other parts of Southwark associated with leather producing or associated industries. Summarising the zooarchaeological evidence from this district a number of observations can be made about the supply of sheep horn. Much of the sheep horn appears to have been prepared by the butchers, by chopping the complete horn from the frontal bone and allowing the bonds between the horncore and the horn-sheath to rot, possibly aided by soaking. This process allowed sheaths of horn to be detached and it was generally just this part that was sold on to craftsmen working with the raw material. Where the butcher sold the skin to the leatherdresser with the skull still attached, the leatherdresser would assume a similar supply role providing horn to other craftsmen. There are few assemblages that could be interpreted as the horn user purchasing more than just the sheath and undertaking to separate the two before using the horn. This differs from the specialist hornworkers described above who resided north of the river and purchased cattle horn both on and off the horncore, resulting in the numerous accumulations of cattle horncores.

Tanners supplying the bone working crafts

Cattle hides which were distributed to tanners often had the horn and lower limbs still attached. The fact that these craftsmen sold horn to hornworkers is reflected in historical documents which indicate that the tanners drew some of their revenue from the sale of horn. Accumulations of cattle horncores have also been found at sites associated with the tanning industry. The distribution of horn and the use of waste horncores represent just one of many forms of by-product distribution that took place. Additionally, tanners either sold, or made available, cattle metapodials to the various craftsmen who worked in bone. These bones were probably used as handles to aid the movement of skins in the tanning pit and stretching the hides. After the transformation to leather was complete the tanners had no further use for the metapodials and they would have been added to the waste products in need of disposal. As with the spent oak bark that could be pressed into fuel blocks for sale to potters and clay pipe manufacturers, the bone was also of use in other crafts. Fortunately for tanners metapodials were sought after since the thick bone of the diaphysis provided a good raw material and the regular cross-section of the metatarsal in particular made it suitable for working. Off-cuts from bone working are frequently found in the archaeological record; some of these provide direct evidence that they were obtained from tanners. Tanners drilled holes through the proximal articulation of the bone, probably to allow the stretching of the hide; where these holes are identified on bone working off-cuts or on artefacts such as pinners' bones, the supply route from tanners is indisputable.

Use of horse carcasses

The carcasses of work animals in London were in



Where h=horncores with basal areas surviving, f=frontal bone with horncore chopped off, m=mandibles (MNE-minimum number of elements) and mp=metapodials (MNE).

Fig 3. Flow diagram used to aid interpretation of the supply of sheep horn to craftsmen from faunal assemblages.[1]

just as much demand as those of animals driven into the city to meet the population's nutritional requirements. Horsehide, although not of the same quality as cattle hide for making leather, was frequently obtained by leatherdressers. The body-part distribution of horse skeletal elements found at leatherdressers' sites indicates that the entire carcass was taken to the leather producer who skinned the animal, and occasionally seems to have defleshed the carcass, perhaps selling the meat as dog food to places such as the bear baiting rings. The horses that the leatherdressers had access to were old work animals whose bones often display pathological modifications caused by a long life of hard work.

Summary

These examples briefly demonstrate how the sequence of carcass supply can be interpreted using zooarchaeological evidence and suggest that the working lives of the different craftsmen were intertwined through the need to obtain one another's by-products. Access to raw materials as a carcass was reduced was, however, only one influence on the spatial location of industry. The roles of other factors in determining the positioning of industry in post-medieval London need to be considered.

INFLUENCES ON LOCATION

Resource input: livestock markets

Livestock was driven to markets, fairs, and grazing areas relatively close to London where farmers and graziers purchased the animals to fatten them before sale either at London's livestock markets or through private arrangements with butchers. Although it is difficult to estimate the number of animals sold at the markets, McGrath (1948) provides an approximation of 500,000 sheep per year passing through Smithfield market during the early 18th century. This quantity had certainly increased since the preceding centuries as it was found necessary to add Mondays to the official trading days, which were confined to Wednesdays and Fridays before 1613 (McGrath 1948; Passingham 1935).

Smithfield was not the only livestock market: Barnet market had been established at the end of the 16th century; a patent allowing cattle to be sold was granted to Rotherhithe market a century later; and a cattle market was permitted in Houndslow in 1686. Unlicensed markets had operated since at least the early 17th century at Paddington, Kensington, Mile End, and in the lanes around Smithfield market; by the end of the century a substantial portion of the cattle trade took place in Islington. Brookfield market reportedly supplied thousands of people living in Westminster, Southwark, Lambeth, Wandsworth, Putney, Fulham, and Chelsea (McGrath 1948).

Primary butchery location: slaughterhouses and butchers

Animals entered London through the livestock markets but they would have subsequently been dispersed to slaughterhouses and butchers. In the 17th century the intermediate role of carcass butcher developed — a person employed in buying livestock and selling meat to retailing butchers. The authorities objected to such men as they provided an unnecessary link in the supply chain and many butchers preferred to use the slaughterhouses themselves or else slaughter the animals behind their own shops. The sale of meat to the public took place at butchers' shops or in markets. The City's six main markets were Newgate market, Honey Lane or Milk Street market, Woolchurch or the Stocks market, Leadenhall market, the Beef market, and the Herb market (Armitage 1978; Masters 1974). Additionally butchers would gather at shambles found on the City margins at Temple Bar, Smithfield Bars, Bishopsgate Bars, Aldgate Bars, Field Lane, Fleet Street, Cripplegate, and St Katherines (McGrath 1948). The population of Westminster could purchase meat on King Street, and that of Southwark used the market on Borough High Street in addition to butchers' shops. It would have been at the slaughterhouses that other craftsmen could gain straightforward access to raw materials in large quantities. By necessity these were distributed throughout London, but concentrations clearly existed such as that around Aldgate.

Land: cost and suitability

Space was at a premium in the expanding city, and tanning, for instance, whilst not providing a substantial return for men practising the trade, required sizeable plots of land. Power (1986) used the hearth tax assessments of 1662, 1664, and 1666 to provide an estimation of building size and therefore wealth in most parishes. The

study demonstrated that buildings of the East End and Southwark were generally the smallest in London. Similar investigations (*eg* Jones 1980) corroborate these results, suggesting that overall the populations of these two districts were the poorest to be found in 17th-century London. These conditions provided cheap rental and a high concentration of unskilled labour that could be employed as and when required.

These were not, however, the only important determining factors. A plentiful water-source was required for some of the carcass processing industries, particularly tanning. The marshy environment of Southwark provided the ideal conditions, with the numerous watercourses and drainage channels aided by the tidal currents close to the Thames which both supplied water and drained away effluents. The area was also well located to take advantage of oak bark supplied from parts of Surrey.

Areas of the eastern suburbs adjacent to the Thames could also supply sufficient water and a few tanneries utilised this environment. Compared to the tanning industry, there were less physical constraints on other carcass processing industries, although places where discard of unpleasant waste was possible would have been advantageous.

Distribution: transport costs and specialist markets

Specialist markets aided the distribution of some raw materials. A leather market had long existed at Leadenhall, but by the 17th century it was clear that the City resented its presence. In 1603 an attempt was made to move the market to Aldgate but this lasted just three weeks; continued complaints about the stench caused the Court of Aldermen to contemplate moving it to Smithfield, but again the move never happened (Clarkson 1960). A second leather market was set up in Southwark, but trade through these specialist markets formed only part of the hide distribution system. Many tanners and leatherdressers would have made separate arrangements with butchers to help ensure supply, and butchers benefited from not having to take hides to market. Although there is evidence of some long distance trade in hides, the majority were bought locally, allowing the tanner to inspect his purchases. Other supply routes to the leatherdressers included the fellmongers who brought numerous skins into London and middlemen were common in the light leather trades to the extent that Clarkson (1960, 131) argued that 'the bulk of sheep skins must have originated from animals dying naturally or by accident in the countryside rather than in the meat markets'. Although such sources were undoubtedly important, the concentrations of sheep bones associated with leatherdressers' workshops found during excavations clearly demonstrate the frequent direct trading between butchers and leatherdressers.

LARGE SCALE SPATIAL PATTERNING

The factors discussed in the preceding section affected the industrial areas of London on the large scale, since the industries using animal products were broadly grouped together allowing the distribution of carcass parts. Craftsmen of this type were primarily found in two areas of London, although occasionally small separate groups would have been situated to supply a specific market or to take advantage of other small scale industries. Generally the two districts where the processing of animal carcasses took place were the eastern suburbs and south of the river in the parishes of St Olave, St George, and particularly Bermondsey.

In both areas, cheaper land was a key factor in the placement of the industries. The tanning industry was further constrained by the natural environment leading to its placement in Southwark, and the less densely occupied Bermondsey being particularly suitable. The effect of inertia is perhaps visible in the case of the Horners Company with members continuing to reside north of the river even if moved from their original dwellings inside the City walls. The prevailing wind and the downstream locations of the areas would also have played a decisive part.

LOCAL DISTRIBUTION CASE STUDY 1: BERMONDSEY

The parish of Bermondsey forms the basis for a localised case study. Numerous industrial faunal assemblages have been recovered from this parish and relatively good historical evidence for occupations is available in the form of parish registers. Fathers' occupations are given in baptism records from the end of the 17th century, throughout much of the 18th century, and into the 19th century. Spatial data is provided in the form of street names throughout much of the

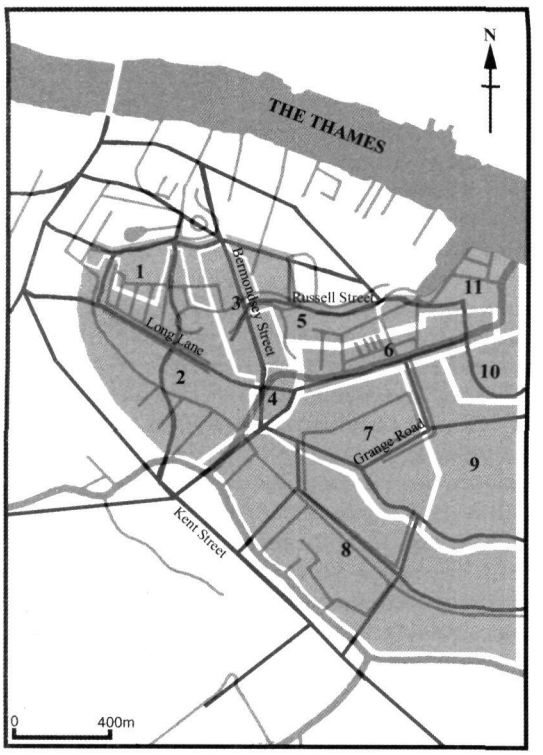


Fig 4. Map of Bermondsey showing the eleven zones used to provide a spatial indication of industry location within the parish

period and these can be used to approximate trade location since place of work was normally within the immediate vicinity of place of residence, if not actually on the premises. Apart from a few entries in the parish register that did not provide a place of abode, or cases where the place of residence was outside the parish, the data was divided into eleven spatial zones as indicated on Fig 4. This division of the parish is based on broad occupational differences observed in the data and on cartographic and archaeological representations of industry, as well as access from the main roads. The occupations given in the baptism register were analysed by these zones to investigate how changing proportions of men employed in the animal carcass processing industries clustered spatially.

During the years containing the relevant data between 1698 (when occupation was first recorded) and 1850 over 8,000 entries in the Bermondsey baptism register were of craftsmen employed in the processing of animal carcasses, from butchers to tanners and tallow chandlers. The accumulated totals of the main trades are shown by zone in Fig 5 to provide an indication of the areas most intensively engaged in such trades. Unfortunately it is not possible to calculate the proportion of the population within the zone that was employed in the respective industries without recording the place of abode of each entry in the Bermondsey baptism register regard-

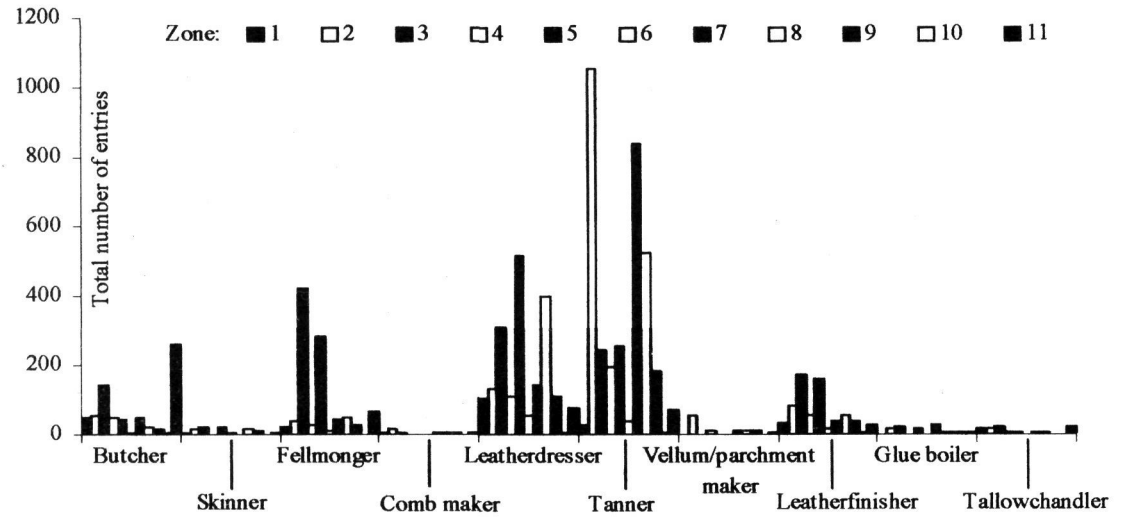


Fig 5. Total number of entries in the Bermondsey parish baptism register between 1698 and 1850 for craftsmen involved in the processing of animal carcasses. Occupations towards the beginning of the carcass consumption sequence are shown on the left of the graph

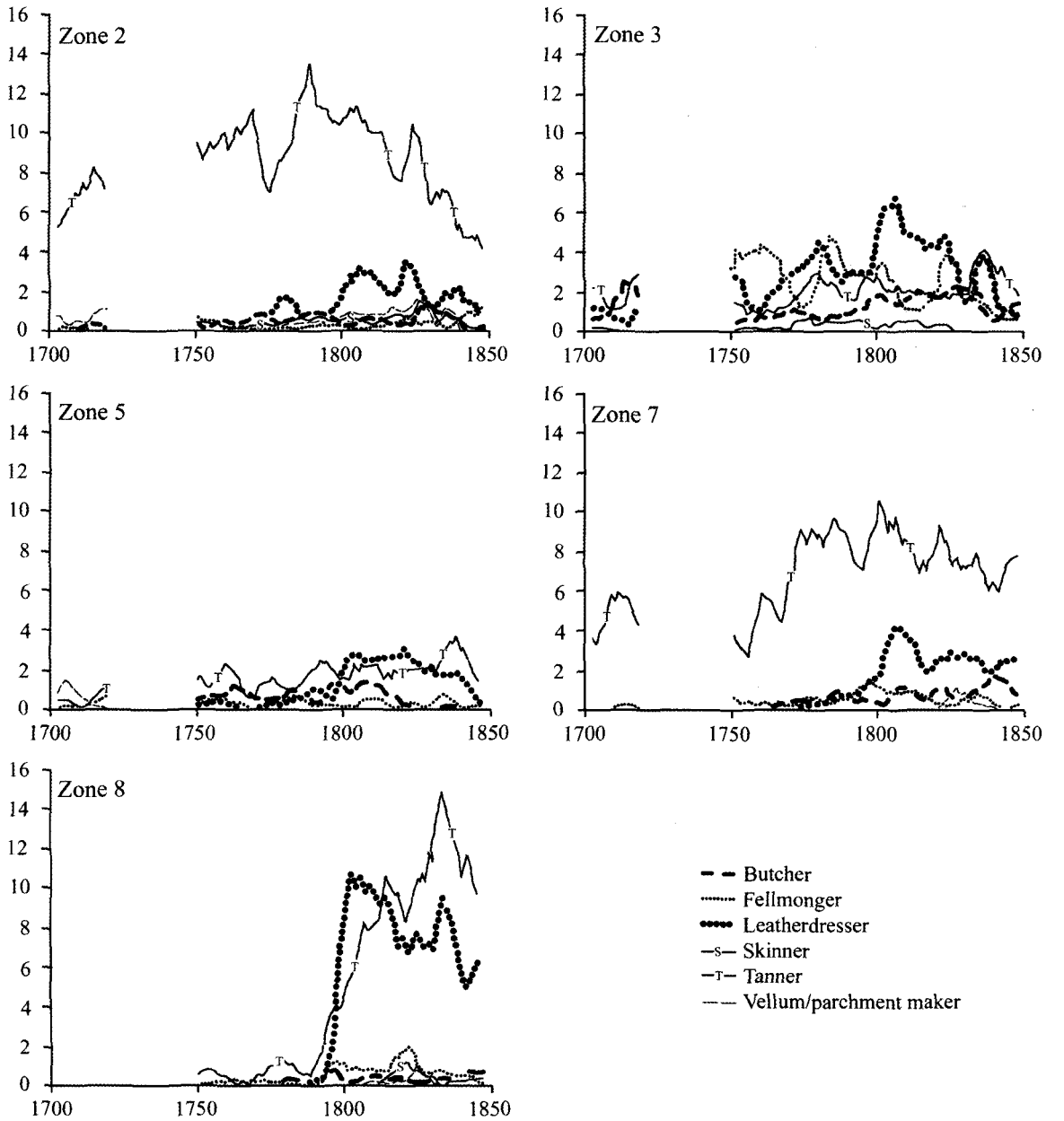


Fig 6. Seven-year moving average of the number of entries in the Bermondsey baptism register with the father's occupations recorded as butcher, skinner, fellmonger, leatherdresser, tanner, or vellum/parchment maker

less of trade. Fig 5 can be used to suggest the zones that are more significant; the fellmongers and leatherdressers were commonly situated in Zones 3 and 5, whereas tanners could most frequently be found in Zones 2, 7, and 8. What is interesting is the number of butchers who resided in Zone 11 whilst other sectors of the industry were rarely found in the vicinity. Analysis of the data compressed into a single graph dismisses the chronological variation that would have been an important feature of the expanding industries. Fig 6 displays data as a seven year moving average from the more important zones: Zones 2, 3, 5, 7, and 8.

Close spatial associations between different craftsmen using animal carcasses at different stages in the consumption sequence are evident in Fig 6. For instance, the number of fellmongers follows similar periods of growth to the leatherdressing industry, especially in Zone 3. This pattern tends to diminish after *c.*1800 suggesting that the leatherdressers were supplied by another source, and interestingly the number of butchers occupying the same zone increases after this date. Not illustrated in the graphs are comb makers who would have utilised the sheep horn provided by the leatherdressers and butchers; these craftsmen also tended to live close to their source of raw material. The graphs demonstrate a certain degree of specialisation within zones, which would have allowed demand for raw materials to be concentrated, which in turn facilitated distribution. Cost of land and local environment would also have been important, but the data does seem to suggest a neighbourhood where supply to related crafts was important for the spatial arrangement of industry and where expansion in one industry had knock-on effects in related land use.

LOCAL DISTRIBUTION CASE STUDY 2: THE EAST END

A second geographical spread of industries processing animal carcasses was found in the eastern suburbs. Analysis of the baptism registers from the mid-17th century indicates that this concentration, compared to the overall employment structure of the area, was substantially lower than in Bermondsey. On the local scale there were tight clusters of specific industry types, an extreme example being the horners who were more or less limited to the Petticoat Lane area in the mid-17th century (see the list of Horners Company members dated to 1641 reproduced in Fisher 1936). Supply was evidently still important, with the slaughterhouse at Aldgate providing an important source of raw material. Work in progress on the parish registers, and corroborated by archaeological data, is demonstrating that expansion in the industry in the later 17th century led to new workshops operating further north in streets in Spitalfields. This was presumably a response to renewed demand for horn instigated by the development of street lighting and the expansion of the export trade (Fisher 1936).

Petticoat Lane and the surrounding area was no better situated for the horners than other parts of east London or indeed, more importantly, other suburbs. The horners did not cluster immediately around the slaughterhouses of Aldgate but spread northwards away from the area. An absence of horners in Southwark and Bermondsey is particularly curious for they would have been served by the same factors that drew the leather industry to the area and they would have had a readily available source of horn. The parish registers of the area mention craftsmen presumably working in horn, but references to actual horners are all but absent. The Horners Company records may offer an explanation for the spatial distribution of the horners. Throughout the 15th, 16th and 17th centuries the Company continued to play an active role in ensuring the supply of raw materials to its members. In 1465, for instance, a statute was passed restricting the right to purchase unwrought horns within 24 miles of London to freemen of the Company (Compton 1879). Then in 1590 a co-operative purchasing system was instigated by only allowing horners to purchase horn within the 24 miles for use of the whole Company. In 1638 a number of by-laws and ordinances were passed which, in effect, made the horners a joint-stock trading company. Although the only restriction on company members was that they had to live within seven miles of the City, close contact with the storehouse and sheds rented in Wentworth Street from 1604 would have been practical.

The presence of horners in the vicinity of Petticoat Lane seems to have attracted other craftsmen working in horn into the area. The typological development of combs during the post-medieval period suggests that horn was frequently used as a raw material (Dunlevy 1972). This is corroborated by the prosecution of a London comb maker in 1689 for pressing horns and thereby breaching the rights of the horners (Compton 1879). Fig 7 displays the decadal occurrence in the St Dunstan baptism register of different tradesmen who used animal products or, in the cases of cutlers, button-makers, and comb-makers, may have used the horn produced by the horners in crafting their finished articles. The graphs are separated into the hamlets covered by the St Dunstan registers for the period and provide a crude estimate of the importance of various industries in the hamlets of Spitalfields, Wapping, Shadwell, Mile End, and Ratcliff. Data extracted from parish

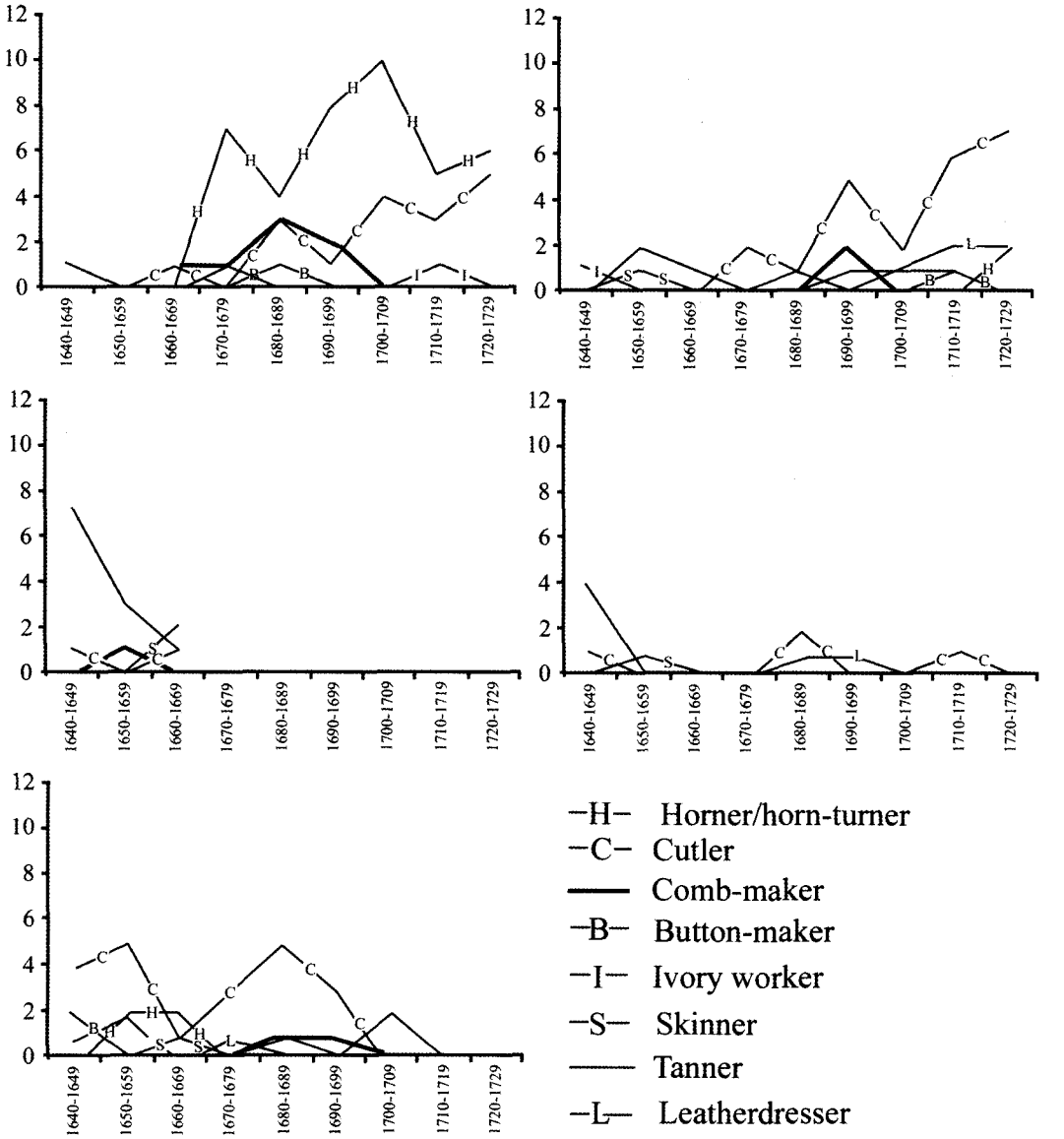


Fig 7. Occurrence of different craftsmen in the baptism registers of St Dunstan, Stepney, by decade, separated by hamlet. Graphs for Bethnal Green, Limehouse, and Popular are excluded because they do not present data relevant to the arguments discussed in the text

registers indicates that by the 1670s hornworkers were starting to occupy Spitalfields. Although the population of this parish increased overall, the number of craftsmen in related trades, presumably relying on the horners to supply them with some of their raw materials, also increased within Spitalfields. Cutlers, for instance, increased in both Spitalfields and Wapping, where horn could have been obtained from horners in Whitechapel. The presence of ivory workers is also interesting given the evidence from Cutler Street (CUT78) where approximately 340 pieces of waste ivory were recovered from the fill of a pit lined with horners' waste dated to between 1650 and 1750 (Drummond-Murray nd). At Aldgate (AL74) two off-cuts of ivory, including

one identified as waste from bead or button manufacture, and bone working off-cuts were found with cattle horncores in deposits dating to the 17th or early 18th century (Armitage 1984). Although the horncores displayed cleaver chops intended to remove the horn from the skull, and others had cut-marks visible around the base, the assemblage was interpreted as slaughter waste as opposed to exclusively horners' waste (Armitage 1984). Combining the historical data obtained from the parish registers and the archaeological evidence, it is clear that trades involved in processing various parts of animal carcasses were closely related spatially. Spitalfields, in the later part of the 17th century, is an example of this. Whitechapel would have been equally important, although the historical data of occupation from the parish registers is not sufficiently complete for the parish to be used as a case study here. Further data collection from the areas surrounding this parish will provide details on the spatial patterning witnessed so far.

The leather producing industry was fairly well represented in the Stepney hamlets. Power (1986) provided evidence of tanners in Shadwell and this is supported by the data displayed in Fig 7. Other tanners could be found in the riverside areas of Ratcliff, Wapping, and, to a lesser extent, Limehouse (data not displayed). There seems to have been a balance between access to the water from the Thames and the distance to the slaughterhouses around Aldgate. Registers at St John of Wapping and St Mary of Whitechapel would have covered parts of Wapping close to the river and these have not yet been analysed; tanners could be found in the part of Wapping within Stepney and these men presumably worked at tanneries supplied with water from the Thames. Tanning was an important trade in Shadwell, at least until the 1670s when the hamlet became a parish. Further to the east, in Ratcliff and Limehouse, tanneries do not appear to have been as common. Leatherdressers, without a need for a plentiful water source, occupied other hamlets where there was no access to the Thames.

CONCLUSIONS: THE INFLUENCE OF SUPPLY ON POST-MEDIEVAL URBAN INDUSTRIAL LOCATION

The 16th century witnessed the beginning of the rise of capitalism; those who would have once used land could become the owners of land. Additionally, as some of the guilds were becoming less powerful, the requirement to work within the area controlled by the guild, where the establishment could oversee the conduct of business, was diminishing (Vance 1971; Langdon 1975). The economic productivity of land became more important and as suburban production increased the control of the guilds was further undermined (Kellett 1957). The initial complaints and attempts to remove the carcass processing industries from the City towards the end of the Middle Ages set the scene for more profound changes than relocation. Specific suburbs began specialising in certain industries and the trade network between craftsmen working with animal carcasses at various stages in the carcass reduction sequence was reinforced. Not all of the guilds went into decline at the same stage, and the Horners Company continued to dominate the business of its members. This effectively led to a rather unusually clustered concentration of horners in post-medieval London compared to the other industries manufacturing goods from animal products. The leather producing industry, although substantially larger, was also more widespread. Factors other than the availability of raw materials were important. There does not appear to have been any shortage of the raw hides; Clarkson (1960, 73) notes that 'supplies of hides coming into London on the backs of animals, in relation to supplies of tanning materials, [was so great] that the capital was able to supply raw hides to other parts of the country'. Tanners could arrange their own supplies with butchers or otherwise purchase materials at the markets of Leadenhall and Southwark, so supply was not constrained. The locations used for the production of leather needed to meet many criteria, with open space, water resource, and oak bark supply all evidently important. The horn industry, however, seems to have congregated because of the need to obtain supplies from the Horners Company. Proximity to the operations of the company became more important, since becoming an active member of the company entitled a horner to additional stock.

Zooarchaeological evidence has been shown to demonstrate links between different industries that may not be detectable in the historical documents. It also reinforces the spatial association between crafts which must be seen to partially result from their trade networks.

Specific zooarchaeological methods have been developed for this aspect of the project, although application to large datasets is as yet incomplete. When finished, the zooarchaeological study will provide an additional source of information on trade links between industries in post-medieval London.

ACKNOWLEDGEMENTS

This research was funded by a student grant from the AHRB. The resources of the London Metropolitan Archive, Guildhall Library, and LAARC were used. Additional information was provided by Pre-Construct Archaeology and Kevin Rielly of the Museum of London Specialist Services. Supervisors of the work are Dr Jane Sidell and Dr Louise Martin.

NOTES

[1] The interpretation of the horn distribution network using the combined faunal assemblage characteristics highlighted in the text is achieved by following the flow-chart. Additional explanations of the formulae are given here.

The formulas in the third column all provide an index for the representation of mandibles compared to skulls or parts of skulls. Where only horncores and no frontal bones are present the representation of mandibles (m) is calculated compared to the number of horncores (h). If frontal bones but no horncores are present the number of mandibles is compared to the number of frontal bones (f). Where both horncores and frontals are present an average of the MNE of the two is used.

The formulas in the fourth column provide similar indices for the representation of metapodials compared to horncores/frontal bones. Since there are four metapodials in the skeleton of a single animal and only two horncores (with the exception of the rare four-horned sheep), the metapodia MNE values are divided by two in the formula.

The horncores, mandibles, and metapodia are typically discarded during primary butchery and therefore the over-representation of one or more of the elements indicates that part of a butchery assemblage has been removed or that the bones were discarded further down the carcass utilisation sequence. An index of approximately 50 indicates equal representation of mandibles or metapodials to skulls.

The index values together with the characteristics in the first two columns allow interpretation of the stage in the carcass utilisation sequence when the faunal assemblage was discarded and which craftsmen removed different usable parts of the carcass. For instance, if a context contained frontal bones with the horncores chopped off, a similar representation of mandibles compared to frontal bones, but few metapodials, the assemblage is interpreted as butchery waste where the butcher was selling the entire horn and horncore to craftsmen and also, although not shown on the diagram, probably selling hides with the metapodia still attached to leatherdressers.

BIBLIOGRAPHY

ARMITAGE (1978), P L Armitage 'Hertfordshire cattle and London meat markets in the 17th and 18th centuries' *London Archaeologist* 3, 217–23

ARMITAGE (1984), P L Armitage 'The faunal remains' in A Thompson, F Grew & J Schofield 'Excavations at Aldgate, 1974' *Post-Medieval Archaeology* 18, 130–43

CLARKSON (1960), L A Clarkson 'The organization of the English leather industry in the late sixteenth and seventeenth centuries' *Economic History Review* 30, 245–56

COMPTON (1879), C H Compton 'The Horners of the City of London' *British Archaeological Journal* 35, 372–9

DRUMMOND-MURRAY (nd), J Drummond-Murray *Excavations on the Site of the East India Company Warehouses at Cutler Street, Narrow Lane, E1*, unpub report in LAARC

DUNLEVY (1972), M Dunlevy 'Some comb forms of the fifteenth to eighteenth centuries' *North Munster Antiquarian Journal* 15, 22–7

FISHER (1936), M A Fisher *A Short History of the Worshipful Company of Horners*

HARDING (1990), V Harding 'The population of London, 1550–1700: a review of the published evidence' *London Journal* 15, 111–28

HOLTZAPFFEL (1843), C Holtzapffel *Turning and Mechanical Manipulation Intended as a Work of General Reference and Practical Instruction on the Lathe and the Various Mechanical Pursuits followed by the Amateurs*

JONES (1980), E Jones 'London in the early seventeenth century: an ecological approach' *The London Journal* 6, 123–33

JONES (1976), P E Jones *The Butchers of London: A History of the Worshipful Company of Butchers of the City of London*

KALM (1748), P Kalm *A Finnish Visitor to the Chilterns*

KEENE (nd), D Keene *Industrial Clustering in London, c.1300–1930* (Accessed on 11/03/04 at http://www.dicboldinstitute.org/paper27.pdf)

KELLETT (1957), J R Kellett 'The breakdown of Guild and Corporation control over the handicraft and retail trade in London' *Economic History Review* 10, 381–94

LANGDON (1975), J Langdon 'Residential patterns in pre-industrial cities: some case studies from seventeenth century Britain' *Transactions of the Institute of British Geographers* 65, 1–27

MASTERS (1974), B R Masters *The Public Markets of the City of London Surveyed by William Leybourn in 1677* London Topographical Society Publication 117

MCGRATH (1948), P V McGrath *The Marketing of Food, Fodder and Livestock in the London Area in the Seventeenth Century* unpub MA thesis University of London

O'CONNOR (1993), T P O'Connor 'Process and terminology in mammal carcass reduction' *International Journal of Osteoarchaeology* 3, 63–7

PASSINGHAM (1935), W J Passingham *London's Markets: their Origin and History*

POWER (1986), M J Power 'The social topography of Restoration London' in A L Beier & R Finlay (eds) *London 1500–1700: The Making of a Metropolis*, 199–223

SABINE (1933), E L Sabine 'Butchering in medieval London' *Speculum* 8, 335–53

VANCE (1971), J E Vance 'Land assignment in the precapitalist, capitalist, and postcapitalism City' *Economic Geography* 47, 101–20

POLICE GRAFFITI, NEW RIVER HEAD, FINSBURY

Peter Guillery, Survey of London

Just west of Sadler's Wells Theatre, along the north side of the New River Head site and facing Myddelton Passage, there is a plain brick wall of 1806–7 (Fig 1). New River Head was established in 1613 as the London terminus of the New River, bringing water to the metropolis from Hertfordshire.[1] This waterworks quickly expanded, with the outer ponds on the site

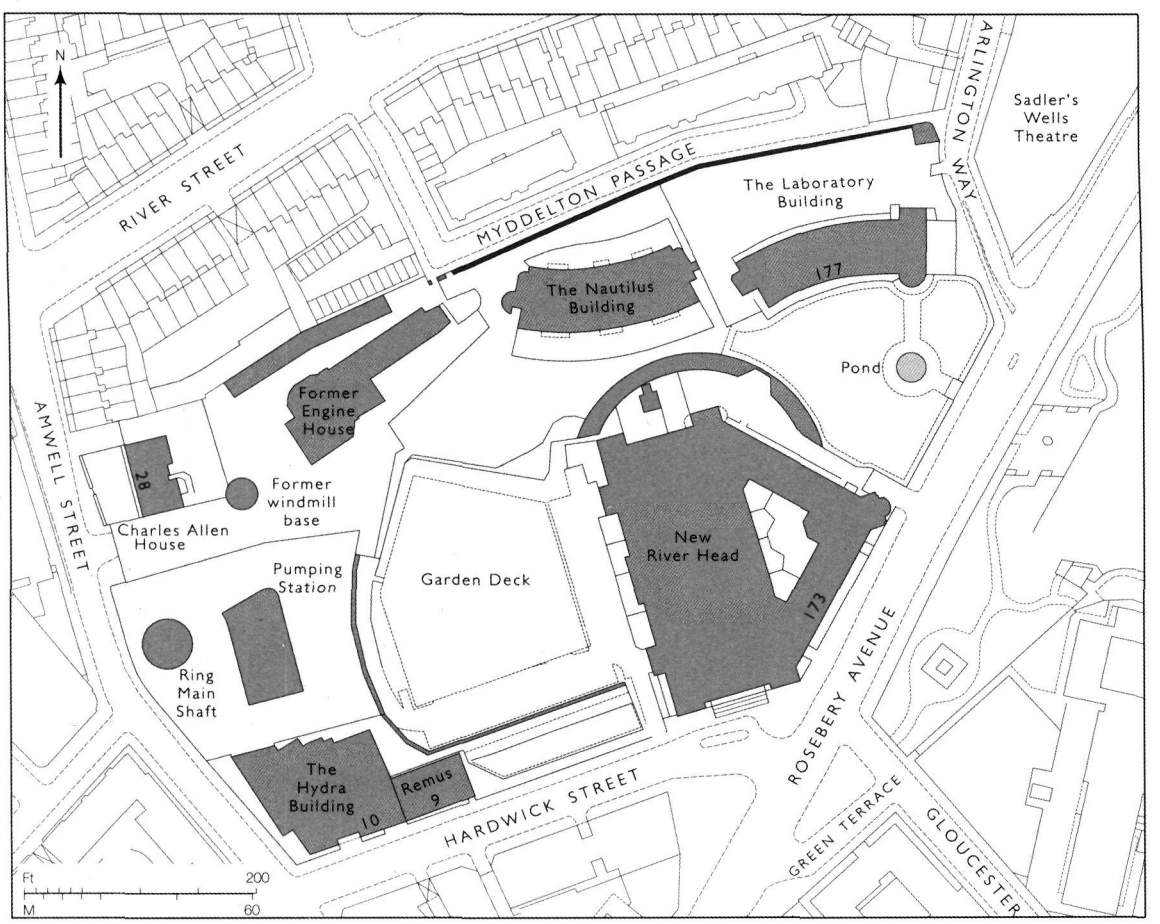


Fig 1. New River Head in 2005 (English Heritage, based on Ordnance Survey)

Fig 2. Police graffiti on the New River Head perimeter wall of 1806–7 on Myddelton Passage (English Heritage)

remaining essentially open, and much used for angling. Low timber hurdles around the perimeter began to be replaced in 1770, largely by high brick walls, with some timber fences, secure enclosure of this vitally important water supply being completed in 1780 immediately following the Gordon Riots, during which troops were stationed at the site.[2] The last section of timber fence along the northern boundary was replaced in brick in 1806–7. The eastern length of this wall is all that remains of New River Head's early perimeter security. It runs from Arlington Way to the west for about 100m, is of purple/grey stock bricks, and stands about 3m high with diagonal brick coping.[3] More westerly parts of the wall, beyond a pier, were rebuilt in yellow brick at a later date, perhaps 1935,[4] and there has been other yellow brick repair.

The remaining wall of 1806–7, which is 'Listed', would be otherwise unremarkable, but for the fact that it bears a quantity of carved graffiti of mid-19th- to early 20th-century date (Fig 2). These have been misattributed to prisoners, in the List description and in local histories. In fact, the graffiti were carved here by police constables, in what appears to have been a circumspect rite; until 1950 Myddelton Passage was a narrow alley, not overlooked as it is now, and the graffiti are all some distance from Arlington Way.[5] The policemen usually recorded their 'collar numbers', two or three digits followed by a letter representing their division in the Metropolitan Police, most frequently 'G' for Finsbury Division, based at King's Cross Police Station. The successive holders of these collar numbers were recorded in Divisional Registers many of which are held in the Metropolitan Police Store and Archive. Through these registers identification of the graffiti artists is possible when dates or initials accompany the collar numbers on the wall. The boldest contributor was Frederick Albert Victor Moore, from Cornwall, who joined G Division in 1886 having served at Devonport Naval Dockyard. Before his transfer in 1894 he not only recorded his collar number and initials, 'FM 365G Aug 17 189?', but also carved '365 PLYMOUTH'. Collar numbers alone, of which there are many, cannot be attributed, but where there is other information identities can sometimes be deduced. 'TK 1913' may have been Thomas Kirkpatrick, a gamekeeper from Dumfries who joined the Division in 1910 and became an Inspector. 'FAH 103' must have been Frederick Albert Huntley, Hackney born, whose collar number was 103G, and who served in Finsbury from 1899 to 1906.

An oral tradition has it that this practice was commemorative, in honour of a fallen colleague, and the graffiti lend some support to this in so much as the only name carved into the wall is 'ROBINSON', and in 1888 a Detective Sergeant Robinson of G Division was stabbed while on duty. However, the wall also bears the carved dates 'Dec 9 1865' and 'Feby 1866', the latter with 185G, which collar number also appears with the initials 'JMK', for John McKinley, a butler from County Antrim who joined the Met in April 1865 and who was promoted to the elite AR Division in November 1866. So the origins of the custom remain obscure. Perhaps the boredom of night duties is sufficient explanation.[6]

ACKNOWLEDGEMENTS

This account derives from text prepared for the Survey of London's forthcoming volume on Clerkenwell, and therefore arises from the work of a team. I am grateful to colleagues, particularly to Helen Jones and Derek Kendall, for the map and the photograph, respectively.

NOTES

1 R Ward *London's New River* (2003).

2 *ibid*, 187, 207; London Metropolitan Archives (hereafter LMA), New River Company Minutes Acc 2558/NR/1/1, ff. 37v, 84r, 101r; /2, pp 35 and 54.

3 LMA, Acc 2558/NR/1/6, p 106.

4 LMA, District Surveyor's Returns, LCC/AR/BA/04/609/010, No. 582, June 1935.

5 LMA, New River Company Deeds Acc 1953/C/1101 and 1110.

6 Metropolitan Police Archives, G Division Registers; information kindly supplied by Maggie Bird, Metropolitan Police Archivist, and Guy Smith; http://www.lightage.demon.co.uk/POL_RaRob.pdf, viewed April 2005.

'OUR LOST ELYSIUM' – RURAL MIDDLESEX: A PICTORIAL ESSAY

Michael Hammerson

Written as recently as 1954, *Middlesex*, Sir John Betjeman's famous lament for the lost countryside of his childhood, recalled a rustic landscape which had, in the main, vanished:

Gaily into Ruislip Gardens
Runs the red electric train.
With a thousand Ta's and Pardons
Daintily alights Elaine,
Hurries down the concrete station
With a frown of concentration
Out into the outskirts' edges
Where a few surviving hedges
Keep alive our lost Elysium – Rural Middlesex again.

Well cut Windsmoor flapping lightly,
Jacqumar scarf of mauve and green
Hiding hair which, Friday nightly
Delicately drowns in Drene;
Fair Elaine, the bobby-soxer,
Fresh-complexioned with Innoxa,
Gains the garden – father's hobby –
Hangs her Windsmoor in the lobby,
Settles down to sandwich supper and the television screen.

Gentle Brent, I used to know you
Wandering Wembley-wards at will;
Now what change your waters show you
In the meadowlands you fill!
Recollect the elm-trees misty
And the footpaths climbing twisty
Under cedar-shaded palings,
Low laburnum-leaned-on railings,
Out of Northolt on and upwards to the heights of Harrow Hill.

Parish of enormous hayfields
Perivale stood all alone,
And from Greenford scent of mayfields
Most delightfully was blown
Over market gardens tidy,
Taverns for the *bona fide*,
Cockney anglers, cockney shooters,
Murray Poshes, Lupin Pooters,
Long in Kensal Green and Highgate silent under soot and stone.

Yet even at that late date, people whose memories reached back no more than 30 or 40 years would have been able to recollect a Middlesex which had changed so dramatically in such a short time; and it is perhaps difficult today for those of us living in the Metropolis that is Greater London to grasp how rural much of the area was less than a century ago.

Although the movement of London's clerks, shopkeepers, and low salaried workers out of town was made possible by the great expansion of London's suburban railways from the 1860s, Middlesex was still essentially rural in the year of Betjeman's birth, 1906. Tongues of development had stretched out between the 1880s and 1914 to the west from Shepherd's Bush, through Acton to Ealing and Brentford; to the north-west, as far as Willesden and Cricklewood; and to the north, to Tottenham and Wood Green. However, the remainder of the county was a scattering of villages, most of whose names still survive — though to most of their inhabitants they have little or no meaning now, except as a way to find the way to where they live — set in a busy agricultural landscape providing food and fuel (*ie* hay for horses) for the greatest city in the world.

It was the massive expansion of London's population during the period between the First and Second World Wars, combined with cheap fares on the suburban railways, which was the catalyst for the creation of what was to become known as Metroland, the expansion of which

was to eclipse the horrors of urban development forewarned less than a century earlier in George Cruikshank's 1829 cartoon *London Going Out of Town.* Between 1901 and 1921, 930,000 people were added to 'outer' London. Between 1919 and 1939, the built-up area of London doubled. Between 1924 and 1939, 860,000 new houses were built; in 1934 alone, 1,500 new suburban houses were being built every week.

The story of the expansion of London has been told many times. By contrast, the story of what was effectively the destruction of a county and a rural society, within a period of 60, 30 or even 20 years — depending on the benchmark one chooses to use — remains virtually untold; Guy Williams' *London in the Country: The Growth of Suburbia* (1975) and Andrew Saint's *London Suburbs* (1999) remain the only easily available works on the subject.

Conversely, there are a number of earlier books, written at a time when the expansion of London was only just commencing, which focus on the Middlesex countryside and its value to Londoners, encouraging them to visit its rustic attractions. Presciently, perhaps, the majority of them appeared between *c.*1890 and the First World War, as if they were trying to alert Londoners to the beauty of the countryside on their doorsteps and the fate which threatened it. Two booklets, both undated but dating to *c.*1885–95, give a selection of rural walks. The first was *Our Lanes and Meadowpaths; or, Rambles in Rural Middlesex* by H J Foley, who writes, 'To how many a North Londoner does the greater portion of his own county of Middlesex remain a wholly undiscovered region? If you speak to such a one of the spots of quaint beauty and rural seclusion that lie within a comparatively short distance of his own doorstep, he will probably regard you with astonishment' and commends 'the rustic quiet of the Middlesex lanes and meadowpaths', all of which can be reached 'by a sixpenny railway ticket from the heart of London'. The 112-page book — with a large map and an appendix for cyclists — gives detailed itineraries for 22 walks, much of them over land now totally built up.

The second guide is *Rustic Walking Routes in the London Vicinity: West to North District* by W R Evans, who remarks on the solitude and isolation which are a feature of walks within this region so close to London, observing that this is not because 'Londoners avoid the fields, but simply that they do not know the ways across them'. As if to emphasise the rural isolation of Middlesex at this late date, he further notes that the numerous field paths of the region 'in many cases... form the only direct routes between neighbouring villages or hamlets'. In an early defence of walkers' freedom to roam, he cites the public's 'indefeasible right with regard to footpaths', but reminds his readers strictly to respect private property and fences, crops, and animals. An ominous note to the third edition,[1] in *c.*1895–1900, adds that a number of alterations have been made, 'consequent, for the most part, on the spread of population and the extent of building'.

Several books on Middlesex appeared within a short period. The first, by John B Firth, was the Middlesex volume of the familiar *Little Guides* county series, still easily available on antiquarian and secondhand bookshelves. Published in 1906, it contained general and topographical data, and an alphabetical gazetteer describing the towns and villages of Middlesex and a 2 miles to 1 inch map. Though the second edition was published as late as 1930, there is nostalgia even for today's motorist who reads that 'The North Circular Road provides an excellent means of passing across the North of London'!

Picturesque Middlesex, a book of nostalgic and historic sketches by Duncan Moul and R H Ernest Hill, is undated but probably dates to *c.*1905–10. In the preface, they observe that 'it is fortunate that so much that is picturesque still exists unspoilt by the ever-increasing influence of London and the onslaughts of the Jerry-builder. It is possible, however, that in a short time many of the sketches in this volume will possess a distinct value as records of rustic scenery that have hopelessly disappeared'. The book ends on an optimistic note: 'notwithstanding the ever-increasing ravages of bricks and mortar and similar abominations, it will be a long time before Middlesex ceases to be picturesque'.

Rural Nooks Round London (Middlesex and Surrey), a similar book by Charles G Harper, was published in 1907. At the time of writing, he was able to remark on 'the pleasant regions of Golders Green...' where 'you are but seven miles from the very hub of and centre of the City' — though, by the time the book was published, development of the crossroads area had already commenced and, when talking of the still-rural village of Highgate, he recommends that those of his readers 'who would see, in a manner, what the "Garden Suburb" at Golders Green

will be, on a larger scale, should certainly visit Holly Village'. The book's large coloured map emphasises, particularly for today's reader, how little London had yet expanded beyond the old London County Council boundary. The same year saw the publication of A R Hope's more art-historical *Middlesex.*

Perhaps the most well-known of the volumes on rural Middlesex was Walter Jerrold's volume in the popular *Highways and Byways* series, published in 1909. Following a similar format to other volumes, it apologises to the reader for having the 'temerity to seek to interest readers anew in the homeliest of the Home Counties', but observes that 'there are yet some people who do not allow the fascination of the far to destroy their interest in the near', and reminding them that 'there are still some rustic "bits" to be seen away from the tram-dominated highways', and that 'if Middlesex has lost much of its natural beauty owing to its relation to the capital... it is still in its more agricultural parts well favoured in... these most attractive byways'.

Just before the outbreak of war, the Middlesex volume of the *Cambridge County Geographies* appeared. It reminded readers that Middlesex was, after Rutland and London itself, the smallest county in England, but that it would enable us to much better understand our national history 'if we first study the geography and history of this small, but very important, portion of our land'. It also reminded us that, as late as 1913, 'yet there are picturesque spots and beautiful villages' and could still illustrate this, on page 17, with an astonishingly rustic landscape, with ancient oaks, a footpath across grassland, and distant tree-clad hills, identified as 'East Finchley', and with a description of Highgate as commanding 'splendid views of the Metropolis and the surrounding country'.

Perhaps the last book of the true era of rural Middlesex was *The Footpath Way Round London; Field-Path and Woodland Rambles,* a small, 80-page, pocket-sized book which, in style, appears to date to about 1910–20, when change was at last beginning to have its impact. 'This district has', it says, 'in the last twenty years [since the 1890s] altered almost beyond recognition owing to railway and tramway developments. These facilities', it naively continues, 'have enabled many people to live in the country who before dwelt in London. They cannot be said, however, to have added to the rural delights of Middlesex, but... even now... there are remote and pretty spots that are astonishingly green and unspoilt, from which the "great smoke" is almost within sight... There are still plenty of footpath walks in rural Middlesex in spite of the great railway developments of last thirty years to the west of London'. Yet of Harmondsworth and Ickenham, it could still claim that few villages 'prettier in their quiet charm exist today in England'.

It can still recommend Hendon station as a good starting point for those walking from Preston to Harrow. The state of the county by the second decade of the 20th century is summarised by the observation that 'London has not yet eaten up all the meadows of Middlesex, though if you travel along the main roads you may get that idea. But between the great arteries of macadam there are cantles of green that stretch for miles, whose silence is only disturbed by the lowing of cattle and the droning of aircraft'. On the day he visited the Greenford and Northolt areas, the anonymous writer continues lightheartedly, 'there were almost as many aeroplanes as cattle, and, although I cannot guarantee you the same experience, you may get all the elements of an exciting adventure when a machine prepares to descend in a field with a rather irritable herd of bullocks looking for trouble.' Though 'there are now seven or eight stations... where twenty years ago there was none', the area between Alperton and Greenford 'is still a pleasant rural district whose main occupation when I passed was getting in the last of the hay'. He adds, more ominously, 'In a few years, judging from the way things are going, this district will be a humming hive of industry. So you had better see it while there is still time and it is still green'. How green Middlesex still was is evident from the last of the 18 Rambles in the book, 'Meadows near Home', recommending a walk from Long Lane, Finchley, to the Orange Tree at Totteridge. 'Thus will you get to know how really remote and rural some of the meadows near home remain.'

In 1934, when the juggernaut of the Metropolis had rolled over much of the area which 20 years before was still rural, Martin Briggs, in *Middlesex Old and New,* realised what were the problems and suggested what needed to be done to save what remained: 'Fifty years ago, Middlesex was predominantly rural and contained less than a quarter of its present population. Now it is largely suburbanised and partly industrial, with a population which is growing at a sensational rate and is rapidly approaching two millions... But this is not to say that all is lost in Middlesex.

Much may still be saved from the wreck... Taking the new townships... I have shown... what [each] may still do to preserve its surviving amenities without obstructing reasonable development. It is my hope that this study may create a spirit of civic consciousness and civic pride in the inhabitants, most of whom have come to Middlesex from other parts of England, and thus have no roots in its soil.'

'Full of the brash, confident optimism of the 1920s' is Oliver Green's description of *Metro-Land*, a handbook published annually by the Metropolitan Railway Company between 1915 and 1933. Its purpose was partly to encourage leisure excursion travel from London, but also to stimulate residential development along the line of the new suburban railway network, built between 1880 and 1905, which the new residents of the same developments would, of course, use to travel into London to work. The publication, which also served as the main method of advertising these developments, last appeared in 1933 when the company became a part of London Transport, but the name Metro-land had entered the language, and was the title of John Betjeman's nostalgic 1973 television programme. The Metropolitan Railway Company itself became involved in development, its first venture being the Willesden Park Estate on railway land near Willesden Green station in the 1880s and '90s; other developments followed at Pinner (Cecil Park) and at Wembley Park, on the site of the failed attempt to build London's equivalent of the Eiffel Tower (never rising above its first stage, 155ft high, it was demolished in 1907). What was revolutionary about these developments was the fact that, until this period, virtually no-one owned their own homes, renting being the main type of tenure, even among the better-off; the rise of the well-paid middle classes meant that, at a time of low interest rates, the prospect of home ownership was opened up to millions, and the prospect of that home being in the countryside, 'where charm and peace await you', was even more of a spur. The process came to a halt with the outbreak of war in 1939, followed, in the 1940s, by the designation of London's Green Belt. The full story of Metro-land can be read on the London Transport Museum's website, www.ltmuseum.co.uk.

Other similar publications appeared during the 1930s, doubtless endeavouring to climb on board the *Metro-land* bandwagon. One example was *London and Suburbs Old and New* by Frank Green, providing information about London, its history and amenities, but primarily advertising the new suburban developments mushrooming throughout the area.

During his childhood and early adulthood, Sir John Betjeman (1906–1984) witnessed at first hand the destruction of the rural Middlesex he loved, from the Metropolis' first flexing of its muscles after the First World War to its climax on the eve of the Second. The destruction was not, of course, total. It is still possible, even today, to find remnants of rural Middlesex in areas such as Enfield, Totteridge, Mill Hill, Pinner, Ruislip, Kingsbury, Harefield and others, while the hearts of ancient and picturesque villages such as Harrow, Pinner, Hendon, Ruislip, Northolt and Hillingdon (threatened in its entirety by the expansion of Heathrow) have been preserved. Even Highgate, Norwood, Ealing, Sunbury, and Laleham still survive, surrounded now by suburbs but, as is coming to be realised, with the potential to become the historic, cultural, and even economic focus of the drive to regenerate Metro-land's declining suburbs.

How this is to be achieved is the challenge. To almost all of the population of Greater London, these still attractive and historic villages are little more than the residential dormitories whence they commute to work by day, and where they can indulge in the pleasures of the 'evening economy' at night. Martin Briggs' was right, as far back as 1934, when he realised that, to save something from the wreck without obstructing reasonable progress, we need to 'create a spirit of civic consciousness and civic pride in the inhabitants, most of whom have come to Middlesex from other parts of England, and thus have no roots in its soil'. There is a risk that modern pressures, not least the drive to solve London's severe housing shortage and accommodate its massively-growing population, will relegate such longer term issues as London's historic and rural heritage to a low position in the priorities of local, regional, and national government, and that what Metro-land did not entirely destroy, these new pressures will. Public education must become a critical element in our efforts to ensure that the new London does not destroy its own historic environment, and the expertise and passion of its many archaeological, historical, and civic amenity societies undoubtedly have a central role to play in making sure that this happens.

The purpose of this essay is to remind

Londoners of how dramatic and rapid was the change in transforming Middlesex from a rural society to a giant suburb, much of it within living memory — a change perhaps unparalleled in England in the short time in which it occurred. It would be interesting to know how a skilled and sensitive writer and observer of rural life such as Richard Jefferies might have chronicled the decline of rural Middlesex had he lived another thirty years. However, it was Betjeman who became the best-known chronicler of these changes, and his poem *Middlesex* perhaps singles him out as the chief mourner for the demise of this rural society.

The best way of illustrating these changes, and losses, must be through photographs, and we are fortunate that the destruction of rural Middlesex coincided with the boom years of the picture postcard; as a result, rural Middlesex was surprisingly well recorded for us by the postcard makers; even the process of destruction was sometimes the subject of a postcard.

The choice of no more than 50 out of thousands of photographs to illustrate this theme was a difficult and inevitably personal one, but it seemed most appropriate to be guided in that choice, as far as possible, by Betjeman's own words in *Middlesex*, encapsulating his memories of the Middlesex countryside in its last days. The illustrations have therefore, as far as possible, been chosen to illustrate the places and events — or, where not possible, the mood — memorialised in various lines from the poem. It is hoped that they will help Londoners to realise how rural Middlesex was, not so very long ago, and to understand the importance of Londoners working together to ensure that what remains to us is not entirely lost in the drive to resolve real current social problems which can, many believe, be satisfactorily achieved without having to destroy what remains of this unique and important cultural asset. Once it is lost, it is lost forever, and no amount of new thinking will bring it back.

ACKNOWLEDGEMENTS

The text of Sir John Betjeman's poem 'Middlesex' is taken from pp 87–8 of *The Best of Betjeman*, selected by John Guest (Penguin Books, Harmondsworth, Middlesex, 1978) and is reproduced by permission of John Murray Publishers. All photographs courtesy of the author.

NOTES

[1] Since going to press, a first edition has been located, dated 1887.

'Gaily into Ruislip Gardens...'

Fig 1. Ruislip Metropolitan station, c.1930. The old village stands at centre background. Just left of centre, two pairs of semis have just been built. In the background, 'a few surviving hedges' await their fate

'A few surviving hedges...'

Fig 2. Roe Green 'Garden Village', Kingsbury, in 1920. The development was commenced in 1917 for employees of the nearby Airco factory, one of several aircraft industry factories attracted by the pioneering aerodrome at Hendon

'Gentle Brent, I used to know you...'

Fig 3. Greenford village, from across the ford over the River Brent, c.1910

'...wandering Wembley-wards at will...'

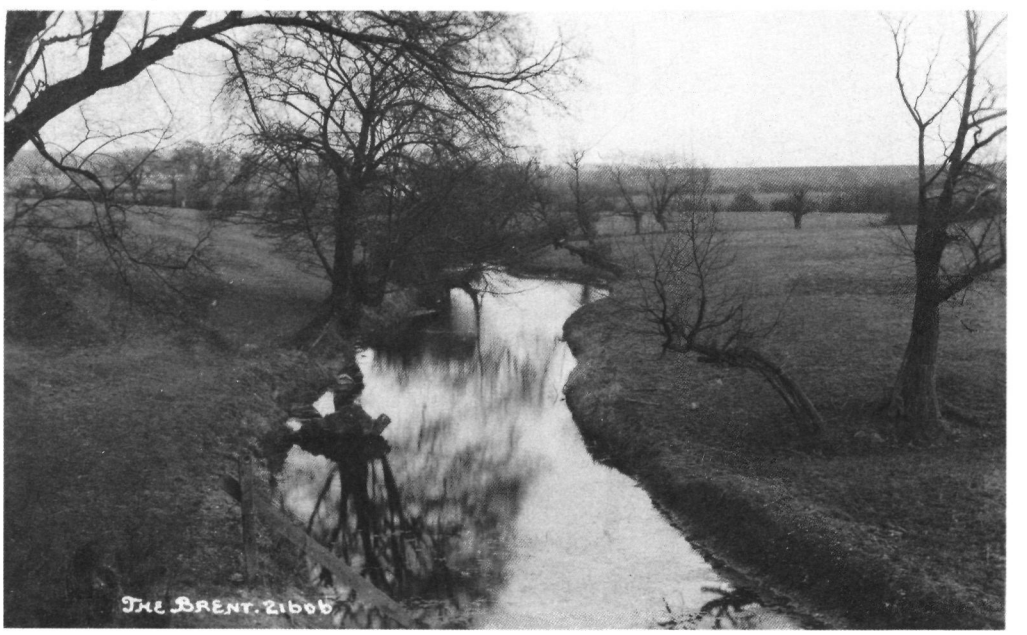


Fig 4. The River Brent near Wembley, 1922. Lines in the fields at left and rear, only discernible under magnification, suggest the survival of possible ridge-and-furrow systems in the area

'Now what change your waters show you in the meadowlands you fill'

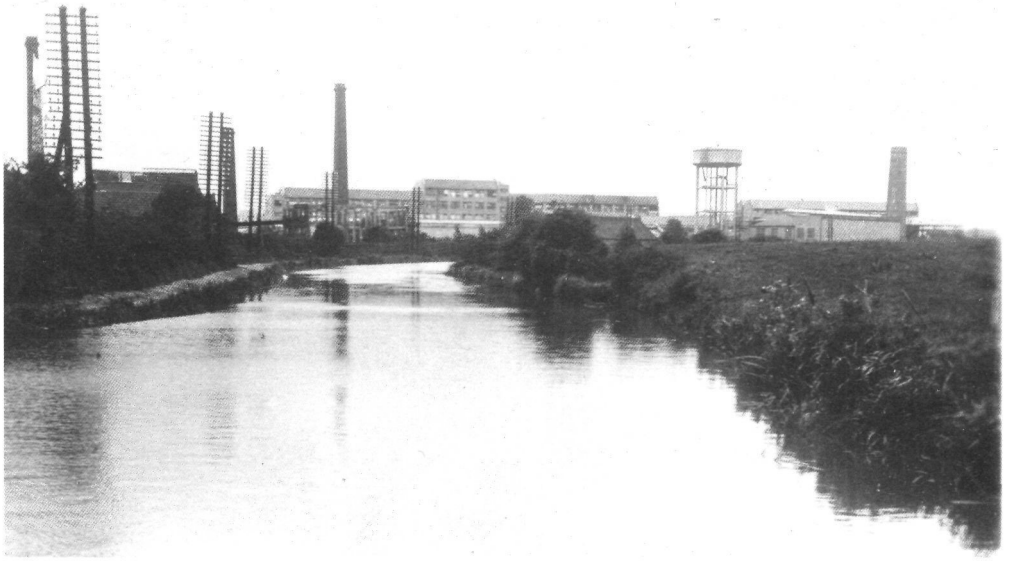


Fig 5. J Lyons' factory at Greenford, c.1930

Fig 6. An idyllic rural scene in Hendon Lane, Finchley, where it crosses Dollis Brook, a tributary of the Brent, 1909. The sign behind the horse-and-trap at far right reads 'White Hall Estate: To let on building lease or for sale'

'Recollect the elm-trees misty...'

Fig 7. Whitchurch Lane, Edgware, 1907

'...and the foot-paths climbing twisty...'

Fig 8. 'Rough Lots', a remnant of Finchley Common, near Squire's Lane, c.1910; some of it remains open today, though no rural quality remains

Fig 9. Footpath from Finchley to Summers Lane; an unidentified rural path, probably today within earshot of the busy A1000, during the 1920s

'Low laburnum-leaned-on railings'

Fig 10. It's very difficult to find a photograph of a laburnum leaning on railings; but here are some railings leaned on by a profusion of vegetation, in a Lordship Lane, Tottenham scene unrecognisable today

'Out of Northolt, on and upwards...'

Fig 11. The old village pump, Northolt, c.1910

'...to the heights of Harrow Hill'

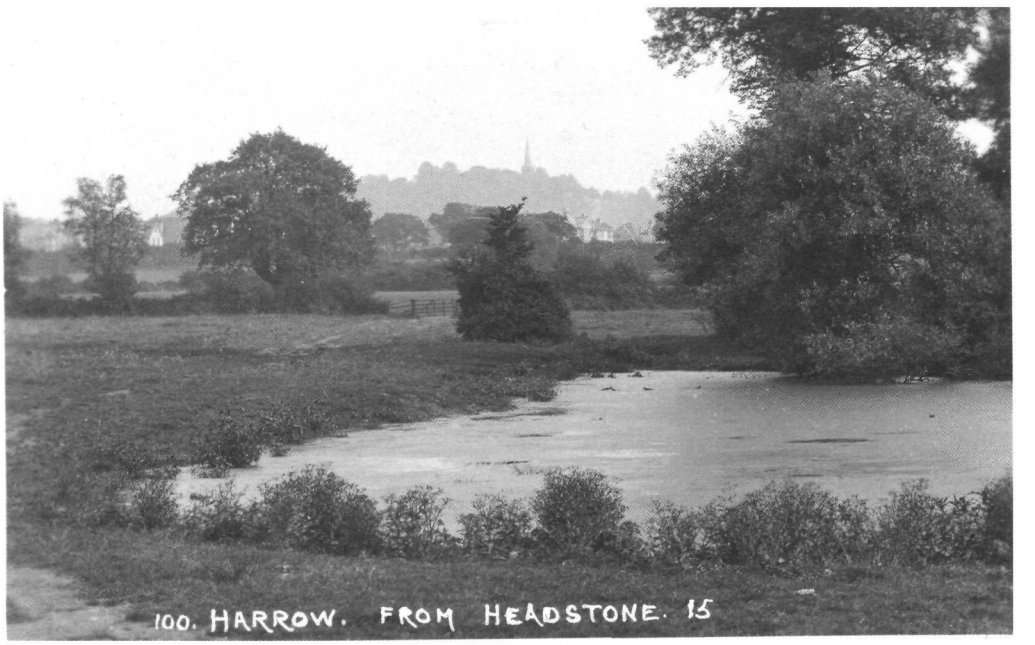


Fig 12. Harrow from the fields between Pinner and Wealdstone in about 1910–20

'Parish of enormous hayfields, Perivale stood all alone...'

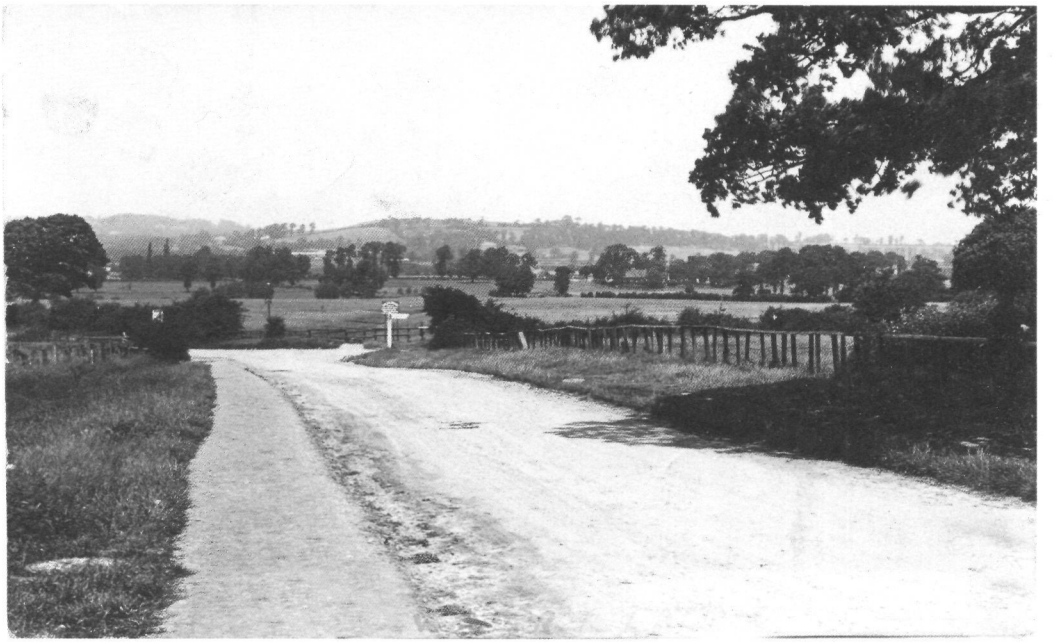


Fig 13. Perivale seen from the direction of Ealing, 1904

[but there were hayfields throughout Middlesex, to meet London's insatiable demand for horse fodder before the motor-card became dominant]

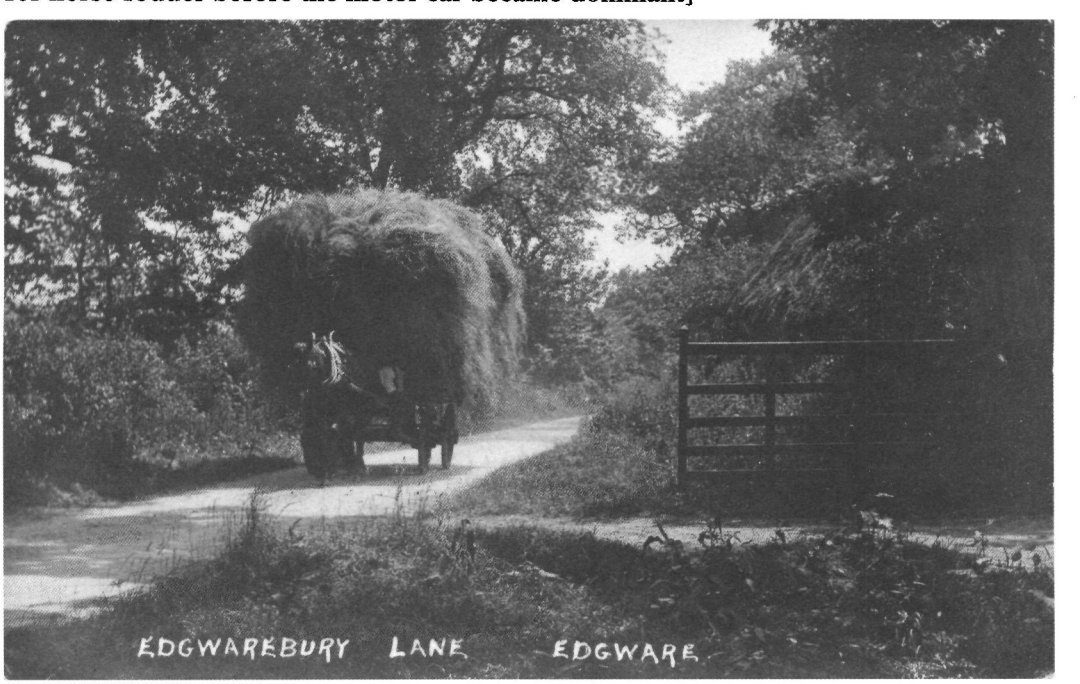


Fig 14. In Edgware: a view in Edgwarebury Lane, c.1910

Fig 15. In Cricklewood: rustic Oxgate Lane, now an industrial estate near Willesden Green, c.1910

Fig 16. Haystacks somewhere in the Pinner area, 1906

Fig 17. Woodhouse Lane, New Southgate, 1910

Fig 18. Even on Hampstead Heath: haymaking for the Earl of Mansfield in 1891 in Kenwood Fields, which became part of the Heath only in 1923. The spot was but a few hundred yards from Betjeman's childhood home at 31 Highgate West Hill

'...and from Greenford scent of mayfields most delightfully was blown...'

Fig 19. Footpath from Horsenden Hill to Greenford, 1911

'...over market gardens tidy...'

Fig 20. Ferguson's sweet peas, Northolt, 1911

'taverns for the bona fide...'

Fig 21. The Plough, Norwood Green, 1924

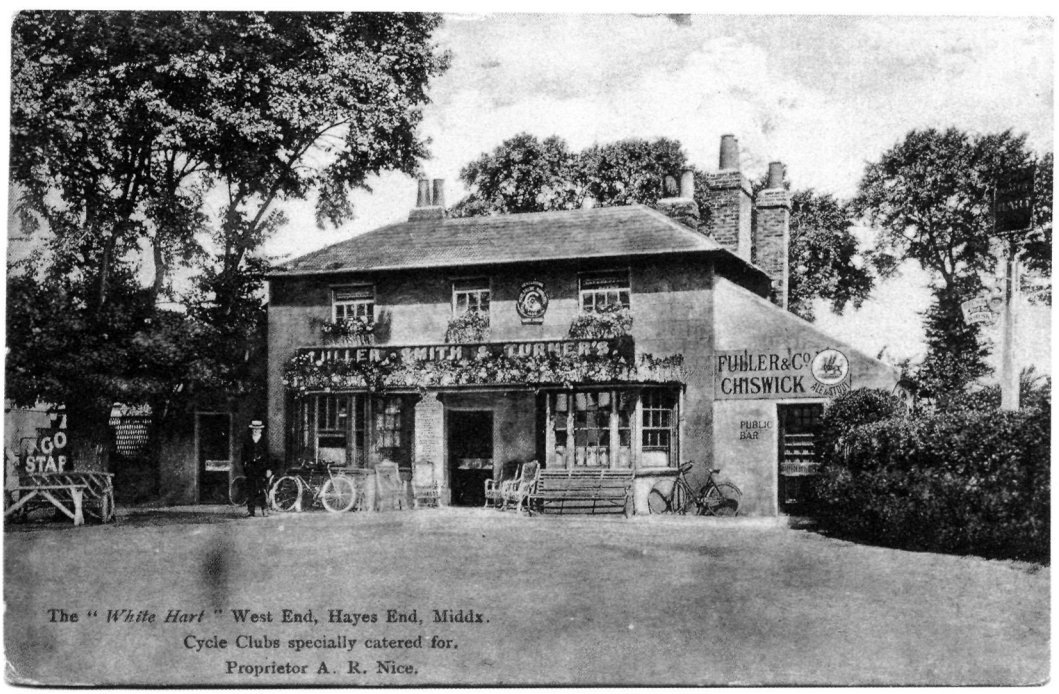


Fig 22. The White Hart, Hayes End, 1908

Fig 23. The Old Welsh Harp, Hendon, 1906

Fig 24. The White Swan, Golders Green, 1909

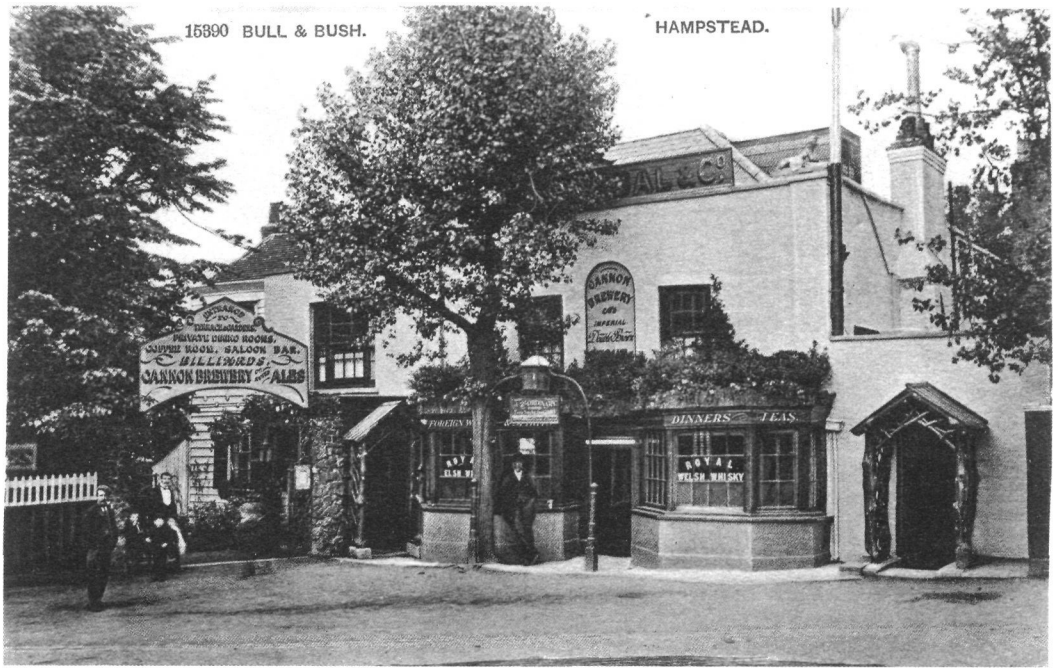


Fig 25. 'Down at the Old Bull and Bush': in 1903, 'Arry and 'Arriet were beating a path to its doors: but it was still a country pub

Fig 26. The Old King of Prussia, East Finchley Village, 1904

'...Cockney fishers'

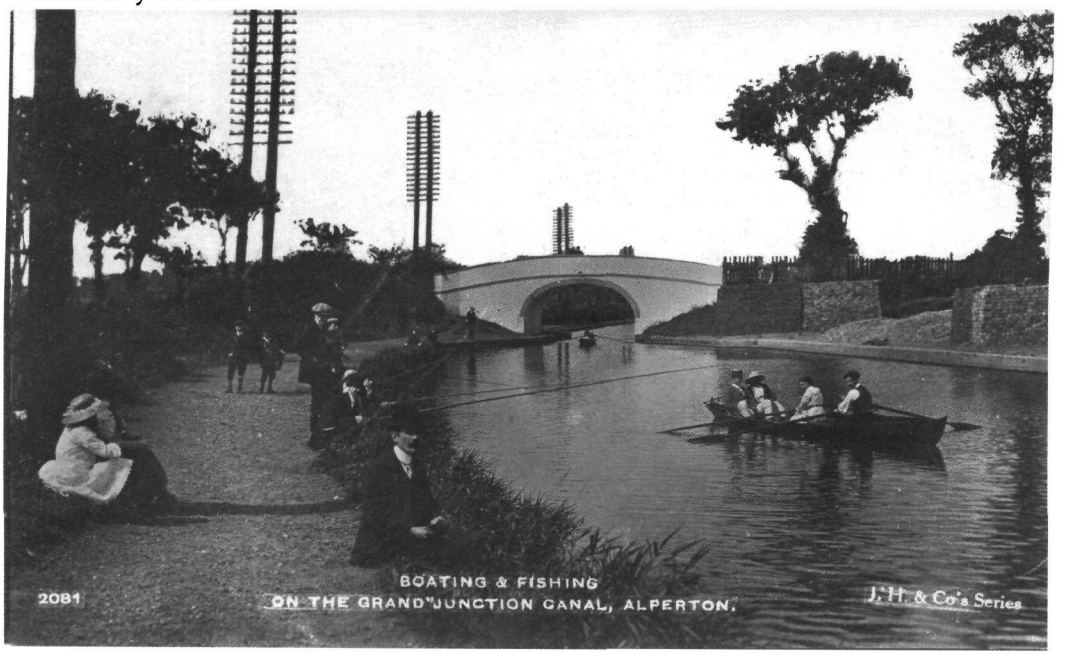


Fig 27. Fishing on the Grand Junction Canal, Alperton, 1920

'... Cockney Shooters'

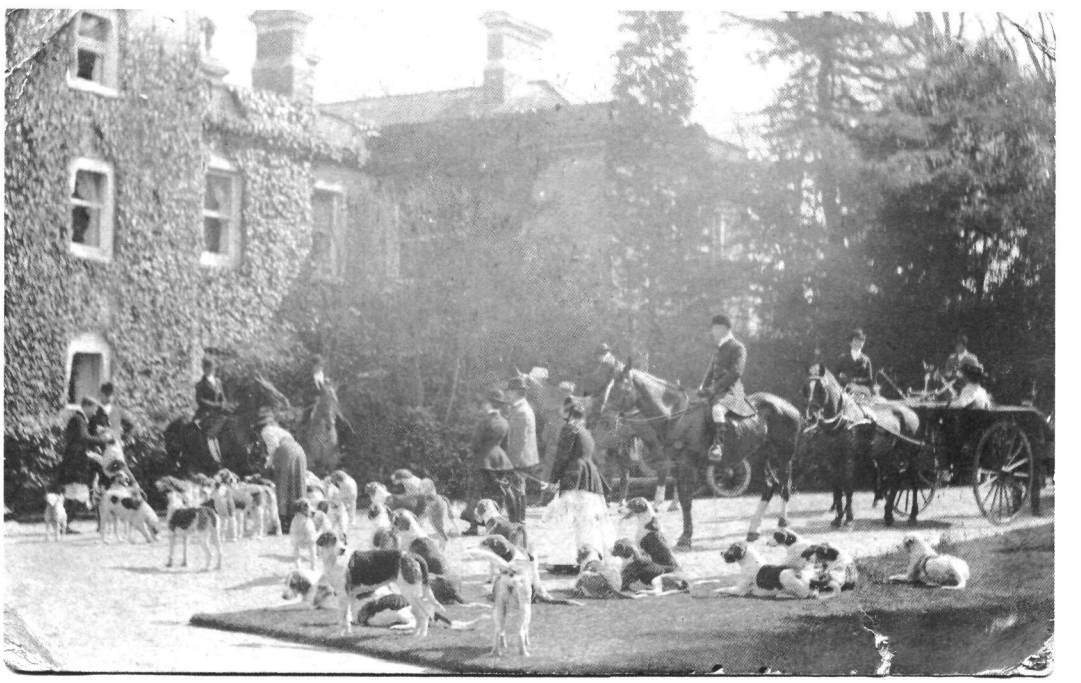


Fig 28. No pictures of cockney shooters — but one of a hunt about to set off from Harefield in 1908

'Our Lost Elysium': rural Middlesex, not so long ago

Fig 29. Greyhound Hill, Hendon, c.1910

Fig 30. Totteridge Fields, North Finchley, 1907. Thanks to far-sighted pre-War local planning policies, the view today is, miraculously, almost unchanged

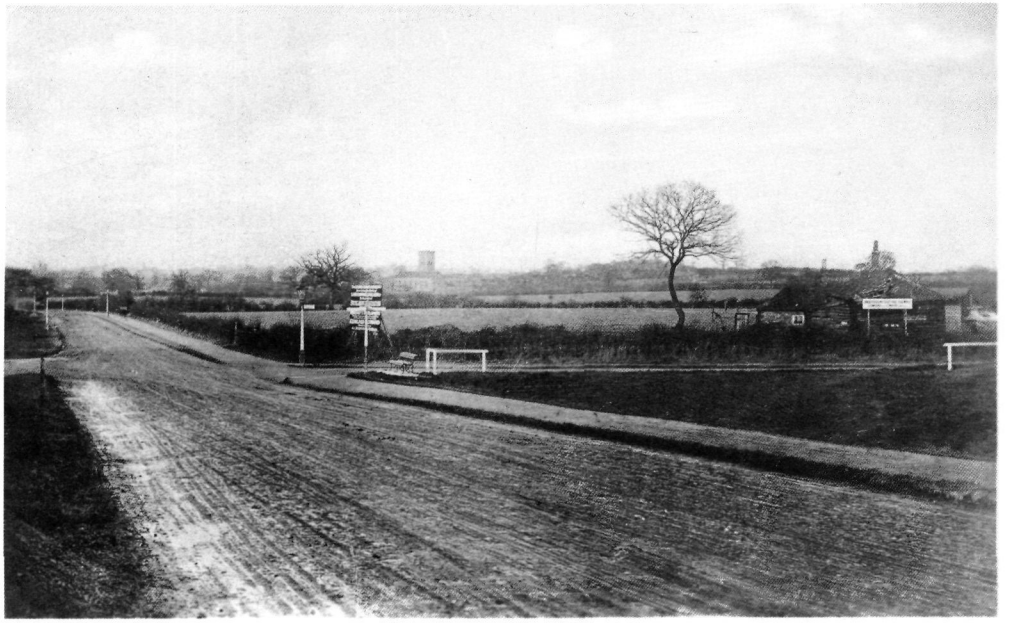


Fig 31. The Finchley Road crossroads at Golders Green, 1904, looking north; the building of Hampstead Garden Suburb is just starting in the distance. A well-known view, which nevertheless forcibly reminds us how rural was the area now covered by London's inner suburbs until relatively recently. The Estate Agent's board at the crossroads signals that the development of Golders Green is imminent

Fig 32. East Finchley from Highgate, 1913; probably looking across the farmland now occupied by Aylmer Road

Fig 33. Neasden, 1909. A view in such contrast to what might today be a candidate for London's dreariest suburb that we could doubt the accuracy of the identification, were it not for the signpost pointing to Kingsbury and Hendon

Fig 34. Dollis Hill Lane, Cricklewood, 1904. Another view so in contrast to its appearance today that one's first reaction might be incredulity

Fig 35. Blackpot Hill, Kingsbury, c.1905

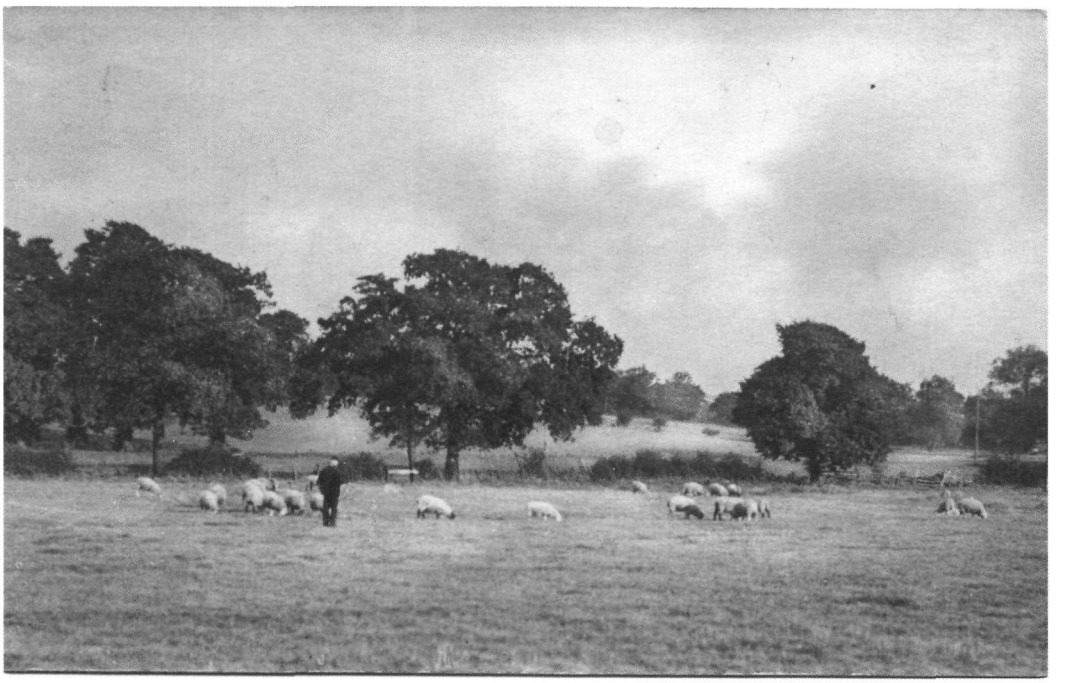


Fig 36. 'This picture was taken from the end of our garden We... would not like to go back to London'. Thus writes a resident of Wembley Hill in 1911

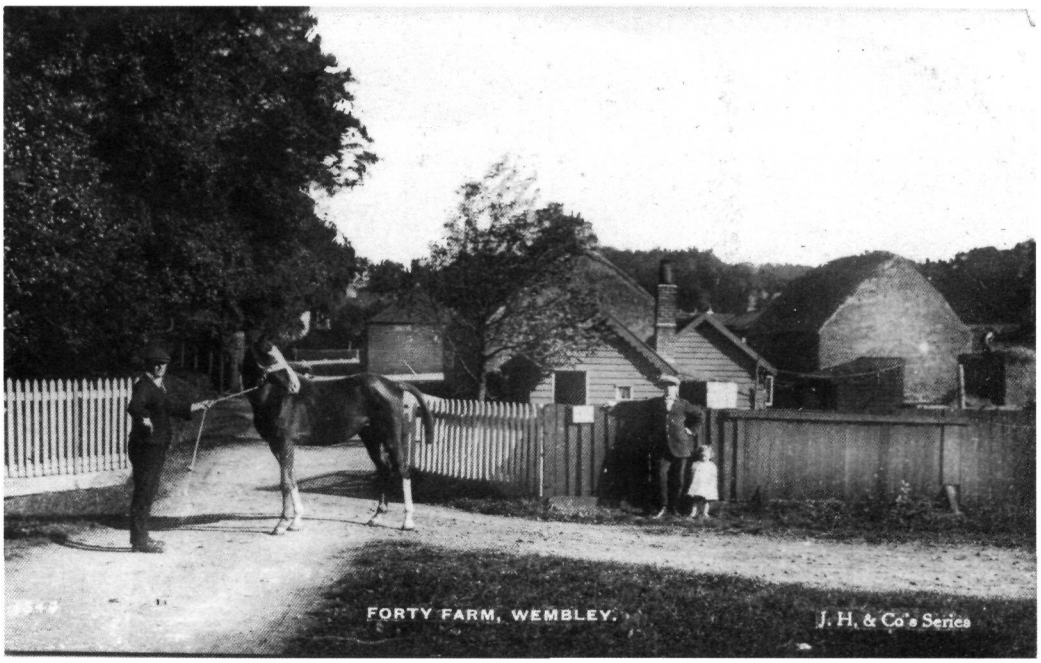


Fig 37. Forty Farm, Wembley, 1922

Fig 38. Bryant's Farm, Harlesden, 1928

Fig 39. Windsor Dairy, Willesden, c.1910

Fig 40. The village smithy, Eastcote, c.1920. The tattered Daily Mail poster on the door advertises a Treasure Hunt at Robart's Field, Northwood on Whit Monday

Fig 41 Powys Lane, Palmers Green, 1906. In the background is a farm with haystacks. The sign warns cyclists against using the footbridge

Fig 42. Osidge Lane and East Barnet Road, from New Southgate, still 'truly rural' in the 1920s

Fig 43. The Old Smithy, Southgate, 1910. The sign advertising William J Cain, Gas and Hot Water Engineer, Locksmith, Bell Hanger and Farrier, visible in photos only five years earlier, has been erased by the photographer

Fig 44. Footpath to Sudbury Hill Station from Horsenden Hill, 1915

Elysium Lost...

Fig 45. 'The King and Queen passing Ravenor Park Estate', Greenford, c.1910 — clearly not tempted to stop, even by the offer of freehold plots for only £5 down

Fig 46. 'Cross Roads, Western Avenue, Perivale', 1937

Fig 47. New housing in Southgate, 1913: 'London Going out of Town; Or, the March of Bricks and Mortar' on a scale dwarfing the growth caricatured by George Cruikshank in 1829

Fig 48. New houses in Ruislip, 1909 — and no surviving hedges! Perhaps Elaine and her family lived in this very house?

Fig 49. New houses going up somewhere in Wembley, 1920s

Fig 50. The destruction of rural Middlesex illustrated in graphic detail: proposed layout of the Lyon Farm and Preston Manor Estates, Kenton, 1935

FURTHER PREHISTORIC FINDS FROM GREATER LONDON

Jonathan Cotton and Adrian Green

With a contribution from Bill White

SUMMARY

This paper rounds up a further selection of prehistoric finds from Greater London which have been reported to the Museum of London. 30 of the 42 objects or groups of objects were recovered from the modern foreshores of the Thames or areas adjacent (with a clear majority from the Surrey bank). Many remain in private possession. Notable finds include two antler-beam mattocks (Nos 12–13) from Mortlake, a Neolithic ground axe of 'near-jadeite' (No. 14) from Enfield, a possibly later Neolithic or Early Bronze Age serrated barbed and tanged bone point (No. 25) from Chamber's Wharf, Bermondsey, and an Early Iron Age iron dagger in a composite wooden sheath (No. 34) from the same locality. In addition, the opportunity has been taken to bring together a number of antiquarian finds, some of which — like the group of Mesolithic flint adzes (No. 11) recovered during river dredging and the two Neolithic ground axes (Nos 16–17), one from King's Cross and the other probably from the Thames at Chelsea — hark back to the early days of archaeological endeavour in the capital. A concluding discussion places these finds within their regional context and draws attention to the importance of the Portable Antiquities Scheme for the capital.

INTRODUCTION

This is the third in an occasional series of contributions designed to round up stray prehistoric finds from Greater London reported to the Museum of London. As before, the majority of the finds dealt with were recovered from the foreshores of the Thames and areas adjacent (Fig 1). Unless otherwise stated, they remain in private hands.

Unlike the two previous roundups (Cotton & Merriman 1991; Cotton & Wood 1996), the present one also incorporates items from historic collections of finds which, for one reason or another, have only recently resurfaced. Otherwise the same chronological arrangement as before is followed. The paper concludes with a brief consideration of the importance of these stray finds for the region's prehistory.

PALAEOLITHIC

1. Fragmentary pointed flint biface (Fig 2) found in the garden of 94 Fairholme Crescent, Hayes, Middlesex and reported by the owner, Ron Vickers, in 1997. Fairholme Crescent is centred on TQ 100 824 and overlooks the Yeading Brook, a tributary of the River Crane.

   The implement measures 94mm in length and weighs 86.12g. It forms part of a pointed biface worked on a small river cobble. It is in rolled condition and lightly olive-stained. Although the findspot appears to lie on London Clay, it is likely that the piece derives from one or other of the various gravel deposits in the locality: the nearest comprise the Boyn Hill terrace to the west, and the Lynch Hill terrace to the south.
2. Small pointed flint biface (Fig 2) from the 'Boyn Hill terrace, West Drayton'. Together with No. 3 below, this formed part of a teaching collection donated to the Museum of London by Queen Mary and Westfield College, University of London in 2002 (MoL 2002.58).

   The implement measures 75mm in length and weighs 138.6g. It is heavily worn and of

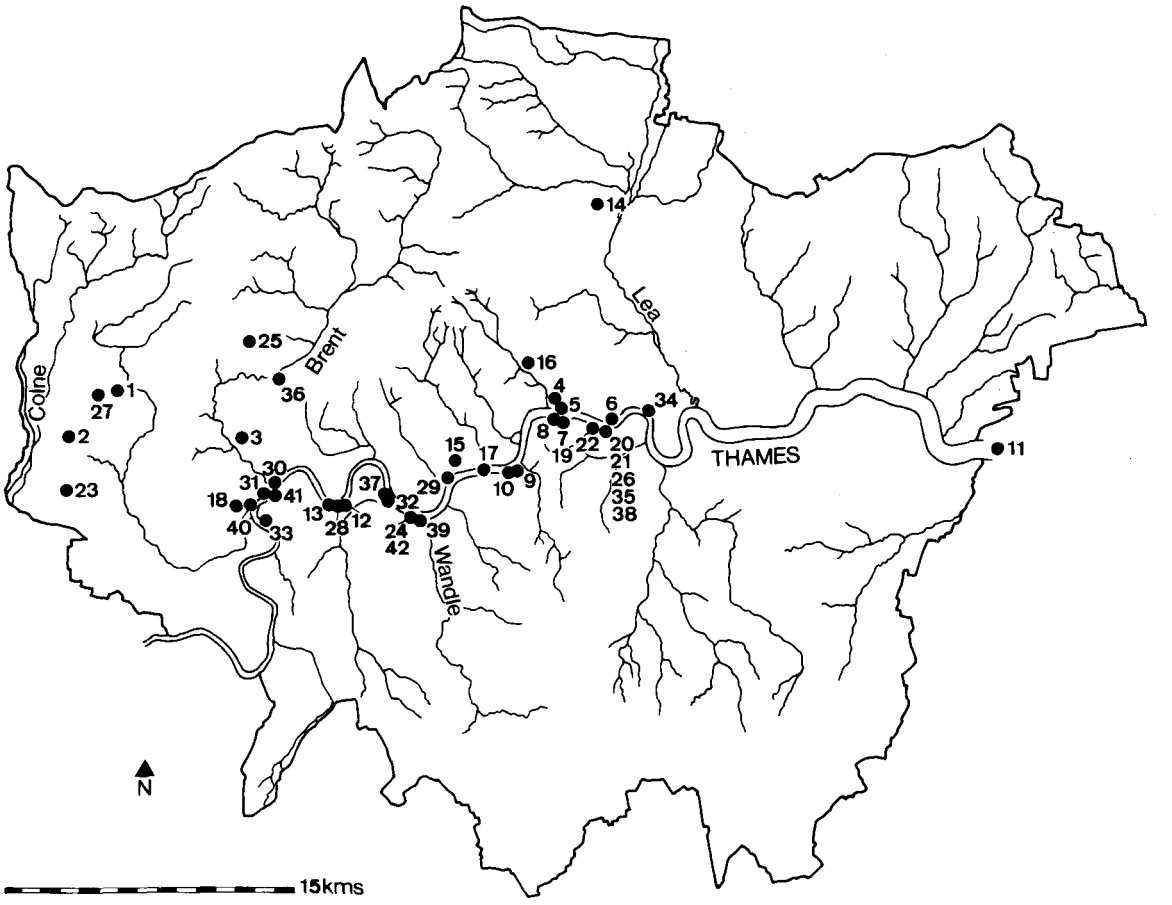


Fig 1. Location map

grey flint. Large numbers of bifaces have been recorded from the area of West Drayton and Yiewsley.

3. Small pointed biface (Fig 2) from 'Taplow Terrace, Hanwell, Middlesex'. As No. 2 above, this formed part of a teaching collection donated to the Museum of London by Queen Mary and Westfield College, University of London in 2002 (MoL 2002.58).

   The implement measures 96mm in length and weighs 201.42g. It is worn and stained a dark ochreous brown. There were a number of gravel pits in this area, including Seward's Pit in Boston Road, where the River Brent cut through a sequence of former Thames terrace gravels (Gibbard 1985, 37).

Discussion

These first three pieces were all recovered from the terrace gravels in west London, an area well known for its Palaeolithic finds (*eg* Wymer 1968; Collins 1978). Moreover, the two pieces from Queen Mary and Westfield College formed part of a teaching collection, a majority of whose pieces originated from Milton Street (Barnfield Pit), Swanscombe and were collected by James Cross prior to 1908. Other pieces include a further small pointed biface from '?Southall', and several Mesolithic adzes from the Thames at or near Windsor formerly in the L V Venables Collection.

4. Pointed flint biface (Fig 3) donated to the Museum of London (MoL 98.5) by Mr Wright in 1997. Reportedly found prior to the Second World War by his father, a plumber by trade, 'during the digging of foundations close to St Paul's Cathedral' (possibly those belonging to Faraday House on its south side?).

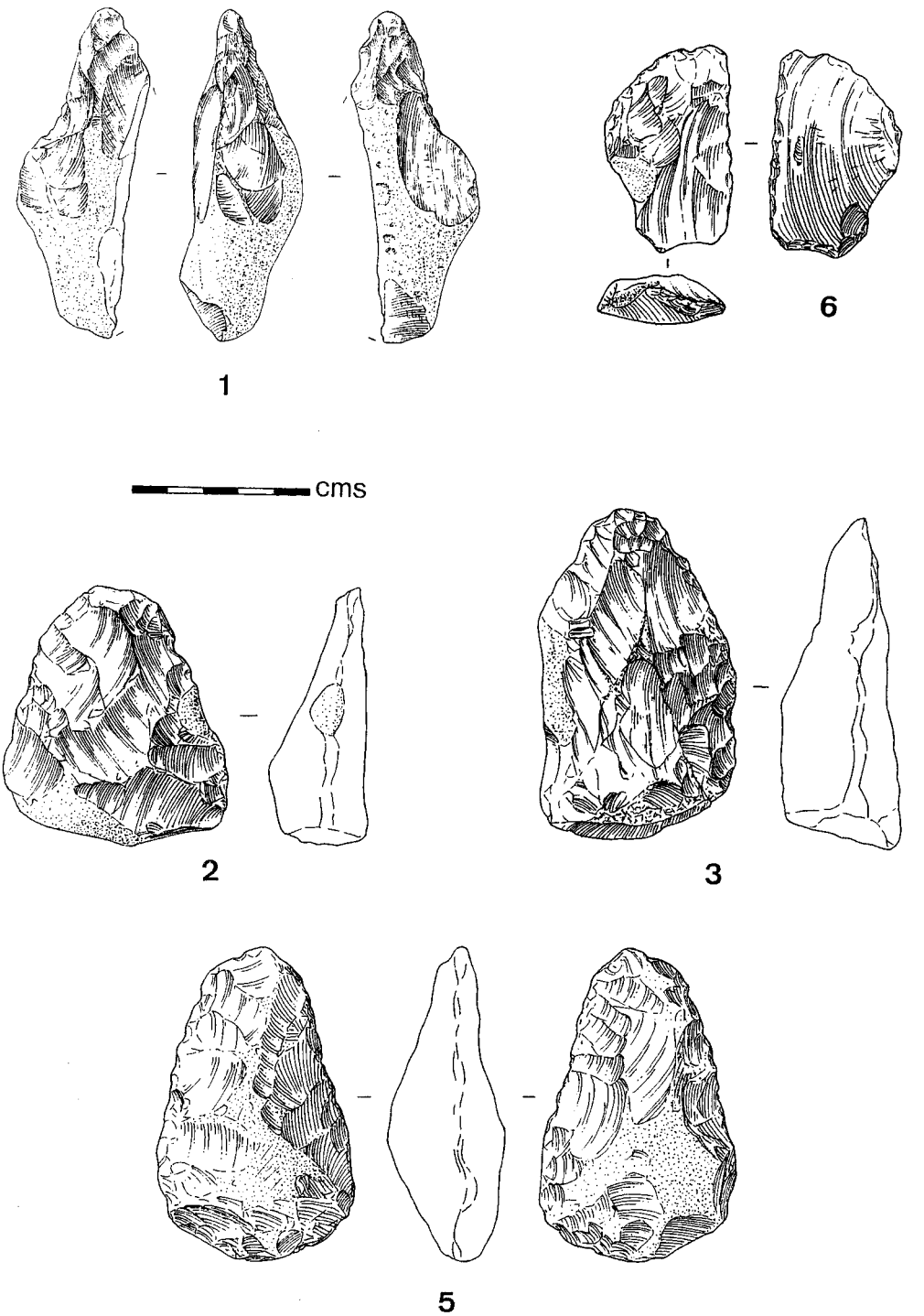


Fig 2. Palaeolithic flint artefacts (Nos 1–3, 5 & 6). Scale 1:2

Fig 3. Palaeolithic flint biface (No. 4) from the area of St Paul's, City (Photo: John Chase, Museum of London)

The implement measures 170mm in length and weighs 570.8g. It is fashioned on a nodule of mottled dark grey cherty flint. An expanse of worn dark cortex has been retained at the butt, extending up one face. The butt gives the impression of having been used as a hammerstone, which has resulted in localised crushing and bruising of the surfaces. These have also been affected by fire, and this has produced some localised spalling and crazing. Otherwise the piece is in a relatively fresh, unrolled condition, unlike many of the other Palaeolithic finds from the area of the City, which are heavily rolled and stained.

5. Small pointed flint biface (Fig 2) found by Anita Freeman on the Middlesex foreshore of the Thames at Bull Wharf, City, and reported in May 2000. The findspot lay on the surface of the foreshore some 15m south of the river wall, and at a point 30m west of Queenhythe in front of the Samuel Pepys Public House (TQ 3223 8075).

The implement measures 89mm in length, 54mm in breadth, is 31mm thick and weighs 158.48g. It has been radially and invasively flaked across both faces; all high points and lateral edges are heavily worn and rolled. The 'dorsal' face (left) has light olive-brown ochreous staining; the flatter 'ventral' face (right) appears to retain a patch of heavily worn cortex, and has been stained a dark brown/black.

Discussion

These two pieces can be added to other Palaeolithic finds recovered from the area of the City (*eg* Wymer 1968, 287–8). It is clear from their reported provenances that neither piece was recovered from an *in situ* context (*eg* Holder & Jamieson 2003, illus 5). The condition of the Bull Wharf piece suggests that it was either eroded from a higher gravel terrace or imported with other material to make up a barge bed. Either way it can be added to a number of heavily rolled pieces recovered from the Thames foreshores (*eg* No. 6 below). The St Paul's biface is in somewhat fresher condition and it is possible that it was brought into the area in Roman or later times, either accidentally or — perhaps more likely — as a curio. Palaeolithic artefacts have, for example, been recovered on Roman cult sites both in France and in Britain (Merrifield 1987, 16; Turner & Wymer 1987).

6. Small rolled flake (Fig 2) found in spring 2004 by Richard Read on the Middlesex foreshore of the Thames near the River Police Station at Wapping (*c.*TQ 3485 8000).

The flake comprises a small squat blank measuring 35mm in length, 60mm in breadth, 13mm thick, and weighing 29.67g. It is rolled and stained a light olive-brown. There is a small patch of cortex surviving on its dorsal face.

The findspot lies just upstream of Execution Dock, from whence came a small Palaeolithic flake struck from a prepared core published in an earlier roundup (Cotton & Wood 1996, 2, fig 2 no. 4).

MESOLITHIC

7. Mesolithic flint tranchet adze (Fig 4) found in March 1995 by Richard Hill on the Surrey foreshore of the Thames at St Mary Overie Dock, Southwark (TQ 3262 8044). It lay close to low water slightly upstream of the mouth of the dock and *c.*20m from another adze reported previously (Cotton & Merriman 1991, 38–9, fig 6 no. 7).

The implement measures 147mm in length, 47mm in breadth, is 30mm thick, and weighs 267.05g. It is made of lightly peat-stained cherty grey-brown gravel flint, with a tranchet removal at the blade on one face, and a large expanse of smooth cortex at the butt. It is in very fresh, sharp condition.

As noted above another, somewhat larger, adze was recovered ten years earlier by the same finder towards the back of the foreshore at this same general location; he suggested that this piece may have been disturbed during dock construction. Part of a third adze has since been found 100m further upstream by Fiona Haughey (see No. 8 below).

8. Incomplete Mesolithic flint tranchet adze (Fig 4) found during spring 1998 by Fiona Haughey on the Surrey foreshore of the Thames at Winchester Wharf, Southwark (TQ 3252 8045). The implement lay close to the base of a gravel deposit over peat and about three quarters of the way down the foreshore on a low tide.

The implement measures 135mm in length, 50mm in breadth, is 35mm thick, and weighs 279.80g. It is made of cherty mottled grey flint with light orange-brown surface staining. There are patches of smooth cortex surviving on one face. The butt is missing and the blade has been re-sharpened with a tranchet blow. It is in fresh condition.

Discussion

These two adzes (and the third piece from St Mary Overie reported previously) can be added to the growing evidence for Mesolithic activity noted in this area since Lacaille's (1966) pioneering survey. Although adze-sharpening flakes have been recovered from various locations away from the river here (*eg* Sidell *et al* 2002, 70–1, table 4), there are no complete adzes. These appear to be restricted to the modern river and its foreshore and may even hint at deliberate deposition, an explanation more usually invoked with regard to Neolithic and later material.

9. Mesolithic flint tranchet adze (Fig 4) found in March 2004 by Richard Read on the Surrey foreshore of the Thames at Nine Elms, Vauxhall (TQ 3000 7794). The adze was found at low water on a 0.1m tide and lay some 10–15m upstream of the Bronze Age wooden 'bridge' or 'jetty' recorded previously (*eg* Sidell *et al* 2002, 29–30).

The implement measures 118mm in length, 45mm in breadth, is 25mm thick, and weighs 182.70g. It comprises a small slender adze of cherty flint stained a glossy black, with a resharpened, tranchet, cutting edge; a large thinning flake has also been removed from one edge on the flatter 'ventral' face (right). To judge from surface encrustation, the 'dorsal' face (left) had been lying uppermost on the foreshore.

10. Mesolithic opposed-platform bladelet core (Fig 4) found at low water by Richard Read on the Surrey foreshore of the Thames at Nine Elms, Vauxhall, a few metres further upstream from, and subsequent to, No. 9 above (TQ 2896 7794).

The core measures 77mm in overall length, 50mm in breadth, is 28mm thick, and weighs 110.22g. A minimum of eight main bladelet scars are visible on the core, a majority of which were detached from a single carefully prepared platform. The core is of mottled dark grey river cobble flint and the unillustrated face retains expanses of smooth cortex and thermally-altered surfaces.

Discussion

A number of such bladelet cores have been

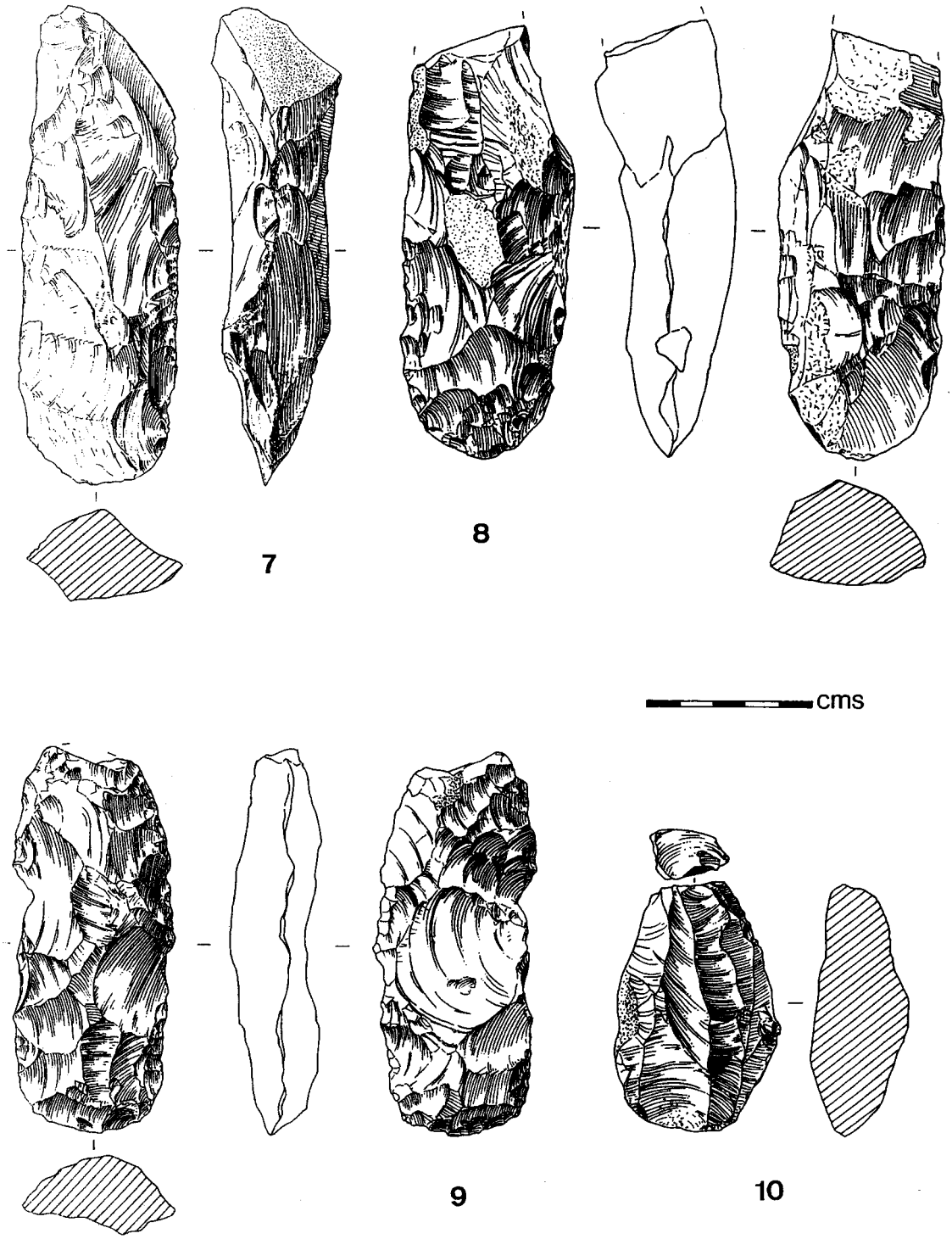


Fig 4. Mesolithic flint adzes (Nos 7–9) and opposed-platform core (No. 10). Scale 1:2

recovered from this reach during recent work associated with the Bronze Age 'bridge' or 'jetty' immediately downstream (*eg* Cotton & Wood 1996, 5, fig 3 no. 8). These two latest pieces from Vauxhall can be added to a growing body of lithic material recovered from this stretch of the foreshore, much of which appears to be of Mesolithic character. It seems likely that the flintwork was originally strewn across a series of low sandy eminences overlooking the Effra/Thames confluence.

11. A group of Mesolithic flint adzes and a single Neolithic flaked axe have recently come to light in the collection of the Croydon Natural History and Scientific Society (CNHSS). These formed part of the collection belonging to Walter Hellyer Bennett (1892–1971), having been purchased by him at the sale of the Corner Collection in 1948.

Frank Corner, son of the well known antiquarian George Corner, was a medical doctor and a collector with eclectic tastes. He lived in the Manor House, Poplar, and was a major early benefactor of the London Museum (Sheppard 1991, 50, 57). Following his death, the residue of his large collection of local prehistoric flintwork and other artefacts, together with the original manuscript copy of the collection catalogue, was sold off in 180 separate Lots by Puttick & Simpson Ltd at their galleries in 22 Dering Street, New Bond Street, W1 in April 1948. Three of the Sale Lots of flint artefacts were purchased by Bennett, whose large and equally eclectic collection was left to the CNHSS on his death in 1971.

The artefacts bought by Bennett comprise Lots 4, 19, and 53 in the Corner Sale Catalogue. Lot 4 is described as 'A fine collection of large [Palaeolithic] tools from Protheroe's Nursery, Bent's Farm, etc (12)' in east London. Lot 53 is described as 'Another collection [of Palaeolithic tools and other specimens], from Milton Pit, Swanscombe (60)' in Kent. Lot 19 is described as 'A similar lot [of Mesolithic Thames picks], mostly dredged (21)', and it is this latter Lot that concerns us here.

The following table lists all 21 Mesolithic pieces contained in Lot 19, with the addition of a single flaked Neolithic flint axe (B512) which, while not apparently included within the original Sale Lot, probably also formed part of the Corner Collection. One piece, B404, is now missing. The surviving pieces are variously marked in pencil, black ink, and white block lettering. All have the CNHSS accession numbers marked in white ink; five have original numbers (?Corner) marked in black ink.

Table 1. Contents of Lot 19 from the Corner Collection Sale, Monday 5 April 1948

CNHSS Acc no.	Description	Provenance as marked	Original no. (black ink)
B400	Flint adze	Thames dredged Northfleet	-
B401	Flint tranchet adze	Thames at Richmond	-
B402	Flint tranchet adze	Blakehall Road Wanstead	-
B403	Flint adze	Thames Long Reach	2972
B404*	Flint adze	Thames Long Reach	-
B405	Flint tranchet adze	No provenance surviving	-
B407	Flint tranchet adze	Thames dredged Long Reach Oct 96	-
B408	Flint adze	Thames dredged Long Reach May 94	-
B409	Flint tranchet adze	Thames dredged Broadness with Bronze	-
B410	Flint tranchet adze	Thames Alluvium below peat Becton Gas Works Oct 93	-
B411	Flint tranchet adze	Thames dredged Erith Oct 90	5
B412	Flint pick	Thames Reading	-
B413	Flint adze	Footings for new iron bridge Poplar	2025
B414	Flint tranchet adze	No provenance surviving	543
B415	Flint tranchet adze	Thames dredged Long Reach Ap 99	-
B416	Flint adze	Thames dredged Broadness with Bronze Hord (*sic*)	-
B417	Flint tranchet adze	Thames dredged Long Reach	-
B418	Flint pick	Thames dredged Putney	-
B419	Flint pick	Thames dredged Hammersmith May 07	-
B499	Flint tranchet adze	Thames Battersea	-
B500	Flint tranchet adze	Clements Reach 12.7.08	-
B512	Flint flaked axe	Thames dredged Hammersmith 97	2435

(*Missing)

Discussion

In terms of provenance, a number of the artefacts come from the Thames downstream of the City, particularly Long Reach. (To judge from the Sale Catalogue the latter locality seems to have been very well represented within the Corner Collection.) One example (B410), from Beckton Gas Works, appears to have been stratified within Thames alluvium sealed by peat. Others come from locations further upstream at Richmond, Hammersmith, Putney, and Battersea, all areas known to have produced similar finds in the past (*eg* Field 1989, fig 7; appendix II).

Though not local finds, two pieces (B409 and B416), from Broadness, Kent, are of particular interest as having been found at the same time as the hoard of bronze spearheads dredged from the Thames in 1892. This large Late Bronze Age 'Broadward' hoard passed into three separate collections: those belonging to Canon William Greenwell (now in the British Museum), William Lloyd junior, and Frank Corner (both now in the Museum of London). In his original publication of the spearheads R A Smith (1910, 161) noted the presence of 'neolithic (*sic*) flints, which numbered several hundreds and comprised flakes as well as finished implements' brought up from a lower level to that of the spearheads. The two Mesolithic adzes now in the CNHSS collection appear to be the first of these flints to have been positively identified.

Two other Lots from the Corner Sale (Nos 27 and 151) were purchased by the London Museum, and are now in the collections of the Museum of London. Lot 27 comprised a group of 16 'polished celts' from various London localities, while Lot 151 comprised a series of finds from Baker's Hole in Kent, including a human skull and a collection of Palaeolithic (Levallois) cores and flakes. Finally, part of another Corner Sale Lot surfaced briefly in the trade following its discovery in Birkenhead School on the Wirral in 1994 (Cotton 1997). This comprised a group of 15 Palaeolithic artefacts from various localities in east London, but it has since been split up and sold on by its purchaser (Bonhams of Knightsbridge, Sale of Antiquities, Tuesday 7 October 1997, Lot 17). The rediscovery of the original Corner manuscript catalogue would no doubt allow further similar purchases to be identified in other public and private collections.

12. Red deer antler-beam mattock (Fig 5) found in October 2004 by Peter Bryan one third of the way down the Surrey foreshore of the Thames and 'two hundred metres or so downstream

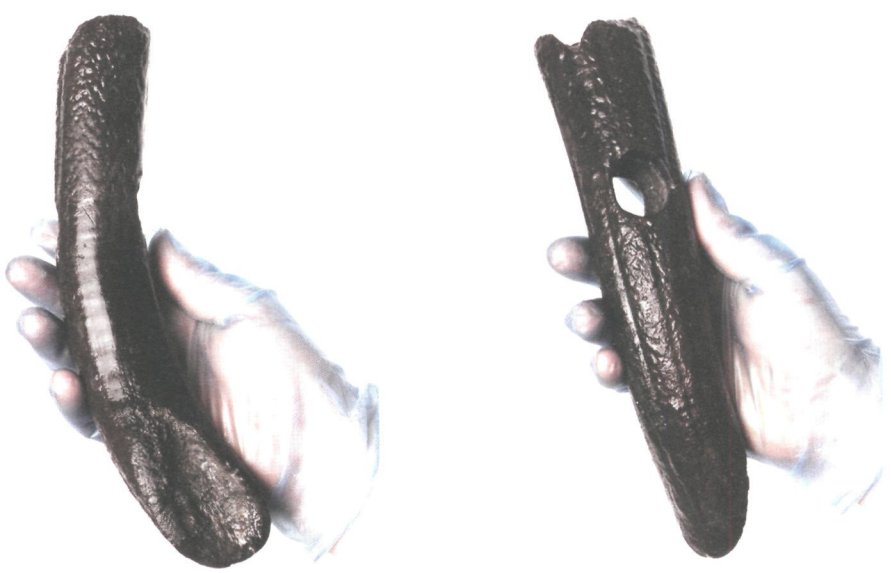


Fig 5. Antler mattock (No. 12) (Photo: Richard Stroud, Museum of London)

from the Ship Inn' at Mortlake (TQ 2075 7610). The piece was initially thought to comprise a natural unworked antler until closer inspection by the finder revealed the presence of the chamfered cutting edge. The piece has now been acquired by the Museum of London (2004.170/1). (The same finder also recovered part of another perforated antler mattock a little further downstream on the same reach some three years prior to the present piece at *c.*TQ 213 762. This had been allowed to 'air dry', and had cracked and split apart as a result.)

The mattock measures 244mm in length and has an oval shaft (or 'beam') 48mm by 38mm in circumference; it weighs 440.97g in its wet state. An oval perforation 28mm by 24mm has been neatly drilled through the beam. The short 'blade' of the mattock has been created with a single angled axe strike. The piece is in fresh condition, though the surface lying uppermost on the foreshore appears to have suffered some wear and tear, which has resulted in the production of a series of striae seemingly unrelated to the object's manufacture and use.

13. Red deer antler-beam mattock (Fig 6) found in the late 1970s by Frank Berry on the Surrey foreshore of the Thames about '100 yards upstream from the Ship Inn' at Mortlake (TQ 2037 7616). The finder noted that the antler was picked up on an abnormally low tide which had 'uncovered parts of the river bed not usually seen'. It has since been donated to the Museum of London (MoL 2004.167) by its finder.

The mattock measures 235mm in length and has an oval shaft (or 'beam') 47mm by 35mm in circumference; it weighs 242.26g. An oval perforation *c.*21mm by 17mm has been drilled through the beam in broadly the same plane as the tines. This had clearly replaced an earlier failed perforation some 36mm further along the beam; the implement was, therefore, originally much longer. The 'blade' of the mattock appears to have been created with a single angled axe strike, though the worn condition of the surface in this area makes its original extent difficult to determine with precision. Wear aside, the piece is in reasonably good shape, with some traces of cracking around the perforations and slight surface loss towards the cutting edge.

Discussion

Antler-beam mattocks Nos 12 and 13 fall within Smith's (1989, 278) 'unbalanced or laterally perforated' Type D, a majority of which have been recovered from the Thames. Smith regarded the antler-beam Types C and D as typologically later than his antler-base Types A and B, a view borne out by a subsequent programme of radiocarbon dating (*eg* Bonsall & Smith 1989) which produced dates spanning the Mesolithic and Early Neolithic. Further dates, however, for example on an antler-beam mattock from a silted channel/ditch feature at Beddington, Surrey (Adkins *et al* 1987, 349; Isca Howell pers comm), would appear to extend the manufacture and use of such objects down into the earlier Bronze Age.

The function of these pieces has also been much discussed, with the general consensus on this side of the Channel being that they were probably used for digging rather than woodworking or flenching (Smith 1989, 282). However, experiments conducted at Lejre, Denmark, have demonstrated the efficiency of such tools when hafted and used as axes to split and trim wood (Jensen 1991; Damian Goodburn pers comm), so their function is perhaps best left open.

The two (possibly three) beam mattocks from Mortlake noted here can be added to the single antler-base mattock and three antler-beam mattocks already known from this wide southerly loop of the Thames (*eg* Lawrence 1929, 82–4; Lacaille 1966, 16–17, fig 3 no. 5; Smith 1989, 274). These form part of a concentration of over fifty such finds from the west London Thames which is unparalleled anywhere else in the country. Other recent mattock finds from the London area include a single example retrieved from the Middlesex foreshore of the Thames at Richmond Bridge as part of the Thames Archaeological Survey (Cowie & Eastmond 1997, 120), together with the radiocarbon-dated example from Beddington, Surrey, mentioned above, found during the excavation of a Roman villa and bath house (Adkins *et al* 1987, 349; Isca Howell pers comm).

NEOLITHIC

14. Neolithic ground stone axe (Fig 6) found in 1985 by a British Telecom employee during cable-laying operations in Pretoria Road, Enfield N18. The axe was reported to have been lying in the top of the brickearth at a

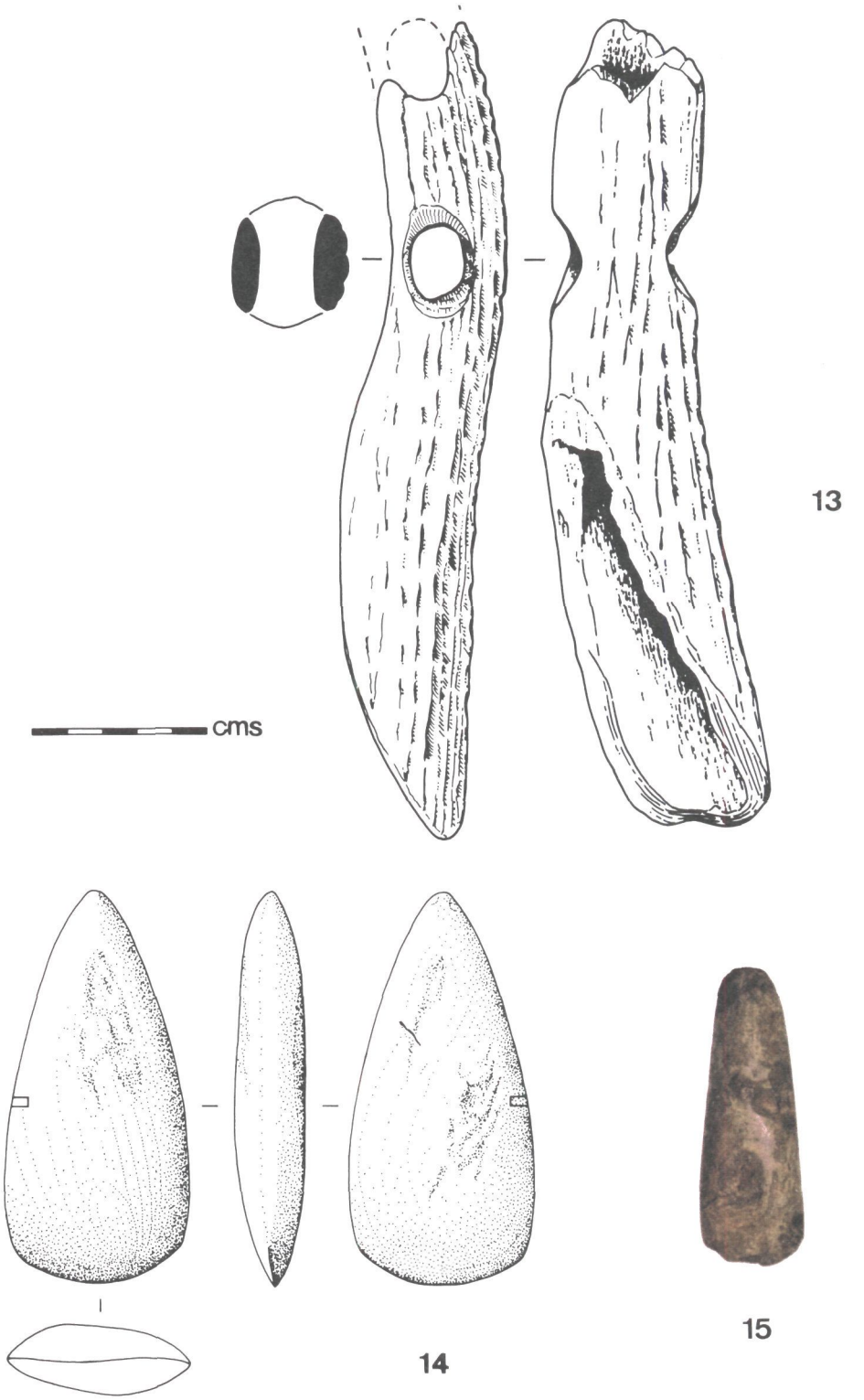


Fig 6. Antler mattock (No. 13) and Neolithic stone (No. 14) and flint (No. 15) axes. Scale 1:2 (Nos 13–14) and 1:4 (No. 15)

depth of 2ft 6in (0.75m) during the digging of a new trench in previously undisturbed ground (Les Whitmore pers comm). Pretoria Road runs north–south between TQ 338 922 and TQ 337 913; the findspot is situated between the 10m and 20m contours to the south of the Pymme's Brook. The latter flows into the River Lea 1.5km to the east. The axe is currently in the possession of Forty Hall Museum.

The implement measures 113mm in length, 53mm in breadth, is 19mm thick, and weighs 182.53g. It comprises an axe worked on a small nodule of banded, fine-grained grey-green rock characterised as 'near jadeite' following thin-sectioning at the Natural History Museum (Valerie Jones pers comm). One face (left) has a smooth glassy surface, with the remains of the parent nodule's original surface present towards the butt where it has not been fully ground out. The other face (right) is paler in colour and has a matt surface. Here the original nodular surface has survived in two areas, one close to the centre point, and the other towards the butt. A thin brownish surface deposit is present in patches close to one lateral edge. The cutting edge is sharp and undamaged, save for one tiny chip.

Discussion

Jade axes, which encompass those made from jadeite or nephrite, are still unusual finds in Britain and have an uneven distribution (Pitts 1996, 319–20). Jadeite occurs in restricted outcrops across Europe from Glenely in Scotland to Brittany and in the French, Swiss, Italian, and Austrian Alps. Nephrite is slightly more widespread and can also be found in nodular form in stream beds. Overall, jade is scarce in Britain and would have been highly valued. It was selected for its robustness and visual appearance, but was difficult to work.

Four true jadeite axes have been recorded from the London region hitherto: two from the Thames, at Mortlake (Mol 31.48) and Vauxhall Bridge (BM 1907,6-19,1), one reworked example from a Roman context in King Street, City (MoL 29.121) (Jones *et al* 1977), and one broken example from Staines Moor in the Colne valley (Field & Woolley 1983). Remarkably, the first three all passed through the hands of G F Lawrence, the well known dealer in antiquities of West Hill, Wandsworth. (A further example, purporting to have come from the Thames at Strand-on-the-Green (MoL O701) (Adkins & Jackson 1978, no. 244), may be an ethnographic import.) In addition, a single nephrite axe has been recorded from Hendon, close to the River Brent (Jones *et al* 1977, 290, *contra* HADAS 1977, where the axe is described as 'jadeite').

15. Partially-ground Neolithic flint axe (Fig 6) found 'about 1930' in the back garden of 36 Danvers Street, Chelsea, by the grandfather of James Reid, who reported the discovery in 1998 (it had been shown to staff at the British Museum some time before this). Danvers Street is centred on TQ 2695 7760 and runs north-west off Chelsea Embankment at a point a little downstream from Battersea Bridge on the Middlesex bank of the Thames. Prior to the construction of Chelsea Embankment in 1871–74 (Weinreb & Hibbert 1983, 149), the area would have formed part of the river foreshore and floodplain.

The axe measures 180mm in length and weighs 380g. It has been fashioned out of cherty grey flint and is of slender lenticular form with markedly faceted sides; the cutting edge bears traces of recent damage.

The present piece can be added to a number of other axes recorded from this stretch of the river and its floodplain (*eg* Adkins & Jackson 1978, 67). Recent archaeological excavations have recovered evidence of the area's topographic development and of low level flint knapping activity conducted within it (*eg* Farid 2000, 119; Divers 2001, 4), some of which may be referable to the Neolithic.

16. Reworked blade section of a Neolithic ground flint axe (Fig 7) (Northampton Museum Inventory I, *c.*1893, 1A 166; now MoL 2000, 287/1). The original label is illegible, but the axe was subsequently marked 'Kings Cross, London, Bateman Collection'.

The implement measures 135mm in length, 67mm in breadth, is 40mm thick at the midpoint, and weighs 448.81g. It comprises a substantial portion of a ground flint axe with faceted sides and reflaked butt. A number of the original flake scars on the body of the axe have not been fully ground out. A modern chip at the cutting edge indicates that it was fashioned out of mottled cherty grey flint, which was stained an ochreous yellow-brown subsequent to the re-flaking of the butt.

Its provenance and likely date of discovery

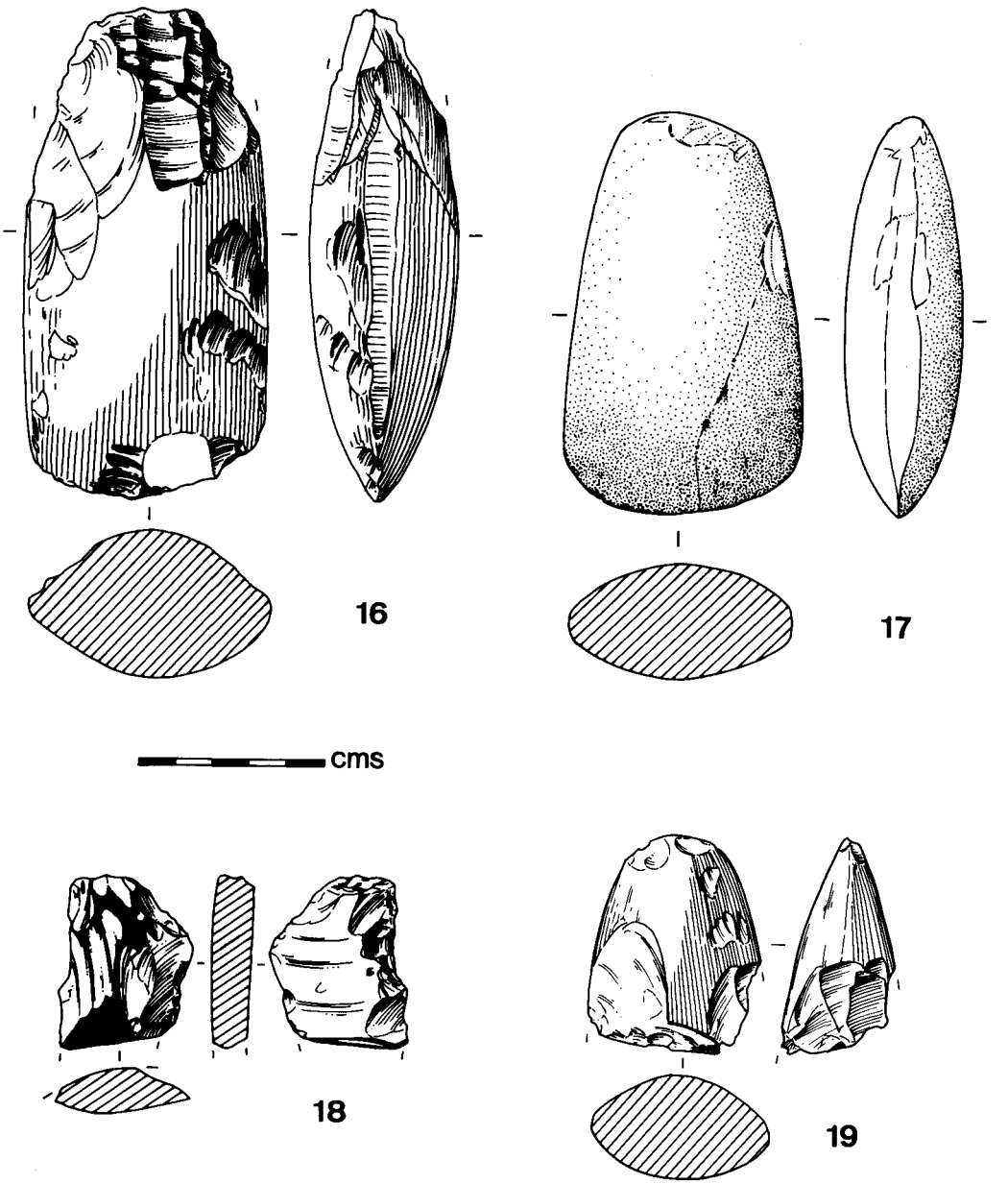


Fig 7. Neolithic axes of flint (Nos 16, 18 and 19) and stone (No. 17). Scale 1:2

(which must have occurred prior to August 1861, when Thomas Bateman died after a short illness aged 40 (*DNB*)) suggest that it could have been recovered during the construction of the terminus of the Great Northern Railway at King's Cross in 1851–2 (Weinreb & Hibbert 1983, 448). King's Cross lies on the left or east bank of the now culverted River Fleet and opposite the point at which a western tributary stream joined the main channel (Barton 1962, 27–8).

17. Small Neolithic ground stone axe (Fig 7) (Northampton Museum Inventory I, *c.*1893 1A, 164; now MoL 2000.287/2). The axe is marked 'Thames' and has a worn label which (under x20 magnification) reads '97. P. Celt

4¼" long, [variega]ted green stone like signite. Found with huma[n? skulls] in the Thames. 1854'. Also 'Thames 1854. Bateman Collection'.

The implement measures 110mm in length, 65mm in breadth at the blade, is 32mm thick at the midpoint, and weighs 367.9g. It comprises a complete stone axe of plump 'hachette' type, with ground facets at the edges and slight damage to its rounded butt. The rock comprises a smooth, fine-grained, speckled dark green material and remains unsourced.

The reference to 'huma[n? skulls]' and the date '1854' given on the label provides a clue as to the implement's original provenance, for a number of collectors, Bateman among them, were known to have been obtaining objects dredged from the river during the building of Chelsea Bridge between December 1854 and October 1855. These objects comprised various items of Bronze Age and later metalwork including the Battersea Shield (Cuming 1858, pl 23) — the latter now in the British Museum — together with large numbers of human skulls. Indeed, so many of the latter were found here that it led the Walworth antiquarian H S Cuming to dub the reach 'our Celtic Golgotha' (1857, 238).

Discussion

The two Neolithic axes, Nos 16 and 17, one of flint and one of stone, both originally part of the collection belonging to Thomas Bateman of Youlgrave, Derbyshire, were transferred to the Museum of London from Northampton Museum in 2000 (MoL 2000.287/1-2). They formed two thirds of Lot 16 in the sale of the Bateman Heirlooms held at Sotheby, Wilkinson and Hodge on Wednesday 14 June 1893. The third axe in the Lot was from Northampton, and has been retained by the museum there.

An annotated copy of the Sale Catalogue held in the British Museum records that Lot 16 was purchased for 15 shillings by 'Fenton' (presumably the London antique dealers Fenton & Sons Ltd), who may have been acting for Northampton Museum. Whether or not this was so, all three axes were certainly quickly incorporated into the collections of the museum, as they feature in its Inventory which was compiled around this time.

Although resident in Derbyshire and best known for his archaeological fieldwork in the Peak District, Thomas Bateman was an active collector on the London scene throughout the 1850s. In addition to the axes (Nos 16 and 17 above), a number of other London antiquities were amongst the objects on offer at the 1893 sale, principally pieces of Bronze Age metalwork, including swords and spearheads dredged from the Thames. Several of these passed into the collection of Canon William Greenwell and are now in the British Museum.

18. Broken blade/narrow flake (Fig 7) from a ground flint axe found by Margaret Wooldridge of the West London Archaeological Field Group during site watching on the south side of North Street, Isleworth (*c.*TQ 163 759) in the early 1970s.

The blade/flake measures 47mm in length, 33mm in breadth, 10mm in thickness, and weighs 21.94g. Originally struck from a partially-ground axe of good quality mottled grey flint it has been reflaked at its butt and along both lateral edges for use as a knife, before being snapped at its distal end.

Another flake from a ground flint axe was recovered during excavations on the site of Richard, Earl of Cornwall's moated manor house in Church Street, Isleworth (site code CSI86; Thompson *et al* 1998, 95) a little to the east, while various complete axes have been dredged from adjacent reaches of the Thames (*eg* Lawrence 1929, 78; Adkins & Jackson 1978, 64).

19. Butt of a Neolithic ground flint axe (Fig 7) found in 1992 by Richard Hill on the Surrey foreshore of the Thames at St Mary Overie Dock, Southwark (*c.*TQ 3263 8044). The piece lay 'close to the mouth of the dock at low water'.

The fragment measures 59mm in length, 45mm in breadth, is 30mm thick, and weighs 85.9g. It is of mottled light grey/dark grey flint. There are traces of ground facets at the lateral edges.

The piece can be added to a small body of Neolithic material recorded from the area of north Southwark and Lambeth, at least some of which appears to reflect sedentary activity (*eg* No. 20. below; see also Sidell *et al* 2002, 21), as opposed to short-stay hunting or foraging.

20. Eleven sherds of Neolithic pottery (Fig 8) collected independently in 2001 and 2002 by Fiona Haughey, Andy Johannesen, and Mike Webber from the same confined area (*c.*2m

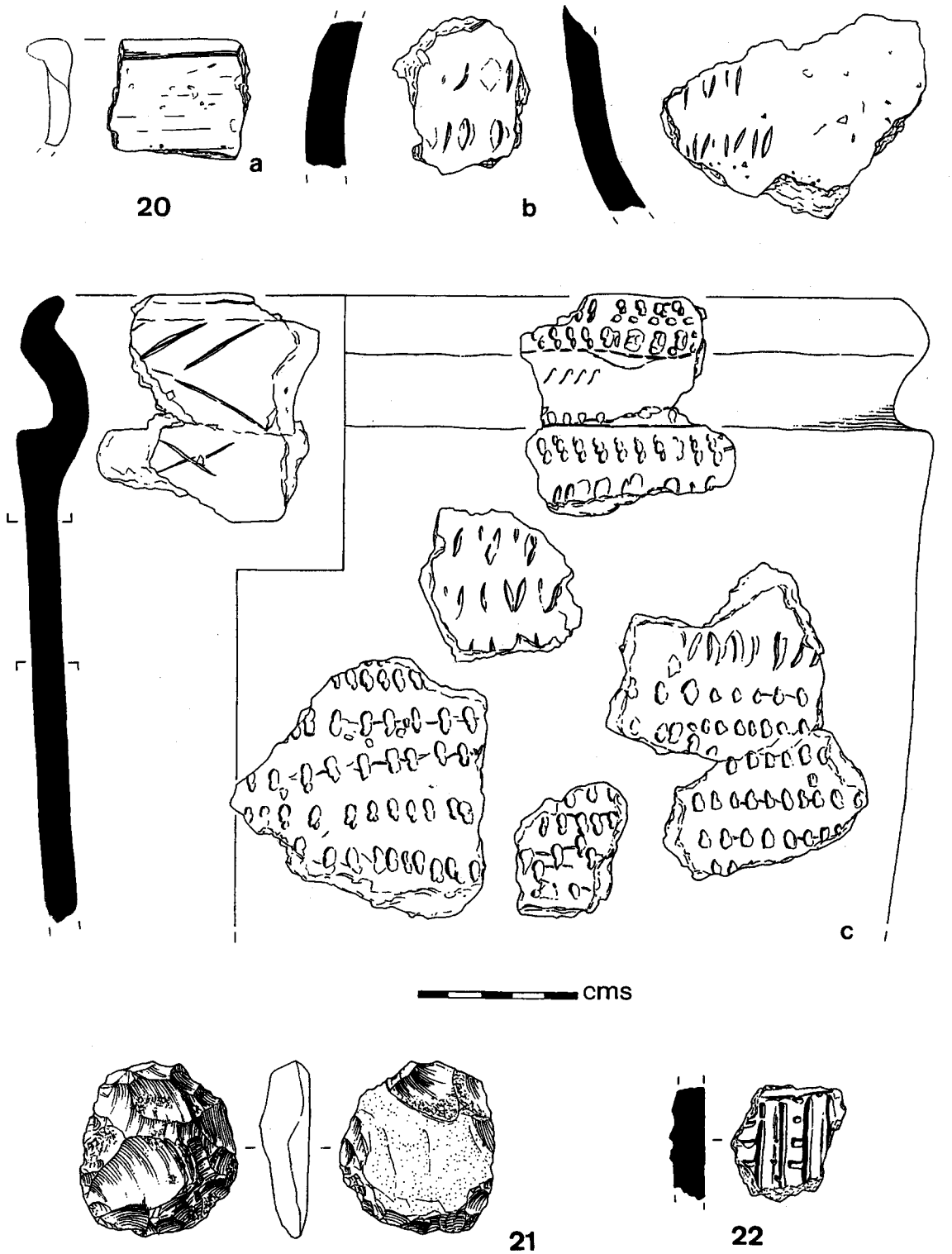


Fig 8. Neolithic pottery (Nos 20 and 22) and flintwork (No. 21). Scale 1:2

Fig 9. The Thames foreshore at Chamber's Wharf, Bermondsey, looking upstream. The findspot of the Neolithic pottery is marked by the vertical stake behind the three figures engaged in excavating a post-medieval human burial (Photo: Robert Whytehead, English Heritage)

in diameter) close to low water on the Surrey foreshore of the Thames at Chambers Wharf, Bermondsey (TQ 3430 7975). Several other sherds have already been reported from this same locality (Cotton & Merriman 1991, 43, no. 14; Cotton & Wood 1996, 10–12, no. 16). (A partial, articulated, human burial initially thought to have been associated with these sherds — but in reality some metres distant, see Fig 9 — has since been radiocarbon dated to the post-medieval period (Baylis *et al* 2004).)

At least three vessels appear to be represented by the sherds: an apparently undecorated 'open bowl' (1 sherd; weight 19.43g); the lower section of a decorated Peterborough Ware bowl of Mortlake type (3 sherds; combined weight 121.79g); and a decorated Peterborough Ware bowl of Mortlake/Fengate type (7 sherds, several conjoining; combined weight 288.45g). The sherds are as follows:

(a) Worn, undecorated rim sherd of necked open bowl with upright, externally expanded rim, weight 19.43g. Hard sandy fabric fired grey/black internally and brown/black externally, tempered with moderate amounts of sub-angular crushed burnt flint up to 4mm in size. A coil junction is visible just below the rim; there are traces of wiping on the interior.

(b) Three sherds representing the lower wall/base of a round-based bowl with an external zone of finger-tip/finger-nail decoration, combined weight 121.79g. Hard, laminated sandy fabric fired grey internally and grey/brown externally, tempered with sparse–moderate amounts of sub-angular crushed burnt flint up to 8mm in size. Contraction cracks are visible on the interior wall surfaces. Peterborough Ware: Mortlake/Fengate type.

(c) Seven sherds of a large, upright, voluminous straight-sided bowl decorated with horizontal zones of finger-tip/finger-nail and 'bird-bone' type impressions arranged in rows, the latter predominating, combined weight 288.45g. The rim and shoulder have been carefully but firmly decorated with overlapping oval motifs (?coarse twisted cord) and 'bird-bone' type impressions, although — four small finger-nail impressions apart — the neck itself has been left plain. Interior decoration is confined to a zone below the rim and comprises a herringbone/diamond pattern lightly incised with a bone or wooden point. Hard, laminated fabric fired grey/brown, tempered with sparse–moderate amounts of sub-angular crushed burnt flint up to 8mm in size. The exterior surfaces have been smoothed prior to decoration and the interior surfaces have been wiped. Peterborough Ware: Mortlake/Fengate type.

Discussion

Neolithic pottery has now been recorded both from the foreshore and from a number of localities in north Southwark (*eg* Sidell *et al* 2002, 21; Cotton 2004, 141–2, fig 15.5). Given the restricted distribution of the material from Chamber's Wharf, it is conceivable that it was originally deposited within a pit (or pits) under active erosion by the tide. Moreover, 'bird-bone' type impressions were noted on a sherd published previously from the Bermondsey-

Rotherhithe area; this could even belong with vessel 'c' above, though its reported NGR is slightly different (Cotton & Merriman 1991, 43, no. 14).

21. Neolithic discoidal flint scraper (Fig 8) found on the Surrey foreshore of the Thames in front of Chamber's Wharf, Rotherhithe by Fiona Haughey in 2001 (TQ 343 797). The findspot lay a few metres downstream from the Neolithic pottery described above, and close to a partial human skeleton radiocarbon dated to the early modern period (Baylis *et al* 2004).

The implement measures 55mm in length, 48mm in breadth, is 15mm thick, and weighs 44.52g. It has been radially worked on a sturdy cortical flake of dark black-brown flint, and has patches of a calcareous deposit (Thames 'race') adhering to both faces.

Prehistoric flintwork of Mesolithic to Bronze Age date is a recurrent find along this stretch of foreshore (*eg* Cotton & Wood 1996, nos 7 and 15). The present piece is probably of Neolithic date.

22. Body sherd of later Neolithic Grooved Ware pottery (Fig 8) picked up at low water in August 2004 by Andy Johannesen on the Surrey foreshore of the Thames a little downstream from the mouth of St Saviour's Dock, Bermondsey (TQ 3418 7987). (A small portion of brown stained adult human cranium measuring 80mm by 60mm had been recovered from the same general area the previous December.)

The sherd measures 35mm by 30mm and the vessel wall is 11mm thick; the sherd weighs 15.3g. Hard sandy fabric with ?grog filler, fired grey-black. External decoration has been deeply scored with the point of a stick or a bone, and comprises a series of overlapping horizontal and vertical grooves.

The deeply scored 'plastic' decoration falls within the Clacton style of Grooved Ware, as defined by Longworth (Wainwright & Longworth 1971, 236–8). Garwood (1999) has since suggested that the Clacton style falls relatively early within the overall Grooved Ware sequence, *ie* early–mid 3rd millennium BC.

Discussion

Grooved Ware is an unusual find from the Thames and its foreshores, though a few sherds have been recognised previously from Hammersmith, with individual sherds from several other reaches. Peterborough Ware is more commonly met with, as for example No. 20 above. It may be that the present sherd was eroded out of a feature dug into Horseleydown, closest of a sequence of higher, drier sand islands in the north Southwark and Bermondsey areas. Moreover, a few scraps of Grooved Ware have been reported from landward sites elsewhere in the Horseleydown locality, *eg* Three Oak Lane adjacent to Dockhead (Proctor & Bishop 2002, 8).

23. Flint arrowhead of later Neolithic transverse 'chisel' form (Fig 12). Found in 2001 during an evaluation carried out by Sutton Archaeological Services at the junction of New Road and Bath Road, Heathrow (TQ 0840 7695) (NED01 [003]).

The piece measures 45mm in length, *c.*50mm in breadth at the (now incomplete) leading edge, is 5–6mm thick, and weighs 13.23g. It is fashioned on a broad flake of handsome mottled dark yellow-brown 'gravel' flint, with invasive retouch used to achieve straight, thinned, lateral edges.

Large numbers of transverse arrowheads have been recovered from the west Middlesex area in association with both Peterborough Ware and Grooved Ware, though few are as large or fine as the present example. The choice of yellow-brown coloured flint for the most elaborate pieces is a recurrent feature, and presumably deliberate (*eg* Elsden 1997, 4).

?NEOLITHIC/BRONZE AGE

24. Part of a human skull (Figs 10–11) spotted in October 2003 by Bob Wells towards low water on the Surrey foreshore of the Thames at Putney (TQ 2430 7562). It was subsequently lifted by Jane Sidell and the first writer and deposited with the Museum of London (MoL 2004.97).

The cranium was lying upside down within the foreshore and was filled with river silts, from which a further fragment of bone was later recovered in the laboratory. On excavation the skull was found to be lying within a black-grey silty sand deposit.

A report on the skull was prepared by Museum of London osteologist Bill White, who writes as follows:

Fig 10. The Thames foreshore at Putney, looking downstream. The findspot of the human skull (No. 24) is marked by a cross (Photo: Bob Wells)

Fig 11. Jane Sidell holding the human skull (No. 24) (Photo: Bob Wells)

The remains comprised two pieces of human cranial bone. The larger one was a calotte, the vault of the skull with frontal, parietal and occipital bones united; the minor fragment was a portion of temporal bone (see below). The bone was stained deep brown and there were patches of a calcareous concretion, typical of 'Thames race'.

The features of the surviving part of the cranium were strongly suggestive of the male sex. These included principally well defined supra-orbital ridges, a sloping forehead, marked temporal lines, and a nuchal crest.

Unfortunately the reduced state of integrity of the skull did not permit accurate estimation of the age at which this individual died. The coronal and sagittal sutures were fused but not obliterated and fusion of the lambdoid suture had commenced but was incomplete. This individual was fully adult and the state of fusion of the cranial sutures suggests a mature adult, rather than a young adult, but because of the known variation within populations it is impossible to state the age at death with greater precision.

The maximum length (L) of the skull was 198mm and the maximum breadth (B) was 148mm. These figures allow the calculation of the cranial index (B/L x 100) as 74.7, interestingly just within the dolichocranic ('long-headed') range <75.0 (Brothwell 1981, 87). Once again, considerable variation in skull shape is seen within populations, nevertheless the 'long-headed' shape in the London region is rather characteristic of the prehistoric skulls known or, to a lesser extent, the Anglo-Saxons.

The non-metric traits still visible on the skull concerned were bilateral supra-orbital grooves and multiple Wormian bones on the lambdoid suture. Apart from the central ossicle at Lambda there were at least nine ossicles on the right lambdoid suture and at least ten on the left (because these were unfused a number have fallen out and been lost in antiquity).

The interior of the cranial vault showed well-marked impressions of blood vessels and sulci. In particular there was a pronounced sulcus on each side of the internal occipital crest. However, the only significant indicator of pathology was on the frontal bone, about 50mm above the margin of the left orbit. Here a slightly raised section of bone about 12mm in diameter represented the sequel to trauma. Although it was roughly circular this bony eminence did not resemble a benign ('button') osteoma as there was a slight excavated area to its left side and inspection of the interior of the cranial vault showed a corresponding minor depression. Accordingly this seemed to be healing of an injury caused to the front of the head. Where this rounded part of the head is concerned, for such a wound to occur by accident would require collision at speed with a hard and edged obstacle, such as the external corner of a brick building or a stout wooden post of square or rectangular cross section. This would tend to rule out accidental injury and make a deliberate act of violence much more likely.

Little can be deduced from the minor fragment of bone (*c.*47mm long) found. It is part of the petrous portion of a temporal bone, probably from the left side. However, as the squaumous part of the same temporal bone by which it would have been attached to the cranium is missing, one cannot be certain that this piece is from the same individual.

The recovered skull is that of a mature man. It is classified as dolichocranic and therefore may be of great antiquity, as is also suggested by the type of deposit from which it was retrieved. Only dating by radiometric methods could resolve this matter but if it proved to be of remote date then here would be evidence of ancient inter-personal violence.

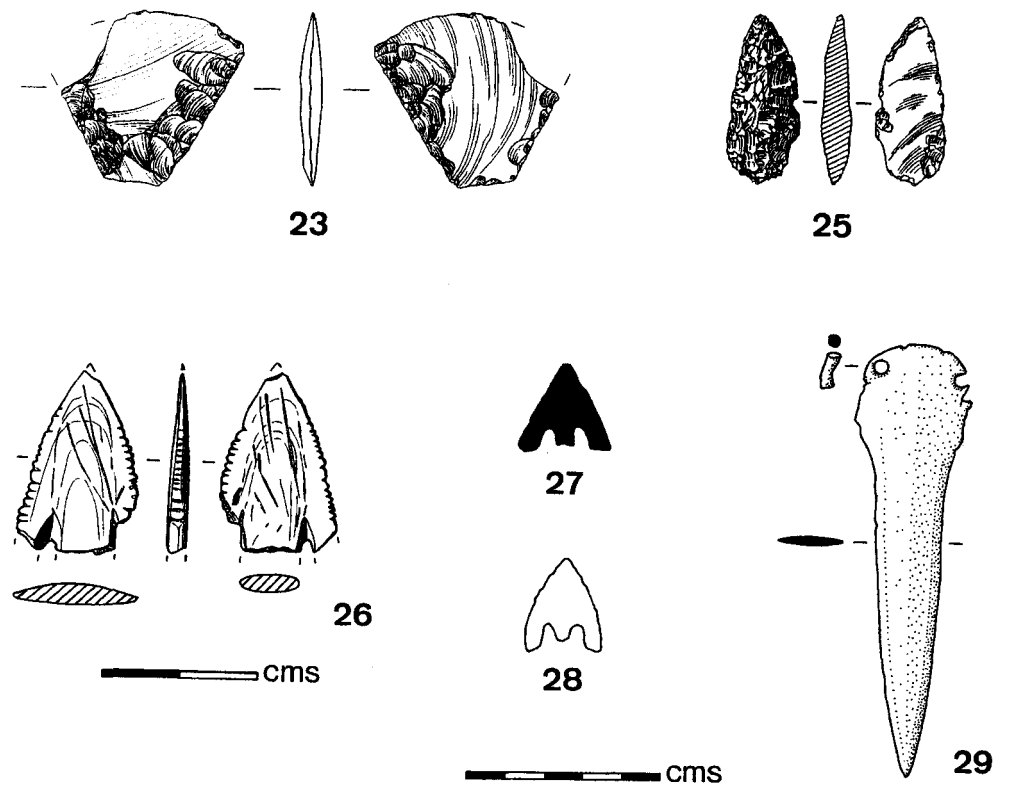
Discussion

The Putney skull can be added to numerous others recorded from the Thames and its major tributaries (see also the fragment of human cranium located close to the mouth of St Saviour's Dock in December 2003, No. 22 above). Cuming (1857) and Lawrence (1929), for example, have drawn attention to skull finds from localities such as Kew, Hammersmith, Strand-on-the-Green, and Chelsea. Few of these Thames skulls have been independently dated, but those that have seem to cluster within the Bronze Age (*eg* Bradley & Gordon 1988, 507–8); to these latter can be added a trepanned male skull fragment recovered recently from the Thames foreshore at Chelsea (Yvonne Edwards, Alison Weiskopf and Fiona Haughey pers comm and in prep).

The evidence of trauma identified on the present skull is noteworthy too, though the current lack of any independent dating for the skull makes its full significance difficult to assess. Nevertheless, the recent recovery of an alder wood club of Neolithic date from the modern foreshore at Chelsea (Webber 2004) provides a tantalising hint of one means by which 'ancient inter-personal violence' could be meted out.

BRONZE AGE

25. Small Late Neolithic or Early Bronze Age plano-convex flint knife (Fig 12) found in 1979 by Barbara Eastop and Tony Lewis of the West London Archaeological Field Group on the lower south-western slopes of Horsenden Hill, Ealing (*c.*TQ 161 842) during the monitoring of a waterboard trench. Other finds from the slopes included a scatter of struck flint and scraps of prehistoric and later pottery. Further finds were recovered from



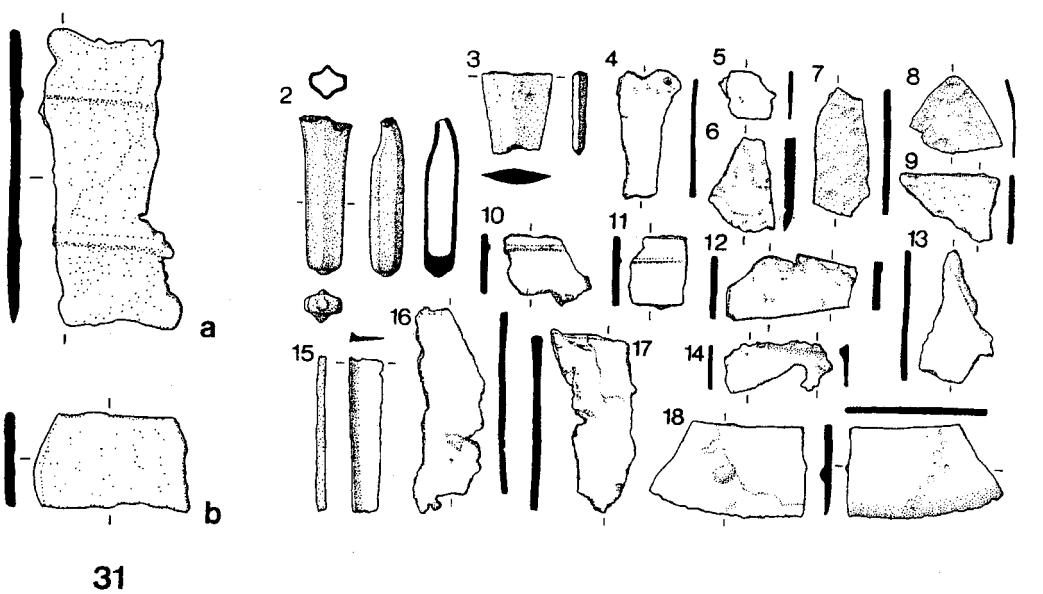


Fig 12. Neolithic and Bronze Age artefacts of flint (Nos 23, 25, 27 and 28), bone (No. 26) and copper alloy (Nos 29, 31a–b and 31.2–18). All scale 1:2 except No. 26 (1:1) and 31.2–18 (1:3) (Drawn by Stuart Needham)

the summit of the hill during the excavations carried out by the Wembley History Society from 1973 onwards (Bloice 1974, 134; 1976, 370). These included pottery of later prehistoric type, together with a fragment of Late Iron Age enamelled strap junction (Ian Stead pers comm).

The knife is 43mm in length, 18mm in breadth, 5mm thick, and weighs 5.37g. It has been fashioned on a small narrow flake/blade of glossy, semi-translucent light brown flint. Neat, invasive retouch covers the dorsal face; retouch on the ventral face is confined to the tip, one edge and the butt.

The form of the piece suggests that it should be characterised as a small plano-convex knife rather than as an asymmetric leaf arrowhead. As such, it is likely to date to the end of the Neolithic and earlier part of the Bronze Age. Most of the few other plano-convex knives known from the London region appear to be distributed along the Thames and its floodplain or on the brickearth-capped terrace gravels around Heathrow.

26. Tip of a serrated barbed and tanged bone point (Figs 12–13) reported in May 1998 by Richard Hill as having been found close to low water on the Surrey foreshore of the Thames at the downstream end of Chambers Wharf, Bermondsey (*c.*TQ 344 798). A wide range of other prehistoric (and later) finds has been recovered from this same stretch of foreshore in recent years.

The point measures 23mm in length, 15mm in breadth at its widest surviving point, is 2mm thick, and weighs 0.86g. It has been fashioned from bone (as opposed to antler), although its small size and polished surfaces have made it impossible to identify to species (Alan Pipe and Kevin Rielly pers comm). A series of fine, rounded, but unevenly spaced serrations have been worked along both lateral edges starting some 7mm from the tip. The latter is slightly chipped, possibly the result of an impact fracture. The tang and one of the barbs appear to have been broken off; the other barb seems to have been deliberately foreshortened, which may have given the original object a somewhat asymmetric form. Surface scratches are visible on both faces, at least one of which appears have been the result of a loss of control of the ?flint blade used to work the barbs.

Discussion

There are no immediate parallels for this piece, which makes dating a somewhat hazardous exercise. However, if it was intended as a copy of an asymmetrically barbed arrowhead (as Sidell *et al* 2002, 21, fig 17) or — perhaps more likely

Fig 13. Serrated barbed and tanged bone point (No. 26). Scale approx 3:1 (Photo: John Chase, Museum of London)

— of a serrated barbed and tanged arrowhead, then a later Neolithic to Early Bronze Age date would be appropriate.

Green (1980, 53) regarded serration on barbed and tanged flint arrowheads as 'primarily a decorative rather than a functional trait' and it occurs most often on his fancy Green Low and Kilmarnock types. The best known group of serrated pieces are the thirteen fine arrowheads that accompany a burial at Breach Farm, Llanbleddian, Glamorgan (Grimes 1938, 115, fig 6). These are dated to the latter part of the Early Bronze Age. A similar date is also usually ascribed to the small series of bone daggers assumed to be copies of bronze originals (*eg* Gerloff 1975, 175–6, pl 28). While it is possible that the present piece shared a common inspiration with these bone skeuomorphs, it was presumably perfectly functional in a way that the daggers were not.

27. Early Bronze Age barbed-and-tanged flint arrowhead (Fig 12) found by Patrick Wright approximately 1ft below the surface in the garden of 8 Heath Road, Hillingdon, and reported to Hillingdon Library Service in April 1999. Information, including a colour photocopy of the object, was recorded by Maria Newbury at Central Library, Uxbridge and passed on to the Museum of London. Recent attempts to contact the finder at the address have been unsuccessful.

The arrowhead measures 23mm in length and 24mm in breadth across the square-shaped barbs. It appears to have been fashioned out of banded yellow-brown flint. Damage is evident at the tip and along one edge just below the tip. It appears to be a variant of Green's (1980, 123, fig 46) fancy 'Conygar' type, the finest examples of which he notes to have Food Vessel associations (*ibid*, 130, 138–9).

Heath Road lies on the north side of the Uxbridge Road between Hillingdon and Hayes End (centred TQ 081 823), close to the junction of the Boyn Hill terrace gravels with the London Clay. Little relevant material has been recorded from the immediate locality hitherto, although a group of six 'Conygar' type flint arrowheads were found associated with the dismembered remains of an aurochs at Holloway Lane, Harmondsworth some 4.5km to the south (Cotton 1991).

28. Early Bronze Age barbed-and-tanged flint arrowhead (Fig 12) reported to Nick Merriman at the Museum of London in May 1987 as having been found on the Surrey foreshore of the Thames at Mortlake (TQ 206 761). The findspot indicated lies 100m or so downstream of The Ship Inn.

The arrowhead measures 22mm in length and 20mm in breadth across the pointed barbs. No information survives as to the colour of the raw material or the quality of the knapping. However, a photocopied outline of the piece survives and this makes it clear that it belongs to Green's (1980, fig 46) fancy 'Green Low' type with barbs projecting beyond the tang. According to Green (1980, 130) the type has exclusively late Beaker associations.

29. Small Middle Bronze Age copper-alloy dagger or dirk (Fig 12) found in August 1978 by Mr J Toms on the Middlesex foreshore of the Thames off Cheyne Walk, Chelsea, and subsequently acquired by the Museum of London (MoL 79.17). The findspot lay just upstream of Battersea Bridge and at a point '*c*.200 yards out from the embankment' (TQ 2680 7738).

The piece measures 115mm in length with a maximum surviving width at its butt of 30mm, and weighs 22.9g. It has a low, lozenge-sectioned blade with a poorly defined mid-rib and bevelled edges terminating in a rounded, trapezoidal butt pierced by two rivet holes. One rivet hole survives intact; the second has torn through. One loose twisted rivet of circular section weighing 0.8g survives, though this was in place in the undamaged rivet hole when the finder discovered the blade.

Discussion

Blades of this type fall within Burgess and Gerloff's Group II (1981, 19–20), a number of which have been recovered from the Thames 'in and near London' (*ibid*, 46, pls 119–20; Rowlands 1976, 406–14). They are broadly dateable to the early phases of the Middle Bronze Age in Britain, *ie* during the currency of 'Acton-Taunton' metalwork (*c*.1500–1300 BC) (Rowlands 1976, 66–7; Needham *et al* 1997, 84–6).

30. Middle Bronze Age copper-alloy, basal-looped spearhead (Fig 14) found in the summer of 2004 by Andy Horwood on the

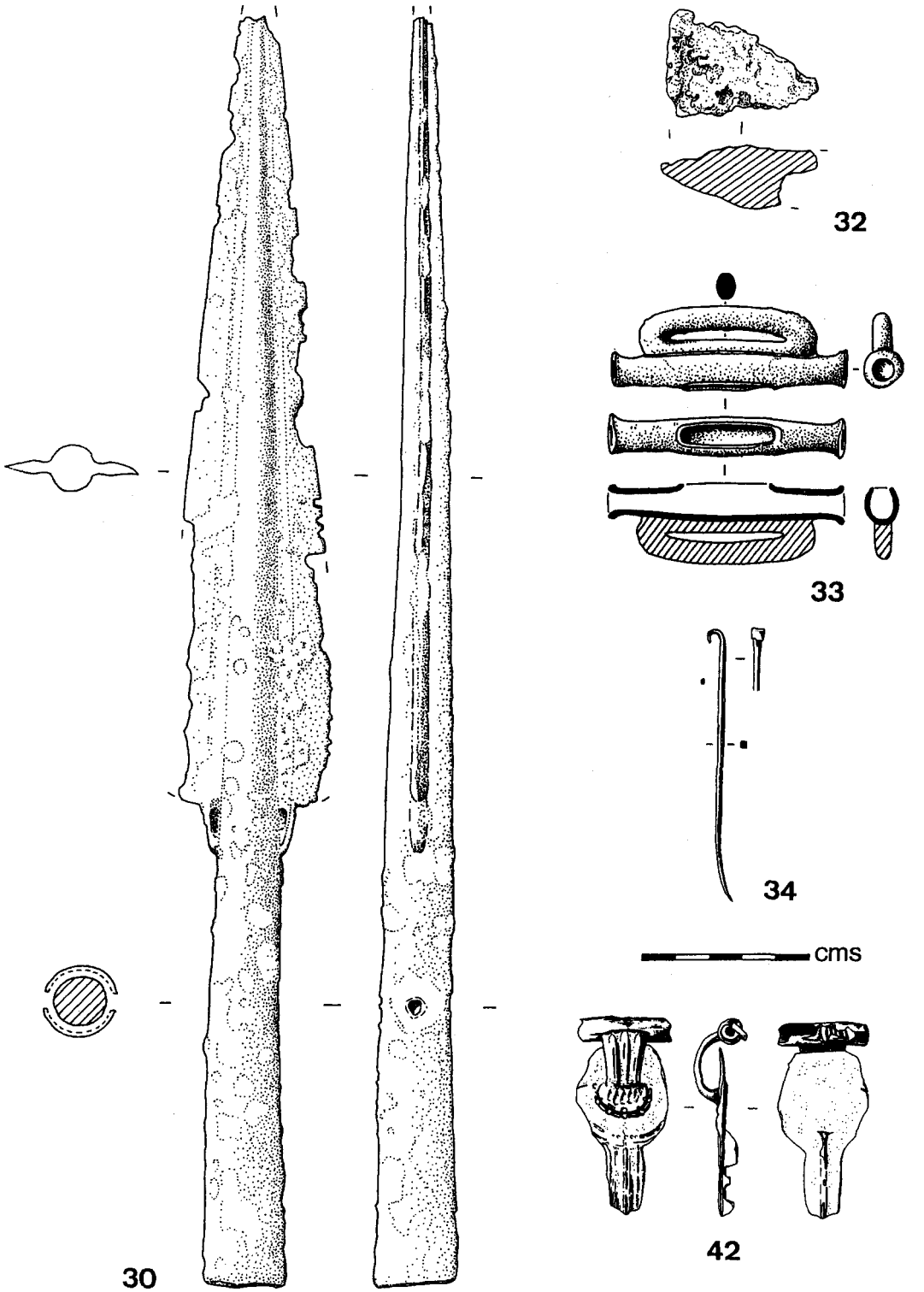


Fig 14. Bronze Age (Nos 30 and 32–34) and Iron Age (No. 42) artefacts of copper alloy. Scale 1:2

foreshore of Brentford Ait, which lies off the Middlesex bank (TQ 1844 7765). The find lay on the outer or riverward foreshore halfway along the upstream or smaller Ait and hard by the modern sheet-piling which protects it from erosion. It is possible that the piece had been disturbed during the works associated with the insertion of the piling.

The spearhead has a surviving length of 390mm (original length *c.*410mm), a surviving width of 41mm across the blade wings, and a socket diameter of 25mm at the mouth. The remains of a wooden shaft tip (species not determined) survives in the socket. In its current state the spearhead/shaft tip weighs 341.4g. The spearhead conforms to Rowlands' (1976, 58) Group 3 in having a triangular blade with straight, right-angled base, internal bevels to the blade wings, a rounded mid-rib, and string loops set at the blade base on the socket side. Traces of blocked pegholes *c.*5mm in diameter are visible in the same plane as the blade wings and loops at a point 81mm from the mouth of the socket.

Though the underlying metal is solid enough, the spearhead is in poor condition: the tip of the blade and portions of both blade wings are missing and there is much surface pocking and localised evidence of bronze disease. There are also traces of older damage in the form of three nicks on the surviving original edge of one of the blade wings.

Discussion

Damage to the blade wings notwithstanding, the piece clearly comprises a triangular basal-looped spearhead of Middle Bronze Age 'Penard' type, whose currency is currently centred *c.*1275–1140 BC (but is of probably longer duration) (Needham *et al* 1997, 87). A number of spearheads of this, and of the earlier 'Taunton' leaf-shaped basal-looped type have been recovered from the Thames between Staines and Vauxhall in west London (*eg* Rowlands 1976, 386–90, map 28). One triangular-bladed piece in the Museum of London's collection (Acc No. A27600) was found 'opposite one of the islands between Kew Bridge and Brentford Ferry', *ie* close to the findspot of the current spearhead.

31. Two fragments of Late Bronze Age copper-alloy plate scrap (Fig 12) found some time after 1976 or 1977 by John Gibson on the Middlesex foreshore of the Thames at Syon Reach (TQ 175 764). They were picked up at the foot of an erosion scarp towards low water, and subsequent to the discovery of a small hoard of scrap bronze at this same spot by the same finder (Needham & Burgess 1980, 443, fig 2, 445; Needham 1987, fig 5.15, nos 2–18). Other finds reported from the findspot include a ground stone axe and a perforated quartzite pebble macehead (Cotton & Wood 1996, 9, nos 12 & 14).

(a) Rectilinear fragment of flat plate scrap with two low ribs on one face. The piece measures 78–80mm in length, 26–30mm in breadth, 2–3mm thick and weighs 41.34g.

(b) Rectilinear fragment of flat plate scrap which measures 40mm in length, 24mm in breadth, 2–3mm in thickness and weighs 20.26g.

It is reasonable to regard these two pieces of plate scrap as strays from the 17-piece hoard recovered in 1976 or 1977 (MoL 93.13/1-17). The original find comprised 15 fragments of plate scrap, together with a fragment of sword blade and the tip of a tongue-shaped chape (Fig 12). The two new pieces have been donated to the Museum of London by the finder and re-united with the rest of the hoard (MoL 2004.146/1-2).

Discussion

Hoards of this type are diagnostic of 'Wilburton' stage metalwork (*eg* Burgess 1968, 36–7), and can be of very large size, as at Isleham, Cambridgeshire (Britton 1960). The Syon hoard is something of an outlier in the London area. Wilburton metalwork as a whole has been back-dated to within a focal range of *c.*1140–1020 BC following a recent radiocarbon programme (Needham *et al* 1997, 90).

32. Fragment of Late Bronze Age copper-alloy ingot (Fig 14) found around 1972 by David Pearson on the Surrey foreshore of the Thames in the Barn Elms locality. The object was lying on the surface about 20ft out from the embankment wall.

The fragment comprises part of the edge of a plano-convex ingot. It measures 47 by 32mm by 19mm in maximum thickness, and weighs 79.71g. Such ingots often form part of so-called 'founder's hoards' alongside

scrapped objects, although there is nothing to indicate that the present piece is anything other than an isolated stray find.

33. Late Bronze Age copper-alloy 'bugle-shaped object' (Fig 14) found in June 2001 by Peter Bryan on the Surrey foreshore of the Thames on the downstream side of Richmond Lock and Weir (TQ 1700 7510). The piece lay on a small sandy portion of foreshore at the foot of the second set of river stairs below the lock. It has now been acquired by the Museum of London (2004.170/2). The spot is well known for artefacts of all periods, many of which were dredged from the riverbed during the construction of the lock and weir in 1891–2 (Thacker 1920, 487–8).

Cast, tubular 'bugle-shaped' fitting with hollow, gently barrel-shaped body and sharply-expanded terminals; overall length 70mm, diameter of expanded terminals 11–12mm. In its current, unconserved, state it weighs 47.93g. The barrel-shaped body is pierced by a narrow elongated rectangular hole, 26mm in length and 6mm wide, defined by a low collar which lies opposite a solid side-loop 52mm in length. The side-loop is of rounded-oval section and its recurved ends lead into a crease on the main body to form a neat moulding flanking a narrow, curving, parallel-sided slot. Although there are no obvious traces of wear along the slot consonant with its suggested use as a strap-housing, both of the expanded terminals of the object have markedly flattened worn facets indicating an 'angle of rest' for the object when in use.

Discussion

'Bugle-shaped objects' are generally thought to comprise strap junctions or fasteners, though as noted above their precise method of use remains obscure. O'Connor (1980, 194–5) has defined several different forms including solid tubular and hollow-backed types, with a distribution that is centred on northern France and south-eastern Britain. The present piece belongs to his solid tubular type. Local hoard associations for bugle-shaped objects are of Carp's Tongue/Ewart Park type and include Cassiobridge Farm, Watford (Coombs 1979, 215–16, fig 11.6, no. 50) and Petters Sports Field, Egham (Needham 1990). Local parallels include the group of four hollow-backed pieces from the Thames at Syon Reach in the collections of the Museum of London (Acc nos A11947-8; A15467 & A19001), which can be matched by a single hollow-backed example in the Petters hoard just mentioned.

34. Late Bronze Age or Early Iron Age copper-alloy roll-headed pin (Fig 14) found at low water in August 2003 by Andy Johannesen on the Middlesex foreshore of the Thames at Limehouse (TQ 3670 8060).

The pin measures 82.5mm in overall length and weighs 2.47g. It is formed of a tapered length of wire of squarish section which has been flattened and turned over to create the head.

Discussion

Such pins are usually only loosely dated to the Late Bronze Age or Early Iron Age (O'Connor 1980, 200), though one from a ditch at Petters Sports Field, Egham, is securely dated to the Late Bronze Age (Needham 1990, 62–3). A number of pins of this form have been recovered from the river previously, all from reaches well upstream of Limehouse (*eg* Cotton & Merriman 1991, 49–51, fig 10, nos 25–26).

IRON AGE

35. Early Iron Age iron dagger in a wooden sheath (Fig 15) found in December 2003 by Andy Johannesen on the Surrey foreshore of the Thames in front of Chambers Wharf, Bermondsey (TQ 343 797). A post-medieval human burial was found close by (Baylis *et al* 2004). The dagger has now been acquired by the Museum of London (MoL 2003.120). Full publication will follow once conservation work has been completed.

The dagger itself measures 439mm in overall length (blade 350mm; tang 89mm); the dagger and sheath are 47mm in breadth at the hilt and 16mm in overall thickness; the combined weight of the two objects is currently 403.03g (though removal of further concretion is likely to reduce this measurement). Both dagger and sheath are in a reasonable state of preservation, although the dagger's organic hilt-plates and pommel, and the sheath's decorative outer cover, suspension loop(s) and chape are all missing.

Initial cleaning of the surface corrosion products on the wooden sheath in the laboratory by Rebecca Lang has revealed

Fig 15. Iron Age dagger in wooden sheath (No. 35), held by its finder (Photo: John Chase, Museum of London)

negative traces that clearly demonstrate the former existence of a series of overlapping, probably copper-alloy strips decorated with horizontal bands of punched repoussé dots. It is possible that these strips copied leather originals. X-rays have also revealed the positions of a number of pins arranged in a broadly linear fashion down the back of the sheath, by which means the now-missing decorative strips were presumably secured. A further series of three narrow ?iron bands clasp (rather than encircle) the sheath, and these may have been the means by which the missing suspension loop(s) were attached.

The wooden sheath itself appears to have been constructed of two separate slender plano-convex leaves of ash cf. *Fraxinus excelsior* (Anne Davis pers comm), effectively bound together by the (missing) overlapping ?copper-alloy strips. It is hoped that further conservation work will be able to confirm other constructional details.

Discussion

The Chambers Wharf dagger and sheath can be added to a small group of slender late Hallstatt sheathed examples of likely British manufacture, all but one of which were recovered from the west London Thames (Jope 1961; 2000, 17–18;

Macdonald 1978). (The group also includes a broad-bladed dagger of continental origin from Mortlake apparently resheathed by a British armourer (Jope 1982).) The single outlier in the group, from Luttre in Belgium, may be a British export. As a group, these daggers and sheaths are usually dated to the later 6th century BC; it is possible that radiocarbon dating of the wooden Chambers Wharf sheath will be able to supply independent corroboration.

36. Group of ten Late Iron Age potin coins (Fig 16) deposited with Gunnersbury Park Museum in 1997. Said to have been dug up in the 1930s on an allotment in Brunswick Road, Sudbury. The reported findspot lies just south of the Western Avenue (A40) on the left (south) bank of the river Brent in Brentham Allotments (*c.*TQ 177 826).

1. Potin Class I, Allen (1971, 134) type A. Weight 2.37g.
2. Potin Class I, Allen (1971, 134) type A. Weight 1.88g.
3. Potin Class I, Allen (1971, 134) type ?B. Weight 1.78g.
4. Potin Class I, Allen (1971, 134) type ?C2. Weight 3.05g.
5. Potin Class I, Allen (1971, 134) type ?D1. Weight 2.57g.
6. Potin Class I, Allen (1971, 134) type D2. Weight 3.36g.
7. Potin Class I, Allen (1971, 134) type E. Weight 2.05g.
8. Potin Class I, incomplete, Allen (1971, 134) type ?F1. Weight 1.25g.
9. Potin Class I, Allen (1971, 135) type ?H2. Weight 2.26g.
10. Potin Class I, Allen (1971, 135) type ?J4. Weight 2.69g.

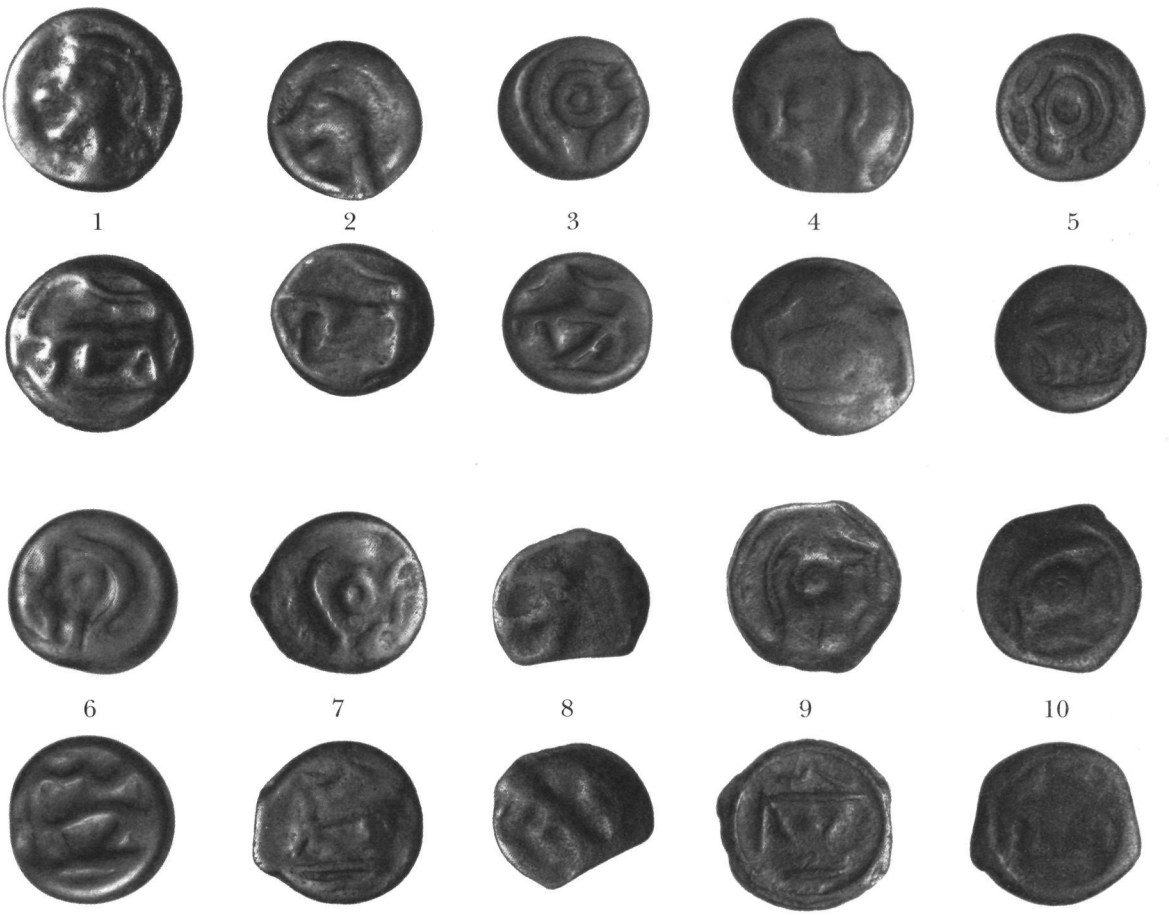


Fig. 16. Possible cache of ten Class I potins (No. 36). Scale 1.5:1 (Photo: John Chase, Museum of London)

Discussion

The range of coin types and weights is diverse, as is the condition of the individual coins, and doubts surround the integrity of the group as a complete and closed cache (John Kent pers comm). However, other potin hoards have been recovered from the Thames and areas adjacent in west London: the closest to Sudbury comprises a now lost hoard of twelve Class I coins found in Gunnersbury Lane, Acton, in 1955 (Allen 1960, 205). Potins comprise a class of 'chill-cast high-tin bronze' coinage thought to have originated in the north Kent area in the late 2nd or early 1st century BC.

37. Two Late Iron Age gold coins (Fig 17) found about 'four feet (*c.*1.2m) apart' in 1976 or 1977 by John Gibson on the Surrey foreshore of the Thames between Putney and Barn Elms (TQ 2350 7634). The coins were discovered on a very low tide some 40m upstream of the mouth of the Beverley Brook and in an area which had also produced a number of potins, including one or more caches (see Cotton & Wood 1996, no. 36). There are unconfirmed reports that further gold coins of unspecified age had been found here at low tide 'long ago' (John Gibson pers comm). Neither coin is now available for study; the information is derived from surviving photographs and the finder's recollection. They are recorded in the Celtic Coin Index at Oxford as CCI 04.1293 and CCI 04.1294

(a) AV stater of Gallo-Belgic E 'uniface' type (Allen 1960, 113–16; Van Arsdell 1989, no. 52-1). Obv. Blank. Rev. Disjointed horse r.

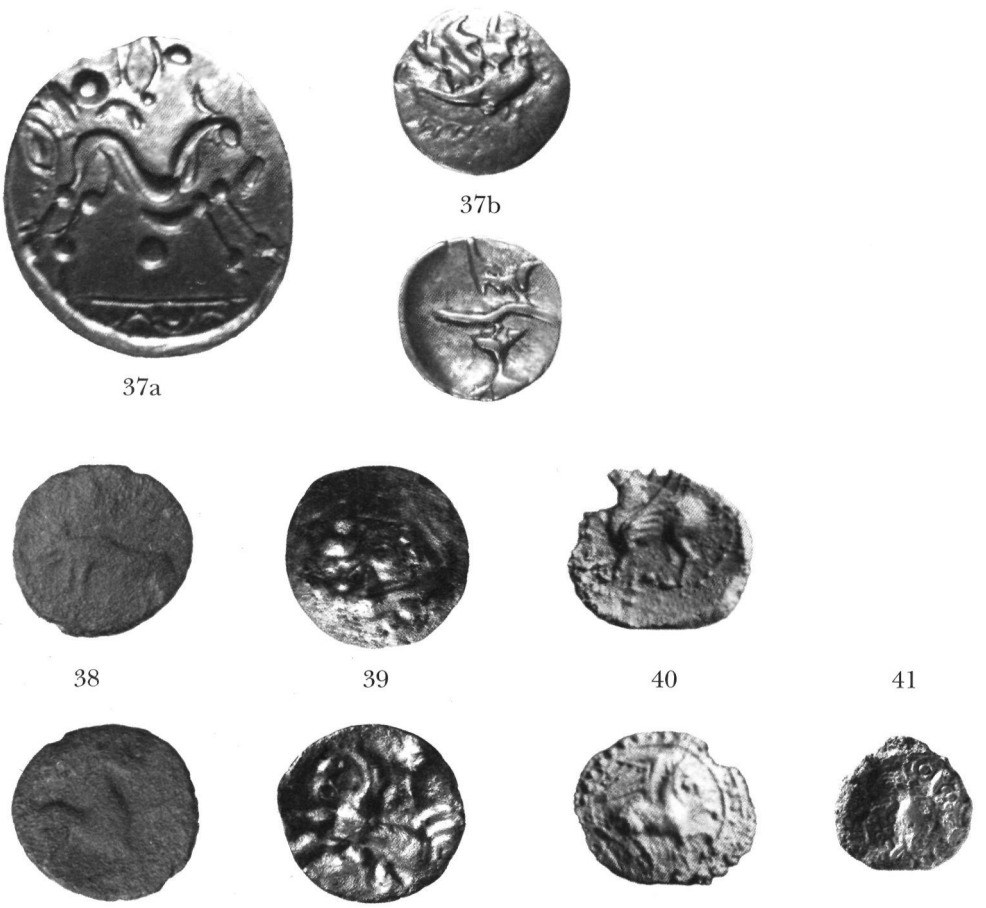


Fig 17. Iron Age coins of gold (Nos 37a–b), silver (Nos 39–40), silver-plated copper alloy (No. 41), and copper alloy (No. 38). Scale 2:1 (Photos: John Gibson (Nos 37a–b and 40) and John Chase/Richard Stroud, Museum of London (Nos 38, 39 and 41))

with pellets in field and pellets and crescents beneath a continuous exergual line.

(b) AV quarter stater of Gallo-Belgic D 'geometric' type (Allen 1960, 110–13; Van Arsdell 1989, no. 69-1). Obv. ?boat with three occupants. Rev. ?tree, crescent and wavy line.

Discussion

It seems likely that the two coins described here originally formed part of a larger cache, now dispersed. The presence of one or more potin caches from the same general area is also noteworthy.

The uniface stater (a) is traditionally thought to have been struck under the authority of the Ambiani. Uniface staters appear to have been imported into Britain in large quantities in the mid-1st century BC, possibly as payment to British mercenaries engaged across the Channel against Julius Caesar (de Jersey 1996, 17–18). John Kent (1978, 55) pointed out that the London area is 'in no way significant' in terms of the distribution of the type, which clusters in north Kent, and arcs round London to the north and east.

The quarter stater (b) was struck 'by an uncertain Belgic authority' and imported into Britain, again perhaps as payment to British mercenaries engaged across the Channel against Julius Caesar (de Jersey 1996, 18). Allen (1960, 111) suggests two routes of entry into Britain for such coins: via Kent and the Sussex coast.

38. Small Late Iron Age bronze unit (Fig 17) found in February 2002 by Andy Johannesen on the Surrey foreshore of the Thames in front of Chamber's Wharf, Bermondsey (TQ 343 797). The coin lay close to the dagger already described (No. 35, above) and to a partial human skeleton of post-medieval date (Baylis *et al* 2004).

Uninscribed South-Eastern AE unit (Hobbs 1996, nos 2480–3; Van Arsdell 1989, no. 154-1). Diameter 12mm; weight 1.47g. Obv. Wolf? l, above ?, above tail ring, below pellet, pellet border. Rev. horse r., foreleg raised, above animal 'I', below ring, above tail 2 pellet-in-rings and pellet, pellet border.

Discussion

Coins of this type are often described as Kentish on the basis of their distribution pattern, and are dated *c.* 50–30 BC by Van Arsdell (1989, 95). Hobbs notes an example in the British Museum Collection from 'the site of Old London Bridge' (1996, no. 2483) a little upstream from Chamber's Wharf.

39. Small Late Iron Age silver unit (Fig 17) found in June 2002 by Bob Wells on the Surrey foreshore of the Thames at Wandsworth (TQ 2466 7547).

Uninscribed AR unit of ?Western 'Regular' type (as Hobbs 1996, 165–7). Diameter 12mm; weight 0.55g. Dished flan. Obv. Head r. with pellets. Rev. horse l. with pellets.

Discussion

The general type has been dated *c.*30–15 BC by Van Arsdell (1989, 273). Several of these coins were recovered from the Wanborough (Surrey) Roman temple hoard (*eg* Hobbs 1996, nos 2961–2), the latter probably deposited sometime around the middle of the 1st century AD (O'Connell & Bird 1994, 57).

40. Late Iron Age silver unit of Tasciovanus (Fig 17) found in 1976 by John Gibson on the Middlesex foreshore of the Thames off the downstream tip of Isleworth Eyot (TQ 1685 7598). The coin is no longer available for study; the information is derived from the surviving photographs and the finder's recollection. It is recorded in the Celtic Coin Index at Oxford as CCI 99.0268, based on information contained in Seaby's Coin & Medal Bulletin for August 1976, where it was reported to have been found 'in the Thames near Sion Reach' (Philip de Jersey pers comm). Other objects from the same location include a lipped terret ring and a multiple find of potin coins (Cotton & Wood 1996, no. 35).

AR unit. Obv. Winged griffin r. inside ring, pellet ring and ring. Rev. winged horse? l., below 'TA', between forelegs 'S', pellet border (Hobbs 1996, no. 1660; Mack 1953, no. 159; Evans 1864, no. V16; Van Arsdell 1989, no. 1790). Type dated *c.*15–10 BC by Van Arsdell (1989, 378).

41. Late Iron Age silver-plated, copper-alloy inscribed unit of Epaticcus or Caractacus (Fig 17) said to have been found on the Surrey foreshore of the Thames at Kew, opposite Old England, in or about 1977 (TQ 182 773). An unknown finder gave it to Mr Frank Mellish who donated it to the Museum of London (MoL 77.219).

AE/AR unit. Diameter 9mm; weight 0.47g. Dished flan, much worn with traces of silver plating on reverse; obverse virtually obliterated. Obv. Traces of head r. Rev. Eagle standing, ring ornament above. Variant of Mack 1953, no. 263 ('EPATI' on obverse; date *c.*AD 25–35) or Mack 1953, no. 265 (as no. 263 but 'CARA" on obverse; date *c.*AD 35–40). Such coins are often regarded as contemporary forgeries.

Discussion

The present coin may have been one of a number of silver units purporting to have been found on the Brentford/Kew foreshores of the Thames around this time. According to Robinson (1978) most went unrecorded, though five coins of Verica (Mack 1953, nos 115; 118; 120; 123; 128), three of Eppillus (Mack 1953, nos 107; 108), and two of Caractacus (Mack 1953, no. 265) were said to have been in the possession of Mr H Mossop of South Humberside. It is possible that some of these coins were originally from the hoard found at Waltham St Lawrence in Berkshire in 1977 (Burnett 1990).

42. Copper-alloy (probably brass) brooch (Fig 14) found in July 1995 by Bob Wells 100m downstream of Putney Road Bridge on the Surrey foreshore of the Thames at Putney (TQ 2430 7561). The brooch lay 10cm deep in gritty, iron-stained silt, at a point two-thirds of the way down an eroded area of the foreshore on a 0.7m tide.

The piece comprises a composite Rosette brooch (Hull Type 26A), 60mm in overall length and weighing 13.60g, with a reeded, P-shaped bow terminating in a cylindrical spring-cover, 7mm in diameter and 28mm in length, within which five spring-coils survive. The bow is soldered to a separate thin flat plate comprising a disc and reeded tapering foot and a catch-plate with parts of two cut-outs remaining. The disc has traces of concentric decoration at its outer edge and a central semi-circular raised ridge which marries with the base of the bow. The base of the bow itself is decorated with a series of triangular punched impressions; there are a further set of rounded punched impressions at the junction of the bow and disc plate. The piece is heavily worn and has a very distinctive golden surface.

Discussion

Rosette brooches are common in Gaul and along the German frontier (*eg* Bayley & Butcher 2004, 150), where they appear in 1st-century BC contexts. They circulated somewhat later in Britain and Mackreth (1995, 973) notes that practically all British brooches of this type had passed out of use by AD 45/50, while any in contexts dated later than *c.*AD 65 'can be discounted as residual' (Mackreth 1999, 219). A clear developmental sequence has been established (*ibid*, 218); the present piece falls relatively late within it and can probably be dated to the decade or so leading up to (and beyond) the Roman conquest.

Though present on settlement sites and in cemeteries around London, as at King Harry Lane, St Albans (Stead & Rigby 1989, 93–4), for example, Rosette brooches are not common within the London area itself. Apart from a handful of dubiously documented or unstratified strays therefore, only two examples have been excavated from the urban centres either side of the river hitherto: one fragmentary piece from a pre-Boudican context in Borough High Street, Southwark (Drummond-Murray & Thompson 2002, 218, <R3>), and another (presumably residual) from a Trajanic context at No. 1 Poultry in the City (<1485> [3837]) (Angela Wardle pers comm).

Beyond the confines of *Londinium* and north Southwark, there are single examples from a 'late first century pit' at Keston (Philp *et al* 1991, 171, fig 51, no. 92) and from the Thames at Kingston (Alderman Gould Collection, Kingston Museum acc no. 615; Cheryl Smith pers comm). Other material of Late Iron Age date (including coins such as No. 39 above) has been recovered from the Putney/Wandsworth reaches of the Thames previously, although the nagging possibility remains that the present piece was introduced amongst material dumped on the foreshore from further downstream.

CONCLUDING DISCUSSION

This latest selection of prehistoric finds can be divided into those found and reported to the Museum of London recently, those known since the 1970s but only reported recently, and those found and/or recorded many years ago. Like the two previous roundups, however, the objects fall most conveniently into one of two groups: those

recovered from the modern foreshores of the River Thames and its adjacent floodplain; and those recovered from findspots further inland.

It is noticeable that the latter, smaller, group (Nos 1–3, 14, 16, 23, 25, 27 & 36) is almost entirely made up of flint/stone objects: and doubt even surrounds the reported provenance of the one metal exception (potin coin cache, No. 36). This squares with the picture emerging from the large-scale excavations conducted in the hinterland: examination of a vast expanse of prehistoric landscape ahead of the construction of Passenger Terminal 5 at Heathrow, for example, has produced only a handful of metal objects (John Lewis pers comm). The three Palaeolithic bifaces (Nos 1–3) and both Neolithic/Bronze Age flint arrowheads (Nos 23 & 27) can be comfortably accommodated within the general run of lithics known from the brickearth-capped terrace gravels of west Middlesex. The two Neolithic ground axes (Nos 14 & 16) were both found close to tributary streams of the Thames (the Pymme's Brook/Lea and Fleet, respectively). It might also be noted that the 'near jadeite' No. 14 is the third exotic axe to have been found away from the Thames in recent years (*cf* others of 'jadeite' from Staines Moor in the Colne valley and of 'nephrite' from Hendon, close to the River Brent). This leaves the small plano-convex flint knife from Horsenden Hill as something of an outlier from a small group of such knives from the west Middlesex terrace gravels.

The majority of the larger group of 'river' finds were recovered from the Surrey shore of the Thames, although, as has been noted previously, many may not actually have been deposited in the waters of the river itself, but may have been strewn across or buried within eyots or low eminences of its floodplain. This seems particularly likely with regard to the objects recovered from the modern foreshore in front of Chambers Wharf, Bermondsey: the group of fresh, unabraded Peterborough Ware sherds (No. 20) are best explained as the eroded contents of a small pit cut into the northern edge of one of the many sand islands in the locality. It is possible that other pieces, such as the iron dagger in its composite sheath (No. 35) and the Rosette brooch (No. 42), may have been redeposited on the foreshore following dredging operations carried out elsewhere.

By and large, these 'river' finds are consistent with the previous selections published in 1991 and 1996. Notable amongst them, however, are two (probably originally three: one having disintegrated) antler-beam mattocks from Mortlake (Nos 12 & 13) whose function and dating remain somewhat equivocal (*pace* Smith 1989). Their survival in the river must surely in part at least reflect the benign nature of the burial environment, which makes the presence of a further similar mattock in a silted feature at Beddington all the more remarkable. It can be noted too that no pieces of worked bone or antler were recovered on either of the recently excavated Mesolithic sites in the Colne valley at Uxbridge (John Lewis and Craig Halsey pers comm) — and this despite a favourable burial environment which had preserved quantities of unworked animal bone (some cut-marked), and the presence of flint burins usually associated with bone working.

Equally significant are the small serrated barbed and tanged bone point from Bermondsey (No. 26), here suggested to be a copy of an Early Bronze Age flint arrowhead, and the Early Iron Age dagger in its wooden sheath (No. 35). This latter piece will form the subject of a separate publication once conservation work is complete. Other organic finds include the (undated) human skull from Putney (No. 24), which can be added to the numerous human skulls already recorded from various stretches of the river. Finally, the various coin finds gathered together here seemingly proffer a tantalising glimpse of activity either side of Caesar's expeditions in the mid-1st century BC and beyond. However, any re-assessment of the local Late Iron Age evidence will need to take careful and critical account of the dubious circumstances under which a number of these finds appear to have been made (*eg* Nos 36 & 41). This latter task will be rendered doubly difficult without the wise counsel of the late John Kent.

Prehistory is now regarded as a legitimate concern by archaeologists working in London. Its study has been greatly aided by the provisions of Planning Policy Guidance note 16 at sites such as Heathrow Passenger Terminal 5 and along the A13 in east London, for example, and by the publication of an archaeological resource assessment (MoLAS 2000) and research framework (Nixon *et al* 2002). With the inception of the Portable Antiquities Scheme and the establishment of a Finds Liaison Officer post at the Museum of London we might also reasonably anticipate — given continuance

of the necessary funding — that the future recording of stray finds such as those noted here (and by Burdon *et al* 2000) has been placed on a surer footing too.

Furthermore, during its short but influential life the Thames Archaeological Survey (1996–1999) successfully refocused attention on the archaeology of the Thames and its foreshores (Webber 2000). The Survey is surely worth reviving. Among many other initiatives, for example, it prompted a renewed interest in the gentlemen antiquaries responsible for amassing antiquities dredged from the Thames and its foreshores (*eg* Cotton 1999). Two of them, Dr Frank Corner and the Derbyshire antiquary Thomas Bateman, collected finds represented amongst the current selection (No. 11 and Nos 16–17 above). These ineluctably transport us back to the dawn of scientific archaeological enquiry in London — something that seems singularly appropriate in LAMAS's sesquicentenary year.

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BIBLIOGRAPHY

ADKINS *et al* (1987), L Adkins, R Adkins & J G Perry 'Excavations at Beddington 1984–87: the final interim' *London Archaeologist* 5 (13), 349–52

ADKINS & JACKSON (1978), R Adkins & R Jackson *Neolithic Stone and Flint Axes from the River Thames* British Museum Occasional Paper 1

ALLEN (1960), D F Allen 'The origins of coinage in Britain: a reappraisal' in S S Frere (ed) *Problems of the Iron Age in Southern Britain* University of London Institute of Archaeology Occasional Paper 11, 97–308

ALLEN (1971), D F Allen 'British potin coins: a review' in Jesson & Hill (1971), 127–54

BARRETT & BRADLEY (1980), J Barrett & R Bradley (eds) *Settlement and Society in the British Later Bronze Age* British Archaeological Reports 83

BARTON (1962), N J Barton *The Lost Rivers of London*

BAYLEY & BUTCHER (2004), J Bayley & S Butcher *Roman Brooches in Britain: A Technological and Typological Study Based on the Richborough Collection* Report Research Committee Society of Antiquaries London 68

BAYLIS *et al* (2004), A Baylis, P Marshall & J Sidell 'A puzzling body from the River Thames in London' *Radiocarbon* 46 (1), 285–91

BIRD *et al* (1978), J Bird, H Chapman & J Clark (eds) *Collectanea Londiniensia: Studies in London Archaeology and History Presented to Ralph Merrifield*

BLOCKLEY *et al* (1995), K Blockley, M Blockley, P Blockley, S Frere & S Stow *Excavations in the Marlowe Car Park and Surrounding Areas* Canterbury Archaeological Trust vol 5

BLOICE (1974), B Bloice 'Excavation round-up 1973' *London Archaeologist* 2 (6), 133–5

BLOICE (1976), B Bloice 'Excavation round-up 1975' *London Archaeologist* 2 (14), 370–2, 375

BONSALL & SMITH (1989), C Bonsall & C Smith 'Late Palaeolithic and Mesolithic bone and antler artefacts from Britain: first reactions to accelerator dates' *Mesolithic Miscellany* 10 (1), 33–8

BRADLEY & GORDON (1988), R Bradley & K Gordon 'Human skulls from the River Thames, their dating and significance' *Antiquity* 62, 503–9

BRITTON (1960), D Britton 'The Isleham Hoard, Cambridgeshire' *Antiquity* 34, 279–82

BROTHWELL (1981), D R Brothwell *Digging Up Bones: the Excavation, Treatment and Study of Human Skeletal Remains*

BRUCE & BIRLEY (1987), J Bruce & M Birley *Horsenden Hill: Archaeological Survey Report 1987*

BURDON *et al* (2000), N Burdon, A Green & C Smith 'Portable antiquities from the Thames foreshore' *London Archaeologist* 9 (5), 123–8

BURGESS (1968), C B Burgess 'The Later Bronze Age in the British Isles and North-Western France' *Archaeol Journ* 125, 1–45

BURGESS & COOMBS (1979), C Burgess & D Coombs (eds) *Bronze Age Hoards: Some Finds Old and New* British Archaeological Reports 67

BURGESS & GERLOFF (1981), C B Burgess & S Gerloff *The Dirks and Rapiers of Great Britain and Ireland* Prähistorische Bronzefunde series Abt IV, Band 7

BURNETT (1990), A M Burnett 'Celtic coinage in Britain III: the Waltham St Lawrence Treasure Trove' *Brit Numismatic Journ* 60, 13–28

COLLINS (1978), D Collins *Early Man in West Middlesex*

COOMBS (1979), D Coombs 'A Late Bronze Age hoard from Cassiobridge Farm, Watford, Hertfordshire' in Burgess & Coombs (1979), 197–233

COTTON (1991), J Cotton 'Prehistory in Greater London' *Current Archaeology* 124, 150–3

COTTON (1997), J Cotton 'Some "new" Palaeolithic flint artefacts from metropolitan Essex' *Essex Archaeology & History* 28, 267–70

COTTON (1999), J Cotton 'Ballast-heavers and battle-axes: the "Golden Age" of Thames finds' in *Mark Dion: Archaeology*, 58–71

COTTON (2004), J Cotton (with R Johnson) 'Two decorated Peterborough bowls from the Thames at Mortlake and their London context' in Cotton & Field (2004), 128–47

COTTON & FIELD (2004), J Cotton & D Field (eds) *Towards a New Stone Age: Aspects of the Neolithic in South-East England* Council for British Archaeology Research Report 137

COTTON & MERRIMAN (1991), J Cotton & N Merriman 'Some recent prehistoric finds from Greater London' *Trans London Middlesex Archaeol Soc* 42, 33–57

COTTON & WOOD (1996), J Cotton & B Wood 'Recent prehistoric finds from the Thames foreshore and beyond in Greater London' *Trans London Middlesex Archaeol Soc* 47, 1–33

COWIE & EASTMOND (1997), R Cowie & D Eastmond 'An archaeological survey of the foreshore in the Borough of Richmond upon Thames, part 2: down by the riverside' *London Archaeologist* 8 (5), 115–21

CUMING (1857), H S Cuming 'On the discovery of Celtic crania in the vicinity of London' *Journ Brit Archaeol Assoc* 13, 237–40

CUMING (1858), H S Cuming 'On further discoveries of Celtic and Roman remains in the Thames, off Battersea' *Journ Brit Archaeol Assoc* 14, 326–30

DE JERSEY (1996), P de Jersey *Celtic Coinage in Britain*

DIVERS (2001), D Divers 'Excavations at 552 Kings Road, Chelsea' *Trans London Middlesex Archaeol Soc* 52, 1–9

DRUMMOND-MURRAY & THOMPSON (2002), J Drummond-Murray & P Thompson with C Cowan *Settlement in Roman Southwark: Archaeological Excavations (1991–8) for the London Underground Limited Jubilee Line Extension Project* MoLAS Monograph 12

ELSDEN (1997), N J Elsden 'Excavations at Nobel Drive, Harlington, and six sites to the north of Heathrow Airport, Hillingdon' *Trans London Middlesex Archaeol Soc* 48, 1–13

EVANS (1864), J Evans *The Coins of the Ancient Britons*

FARID (2000), S Farid 'An Excavation at 6–16 Old Church Street, Royal Borough of Kensington and Chelsea' *Trans London Middlesex Archaeol Soc* 51, 115–41

FIELD (1989), D Field 'Tranchet axes and Thames picks: Mesolithic core tools from the West London Thames' *Trans London Middlesex Archaeol Soc* 40, 1–26

FIELD & WOOLLEY (1983), D Field & A Woolley 'A jadeite axe from Staines Moor' *Surrey Archaeol Collect* 74, 141–5

GARWOOD (1999), P Garwood 'Grooved Ware in Southern Britain: chronology and interpretation' in R Cleal & A MacSween (eds) *Grooved Ware in Britain and Ireland*, 145–76

GERLOFF (1975), S Gerloff *The Early Bronze Age Daggers in Great Britain and a Reconsideration of the Wessex Culture* Prähistorische Bronzefunde, Abt VI, Band 2

GIBBARD (1985), P L Gibbard *The Pleistocene History of the Middle Thames Valley*

GREEN (1980), H S Green *The Flint Arrowheads of the British Isles: A Detailed Study of Material from England and Wales with Comparanda from Scotland and Ireland* British Archaeological Reports 75

GRIMES (1938), W F Grimes 'A barrow on Breach Farm, Llanbleddian, Glamorgan' *Proc Prehist Soc* 4, 107–21

HADAS (1977), Hendon & District Archaeological Society 'A jadeite axe from Hendon' *Trans London Middlesex Archaeol Soc* 28, 271

HOBBS (1996), R Hobbs *British Iron Age Coins in the British Museum*

HOLDER & JAMIESON (2003), N Holder & D Jamieson 'The prehistory of the City of London: myths and methodologies' *Archaeol Journ* 160, 23–43

JENSEN (1991), G Jensen 'Unusable axes? An experiment with antler axes of the Kongemose and Ertebolle cultures' *Eksperimentel Arkaeologi* 1, 10–21

JESSON & HILL (1971), M Jesson & D Hill (ed) *The Iron Age and its Hill-Forts: Papers Presented to Sir Mortimer Wheeler* University of Southampton Monograph 1

JONES *et al* (1977), V Jones, A C Bishop & A R Woolley 'Third supplement of the catalogue of jade axes from sites in the British Isles' *Proc Prehist Soc* 43, 287–93

JOPE (1961), E M Jope 'Daggers of the Early Iron Age in Britain' *Proc Prehist Soc* 27, 307–43

JOPE (1982), E M Jope 'Hallstatt D daggers: Britain and Europe' *Bull Inst Archaeol* 19, 83–9

JOPE (2000), E M Jope *Early Celtic Art in the British Isles*

KENT (1978), J P C Kent 'The London area in the Late Iron Age: an interpretation of the earliest coins' in Bird *et al* (1978), 53–8

LACAILLE (1966), A D Lacaille 'Mesolithic facies in the transpontine fringes' *Surrey Archaeol Collect* 63, 1–43

LAWRENCE (1929), G F Lawrence 'Antiquities from the middle Thames' *Archaeol Journ* 86, 69–98

MACDONALD (1978), J Macdonald 'An Iron Age dagger in the Royal Ontario Museum' in Bird *et al* (1978), 44–52

MACK (1953), R P Mack *The Coinage of Ancient Britain*

MACKRETH (1995), D F Mackreth 'Pre Roman and Roman brooches' in Blockley *et al* (1995), 955–83

MACKRETH (1999), D F Mackreth 'The Brooches' in Niblett (1999), 216–22

MERRIFIELD (1987), R Merrifield *The Archaeology of Ritual and Magic*

MOLAS (2000), Museum of London Archaeology Service *The Archaeology of Greater London: An Assessment of Archaeological Evidence for Human Presence in the Area now Covered by Greater London*

NEEDHAM (1987), S Needham 'The Bronze Age' in D G Bird & J Bird (eds) *The Archaeology of Surrey to 1540*, 97–137

NEEDHAM (1990), S Needham *The Petters Late Bronze Age Metalwork: an Analytical Study of Thames Valley Metalworking in its Settlement Context* British Museum Occasional Paper 70

NEEDHAM & BURGESS (1980), S Needham & C Burgess 'The Later Bronze Age in the lower Thames valley: the metalwork evidence' in Barrett & Bradley (1980), 437–69

NEEDHAM *et al* (1997), S Needham, C B Ramsey, D Coombs, C Cartwright & P Pettitt 'An independent chronology for British Bronze Age metalwork: the results of the Oxford Radiocarbon Accelerator Programme' *Archaeol Journ* 154, 55–107

NIBLETT (1999), R Niblett *The Excavation of a Ceremonial Site at Folly Lane, Verulamium* Britannia Monograph 14

NIXON *et al* (2002), T Nixon, E McAdam, R Tomber & H Swain *A Research Framework for London Archaeology 2002*

O'CONNELL & BIRD (1994), M G O'Connell & J Bird 'The Roman temple at Wanborough, excavation 1985–1986' *Surrey Archaeol Collect* 82, 1–168

O'CONNOR (1980), B O'Connor *Cross-Channel Relations in the British Later Bronze Age* British Archaeological Reports International Series 91

PHILP *et al* (1991), B Philp, K Parfitt, J Willson, M Dutto & W Williams *The Roman Villa Site at Keston, Kent: First Report (Excavations 1968–1978)*

PITTS (1996), M Pitts 'The Neolithic axe in Britain' *Proc Prehist Soc* 62, 311–71

PROCTOR & BISHOP (2002), J Proctor & B Bishop 'Prehistoric and environmental development on Horsleydown: excavations at 1–2 Three Oak Lane' *Surrey Archaeol Collect* 89, 1–26

ROBINSON (1978), A Robinson 'Silver coins found on the banks of the Thames' *Surrey Archaeol Soc Bulletin* 148, 3–4

ROWLANDS (1976), M J Rowlands *The Production and Distribution of Metalwork in the Middle Bronze Age in Southern Britain* British Archaeological Reports 31

SHEPPARD (1991), F Sheppard *The Treasury of London's Past: An Historical Account of the Museum of London and its Predecessors, the Guildhall Museum and the London Museum*

SIDELL *et al* (2002), J Sidell, J Cotton, L Rayner & L Wheeler *The Prehistory and Topography of Southwark and Lambeth* MoLAS Monograph14

SMITH (1989), C Smith 'British antler mattocks' in C Bonsall (ed) *The Mesolithic in Europe: Papers Presented at the Third International Symposium, Edinburgh 1985*, 272–83

SMITH (1910), R A Smith *Proc Soc Antiq London* 2nd series 23, 160–71

STEAD & RIGBY (1989), I M Stead & V Rigby *Verulamium: The King Harry Lane Site* English Heritage Monograph 12

THACKER (1920), F S Thacker *The Thames Highway Volume II: Locks and Weirs*

THOMPSON *et al* (1998), A Thompson, A Westman & T Dyson (eds) *Archaeology in Greater London 1965–90: a Guide to Records of Excavations by the Museum of London*

TURNER & WYMER (1987), R Turner & J J Wymer 'An assemblage of Palaeolithic hand-axes from the Roman religious complex at Ivy Chimneys, Witham, Essex' *Antiq Journ* 67, 43–60

VAN ARSDELL (1989), R van Arsdell *Celtic Coinage of Britain*

WAINWRIGHT & LONGWORTH (1971), G J Wainwright & I H Longworth *Durrington Walls Excavations 1966–1969*

WEBBER (2000), M D Webber *Report on the Thames Archaeological Survey 1996–1999*

WEBBER (2004), M Webber (with H Ganiaris) 'The Chelsea club: a Neolithic wooden artefact from the River Thames in London' in Cotton & Field (2004), 124–27

WEINREB & HIBBERT (1983), B Weinreb & C Hibbert (eds) *The London Encyclopaedia*

WYMER (1968), J J Wymer *Lower Palaeolithic Archaeology in Britain: As Represented by the Thames Valley*

NEW WORK ON CRIPPLEGATE FORT: EXCAVATIONS AT 25 GRESHAM STREET, 2000–2001

Jo Lyon

With contributions by Ian M Betts and Susan Pringle (ceramic building material), Lisa Gray (plant remains), Jackie Keily (registered finds), Jane Liddle (animal bone), Jacqueline Pearce (post-Roman pottery), and Robin Symonds (Roman pottery)

SUMMARY

The site of 25 Gresham Street is located in the financial centre of the modern day City of London. This area became the focus for Roman military and civil activity in the early 2nd century AD, when Cripplegate fort was built. The main significance of the site lies with the fact that it straddles the south wall of the fort. The Museum of London Archaeology Service (MoLAS) carried out excavations on the site in 2000–2001 which uncovered the foundations of the south wall of the early Roman Cripplegate fort, an interval tower, defensive ditch, and ancillary buildings. These remains form the largest portion of the southern section of the fort wall discovered to date. By the 3rd century the fort had fallen into disuse, and there was little activity in the area by the 4th century AD.

Reoccupation of the Roman city occurred during the early medieval period. The main evidence of occupation at the site was dated to between 1050 and 1150. Intensification of activity was linked with the development of metalworking and dye production in the Cripplegate area. These industries played an integral role in the development of the early economy and society in this part of London, echoed in the modern street names, eg nearby Silver Street. During the post-medieval period the area became built up with tenements, and was the site of the church of St John Zachary. The remains of this church (destroyed in the Great Fire of 1666) are now preserved under the garden area of the new development.

INTRODUCTION

The site is situated on the north side of Gresham Street and is bounded by Staining Lane on the east, Noble Street on the west, and Oat Lane on the north side. The national grid reference for the centre of site is 532243 181444 (see Fig 1). The Museum of London site code is NHG98.

The area around Gresham Street and Noble Street was virtually destroyed during the Blitz. Post-War reconstruction of the City provided an unprecedented opportunity for the study of its archaeology. The Roman and Medieval London Excavation Council (RMLEC), led by W F Grimes (then Keeper and Secretary of the London Museum), conducted a series of archaeological investigations throughout the area. During the course of these excavations, Grimes discovered that the Roman city wall had been preceded by a fort, in the north-west area of the settlement (Grimes 1968, 17–28). Investigations carried out on the site of 25 Gresham Street during the 1950s located the remains of three courses of the south wall of the fort, in a small trench (WFG10; Grimes 1968, 23). It was not possible to define the exact alignment of the wall from this limited evidence.

The Museum of London Archaeology Service (MoLAS) carried out an evaluation of the site in 1998, which indicated a potential for survival of archaeological remains from the Roman, medieval, and post-medieval periods. Due to

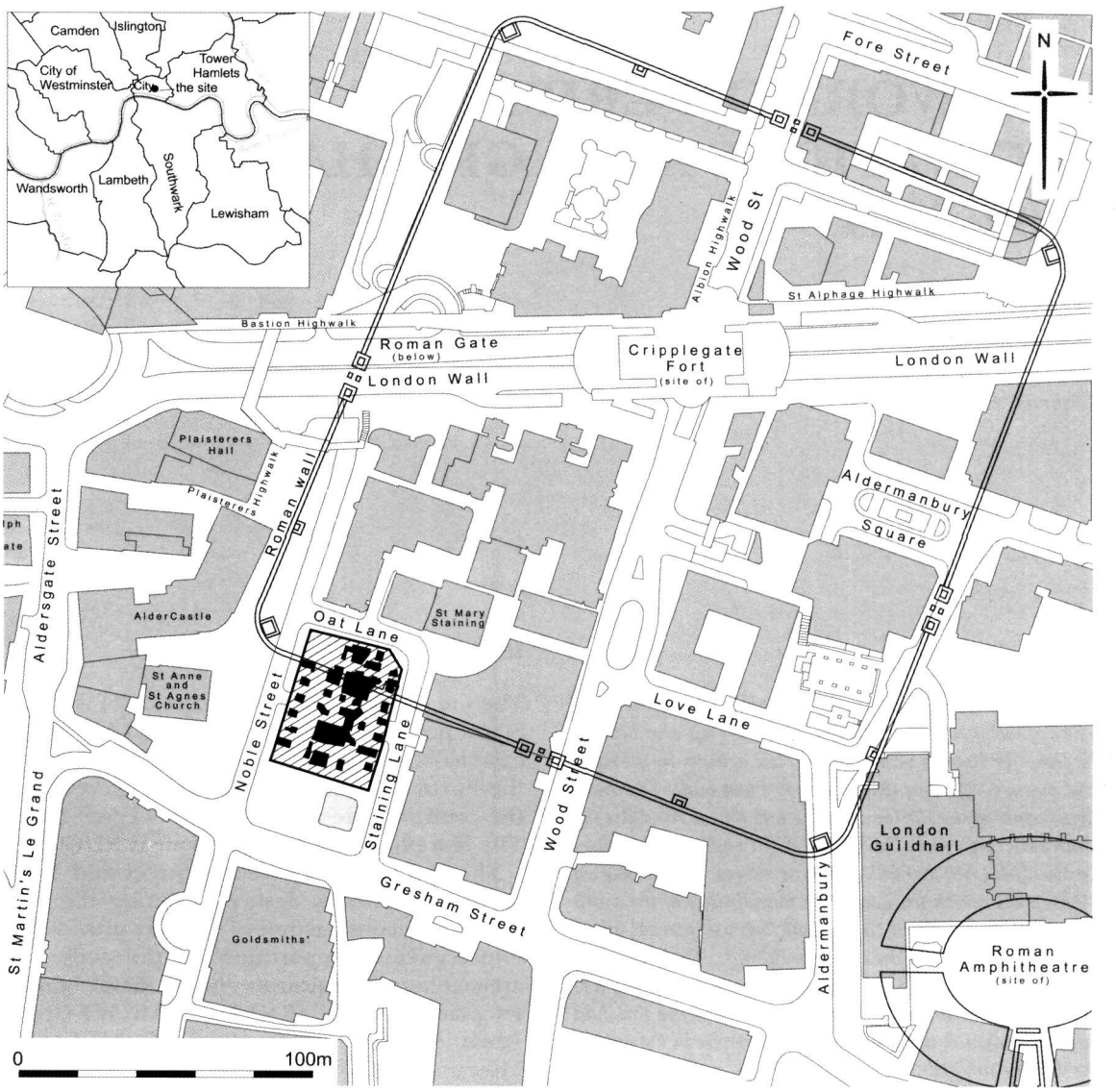


Fig 1. Site location showing the outline of the Roman fort

problems with access into relevant areas during the evaluation, the presence or absence of the fort wall could not be confirmed. As a result a contingency was built into the foundation design for the proposed redevelopment, which made provision for the preservation of the fort wall. A second phase of evaluation was undertaken in 2000, immediately prior to the main excavation, which confirmed that large segments of the foundations of the south wall of the fort survived on the site. No trace of Grimes's earlier trenches (WFG10) were discovered at this time.

The discovery of the fort wall enabled the piling design to be finalised to ensure preservation *in situ* of the fort wall and interval tower. The resulting mitigation strategy for the site was complicated and limited the excavation to a series of pile holes, lift pits, and ground beams. Excavation took place in a number of phases between 2000 and 2001. This report describes the results of the investigations at the 25 Gresham Street site, and puts them in context with the findings of the RMLEC carried out during the 1950s, and those of more recent

archaeological sites in the vicinity. The findings from 25 Gresham Street are also discussed in the recent monograph on Cripplegate Fort (Howe & Lakin 2004), and the monograph detailing work conducted by W F Grimes and A Williams on Cripplegate Fort during the post-War years (Shepherd in prep). The site archive is available for consultation in the LAARC[1] by arrangement.[2]

NATURAL TOPOGRAPHY AND PREHISTORIC ENVIRONMENT

The underlying solid geology of the City of London consists of London Clay. Overlying this are Pleistocene drift deposits laid down by the Thames in a series of terraces. In the area of Cripplegate river gravel terraces are overlain by brickearth deposits, which are of considerable thickness in places. On the site itself brickearth was found to be up to 4m thick, whilst on other sites in the area brickearth was recorded up to 2.8m thick (Howe & Lakin 2004, 10). Deposits of truncated natural brickearth were recorded on site at an average level of 12.27m OD; natural gravels were located at 8.27m OD. By comparison modern street level in Gresham Street to the south of the site is at 16.3m OD. The recorded level of truncated natural on neighbouring sites compares closely with that on the site.

No pre-Roman features were identified on site; however, a fragment of residual prehistoric pottery (dating 4,000 BC–AD 43) was recovered from the primary backfill of the fort ditch. A small number of residual worked and burnt flints was also discovered on site. Prehistoric activity has been identified on surrounding archaeological sites, with a number of struck and burnt flints being found, for instance, at 3 Noble Street (NST94), 31–45 Gresham Street (GAH95), and 90–91 and 100 Wood Street (WOO97). On the last site a prehistoric north–south aligned ditch was found, along with other more ephemeral features (Howe & Lakin 2004, 11).

THE ROMAN SEQUENCE

Pre-fort activity *c.*50–120 (Period 1)

At the beginning of the Roman period the site was situated on the fringe of the new settlement. Grimes indicated in his interim publication (Grimes 1968, 32–7) that clay and timber buildings were established in the area later occupied by the fort. Indeed evidence for such buildings has since been identified on many sites in the area (*eg* 3 Noble Street, 31–45 Gresham Street, and 90–91 and 100 Wood Street). During Period 1 natural brickearth was sealed by a layer of redeposited brickearth, forming Open Area 2 (Fig 2). This deposit extended across the whole site, and contained pottery dating to AD 60–100.

Fragments of four clay and timber buildings (Buildings 1–4, Fig 2), which appear to pre-date the fort, were identified at the site. Beamslots, indicating wall lines, had not survived and so the orientation of the buildings could not be determined. The buildings consisted of internal brickearth floors and occupation debris. The floors in Building 1 contained the base of a glass phial (<73>) and a small amount of Highgate Wood ware C pottery, dating to *c.*AD 70–160. In Building 2 the floor layers contained pottery dated to *c.*AD 70–120, and a fragment of burnt ceramic, probably from a hearth. A fourth structure (Building 4, Fig 2) was situated further to the south and consisted of a brickearth floor, laid on a thin layer of gravel, with a series of associated postholes. Building 4 is dated *c.*AD 50–100 by the presence of South Gaulish samian ware, early Roman micaceous sandy ware, and early Roman sandy ware B. A series of small, shallow pits (Open Area 3, Fig 2) was associated with the early Roman buildings. The pits contained sherds of pottery, including Verulamium region coarse white-slipped ware and a jar and lid in Highgate Wood ware C, dating to *c.*AD 70–120. The pottery assemblage from Open Area 3 also included two rare amphora types: a Lipari amphora and a Fishbourne form 148.3 amphora in a similar fabric to an example from earlier excavations at 3 Noble Street (Seeley 2004); the former was from the Aeolian Islands near Sicily, and the latter probably originated from North Africa.

Due to the paucity of remains it was not possible to establish the form or function of the buildings, although they probably had a residential and industrial purpose similar to pre-fort buildings excavated on sites at 3 Noble Street, 31–45 Gresham Street, and 90–91 and 100 Wood Street, which had evidence of hearths (Howe & Lakin 2004, 23–4). The buildings on these sites were similar to those with a residential and industrial function in the centre of the early Roman city, further to the south-east (Perring & Roskams 1991, 3–18; Hill & Rowsome in prep). They must have been demolished immediately prior to the construction of Cripplegate fort.

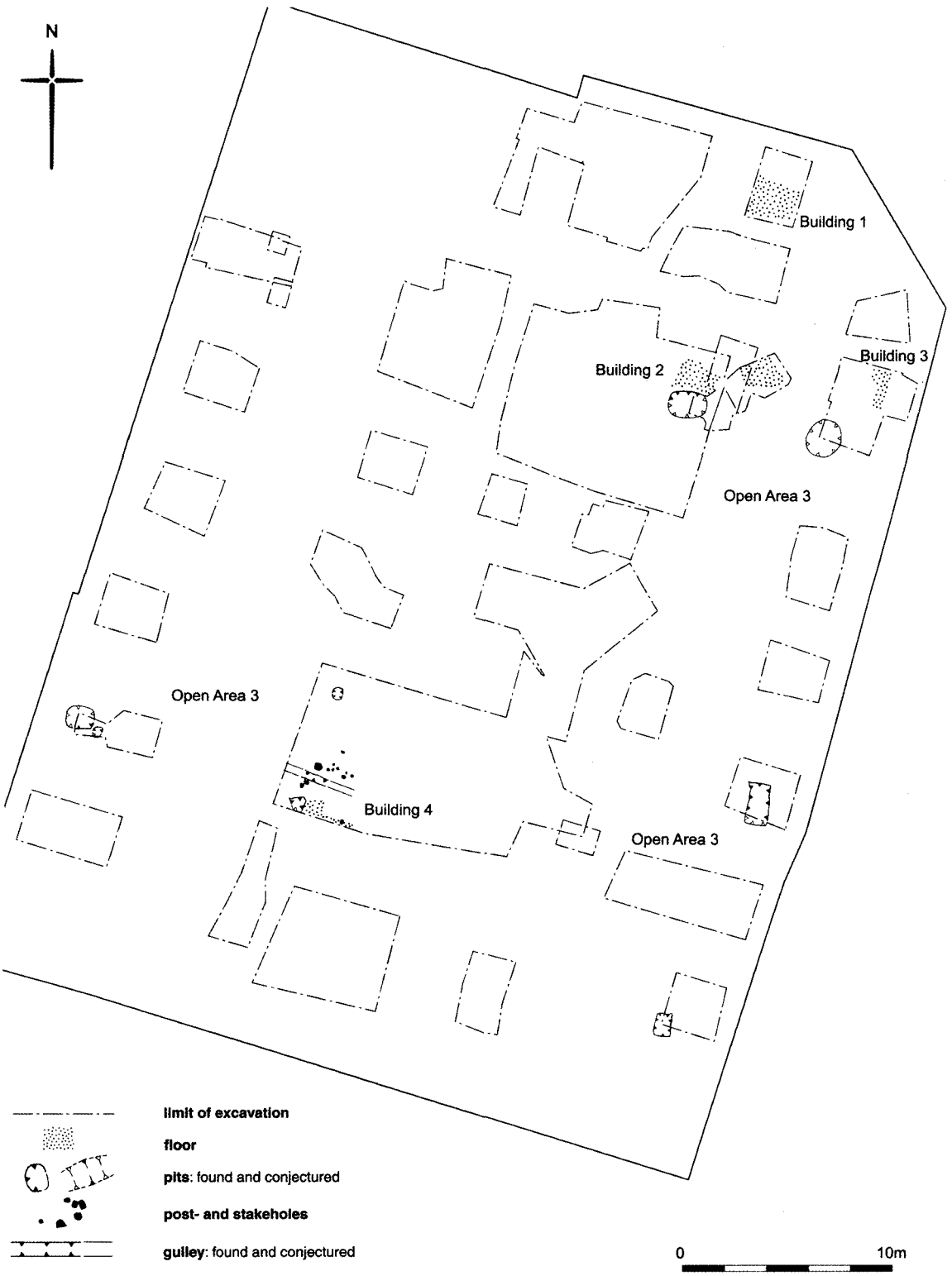


Fig 2. Pre-fort activity; early Roman buildings (Buildings 1–4) and Open Area 3 c.AD 50–120 (Period 1)

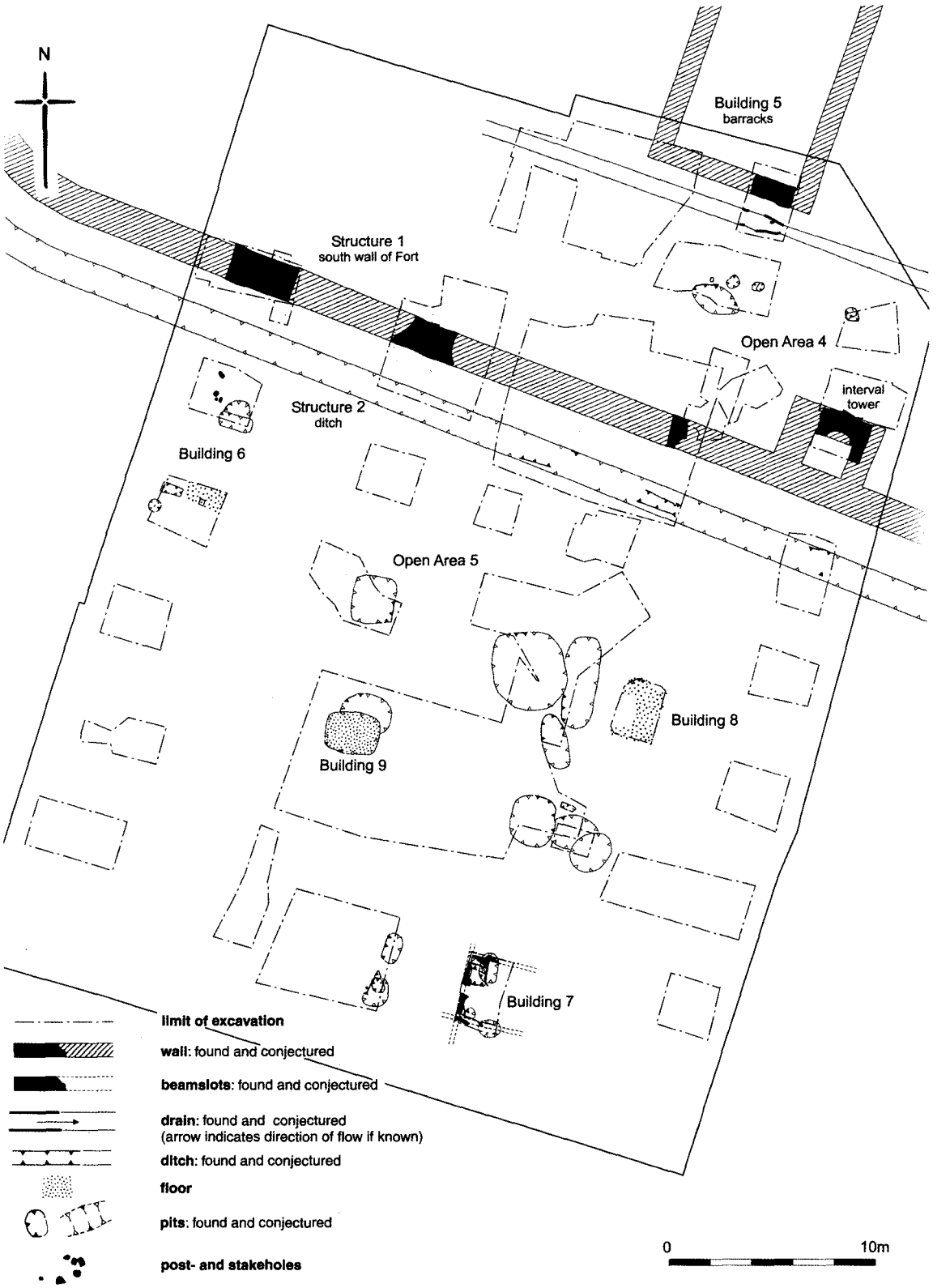


Fig 3. South wall of Cripplegate fort, ancillary structures and external contemporary features c.AD 120–200 (Period 2)

Cripplegate fort, *c.*AD 120–200 (Period 2)

The construction of Cripplegate fort took place *c.*AD 120–160. This date has been refined as a result of recent work (Howe & Lakin 2004, 39–40), as it was previously believed that the fort was constructed before AD 120 (Grimes 1968, 38). The dating of the fort has relied largely on finds assemblages from small fragments of internal buildings and roads, excavated on neighbouring sites. No new dating evidence for the fort was obtained from the site of 25 Gresham Street; this was mainly due to deep truncation caused by modern basements on the site.

The line of the south wall of the fort crosses the northern part of the site. Initial evaluation (both by Grimes and MoLAS) was unable to establish the level of survival of the fort wall and

Fig 4. Foundations of south wall of Cripplegate fort (Structure 1), looking east (0.50m scale)

foundations. However, subsequent excavations on site confirmed that three separate fragments of the foundations of the fort wall and an interval tower (Structure 1, Fig 3) had survived. The foundations were found to be composed of packed Kentish ragstone (with occasional fragments of brown sandstone) and tile, bonded together with grey/green puddled clay (Fig 4).

The discovery of these *in-situ* fragments confirmed the exact location of the south wall, which is further to the north than had been anticipated. This discrepancy occurred because the line of the wall was originally projected using the south-west corner of the fort in Noble Street, the alignment of the north wall of the fort, and a small section of the south wall discovered running across Staining Lane (WFG11, Grimes 1968, 23). More recently, evidence for the location of the south wall was suggested by the discovery of an east–west aligned robber trench at 90–91 and 100 Wood Street in 1997 (Howe & Lakin 2004, 36).

In addition to the discovery of the south wall foundations, the remains of an interval tower (Structure 1, Fig 5) were identified. Grimes had predicted the existence of this tower but had thought that it would be further to the east. The discovery of the tower confirms that it was situated approximately half way between the south-west corner of the fort and the gatehouse located in the area of Wood Street. The Kentish ragstone foundations of the south wall and interval tower were preserved *in situ* below the new development.

Other features relating to the fort included the fort ditch (Structure 2, Figs 3 and 6), discovered in two different locations and situated approximately 1m from the southern face of the fort wall. A fragment of one of the internal fort buildings (Building 5, Fig 3) was discovered at the northern extent of the site. This consisted of an east–west orientated, robbed-out Kentish ragstone and clay-packed wall foundation (similar to the fort wall foundation). Examples of structures like this have been discovered on sites at 3 Noble Street, 31–45 Gresham Street, and 90–91 and 100 Wood Street. The external wall of Building 5 was part of a much larger structure,

Fig 5. Foundations of interval tower (Structure 1), looking north-east (0.50m scale)

Fig 6. Section through external fort ditch (Structure 2), looking west (0.50m scale)

first identified on the adjacent site at 3 Noble Street. This building is identified as Building 12 in the Cripplegate monograph (Howe & Lakin 2004, 31–5), but has been numbered independently as Building 5 for the purpose of this study. The building would have been one of a series of large rectangular barrack blocks. The discovery of the south wall of Building 5 has allowed the overall dimensions of the barrack to be more accurately predicted, at 50m long and 8–10m wide. The internal area of Building 5 was not seen. Excavation of the northern portion of this building at 3 Noble Street, however, revealed internal floor deposits, a partition, and a hearth (Howe & Lakin 2004, 31). A gulley was identified running parallel to the south of Building 5; this was part of the fort's drainage system. In addition to the fort wall, ditch, and barrack, it was expected that fragments of the intramural road (*via sagularis*) and clay bank might survive. It is possible that the compact, dirty gravel dump in Open Area 4 (Fig 3) was part of the road, or the bank. This deposit contained fragments of brick and Kentish ragstone rubble, which could be debris related to construction work inside the fort.

Occupation activities thought to be contemporary with the fort were identified outside its south wall. These remains, which were extremely sparse, included parts of three clay and timber buildings. Buildings 6 and 8 (Fig 3) were situated in close proximity to the fort wall; both consisted of internal brickearth floors and occupation debris. The deposits in Building 6 contained a turquoise glass melon bead (<137>), and are dated to *c.*AD 120–160 by a rim sherd of a black burnished-style ware everted-rimmed jar, a body sherd of a colour-coated beaker (which may be Colchester colour-coated ware), and sherds of an unusual fine micaceous reduced ware bowl with compass-inscribed decoration (<P1>, Fig 7). The floors in Building 8 contained pottery including Central Gaulish samian, and jars and bowls in black burnished wares 1 and 2, dating the building to *c.*AD 120–160. Building 9 (Fig 3), which was slightly further south, consisted of the remains of brickearth floors, levelling, and trample, which had slumped into an earlier quarry pit, dating

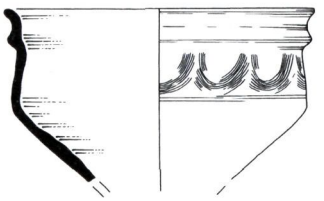


Fig 7. Unusual reduced ware bowl <P1> [910] (Scale 1:4)

to AD 150–200. At the southern extent of the site was Building 7 (Fig 3), consisting of a series of beamslots, make-up layers, and a hearth. A copper-alloy coin (<11>) and bowls, dishes and jars in black burnished wares 1 and 2 dated the building *c.*AD 120–160. Building 7 may have had an industrial purpose as samples taken from the hearth had a high iron-working slag content.

It is likely that the buildings in Period 2 were similar in form and function to the pre-fort buildings of Period 1. They are also likely to have been similar to buildings from nearby sites; a 1st-century building at 3 Noble Street also contained a hearth with slag fragments. Given that there was not a large amount of industrial waste associated with Building 7, it is probable that small scale smithing or repair work took place rather than mass production. This is corroborated by the nature of the finds contained in the pits in Open Area 5 (Fig 3), associated with Buildings 6–9. The pits associated with Building 7 contained a range of domestic finds, such as glass fragments, including part of the rim of a small cast bowl in marbled polychrome glass (<69>, Fig 8), fragments of a burnt oxidised ware bowl, and a Matres-de-Veyre samian fabric 2 Curle form 11 bowl with deep flange (<P2>, Fig 9). The faunal assemblage from these pits was exclusively cattle remains. The cluster of rubbish pits and wells in the centre of site (Fig 3) was dated AD 120–140 by various forms in black burnished wares 1 and 2, along with several dishes, bowls, and cups

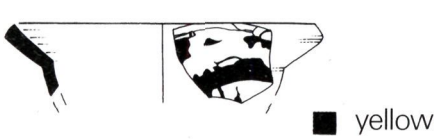


Fig 8. Cast glass bowl <69> (Scale 1:2)

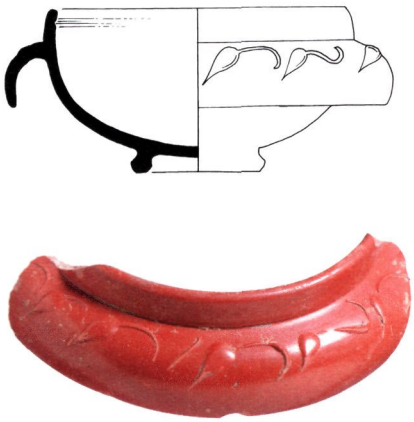


Fig 9. Samian bowl <P2> [265] (Scale 1:4)

in samian ware from Les Matres-de-Veyre and Lezoux. These pits also contained numerous fragments of mudbrick walling from clay and timber buildings, a fragment of combed box flue from a hypocausted building, and a faunal assemblage including marine and freshwater fish species.

It is probable that some of the buildings discussed above are actually part of the same structure; it was not possible to confirm this due to the small size of the trenches excavated. None of the Period 2 buildings or pits contained finds that could be described as military, a pattern that has also been observed on neighbouring sites. The pottery assemblage from Period 2 is very similar to that from 3 Noble Street, in that it contained very little pottery dating to the second half of the 2nd century (Howe & Lakin 2004, 39). This suggests that occupation of the Period 2 clay and timber buildings had ceased by AD 160.

Disuse of the fort *c.*AD 200–400 (Period 3)

The construction of the Northern House basement on the site in the 1950s destroyed all late Roman horizontal stratigraphy. Evidence from the site (Fig 10), when placed alongside more substantial evidence from surrounding sites, suggests that the fort fell into disuse by the mid-3rd century AD.

Of the fort features excavated on the site, only the fort ditch contained dating material, including a near complete Highgate Wood ware C

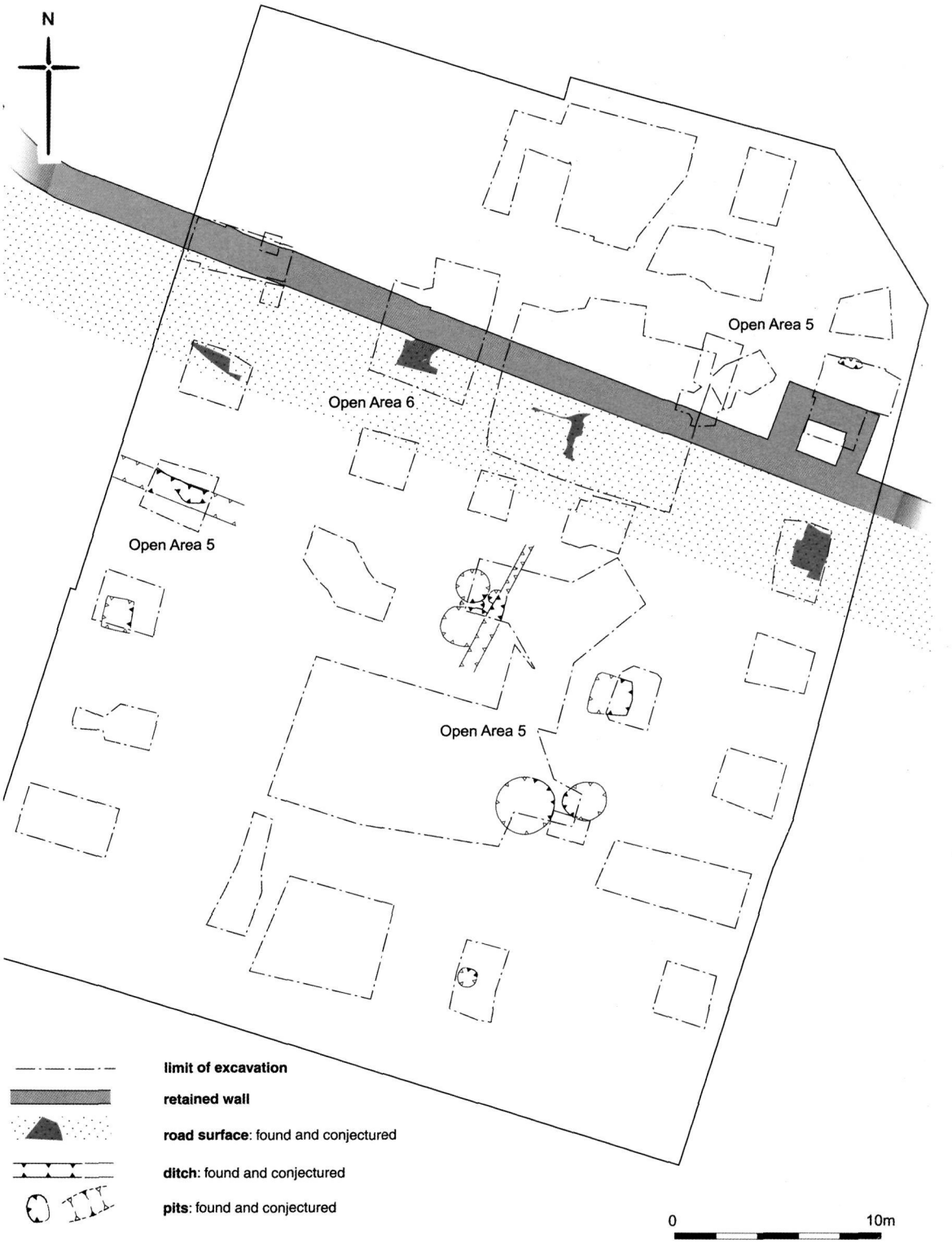


*Fig 10. Disuse of the fort, c.*AD *200–400 (Period 3)*

Fig 11. Jar in Highgate Wood ware C with decorated shoulder <P3> [475] (Scale 1:1)

round-bodied jar with decorated shoulder (<P3>, Fig 11), suggesting that the ditch was backfilled in the mid–late 2nd century AD. The backfilled fort ditch was also excavated by the RMLEC on sites at 70a–71 Aldermanbury (WFG14) and the Guildhall Library (formerly Guildhall car park), Aldermanbury (GM4), and contained pottery dating to the late 2nd and early 3rd centuries AD (Grimes 1968, 39; Marsden 1968, 9).

The backfilling of the ditch does not necessarily indicate disuse of the fort, and was probably linked with the building of the city wall. It is known that construction of the Roman city wall took place between AD 190 and 225, at which time the north and west walls of the fort were thickened and incorporated into the city wall (Perring 1991, 92). The external ditch for the fort's south wall would have become redundant, and it is likely that it was backfilled at this point. It is not known whether the fort also ceased to function and was entirely demolished at this time, or whether the south and east walls continued to stand. Evidence for the disuse of the fort obtained from other sites suggests that the internal buildings of the fort went out of use by the 3rd century AD. For instance, on sites at 3 Noble street and 90–91 and 100 Wood Street, barrack blocks were demolished and the internal area sealed by a layer of demolition material dating AD 150–250 (Howe & Lakin 2004, 45–7). On the site, the south wall of Building 5 (Building 12 at 3 Noble Street) had

been largely robbed out. The backfill of the robber trench contained a high proportion of plaster and mortar, and was dated 1000–1150 by a small amount of medieval pottery. Building 11 at 90–91 and 100 Wood Street also had robbed out foundations backfilled with plaster and mortar debris from the demolition of its interior, but contained large amounts of pottery dating to AD 160–300 (Howe & Lakin 2004, 42). This suggests that there may have been a delay between the demolition of the barracks, and the robbing of the foundations. It is clear that the original layout of the fort did persist into the later Roman period, due to the fact that some of the internal roads were remetalled after the internal buildings were demolished.

The site has produced evidence that suggests the south wall of the fort may have continued to stand after the construction of the city wall. There is no evidence of any Roman robbing of the south fort wall foundations on the site. This may mean that the interior of the fort was redeveloped while the wall was left intact. Or it could simply mean that robbing of the foundations of the fort did not take place immediately after the demolition of the upstanding wall, on this site. It was not until the early medieval period that cut features first began to encroach upon the line of the wall; prior to this there is nothing to suggest that the wall was not still a physical boundary in the landscape. This possibility is given further credence by the manner in which the landscape external to the south wall of the fort was remodelled during the 2nd/3rd century AD. Directly after the fort ditch was backfilled, the area to the south of the wall was cleared and a metalled surface laid (Open Area 6, Fig 10). This metalling respected the line of the wall and sloped up towards it, suggesting that the wall may still have been standing at this time. The gravel surface, 5–6m wide north–south, extended east–west across the full extent of the site. It contained roofing tile and brick in a variety of fabrics, suggesting that it was partially made up of demolition material from a number of buildings, possibly derived from the destruction of internal fort structures. The latest pottery present in the assemblage from Open Area 6 was a small sherd of East Gaulish samian, dated *c.*AD 150–300, and what may have been a sherd of a Colchester white ware vessel dated AD 200–300. This corresponds with the date at which the ditch was backfilled, and when demolition of internal buildings probably began. Open Area 6 contained arguably the

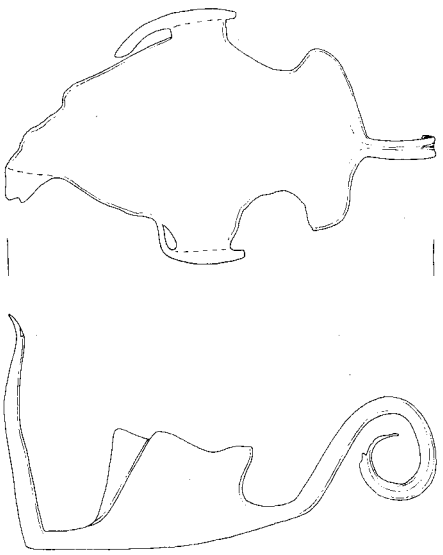


Fig 12. Iron hipposandal <41> (Scale 1:4)

most interesting Roman finds from the site: the remains of two iron hipposandals, including a near complete example (<41>, Fig 12), belonging to Manning's type 1 (Manning 1985, 63 and fig 16, no. 1). These were a form of horseshoe used on unshod animals on metalled surfaces, and it is extremely rare to find examples from archaeologically excavated contexts.

It is possible that Open Area 6 represented an external road built during or after the construction of the city wall, and was associated with the partial redevelopment of the fort road system at this time. It is difficult to relate later Roman activity on nearby sites to that on the 25 Gresham Street site; the metalled surface in Open Area 6 has no parallel elsewhere. The metalling was truncated at an unknown date, and sealed by an undated dark silty deposit (Open Area 7), not unlike late Roman 'dark earth'. There were no Roman pits cut through the layer of metalling, and so it is possible that this road or yard represents some kind of exclusion zone around the south wall of the fort.

Late Roman pits and linear features were found to the north and south of Open Area 6, in Open Area 5 (the pit internal to the fort wall (see below) would have been physically separated from the other features at this time) (Fig 10). These features had a date range of *c.*AD 200–300. In the western part of the site an east–west orientated ditch ran approximately parallel

to the gravel surface in Open Area 6, and may have been associated with it. The backfill of two large pits in the centre of Open Area 5 contained a range of finds including a copper-alloy finger ring (<93>, Fig 13) with stone intaglio. The ring looks like a late development of Henig type III

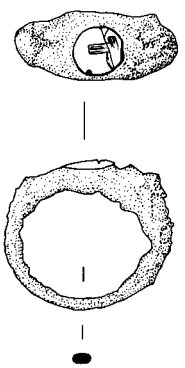


Fig 13. Copper-alloy ring with intaglio <93> (Scale 1:1)

towards the forms characteristic of late Antonine times and beyond. The cornelian, with which it is set, is cut with a single stroke of the lap wheel and was clearly designed when worn to look like an engraved signet. It compares well with an 'intaglio' from South Shields (Henig 1978, no. 421). Another example of a base of an iron hipposandal (<102>) was also recovered from a pit in Open Area 5. A pit within the confines of the former fort (Fig 10) contained fragments of brown ferruginous sandstone; this is known to have been used as a plinth at the base of the city wall, and could have been discarded during its construction.

There was no evidence of post-fort or later Roman buildings on the site. There was evidence of a post-fort building on the neighbouring site 90–91 and 100 Wood Street, however, situated in the internal area of the fort, and built on barrack demolition layers. The building dates to AD 250–400 and does not respect the original internal layout of the fort, providing further evidence that the fort had fallen into disuse by this time (Howe & Lakin 2994, 43).

A fairly large assemblage of residual late Roman pottery was found in early medieval features on the site. The assemblage consists mainly of 3rd-century pottery types, such as Alice Holt/Farnham ware, later black burnished ware forms,

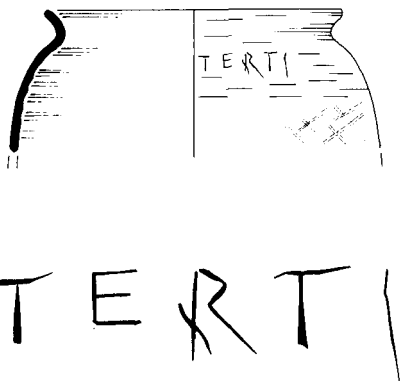


Fig 14. Jar in black burnished ware 2 with graffito TERTI <P4> [140] (Scale 1:4; graffito 1:1)

Oxfordshire and Nene Valley colour-coated wares, and East Gaulish samian. The assemblage includes sherds of a bowl in black burnished ware 2 (<P4>, Fig 14) marked with a graffito which reads TERTI.

Roman discussion

The evidence from the site indicates that the area was occupied by buildings in the latter part of the 1st century AD, prior to the building of the fort. This confirms the pattern known from nearby sites, and shows that the settlement expanded quickly once it had been re-established after the Boudican revolt. The buildings excavated on the site appear to conform to the general nature of buildings in the area in the 1st century AD — domestic houses with an industrial component. There is no evidence that these buildings were military in nature, and they were not situated in areas which respected or anticipated the layout of the later fort. There was no evidence on the site that the fort was preceded by an earlier military installation, such as a timber fort, as has been suggested (Perring 1991, 39–40).

The 1st-century buildings on the site were swept away prior to construction of the fort; dating evidence from surrounding sites indicates that fort construction took place between AD 120 and 160. The discovery of the remains of the south wall of the fort demonstrated that the construction technique of the fort foundations was fairly crude, consisting of trench-built layers of unshaped ragstone bonded with puddled clay. The fort ditch was recorded in three different locations on the site, approximately 1m from the

face of the south wall. No evidence of a second external ditch was identified, as was the case at Alder Castle and Falcon House, 1–6 Aldersgate Street, where there was evidence that the fort may have had a double ditch on its west side (Butler 2001, 45). The discovery of the south wall of Building 5, in conjunction with evidence provided by nearby sites, has allowed the full dimensions of this barrack block to be more accurately estimated, giving a measurement of 50m long and 8–10m wide. Evidence of occupation contemporary with the fort was discovered outside the south wall. The buildings in Period 2 were similar to those in Period 1 in that they were clay and timber built, and not of particularly high status. The presence of the fort on site is not reflected in the finds assemblages; very few *in situ* military type finds have been retrieved from sites in the Cripplegate area in general.

The site did not provide any new evidence for the date at which the fort may have fallen into disuse. Evidence from nearby sites suggests that the upper limit for disuse of the internal fort buildings is *c.*AD 250, and so the fort probably fell into disuse by the mid-3rd century AD. Evidence from the site did show that the foundations of the south wall of the fort were not encroached upon until the early medieval period. Also, a gravel surface was laid down over the backfilled fort ditch during the 3rd century AD that respected the line of the wall. This may suggest that the wall remained standing in some form, perhaps in a partially robbed or ruinous state, after the construction of the city wall. The defensive features of the fort would certainly have no longer been necessary once the city wall had been built, and this must account for the backfilling of the fort ditch. There is evidence that the south-east corner of the fort was still partially standing in the medieval period (Marsden 1968, 7). On the site, there is also evidence that the foundations of Building 5 were not robbed until the early medieval period. A stair turret recently identified on the city wall, close to the turret on the south-west corner of Cripplegate fort (Alder Castle and Falcon House, 1–6 Aldersgate Street), has been interpreted as a possible replacement for the south-west corner turret, which may have been demolished during the building of the city wall (Butler 2001, 50). By extension, it is possible that the demolition of the south wall could have taken place simultaneously; however, the evidence does seem to indicate that robbing and demolition of the stonework of the fort was not systematic, and did not occur as a wholesale event.

THE MEDIEVAL SEQUENCE

Early medieval, *c.*400–1200 (Period 4)

After the departure of the Romans at the beginning of the 5th century AD, the Cripplegate area was apparently not occupied again until the late Saxon period. Reoccupation of the Roman city began in the late 9th century, on the riverfront. By the 10th century settlement had expanded towards Cheapside, and development of the medieval street system of Cripplegate had begun (Milne 2001, 122–5). It is documented that Wood Street was already in existence by the 10th century (Harben 1918). The church of St John Zachary, just to the south of the site, is first mentioned in 1120, as the church of St John the Baptist.

The initial redevelopment of the Cripplegate area is represented on the site by a concentrated burst of activity between *c.*1050 and 1080, as shown by the ceramic evidence. This trend is also reflected on neighbouring sites; the archaeology of the area is characterised by sunken and cellared buildings and deep, lined pits and wells (Fig 15). It is likely that the wattle/timber-lined pits and wells on the site were originally associated with buildings fronting onto Staining Lane, which have since been removed by deep basements. The foundations of the fort barrack block, Building 5, may also have been robbed in this period as the backfill of the robber trench contained pottery dating to *c.*1050–1150.

The remains of an early medieval sunken-building (Building 10, Fig 15) were identified on the site, contemporaneous with most of the pits dated to this period. These pits were situated in Open Area 8 (Fig 15), which extended across the whole site during Period 4. During the late 10th and early 11th centuries, pits began to encroach onto the line of the fort wall, perhaps indicating that it was no longer a visible or important feature in the landscape (Fig 16). Building 10 seems to have utilised the fort wall foundations as part of its structure, which may mean that parts of the wall were at least still partially visible in the early medieval period. The practice of reusing Roman walls in early medieval buildings is also known from other sites in the City, for instance at 1 Poultry (ONE94), where a

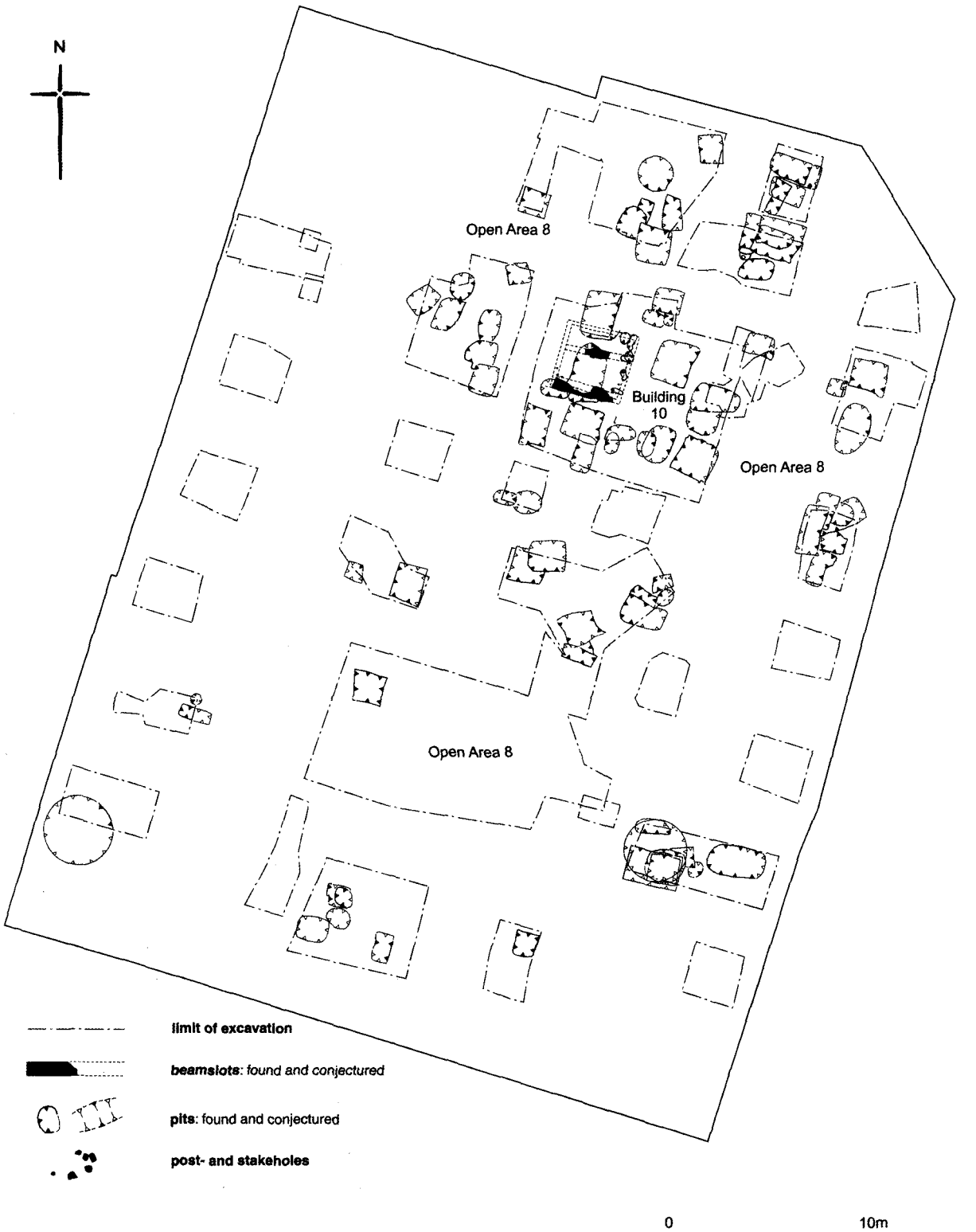


Fig 15. Early medieval, c.400–1200 (Period 4)

10th-century sunken-floored building was built against the west wall of a Roman building (Burch & Trevail in prep). Building 10 contained no evidence of floor surfaces such as have been discovered in other early medieval buildings, for example on sites at 3 Noble Street and 90–91 and 100 Wood Street (Howe & Lakin 2004, 64–7); the remains of Building 10 were quite ephemeral by comparison. The base of the building was at the same level as the base of the fort wall foundation, and measured at least 3.4m north–south and 3m east–west. The only surviving internal elements were the partial remains of one beamslot, and the impression of one insubstantial post setting. The area was cleared when the building went out of use, followed by dumping of large amounts of destruction debris. These dumps had a high wood content and were full of voids, presumably left by the dumped rotted posts. It is probable that this material relates to the wooden superstructure of the building, used to backfill the cellar when it fell into disuse. The backfill of the building was dated to *c.*1050–1150 by sherds of cooking pots/jars in early medieval chalk-tempered ware and early medieval shell-tempered ware. This suggests that the building had a domestic function, similar to other early medieval buildings on neighbouring sites. Building 10 also appears to be on a similar alignment to other early medieval buildings recorded in the area (Howe & Lakin 2004, 65, fig 52).

The backfill of Building 10 was cut by pits of similar date, suggesting that the building was in use for only a short time. The pits in Open Area 8 were concentrated mainly in the north-east portion of the site, where they occurred in clusters and were mostly rectangular in shape. Many of the pits were lined with wattle or timber planking, and at least one was lined with clay. It is likely that they were used as cesspits, wells, and maybe even for storage (Fig 17). Some were in excess of 5m deep from the contemporary medieval land surface, dug to the base of the brickearth and into the underlying gravel. Not all of the exceptionally deep pits were lined, despite this it is likely that many served as wells in the

Fig 16. Truncated fragment of south wall of Roman fort, showing early medieval timber-lined pits in foreground, looking north (0.50m scale)

Fig 17. Section through early medieval lined pits, looking north

backyard area of tenements. The pitting did not seem to follow any particular pattern, so it has not been possible to reconstruct the boundaries of tenements by inference from the location of pit clusters. All the pits were orientated with the surrounding road system, however, indicating that they may originally have been associated with roadside buildings.

Pits with medium sized pottery assemblages (30–100 sherds) are dated to *c.*1050–1080 by the presence of early medieval handmade coarsewares and the absence of London-type wares, first used in the City *c.*1080 (Vince & Jenner 1991, 268). Sherds of London-type ware were found in some pits, including an unusual form of bowl or skillet in coarse London-type ware. The most common ceramic forms from Open Area 8 are cooking pots or jars, including a near complete cooking pot in London-area greyware (<P5>, Fig 18). Pitchers, used for serving wine or ale at table, are the other main form represented on the site. Part of a probable spouted pitcher in early Surrey ware (<P6>, Fig 18) has unusual, stamped decoration on the shoulder. There is little pottery that originated outside the London area, although a spouted pitcher in Ipswich-Thetford-type ware was found. There is also relatively little continental pottery, although the rim and handle from a spouted pitcher in red-painted ware was found in one trench — red-painted wares are largely associated with the wine trade from the Rhineland.

Very few bowls and dishes used for food preparation and serving were found in Open Area 8; there were also relatively few food remains. The animal bone assemblage was composed mainly of sheep/goat remains, with a lesser amount of cattle and a small quantity of pig. The body part emphasis is on mandibles and lower limbs, the lesser meat-bearing bones, indicating that this is butchery waste. Other sites in the Cripplegate area have produced similar assemblages (Ainsley 2004). On this site it is possible that the predominance of sheep/goat remains indicates that the bones came from specialist butchers' waste (O'Connor 1993, 65). Food waste, as well as butchery waste, was found in pits near to Building 10 (Fig 15). These assemblages contained fish remains, mainly herring, cod, and eel. There was evidence that beef, mutton and

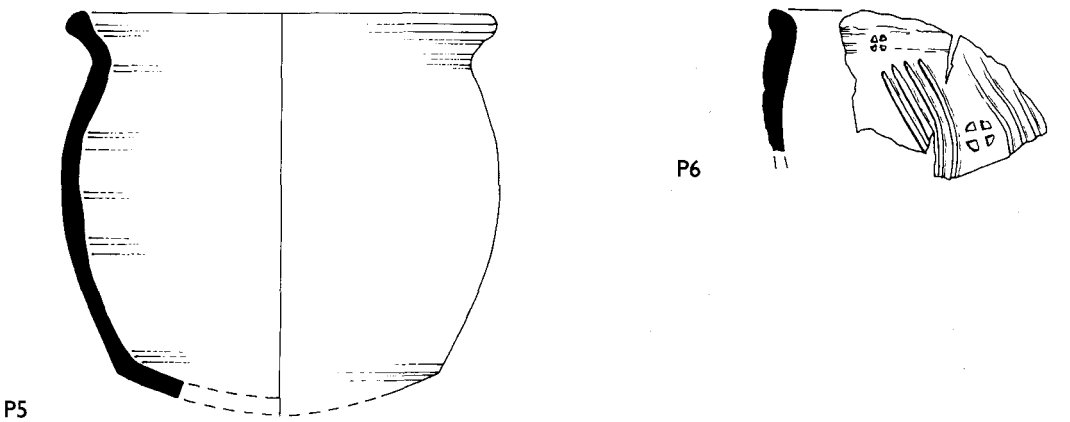


Fig 18. Cooking pot in London-area greyware <P5> [276] and spouted pitcher in early Surrey ware <P6> [322] (Scale 1:4)

some pork was consumed, along with chicken, goose, and duck. The only high status foodstuffs present were roe deer and veal; these could also have been associated with vellum production, for book binding (Serjeantson 1980, 129). Lack of high status foodstuffs was also reflected in the plant remains. Samples mainly produced evidence of cereals such as bread wheat and oat, fruit seeds such as blackberry/raspberry, cherry stones, and mineralised pear and apple remains.

In addition to domestic activity, there was evidence for metalworking and dye preparation. Metalworking crucibles were found in Open Area 8, in Periods 4 and 5, mostly in early medieval coarse whiteware, the main crucible fabric used in London between *c.*1050 and 1150. Crucibles found in Period 5 are largely residual, redeposited by constant pit-digging in the same area. In Period 4, sherds from two rounded crucibles were found in wattle-lined pits in the central area of site (Fig 15). The fabric is vitrified, as a result of having been heated to a high temperature. Neither crucible is large, and they were probably used in the production of copper-alloy dress accessories. One example from Period 5 appears not to have been used in metalworking at all. It is sooted and fire-cracked, with high levels of calcium and phosphorus present internally, and may have been used in the preparation of bone for cupellation, rather than in melting copper. There is also a rounded crucible in London-type ware (<P7>, Fig 19), heavily burnt and sooted, with an internal deposit resembling limescale; again, it may not have been used in metalworking. The Cripplegate area is known to have been a centre of metallurgy, and over 150 crucible fragments were found on neighbouring sites 3 Noble Street and 90–91 and 100 Wood Street (Howe & Lakin 2004, 77). Nearby sites have also produced evidence for silver working, but this was not present on the site. It was not possible to identify areas of the site in which metalworking was concentrated.

Vessels used in the production of dye from madder were found in the north of site (Fig 15). This process involved boiling up the roots of dyers' madder (*Rubia tinctorum*) in order to create a purplish red liquid that was then used to colour textiles (Walton 1992, 200). Standard

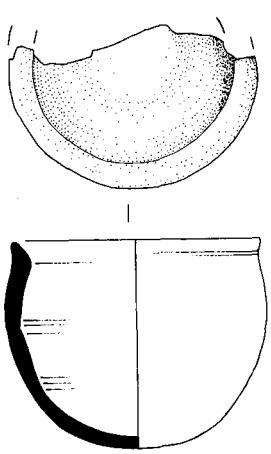


Fig 19. Crucible in London-type ware <P7> [356] (Scale 1:4)

cooking pots and jars were principally used in the process; these typically became stained dark purple over the inside and base as a result. Madder-stained pottery was found in both lined and unlined pits on the site, some of which were extremely deep and may originally have been wells. The evidence for madder-boiling is concentrated in this period; activity began to wane in Period 5. Evidence for madder production has been found on many other sites nearby, suggesting that the Gresham Street/ Noble Street area was a focus for this activity. Another comparable concentration of madder-stained vessels was found at 1 Poultry (ONE94; Whittingham pers comm). This activity appears to be limited to the 10th–12th centuries in the City, perhaps suggesting that dyeing subsequently became more of a commercial enterprise, rather than a domestic handicraft (Crowfoot *et al* 1992, 20). The number of madder-stained vessels found on the site may indicate the presence of small scale, domestic, textile-related industry. The pits containing madder-stained vessels were concentrated in the north-east portion of the site, perhaps indicating that dye production was localised in this area.

Medieval development, *c.*1200–1350 (Period 5)

By the beginning of the 13th century, evidence of activity on the site had decreased dramatically (Fig 20). Evidence from nearby sites indicates that the sunken/cellared buildings, typical of the Cripplegate area in the early medieval period, were replaced with more substantial masonry and timber buildings (*eg* 3 Noble Street). Many of the City's Guild and merchant houses were also under construction by this time: Haberdasher's Hall, Beaumont's Inn, Shelley House, Brewer's Hall, and Neville's Inn. There is evidence that the frontage of Silver Street became lined with the houses of wealthy merchants (Howe & Lakin 2004, 78). It is possible that a similar pattern of development took place on this site, with the street frontages of Staining Lane and Noble Street lined with larger houses during the 13th century.

The intense pitting activities, which had previously characterised the landscape of the north-east area of the site, all but ceased in Period 5. Most of the pits in this period (Open Area 8, Fig 20) were dug in the same area as the earlier phases of pitting, causing the pottery assemblages to become very mixed. This was particularly true of the extensively recut sequence of pits in the south of the site. Such intense localised activity indicates that space may have become restricted by this time. Several pits were dated by pottery to the second half of the 12th or early 13th century. Some pits are dated after *c.*1170 by the presence of South Hertfordshire-type greyware, and/or London-type ware decorated in the North French or Rouen styles. Other pits are dated to *c.*1140 or later by shelly-sandy ware and/or London-type ware early rounded jugs. Coarse London-type ware was common during the 12th century, as seen in the Period 4 assemblage, but was going out of production by the beginning of the 13th century. The pits cut by a later building (Building 12) contained a medium sized assemblage of pottery dated to *c.*1240–1270; one pit in this sequence had the best-preserved wattle lining recorded on the site. London-type wares predominate, with sherds from four cooking pots or jars in South Hertfordshire-type greyware and one in early Surrey ware. Part of a large Rouen-style baluster or rounded jug (<P8>, Fig 21) is clear-glazed, with vertical strips of alternately red and white slip. A second London-type ware jug has criss-cross *sgraffito* combing around the neck, which alone is white-slipped under a green glaze (<P9>, Fig 21). This selective use of white slip is extremely unusual; jugs were either slipped entirely or not at all. The *sgraffito* technique is also found on another London-type ware baluster jug from the same group (<P10>, Fig 21), completely white-slipped under a clear glaze. Part of a green-glazed jug in the highly decorated style has a series of curvilinear, applied plant tendrils around the body, with applied stamped discs representing flowers (<P11>, Fig 21). Jugs with this more elaborate development of the North French style are first found in London *c.*1240–1250 (see Pearce *et al* 1985, 19, *cf* fig 40, no 135; fig 41, no 138; fig 55, no 209). As this pottery came from the higher end of the local market, it is possible that the contents of pits cut by Building 12 were discarded by a relatively wealthy household.

A complicated sequence of wattle-lined pits was excavated in the centre of the site in Open Area 8 (Fig 20). The later pits appear to have been dug through the centre of earlier ones, resulting in a 'Russian doll' effect, or it is possible that one large pit was successively cleared out and relined, gradually becoming smaller. Such extensive recutting resulted in disturbance of the earlier features, demonstrated by the fact that there are numerous sherd links between

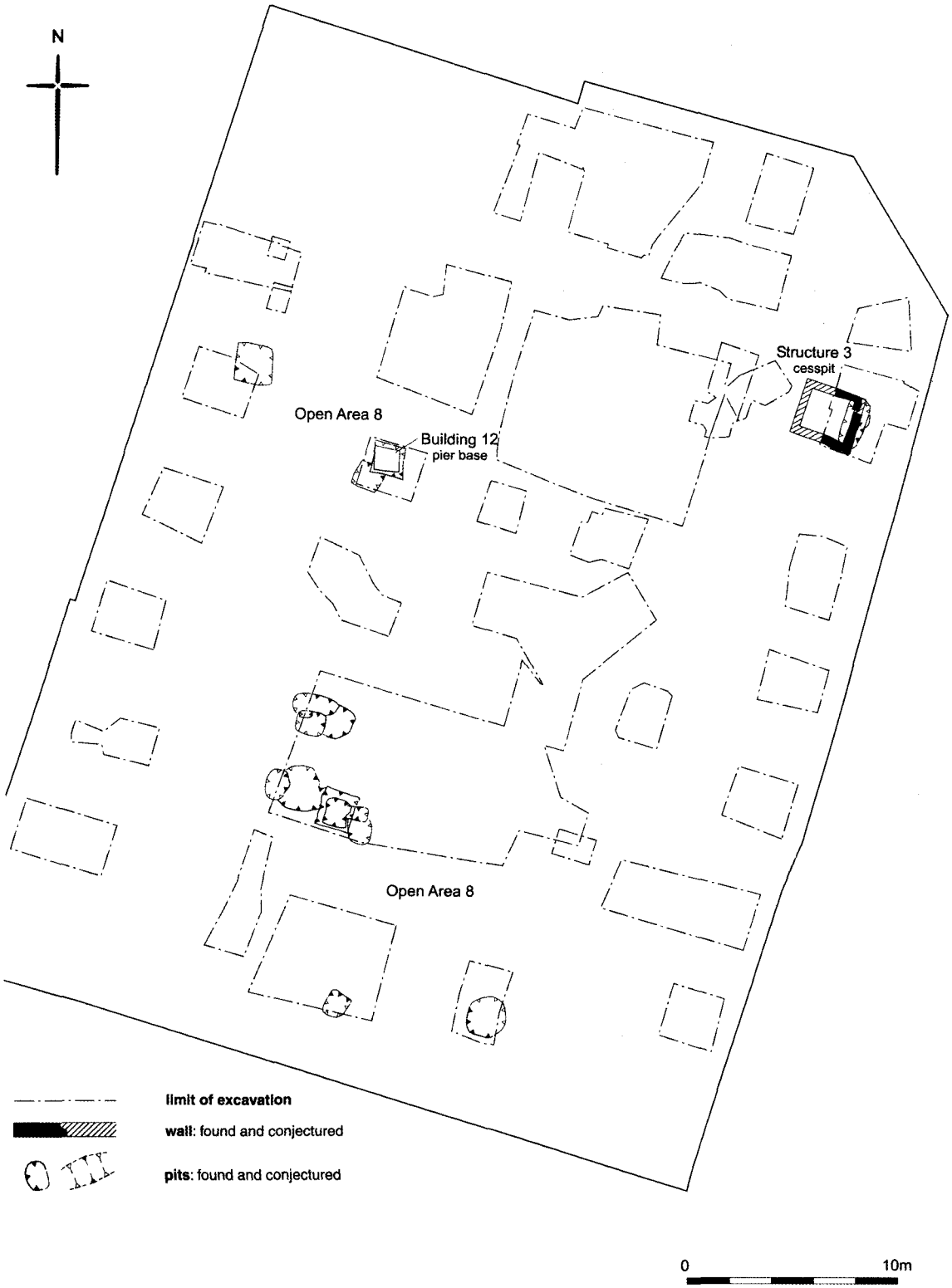


Fig 20. Medieval development, c.1200–1350 (Period 5)

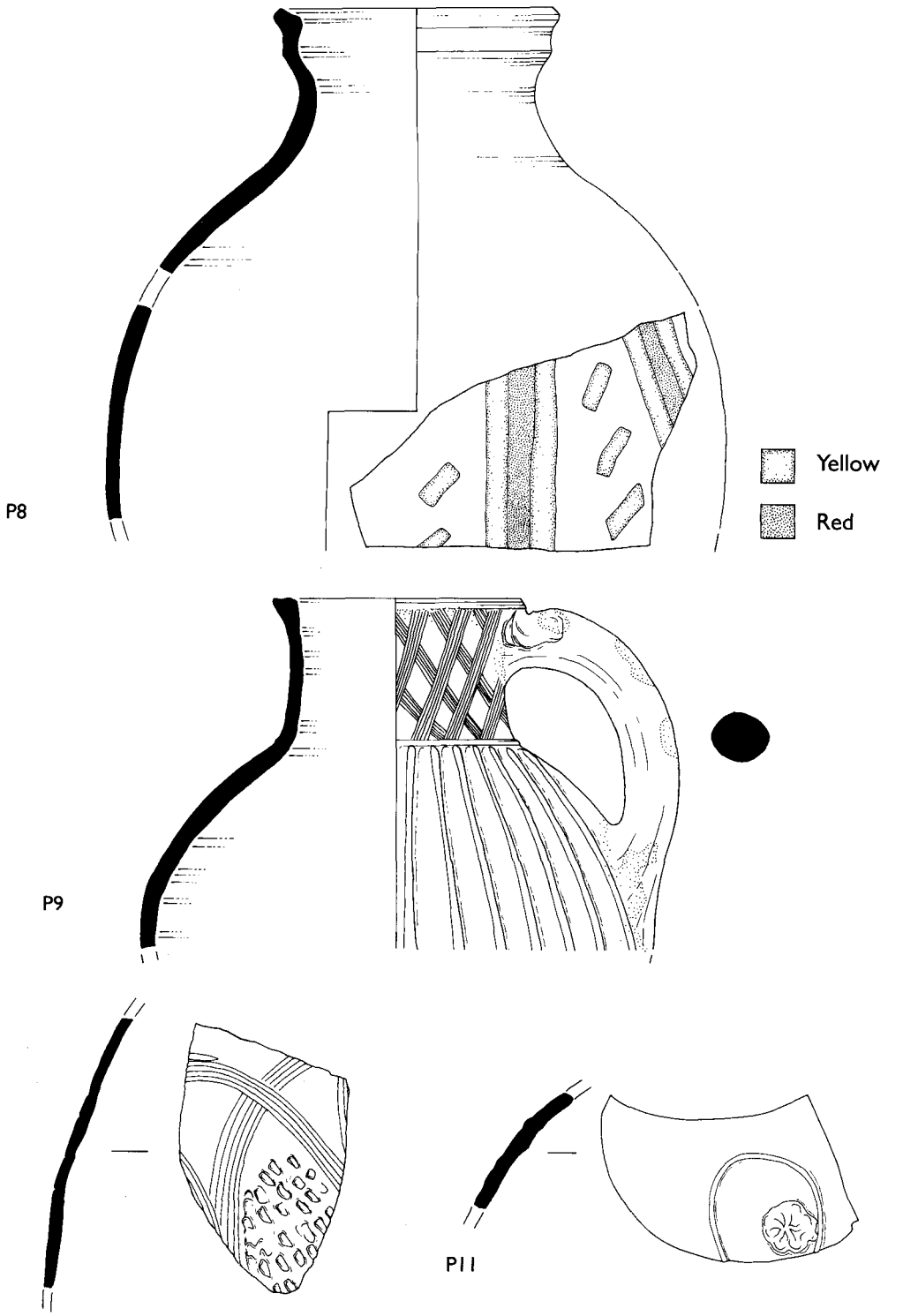


Fig 21. Pottery from pits in Open Area 8, Period 5: Rouen-style baluster jug in London-type ware <P8> [356]; jug in London-type ware with criss-cross sgraffito <P9> [356]; baluster jug in London-type ware with sgraffito <P10> [356]; green-glazed highly decorated jug in London-type ware in the highly decorated style <P11> [356] (Scale 1:4)

vessels from separate pits in the group. The ceramic assemblage is dated to *c.*1290–1350 by sherds in London-type ware, Kingston-type ware, and South Hertfordshire-type greyware. Sherds from tall, tulip-necked baluster jugs in London-type ware come from a form probably used for storing and serving wine. The assemblage also includes more decorative vessels, such as jugs in Kingston-type ware and Mill Green ware with white slip decoration. Other pottery in the group consists mostly of cooking vessels, including the substantial remains of a cauldron (<P12>, Fig 22); there are also cooking vessels in London-type ware, including pipkins (<P13>, Fig 22). The only other form identified in South Hertfordshire-type greyware is a rounded jug (<P14>, Fig 22). The sequence of pits also contained the remains of a large roof finial in coarse

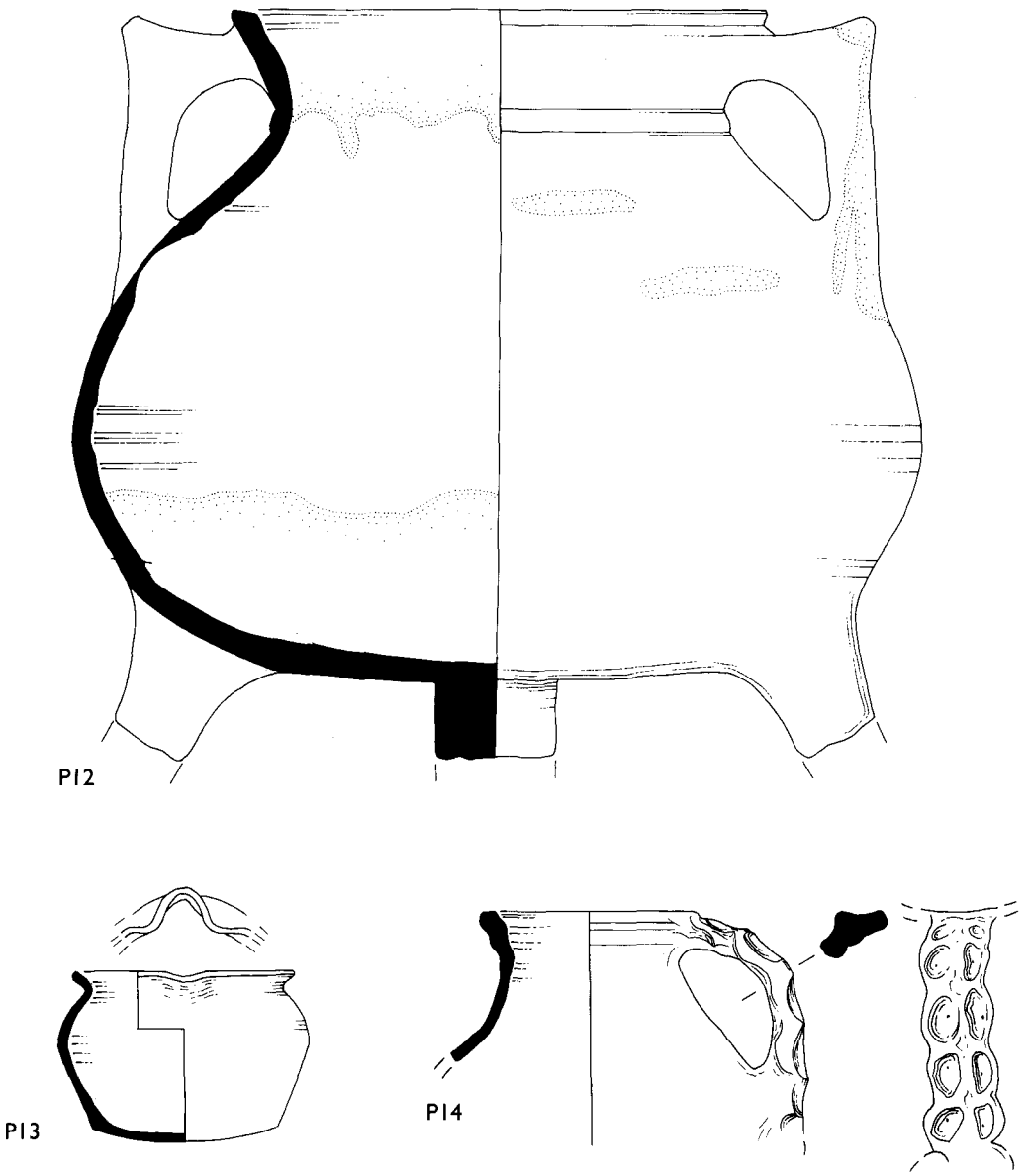


Fig 22. Pottery from Open Area 8, Period 5: cauldron in Kingston-type ware <P12> [758]; pipkin in London-type ware <P13> [758]; rounded jug in South Hertfordshire-type greyware <P14> [758] (Scale 1:4)

London-type ware. Most of the roof tile found in Period 5 consisted of the common, London-made peg and curved ridge tiles. The presence of a decorated finial suggests a high status building in the vicinity.

The wealth of the occupants of the site may have increased since Period 4, as suggested by the ceramic finds, perhaps as a result of the metal-working and textile-related industries focused in the area during the early medieval period. There is no evidence for madder-staining on the site by Period 5, and the metalworking crucibles were all residual from Period 4. These processes may no longer have been taking place in the same location, or may have continued on a reduced scale. Although good quality, decorative pottery may suggest increased wealth, the record of faunal and floral remains is similar in composition to that of Period 4, with little evidence for high status foodstuffs. Moreover, there is scant evidence for higher status stone buildings, with one possible exception. Building 12 (Fig 20) consisted of a single, extremely robust, chalk pier base, constructed of Kentish ragstone and chalk, and bonded with a gravely mortar. The pier was approximately 5m in depth, from contemporary land surface, trapezoidal in shape and was clearly constructed to carry the weight of a substantial structure. Curiously, the pier was built inside an earlier wattle-lined pit/well, which could account for its unusual shape. The earlier pit was dated to *c.*1240–1270 by a medium sized assemblage of pottery, so the pier must have been built after this time. No other piers were discovered on the site, although similar piled foundations were found on 3 Noble Street, to the north. These piles truncated pits still in use in *c.*1150, which means they could have been built up to 90 years earlier than Building 12. The remains on 3 Noble Street have been interpreted as those of a large masonry building, perhaps an early medieval hall (Howe & Lakin 2004, 68). As street frontages began to be built up with masonry buildings in the late medieval period, wood-lined cesspits were often superseded by chalk-built ones. A chalk-built cesspit (Structure 3, Fig 20) was discovered at the eastern extent of the site, close to Staining Lane. The latest pottery in the cesspit dates to *c.*1270–1350.

Later medieval development, *c.*1350–1600 (Period 6)

By Period 6 activity in Open Area 8 was confined

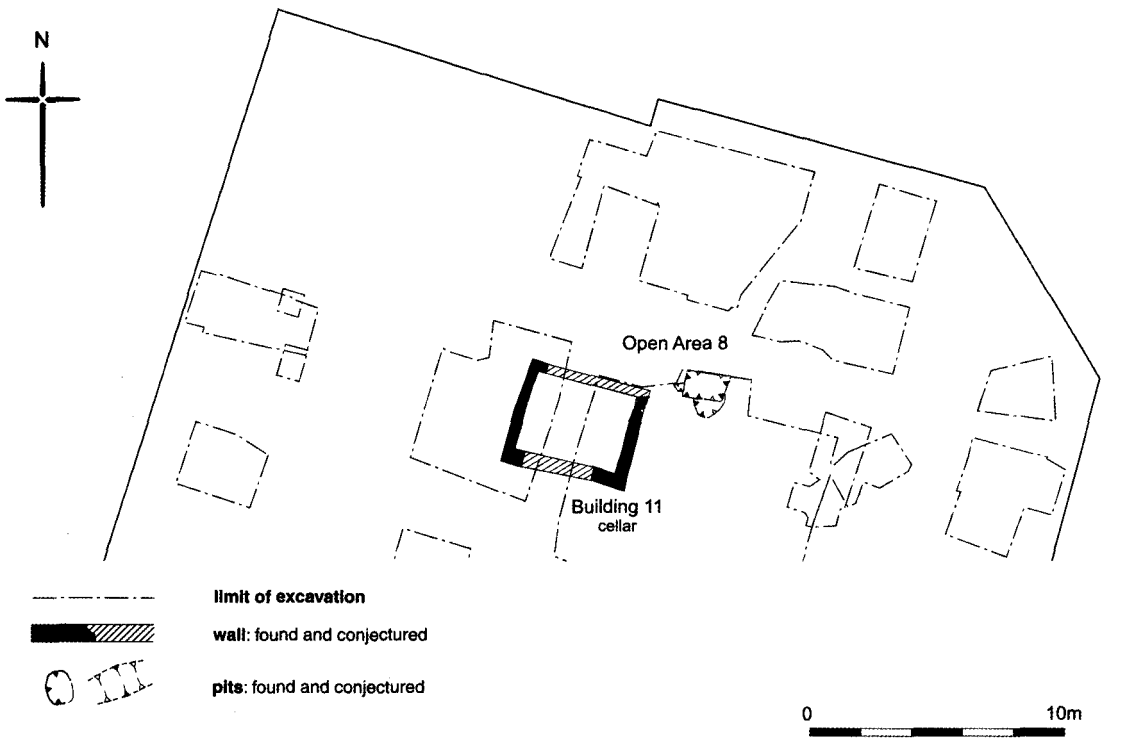


Fig 23. Later medieval development, c.1350–1600 (Period 6)

Fig 24. Section through inter-cutting late medieval pits, looking north-east (0.50m scale)

to one small area in the north of the site, where a sequence of unlined pits is dated to *c.*1350–1400 (Figs 23–24). The pottery is typical of late 14th-century assemblages across London. Jugs and cooking pots in coarse Surrey-Hampshire border ware are the most common types present. The jugs include rounded and baluster forms. In addition to Surrey-Hampshire border ware, the pit assemblage includes a near-complete rounded drinking jug in Cheam whiteware, first used in the capital *c.*1350. The assemblage also includes a virtually complete bone bodkin or tool (<63>, Fig 25).

A large Kentish ragstone- and chalk-built cellar

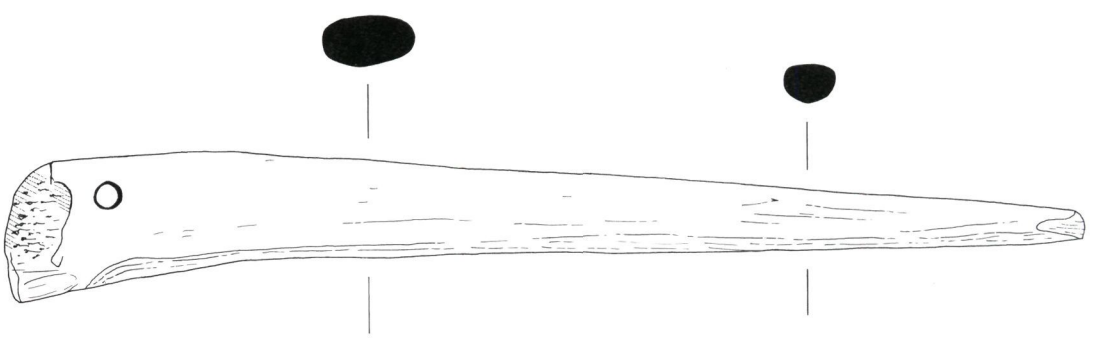


Fig 25. Bone thread picker <63> (Scale 1:1)

Fig 26. Medieval glass vessels from a backfilled cellar (Building 11): flasks <17> and <29> and prunted beaker <27> (Scale 1:1)

(Building 11, Fig 23) was discovered in the north-west area of the site. The building was probably constructed after the nearby pits went out of use. The date at which Building 11 was in use is unknown; pottery from the backfill suggests that it fell out of use between 1480 and 1550. A range of cooking pots and jugs was found in Cheam whiteware and Surrey-Hampshire border ware, used for food preparation, cooking, and serving. Examples of London-area redwares in the assemblage include cauldrons and/or pipkins and a rounded jug. The backfill also contained a small assemblage of medieval glass vessels: flasks <17> and <29> (Fig 26), a urinal <20>, and a prunted beaker <27> (Fig 26).

The pottery from the pits in Period 6 is relatively plain and utilitarian; there is no imported pottery or industrial wares. This is a pattern seen across London at this date, and may be linked to the impact of the Black Death on ceramic production. There is nothing to suggest that the rubbish from the backfilled cellar (Building 11) was discarded by a wealthy household, although the sample is not large. The few imported wares in the deposit include the base of a cauldron or tripod pipkin in Dutch red earthenware, and

part of a large dish in Merida-type micaceous ware. Building 11 must have been a building of some size, possibly multi-storeyed and fronting onto one of the surrounding streets. Other sites in the area have yielded evidence of large cellared buildings, which housed wealthy occupants (Howe & Lakin 2004, 78).

Medieval discussion

The reoccupation of the Cripplegate area in the 11th century was characterised by an intense burst of activity dating to *c.*1050–1080, consisting almost exclusively of wattle- and timber-lined pits and wells, which were probably associated with properties fronting onto the surrounding street system. The remains of one truncated early medieval sunken building (Building 10) were discovered, which seems to have utilised part of the south wall of the Roman fort in its structure. This is significant, since it implies that the wall may still have been visible at this time. Complicated sequences of early medieval pits were found across the entire site in Period 4, the backfills of which contained debris from domestic and industrial processes. The absence of high status pottery and food remains may suggest that the occupants of the area were not especially wealthy. The remains of madder-stained vessels and metalworking crucibles show that dye-production and metalworking were being carried out.

By the end of the 12th century pitting activities had ceased almost completely, possibly because the site had become built up with houses. More decorative ceramics were discovered in the Period 5 pit groups, showing that the wealth of the occupants had increased, perhaps as a result of the earlier dye-making and metalworking industries in the vicinity. By Period 6 there was further evidence of the site's development, in the form of a large stone-built cellar and the virtual absence of pitting. The finds assemblages from these features are not indicative of particularly high status, although the sample is too small to be fully representative.

THE POST-MEDIEVAL SEQUENCE

Post-medieval development, *c.*1600–1900 (Period 7)

By this period the street layout of the Cripplegate area was fully developed, as depicted on the Agas woodcut map of 1559, which shows that the surrounding area was mainly occupied by tenements. Lobel's map of 1520 shows that the church of St John Zacharie remained the principal building in the vicinity of the site. The map also shows that buildings existed around the perimeter of the site, and on either side of Lilipot Lane, which bisected the site. In the early 1600s there was at least one inn on the site, 'The Chequer', which lay behind the church. Camden House, known to have been a substantial building, also lay to the east of the church; part of it was converted into a tavern in 1652. The Cripplegate area was devastated by the Great Fire in 1666, and all buildings on the site were destroyed. It was quickly redeveloped after the fire, and by the 18th century the streets were again lined with tenements. The area remained unaltered until the 19th century, at which point warehouses replaced the tenements. These survived until the World War II, when they were destroyed in the Blitz.

A number of post-medieval cesspits (Structures 4, 7, and 9–15, Fig 27), a deep well (Structure 7, Fig 27), and other building foundations were found on the site. A large brick-built culvert running east–west across the site (Structure 6, Fig 27), on the approximate line of Lilypot Lane, is shown on historical maps of the area and could be associated with the old road. A similar feature was found on 90–91 and 100 Wood Street, and could be part of the same feature. Few of the many cesspits recorded on site yielded finds; however, a closely-dated assemblage came from a late post-medieval brick- and chalk-built cesspit (Structure 12, Fig 27). The pottery was probably discarded *c.*1807–1820, and includes various teawares and sherds of high quality English porcelain. Most interestingly, the cesspit also contained a 'Queen Anne' cannon-barrelled pocket pistol, dating to the late 18th century (<85>, Fig 28). The frame and barrel are copper alloy and the wooden stock is made of walnut. Most of the stock and butt are missing, but they may have been decorated with silver inlay. The side plates are engraved 'BARBAR' and 'LONDON' with scrolls and flags. Louis Barbar emigrated from France *c.*1688 and established himself in Soho (Blackmore 1986, 46). His sons continued the family business before setting up on their own, and his grandsons also worked as gunmakers. The pistol may have been made either by his son James, who worked at Portugal Street and Dover Street and died in 1773, or by

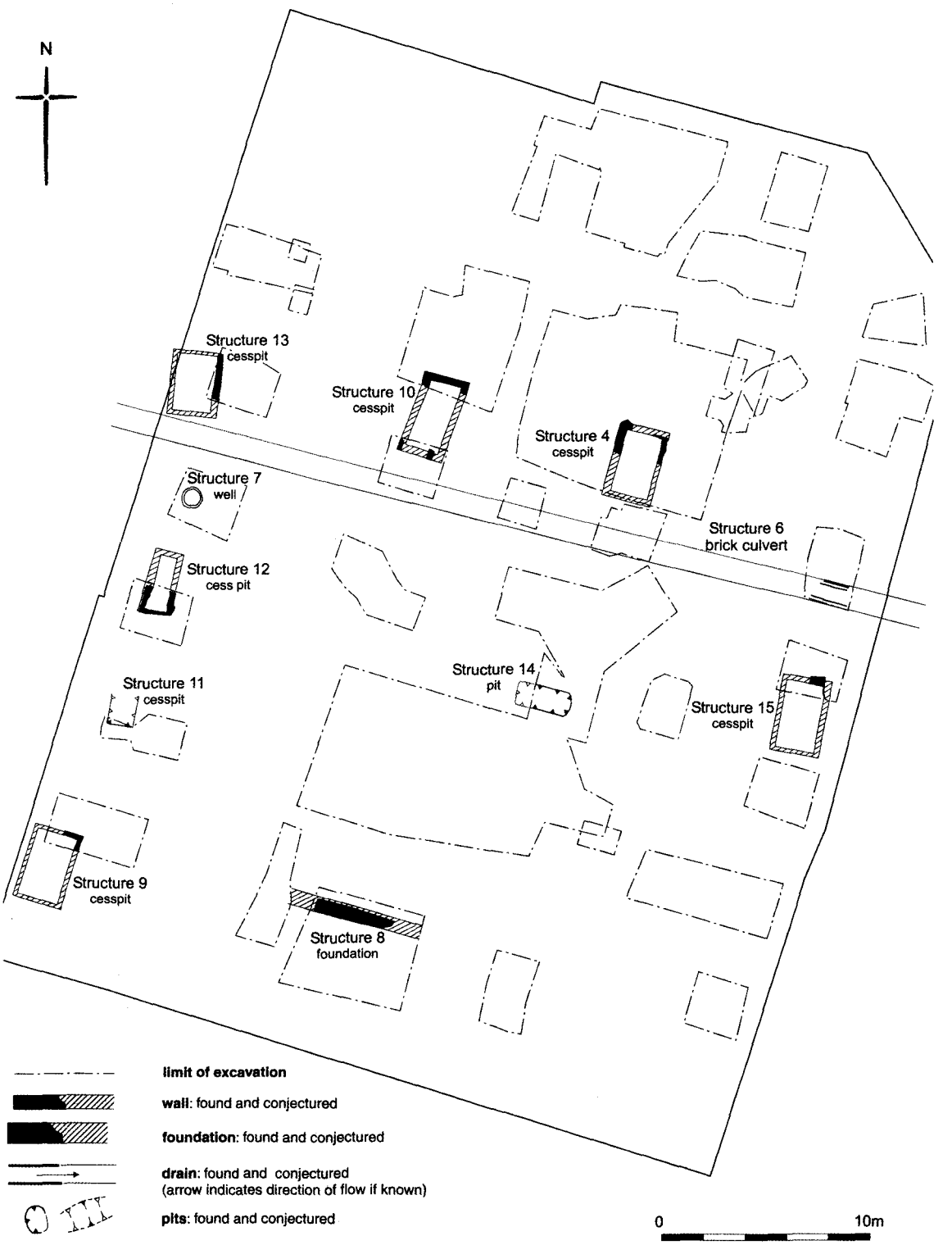
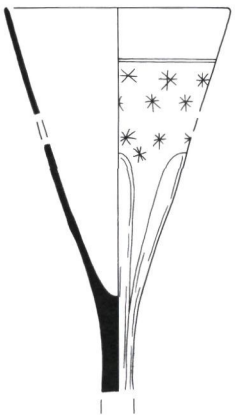
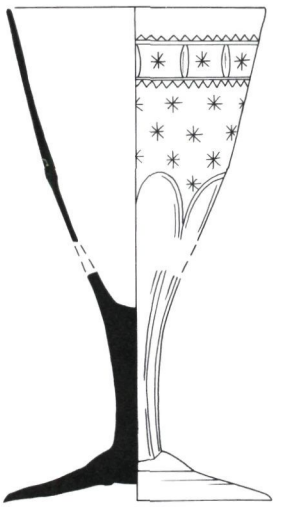


Fig 27. Post-medieval development, c.1600–1900 (Period 7)

Fig 28. 'Queen Anne' copper-alloy pistol <85> from cesspit (Structure 12) (Scale 1:2)





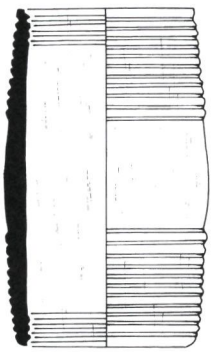


Fig 29. Late 18th-/early 19th-century stemmed drinking glasses <49> and <67> (Scale 1:2), and bone cotton barrels <47> and <62> (Scale 1:1), from cesspit (Structure 12)

James's son, also James, who was apprenticed to his father in 1747. Other finds included two late 18th- to early 19th-century stemmed drinking glasses (<49> and <67>, Fig 29), and two bone objects (<47> and <62>, Fig 29), possibly cotton barrels.

Post-medieval discussion

The features in Period 7 must have been associated with the tenements on the site at this time. The houses were probably mostly residential, although taverns are also known to have occupied the

site (for example, The Chequer Inn). The finds assemblages are domestic in nature, and seem to have come from relatively well-to-do households. The pistol is an extremely rare find on an archaeological site; it is especially unusual in that it appears to have been discarded while still in good condition. Victorian warehouses are known to have occupied the site until just before World War II; the only possible evidence for this was a brick foundation (Structure 8, Fig 27) in the southern part of the site.

CONCLUSIONS

The site at 25 Gresham Street conforms to the general picture of the Cripplegate area in both the Roman and medieval periods, adding to the body of information already provided by previous sites.

The presence of early Roman clay and timber buildings confirms that the site was occupied by residential type buildings prior to the construction of the fort, and not by an earlier military installation (such as a timber fort). The fort is known to have been constructed between AD 120 and 160 (Howe & Lakin 2004, 39–40), and although the site produced no new evidence that might help to refine this date further, the fort-related features identified on the site have allowed a number of other issues to be resolved. Most significantly, the discovery of fragments of the south wall of the fort, its interval tower, the external fort ditch, and fragments of an internal barrack block on the site has allowed the location of the southern extent of the fort to be more firmly defined.

The evidence from nearby sites suggests that the fort went out of use by the mid-3rd century AD (Howe & Lakin 2004, 45–7), and that this was probably related to the construction of the city wall (AD 190–225). It is not known for certain if the fort walls were demolished or remained standing, although evidence from the area suggests that demolition probably occurred. The 3rd-century AD gravel surface found at 25 Gresham Street, which respected the line of the south fort wall, could indicate that it was still standing in some form after the construction of the city wall.

The medieval evidence from the site adds significantly to the previous understanding of the Cripplegate area, suggesting that it was an important centre for dye production and metallurgy in the early medieval period. The Cripplegate area was reoccupied in the mid-11th century. The archaeological evidence from the site which dates to this period was characterised by extensive pitting activities, and a medieval sunken building. The pits all contained debris relating to domestic and industrial processes; most significantly evidence for copper-alloy metal working and the production of madder dye was discovered. These industries no doubt greatly influenced the economy of the Cripplegate area and probably contributed to the increased wealth of the occupants, eventually culminating in the area becoming fully developed with merchant's houses and taverns in the post-medieval period.

ACKNOWLEDGEMENTS

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NOTES

1 The London Archaeological and Archive Research Centre, 46 Eagle Wharf Road, London, N1 7ED.
2 Tabulated data/detail from the site not published in this article can be found under the site code of NHG98 in the LAARC.

BIBLIOGRAPHY

AINSLEY (2004), C Ainsley 'The animal bones' in E Howe & D Lakin *The Cripplegate Fort* MoLAS Monograph 21

BLACKMORE (1986), H L Blackmore *A Dictionary of London Gunmakers* 1350–1850

BURCH & TREVAIL (in prep), M Burch & P Trevail with P Rowsome *Excavations at 1 Poultry: the Medieval Sequence* MoLAS Monograph

BUTLER (2001), J Butler 'The city defences at Aldersgate' *Trans London Middlesex Archaeol Soc* 52, 41–111

CROWFOOT *et al* (1992), E Crowfoot, F Pritchard & K Staniland *Textiles and Clothing c.1150–c.1450 (Medieval Finds from Excavations in London 4)*

GRIMES (1968), W F Grimes *The Excavation of Roman and Mediaeval London*

HARBEN (1918), H A Harben *A Dictionary of London*

HENIG (1978), M Henig *A Corpus of Roman Engraved Gemstones from British Sites* BAR Brit ser 8 (2nd edn)

HILL & ROWSOME (in prep), J Hill & P Rowsome *Excavations at 1 Poultry: the Roman Sequence* MoLAS Monograph

HOWE & LAKIN (2004), E Howe & D Lakin *The Cripplegate Fort* MoLAS Monograph 21

MANNING (1985), W H Manning *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum*

MARSDEN (1968), P Marsden 'Archaeological finds in the City of London, 1965–66' *Trans London Middlesex Archaeol Soc* 22.1, 12–13

MILNE (2001), G Milne *Archaeology after the Blitz, 1946–68: Excavations at Medieval Cripplegate* English Heritage Archaeol Rep

O'CONNOR (1993), T P O'Connor 'Process and terminology in mammal carcass reduction' *Int Journ Osteoarchaeology* 3, 63–7

PEARCE *et al* (1985), J E Pearce, A Vince & M A Jenner *A Dated Type-series of London Medieval Pottery: Part 2 London-type Ware* London Middlesex Archaeol Soc Special Paper 6

PERRING (1991), D Perring *Roman London*

PERRING & ROSKAMS (1991), D Perring & S P Roskams with P Allen *The Archaeology of Roman London vol 2. Early Development of Roman London West of the Walbrook* CBA Research Rep 70

SEELEY (2004), F Seeley 'The Roman pottery' in E Howe & D Lakin *The Cripplegate Fort* MoLAS Monograph 21

SERJEANTSON (1980), D Serjeantson 'Animal remains and the tanning trade' in B Wilson, C Grigson & S Payne (eds) *Ageing and Sexing Animal Bones from Archaeological Sites* BAR Brit Ser 109, 129–46

SHEPHERD (in prep) J D Shepherd *The Cripplegate Fort, London: Excavations by W F Grimes and A Williams 1946–68*

WALTON (1992), P Walton 'The dyes' in Crowfoot *et al* (1992)

VINCE & JENNER (1991), A G Vince & A Jenner 'The Saxon and early medieval pottery of London' in A G Vince (ed) *Aspects of Saxon and Norman London 2: Finds and Environmental Evidence* London Middlesex Archaeol Soc Spec Pap 12, 19–119

CROSSED WIRES: THE RE-DATING OF A GROUP OF FUNERARY LEAD CROSSES FROM NEWGATE, LONDON

B Sloane and B Watson

SUMMARY

The date and provenance of a group of at least 89 lead funerary or mortuary crosses found with skeletons near Newgate Street, City of London, in 1905, and now held by the British Museum, the Science Museum, and the Museum of London, are radically reappraised. The published interpretations that they were crosses accompanying victims of the Black Death outbreak of 1348–50 and that these victims were probably Franciscans buried in the friary cemetery, are refuted. Instead, the argument is made that the crosses certainly date to after 1553, and were most probably buried with victims of 'gaol distemper' who died in nearby Newgate Gaol in the 18th century. The nature and ownership of the cemetery is explored, and the crosses re-evaluated in terms of post-medieval burial practice. The intriguing story of where the crosses ended up is recounted.

INTRODUCTION

On 7 December 1905, F G Hilton Price, FSA, read to the Society of Antiquaries of London a communication concerning the discovery of 'a number of leaden grave crosses near the Grey Friars Monastery, Newgate Street, London' and concluded that the crosses had been placed with Franciscan friars who had succumbed to the Black Death in the mid-14th century (*Athenaeum* 1905; Hilton Price 1907) (Fig 1). The area to the south of this discovery was investigated during 1907–09 (Norman & Reader 1912). The area where the crosses were found was to remain untouched by further development until 1998, when the Museum of London Archaeology Service (MoLAS) began extensive excavations on the site of the new Merrill Lynch European Headquarters (Lyon in prep). These excavations lay adjacent to the site of London's medieval Franciscan friary, and were directed in part by one of the present authors (BW). One year later, and synchronous with the excavations, the second author (BS) was appointed to a Research Fellowship at the University of Reading, funded by the Arts and Humanities Research Board (AHRB), to examine the archaeological evidence for medieval burial practice in Britain. These two separate strands of research converged on a report written exactly a century ago, concerning the identity of a cemetery near Newgate, and the lead crosses interred with its occupants. Re-examination of the report by the authors revealed that there were problems with the logic used to date the lead crosses, and over the association of the site with the medieval Franciscan friary (1225–1538). The case for re-examining the data was clear.

THE ORIGINAL EXCAVATION: CIRCUMSTANCES AND SUMMARY OF DISCOVERIES

The excavations that produced the crosses occurred as part of a major southward extension to St Bartholomew's Hospital during the period 1903–09, and the specific groundworks which revealed the archaeological discovery took place in July and August of 1905 (Fig 2). Hilton Price was not able personally to visit the site, but relied on two eye witnesses for his information (Hilton Price 1907, 14). The excavation area was described as being an oblong measuring 'about 50 feet by 20 feet [15m by 6m], situated

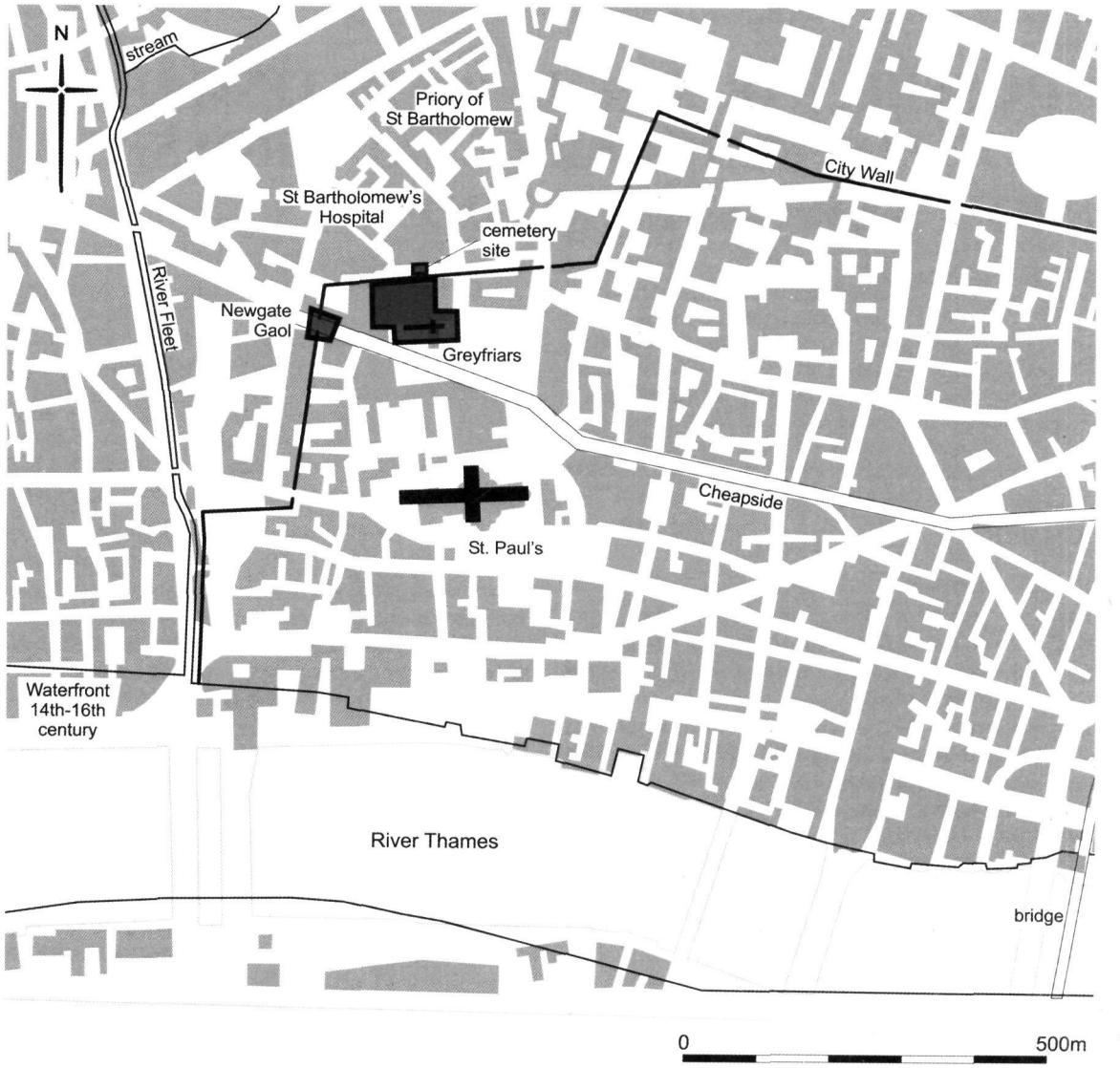
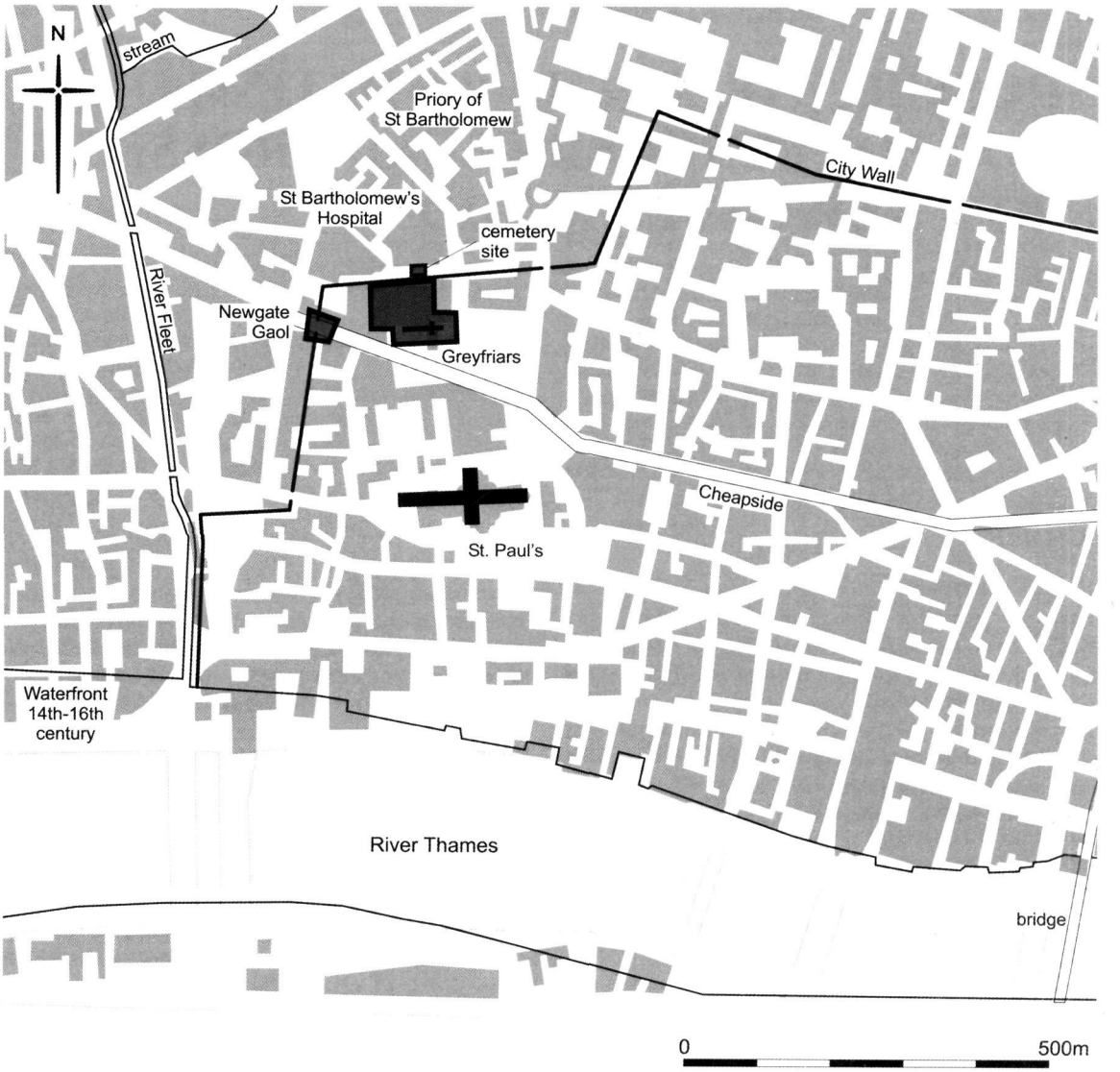


Fig 1. Detail of the walled City of London in c.1520, showing the Franciscan friary; the approximate findspot of the crosses is marked (see Fig 2 for more detail)

close to the wall near the southern extremity of the St Bartholomew's Hospital property, and extending partly beneath the old swimming bath of the Bluecoat School'. The excavation was about 20ft (6m) deep, and was 'upon the site of the playground and bath of Christ's Hospital School' (*ibid*, 15). There also appears to have been a second area nearby subjected to some form of watching brief, as Hilton Price (*ibid*, 18) describes an area 'just outside the city wall, in the south east corner of the site' where a brick structure and further burials were encountered.

Reconstructing the sequence of archaeological features from Hilton Price's report is difficult, as no plans or sections were published. The natural geology at the base of the trench was London Clay. Above this there was some form of large pit, whose base was upwards of 20ft (6m) below the contemporaneous ground level. The width of the pit is not given, but must have been very considerable since all the later graves were described as cut into it. The basal fill of the pit



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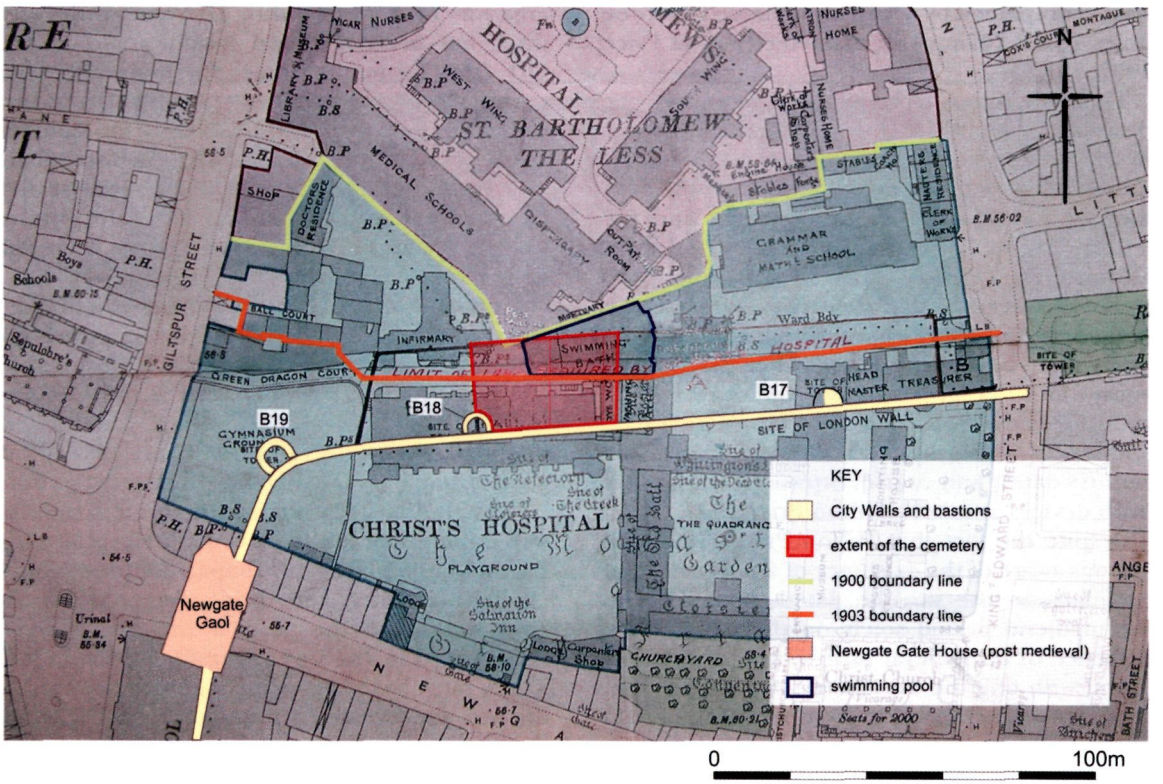

Fig 2. The area of the site in 1903, showing the principal buildings of Christ's Hospital and the extent of the cemetery as determined by map regression and the approximate location of the 1905 excavation described by Hilton Price (Christ's Hospital archive)

was described as dirty grey gravel. The upper fills were not described.

Numerous graves were cut into the upper levels of the pit. Here, the report becomes confusing. It would appear that two areas of burial were encountered, totalling some 400 skeletons. In one area, many of these were found 'in boxes, about 14 feet (4.3m) in length, which had entirely rotted away' (Hilton Price 1907, 15). These appear to be distinct from those graves cut into the upper levels of the large pit, and may have lain in a separate part of the excavation. The burials cut into the pit were placed in separate graves, the bodies laid one above the other with over 1ft (0.3m) of earth between each, and arranged 'about eight deep'. The highest grave was about 8ft (2.4m) from the surface. This would suggest that the lowest levels were some 16ft (5.5m) below ground level and perhaps 4ft (1.2m) above the base of the large pit. This detail is contradicted by Hilton Price's first account of the site, in which the excavation area was described as a single mass burial pit (*Athenaeum* 1905).

Many of the skeletons were well preserved, with hair surviving in a number of cases. The individual (rather than boxed) inhumations were found without any trace of coffins, but were clothed in 'coarse frocks', and about 100 lead crosses were found with them. The crosses were plain 'that is to say they are uninscribed', and had been found 'possibly laid upon their [the skeletons'] breasts' (Hilton Price 1907, 15–16), although the exact positions were uncertain. Of these, Hilton Price managed to retain 89 which he displayed before the Society of Antiquaries. One of the interments was found accompanied by a bronze figure of Christ, 2¾in (70mm) high, from a crucifix. Hilton Price identified it as very good 14th-century work. Two graves were apparently accompanied by letters fashioned from lead; a 'B' and a 'C', while another grave

was accompanied by a lead disk, pierced by three holes 1⅝ in (42mm) in diameter (Hilton Price 1907, 18).

The only other archaeological feature to be described (situated in the south-eastern corner of the site) was a brick structure containing an inhumation in a wooden coffin. The skeleton was accompanied by a silver crucifix, and the letters 'P' and 'S' and the number '6' in lead. Hilton Price estimated the date of these items to be 16th-century. The brick structure was, he suggested, the friary charnel house. Finally, he listed some other finds from 'other parts of the excavations': a green-glazed earthenware jug with the arms of Henry VIII on it; a candlestick and sherds of Metropolitan slipware (so of 17th-century date); and coarse, brown glazed pottery 'with devices in relief' (Hilton Price 1907, 19).

Despite the fact that Hilton Price (1907, 15; 18) was aware of the existence of a post-medieval cemetery on the site, he dated the burials to the medieval period solely on the basis of the presence of a medieval bronze figure of Christ found with one the burials. He concluded 'that these crosses belonged to members of the Friars Minors in London who had died of the Black Death in the great visitation of 1348–1349' (1907, 17). It is certain that Hilton Price was mistaken about the context of the site, and therefore assigned an incorrect date to both the graves and crosses.

LOCATION AND HISTORY OF THE SITE

The site has been redeveloped a number of times since the early 19th century, and now lies partially under the new Merrill Lynch buildings, and partly under the Horder Wing of St Bartholomew's Hospital. As the confusion over whether the site was intra- or extramural is central to Hilton Price's dating, a map regression exercise was undertaken to relate the location of the 1905 excavation to the line of the city wall and the post-medieval cemetery. This exercise shows that the site described by Hilton Price lay beyond the city wall and directly above the city ditch. The centre of the 1905 site was situated approximately at NGR 531,910/181,463. Fig 3 shows a schematic cross section of the site, showing the 13th-century city ditch as revealed by archaeological investigations in the locality, with an approximation of how the burials described by Hilton Price could have been situated within the infill of the city ditch.[1]

The medieval city ditch within the Newgate area was 18–23m in width. The base of the city ditch has been recorded locally at 9.1–10.3m OD (the former is some 8m below modern ground level). The sequence of deposits within the ditch was: primary fills (wet, silt stained, sandy gravel) top 9.6–11.6m OD, then waterlain silts (top 11.9–13.1m OD), which were sealed by systematic infilling during the 16th century. Excellent organic preservation of finds occurred within the lower ditch fills (Lyon in prep).

It is documented that in 1553 the 'town ditch' from Newgate to Aldersgate was 'stoppyed up with brycke and made playne [with the] erthe' (Nichols 1852, 77). Evidence of a 16th-century brick culvert constructed within the infilled ditch was discovered during 1999 archaeological work at the Merrill Lynch headquarters (Watson 2000, 10). A postern gate was let through the city wall to permit access from Christ's Hospital to St Bartholomew's Hospital. To span the (now mostly choked) city ditch, a footbridge was constructed. Stow states that the postern and bridge were constructed in 1547–48 (Kingsford 1908, I, 34). These must have lain immediately to the east of the site, and a masonry foundation encountered during an archaeological evaluation of the Horder Wing of St Bartholomew's Hospital may have been a remnant of the footbridge (Tyler 1999, 23).

In 1552 the former premises of Greyfriars, apart from the monastic church, was established as a new Royal Hospital, known as Christ's Hospital, which functioned as an orphanage and school (Allan 1984, 11). In 1538 the choir of the former friary church was taken over by the new parish of Christ Church. This new parish, according to Stow, took in the former precinct of Greyfriars, that of St Bartholomew's Hospital, and the parishes of St Nicholas Shambles and St Audoen Newgate, as well as part of the parish of St Sepulchre (Dyson 1997, 78; Kingsford 1908, I, 318). The 1905 site thus fell within the new parish. The registers show that by February 1539 baptisms were being undertaken (Littledale 1895). The first burial apparently took place in 1541 (although these dates were altered from 1538 in the register: *ibid*, 257). The site of the parochial cemetery of Christ Church during the mid-16th century is uncertain.

The earliest map of the site is the recently discovered section of the so-called 'Copperplate map' of 1559 (Schofield 2001). This shows, in elevational format, Christ's Hospital within the city wall, the wall's bastions, and, beyond, the

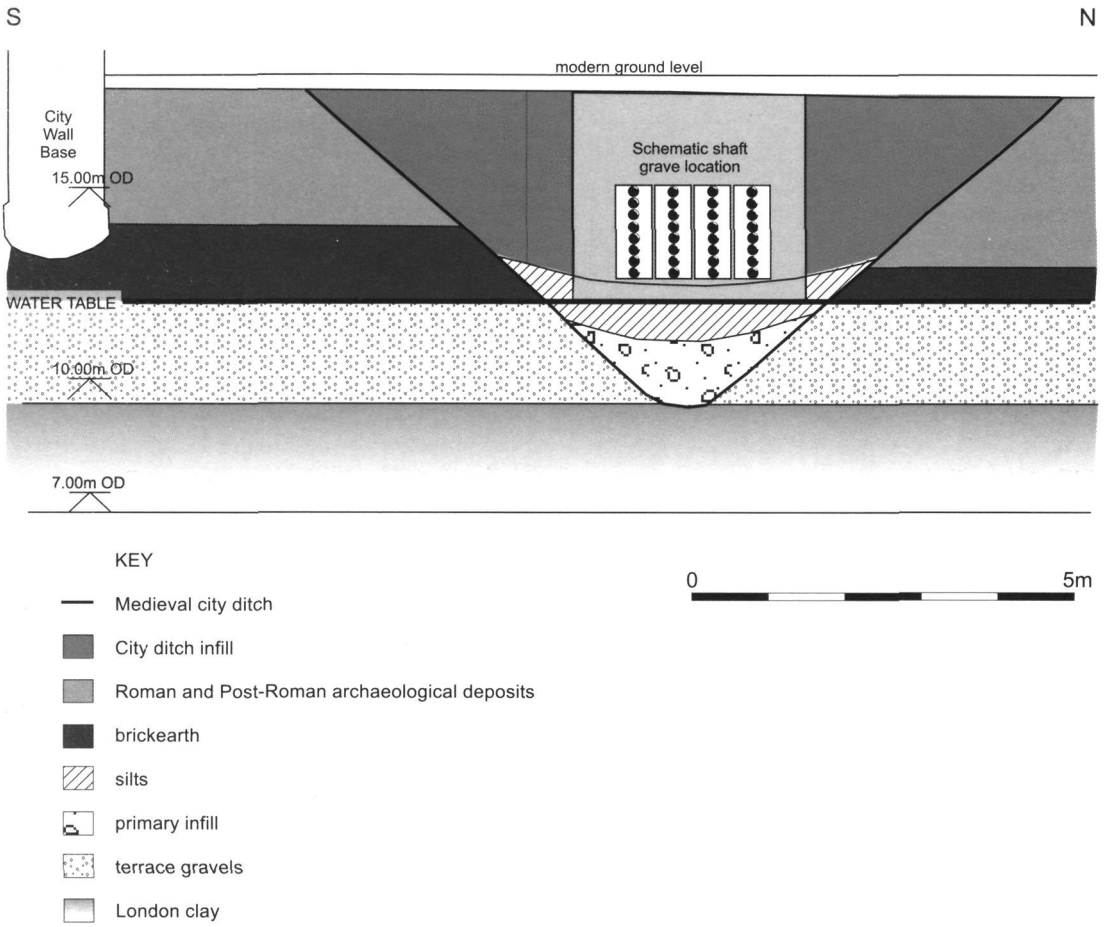

Fig 3. Schematic cross-section of the medieval city wall and ditch showing geology and depths of various archaeological deposits and an approximation of how the burials from the cemetery could have been situated within the infilled city ditch

postern and bridge. The city ditch is shown as infilled by this period, and the space is shown as open between the city wall and that of St Bartholomew's Hospital precinct to the north. There is no evidence of a cemetery at this date. The London woodcut map of *c.*1562–3 shows houses built over the Giltspur Street stretch of the city ditch, while the area of the ditch that was to become the burial ground is still shown as open space (Procket & Taylor 1979).

For the 17th century there are a number of detailed maps relating to Christ's and St Bartholomew's Hospitals, and it is clear that, by the early 17th century, the land west of the postern bridge had become a cemetery. The earliest map is the 1617 Treswell map of St Bartholomew's Hospital (Fig 4). It clearly shows the city wall, with the postern and the footbridge. West of the footbridge, a rectangular plot of land is labelled as 'Church yard belonging to Christchurch'. East of the footbridge adjoining Bastion 18 (RCHM(E) 1928, 104), was a space called 'Ye Car yard to Christ Hospitall'.[2]

While the cartographic evidence for this new cemetery is clear, there is very little in the way of published documentation concerning its foundation. The parish registers for Christchurch, Newgate Street, covering the years 1541–1754 are incomplete, and there are no entries for the period between August 1588 and November 1666 (Littledale 1895). Also the surviving entries do not distinguish between burials in the cemeteries and those in the church.

A plan of *c.*1650 (Fig 5) shows the layout of Christ's Hospital in detail. To the north of the city wall the cemetery is simply called 'Church

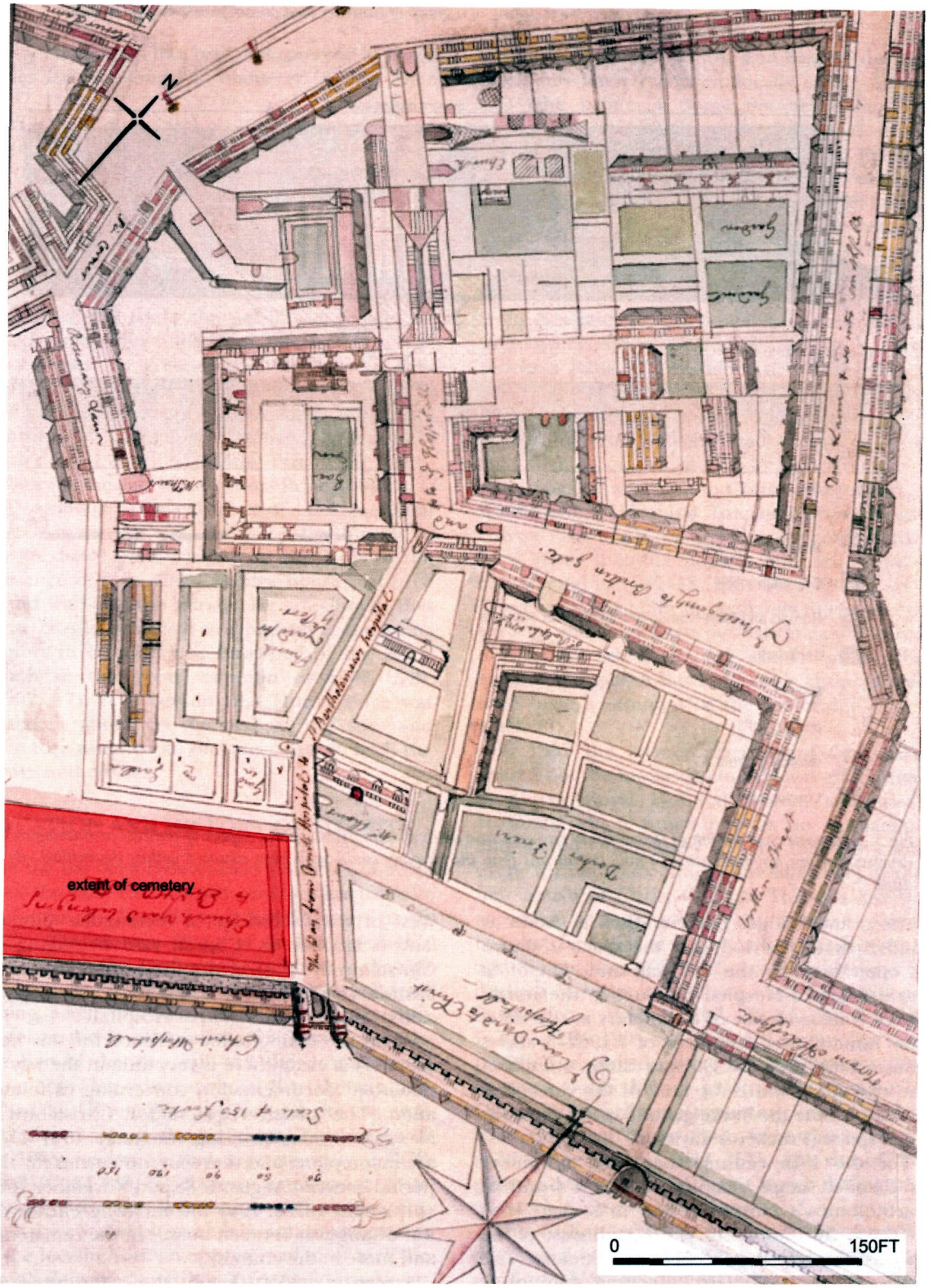

Fig 4. An 18th-century copy of Ralph Treswell's 1610 survey of St Bartholomew's Hospital and the City wall, showing the postern and bridge out of Christ's Hospital and the cemetery to its right (west) (© British Library Crace Collection, Maps. Crace VIII, 92)

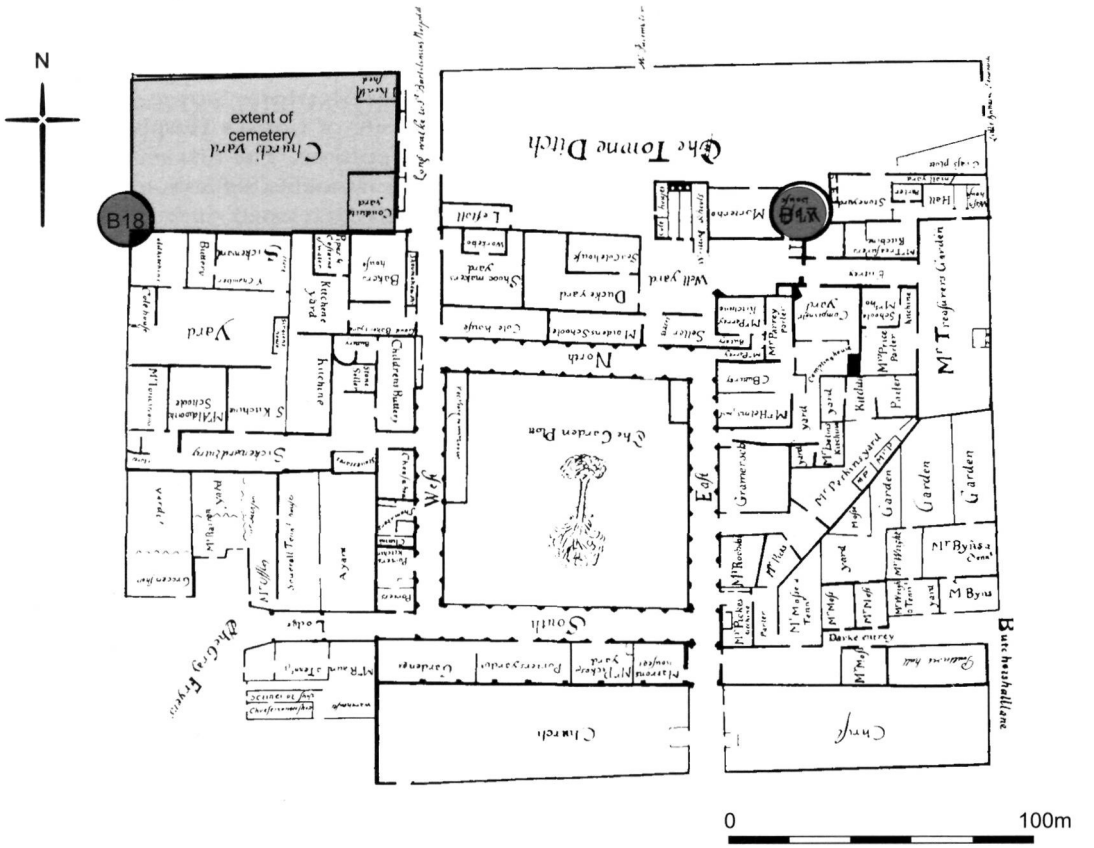

Fig 5. Detailed plan of Christ's Hospital c.1650 showing the site of the cemetery north of the City walls (Guildhall Library Print Room Pr.141/CHR) (note figure reversed to show N at top)

yard'. Already there is evidence that the cemetery was suffering from encroachment. In the south-eastern corner is a 'Conduit yard', while in the north-eastern corner is a building entitled 'J Kevill shed'. The 'grave yard' which was indicated on the 1617 map is not mentioned (and may actually have been a mis-reading of the 'Car yard' of 1610). This area is simply called 'The Towne Ditch'.

Following the Great Fire of 1666, the area was surveyed by John Ogilby in 1676 (Hyde 1976). The cemetery was now called the 'hospital churchyard', while the land east of the postern remained known as the 'town ditch'. Within the city walls, the friary church had been destroyed in the Great Fire; between 1674 and 1687 the parish church of Christ Church was rebuilt on the site of the old friary choir (Jeffery 1996, 190).

The extramural cemetery continued in use through the greater part of the 18th century. The western portion of this cemetery is shown as the 'Burying Ground' on Rocque's map of 1746, but by this date the adjoining eastern portion of the city ditch was already partly built over (Hyde 1982, 4). The area of the 'Burying Ground' was also shown as open space on Horwood's map of 1792–93 (Laxton 1985, 14). In 1795 an Act of Parliament allowed the Governors of Christ's Hospital to enlarge both their premises in London and Hertford (Act 1795). The preamble to the act stated that it would be necessary to 'appropriate a Piece of Ground called the *Burying Ground* of the Parifhioners of the Parifh of *Christ Church Newgate Street*, and the prifoners of *Newgate*...'. It was stated that the Christ's Hospital held this land from the Corporation of London. In return for waiving their right to use their existing burial ground, the parishioners of Christ Church Newgate were to be given a

nearby plot of land as a replacement. This was to be acquired by Christ's Hospital specifically for this purpose. This new burial ground was also to be used by prisoners of Newgate. It was created by extending the existing cemetery of St Botolph's, Aldersgate, westwards (to King Edward Street), forming an open space now known as Postman's Park (Act, 1795, Third Schedule). This arrangement allowed the old burying ground to be closed and subsequently built over during the 1795–1835 redevelopment of the school.

The last cartographic evidence of the cemetery dates to *c.*1810 (Fig 6), where the cemetery is labelled as 'Burial ground for Newgate & for poor of Christ's Church'. By 1825, the cemetery had been completely taken into the extended precinct of Christ's Hospital allowed for by the 1795 Act, and the new Great Hall had been erected over its southern half. Further buildings followed, including the boys' washroom, bath house and latrines, and, in 1870, the swimming pool building (Lempriere 1913, 506). The school remained here until 1902, when it was relocated to Horsham, Sussex (Allan 1984, 11, 76). The site of Christ's Hospital was disposed of in two portions. The first one (5/8 acre, 2529 square m) was sold to St Bartholomew's Hospital, which was redeveloped during 1903–04 as the new out-patients' block (D'arcy Power & Waring 1923, 91–2). The second portion was sold to the Post Office and redeveloped as the King Edward Buildings General Post Office during 1907–09 (Norman & Reader 1912, 274), which in turn was redeveloped again during 1998–2000, when it was transformed into the new Merrill Lynch Headquarters (Lyon in prep). A plan made in 1903 shows clearly the disposition of these buildings at the time of the transplant of Christ's Hospital, and immediately prior to the beginning of the redevelopments of 1903–09 in

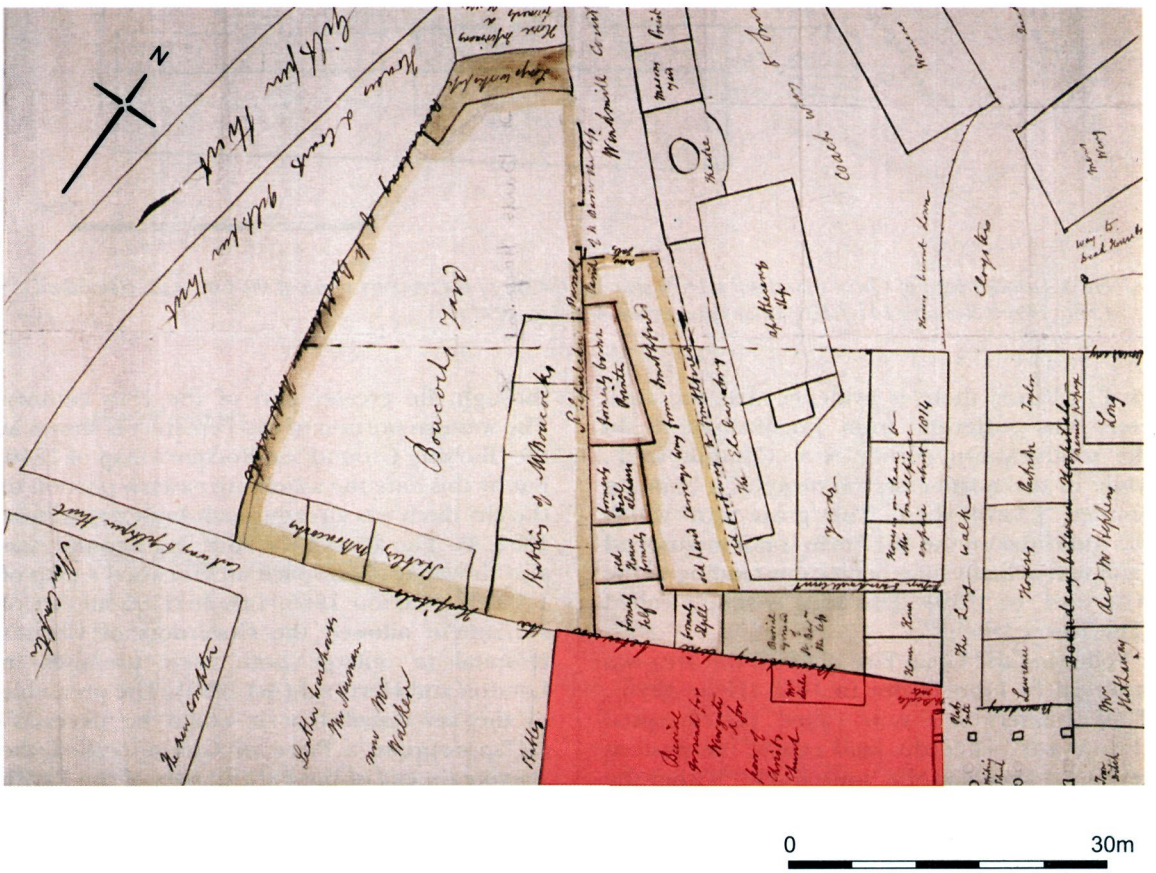

Fig 6. The area of Giltspur Street and the boundary between the properties of Christ's and St Bartholomew's Hospitals in c.1810. The cemetery is marked (Guildhall Library Print Room Pr.259/GIL)

which the burials and funerary crosses came to light (Fig 2).

OBSERVATIONS ON THE NATURE OF THE CROSSES

Hilton Price furnished his audience with a broad consideration of the crosses and their manufacture. He considered it likely that they had been cut with shears and chisels from milled sheet lead, and then hammered out (Hilton Price 1907, 20–1). Recent examination of a selection of the crosses by Geoff Egan has shown that Hilton Price's observation concerning their manufacture requires some revision. Fig 7 shows three examples demonstrating the variety of form that can be found in the collections, while Fig 8 provides basic, scaled silhouette outlines of a wide selection of the crosses to give a further idea of the range.

It is quite apparent that the crosses were all very poorly made by unskilled labour. No experienced sheet-metal worker would have made objects this crude. The overall size of the individual crosses varies, as do the shape and dimensions of their arms. The crosses vary in length from 54 to 165mm. They were clearly not made from a standard template, but look more like a series of individual efforts by a number of different people. If just one or two individuals had made them then a better standard of workmanship would have been expected. Also if a template of some description had been used then a much greater degree of standardisation would have resulted. The crosses were probably cut from sheet lead by knives (not by shears or chisels). In many places this process is marked as a series of short, jagged cuts. One cross (SM A654859) shows evidence of having been cast in a very crude and leaky mould, with very substantial amounts of flashing remaining between the cross arms and no evidence of having been cut, milled, or hammered.

A large number of crosses have one relatively smooth face (the original sheet face), and one with a ribbed or slighted hammered appearance. This is due to the sheet metal being rolled (with something like a rolling pin, presumably a large metal rod) to flatten it, after it had been cut into a cross. This process has resulted in some very

Fig 7. Detail of three of the lead crosses, two letters, and the number '6' (or possibly '9') found on the site. Dimensions/details: P (A3370) L 108mm, S (A3369) L 105mm, 6 (A3371) L 94mm (courtesy of MoL)

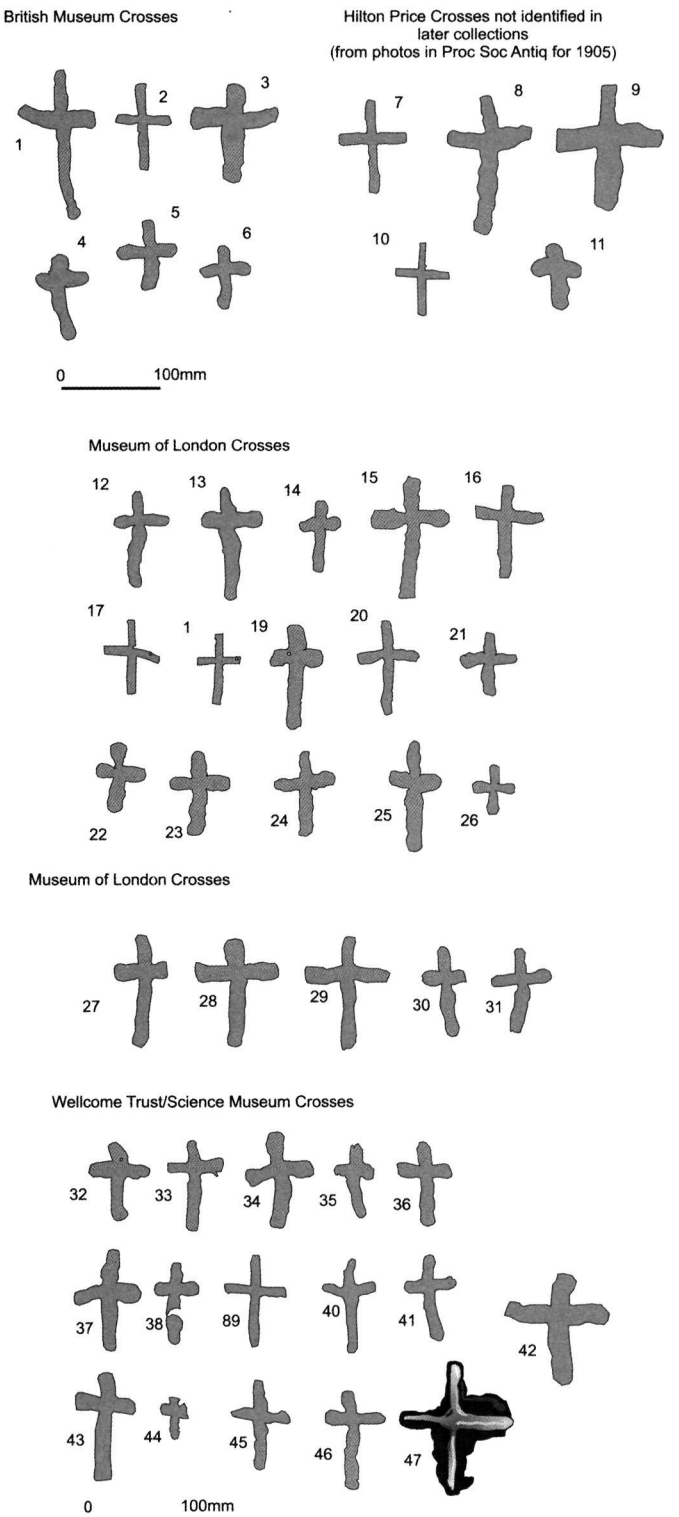

Fig 8. Silhouette plans of a broad selection of the crosses to show relative sizes and styles. Note that some of the crosses were unavailable for illustration at the time of preparation for this article. For numbers please refer to Appendix

thin sheets, and the distortion of the original edges. In some instances the rolled ends of the arms of the crosses have been folded over (*eg* MoL A8904e) or in others probably accidentally turned over or creased/crumpled during handling (*eg* MoL NN18702). Some crosses have a curved and distorted appearance due to this rolling process.

Several of the crosses have a single punched hole, always off-centre and sometimes so close to the edge of the metal it cannot have been intended to fix the cross to another object such as a shroud. Instead this hole may have been intended to secure the sheet metal during cutting (a number of the holes certainly predate the rolling process).

Of the other finds, the letters 'S', 'C' and 'P' were probably cast in crude clay moulds, then finished by being worked into their final shape by cold hammering. Due to extensive hammering of the edges their mode of manufacture is not certain (as any cut marks will have been obscured). The '6' was probably initially cast too, but it has some evidence of rolling as well as being hammered.

The tiny (probably silver?) crucifix is certainly of post-medieval date and has a flattened loop on the top arm of the cross (L 28mm). The somewhat uninspired figure of Christ was made separately.

The nature of the crosses and the letters, therefore, strongly suggests that they were created by a number of different unskilled workers using very crude techniques and simple tools, working to the most basic of designs. The crosses were clearly not being made for the commercial market. This lends powerful weight to the hypothesis that those buried with them were certainly at the lower end of the social strata.

THE CHARACTER OF THE CEMETERY AND THE PEOPLE BURIED THERE

It is clear that the cemetery revealed during 1905 was the one belonging to Christ Church, Newgate Street. From cartographic and documentary evidence it is certain that the cemetery was established by the early 17th century, and was still (at least partly) in use in the early 19th century. The crosses and other finds discovered with the interments are, therefore, not related to either the medieval Black Death visitations, or the Franciscan friary. Who, then, were those buried in the cemetery, and why were at least 100 of them accorded burial with lead crosses?

Christ Church already had a cemetery, established in the early 1540s, the location of which is uncertain. Possibly it was situated within the former intramural cemetery of the Franciscans, or burial may have taken place within the monastic cloisters.[3] In addition to the former precinct, the new parish of Christ Church took in the former parishes of St Audoen's and St Nicholas in the Shambles, so burial may initially have continued at cemeteries attached to these churches until their closure in 1552. After the Great Fire, the nave of the old friary church was demolished, and a new cemetery established on its site (Jeffery 1996, 190). This area is still public open space. However, a new burial area was needed for the parish by the early 17th century. Harding's recent work on the early modern burial grounds of London and Paris demonstrates that a combination of mounting population and recurrence of epidemics in the late 16th and early 17th centuries prompted the Court of Aldermen in 1604 to establish a committee to find more burial space (Harding 2002, 99). Individual parishes responded to the problem by acquiring additional land wherever possible, and the open land left by the infilling of the city ditch was utilised in this fashion by St Botolph Aldgate in 1615 and St Botolph Bishopsgate in 1617. The new churchyard at Christ Church was almost certainly established within this context, and may indeed have been among the earliest.

Such new churchyards were not initially popular with parishioners, and in response to this reluctance, some vestries created two-tier burial pricing. It followed, therefore, that the less wealthy would tend to be buried in the new cemetery areas. Harding has also shown that the cheaper areas of churchyards were, perhaps unsurprisingly, much more often used for parish pensioners, servants, and foundlings (*ie* those without known family nearby) than were church interiors (Harding 2002, 58–9). The Christ Church cemetery was, therefore, likely to have served the poorer members of the community and those with no one to organise and pay for a private burial, and certainly by 1810 this was its explicit role, as the map evidence indicates.

It is most likely to have been such 'lower' churchyards that were also the locations for the mass graves, dug in years of high mortality associated with various epidemics, and culminating in the exceptional events of 1665. Hilton Price's account of the very large wooden boxes (14ft/4.3m in length) containing numerous burials may well represent the archaeological evidence for such mass graves. It seems inherently probable

that these were not transportable boxes, but revetted pits, and we might look to contemporary descriptions of plague burials in London in 1625, where authorities were compelled 'to dig Graves like little cellers, piling up forty or fifty in a Pit' (quoted in Harding 2002, 66). The absence at Christ Church of any churchwardens' accounts for the years between 1588 and 1666 means that we have no direct information on mass burials in the plague outbreaks between these years, and there are no obvious references before or after, but it does seem likely that at least part of the cemetery was set aside for plague burials from time to time.

However, the mass burials were not those that were accompanied by the lead crosses. The latter were found apparently within individual shafts containing up to eight inhumations buried one above the other. We further believe that they were buried without coffins (since no wood was found), and had all been dressed in similar coarse smocks. Such a standardised, repeated, and very modest burial rite, associated with multiple burials strongly suggests some kind of institutional system for disposing of the dead, yet the evidence from the crosses themselves suggests that this was no case of mass-production by a single source (through the use of moulds for example). To determine who these people might have been is something of a detective story.

Firstly, we know from the 1795 Act and the 1810 map that the cemetery was used for the poor and for prisoners from Newgate. The parish registers (Littledale 1895) clearly confirm this. Between 1579 and 1734 no fewer than 1,011 individuals in the burial register are described as being 'from Newgate', and that excludes the missing 78 years of the register. The term ceases to be used in 1734 and for the remaining 20 years of the registers appears to be replaced by the term 'prisoner'. Between 1691 and 1754 (the period when the register seems to be most consistent) 1,879 individuals described in these terms were buried in a cemetery area of Christ Church. That prisoners were being buried in a cemetery of Christ Church is also clear from contemporary mid-18th-century accounts. Strype *et al* (1754, i, 683) recorded that many prisoners awaiting trial or punishment in Newgate gaol often contracted a disease called 'Gaol Distemper' (typhoid), due to overcrowding and insanitary conditions, 'of which they die by dozens, and cartloads of them are carried out and thrown into a pit in the churchyard of Christ Church, without any ceremony'. So, the cartographic evidence, the Act of Parliament, and the burial registers seem to combine to show that the extramural cemetery was the recipient of thousands of bodies of those who had died in Newgate Gaol, and that mass burial was involved. The manner and place of death of those buried would tend to have precluded any normal family burial, and there thus may have been the need for an institutional burial rite.

However, the registers also show another group of dispossessed, who may also have been the recipients of an institutional burial. At least 509 individuals are described as 'almswomen' or 'pensioners' between 1691 and 1754. Many parishes supported their poor and destitute, but this number is significantly high. It seems probable that the almsmen and women of Christ's Hospital were also being buried in the cemetery on a regular basis.

A third identifiable institutional burial group in the registers are those described as being from the Workhouse. However, we can certainly discount these as being the recipients of the crosses since only 13 individuals are so identified.

Returning then to the archaeological evidence, we need to establish whether either of the two most likely groups were being buried in the sort of numbers that would correlate with the archaeological evidence described by Hilton Price of narrow, shaft burials with eight inhumations one above the other. Firstly, the description may have resulted from the misinterpretation of discrete individual inhumations that, seen in section, appeared to overlie each other. The use of a narrow, unlined, shaft for mass burial is unusual compared with the deep, broad, mass burial pits or trenches such as have been recorded at the Black Death cemetery of East Smithfield (Grainger *et al* in prep), or at the site of London's 'New Churchyard' of 1569 (Malt & Hunting 1991, 35; Malt & White 1987), and such as are commonly referred to in contemporary parish registers. The form of this shaft would preclude being left open for any length of time, since the sides would simply have collapsed. But three London excavations have shown that it was certainly used. At St Mary Spital, several shafts of this kind, dating to the 15th and 16th centuries, one containing as many as 12 individuals, have recently been excavated (Chris Thomas pers comm), while others were encountered alongside more typical later 16th-century mass graves at the New Churchyard (Malt & Hunting 1991, 31–6), and at the 19th-century lower

cemetery of St Brides in Farringdon Street (A Miles pers comm). Hilton Price's recounted observations therefore cannot be ruled out as mistaken.

Since the parish registers give the precise date of each burial, it is possible to calculate for each day of each year how many prisoners and how many pensioners were being recorded as buried on the same date (and thus possibly receiving a common grave). Between 1691 and 1754, the year of greatest mortality for prisoners (including those from Newgate) was 1729, when 92 prisoners were buried and seven pensioners. Prisoner burials exceeded 50 in 12 years during this same period (1698, 1724–30 inclusive, 1737, 1740–41, and 1750). In contrast, pensioner burials never exceeded 27 in any year. The highest numbers of burials recorded were in 1746 (26) and 1747 (27). In terms of potential mass burial, the highest recorded group buried in one day was that of eight prisoners on 21 February 1729 (officially then 1728 of course). Another group of seven was buried on 18 January 1740. A further five groups of five burials can be identified, 12 groups of four burials, and 75 potential triple burials. Again, in contrast, never were more than three pensioners buried on the same day: this number occurred only three times.

Given that about 100 lead crosses were recovered from these shaft graves, it would appear that the only recorded group who were dying in sufficient numbers to be buried up to eight deep (at least in the records that are available) were the prisoners from Newgate Gaol. The crude nature of the crosses themselves is of note here. The extremely simple approach of sheet lead being knife-cut, hammered and/or rolled without a template and with no regard for finish suggests that the makers were entirely unskilled. It does seem conceivable that each cross could have been manufactured by prisoners for themselves or for dying inmates (assuming that the sheet lead was available and that the rolling and hammering tools were of a kind accessible within the cells), or even that jailers were bribed to provide such items. Put another way, it is hard to imagine people at liberty setting about making such items. No work was provided for prisoners until the 19th century 'although debtors always had the right to follow their trades, and many other prisoners would make goods for sale to help support themselves' (Byrne 1992, 30).

However, if this was the case, and crosses were routinely offered to those who had died incarcerated, then such a circumstance would surely have left many more crosses than 100 to be found by Hilton Price, as thousands of prisoners were likely to have been buried in this ground. Two further options should therefore be considered. The first is that the burial practice was an idiosyncrasy of a single sexton (or possibly jailer?), and that therefore the crosses were only manufactured for a single generation. In support of this the coincidence of multiple burials with the decades between the 1720s and the 1750s would allow for a single practitioner to have provided the crosses. The crude and highly variable form of the crosses argues against a single source however, and the *Ordinary of Newgate Accounts* (accounts of felons' final days published by the prison chaplain) for 1687–1747 (Corporation of London Guildhall Library AN 20.1.2, S L3/1) reveal no evidence whatever concerning the mode of burial of prisoners during this period.

A second option is that within the overall category of 'prisoner', there was a further subset of society with whom it was appropriate to bury such crosses. One possibility is that of gender. Returning to the parish registers, between 1691 and 1754 a noteworthy total of 478 (25.4%) of the 1,879 people who were described either as 'from Newgate' or 'prisoner' were women. Multiple burials of women on the same day are indicated from the registers, but the greatest single number was that of three women who were buried on Christmas Eve 1747. If the description of shafts containing eight burials provided with crosses is accurate, sex was not the defining character.

Another possible subgroup is of distinct religious groups, although it must be emphasised that we have no evidence for any employing lead funerary crosses at this date in any context. The earliest group with a specific link to Newgate prison may be that of the nonconformists, sorely affected by the events of the early 1660s. Records relating to Newgate prison show that following the passing of the Act of Uniformity (1661) and the Conventicles Act (1664) large groups of nonconformists were imprisoned in Newgate. Of the 120 Quakers jailed there for nonconformity in 1665, 52 died of plague (Crippen 1909, 377). Such discrimination continued into the late 17th century and beyond, so it is conceivable that the identity of oppressed religious groups might be expressed in their funerary arrangements. Religious oppression of this order had begun

to fade during the first half of the 18th century, following such laws as the Tolerance Act of 1738, so Roman Catholics (and other minority groups such as the French Prophets) may have felt more freely able to articulate specific burial practices despite desperate straits imposed by prison. Thus, not being incarcerated for their faith, but for other, secular crimes, they were allowed some aspect of its expression in death. This hypothesis has the advantage of also tying in with the peaks of mass burial suggested by the parish registers.

Clearly there are very significant gaps in the documentary coverage of the registers, and clearly there may have been other groups being disposed of who were not identified by description in the registers, so no absolute certainty exists. It does, however, seem plausible that the repeated devastation caused by disease, and especially typhoid, among the wretched population incarcerated in Newgate gaol provoked some kind of crude response in those set to bury their corpses, and that rude lead crosses were placed in the folds of their 'coarse frocks' before their bodies were lowered into their unmarked shafts.

THE HISTORY OF THE CROSSES: A STORY OF DISPERSAL AND CHINESE WHISPERS

The post-discovery history of the crosses is every bit as interesting as their excavation. They were reported, and displayed, at a lecture of the Society of Antiquaries in 1905 (*Athenaeum* 1905, 841). They then began to find their way into public, and private, collections.

At least four of the crosses were accessioned at the British Museum in the same year (BM accession numbers 1905,1121.1–1121.4), and a further six were accessioned in 1906 (BM 0514.1–0514.6). They bear differing descriptions, suggesting they formed two separate acquisitions. The first are described simply as plain, thin, lead-alloy crosses, with edges irregularly beaten out, and assigned a suggested date of 14th to 15th century. They were provenanced to Christ's Hospital. The second group were not assigned a date, and described as plain, flat, lead mortuary crosses.

A further six crosses were acquired by the Guildhall Museum before 1908, entering the museum's catalogue as number 249 (GM 1908, 23) and accessioned as 8904. These were described as 'Mortuary crosses (six), roughly cut in lead, from graves on the site of Grey Friars' Monastery (Christ's Hospital); perhaps 1348–9; from 3½ in x 1¾ in to 5¾ in x 3¼ in'. Such a location would have been taken as being certainly intramural at the time: the hospital still stood and some elements of the old friary were probably still visible.

Hilton Price clearly held many of the crosses himself for a time, perhaps all of the remainder. One of the group acquired by the Wellcome Institute (see below) had an anonymous note attached: 'Leaden Cross, from Plague pit of 1348–9, site of Christ Church, London, 1907 (One of these laid/on breast of each body). Given me by Mr F G Hilton Price. Dec. 08' (SM accession A17456). It seems likely too that the collection of 32 crosses accessioned at the London Museum in 1912 (MoL accession numbers A3336–A3367) may have been obtained from the Hilton Price collection. In the catalogue, these were described as 'Leaden mortuary crosses found with interments on the site of Grey Friars monastery'. They were given a date of the 14th century, and were provided with a broad location of 'Newgate Street'. This effectively cemented the intramural location. At least eight, and probably significantly more, of these crosses were subsequently auctioned in 1920, a number of which were bought by the Wellcome Institute.

The Wellcome Institute appears to have obtained its first example in 1919, the one donated in 1908 by Hilton Price to a friend, when it was purchased in Stevens's Auction Rooms in Covent Garden in December 1919 for the considerable sum of 16 shillings.[4] Stevens's, a respected and busy auction house, was the source for several further acquisitions: two crosses for 5s in August 1920 (SM accessions A635017 and A635018), and six in December of that year (SM A635015 and A635016; A654844–A654846; and A9076) for a total price of £1 6s 3d. A further group was that acquired from the London Museum. Three of an otherwise undated group still bear the original London Museum accession numbers (MoL accessions LM A3344, A3358, A3367), and by association, a total of 17 crosses may have been acquired at this time (SM A654840–A654843; A654847–A654859). The Wellcome Institute had thus gathered a total of 26 crosses by 1921. In the *London Museum Medieval Catalogue* 27 crosses were listed in the collections, and an additional five examples were described as in collections of the Guildhall Museum (Ward Perkins 1940, 290). At least eight crosses had been sold by the London Museum by the end of 1920 (there are currently 21 accessions of the

original 32 obtained in 1912). The remaining eleven examples are 'not traced', a number which includes all eight definitely sold in 1920, so it may be that three examples were disposed of at this time.

The notes that were made of the provenance of the crosses are contradictory and complex. Most describe the fact that the crosses were placed on the breasts of plague victims at the Greyfriars, and dated to 1348–50, in line with Hilton Price's original surmise. Two, however, are noted as 'Lead mortuary cross from monastic victim of the plague, English, 1601–1700', and one is described as being from Greyfriars, but dated to the 12th century. In the *London Museum Medieval Catalogue* the crosses were described as 'found with internments at Christ's Hospital Newgate Street, on the site of Grey Friars' burial ground' (Ward Perkins 1940, 290).

A further cross was presented to the London Museum in November 1929 by a Mrs Greg or Grey. It apparently originated in the Hilton Price collection, and was described as a 'Leaden coffin cross, medieval' from 'London' (London Museum accession 29.186/1). One more surfaced at another auction at Steven's Auction Rooms in September 1934, identified as being from Christ's Hospital, and purchased by the Wellcome Institute for 17s 6d (SM accession A205305).

Specimens from the original group clearly went a considerable distance with their owners. In 1951, the Guildhall Museum acquired a cross (MoL accession GH 17155) from the Leicester Museum as part of a collection of London material formerly owned by the late Mr V B Crowther-Beynon FSA. He was President of the Numismatic Society in the 1930s, and endower of Cambridge University's eponymous fund for archaeology and anthropology. The cross from his collection was honoured with the most specific description yet: 'Leaden mortuary cross, found, with interment, in the Lesser Cloister, Grey Friary, Newgate Street, AD 1348–9, Christ's Hospital 1905'. It measured 4.7in by 3.6in. It was joined by a gift of two more crosses (MoL accessions GH 255585 and 255586), this time from the Bridgnorth and District Historical Society, in 1971. These were accompanied by written cards defining them as 'absolution' crosses, each found with 'a human skeleton, a friar, in a great pit containing about 400 skeletons uncovered during excavations on the site of the churchyard of the Grey-Friars Monastery (Christ's Hospital), Newgate Street, London EC'.

The most poorly provenanced are a curious group of five crosses currently on loan to the Science Museum from the Wellcome Institute, and originally held in the latter's 'strongroom' (SM accessions A115565, A629427, A629445–A629447). These are not the originals, but instead are copies (made in Willesden) of crosses lent for exhibition at Antwerp, Dresden, and Buenos Aires. We do not know when these exhibitions took place, nor what happened to the originals. Indeed it is not certain (though it is very likely) that these actually came from the site to which the others belong. The description states that they were from London, and that they were 'from the graves of victims of the plague in London, original 17th century'. All but one strongly resemble in form and size the Newgate crosses (one is rather more of a Maltese cross shape), and there is no known findspot of a similar nature in any other literature. There is thus a high probability that the originals were part of this group. Why the 17th-century date was ascribed to these is unclear.

The remaining objects discovered with burials and reported by Hilton Price comprised the crucifix, the lead letters 'S' and 'P' and the lead number '6' found with a skeleton in a brick vault; and the letters 'C' and 'B' in lead from other graves (Fig 7). These too survive (at the Museum of London, respectively A3368–73) but their dates of accession are not recorded. The accession sequence follows immediately on from the crosses obtained by the Museum of London in 1912, so it seems very probable that they formed part of the Hilton Price collection too.

In 1974, the creation of the Museum of London brought together the collections of the Guildhall and London Museums, and thus reunited a number of the crosses held at both these locations. Between 1972 and 1978 the Wellcome Institute transferred its holdings of crosses on loan to the Science Museum. Although the latter had not previously held any examples of the crosses, this now meant that significant collections existed in two national museums and one regional museum.

The story of the crosses was not yet complete. In 1978 a selection of the crosses was illustrated in a social history and archaeology of medieval England as coming from the friary cemetery (Platt 1978, pl 86), and this reference was later used to illustrate the opinion that funerary crosses were 'a relatively common feature' of medieval cemeteries (Daniell 1997, 166). In

1998, the book accompanying the 'London Bodies' exhibition at the Museum of London described authoritatively how in 1905 'a mass grave had been uncovered on the site of the priory of the Grey Friars north of St Paul's'. It went on to explain how the pit 'contained several hundred bodies, many of them accompanied by [the crosses]' (Werner 1998, 65–6). The crosses currently on display in the Science Museum (5th floor Science and Art of Medicine G9) are described as 14th-century mortuary crosses from an English Black Death cemetery. Thus the myth of a Black Death mass grave on the site of the Greyfriars, Newgate Street lives on.

This remarkable dispersal brings the sum of crosses received at one time or another into museum care and currently traceable to 63 (BM = 10, SM = 32 incl replicas, MoL = 21), leaving the whereabouts unaccounted for of 26 of those displayed in 1905. The object of this review is, of course, not to presume any kind of academic superiority over our predecessors, but to show how powerfully a simple slip can influence the facts. Hilton Price probably knew little of post-medieval burial customs, and the stratigraphic study of archaeological sites was in its infancy in 1905, so such a mass of burials, laid so deep would of course have had the appearance of a plague pit. What is more interesting is the assumption that these burials were friars, and the manner in which the crosses acquired embellished descriptions over time: first coffins, then cloister burials, and finally the single mass pit. All these characteristics were invented later. Equally interesting is the snapshot that this group gives of the manner in which artefacts were dispersed quite thoroughly from London to Leicester and Shropshire, via personal gift, auction, and museum donation.

THE CROSSES IN THEIR NEW CONTEXT: THE FINDS IN THE CONTEXT OF MEDIEVAL AND EARLY MODERN BURIAL PRACTICE

The identification of the funerary crosses as being certainly post-medieval, and almost certainly 18th-century, provides us with a unique new group of mortuary artefacts in Britain. Lead funerary crosses are known from a number of medieval sites, mostly monastic, but they are rare. Only two English sites, Bury St Edmunds Abbey and the Crutched Friars in Colchester, have revealed the recurring use of lead crosses in graves. Neither is as late as the 18th century. The Bury crosses are considered to have been of 12th- or 13th-century date, and several are inscribed, leaving Colchester as the one possible parallel for the use of crude, uninscribed crosses in a cemetery, and these would appear to be at the latest 16th-century in date (for a discussion of lead crosses see Gilchrist & Sloane 2005, 5.1). Lead crucifixes have been recovered from the 18th- to 19th-century burial grounds of St Pancras and St Marylebone in London, but these were finished with Christ figures, and not the crude crosses as found at Newgate. They probably accompanied Catholic burials (A Miles pers comm).

The inclusion of lead crosses in medieval graves has been interpreted as a means by which the bodily remains could be protected from demonic possession, or by which the deceased might exhort any who disturbed their bones to offer intercessory prayer to hasten their souls through Purgatory. The need for such talismans should have faded long before the 18th century according to current understanding, and archaeological evidence for grave goods from this time is indeed normally confined to coffin fittings, *depositum* plates, and items of mortuary dress. Indeed no published examples of lead mortuary crosses of this date have been found (see for example Litten 1991; Mytum 2004). This group is therefore particularly interesting as it sits outside our general understanding of orthodox burial practice for the time.

The intriguing possibility that these crosses may have been in some way associated with poor badges has been raised (T Hitchcock pers comm). From Elizabethan times, and encoded by the Badging Act of 1696, the poor who were in receipt of parish pensions (*ie* the pensioners recorded in the Parish Registers, above) had to wear small badges identifying themselves. Most often these were cloth badges stitched to clothing. However, some were brass or tin discs, and Romsey, Hants, used elaborate lead plaques (Hindle 2004, 22). These artefacts of deprivation certainly seem to resonate with the crude crosses from Newgate, and one or two of the crosses do carry small holes by which they *could* have been stitched to clothing, though proving any link is impossible, and, as we have seen, the pensioners do not seem to have been dying in the numbers and frequency demanded by the circumstances of the finds.

There are other rare types of grave finds from the post-medieval period which might indicate that the breadth of mortuary practice, and thus

of the belief structures of Londoners was wider that previously considered. For instance, in 1601 the gravediggers at St Dunstan in the West were charged with removing from a grave a lead coffin along with an hourglass, a handkerchief, and a garland of flowers (Harding 2002, 145). Such a reference is explained by the discovery of another garland in a grave in St James, Clerkenwell (Anon 1747, 264). The writer describes how in 1733, the clerk of Bromley church, Kent, dug up a garland wrought in filigree of gold and silver to look like myrtle, covered with a cloth of silver. Such garlands apparently often formed crowns for mourners to wear at the funeral, and the centre-pieces of such crowns could be, among other things, wire representations of hourglasses.

CONCLUSIONS

Exactly 100 years after the first report on the finds from the Christ's Hospital excavations, the cemetery and its associated artefacts can now be set in their proper place in the history of London. It is worth considering briefly how Hilton Price came to mistakenly pronounce the site to be a 14th-century Black Death cemetery. He knew (1907, 18) of the early maps showing that the cemetery was connected with Christ's Hospital, and he had undertaken some research in the literature, so he also knew about Pearce's (1901, 62) *Annals of Christ Church Hospital* and the use of this burial ground by the prisoners of Newgate and parishioners of Christ Church (1907, 15). He even stated the general impression 'that [the skeletons] must have been buried there in one of the great plague years 1603 or 1665' (*ibid*). All the pieces were in place, but he could not understand how the cemetery could lie beneath the playground and swimming baths of the hospital. It would appear that in his mind the only way that this could be the case was if the cemetery entirely pre-dated the hospital, and the only candidate he could perceive was the nearby friary. It remains a credit to him that there is sufficient information in his promptly published report for us to have been able to write this paper. The shaft burials, the 'coarse smocks', and of course the lead crosses all add a significant dimension to our understanding of post-medieval burial rites and the beliefs associated with them. We may never know the precise conditions under which people were provided with the crosses at their deaths. It might have been the practice of a single sexton, operating for only 20 or 30 years, which coincided with the mass burials from the 'gaol distemper'. It may conceivably have been a hidden Catholic rite, with unskilled prisoners themselves fashioning crude objects of their faith. Some part of the cemetery may yet survive the palimpsest of later development, and if so, should the occasion arise, it would be highly informative to excavate what remains under controlled conditions to try to answer these questions.[5] Equally, the many parish registers for City churches and Corporation cash books might hold further clues. What we can say with some considerable certainty at this point is that the crosses were provided to those among the lowest strata of society, people not usually represented well in the history of death and burial.

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APPENDIX: LOCATION AND HISTORY OF THE CROSSES

Location	Object No.	Illustration No. (Fig 8)	Summary of notes from accession cards and catalogues *etc*	History
British Museum	1905.1121.1		Cross; lead alloy; plain; thin; edges irregularly beaten out. 14th-15th century, from Christ's Hospital	Acquired in 1905
British Museum	1905.1121.2		Cross; lead alloy; plain; thin; edges irregularly beaten out. 14th-15th century, from Christ's Hospital	Acquired in 1905
British Museum	1905.1121.3		Cross; lead alloy; plain; thin; edges irregularly beaten out. 14th-15th century, from Christ's Hospital	Acquired in 1905
British Museum	1905.1121.4		Cross; lead alloy; plain; thin; edges irregularly beaten out. 14th-15th century, from Christ's Hospital	Acquired in 1905
British Museum	1906.0514.1	1	Mortuary cross; lead; plain; flat. Christ's Hospital	Acquired in 1906
British Museum	1906.0514.2	2	Mortuary cross; lead; plain; flat. Christ's Hospital	Acquired in 1906
British Museum	1906.0514.3	3	Mortuary cross; lead; plain; flat. Christ's Hospital	Acquired in 1906
British Museum	1906.0514.4	4	Mortuary cross; lead; plain; flat. Christ's Hospital	Acquired in 1906
British Museum	1906.0514.5	5	Mortuary cross; lead; plain; flat. Christ's Hospital	Acquired in 1906
British Museum	1906.0514.6	6	Mortuary cross; lead; plain; flat. Christ's Hospital	Acquired in 1906
Hilton Price - now unknown	Not accessioned	7	Object recorded on photograph in Hilton Price 1907 article only	Not identified in any existing catalogues or collections
Hilton Price - now unknown	Not accessioned	8	Object recorded on photograph in Hilton Price 1907 article only	Not identified in any existing catalogues or collections
Hilton Price - now unknown	Not accessioned	9	Object recorded on photograph in Hilton Price 1907 article only	Not identified in any existing catalogues or collections
Hilton Price - now unknown	Not accessioned	10	Object recorded on photograph in Hilton Price 1907 article only	Not identified in any existing catalogues or collections
Hilton Price - now unknown	Not accessioned	11	Object recorded on photograph in Hilton Price 1907 article only	Not identified in any existing catalogues or collections
Museum of London	8904a	12	One of a group of six roughly cut lead alloy crosses, roughly cut. Findspot given as Christ's Hospital, Newgate Street, St Paul's, London	Acquired by Guildhall Museum by 1908
Museum of London	8904b	13	One of a group of six roughly cut lead alloy crosses, roughly cut. Found in graves on the site of Greyfriars monastery (Christ's Hospital), dated to perhaps 1348-9	Acquired by Guildhall Museum by 1908
Museum of London	8904c	14	One of a group of six roughly cut lead alloy crosses, roughly cut. Found in graves on the site of Greyfriars monastery (Christ's Hospital), dated to perhaps 1348-9	Acquired by Guildhall Museum by 1908
Museum of London	8904d		One of a group of six roughly cut lead alloy crosses, roughly cut. Found in graves on the site of Greyfriars monastery (Christ's Hospital), dated to perhaps 1348-9	Acquired by Guildhall Museum by 1908
Museum of London	8904e	15	One of a group of six roughly cut lead alloy crosses, roughly cut. Found in graves on the site of Greyfriars monastery (Christ's Hospital), dated to perhaps 1348-9	Acquired by Guildhall Museum by 1908

Location	Object No.	Illustration No. (Fig 8)	Summary of notes from accession cards and catalogues *etc*	History
Museum of London	8904f	16	One of a group of six roughly cut lead alloy crosses, roughly cut. Found in graves on the site of Greyfriars monastery (Christ's Hospital), dated to perhaps 1348-9	Acquired by Guildhall Museum by 1908
Museum of London	A3336		Cross, lead alloy? Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Acquired by 1912 by London Museum from Hilton Price collection. Cross not traced at MoL in 2004. Probably sold in 1920
Museum of London	A3337		Cross, lead alloy? Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Acquired by 1912 by London Museum from Hilton Price collection. Cross not traced at MoL in 2004. Probably sold in 1920
Museum of London	A3338		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Acquired by 1912 by London Museum. from Hilton Price collection. Sold (to Wellcome Trust?) in 1920
Museum of London	A3339		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3340	17	Lead alloy cross, roughly cut. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Purchased in 1912
Museum of London	A3341	18	Lead alloy cross, roughly cut. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Purchased in 1912
Museum of London	A3342		Lead alloy? Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Cross not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3343		Lead alloy? Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Cross not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3344		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Cross certainly sold and acquired by Wellcome Trust in 1920, see SMA654857
Museum of London	A3345		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Cross not traced by MoL in 2004. Probably sold in 1920

Location	Object No.	Illustration No. (Fig 8)	Summary of notes from accession cards and catalogues *etc*	History
Museum of London	A3346		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Cross not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3347	19	Roughly cut lead cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Purchased in 1912
Museum of London	A3348	20	Lead alloy cross, roughly cut. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Purchased in 1912
Museum of London	A3349		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3350	21	Lead alloy cross, roughly cut. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Purchased in 1912
Museum of London	A3351	22	Lead alloy cross, roughly cut. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Purchased in 1912
Museum of London	A3352		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3353	23	Roughly cut lead cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	
Museum of London	A3354	24	Lead alloy cross, roughly cut. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Purchased in 1912
Museum of London	A3355		Cross, lead alloy? Roughly cut. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3356		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920

Location	Object No.	Illustration No. (Fig 8)	Summary of notes from accession cards and catalogues *etc*	History
Museum of London	A3357		Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	
Museum of London	A3358		?Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Sold in 1920 and acquired by Wellcome Trust (see SMA654843)
Museum of London	A3359		?Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3360		?Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3361		?Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3362	25	Lead alloy cross, roughly cut. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's Hospital, Newgate St, St Paul's, London EC1	Purchased in 1912
Museum of London	A3363		Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3364	26	Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century. Findspot given as Christ's hospital, Newgate Street, St Paul's, London EC1.	Purchased in 1912
Museum of London	A3365		?Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3366		?Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Not traced by MoL in 2004. Probably sold in 1920
Museum of London	A3367		?Lead alloy cross. Note in London Museum catalogue states: Leaden mortuary crosses (thirty two) found with interments on the site of Grey Friars Monastery. XIV century	Sold in 1920 and acquired by Wellcome Trust (see SMA654858)
Museum of London	A3368		Small pendant in the form of a small crucifix with Christ on the cross. There is a suspension loop above the cross. Cast. Findpost given as Greyfriars Monastery (site) Newgate, St Paul's London EC1. Object described as silver in London Museum catalogue.	Acquired in 1912

Location	Object No.	Illustration No. (Fig 8)	Summary of notes from accession cards and catalogues *etc*	History
Museum of London	A3369		Leaden letter S. Found with an interment on the site of Greyfriars monastery, Newgate Street. XVI century	Acquired in 1912
Museum of London	A3370		Leaden letter P. Found with an interment on the site of Greyfriars monastery, Newgate Street. XVI century	Acquired in 1912
Museum of London	A3371		Leaden number 6 found with an interment on the site of Greyfriars monastery, Newgate Street. XVI century	Acquired in 1912
Museum of London	A3372		Leaden letter B found with interment on the site of Greyfriars monastery, Newgate. XIV century.	Acquired in 1912
Museum of London	A3373		Leaden letter C found with interments on the site of Greyfriars monastery, Newgate. XIV century.	Acquired in 1912
Museum of London	NN18702	27	Lead alloy cross. Described in London Museum catalogue as leaden coffin cross, medieval, from London.	Acquired from a Mrs Greg or Grey in 1929, formerly in the collection of Hilton Price.
Museum of London	29.186/1	28	Roughly cut, lead alloy cross. Findspot simply given as London.	
Museum of London	17755	29	Lead alloy cross found at Christ's Hospital in 1905. Described in Guildhall catalogue for 1951 as a mortuary cross found with interment in the lesser cloister, Grey Friary, Newgate Street, and dated 1348-9.	Gift from Leicester Museum to the Guildhall Museum in 1951. Originally part of the collection of the late Mr Crowther Beynon.
Museum of London	25585	30	Roughly cut lead alloy cross. Accompanying note states 'This absolution cross was found associated with a human skeleton, a friar, in a great pit containing 400 skeletons uncovered during excavations on the site of the churchyard of the greyfriars monastery (Christs-Hospital) Newgate St, London EC. It was exhibited with others at a meeting of the Soc Antiq. London. See Athenaeum Dec 16th 1905'.	Gift from Bridgenorth and District Historical Society to the Guildhall Museum, November 1971.
Museum of London	25586	31	Roughly cut lead alloy cross. Accompanying note states 'This absolution cross was found associated with a human skeleton, a friar, in a great pit containing 400 skeletons uncovered during excavations on the site of the churchyard of the greyfriars monastery (Christs-Hospital) Newgate St, London EC. It was exhibited with others at a meeting of the Soc Antiq. London. See Athenaeum Dec 16th 1905'.	Gift from Bridgenorth and District Historical Society to the Guildhall Museum, November 1971.
Science Museum/ Wellcome Trust	A115565		Lead cross, cut from sheet of lead. Replica (made in Willesden) of one taken from the grave of victims of the plague in London, original 17th century. Copy of one which was lent for exhibition at Antwerp, Dresden and Buenos Aires – no further details as to whereabouts of original	

Location	Object No.	Illustration No. (Fig 8)	Summary of notes from accession cards and catalogues *etc*	History
Science Museum/ Wellcome Trust	A17456	32	Crudely executed cross of lead, beaten out of lead, not cut. From the plague pit on the site of Christ Church, placed on body of victim of Black Death, London, 1348-1349. With label, which states: 'Leaden Cross, from Plague pit of 1348-9, site of Christ Church, London, 1907 (One of these laid/on breast of each body). Given me by Mr./ F.G.Hilton Price. Dec. 08'	Purchased by Wellcome Trust at Stevens Lot 411, 19.12.1919, price 16s
Science Museum/ Wellcome Trust	A205305	33	Crudely executed cross of lead, beaten out of lead sheet, traces of adhesive on reverse. Cross placed on corpse of victim of Black Death, Christ's Hospital, London, 1348-1349. Note states: site of Greyfriars Monastery; place of excavation, said to be from graves of monks who died in Great Plague, 1348	Purchased by Wellcome Trust at Stevens Lot 118 13.09.1934, price 17s 6d
Science Museum/ Wellcome Trust	A629427		Lead cross, cut from sheet of lead. Replica (made in Willesden) of one taken from the grave of victims of the plague in London, original 17th century. Copy of one which was lent for exhibition at Antwerp, Dresden and Buenos Aires – no further details as to whereabouts of original	
Science Museum/ Wellcome Trust	A629445		Flanged cross, in a Maltese style, cut from sheet of lead. Replica (made in Willesden) of one taken from the grave of victims of the plague in London, original 17th century. Copy of one which was lent for exhibition at Antwerp, Dresden and Buenos Aires – no further details as to whereabouts of original	
Science Museum/ Wellcome Trust	A629446		Lead cross, cut from sheet of lead. Replica (made in Willesden) of one taken from the grave of victims of the plague in London, original 17th century. Copy of one which was lent for exhibition at Antwerp, Dresden and Buenos Aires – no further details as to whereabouts of original	
Science Museum/ Wellcome Trust	A629447		Lead cross, cut from sheet of lead. Replica (made in Willesden) of one taken from the grave of victims of the plague in London, original 17th century. Copy of one which was lent for exhibition at Antwerp, Dresden and Buenos Aires – no further details as to whereabouts of original	
Science Museum/ Wellcome Trust	A635015	34	Lead mortuary cross from victim of the Great Plague of 1348, English, 1340-1350. Note states: site of Greyfriars Monastery; place of excavation, said to be from graves of monks who died in Great Plague, 1348	Purchased by Wellcome Trust at Stevens Lot 352, 21.12.1920, Price 4s 3d. Originally accessioned as A9076B. This cross appears in a photograph in Hilton Price 1907
Science Museum/ Wellcome Trust	A635016	35	Lead mortuary cross from victim of the Great Plague of 1348, English, 1340-1350. Note states: site of Greyfriars Monastery; place of excavation, said to be from graves of monks who died in Great Plague, 1348	Purchased by Wellcome Trust at Stevens Lot 352, 21.12.1920, Price 4s 3d. Originally accessioned as A9076F. This cross appears in a photograph in Hilton Price 1907

Location	Object No.	Illustration No. (Fig 8)	Summary of notes from accession cards and catalogues *etc*	History
Science Museum/ Wellcome Trust	A635017	36	Lead mortuary cross from monastic victim of the plague, English, 1601-1700. However, note states: site of Greyfriars Monastery; place of excavation, said to be from graves of monks who died in Great Plague, 1348	Purchased by Wellcome Trust at Stevens Lot no, 24.08.1920, price 5s for 2 crosses (see A635018). This cross appears in a photograph in Hilton Price 1907
Science Museum/ Wellcome Trust	A635018		Lead mortuary cross from monastic victim of the plague, English, 1601-1700. However, note states: site of Greyfriars Monastery; place of excavation, said to be from graves of monks who died in Great Plague, 1348	Purchased by Wellcome Trust at Stevens Lot no, 24.08.1920, price 5s for 2 crosses (see A635017)
Science Museum/ Wellcome Trust	A654840		Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	Possibly originally a London Museum accession by association with A654843, if so acquired after 1920
Science Museum/ Wellcome Trust	A654841		Crudely executed cross of lead placed on corpse of victim of Black Death, London, 1348-1349	Possibly originally a London Museum accession by association with A654843, if so acquired after 1920
Science Museum/ Wellcome Trust	A654842	37	Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	Possibly originally a London Museum accession by association with A654843, if so acquired after 1920
Science Museum/ Wellcome Trust	A654843	38	Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	Old accession number painted on A3358: this is almost certainly a London Museum accession, and would make this one sold in 1920 by that Museum
Science Museum/ Wellcome Trust	A654844		Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349. Note states: Found at the site of GreyFriars, Christ's Hospital	Purchased by Wellcome Trust at Stevens Lot 352 21.12.1920, 4s 3d, old accession number A9076C
Science Museum/ Wellcome Trust	A654845	39	Crudely executed cross of lead placed on corpse of victim of Black Death, London, 1348-1349. Note states: cross found on site of Grey Friars, in monks' graves	Purchased by Wellcome Trust at Stevens Lot 352 21.12.1920, 4s 3d, old accession number A9076D
Science Museum/ Wellcome Trust	A654846		Crudely executed cross of lead, placed on corpse of Grey Friars monk who was victim of Black Death, Christ's Hospital, London, 1348-1349. Note states: Found at Grey Friars, Christ's Hospital	Purchased by Wellcome Trust at Stevens Lot 352 21.12.1920, 4s 3d, old accession number A9076G
Science Museum/ Wellcome Trust	A654847	40	Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	

Location	Object No.	Illustration No. (Fig 8)	Summary of notes from accession cards and catalogues *etc*	History
Science Museum/ Wellcome Trust	A654848		Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	
Science Museum/ Wellcome Trust	A654849	41	Crudely executed cross of lead placed on corpse of Black Death victim, London, 1348-1349	
Science Museum/ Wellcome Trust	A654850	42	Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	
Science Museum/ Wellcome Trust	A654851		Simple cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	
Science Museum/ Wellcome Trust	A654852	43	Small, crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	
Science Museum/ Wellcome Trust	A654853		Simple cross of lead placed on corpse of victim of Black Death, London, 1348-1349	
Science Museum/ Wellcome Trust	A654854	44	Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	
Science Museum/ Wellcome Trust	A654855		Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	
Science Museum/ Wellcome Trust	A654856		Crudely executed simple cross of lead, placed on corpse of victim of Black Death, London, 1348-149. Note states: Found at the site of Christ's Hospital. Label on back of cross reads 'A4441/d/-/ Mortuary cross/from site of Christ's Hospital, City of London/Hilton Price'	
Science Museum/ Wellcome Trust	A654857		Crudely executed cross of lead, placed on corpse of victim of Black Death, London, 1348-1349	Object marked A3344. This is the London Museum accession number for one of the 5 sold in 1920 by that Museum
Science Museum/ Wellcome Trust	A654858	45	Simple cross of lead, now mounted on wood, placed on corpse of victim of Black Death, from site of Grey Friars, London, 1348-1349. Note attached to object states: 'Hilton Price/Coll-/from Grey Friars/Newgate St/12th Centy. Note on record states: although note on back of mount dates object to 12th c., its association with similar crosses produced during Black Death makes date of 1348-1349 more likely'	Object marked A3367. This is the London Museum accession number for one of the 5 sold by that museum in 1920
Science Museum/ Wellcome Trust	A654859	46	Crudely executed cross of lead, probably placed on corpse of victim of Black Death, London, 1348-1349. This cross has extensive flashing adhering showing it was cast. It does not appear to have been subjected to rolling/hammering as with others	
Science Museum/ Wellcome Trust	A9076	47	Lead mortuary cross from victim of the Great Plague of 1348, English, 1340-1350. Note states: site of Greyfriars Monastery; place of excavation, said to be from graves of monks who died in Great Plague, 1348	Purchased by Wellcome Trust at Stevens Lot 352, 21.12. 1920, price 5s. This cross appears in a photograph in Hilton Price 1907

NOTES

[1] Locally the top of the London Clay has been found at 9.4m OD. The overlying Pleistocene terrace gravel has been recorded at various points between 12.6m and 14.6m nearby at St Bartholomew's Hospital (Tyler 1999, 14; Daykin & Miles 2003, 26). This was capped by brickearth subsoil, located at 12.8 to 13.0m OD. The early Roman land surface was situated at between 13m and 14m OD. By the 13th century the accumulation of deposits had raised the ground surface locally over 2m to above 17m OD, the level from which the medieval city ditch was cut. Modern ground level is about 17.6m OD (Lyon in prep).

[2] Samuel Johnson's *Dictionary of the English Language* (1755) defined 'car' as 'a small carriage of burden' (1843 edn, 97).

[3] During the 18th century benefactors and members of Christ's Hospital were buried inside the friary cloister (Harrison 1775, 202). Within the 'north cloister, thene called the Dead Cloister' was a vault where deceased pupils were buried. The vault was sealed in 1809 and subsequently the inner quadrangle was used as the school cemetery (Trollope 1834, 346).

[4] In 1914 the annual cost of maintaining a boy at Christ's Hospital School was £69 (Allan 1984, 131).

[5] Evaluation Trench 7 within the Holder Wing was sited within the area of the cemetery, but no burials were found and natural geology was reached in this particular trench (Tyler 1999, 16). In 2003 archaeological monitoring of geotechnical pits in the George V Block revealed residual disarticulated human bone including neonatal material within post-medieval deposits (Daykin & Miles 2003, 27–8). Watching brief work on the Merrill Lynch Headquarters, very close to the site of the cemetery, during 1999 (Area K test pits 1–3) revealed post-medieval deposits and the top portion of the infilled medieval city ditch, but no sign of burials (Watson 2000, 10).

BIBLIOGRAPHY

ACT (1795), Act Geo 3rd ch 104 'An Act for enabling the Mayor and Commonalty and Citizens of the City of *London*, Governors of the Poffeffions, Revenues, and Goods, of the Hofpitals of *Edward* King of England the Sixth, of *Chrift Bridewell*, and *Saint Thomas* the Apoftle, and other Governors of *Chrift's Hofpital*, to purchafe Houfes and Ground for enlarging *Chrift's Hofpitals* in *London* and at *Hertford*...[22 June 1795]'

ALLAN (1984), G A T Allan *Christ's Hospital* (1937 edn revised by J E Morpurgo)

ANON (1747), Anon 'Of burial garlands' *Gentleman's Magazine* (June 1747), 264–5

ATHENAEUM (1905), *Athenaeum Journal* no. 4077, Diary, 16 December 1905, 841

BYRNE (1979), R Byrne *Prisons and Punishments of London*

CRIPPEN (1909), T G Crippen 'Nonconformity in London' in *Victoria County History of London* vol 1 (ed W Page), 374–400

DANIELL (1997), C Daniell, *Death and Burial in Medieval England 1066–1550*

DAYKIN & MILES (2003), A Daykin & A Miles *King George V Block, St Bartholomew's Hospital, London EC1, an Assessment of the Monitoring of Geotechnical Pits* unpub MoLAS archive report

D'ARCY POWER & WARING (1923), Sir D'arcy Power & H J Waring *A Short History of St Bartholomew's Hospital*

DYSON (1997), T Dyson 'The church and churchyard of St Nicholas Shambles' in J Schofield (ed) 'Excavations on the site of St Nicholas Shambles, Newgate Street, London EC2' *Trans London Middlesex Archaeol Soc* 48, 78–84

GILCHRIST & SLOANE (2005), R Gilchrist & B Sloane, *Requiem: the Medieval Monastic Cemetery in Britain* MoLAS monograph

GRAINGER *et al* (in prep), I Grainger, D Hawkins & T Waldron *The Black Death Cemetery at East Smithfield, London* MOLAS Studies Paper

HARDING (2002), V Harding *The Dead and the Living in Paris and London, 1500–1670*

HARRISON (1775), W Harrison *Universal History; Description and Survey of London, Southwark and Westminster*

HILTON PRICE (1907), F G Hilton Price 'Notes upon the discovery of a number of leaden grave crosses near Grey Friars Monastery, Newgate Street, London' Record of the session of 7 Dec 1905, *Proc Society of Antiquaries* 21 (1906–7; 2nd series), 12–22

HINDLE (2004), S Hindle, 'Dependency, shame and belonging: badging the deserving poor, *c.*1550–1750' *Cultural and Social History* 1, 6–35

HYDE (1976), R Hyde (ed) *A Large and Accurate Map of the City of London by John Ogilby 1676*

HYDE (1982), R Hyde (ed) *The A to Z of Georgian London* London Topographical Society Publication 126

JEFFERY (1996), P Jeffery *The City Churches of Sir Christopher Wren*

KINGSFORD (1915), C L Kingsford (ed) *The Greyfriars of London* British Assoc Franciscan Studies 6

KINGSFORD (1908), C L Kingsford (ed) *A Survey of London by John Stow*

LAXTON (1985), P Laxton (ed) *The A to Z of Regency London* London Topographical Society Publication 131

LEMPRIERE (1913), W M Lempriere 'The history of Christ's Hospital, London' *Trans London Middlesex Archaeol Soc* 2, 495–510

LITTLEDALE (1895), W A Littledale (ed) *The Registers of Christ Church, Newgate, 1538 to 1754* Harleian Society 21

LITTEN (1991), J Litten *The English Way of Death*

LYON (in prep), J Lyon *Within these Walls: the Archaeology of the Merrill Lynch Financial Centre, 2 King Edward Street, City of London, EC1*

NICHOLS (1852), J G Nichols (ed) *Chronicle of The Greyfriars of London*

NORMAN & READER (1912), P Norman & F W Reader 'Further discoveries relating to Roman London 1906–12 (includes: Site of Christ's Hospital)' *Archaeologia* 63, 257–344

MALT & WHITE (1987), R D Malt & W White *Excavations at Broad Street Station: part 3 the Cemetery* unpub MoL report part of LSS85 archive

MALT & HUNTING (1991), R D Malt & P Hunting *Broadgate and Liverpool Street Station*

MYTUM (2004), H C Mytum *Mortuary Monuments and Burial Grounds of the Historic Period*

PEARCE (1901), E H Pearce *Annals of Christ's Hospital*

PLATT (1978), C Platt *Medieval England*

PROCKET & TAYLOR (1979), A Procket & R Taylor (compilers) *The A to Z of Elizabethan London* London Topographical Society Publication 122

RCHM(E) (1928), Royal Commission on Historical Monuments (England) *An Inventory of the Historical Monuments in London, Vol III, Roman London*

SEYMOUR (1754), R Seymour *A Survey of the Cities of London and Westminster, Borough of Southwark and Parts of Westminster*

SCHOFIELD (2001), J Schofield 'An introduction to the three known sheets of the Copperplate Map' in A Saunders & J Schofield (eds) *Tudor London: a Map and a View* London Topographical Society Publication 159, 1–6

SHEPHERD (1902), E B S Shepherd 'The Church of the Friars Minor in London' *Archaeological Journal* 59 (2nd series), 238–87

STRYPE *et al* (1754), J Strype & J Stow *et al A Survey of the Cities of London and Westminster and the Borough of Southwark written in 1698 [1598] by John Stow, corrected, improved and enlarged by John Strype 1720, brought down to the present day by careful hands* (6th edn)

TROLLOPE (1834), W Trollope *A History of the Royal Foundation of Christ's Hospital*

TYLER (1999), K Tyler *The Horder Wing, St Bartholomew's Hospital, London EC1: an Archaeological Evaluation* unpub MoLAS report part of BAP99 archive

WARD PERKINS (1940), J B Ward Perkins (compiler) *London Museum Medieval Catalogue*

WATSON (2000), B Watson *An Interim Report on the 1998–99 Archaeological Investigations at the New Merrill Lynch Regional Headquarters, King Edward Street and Newgate Street, London EC1* unpub MoLAS report part of KEB98 archive

WERNER (1998), A Werner (compiler) *London Bodies: the Changing Shape of Londoners*

FAST FOOD IN THE MEDIEVAL CITY: EXCAVATIONS AT 29–30 QUEEN STREET AND 1–7 GREAT ST THOMAS APOSTLE, LONDON EC4

Alison Telfer

With contributions by Anne Davis (plant remains), Rupert Featherby (Roman pottery), Nigel Jeffries (post-Roman pottery), Jackie Keily (accessioned finds), Alan Pipe (animal bone), and Terence Paul Smith (building material)

There is in London on the river bank among the wines for sale in ships and in the cellars of the Vintners a public cook-shop. There daily you may find food according to the season, dishes of meat, roast, fired and boiled, large and small fish, coarser meats for the poor and more delicate for the rich, such as venison and big and small birds ... For this is a public kitchen, very convenient to the City, and part of its amenities.

William FitzStephen (12th century)

SUMMARY

Fieldwork carried out at 29–30 Queen Street and 1–7 Great St Thomas Apostle between 1989 and 2001 revealed activity from the Roman to the post-medieval periods. The sequence was dominated by substantial medieval chalk and ragstone walls and a series of pitched tile hearths, dating from the 13th to the 17th centuries. The hearths appeared to be situated outside the building represented by the walls, in an area which may have been a cookshop or food stall. Although set back from the Thames-side cookshops noted by FitzStephen, the site provided important evidence for food preparation in medieval London.

INTRODUCTION

This article presents the results of archaeological work carried out by the Museum of London Archaeology Service on the site of 29–30 Queen Street and 1–7 Great St Thomas Apostle, London EC4 (QUS00, NGR 532400 180930) (Fig 1). It refers largely to archaeological investigations between September 2000 and February 2001

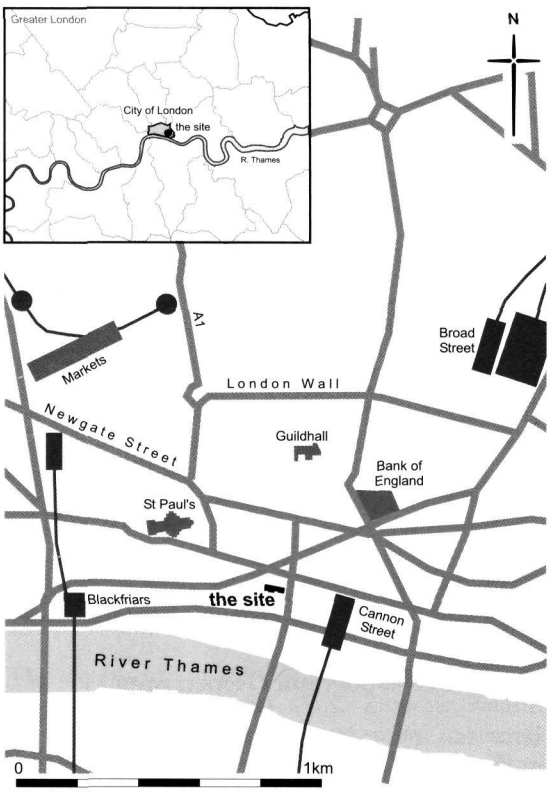

Fig 1. Site location plan

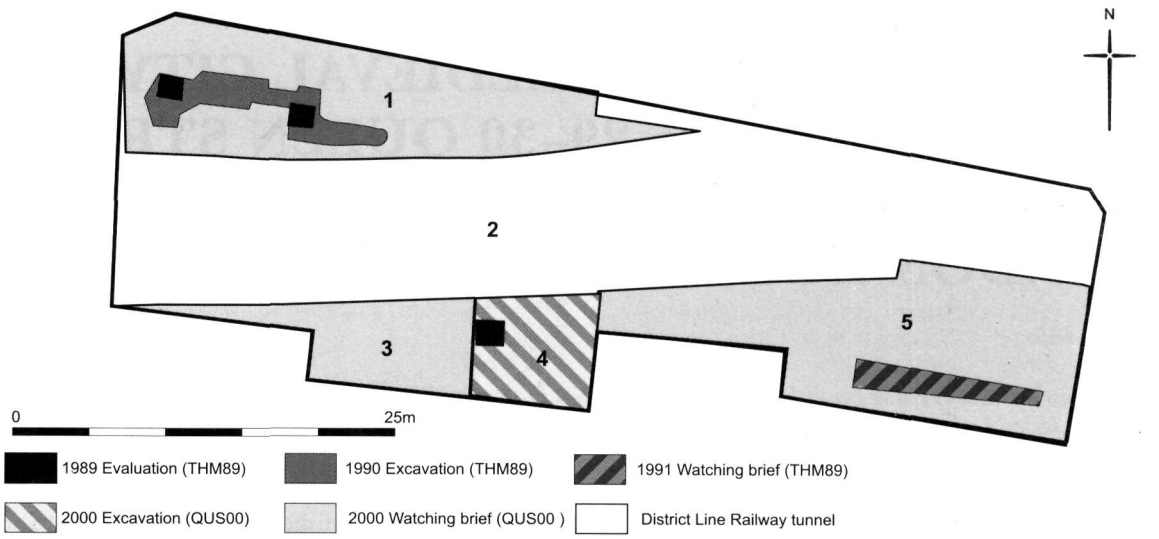

Fig 2. Plan showing phases and numbered areas of fieldwork

(QUS00), but also attempts to integrate previous fieldwork by the DUA between 1989 and 1991 (THM89: Goode & Pope 1989; Lawrence 1990; Elsden 1991). The specialist results refer solely to the most recent investigation of QUS00. The site was divided into five areas and each phase of fieldwork is illustrated in Fig 2. The main area of excavation in 2000–2001 was Area 4, which was the only part of the site not to have been previously basemented. The work was commissioned by Berkeley Homes and the site archive will be deposited in the London Archaeological Archive and Research Centre.

Prior to clearance, the site housed a mixture of Victorian and Edwardian commercial buildings, including the Vintry Public House. In addition, the London Underground District Line tunnel runs east–west through the middle of the site (represented by Area 2). The proposed development involved the construction of new retail and residential units, requiring extensive new foundations and piling, which had an archaeological impact.

Geology and topography (Open Area 1)

There was no evidence of pre-Roman activity on the site. The natural subsoil encountered throughout the fieldwork was brickearth, although gravel was seen in Area 1 during piling. The height of the brickearth varied from 8.93m OD in Area 1 to 6.95m OD in Area 5. Despite the impact from Roman and modern truncation, the Ordnance Datum levels of the brickearth across the site reflect the downward slope in the natural terrain towards the River Thames to the south.

Archaeological background

The site and others in the immediate vicinity (Sites 1–10, see Fig 3) have produced a number of Roman features including ragstone foundations, beam slots of timber-framed buildings, and timber-lined drains, as well as quarry, rubbish, and cess pits. The dating of these features suggests that the area was not fully developed until the 2nd century AD. An excavation at Site 6 also revealed an early Roman pottery kiln whose demise appeared to have coincided with the Boudican revolt.

The site is in Vintry Ward, which stretched from just north of Great St Thomas Apostle down to the Thames; in 1320 this was the second richest ward in the City with four parish churches and six company halls. Just to the north-west of the site stood Ormond Place. Originally built by the earls of Ormond, it was given by Edward IV to his wife Elizabeth in the second half of the 15th century, but was demolished shortly afterwards to make way for tenements.

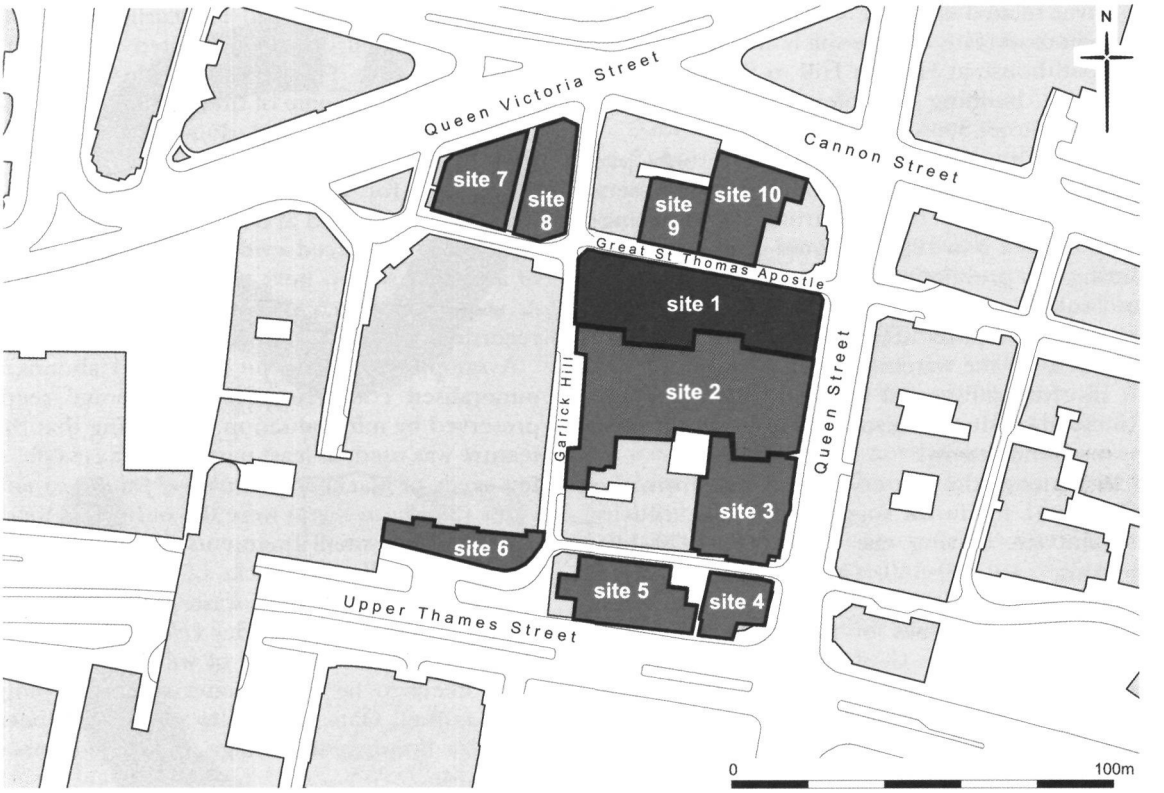

Fig 3. Previous archaeological sites in the vicinity. Key: Site 1: (The Site) 1–7 Great Thomas Apostle, 29–30 Queen Street, EC4 (THM89 and QUS00); Site 2: 32–35 Queen Street, 6A Great St Thomas Apostle, 21–26 Garlick Hill, EC4 (QUE88 and GRL88); Site 3: 2–4 Skinner's Lane, 36–39 Queen Street, EC4 (SKI83); Site 4: 40 Queen Street, 1 Skinner's Lane, EC4 (QSK89); Site 5: St James Garlickhithe Church, Garlick Hill, EC4 (JAS91); Site 6: 14 Garlick Hill (Sugar Loaf Court), EC4 (SLO82); Site 7: Ormond House, 62–63 Queen Victoria Street, EC4 (ORM88); Site 8: Mansion House Underground Station, 38 Cannon Street, EC4 (ORM88); Site 9: 13–14 Great St Thomas Apostle, EC4 (GTA89); Site 10: 48–50 Cannon Street, EC4 (CS75).

The church of St Thomas the Apostle stood on the northern side of Great St Thomas Apostle, formerly part of Knightrider Street. It was first mentioned in 1170, but was destroyed in the Great Fire and never rebuilt. Most of Knightrider Street disappeared when Queen Victoria Street was built.

The Great Fire created the opportunity for the construction of Queen Street, named in honour of Catherine of Braganza, the wife of King Charles II. With King Street, Queen Street provided direct access from the Guildhall to the Thames, a route used by the Lord Mayor and Aldermen to board a boat to Westminster Hall. Southwark Bridge was built at the end of Queen Street at the beginning of the 19th century.

The widening of Queen Street in the mid-19th century led to the clearance of the remaining graveyard of St Thomas the Apostle. The area was further disrupted by the construction of the London Underground in the 1870s, when the District Line cut a wide trench across the site.

THE ARCHAEOLOGICAL INVESTIGATION

The Roman period

Urban activity in the 1st–4th centuries (Open Area 2)

The excavation in 1990 (Fig 2, Area 1) produced evidence of structural slots, possibly relating to a building, as well as an earlier boundary fence, both on a north–south alignment. These discoveries add to evidence from nearby sites, which included dwellings (Sites 2, 3, 4, 6, and

9), river related drainage (Sites 4 and 10), and a Roman road (Site 7). The site is located between the bathhouse at Huggin Hill to the south-west and the building complex excavated below Cannon Street Station.

Across the remainder of the site, only pits and dumps were observed. A single tessera (mosaic tile) was found during the watching-brief in Area 5 in 1991. It would seem that early pitting was prevalent in the area: Roman quarry and rubbish pits were recorded on sites in the immediate vicinity (Sites 7 and 8). Although the areas of the watching-brief (Areas 1, 3, and 5) involved substantial modern truncation, the Roman deposits had also been heavily truncated by medieval activity.

In general, the pottery assemblage from the 2000–2001 fieldwork suggests domestic activity on the site during the period *c.*AD 70–140, peaking *c.*AD 120–140. One deposit, however, dating to *c.*AD 70–100, contained sherds from three different types of amphora, one from Spain and two from Gaul. Each form is thought to have carried a distinctive foodstuff: olive oil within the Spanish amphora and olives and wine or fish paste in the two French amphorae. This concentration of amphora is more than might be expected in one home and could possibly represent either the storage area of a shop or a dry-rising area, with the amphorae allowing the circulation of air in a basement.

The Roman pits and dumps produced a number of very corroded and unidentifiable fragments of iron and copper alloy. Fragments of Roman vessel glass were found residually in later post-Roman contexts.

Only a few fragments of adult ox mandible, vertebra, rib, and femur, and adult sheep/goat vertebra and rib were recovered from this phase. They indicate waste derived from consumption of good quality beef and mutton. An ox vertebra showed transverse and mid-line chop marks indicating splitting of the carcass into sides, with subsequent division into 'chops'.

The medieval period

Backyard cess pits (Open Area 3), 1050–1150

There was no evidence of Saxon activity on the site: this had probably been truncated. A number of Saxo-Norman pits, however, were recorded at Sites 7 and 9 and sporadic finds from elsewhere in the surrounding area have generally also dated to the later Saxon period. The earliest medieval activity recorded on the site dated to the 11th or 12th century. This consisted of a number of intercutting pits, some of them wattle-lined. The pits contained cess and domestic refuse and presumably lay in garden areas.

Evidence for wattle-lined pits was found in Areas 3, 4 and 5 and at Site 7, to the north-west. Site 7 also produced evidence for the remains of a privacy screen next to one of the cess pits. A sequence of contemporary pits has been recorded on Sites 3, 7, 8, and 10.

A sample from one pit contained abundant mineralised concretions and occasional seeds preserved by mineralisation, suggesting that the feature was used, at least partially, as a cess pit. A few seeds of blackberry (*Rubus cf fruticosus*) and elder (*Sambucus nigra*) were the only plant foods surviving, but small fragments of fishbone and scales, eggshell, and flecks of marine mollusc shell also indicated food waste. Charred grains of oats (*Avena* sp) and barley (*Hordeum sativum*), together with a few seeds of wild grasses, were most likely to be waste material or sweepings used as fuel. Oats and barley could have been used for brewing, in pottage, or to feed horses and cattle.

Fills of two wattle-lined pits in the same area also contained abundant mineralised concretions, some with impressions of plant stems, as well as occasional mineralised grape (*Vitis vinifera*), blackberry, and elder seeds, sloe/plum stones (*Prunus* sp), and possible fruit skin, all preserved by mineralisation. Small fish bones and remains of marine mollusc shells were again quite frequent, showing that these pits were also used for the disposal of cess and probably kitchen waste.

Small groups of bone recovered from three wattle-lined pits reflected an increasingly varied meat diet. This material included the major domesticates, with occasional fragments of herring family (Clupeidae), eel (*Anguilla anguilla*), chicken (*Gallus gallus*), goose (*Anser anser*), wild duck, and rabbit (*Oryctolagus cuniculus*). The bulk of the bird and mammal material derived from adults, although there was a fragment of juvenile chicken radius; tooth eruption and wear on a pig mandible indicated a sub-adult animal between six months and a year old. A butchered ox metacarpal had been partially worked into an ice-skate blank — the only evidence of bone working from this group.

The wattle-lined pits produced limited evidence

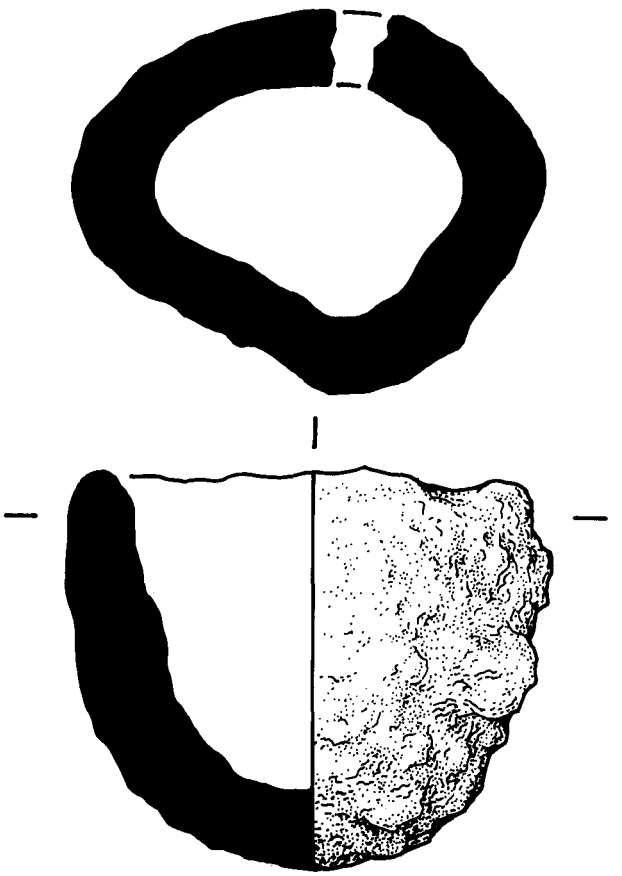

Fig 4. Crucible <104> (Scale 1:1)

for metalworking in the area, in the form of a small fragment from a ceramic mould <174>, probably used in the production of cast copper-alloy vessels, and a crucible <104> (Fig 4). The latter contained copper alloy residues. In addition, a number of very small, corroded fragments of copper alloy were recovered, some of which may have been heat-effected. Other finds comprised a fragment of Roman bottle glass and a worn stone hone.

Residential house (Building 1), c.1100

A north–south aligned ragstone wall with a return was recorded at the western end of Area 4 (not illustrated). The structure probably represented a cellar at the eastern end of a property. Confirmed earlier and later features give it an approximate date.

Residential house and garden (Building 2, Structures 1 and 2 and Open Area 4), 1080–1150

Substantial ragstone and chalk walls (Fig 5) had been built on top of Building 1, on a slightly different alignment, with a later addition appearing to form a return to the west. These later walls possibly represented two buildings, or a single building with a later addition: interpretation was complicated by modern truncation. They appeared to be external: the interior of the building would have been to the west, within Area 3. A contemporary wall segment (Structure 1) was recorded in the north-eastern corner of Area 4 (see Fig 6). This may have represented a third building.

Across the site, sections of chalk foundation may have represented up to five different buildings or structures (Fig 6). Remains were also recorded on other sites in the immediate vicinity, namely Sites 6, 7, 8, and 9. Site 6 produced evidence of a medieval undercroft, as well as a chalk foundation with associated occupation layers dating to the 12th century.

In Area 4, this period also included an area of homogeneous garden soil, which had built up against the outside of Building 2 and over Structure 1. This open area was possibly used for gardening, or simply allowed to build up over time. It had been truncated by another, later segment of chalk and ragstone wall (Structure 2) to the south-east (Fig 6).

The garden soil from this period yielded abraded groups of medieval pottery deposited between 1080 and 1150. The ratio of sherds (106) to number of vessels (104) could have resulted from gradual sporadic deposition and the abrasion caused by possible trampling and weather erosion, which corresponds with the use of this area as open ground.

The garden soil also produced a number of accessioned finds, including two small, undiagnostic fragments of ceramic metalworking mould <175>, and small fragments (89g) of corroded copper alloy <12> and <73>, some of it molten waste. A very small fragment of ceramic crucible <193> was also found, as well as part of a lead-alloy bar ingot <149> (Fig 7). A series of dumps and pits, either cut into or overlying the garden soil, produced a large assemblage of accessioned finds, including many small fragments of heavily corroded copper alloy and

Fig 5. North–south aligned ragstone and chalk walls forming the eastern end of Building 2, view looking west

iron. Identifiable objects comprised an iron pintle <97>, part of a possible iron padlock slide key <189>, a copper-alloy bar mount <26> with two rounded terminals, probably for use on a strap, as well as various fragmentary iron and copper-alloy mounts. The most interesting object, however, is a balance fork from which a small balance could be suspended <40> (Fig

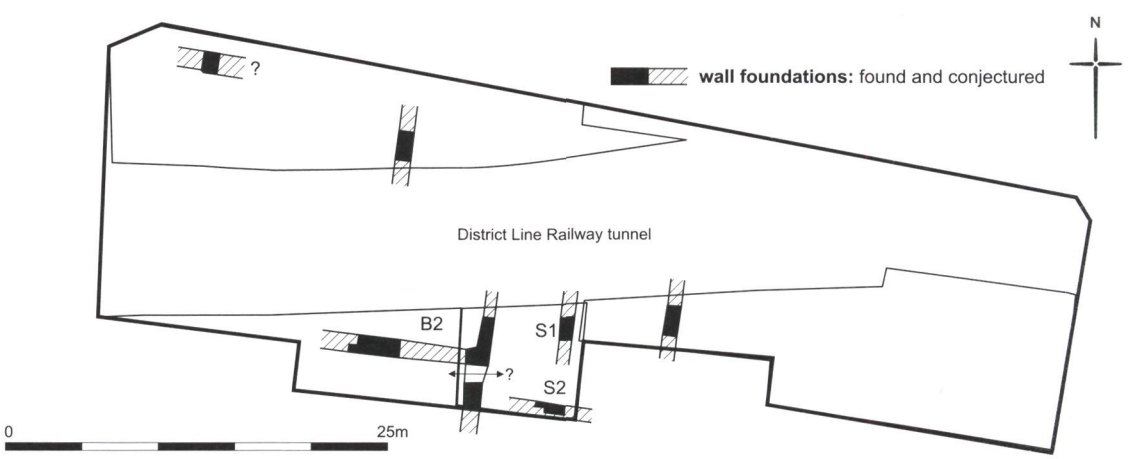

Fig 6. Plan showing remains of medieval wall foundations across the site

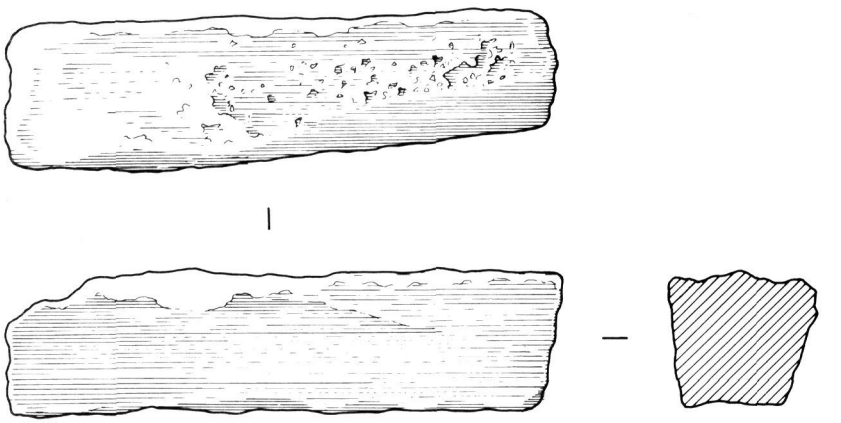

Fig 7. Lead ingot <149> (Scale 1:2)

Fig 8. Balance fork <40> (Scale 1:1)

8). This may have been used for weighing small items, such as precious metals or spices. Some of the unidentifiable copper alloy may be waste but is too corroded to identify. Small fragments of burnt, vitrified ceramic hearth lining were also found, some with traces of copper alloy.

The dumps and pits also yielded a substantial animal bone assemblage derived mainly from ox, sheep/goat and pig, with occasional fragments of chicken and single fragments of wild duck and horse (*Equus caballus*). All the material was derived from adults. There was some evidence of charring on a pig femur. A sheep/goat scapula unusually showed a hole bored through the origin of the distal end.

Backyard cess pits (Open Area 4 retained), 1180–1220

A series of dumps and pits overlay or cut the garden soil, including two pits that were wattle-lined. Although Structure 2 had gone out of use by this stage, it would appear that the walls of Building 2 stayed in use until the early post-medieval period.

The deposits yielded a total of 419 sherds from 270 vessels. Pottery recovered from one of the wattle-lined pits is typical of the area: two episodes of backfilling produced pottery, which, although highly fragmented, contained substantial remains of the rim from an early medieval shell-tempered ware (EMSH) cooking pot and the base of a London-type coarseware (LCOAR) jug.

The fills from one of the wattle-lined pits in this phase also suggest its use as a cess pit. Many mineralised concretions and plant stem fragments were seen in the samples and the same food plants as were found in samples from the previous open area, including a great many blackberry seeds. The stems, which are often found in this sort of deposit, may come from hay or straw used to dampen smells from the pit. All samples also included charcoal fragments and animal bones, indicating that these pits were used for various types of domestic waste.

The most unusual pottery fabric identified from this phase was from the excavation in Area 4. Sherds from a Winchester ware pitcher (WINC) were recovered from two pits. WINC is a fine, often highly decorated, white-fired fabric, thought to date between *c.*970 and 1100. It has been recorded on several other sites in the City, but appears most frequently on port sites such as Queenhithe. The discovery of WINC from another site near the medieval port is significant in our understanding of the distribution of this fabric. The only occurrence of this fabric in London outside the City has been in Southwark.

Cookhouse (Building 3), 1135–1400

Building 3 took the place of the previous garden area and appeared to have used the exterior eastern wall of Building 2 as its own western wall. A total of eight hearths and a possible oven were recorded within this phase of occupation. Seven of the hearths were constructed with pitched tile. Due to the presence of numerous floor layers associated with the hearths, it seems likely that a roof would have existed (although no trace was found of this or of supporting walls or posts) and the area may have been a kitchen or, perhaps more likely, a cookshop or food stall.

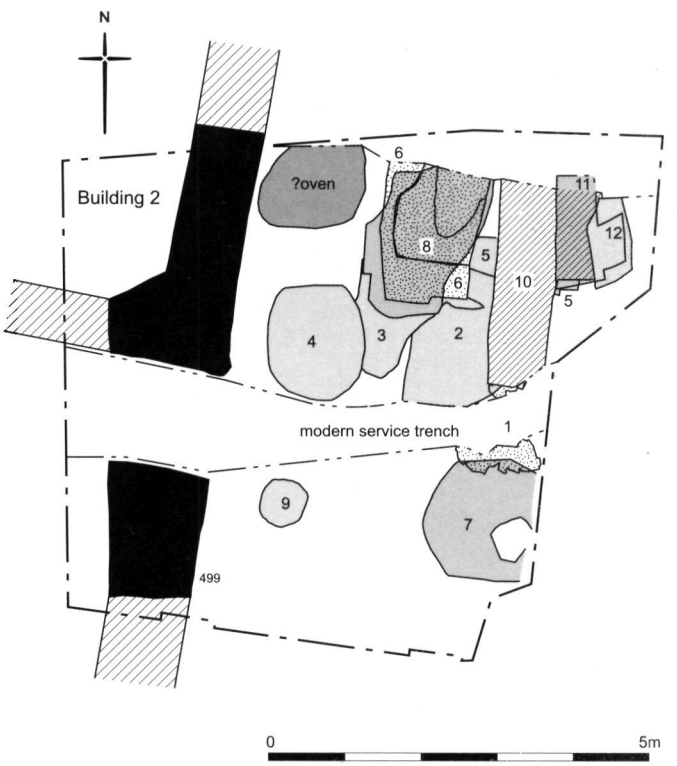

Fig 9. Plan of Building 2 and sequence of hearths to its east

Descriptions of the hearths and related structures have been listed in Table 1; this should be read in conjunction with Fig 9.

Table 1. Medieval hearths and structures

Structure	Date	Description	Dimensions
Hearth 1	1135–1220	Ragstone and flint hearth	1.35m N–S x 1.10m E–W
Oven	1170–1350	Possible crude and unstructured oven	1.20m N–S x 1.38m E–W
Ragstone and flint structure	*c.*1270	Ragstone and flint within rectangular cut: base for Hearth 2? Separate hearth? (not illus)	1.55m N–S x 1.15m E–W
Hearth 2	*c.*1270	Rectangular pitched tile hearth, with stones set into sand along northern edge	2.10m N–S x 1.26m E–W
Cobble structure	1170–1350	Cobbles set into clay bed: floor? hearth? (not illus)	2.50m N–S x 1.50m E–W
Hearth 3	1150–1280	Irregular pitched tile hearth, with stones in SW corner	1.70m N–S x 1.65m E–W
Hearth 4	?*c.*1200	Ovular pitched tile hearth, with sections of tile aligned in different directions	1.53m N–S x 1.26m E–W
Hearth 5	1180–1350	Rectangular pitched tile hearth	0.55m N–S x 1.50m E–W
Hearth 6	1340–1350	Rectangular pitched tile hearth with cobbled surround (Fig 10)	Tiled area: 0.90m N–S x 0.70m E–W. Total area: 1.75m N–S x 1.60 E–W
Hearth 7	1350–1400	Circular pitched tile hearth, with central gap for likely flue (Fig 11)	1.62m N–S x 1.42m E–W
Hearth 8	1350–1400	Rectangular pitched tile hearth with gutter and central square of flints	2.06m N–S x 1.10m E–W

Charred cereal grains and weed seeds were found in a sample associated with the disuse of the possible oven. About 40 grains were present (equivalent to 80 grains per litre of soil), consisting of a mixture of free-threshing wheat (*Triticum* cf *aestivum*) and barley (*Hordeum sativum*), with smaller quantities of oats and rye (*Secale cereale*). The sample also contained a single rachis node of barley and a number of small weed seeds, as well as several medium sized vetch seeds (*Lathyrus /Vicia* sp) which could not be reliably identified to species, but resembled common vetch (*Vicia sativa*) in general size and shape. Common vetch was frequently grown as a fodder crop during the medieval period. This assemblage may be the remains of one or more crops burnt accidentally during food preparation, or possibly crop cleanings or straw used to fuel the oven. There was little sign of these waste products in the assemblage, but it is possible that the grains, being more robust, may have survived the high temperatures while straw and chaff were destroyed. Only single fragments of unidentified fish fin ray and goose toe phalange were associated with the oven, while a single fragment of juvenile ox mandible was recovered from a contemporary trample layer.

A dump contemporary with Hearth 1 produced a small diverse group of bone from fish, poultry, domestic mammals, and 'game', including herring family, eel, cod family (Gadidae), dove (*Columba livia/c.oenas*), chicken, goose, grey partridge (*Perdix perdix*), wild duck, passerine bird, ox, sheep/goat, and pig. The major domesticate material produced clear butchery marks indicating marrow extraction, disarticulation, and splitting by use of cleavers.

A dump associated with Hearth 2 produced only a single fragment of infant pig skull. Fragments of ox femur and sub-adult sheep/goat tibia were contemporary with Hearth 4. No animal bone was recovered from any deposits associated with Hearths 3 or 5.

Occupation deposits associated with Hearth

Fig 10. Hearth 6 (1340–1350), view looking east

Fig 11. Hearth 7 (1350–1400), view looking south-east

6 showed an increase in species diversity and included wild duck, grey partridge, mallard/domestic duck (*Anas platyrhynchos*), and rabbit. Pheasant (*Phasianus colchicus*) makes its only appearance in this phase and brown hare (*Lepus europaeus*) its first. Although the majority of the material derived from adults, there was again considerable recovery of juvenile chicken. Hearth 6 was particularly grand in style (Fig 10), with an inner, pitched tile area skirted by a band of small cobbles, and an outer edging of large square cobbles. It was also one of the largest hearths and its grandeur is reflected in the type of fare associated with it.

Deposits associated with Hearths 7 and 8 included gurnard (*Triglidae*), the first recovery of this species from the site. One dump contained a single fragment of plaice/flounder, an unidentified wading bird, and swan (*Cygnus* sp). There was also occasional recovery of juvenile chicken, which increased in the later medieval material, suggesting that poultry were reared in the locality. Hearths 7 and 8 may not have been in use simultaneously: a modern service trench had bisected Area 4 and so definite relationships were lost across the site; it is known only that the structures were broadly contemporary. The two hearths were very different in shape and design and may represent two separate rooms within Building 3. Hearth 7 (Fig 11) was circular in design: there was a deliberate gap left in the pitched tile, near its centre; this was likely to have accommodated a flue. The remains of a large quernstone had been laid on the deposit overlying the hearth, suggesting baking, in addition to cooking, on the site.

This series of hearths and associated occupation dumps and make-up layers produced small, corroded fragments of metal, some from fittings such as fragmentary mounts possibly for caskets

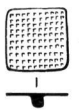

Fig 12. Copper-alloy stud <108> (Scale 1:1)

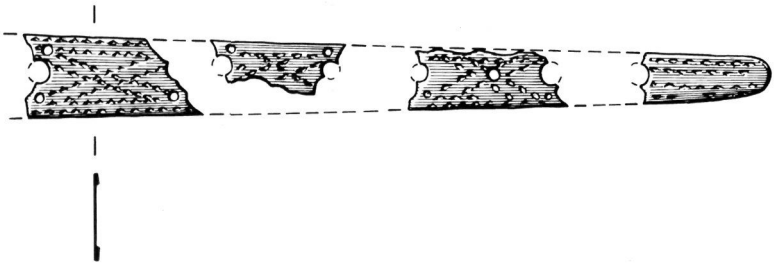

Fig 13. Copper-alloy strap mount <50> (Scale 1:1)

or furniture, others unidentifiable and possibly waste. These appeared to be redeposited, rather than directly associated with the hearths, and included a small undiagnostic fragment of ceramic mould with associated copper-alloy waste attached <44>. A dense lump of molten copper alloy was also probably a by-product of metalworking, although it is fragmentary and its specific form or function is uncertain. Other identifiable finds are either of a more domestic nature (fragments of stone mortars <126> and <157>, a hone <128>, a corroded iron knife with fragmentary wooden handle <14>) or associated with horses (fragmentary iron horseshoe <20>, probably dating to the 12th–14th centuries), or possibly commerce (a lead-alloy disc weight <118>).

Possible dress accessories included small copper-alloy studs with plain, convex heads, another, <108>, with a flat, square head decorated with rows of fine dots (Fig 12), and a strap-end and strap mounts <50> (Fig 13), all decorated and with traces of what has been identified by the MoL conservation laboratory as silver plating.

The post-medieval period

Cookhouse (Building 3), 1400–1650

The sequence of hearths continued into the 16th and 17th centuries, up until the time of the Great Fire (Table 2). All four hearths were constructed with pitched tile, although the purpose of the additional stone structure was unclear, unless it was simply to provide a solid base for Hearth 11. Hearths 9 and 10 may not have been in use simultaneously. As with Hearths 7 and 8, the two hearths were very different in shape and design and may represent two separate rooms or food stalls.

Deposits associated with Hearth 9 produced the largest and most diverse animal bone assemblage from the site. Although dominated by domesticates, there was a considerable component of fish and 'game' species, including plaice, eel, grey partridge, and rabbit, and, for the first time, conger eel (*Conger conger*), woodcock (*Scolopax rusticola*), and fallow deer (*Dama dama*). There was also considerable recovery of infant and juvenile chicken and sheep/goat, and occasional recovery of foetal or neonate pig. No animal bone was recovered from any deposits associated with Hearth 10.

Trample, dump, and floor deposits associated with Hearth 11 produced small groups of fragmented bone derived from a diverse range of domesticated and wild species. Small components of cod family, conger eel, chicken, rabbit, and brown hare were recovered. A floor deposit also produced a single fragment of rat. There was

Table 2. Post-medieval hearths and structure

Structure	Date	Description	Dimensions
Hearth 9	1400–1500	Circular pitched tile hearth	0.64m N–S x 0.60m E–W
Hearth 10	1400–1500	Rectangular pitched tile hearth with tile edging	2.72m N–S x 1.35m E–W
Stone structure	1480–1550	Stone base: hearth? pad? (not illus)	1.37m N–S x 0.56m E–W
Hearth 11	1500–1600	Rectangular pitched tile hearth with tile gutter	1.50m N–S x 0.90m E–W
Hearth 12	1580–1650	Rectangular pitched tile hearth	1.15m N–S x 0.55m E–W

also occasional recovery of foetal/neonate and infant sheep/goat and pig.

Rubbish pits contemporary with Hearth 12 produced small numbers of fragments derived from chicken, ox, and sheep/goat, with single fragments of gadid fish and rabbit. There were occasional finds of juvenile ox and sheep/goat.

The almost identical style and position of the stone structure and Hearths 11 and 12 suggest an alteration in occupation and activity at the site between about 1500 and 1650. In addition, a pit contemporary with Hearth 12 had truncated the top of one of the ragstone and chalk walls, with which the other hearths had been associated. It is therefore likely that the layout of Building 3 changed in the 16th century and, although no further evidence was recovered to substantiate this, the change is likely to be connected with the redevelopment of the vicinity, as mentioned by Stow in 1598. Most of the pottery from this last phase of occupation was recovered from the pit, which dated to between 1580 and 1650. The material included a smashed Martincamp stoneware costrel (MART I; made in Northern France), a range of white Surrey/Hampshire border ware (Pearce 1992), and early London coarse red earthenware (Nenk 1999, 237) fabrics and forms. Other vessels included the substantial remains of a PMRE sprinkler, used for horticultural purposes, which was found in a demolition layer.

The finds from post-medieval activity in this area are similar to those from the earlier phases: small fragments of corroded iron and copper alloy, some of the latter probably debris from metalworking in the area. They also included a fragment of a residual Roman glass vessel handle <146> and a small fragment of medieval window glass <159>, the latter possibly associated with a nearby church or well-to-do household. Other finds included domestic items (half a stone mortar with two lugs remaining <176> (Fig 14) and a small, copper-alloy curving rod handle <19>, probably from a cast vessel) and dress accessories (a copper-alloy lace chape <59>, an incomplete copper-alloy buckle frame <3>, and a copper-alloy stud <109> with a flat, circular head).

One of the most interesting finds is a copper-alloy tomb inscription letter <62>: a Lombardic

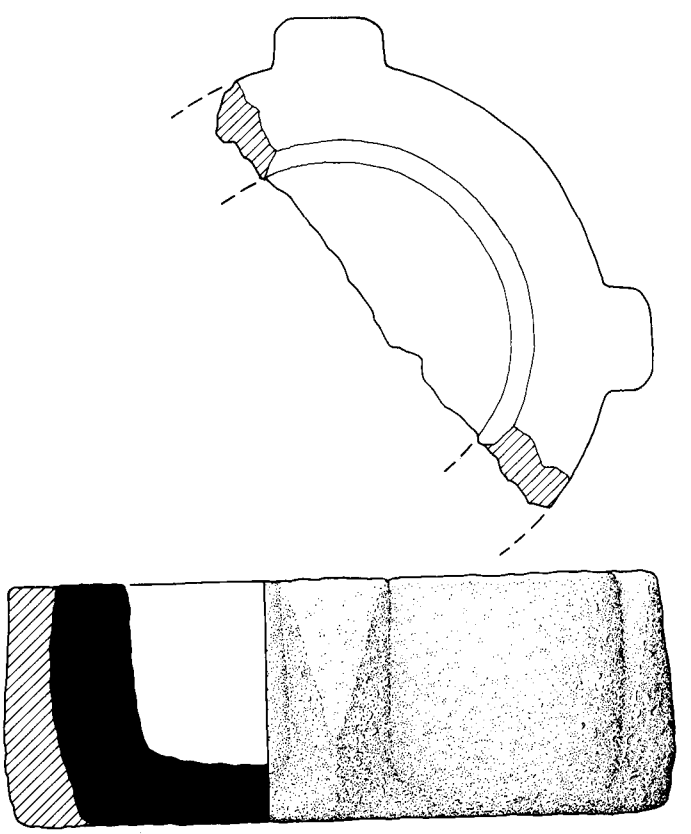

Fig 14. Stone mortar <176> (Scale 1:4)

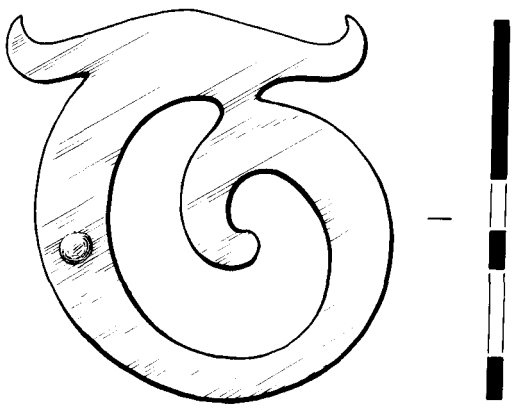

Fig 15. Copper-alloy tomb inscription letter (Lombardic 'T') <62> (Scale 1:1)

letter 'T' (Fig 15), possibly from a funerary monument associated with the nearby church of St Thomas the Apostle, which lay to the north. The size indicates that it belongs to Blair's 'Main Group size 1' (Blair 1987, 140), dating from the late 13th to the mid-14th century. From the early 14th century, this size of lettering was normally used on full-scale figure brasses (*ibid*, 144). It is of interest to note that this phase also produced two fragments of stone moulding, one of which could be dated stylistically to before the mid-14th century and possibly also originated in the church of St Thomas the Apostle.

There was a small but interesting assemblage of early post-medieval vessel glass and a small fragment possibly from a glass mirror <166>; two fragmentary vessels, both probably beakers, are of particular note. Two small fragments from a beaker in deep blue glass have painted decoration in white and gold <153> (Fig 16) and may date to the late 15th century or later. The other beaker is in colourless glass with applied, marvered spiral threads of opaque white glass (*latimo*) <130> and <152>; this form of decoration is called *vetro a fili* and such glass is imported, possibly from Venice, and dates to the late 16th to 17th century.

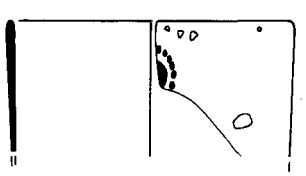

Fig 16. Glass beaker <153> (Scale 1:2)

Accessioned find <167> is a complete upper stone from a rotary quernstone in Mayen lava from northern Germany. The upper surface is roughly pecked and has traces of mortar, presumably from re-use. It is plain with no ridge around the central hopper.

The metalworking evidence continues into the post-medieval period. Small square and triangular fragments of copper-alloy sheet are off-cuts from sheet-working and a small angled fragment of copper alloy <195> may be waste from buckle-making. A copper-alloy bar ingot <71> with a circular section was also found. Small fragments of molten runnels and blobs (total weight 25g) may be residual from earlier deposits or may indicate that casting continued into the post-medieval period too. Fragments of copper-alloy wire of varying gauges, <28> and <80>, may be waste from metalworking or from the production of items such as headdresses: two of the pieces have one end bent to form a loop and a third (the thickest fragment) has been bent at an angle, possibly to form a frame for a headdress.

This dumping also produced an assemblage of small copper-alloy mounts and studs of varying forms: plain convex heads with no shafts, some with traces of lead-alloy solder inside the head (x 4), domed convex head with a moulded five petal design (x 1), small studs with plain convex heads (x 4), plain convex mounts with an off-centre hole (x 2), plain convex mounts with a central hole (x 1), and a small, square pyramidal mount (x 1). It is unclear whether these may have been collected for recycling or are merely discarded or lost items. Other finds included a fragmentary iron horseshoe <138> dating to the 14th century, part of a very corroded copper-alloy lace chape <55>, iron mounts, some possibly from boxes or furniture, a lock <142>, a plain D-shaped iron buckle <132>, and iron buckle frame fragments <143> and <145>.

DISCUSSION

Roman

It would appear that the area of the site was residential in the Roman period. Patterns of land use can be broken down into episodes of pitting, early timber-framed buildings, and, later, grander ragstone buildings with tessellated floors.

The Roman pottery assemblage comprised a range of vessels that appeared to be domestic:

bowls, jars, fine wares, and mortaria. The assemblage as a whole dates from *c.*AD 70, suggesting that there was little or no activity on the site until the Flavian period. The presence of late Roman fabrics, such as Alice Holt/Farnham (*c.*AD 250–400) and Oxfordshire red/brown colour-coated wares (*c.*AD 270–400), suggests that there was also late Roman activity across the area.

Medieval and post-medieval

Building 1

This possible cellar structure represented the south-eastern corner of a building and had been built on an alignment with Garlick Hill, to the west, possibly fronting it.

The hearth structures

The hearths in Area 4, which spanned about five hundred years, showed an interesting diversity in position, type and layout of materials, size, and shape. Their construction and use in the area to the east of Building 2 and their lack of continuity in position suggest that the area could represent a succession of food stalls. These would have been rebuilt more frequently than if they had belonged to the kitchen of a residential property, where the fireplace and chimney would have had a more consistent position.

The design of the hearths appeared fairly eclectic and there were few obvious signs of style evolution. Hearths between the 12th and 13th centuries encompassed a wide variety of styles: flint, tile with stones, rectangular, circular. Circular hearths seem to have been less common than rectangular ones, but appeared on the site at the end of the 13th century (ovular), in the second half of the 14th century, and again in the 15th century. While it is possible that they served a different culinary function, there is no faunal or botanical evidence to substantiate this.

During the 14th century, the hearths became slightly more sophisticated, in general appearing bigger and also more robust. This change is evident in Hearth 6, with its large cobbled surround, and also in the sturdy circular design and flue of Hearth 7. Hearth 10, constructed during the 15th century, was by far the largest structure, measuring nearly 3m in length. This type of scale supports the likelihood of commercial rather than domestic activity on the site.

The end of the 14th century is the only point at which a change in hearth design can be pinpointed. This is represented by Hearth 8, which was the first hearth to contain a gutter along its edge and the last hearth to contain both tile and flint. In addition, this hearth had a central square of flints; in earlier hearths containing both materials, the stones or flints were contained along one side or in one corner. The layout of the pitched tiles also varied from structure to structure: Hearth 4, in particular, had areas of tiles facing every direction. This may have represented periodic enlargement of the fireplace, but seen *in situ* appeared to have been part of the hearth's original design. It is possible that the diversity of the hearth styles reflected a variety of shop proprietors, as well as illustrating design influences of the times.

The environmental evidence

The early medieval material indicates consumption of a varied meat diet based on good quality beef, mutton, and pork, but also including marine/estuarine and migratory fish, poultry, and bird and mammal 'game' species.

Although much of the major domesticate material derives from carcass areas of good meat-bearing quality, occasional recovery of elements of the head and feet suggests that the deposits may include waste resulting from primary carcass-processing as well as post-consumption disposal.

Varieties of herring are still abundant in the lower tidal Thames (Wheeler 1979, 172–3); they would have been fished for as adults, and also as mixed shoals of juveniles ('whitebait'), which were a major seasonal fishery in the Thames estuary and regarded as a London dish *par excellence* (*ibid* 1979, 70). Eels are extremely abundant throughout the Thames estuary and river system, and are staple components of the fish diet throughout the medieval and post-medieval deposits in London. Grey/common partridge are abundant as a breeding species on suitable agricultural land in the area surrounding London (Holloway 1996, 142) and would have been available from markets and game dealers in London.

The later medieval material shows a broadly similar composition, although with the increased species diversity of plaice, gurnard, pheasant, rabbit, and brown hare. Tub and red gurnard are the most significant as food species, with

tub gurnard providing the best eating quality. A deposit dating to between 1350 and 1400 produced additional 'game' components: an unidentified wader and a swan. Since at least the late 12th century (Birkhead & Perrins 1986, 19–20) swans have been regarded as Royal Birds, with consumption very much limited to the upper ranks of society, and even then confined to special days such as church festivals (Wilson 1976, 125). The Dyers' Guild, which met in a hall directly to the south of the site, was given the privilege of keeping swans on the Thames (heraldicmedia.com). Recovery of swan from a medieval or post-medieval archaeological deposit suggests consumption at a high level of social status.

The recovery of juvenile chicken increases in the later medieval material and may imply that poultry were reared in the vicinity.

The post-medieval material shows a further increase in species diversity with the recovery for the first time of conger eel, woodcock, and fallow deer, in addition to plaice, grey partridge, rabbit, and brown hare. Conger eel is a marine species only occasionally caught in the outer Thames estuary and generally rather uncommon in the southern North Sea (Wheeler 1979, 171). It has a strong preference for rocky shores and offshore sites such as wrecks. Although of good eating quality and still widely available from London fishmongers and markets, it has never been widely esteemed as a staple food fish (Wheeler 1978, 63). There was no recovery of true freshwater species from the site and a complete reliance on marine/estuarine and migratory fish.

Woodcock are an esteemed 'game' species and occur in the London archaeological record from the Roman to the post-medieval periods. Brown hare is an indigenous, highly esteemed game species available from agricultural land close to London and still seasonally available from London markets and game dealers.

Fallow deer are an introduced species in the British Isles; they are now widespread, particularly throughout southern Britain, in mature deciduous or mixed woodland (Arnold 1993, 133). Hunting and consumption of fallow, as with red and roe deer, was confined to a limited proportion of the population and recovery of this species has definite implications for the presence of high-status consumers. As with the later medieval material, there is definite recovery of very young individuals of chicken, sheep/goat, and pig, suggesting some level of local stock rearing, and consumption of young fowls, lambs, and suckling pigs, again with implications for the status of local consumption.

The dating evidence

The bulk of the building material from the site was early medieval roofing tile. Two distinct types of roofing system were represented: the flanged and curved tile system which is based on the Roman *tegula* and *imbrex* style of roofing, and the peg tile system. Shouldered peg tile, an early form of peg tile, was present, and both this and the flanged and curved tiles are typical of ceramic roofing in London in the period *c.*1135–1220. All of the early types were superseded by plain rectangular peg tiles: those recovered included both medieval and post-medieval types. Three ridge tiles were also present.

Several fragments of 'Westminster' floor tiles were recovered from occupation dumps. Two were decorated, one with design W5 (Betts 2002, 51), the other too fragmentary for identification. The rest, including one of triangular shape, are plain. They date from the second half of the 13th century and were made in the London area. Of the few Penn tiles from Buckinghamshire, made in the second half of the 14th century, the one clearly recognisable design is Eames 2820 (Eames 1980, vol 2, pl 2820). Also present were some yellow plain-glazed tiles imported from the Low Countries in the 14th and 15th centuries. None of the floor tiles were *in situ* and it is possible that they came from the church of St Thomas the Apostle.

A Caen stone capital was also recovered. Its foliate angles appeared to be prototypes of the more common water-leaf, annular chevron decoration replacing the more usual astragal. The bedface of the circular shaft shows a small hole formed by the dividers used to describe the circle. A 12th-century date is likely and the stone possibly originates from St Thomas the Apostle. The other examples of worked stone, possibly also from the church, are Reigate; they include voussoirs with diverse mouldings and of various dates, one with a hole in its bedface for an iron reinforcing rod. Some paving slab fragments of Kentish Ragstone and laminated sandstone appeared to have been reused as hones.

The most dominant type within the medieval pottery assemblage was handmade early medieval coarsewares (see Vince & Jenner 1991),

dating to between 1050 and 1150; these comprise a range of sand-tempered (EMSS; 8.6% of the total sherd count), local greyware (LOGR; 19.3%), and sand- and shell-tempered fabrics (EMSH; 10.1%). The most significant quantities of glazed wheel-thrown coarsewares found were South Hertfordshire greywares (SHER; 7.1%). SHER is one of the major suppliers of coarse, unglazed jars and jugs into London between *c.*1170 and 1350 and has been used to date many of the later phases of Building 3.

The post-medieval pottery assemblage consisted of 264 sherds (ENV total of 113); it was generally dated no later than *c.*1650 and found in a poor condition. The majority of vessels (by sherd count) were kitchen wares (*ie* cauldrons and tripod pipkins) and storage/transport wares (represented solely by the MART costrel). In common with the medieval pottery, none of the later vessels were identified as having a specific industrial use.

There is evidence on the site for the production of both cast and cold-hammered copper-alloy objects, although this is quite limited and appears to be indicative of metalworking in the general area rather than necessarily at this particular site. The evidence comes from both the medieval and early post-medieval periods. Early medieval activity produced crucible fragments, molten copper alloy waste, and small fragments of ceramic mould used in the production of cast copper-alloy objects, probably vessels. In the medieval period, metal industries tended to be concentrated in towns and usually, as the scale of production increased, in particular areas (Bayley *et al* 2001, 4); in London such concentrations have already been identified in the Gresham Street/Foster Lane/Cripplegate area (Schofield with Maloney 1998, 36–7 and 185–6; Tobert 1982) and evidence for the mass production of small dress accessories has been found in both the Guildhall and Copthall Avenue areas (Egan 1991, 122–3; Egan 1996, 85–7). To the south-east of the site, at the waterfront site of the Thames Exchange, an assemblage of waste material and discards from a foundry was recovered (Egan 1996, 86).

Late medieval and early post-medieval activity produced more copper sheet off-cuts and trimmings, as well as a small circular-sectioned bar ingot. Again the evidence is quite limited and is probably redeposited from a metalworking centre in the vicinity of the site. The presence of a number of small fittings/mounts may simply be due to accidental loss and careful retrieval or may represent material collected for recycling or waste from a workshop.

The remaining identifiable finds are a mix of domestic items, dress accessories, two fragmentary horseshoes, and various mounts and fittings. The material is typical of that found in dumps in the medieval and early post-medieval city. The small fragments of imported glass vessels, the stone mortars, and the silver plated strap mounts indicate the likelihood of a well-to-do household nearby; the tomb inscription letter, possibly from the church of St Thomas the Apostle, is a reminder of the many medieval funerary monuments, and indeed medieval churches, that no longer exist in London.

CONCLUSIONS

The area of the site exhibited signs of high status in the medieval and post-medieval periods. Finds such as the 14th-century silver plated mounts, the late 15th-century beaker, and the expensive, fine imported glassware from the 17th century substantiate this trend. In addition, evidence of delicacies such as pheasant, sturgeon, swan, and fallow deer suggest wealthy consumers, particularly between the 14th and 16th centuries.

The wide variety of animal bone consistently associated with the hearths could relate to that produced by a series of cookshops occupying the same property. Hearth 1 is roughly contemporary with the writings of William FitzStephen, whose description of a Thames-side cookshop is cited at the beginning of this article. The evidence from the hearths suggests a commercial, rather than a domestic undertaking and one which could have accommodated less affluent social groups, as well as appealing to those with more expensive tastes.

In Stow's *Survey of London* from 1598, he writes that cookshops in the Vintry Ward were taken over by vintners in the 14th century and grumbles that taverns started to sell food in addition to wine. It is possible that the hearths were associated with a tavern, although their nature suggests a more transient situation, rather than belonging to a kitchen with an established chimney. Further north, in the Cheap Ward, there is evidence for cookshops leading north from Cat Street to the Guildhall. These serviced the community in the 12th and 13th centuries (Bowsher *et al* in prep).

The recovery of certain species of expensive

fish and 'game' appears to correlate with either an increase in size and grandeur of hearth or a period when two hearths may have been in use at the same time. The recovery of the pheasant bone, for example, was associated with Hearth 6, possibly the largest and grandest of the fireplaces. Swan consumption is contemporary with Hearths 7 and 8. The trend towards high-status consumers continues into the 15th century, with recovery of fallow deer from Hearth 9. The fact that tiles from the hearths contained no industrial or baking residue suggests that they were simply used for heating and cooking food, and the presence of three mortars and a quernstone suggests food preparation.

Stow frequently mentions links between the Vintry Ward and royalty, mayors, and merchants. This appears to be significant in relation to the evidence from the site: the taverns may have attracted a wealthier customer with a more discerning palate and a liking for elegant glassware.

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BIBLIOGRAPHY

ARNOLD (1993), H R Arnold 'Atlas of mammals in Britain' *ITE Research Publication* 6

BAYLEY *et al* (2001), J Bayley, D Dungworth & S Painter *Centre for Archaeology Guidelines: Archaeometallurgy*

BETTS (2002), I M Betts *Medieval 'Westminster' Floor Tiles* MoLAS Monograph 11

BIRKHEAD & PERRINS (1986), M Birkhead & C Perrins *The Mute Swan*

BLAIR (1987), J Blair 'English monumental brasses before 1350: types, patterns and workshops' in J Coales (ed) *The Earliest English Brasses: Patronage, Style and Workshops 1270–1350*, 133–74

BOWSHER *et al* (in prep), D Bowsher, N Holder, I Howell & T Dyson *The London Guildhall: the Archaeology and History of the Guildhall Precinct from the Medieval Period to the 20th Century* MoLAS Monograph

EAMES (1980), E S Eames *Catalogue of Medieval Lead-glazed Earthenware Tiles in the Department of Medieval and Later Antiquities British Museum* (2 vols)

EGAN (1991), G Egan 'Buckles' in G Egan & F Pritchard *Dress Accessories c1150–c1450, Medieval Finds from Excavations in London: 3*, 50–123

EGAN (1996), G Egan 'Some archaeological evidence for metalworking in London *c*1050–*c*1700 AD' *Hist Metallurgy Soc* 30 (2), 83–94

ELSDEN (1991), N Elsden *Archaeological Watching Brief at 30 Queen Street, EC4* (THM89) DUA unpub report

FITZSTEPHEN (12th century), W FitzStephen 'Description of London' in D Douglas & G Greenaway *English Historical Documents II* (1981), 958

GOODE & POPE (1989), C Goode & S Pope *Test Pit Survey, 1–3 and the Courtyard of 6a Great St Thomas Apostle, EC4* (THM89) DUA unpub report

HOLLOWAY (1996), S Holloway *The Historical Atlas of Breeding Birds in Britain and Ireland 1875–1900*

HUSTINGS ROLLS 141 (29), July 1413, City of London Records Office

LAWRENCE (1990), D Lawrence *Archaeological Investigations at 1–3 Great Saint Thomas Apostle, EC4* (THM89) DUA unpub report

NENK (1999), B Nenk with a contribution by M Hughes 'Post-medieval redware pottery of London and Essex' in G Egan & R L Michael (eds) *Old and New Worlds, Historical/Post-medieval Archaeology Papers from the Societies, Joint Conferences at Williamsburg and London 1997*, 235–45

PEARCE (1992), J E Pearce *Post-medieval Pottery in London, 1500–1700: 1 Border Ware*

SCHOFIELD with MALONEY (1998), J Schofield with C Maloney *Archaeology in the City of London 1907–91: a Guide to Records of Excavations by the Museum of London and its Predecessors* Archaeol Gazetteer Series 1

STOW (1598), J Stow *A Survey of London* (edn H Morley Ltd, 1994), 238–9

TOBERT (1982), N Tobert *Foster Lane 1982: the Finds, an Appraisal Report* (OST82) unpub DUA appraisal report

VINCE & JENNER (1991), A G Vince & A Jenner 'The Saxon and early medieval pottery of London' in A G Vince (ed) *Aspects of Saxon and Norman London 2: Finds and Environmental Evidence* London Middlesex Archaeol Soc Spec Pap 12, 19–119

WHEELER (1978), A Wheeler *Key to the Fishes of Northern Europe*

WHEELER (1979), A Wheeler *The Tidal Thames: the History of a River and its Fishes*

WILSON (1976), C A Wilson *Food and Drink in Britain from the Stone Age to Recent Times*

http://www.heraldicmedia.com/site/info/livery/livcomps/comp013a.html

A SUMMARY OF PAPERS READ AT THE LAMAS LOCAL HISTORY CONFERENCE HELD AT THE MUSEUM OF LONDON ON 20 NOVEMBER 2004: 'ST PAUL'S AND THE DIOCESE OF LONDON: FOURTEEN HUNDRED YEARS'

THE FOUNDATION AND ENDOWMENT OF ST PAUL'S

Pamela Taylor

The magnificent new centenary history of St Paul's takes the history of London's cathedral through from the foundation in AD 604 to 2004. My own chapter there, 'Foundation and Endowment: St Paul's and the English Kingdoms, 604–1087', has a wider span than this paper, but could not include some of the detail that a local audience might appreciate. This paper therefore focuses only on the first two centuries and on three topographical issues, all within what might be called greater Middlesex. These are: firstly, the diocesan boundary; secondly, Stepney and the 24 hides; and thirdly, the west Middlesex estates: Fulham and Willesden.

Foundation and endowment were always inextricably linked since no church or any other institution could or can exist without the funds to support its buildings, staff and so on. In later centuries there were alternative forms of investment, but in the pre-modern world land was the only resource capable of yielding a long-term regular income. Since every founder knew this, the act of foundation necessarily included endowment. The sources for the early history of St Paul's are weak but we do have Bede's account of the foundation, and, although Bede himself was far away in Jarrow, and not writing until the 730s AD, he had a key research assistant, Nothelm, who was a priest of St Paul's and also immersed himself in the records at Canterbury.

This immersion was not a routine genuflection to ecclesiastical hierarchy but a reflection of a basic and permanently determining political reality, that conversion was always via princes. When St Augustine, sent by Pope Gregory the Great to reconvert the various tribes and kingdoms that would eventually coalesce into England, landed in Kent in AD 597, he was not simply taking the shortest crossing from Gaul but also acknowledging the prevailing political circumstances. Æthelberht, King of Kent, was also overlord of much of southern England, and the East Saxon kingdom, which included London, although it had its own royal line, was under Æthelberht's direct hegemony. This explains why the archbishopric was settled at Canterbury, even though Pope Gregory had assumed that the refounded church would continue the Roman pattern with the archbishoprics at London and York; and it is also why it was Æthelberht who in AD 604 established two other sees after Canterbury — at Rochester and London. It is also, in the longer view, why St Paul's, the cathedral of the permanently subservient East Saxons, was never as well endowed as one might assume the cathedral of London to have been.

Bede's account of the foundations makes this

essential royal support and endowment crystal clear:

> In the year of our lord 604 Augustine, archbishop of Britain, consecrated two bishops, namely Mellitus and Justus, Mellitus to preach to the province (*provincia*) of the East Saxons, which is divided from Kent by the river Thames and borders on the sea to the east. Its capital is the city of London, which is on the banks of that river and is an emporium for many nations who come to it by land and sea. At that time Sæberht, Æthelberht's nephew ..., ruled over the people (*gens*) although he was under Æthelberht's suzerainty ... When this province had accepted the word of truth through the preaching of Mellitus, King Æthelberht built the church of the holy apostle Paul in the city of London, in which Mellitus and his successors were to have their episcopal seat ... [Æthelberht also built the church for Justus at Rochester]; he also bestowed many gifts on the bishops of both these churches and that of Canterbury; and he also added lands and possessions for the maintenance of those who were with the bishops.

Crystal clear, but only as far as it goes. First, Bede does not attempt to specify any of the 'lands and possessions'. Secondly, he does not fully define the province of the East Saxons, saying only that it was divided by the Thames from Kent and bordered the sea to the east, and thus avoiding the far more difficult question of the land boundaries on the north and west. It is obvious that the East Saxon kingdom was larger than the later county that inherited its name. Essex lies entirely east of the river Lea, but the kingdom in AD 604 spread much further west. London itself is west of the Lea and until the local government reorganisations of the 19th and 20th centuries was part of Middlesex, or the territory of the Middle Saxons. Earlier scholars assumed that in the 6th century the East Saxons must have been performing more strongly than later, and had managed to absorb the Middle Saxon kingdom. This is now considered doubtful. A better guess is that the East Saxon kingdom extended west of the Lea from the beginning and that 'Middlesex' (whose first recorded usage comes in a charter of AD 704) was a new term coined in the early 8th century by the Mercians, who had certainly by then absorbed the East Saxon kingdom into their ever-expanding empire. (Kent's hegemony barely outlived Æthelberht, who died in AD 616). On this reading the Middle Saxons, like the neighbouring Middle Angles, were a bureaucratic invention.

It is also important to remember that the shiring of Mercia into anything resembling its modern counties did not occur until the early 10th century — as part of the reconquest of the area from the Vikings. Hertford, a newly created fort of AD 911, soon afterwards received its eponymous shire, which must have been taken primarily from Middlesex, though probably with additional land on the same problematic north and west. In the 10th century the new boundary between Middlesex and Hertfordshire becomes an additional issue, but one which is excluded here. Before this, the problem of the northern and western boundaries of the province and diocese pertain to greater Middlesex. The Tribal Hidage, probably drawn up in the 670s AD, gives a list of the political units that were then paying financial tributes to Mercia; these included the East Saxons, and also two other separate groups within the later Hertfordshire, the *Cilternsætan* (Chiltern-dwellers) at the western edge and the *Hicce* around Hitchin in the north, but the other known tribes in the area, including the *Brahingas* around Braughing and the *Wæclingas* around St Albans, are not named. As with the equally absent Middlesex and its constituent tribes, they had therefore already been absorbed into a larger unit, most probably that of the East Saxons.

The whole fledgling church came perilously close to collapse during the 7th century, and was only placed on a more stable footing by the dynamic Archbishop Theodore (AD 668–90). One of his actions was to rationalise the diocesan structure, both severing the exact connection with tribal origins and creating several new dioceses in Mercia. Among these was Leicester, created in AD 679 for the Middle Angles — as mentioned above an invented grouping (and, unlike the Middle Saxons, I think always understood as such) — and this was the adjacent see along London's northern and western edges. Leicester was ultimately absorbed within the enormous diocese of Lincoln. The diocese of London, as it existed from at least the high Middle Ages until subdivision in the 19th century, comprised the whole of the counties of Essex and Middlesex and about the eastern third of Hertfordshire, with West Herts, including St Albans, within the diocese of Lincoln. The boundary between East and West Herts was

and is the Roman Stane Street. The boundary between West Herts and Middlesex has no obvious topographical rationale (and all theories concerning Grimsdyke, which runs along part of the line, should be treated with great caution), and it is still uncertain whether when this was made the new county boundary in the early 10th century, it preceded or followed the diocesan one. But we do know that in AD 704, 25 years after Archbishop Theodore's rearrangements, King Offa of the East Saxons gave his bishop land in Hemel Hempstead, which must therefore at that time have been within the East Saxon province and diocese. Hemel, which is west of St Albans, was later firmly within West Herts and Lincoln. The Hemel estate was later lost to St Paul's, we know not when or how, but that is a common story.

Endowments, then, can be revelatory: the Hemel grant shows that the East Saxons' boundary changed after AD 704. More generally, the amount of endowment that a church received and retained at various periods can be a rough indicator of its standing *vis-à-vis* its rivals — and London's competitors came to include not only Canterbury but such other heavyweights as Westminster and St Albans. There are, of course, always difficulties in interpretation, not least because endowments could be problematic not only to retain but also, particularly in the later Anglo-Saxon period, to receive, so that documented promises could easily fail to materialise. Also, and an important point for local historians returned to below, changes both in the names of aggregated manorial units and in units of measurement make reading back from later evidence extremely hazardous.

By the time of Domesday Book (1086) the bishop and canons were holding their estates almost entirely separately from each other — that is both were holding directly from the Crown. No other English cathedral had yet progressed this far, and even at London such a fixed and formal degree of separation was recent. Bishop Theodred (d.951x953) transferred some estates from episcopal to cathedral endowment, but some had been re-transferred by 1066. Some bequests made around 1000 make it clear that the gift is to one side or the other, but others were still undivided; Æthelric for example bequeathed estates west of Rayne (Essex) 'for the bishop for the provision of lights and for the communication of Christianity to God's people there', and this is still in exact line with Bede's '[Æthelberht] also bestowed many gifts on the bishops ...; and he also added lands and possessions for the maintenance of those who were with the bishops'. In the 7th and 8th centuries we have to assume that endowments were undifferentiated between the bishop and canons, and were only divided later. There are two other important facts about early grants: first that they were almost always made by kings, and secondly that they were normally of large tracts of territory. The smaller grants by lesser people such as Æthelric come later, and are closer to grants of estates as we easily recognise them. The early royal gifts are different, comprising not simply land but huge contiguous areas within which there was some alienation of royal sovereignty so that the grantee became responsible for some aspects of royal peace-keeping and so on. Despite the risk of a circular argument, I am convinced that even without documentation any evidence of one of these very large contiguous estates is evidence of an early, certainly pre-Viking, grant.

St Paul's had four such large blocks of territory, two in Essex and two in Middlesex. To deal briefly with the Essex ones: one has no charter and the earliest reference comes in Bishop Theodred's will of the mid-10th century, but it comprised a very large chunk of coastal Essex, 54 hides in Domesday Book, by which time it was divided exactly between the bishop's manors of Chich-St Osyth and Clacton and the canons' The Naze. Even without knowing the exact value of a hide (if it was actual it was probably around 120 acres, but it was as likely to be cadastral, and sometimes leniently beneficial), this is obviously a large area. The other Essex estate has a reputable charter, or more exactly, a reputable 17th-century copy from an apparently reputable charter roll, now lost, by which Suabred, King of the East Saxons, gave the Bishop of London 70 *cassati* 'in regione qui dicitur Deningei'. This *regio* or region called Dengie was the whole promontory between the rivers Crouch and Blackwater. Exactly how much was granted is unclear, and if the whole promontory then much was later lost, but the bishop's extensive manor of Southminster within the promontory was assessed at 30 hides in 1086. Tantalisingly too, the promontory also includes Tillingham, which St Paul's has always claimed as a foundation estate.

The Tillingham estate actually boasts a charter, or a copy of one, but the balance of expert opinion is that AD 604 would have been too early for this to be possible, and that it is therefore a later forged justification. I accept that the

charter is suspect but am less sure that this means that the gift cannot have occurred then. To say that no document equals no early estate but that any document is deeply suspect is to be damned either way. This becomes relevant when we move across to Middlesex, which has the only other estate that the canons always claimed as a foundation grant — the 24 hides just north of the city. Their claim was accepted by William the Conqueror, no pushover but four and a half centuries after the event, but as far as we know St Paul's never adduced any written evidence. We cannot pinpoint the 24 hides exactly — the amounts of land in the then recently created Domesday prebends do not tally — but they have to be more or less the area covering St Pancras, Tottenham Court, part of Moorfields, and probably part of Islington.

This by itself is quite substantial, but again needs to be seen in conjunction with the bishop's adjacent holdings. The bishop's manor of Stepney, for which there is no early documentation nor claim, lay all around the 24 hides. In 1086 he had 32 hides in demesne (direct ownership) there, as well as various subinfeudated chunks. The two largest of these were, first, 5.25 hides held by Hugh de Berneres, and since this became the manor of Islington Berners or Barnsbury, we know where it was — in Islington and north-west of modern Stepney. Second was a 5-hide estate held by the wife (or widow) of Brian, and although this carried no such helpful name-tag, because of its later descent it has been shown to be Clerkenwell, and therefore west not only of modern Stepney but also of the 24 hides.

The bishop also held Bishopsgate. This led out into St Paul's land, basically the manor of Stepney, although it was the canons whose cottagers were recorded at Bishopsgate in the Middlesex Domesday survey. In City terms it was a major gate, controlling the northern end of the important direct route up from London Bridge and the pre-bridge crossing place. Within the City we would probably expect St Paul's to have controlled the area around the precinct, but, although this may well originally have been the case, there seems to have been some radical readjustment and loss when the adjacent Castle Baynard was destroyed in the early 13th century. The bishop did however have a large soke (area of privileged private jurisdiction) covering the Cornhill and Bishopsgate areas. When this was acquired is uncertain, and it is only well documented from the 13th century, but the earlier silence is almost certainly simply an absence of documentation. It is highly unlikely that any such new grant would have been made by then in exchange for the old area around the precinct: sokes and socage rents are another example of early alienation of royal authority — and made at a time when the City's own local government was not a player. There was a legend, reported by Stow in the 16th century, that St Peter Cornhill marked the site of the Roman cathedral, and even though this is no longer accepted (it was certainly on the forum site but no suitable traces of a church have been found), if the legend was current sufficiently early it might explain the gift. But how early? AD 604 courtesy of Æthelberht? Around AD 700 courtesy of the Mercians, and if so, why? Around AD 900 during the Alfredian reconstruction of the City, or AD 950 when Bishop Theodred was very powerful? Any later than that seems unlikely.

It is certainly arguable that the soke seems coherent with St Paul's adjacent extramural holding, and that such a large area, ringing the City from Stepney and Hackney in the east round to Clerkenwell in the west, must have had obvious strategic importance. Not only does it make obvious sense for a foundation grant to be close to the cathedral city, but it is far from clear that any of London's later overlords would have been so generous with such territory. It is true that we now know that some or all of Islington — at the northern end of the area — was not received until some point in the 10th century, and in the bishop's case was then added in to Stepney (this was standard administrative practice if there was a convenient neighbouring manor), but this does not vitiate the main point. But we cannot prove that this was a, or the, foundation grant. All students of the past have to learn to live with uncertainty, and the burning desire to know definitively has to be controlled before it leads to *idées fixes* and tunnel vision.

The fourth of the cathedral's large areas of endowment comprises its estates in west Middlesex. Here we know that at least some were granted in the very early 8th century. There are actually two charters, or rather, again, reputable 17th-century copies from a reputable roll. Both were first published with the rest of Richard James's extracts by Marion Gibbs in 1939. In the early 1990s Simon Keynes unearthed another set of extracts from the same missing roll, this time by the distinguished jurist John Selden, again frustratingly incomplete, but providing a little

bit of additional information. The larger of the two grants, of 50 *manentes* 'in loco qui dicitur Fulanham (in the place that is called Fulham)', which Gibbs dated to *c.*AD 704–5, can now, thanks to Keynes, be assigned to AD 701. The other grant, of 10 *manentes* 'in loco qui dicitur Gillingas (Ealing)', is still only datable to between AD 693 and 704, so we still do not know which came first. We do know that the Ealing grant was made by Æthelred King of the Mercians, while Fulham came from Bishop Tyrhtilus of Hereford with the consent of Sigeheard King of the East Saxons and Coenred joint King of the Mercians. Why Tyrhtilus had the land is still a major puzzle. Even within the Mercian empire it seems an unlikely endowment for so distant a see as Hereford, and even if, as is highly likely, Tyrhtilus was a Mercian prince, this is usually considered too early for land to be held by the lay aristocracy.

The exact area covered by *manentes*, like hides, is unknowable but 50 plus 10 is a substantial territory, far more than what we would now think of as Fulham and Ealing. As with Stepney or the 24 hides, grantors or owners picked on one name, which (as with a London borough) denotes an administrative unit not the settlements within it. This has been a constant pitfall for local historians. In the Hammersmith Local History Group's pioneering *A History of Hammersmith*, for instance, published in 1965, Helen Miles, the then-borough archivist who contributed the chapter on the manor, was still as sure as earlier antiquarians had been that the Domesday manor of Fulham equated to the later parish of Fulham, which in turn equates to what had just in 1965 become the London Borough of Hammersmith, but in the face of local outrage was later renamed the London Borough of Hammersmith and Fulham. Fulham is a less complicated Domesday entry than Stepney, with only a 40-hide main manor held by the bishop and two other estates of 5 hides each, one of them held from the bishop by Fulchered and the other held by the canons directly from the Crown. Marion Gibbs showed in 1939 that the canons' estate equated to their manors of Sutton and Chiswick, which between them occupied a large part of today's Chiswick, and should perhaps have given Miss Miles pause for thought. But, convinced that the rest of the entry had to refer exclusively to Fulham and Hammersmith, she equated Fulchered's 5 hides to Wormholt, now the Wormwood Scrubs area.

Shortly after this, and after Miss Miles's departure, I too came to Hammersmith as one of its archivists and turned with immediate interest to the manor, only to discover that the existing, extremely Fulham-centric, model simply did not fit. This led fairly swiftly to my doctoral thesis on the medieval Bishopric of London estates, and also to my one article in the LAMAS *Transactions*, published in 1977, and far too densely argued. The basic argument, though, remains sound. Just as in Stepney Hugo de Berners' and the wife of Brian's estates were in fact in Islington and Clerkenwell respectively, so in Fulham Fulchered's 5 hides were in fact in Acton. The apparent absence of Ealing and Acton from Domesday Book is because in 1086 they were still fully subsumed within the manor of Fulham.

So does the 50 hides of Fulham in 1086 equate exactly to the 50 *manentes* in Fulham and 10 in Ealing granted around AD 700? Almost certainly not, not least because distant Finchley was probably added in the 10th century. But there is also a wider problem. That reputable charter roll whose 17th-century copies give us the grants of Hemel, Fulham, Ealing, Islington, and Dengie, refers predominantly to estates, or estate names, later held by the bishop. The canons had their separate Tillingham charter and their acceptance of the 24 hides by William the Conqueror, but for virtually everything else they relied on one comprehensive forgery, purporting to be a confirmation of their estates by King Athelstan (925x939), but in fact manufactured in the 12th century with help from the creative forgers down the road at Westminster Abbey. By then the holdings of the canons and bishop were fully separate and this confirmation (which was often later misconstrued as a grant) only deals with the canons' estates. A genuine 10th-century document would not have been so narrow. If the canons had previously had any genuine documents, they seem to have disposed of them, but in the case of the four main early blocks of territory one has to wonder if such documentation had ever existed — for a single grant would have been made under a single name — Fulham, Ealing, Dengie — and later, when the territory had long been divided, this might well have been misunderstood. By 1066 the canons held extensive territories in a block adjacent to episcopal Fulham, listed in Domesday Book under the names of Twyford (two holdings of 2 hides), Harlesden (5 hides), and Willesden, a substantial 15 hides. Were these the result of a separate grant or grants, or were they within the original donations of Fulham and Ealing? There

is no way of knowing, but the problem underlines the dangers of any rigid equation of amounts of land, as well as of names, over time. And on the latter point, the area listed as Harlesden and Willesden in Domesday Book appears as Neasden in a St Paul's list of *c.*1000, compiled to show the distribution of obligations towards the manning of a warship and thus incidentally the first genuine list of the church's estates.

Further reading

B Colgrave and R A B Mynors (eds) *Bede's Ecclesiastical History of the English People* (1991)

D Dumville 'Essex, Middle Anglia and the expansion of Mercia in the south-east Midlands' in *ipse, Britons and Anglo-Saxons in the Early Middle Ages* (1993), IX, 1–30 [this is a footnoted version; the paper was first published without references in S Bassett (ed) *The Origins of the Anglo-Saxon Kingdoms* (1989), ch 9]

D Dumville 'The Tribal Hidage: an introduction to its texts and their history', in Bassett *op cit*, ch 16

M Gibbs (ed) *Early Charters of the Cathedral Church of St Paul, London* (1939)

D Keene *et al St Paul's The Cathedral Church of London 604–2004* (2004)

S E Kelly (ed) *Charters of St Paul's, London* Anglo-Saxon Charters 10 (2004)

S Keynes 'A charter of King Edward for Islington' *Historical Research* 66 (1993), 303–16

D P Kirby 'The Saxon bishops of Leicester, Lindsey (Syddensis), and Dorchester' *Leicestershire Archaeological and Historical Soc Trans* 41 (1966), 1–7

J Morris (ed) *Domesday Book. Middlesex* (1975)

P Taylor 'A knight's fee at Acton, in the manor of Fulham' *Trans London Middlesex Archaeol Soc* 28 (1977), 316–22

P Taylor 'The bishop of London's city soke' *Historical Research* 53 (1980), 174–82

P Taylor 'Clerkenwell and the religious foundations of Jordan de Bricett: a re-examination' *Historical Research* 63 (1990), 17–28

RECONSTRUCTING ST PAUL'S BEFORE THE FIRE

John Schofield

An archaeological account of St Paul's and its site is only now being assembled. The observations and excavations on which it is based go back to the time of Wren as he was building his new cathedral in the 1670s, and continue at the present day.

No certain evidence of the Saxon cathedral has yet been identified, though a foundation of Saxon or at latest 11th-century character found in a test pit on the north-west side of the cathedral in 1933 is significant: it suggests that where pockets of stratigraphy survive, they may include Saxon layers and features. But otherwise the Saxon cathedral and its ancillary buildings remain unknown. One potential site for the Saxon church, beneath the nave of its Romanesque successor, is suggested here; but there is no firm evidence and other sites are equally possible. The plotting of sites for the gazetteer has produced a probably significant proximity of the findspot of the well-known 11th-century Viking tombstone and the proposed site, on documentary grounds, of the bishop's palace before its move across the churchyard sometime in the 13th century.

The form of the eastern arm and transepts of the Romanesque cathedral were suggested by Richard Gem in 1990, and their significance hinted at, though not much could be said as the information was so exiguous. The London region was where a fully-developed style of Romanesque architecture might be expected before the Norman Conquest, and the rebuilding of the cathedral from 1087 would fit into this context. The analysis of moulded stones from the recent excavations, probably from the nave, has filled out this picture and identified the main building stone as from Taynton in Oxfordshire. The plotting of the outline of the whole church, from all the evidence, is gradually taking place on computers.

As we progress through the succession of cathedrals on the site, the information increases and our understanding of the building and therefore its architectural and historical significance becomes clearer. The New Work, the rebuilding and extension of the choir between 1255 and 1314, was presumably intended to provide an enlarged, spacious setting for the

shrine of Erkenwald; a similar extension for the patron saint had just been finished at Ely in 1252. The rose window in the east gable, the largest in Britain, may have been a conscious echo of, or reponse to, the rose in the south transept of Notre Dame, Paris. From 1270 to the 1290s, St Paul's was the greatest architectural undertaking in the London area, surpassing even the works at Westminster Abbey.

At the Reformation in the 1530s the cathedral suffered, like all other great churches. Its fabric was despoiled and neglected; in 1561 the spire caught fire and was afterwards demolished. During the Elizabethan and Jacobean decades, however, the choir of the cathedral became the site of prestigious, assertive tombs of courtiers and high-ranking officials. A major new element in our understanding of the development of the pre-Fire cathedral comprises the recovery and analysis of fragments of the Jones portico of 1633–1641 and other fragments from his restoration of the church. The majority of these fragments come from excavations of 1994–96, but now others in the historic collection, in the south triforium of the present building, can be recognised as also being from Jones's works. For the first time the portico can be reconstructed from actual fragments, and a detailed picture of his whole restoration is emerging from the conjunction of archaeological and documentary study.

Two overall conclusions can be drawn from this work. First, although the Wren building was itself destructive of traces of the previous cathedrals throughout its footprint and possibly for some distance outside in certain directions, a great deal survives beneath the ground and it has the capacity to elucidate, as no other source can, the early history of the cathedral and its site. By charting the discoveries and observations of the strata in and around the present cathedral since the time of Wren, we can underpin the present cathedral with much of the site's previous physical history and the context of worship in the cathedral since AD 604. Second, it may be suggested that St Paul's Churchyard, a rectangular block of land and strata in the western part of the City, comprises probably the best and most significant remaining block of strata for the understanding of the evolution of the City of London through 2000 years.

JOHN COLET AND THE FOUNDATION OF ST PAUL'S SCHOOL

Reverend Hugh Mead

Five years after the see of London celebrates the fourteen hundredth anniversary of its re-foundation, the school that John Colet built in the cathedral's shadow, but that now flourishes on the river bank at Barnes, will celebrate a much more modest five hundred years of life. But perhaps the school ought really to have already kept its thousandth anniversary, as long ago as 1886. So argued the Edwardian pundit A F Leach, on the grounds that, when King Alfred retook London from the Danes in that year, a cathedral school would have at once been set up, and that Colet's foundation was no more than a reform of that cathedral school. There certainly was a medieval cathedral school — indeed there were two, a grammar school and a choir school. The grammar school may be able to claim both Thomas Becket and Geoffrey Chaucer as old boys, and can certainly claim a schoolmaster, one Elwin, 'who among other works of piety exercised the most vigilant discipline over the boys', one of whom miraculously escaped a beating by fleeing to the nearby shrine of St Erkenwald. But by Colet's day this school was in decay. It occupied tiny premises over some shops ('cum quatuor shoppis subtus') and Colet called it 'schola nullius plane momenti (obviously a school of no importance)'. In its place Colet planned a beautiful stone building, staffed by masters as well qualified (or so he told the pope) by sanctity as by literary knowledge. He began the complex legal and financial process of foundation in 1509 and obtained royal letters patent in 1510.

In one respect Colet's school certainly did break with the past — he ensured that it should be entirely outside the control of the cathedral authorities (apart, that is, from his own personal supervision), going so far as to petition the pope to quash any claims over it by the canon chancellor. Perhaps this was partly because the then chancellor was William Lichfield, of whom the Cathedral's historians have written, 'that no project could possibly flourish if placed in his apathetic hands' and who had allowed the Cathedral's divinity lectures, for which he was responsible, to lapse for twenty years. Instead Colet vested its government in the most senior of the livery companies of the City of London,

the Mercers, of which both he and his father, who had twice been Lord Mayor of London, were eminent members. According to his friend Erasmus of Rotterdam, 'that learned Erasmus' as Colet rightly called him, he chose them because, though there was nothing certain in human affairs, he yet found the least corruption in married laymen. He chose a married layman as the first high master too.

It used to be thought that these were radical choices: in fact married schoolmasters and lay trustees of schools were known well before Colet's day. What is surprising is that so severely ascetic a celibate as Colet should have chosen them. His own view of marriage, expressed in his treatise on the sacraments, was that 'the marriage of male and female for the propagation of the flesh is a vain and empty shadow of the true marriage between Christ and his church ... There is no need for [carnal marriage] among Christians, though it is necessarily permitted to the weak and feeble; nor is the resulting offspring needed ... The pagans would supply ample material for regeneration even if the church were altogether barren in that respect.' All this is from his Latin treatise on the sacraments, which was neither published in full nor translated until 1989. Yet he could also write, paraphrasing Proverbs xviii.22, 'if thou intend to marry or being married hast a good wife thank the Lord for it, for she is of his sending'. And he lavished a large fortune on the education of this unnecessary offspring and entrusted it to married men.

John Colet was himself the eldest of twenty two children, eleven boys and eleven girls, of whom all but two died in infancy. His remaining brother, Richard, seems to have died aged about twenty five. All this mortality helped make him very rich as his father's only heir. It may also have made him, to use a phrase that the late Harry Porter transferred to Colet from Inge, something of a gloomy dean. Erasmus thought Colet a man of strong passions, strongly repressed. He always wore black (it seems that in his day deans generally wore purple); he entertained meagrely (he thought demons were attracted by the smell of cooking) — you got good conversation at his table, but rose from it not very well filled. The Chapter thought he neglected his duties of hospitality, especially to the Chapter, and Colet thought that the Chapter, like the ungodly in the psalm, hated to be reformed. He ordered the canons: 'to refrain from vain conversation, guffawing and laughing, and ... to stand up straight in their stalls, concentrated and devout; and they are either to be praying or reading or chanting, mindful that they are in the sight of God and the angels.'

Either in 1510 or 1512, in any case at the very time that his new school was rising in the cathedral churchyard, Colet preached before the Convocation of Canterbury a sermon which would later be hailed as having heralded the reformation, though its boldness and uniqueness may prove to have been considerably exaggerated. But even if conventional, his criticisms of his fellow clergy are certainly severe: 'Most priests give themselves up to feasting and banqueting, spend themselves in vain babbling, take part in sports and plays; devote themselves to hawking and hunting; are drowned in the delights of the world...' These strictures are no doubt reflected in his orders that the boys of his school should not be allowed 'cock fighting, nor riding about of victory, nor disputing at St Bartilmewe, which is but foolish babbling and losse of time'. Having dealt with the lust of the flesh, the Dean's sermon turns to covetousness: 'For what other thing seek we nowadays in the church than fat benefices and high promotions ... we care not how many, how chargeful, how great benefices we take so that they be of great value.' He himself had already acquired three livings in plurality, including a very valuable one which he kept for the rest of his life, even before he had been ordained deacon.

Colet the severe reformer then was also Colet the rich pluralist, and the Colet who found most virtue in married business men was also Colet the almost savagely celibate ascetic. For these paradoxes all beneficiaries of St Paul's School must be grateful. His reforming instincts made the school a centre of Christian humanism (but there are more paradoxes to come as to this topic). His childlessness (and the deaths of his siblings) left him free to give his school nearly all his wealth, and his wealth enabled him to make it the largest and best endowed in the kingdom (there were to be more than twice as many boys on its foundation as at Eton, and its masters were paid twice as well). Within a few years of the school's foundation Sir Thomas More could write to Colet that 'some are bursting with envy at your famous school'.

The new St Paul's school 'was elegantly built in stonework' and established in the eastern part of St Paul's churchyard. Adjoining it houses were provided for the High Master and his assistant,

the surmaster. Later on the High Master was also to enjoy a country house, in Stepney, but this was at first still occupied by Colet's mother, who survived him.

No plan or picture of the school Colet built is known to survive; but we have a verbal description of it at the time of Colet's death from the pen of Erasmus. It was a single large hall, divided into three by curtains. The High Master taught the senior boys at one end; the surmaster taught the middling boys in the middle; the chaplain taught the little boys at the other end. The last seems to have been an afterthought. At first the chaplain's duty was that of a chantry priest; but if he was learned enough, said Colet, he could help with the teaching should the High Master wish it. Over the High Master's chair was an image of Jesus as a boy, with the inscription 'Hear ye him', added, says Erasmus, 'at my suggestion': the school was dedicated to Jesus in his boyhood, and was at first often called Jesus School. The boys sat on benches raised in tiers. Colet intended that boys should be admitted from all nations and countries indifferently, but 'my countrymen Londoners specially'. As St Paul's was at first entirely a day school, early Paulines will all have been Londoners, unless they were put to board with friends or relations in the City. They were not to be admitted until they could read and write and say their catechism: but they were probably admitted very young, as Colet, in the introduction to the Grammar that he drew up for the school, addresses them as little babes, little children. Their education was to be free, but each was to come to school provided with a wax candle; for lessons, at least in winter, began in the dark. That the candles were of wax and not of tallow suggested to one early 20th-century historian of the school that St Paul's was not intended for the children of the poor. Well, perhaps not. But in the early 20th century, a London day school, however eminent academically, could never feel quite secure as to its place in the public school pecking order. And Colet did provide for at least one poor child of the school, who was to have the duty of removing the boys' urine and the perk of selling it.

Erasmus says that there were sixteen boys in each class. The top class at St Paul's is called the eighth (instead of the sixth as at most other schools). If this was so from the beginning, then we can envisage eight benches or forms, four on each side of the school room, and 128 boys altogether; but neither 128 boys nor eight forms are divisible by three masters. Erasmus's scheme is too tidy. In any case Colet ordered that there should be 153 boys. (There are still 153 scholars.) As far as we know he did not explain his choice of this interesting number; but there seems no good reason to doubt that it is a reference to the 153 fishes in the miraculous catch at the end of St John's gospel. The school is to catch children for Christ, just as the apostles were to be fishers of men. J H Lupton, biographer and editor of Colet and surmaster 1866–99, argued against this view, probably because it went against his own idealised picture of Colet as a rational and enlightened Christian, a precursor of all that was good and moderate in the English Reformation. But Colet was interested in numerology: he may have had in mind the belief that there were 153 species of fish in existence, so that the catch is symbolic of the command to preach the gospel to all nations. Or he may have been thinking more elaborately. 153 is the triangular of the mystic number 17, which is the sum of 10 and 7, 'both symbols of perfection'. The Pauline, as soon as he was admitted to the school, was taught the ten commandments and the seven sacraments included in the catechism which Colet himself wrote for them in English. 'By this way', said Colet, 'thou shalt come to grace and to glory.'

Once the boys had learned their catechism, their studies were entirely in the classical tongues, and principally, of course, in Latin. But Colet, though he himself did not seriously try to learn Greek until nearly the end of his life, ordered it to be taught at his school; Lily, the first High Master, was a good Greek scholar, and St Paul's has long claimed to be the first English School to teach Greek. Hebrew was added at least as early as the 17th century. One High Master was removed, in 1559, ostensibly for not knowing Greek, but really for holding the wrong religious opinions. Colet's instructions were that the boys should be taught 'all way in good literature ... and good authors such as have the very Roman eloquence joined with wisdom, specially Christian authors that wrote their wisdom with clean and chaste Latin'. He denounced as blotterature rather than literature the 'Latin adulterate which ignorant blind fools later brought into this world and utterly abanished and excluded it' out of his school. This rather intemperate language reflects the contempt of Erasmus's circle for scholastic authors, especially the scotists, though Colet himself particularly disliked Thomas Aquinas.

Besides the catechism, Colet wrote an accidence or elementary grammar for the school. This, with additions by Erasmus, William Lily, the first High Master, and John Ritwise, Lily's son-in-law and successor, grew into the long lived Lily's Grammar, made compulsory for all teaching in grammar schools by convocation in 1571, and, in 1758, shamelessly filched by Eton and rechristened the Eton Latin Grammar. Colet, who may well have personally taught in his school, also hoped that Erasmus would teach at St Paul's: this he declined to do, though he attempted, without success, to recruit masters for the school at Cambridge, reporting, if with disapproval, a remark he heard there to the effect that no man would willingly lead such a slavish life if he could earn his living in any other way: he did, however, write other text books for St Paul's, the *Colloquies* (Latin conversation), *De Copia* (a Latin phrase book), and a sermon on the child Jesus, for one of the boys to deliver to the others, perhaps as boy bishop on Innocents' Day. The good literature which the boys were to read when competent in grammar and vocabulary was specified by Colet and is surprising, given that he wants them 'to be proficient in the very Roman tongue which in the time of Tully and Sallust and Virgil and Terence was used'. The prescribed authors are 'Lactantius, Prudentius, and Proba and Sedulius, and Juvencus and Baptista Mantuanus'. These writers were all Christian: one, Baptista Mantuanus, was a contemporary much admired by Erasmus. The others were mostly late classical apologists: Lactantius wrote a gory *Deaths of the Persecutors*, Juvencus a harmony of the Gospels in Virgilian hexameters, Prudentius Christian poems and hymns, some of them fine ones: 'Corde natus ex parentis (Of the father's heart begotten)' is his. Sedulius was a Carolingian poet and theologian. This is a very conservative list: most of the names on it had been appearing in school syllabuses for centuries. C S Lewis thought that 'no more deadly or irrational scheme could have been propounded' and it certainly does not square with the school's perception of itself as a pioneer of humanist education. But it does square with Colet's professed aim: 'my intent is by this school specially to increase knowledge of God and our Lord Christ jesu and good christian life and manners in the children.'

Yet within half a century of Colet's death, all his prescribed authors, except the moderns, Erasmus and Baptista Mantuanus, had disappeared from the syllabus, replaced by such classical authors as Caesar, Horace, Ovid, and Cicero. Classical writers had in any case been insinuated into Pauline studies by Erasmus's exclusive use of them as grammatical examples, and Lily wanted the boys to read Cicero, Virgil, and Terence. So dead a letter did Colet's instructions prove that it is permissible to wonder whether they were ever intended seriously. Colet told Erasmus that 'our school' was under attack: somebody influential had been 'blaspheming our school before a large concourse of people, declaring that I have erected ... a temple of idolatry.' Thomas More compared St Paul's to the Trojan horse. Just as Greeks came forth from the horse to destroy barbarian Troy, so Paulines come forth from the school to destroy ignorance and disorder. So it may be (though I doubt it) that that very conservative and strictly Christian reading list was meant for a smoke-screen rather than a real curriculum.

In his *Letter to Justus Jonas*, which was written in 1521, two years after Colet's death, and contains a biographical sketch of him, Erasmus declares that Colet 'had never got along well with his bishop', the aristocratic octogenarian Richard Fitzjames, who with two other bishops, delated the dean to the Archbishop of Canterbury for heresy. He specifies three charges: that Colet 'had taught that images were not to be adored', 'that he refused to acknowledge the duty of hospitality which Paul praised', and that he criticised those who read their sermons (meaning but not naming the Bishop of London). The Archbishop dismissed the charges, along with others which, according to Erasmus, were even more absurd, Colet himself disdaining to defend himself. In 1531 William Tyndale accused Fitzjames of bringing another charge against Colet, that of translating the *Pater Noster* into English .

As Colet's most recent biographer, John B Gleeson, has pointed out, these charges certainly are absurd, far too absurd for Fitzjames, unless quite senile, to have contemplated for a moment. We have already seen that an image of Jesus was set up in Colet's new school. Colet was not opposed to the cult of images: if he opposed the worship of the image in place of the reality it represented, he was quite orthodox in doing so. Colet's hospitality may have been meagre; but meanness is not heresy. It is rude to criticise one's bishop's manner of preaching: but rudeness is not heresy either. Colet did indeed translate (and expand) the *Pater Noster* for his schoolboys:

O father in heaven, hallowed be thy name among men in earth as it is among angels in heaven, and so on. The expansions are unexceptionable; the practice of such translation was not forbidden but encouraged by the hierarchy. (The whole Bible, of course, was another matter.)

Not only do the specified charges of heresy not make sense; but Gleeson is able to show that Erasmus was wrong in claiming that the bishop and the dean had never got on: 'the two men worked amicably together for years'. Gleeson also shows that as late as 1511, Colet 'so far from being suspected of heresy', sat on a commission that tried and condemned two heretics. But Gleeson does see a spark of truth behind the murky smoke of Erasmus's and Tyndale's stories. In the power struggle between Warham and Wolsey that ended with the Cardinal of York replacing the Archbishop of Canterbury as Lord Chancellor in 1515, Fitzjames supported Warham, Colet supported Wolsey. In Hunne's case, Fitzjames had favoured repression as the best way to silence the Church's critics. Wolsey and Colet saw the need for the Church to reform itself, if it was to avoid being reformed by others. Conservative bishops might well look for unsound opinions in a reforming dean who had helped loosen their hold on power. And Colet, Gleeson thinks, though generally discreet on formal occasions, could be less than discreet off duty. 'Heresies', he was reported as saying, 'are not so pestilent and pernicious ... as the evil and wicked life of priests.' Some years after his death, Erasmus told the story of the dean's disgust when invited to kiss the shoe of St Thomas of Canterbury: 'By the same token they might offer his spittle to be kissed, or who knows what else.'

However motivated and however ill- or well-justified, the attack on Colet for heresy got nowhere. An attempt to discredit him with the King fared equally badly. Colet, it seems, had preached pacifism, or near pacifism, at a time when Henry was projecting war on France. 'All the wicked', says Erasmus, 'then flocked together ... in the hope that now at last the King's anger would be kindled against him.' The King interviewed the dean in private, and then in public drank his health, embraced him, and declared: 'Let every man have his own doctor and show his favour to him. This is the doctor for me.' Colet, it seems, had agreed to explain 'for the sake of the rough soldiers' that some wars, such as defensive English wars against France, were just wars.

Colet died in 1519. His school was rebuilt for the second time on its original site in 1824, and moved to Hammersmith in 1884, and to Barnes in 1968. The fourth school's buildings were designed by Waterhouse and destroyed by an act of gross official vandalism soon after the move to Barnes in 1968. I remember approaching them from Baron's Court station on my way to work there as a very junior master. They were a splendid sight, at least on a sunny morning. You can see the fifth school if you take a bus over Hammersmith Bridge.

Further reading

John B Gleason *John Colet* (1989)
S Knight *The Life of Dr John Colet* (1724)
Arthur F Leach 'St Paul's School before Colet' *Archaeologia* 62 (1910)
J H Lupton *Life of John Colet* (1909)
J A R Marriot *The Life of John Colet* (1933)
Michael F J McDonnell *A History of St Paul's School* (1909)
Michael McDonnell *The Annals of St Paul's School* (1959)
Michael McDonnell *The Registers of St Paul's School 1509–1748* (1977)
A H Mead *A Miraculous Draft of Fishes: A History of St Paul's School 1509–1990* (1990)
J B Trapp 'An English late medieval cleric and Italian thought: the case of John Colet, Dean of St Paul's (1467–1519)' in *Medieval Religious and Ethical Literature. Essays presented to G.H.Russell* (1986)
J B Trapp 'John Colet' in *Oxford Dictionary of National Biography* vol xii (2004), 601ff

VICTORIAN MISSIONARY WORK IN LONDON

Right Reverend Richard Chartres, Bishop of London

Hats off to the Society for making possible this day as a coda to the celebrations of the 1400th anniversary of the re-organisation of the Diocese of London and the building of the first St Paul's.

Ecclesiastical history has been in temporary eclipse as a dimension of wider historical studies. Historians of the 20th century often lacked the imagination to believe that a part of life which meant little to them could have played a more significant role in the past. This is why in the recent histories of London, apart from a few caricaturing asides, the massively significant

social and institutional presence of the churches has been largely ignored.

At the same time ecclesiastical history had the misfortune to become, at least in part, the province of clerical partisans, who studied the past with polemical intent informed by somewhat arcane theological controversies of their own day and in the process convinced the wider public that there was little to interest them in such an area of study.

Things are changing. We await eagerly the publication of Arthur Burns new assessment of my predecessor Bishop Blomfield, coming as it does from the pen of the head of the history faculty in Kings and not from a divine.

The Economist is also a sign of the times. It would be fair to say that ten years ago that magazine believed that religion could be safely ignored as a phenomenon with no influence on the daylight world. That is not the case today. The salience of religion worldwide and not least in this great city state of London is vastly greater than it was a quarter of a century ago, sometimes for good but very often for ill. Once again, in a way that baffles many of our contemporaries, religion is unignorably connected to our deepest life and death concerns. This gives a new significance to the historical studies with which we are concerned today.

At the same time even the Church of England is waking up in a way that is directly relevant to my introductory talk. The talk is once more of 'mission'. In a recent influential report entitled 'Mission Shaped Church', various 'new ways of being church' are considered and commended. The authors frankly acknowledge that near the close of Victoria's reign in 1900, 55% of all the children in England and Wales were enrolled in some kind of Christian Sunday School, quite apart from the religious instruction which was part of the normal school day. In 2000 the figure was 4%, and I am surprised that it is so many.

As we mount our response to this challenge, I have become more and more aware that there are precedents for nearly all our 'new ways of being church' and it is instructive to contemplate our own situation in the light of the huge missionary challenges faced by the Victorian Church. We only have a limited time for such a vast subject, so I want to illuminate the picture a little with four vignettes, Bishop Blomfield at work, the Exeter Hall meeting of June 1840, the 1858 Primary Charge of Bishop Tait and its consequences, and lastly the witness of an unpublished manuscript preserved in the Guildhall Library and written by the Reverend J M Rodwell between 1865 and 1875.

Blomfield

To tell you the truth I am a trifle anniversaried out after the various 1400th celebrations of the reconstitution of the Diocese of London in AD 604 to serve the East Saxon tribe. But the experience of this year has been only an exaggerated version of usual episcopal business. I have to fulfil my predecessors' diaries as well as my own. This has alerted me to how busy my predecessor Bishop Blomfield was in opening churches. There has been a plethora of 150th anniversaries of foundation stone laying by Blomfield.

London in the 1830s constituted a challenge for all the churches and for the Church of England in particular. London had grown explosively and by 1820 was larger than all the capitals of continental Europe put together. The Church was beset by the difficulty of organising new parishes to serve the expanding population, of providing adequate clerical incomes, and in dealing with the related problem of clerical non-residence.

The years of the struggle with France had seen an explosive growth of Dissent. Between 1795 and 1801 alone there were 3,300 dissenting chapels registered. These were years of apocalyptic enthusiasm and speculation. In London William Blake gave voice to a buried tradition of urban mysticism. Old patterns of life and social restraints were disrupted by rapid industrialisation and the fascinating figure of Napoleon fuelled the sense of a world in the melting pot. By 1815, a third of the UK population were dissenters from the National Protestant Established Churches.

In London the response of the Established Church developed in an active alliance with the Government. The London based Hackney Phalanx, a network of high church clergy and their supporters were influential in promoting this church\state compact. From 1809–21, for example, the Government allowed £100,000 pa to enhance poor livings. In 1818 the Phalanx assisted by the Claphamites (their evangelical equivalents) and a Government grant of £1,000,000 launched the Incorporated Church Building Society with the intention of providing more 'sittings' for the burgeoning population.

In the years before 1828 the alliance of Church and State worked more in the favour of the

Established Churches in Britain than at any time since the reign of Charles II. The Government acted on the belief that the parochial structures of the Established Churches could assist in nation building.

The strategy came to grief in Ireland where the Second Reformation associated with Archbishop Magee's St Patrick's Charge of 1822 was a divisive failure. The repeal of the Test and Corporation Acts in1828 marked the end of even a theoretical constitutional symphony. There were further constitutional changes in the following years which made Parliament less Anglican and an assault on the Church's property and usefulness intensified in the early 1830s. Hostility to the collection of Church Rate was widespread. In Bethnal Green in 1836 when a lay worker sought to collect money for church extension, he was told that 'they would give him a shilling to hang the bishop but not six pence for church building' (quoted in S J Brown *The National Churches*).

The moralists were gloomy about the prospects. One influential assessment, 'The State of the Metropolis considered in a letter to the Bishop of London', was published in 1835. It was the work of Baptiste Noel (1793–1873), one of the founders of the London City Mission.

> There is something, my Lord, unspeakably painful in this contemplation of this mass of immortal beings, in such close juxtaposition with ourselves, living as we have reason to fear without God and without hope. 500,000 Sabbath breakers at the very least, in total neglect of the restraints of religion, communicate the plague of ungodliness to all around them. 10,000 of these are devoted to play: above 20,000 are addicted to beggary: 30,000 are living by theft and fraud: 23,000 are in the course of the year picked up drunk in the streets: above 100,000 are habitual gin drinkers; and 100,000 or more have yielded themselves to systematic and abandoned profligacy.

The recipient of the letter was Charles James Blomfield who, although a high churchman, was justly noted for his pragmatism — he happily accepted the title of 'priest in the temple of expediency' when it was bestowed upon him in a Parliamentary debate. The Church's true beauty in his eyes was 'the beauty of its holy usefulness'.

He was born in 1786, was elevated to Chester in 1824, and translated to London in 1828. He was convinced, especially in the light of the experiments in Glasgow associated with the name of the Reverend Thomas Chalmers, one of the most influential Christian strategists of the 19th century, that the revival of parish communities was the key to lasting social improvement.

In 1834 in 'The Uses of a Standing Ministry and an Established Church', Blomfield argued that such a church was 'the most efficient instrument of instructing the people in the doctrines of religion and of habituating them to its decencies and restraints.'

By declining to issue licenses for non-residence, he managed between 1831 and 1835 to increase the number of resident incumbents in the Diocese of London from 287 to 325. By 1834 there were only 64 parishes without a resident clergyman. He was also an enthusiastic supporter of the work of the Ecclesiastical Commission which was launched in February 1835.

In April 1836 a major church building campaign was launched in London. The aim of the Metropolitan Churches Fund was the construction of at least 50 new churches. The need, especially in east and north-east London was very great. The population of 353,460 was served by only 18 churches and chapels and 24 clergy. Blomfield asserted that it was the task of the Established Church 'to divide the moral wilderness of this vast city into manageable districts each with its own place of worship, its schools and its local institutions'. Citing the example of church building in Glasgow, Blomfield called for voluntary contributions to build and endow the new churches. Endowments were especially important because they would render the parish clergy 'independent of pew rents' and thus strengthen the Church's mission in poorer districts.

In 1837 the first of the campaign's district churches was begun — St Peter's Stepney. It was financed by a wealthy banker, William Cotton. Within two years St Peter's was a model district church, with a district visiting society, a hospice, two large schools, and a lending library with 570 volumes.

Blomfield saw the Cathedral establishments as one source of finance, which earned him the hostility of the vastly overrated but admittedly witty Canon Sidney Smith, supposedly a Whig, but stout in the defence of antique Cathedral abuses. Blomfield, in a speech in the House of Lords in 1840, observed, 'I am continually brought into contact in the discharge of my official duties with vast masses of my fellow creatures living without God in the world. I traverse the streets of this

crowded city with deep and solemn thoughts of the spiritual condition of its inhabitants. I pass the magnificent church which crowns the metropolis and is consecrated to the noblest of objects, the glory of God and I ask of myself in what degree it answers that object.'

Between 1831 and 1841, the Church of England, almost entirely by its own efforts, built 667 new churches. There were lingering hopes of government assistance with this programme especially when the Tories under Sir Robert Peel were returned to power. The Prime Minister was personally a devout member of the Church of England but the moment had passed when it was possible for the Government to regard alliance with any particular religious body as a recipe for social cohesion. The explosion of the urban population continued but, although given an opportunity in 1840, Parliament declined to provide further public funds to make church extension a truly national effort. There was a similar story in education where, by 1839, 1,118,000 children were being educated as a result of voluntary exertions in Church of England schools.

The Church had by its own efforts achieved much of the vision to which Thomas Chalmers gave classic expression in his London lectures of 1838 on 'The Establishment and Extension of National Churches'. After the turmoil of the constitutional changes of the 1828–32 period with the determined attacks of the radicals, the churches had redefined themselves as popular institutions, exhibiting in Blomfield's words a 'beauty of holy usefulness'. They had set themselves to build viable communities, to educate the young, and to promote social harmony with the assistance of a new generation of clergy taught to see themselves as 'tribunes of the people'.

But had such a renascent Church achieved Parliamentary patronage in 1838–41 it might have resembled the Churches of Scandinavia and become more a department of state with its spiritual independence compromised. As it was, this watershed marked a decisive development in the peculiar British tradition by which religion is allowed a place in the public arena while being almost entirely sustained by voluntary effort. In the light of the responsibility carried by the Church of England in particular for such a large part of the architectural and cultural inheritance of the whole community, it can be confidently asserted that the Anglican Church is the most disestablished in Europe.

Exeter Hall

Most often today we associate ticket touts with great sporting events, but at the beginning of June 1840 the touts were doing a roaring trade in tickets for the first anniversary meeting of the 'Society for the Extinction of the Slave Trade and for the Civilisation of Africa'. The doors of the Exeter Hall in the Strand, one of the great places of Evangelical Assembly in Victorian London, were open at 10.00am and the streets surrounding the Strand were packed with people waiting to view Queen Victoria's German consort on his way to his first public engagement — to what *The Times* was to describe as 'the scene of Prince Albert's matriculation in the business of a free and deliberative people'.

The Bishop of London pleaded a prior engagement in Hertfordshire but he was hardly missed among the serried ranks of politicians, bishops, and noblemen. They were there to cheer the initiative which was about to be launched by HMG. Three steamships were being sent to the River Niger in West Africa where it was believed slavery and worse still lingered. They were to sail up and down the river pacifying and civilising as they went. In defence of the bishop I must say that it was announced as the day wore on that he was among the more notable new subscribers to the Society.

The meeting exhibited the old alliance between the anti-slavery movement and the missionary impulse and marks the outpouring of forces which had been gathering strength for the previous half century and which in the century to come were to transform Africa.

I have just attended a conference sponsored by the World Bank, organised around the idea, which some of the participants seemed to believe was novel, that the churches should be involved in the work of sustainable development. At least in part as a result of the eruption of energy which followed the Exeter Hall Meeting, Africa is 45% Christian and, in a country like Zambia, 40% of the health care and 30% of the education service is provided by the churches. They are in fact unignorable, although this comes as unwelcome news to many post-Victorian West Europeans.

Wilberforce's successor in the anti-slavery crusade, Thomas Fowell Buxton, was present in Exeter Hall. He declared that, 'It is the bible and the plough that must regenerate Africa'. Trade and Christian standards would replace the economy which depended upon the exploitation

of human misery and ignorance. The Prince Consort stood next to Buxton and such was the tumultuous reception of the first sentence he uttered, that his speech notes dropped off the brim of his upturned top hat and were scattered in the interior.

Wilberforce's son the Archdeacon was also there to remind the great audience that their purpose was to ensure 'that every ship laden with commerce might also bear the boon of everlasting life', that, in addition to gold and spices, every part of the earth should receive 'the more precious wealth – the more blessed frankincense of Christ their master'. The applause was tremendous and somewhere in the Hall was a 27-year-old medical student from the Charing Cross Hospital, David Livingstone.

Bishop Tait's Primary Charge of 1858

The place was St Paul's Cathedral and the date was 13 November 1858. It was, as the bishop noted, the 300th anniversary of the accession of Queen Elizabeth — you see once again the anniversary captivity of the episcopate.

The Charge, 122 pages long and replete with statistical appendices, required almost five hours for its delivery and so exhausted the bishop that he was obliged to take a seaside break in Southend to recover.

It is interesting to note in the light of our focus on the history of St Paul's that the Cathedral was described by the bishop as being 'now used for the first time for such a gathering of the whole clergy of the Diocese'.

Appendix A lists the new churches consecrated by Blomfield, 198 in all, 169 in the 'present Diocese of London'. There is a table of attendance figures and of school rolls.

Among particular concerns noted by Tait is the fact that London clerical stipends have suffered by the loss of burial fees consequent on changes in the public health regime.

There is much reference to the recent House of Lords Select Committee on Spiritual Destitution and a recognition that the bonds between Church and society as a whole were fraying. 'It is certain that in our large towns there is a gradual diminution going on of all those outward helps that used to prop up a parish clergyman's position.' One of the notable challenges facing the Church was 'the subtle progress of an intellectual infidelity'.

In 1851 the population of the Diocese was 2,143,340. The Church of England regarded itself as responsible for the 1,881,994 unprovided for by other religious bodies. In 1858 Tait calculated that this figure had risen to 2 million served by 885 licensed clergy. The average stipend was £140 pa and many were dependent on private means. The debate about church rates to support the buildings was still raging. 'The days are gone by when the Church of England can look to be propped up by the adventitious aid of secular authority.'

But with the evidence of the voluntary vigour of the Church in London, the bishop struck a confident note of a kind which seems to have become very difficult for church leaders to sound in our own day. 'This our own national development of the Church of Christ — with its own peculiar institutions, dear to true hearted Englishmen from the historical associations from the centuries of England's most real greatness, which has been bound up with so many crises of the nation's history in times past, which men love because it maintains the faith in which their fathers lived and died, and in which they desire to rear their children; to which all the Protestant nations of the earth look as the great bulwark of that at once reasonable and loving Christianity which commends itself only the more to right minded men, the more they love freedom and the more they are educated — I say this, our great national development of the Church of Christ is in no danger, if we, its ministers, are what we ought to be.'

Tait turned to some specific challenges. There was, he argued, a danger of dumbing down. 'I know that it is a favourite theory with some in the present day that we need a lower order of clergymen of a more homely type with less Latin and Greek.' The bishop was determined to resist this movement.

He was alive, however, to the need for a clear parochial strategy. Every five or six thousand people ought to have a church and a parson supported by adequate staff, rather than subdivision into smaller units.

In 1857 there had been a meeting of the clergy of the more populous parishes in London House, the Bishop of London's town house in St James's Square (you can still see the mitres on the drain pipes). This meeting had resulted in the formation of the Diocesan Home Mission 'for adding somewhat of a missionary machinery to our ordinary parochial work'. 'The parochial system, standing quite alone, is unable to meet

many other wants of our complicated and highly artificial state of society.'

Methodist open air meetings were an example of an appeal to the alienated and deserved emulation. The days when it was feared that the Church of England was 'dying of her dignity' had passed but the needs of a fluctuating population were best met by missioners. 'But these efforts must be saved from degenerating into irregularity.' In consequence every effort was made to secure the incumbent's support for special services for the labouring poor who are invited to come in their working dresses.

The first missionary curate was appointed at £200 pa to serve Whitechapel and Spitalfields. In 1862 there was a special appeal for funds to employ two missionaries to work among omnibusmen and cabmen. They, together with their families, were estimated to comprise a population of 80,000, largely untouched by Christian mission.

The work made rapid progress, judging by the reports of London Diocesan Home Mission preserved in Lambeth Palace Library. The Council included luminaries like the Duke of Marlborough, Lord Shaftesbury, Mr Cazenove, even the Dean of Westminster. The AGM was held at Willis's Rooms on 2 March 1865 and the work of the previous year was reviewed.

Resolution II proposed by Lord Harrowby and seconded by the Bishop of Ely, stated: 'That the great extension of the operations of the Diocesan Home Mission, through the large grants from the Bishop of London's Fund and the success which has attended the work of the increased staff of missionaries show that the method of working adopted by the mission is well suited to grapple with the various forms of Spiritual Destitution in the Metropolis and most effectually assists in the extension of the parochial system and the erection of new Churches.' In speaking to the motion Harrowby remarked, 'At last it had been found out that the church was the culminating point. The apostles began by addressing the multitude.' (The Church Commissioners were involved in funding this 'transient work'.)

The limitations of the strategy which put the principal emphasis on church building were well recognised in the second half of the 19th century and it is fascinating to discover Tait at work setting up a Home Mission Fund remarkably similar to the initiative which has just been taken by the 21st-century Diocese of London. We are united with our Victorian forebears in recognising that 'this Metropolitan Diocese is a world in itself and its schemes of Christian usefulness must suit all tastes'.

J M Rodwell

Unpublished diary preserved in the Register of St Ethelburga, Bishopsgate commenced 1792–1812. Manuscript number 4238 Guildhall Library.

After the bomb explosion which laid it waste in 1992 the church of St Ethelburga in Bishopsgate was restored to serve a very contemporary need which is part of the duty of all followers of Christ, the work of preventing and transforming conflict, especially those conflicts with a religious dimension.

The St Ethelburga Centre which is devoted to this expression of Christian faith in the service of the whole community has just celebrated its second birthday. As a mark of respect, Professor Haleem, the foremost Quranic scholar whose translation of the Quran has just been published by Oxford University Press presented a copy of his new work to the library of the Centre. He was astonished by the news of a Providential discovery.

In a moment of leisure I was glancing at the invaluable publications of the London Record Society and noticed mention of an unpublished fragment of autobiography written on the leaves of an 18th-century Register of Births and Deaths from St Ethelburga's, Bishopsgate. The author was John Medows Rodwell, Rector of St Ethelburga from 1843. The name seemed familiar for some reason that I could not remember and courtesy of the helpful staff in the manuscripts section of the Guildhall library I read it recently.

> In the year of our Lord 1808. April 11 the writer J.M.Rodwell was born at Barham Hall in the County of Suffolk. – educated at Bury School under Dr Malkin.
> B.A. of Gaius and Gonvile College Cambridge 1830
> M.A. 1834.
> From the Rev. W. Kirby Rector of Barham, the celebrated naturalist and father of English entomology I derived great advantages and [?] in 1833 became his curate. He was also my uncle having married Miss Charlotte Rodwell, my Fathers sister in 1816. A debt of everlasting gratitude is due from me to the memory of my maternal uncle the Rev Robert Kedington M.A. of Babergh Hall in the aforesaid county who took an unceasing

interest in my education – early instilled into me sound church principles – a love for natural science – and a taste for learning generally especially languages. He was Rector of Bradfield Combust and a devoted Parish Priest and in every sense a thorough English gentleman.

.....

In the year of our Lord 1843 I was appointed to the rectory of St Ethelburga Bishopsgate on the collation of the Right Reverend Charles James Blomfield D.D. Lord Bishop of this Diocese. I had previously laboured for nine years in the charge of St Peter's Saffron Hill, as the first incumbent of that populous and poor District containing 13,000 souls – and the Bishop was good enough to say that he presented me to St E's in acknowledgement of what he was pleased to term "my arduous and earnest labours in that anxious sphere of duty". Such indeed it was and though I am only too painfully conscious how much that ought to have been done was left undone, and that I made many and painful mistakes, yet upon the whole my ministry there was very successful, the congregation very large, the schools well attended and the communicants numerous. Being only just in priest's orders and blessed with a strong constitution, a loud voice and a willing mind, I have reason to be most thankful that I was enabled to devote these gifts to the service of God – to whom I can never be sufficiently thankful for having raised up for me so many helpers who rendered most efficient aid with their purse and time as well as with personal labours among the poor in the schools and in visiting the sick and poor. The Rev. Gilbert Beresford was at this time Rector of St Andrews Holborn, to which St Peters was a Chapel of Ease – a really good man of deep unaffected Piety. He was very unpopular in the Parish except among a few select friends; most undeservedly so however, as his only offence was that of standing up for the rights of the church, and claiming the very low tythe which had always been paid up to the time of his appointment but which was now withheld by a few factious Dissenters and nominal Churchmen. Peace be with his memory. He was always kind liberal and most judicious in his counsels to me – and though there was lack of energy in his ministrations and he belonged to that somewhat uninfluential class of churchmen called High and Dry yet he was personally in every sense a Christian Gentleman. – It was with many regrets that I heard of his removal to a family living in Leicestershire – where however I once again saw him.

Rodwell pens other affectionate reminiscences, most particularly of his wife, and then looks back (from 1865) to the period we have already been considering.

> With the year 1842 and 1843 commenced a most eventful period for this Church of England. The ancient Barriers were now broken down; the old bonds between church and state were one after another gradually loosened. Romanism and Dissent had commenced their attacks. A High Church movement commenced in the Church itself and these all have been steadily developing during the last 25 years. The High Church movement first showed itself in the publication of the Oxford Tracts by Dr Pusey, Newman, Keble, A. Perceval and Hugh James Rose and the principles which they enunciated appear to me to have steadily leavened the Church of England ever since. Of course there have been other Phases of Religious Opinion – the Broad or Liberal Church Party and the Evangelical or Puritanico-Calvinistic schools. The latter sensibly diminishing for some years past both in number and in influence. And by the side of High Churchism has also grown up no small amount of German Neology and this I have no doubt is steadily though stealthily on the increase. It has its fautors in high places and the name and writings of Bishop Colenso will mark I believe an epoch in the history of religious thought in England. Whether those views and principles are destined largely to overspread the church remains to be seen. If I may venture to prophesy I believe that they will.
>
> I have kept my eye steadily upon this subject for many years. I have read much of the literature connected with it and am decidedly of the opinion that the orthodox party have not yet manifested learning and research equal to that of their opponents. I shall not live to see the issue of these attacks upon the Old Faith. But if these remarks shall last two hundred years hence, I venture to think that whoever may read them will find that much of the Catholic creed as now held by High Churchmen and orthodox persons generally will have been eliminated from the creed of Englishmen, when he compares the creed of his days with the standards and formularies of the church of this day. Regeneration in Holy Baptism, the Eternity of Hell Torments, the Inspiration

> of Scripture are already open questions; and there are certain portions of the sacred text itself which seem likely to fare ill at the hands of the critics. For my own part *stare super antiquas vias* is my motto, and so far as my individual efforts go, I will never give up, whatever difficulties I see and feel, my portion of the old Catholic faith. There may be reasons for faith in mysteries that are above me, and for clearing up perplexing difficulties which I do not see and know ..... I am a thorough conservative in religion and wish to leave on record this my testimony for the ancient creeds. Englishmen seem to be fast unlearning their religion. There is a widespread scepticism among the lower orders especially in the manufacturing districts. In London large assemblies are held in various parts on Sunday evenings for lectures and discussions of an infidel tendency. Three years ago I remember attending one such in the City Road at which at least 1500 persons were present and when the speakers advocated 'infidelity pure and simple'. Neither are the middle classes free from this insidious enemy. The immense circulation attained by Essays and Reviews, Colenso's works, the Westminster Review, the Daily Telegraph newspaper etc clearly show how large a section of the public holds very loosely to the Faith of their Fathers.

For all his conservatism, however, Rodwell had been a friend of Darwin and accompanied him on botanising expeditions. His most extraordinary achievement, however, was his translation of the Quran, published in 1861. It has appeared in many editions ever since, particularly after its inclusion in the Everyman Library. Professor Haleem commended the Rodwell version for its stylistic felicities and was clearly moved to be standing in the church where Rodwell served and worshipped for so many years as rector.

There are, of course, judgements in the Rodwell translation and especially in its footnotes which are unacceptable to contemporary Muslim scholarship, but in his day Rodwell represented a positive estimate of the work of Muhammad and followed Carlyle's judgement that the Quran was the 'ferment of a great rude human soul ... fervent, earnest ... Sincerity in all senses seems to me the merit of the Koran'.

Rodwell himself says in the preface to his translation, 'The more insight we obtain from undoubted historical sources into the actual character of Muhammad, the less do we find to justify the strong vituperative language of Maracci, Prideaux and others [scholars of the previous century]'.

Rodwell was also responsible for converting St Ethelburga's into a place of advanced ritual of the kind that made Victorian bishops uneasy but which was part of the reaction to the missionary challenges of the new industrial society. By 1865, as the smoke of industrial London grew thicker, Rodwell introduced incense, the fragrance of Paradise, collected from trees which legend asserted were smuggled out of the Garden of Eden by Adam and Eve when they were expelled. Eucharistic vestments were also adopted.

In December 1867 there were anti-ritualistic disturbances in St Ethelburga's which resulted in a case heard by the Lord Mayor. Protests from the Vestry continued which did not however reflect the views of the substantial congregation and Bishop Jackson was induced to order the cessation of the ritual lovingly detailed in Rodwell's manuscript autobiography.

The *Church Times* for 13 April 1877 described the situation thus: '£1500 had been spent by Rodwell and his friends re-edifying St Ethelburga's. Large sums also came from the Rector's pocket to beautify the worship. Mr Rodwell was the first of the City clergy to open his church for short mid-day services and the success of the experiment may be gathered from the fact that 530 communicants signed a memorial to the bishop praying His Lordship to protect Mr Rodwell from persecution.' The bishop was unmoved however and threatened action unless the advanced ritual was abandoned. 'Bishop Jackson is content', thundered the *Church Times*, 'to let the City drones convert their benefices into sinecures but this admirable worker must be treated as if he were the scum of the earth. The right reverend prelate may depend upon it that he is accumulating matter for bitter remorse. This is not one of his *Little Sins* [a reference to the title of the Bishop's most popular devotional book].'

Rodwell survived until 1900 and died in St Leonard's on Sea. I do not doubt however that he has intervened recently to bless the new endeavours which we are building on the ancient foundations of St Ethelburga's Bishopsgate.

REVIEWS

Aspects of Archaeology & History in Surrey: Towards a Research Framework for the County. Edited by Jonathan Cotton, Glenys Crocker and Audrey Graham. Surrey Archaeological Society, 2004. Pp. xi + 260, 120 figs. ISBN 0 0541460 3 4. Price: £24.70 (incl p&p) pb.

Although this book stems from the conference *Archaeology in Surrey 2001: Towards a Research Agenda for the 21st Century*, it would be wrong to see it simply as a set of conference proceedings, and the conference itself was more than just an update of the earlier conference *The Archaeology of Surrey to 1540*. The dual theme of looking back and looking forward is present to some extent in all the contributions, with varying emphases. A series of chronologically-based chapters (Surrey's Early Past: a Survey of Recent Work [Palaeolithic to Bronze Age]; Iron Age Surrey; Surrey in the Roman Period: a Survey of Recent Discoveries) gives broad overviews and syntheses of recent work, with lists of recent sites and extensive bibliographies. More thematic chapters deal with topics of landscape (The Environmental History of Surrey; Engraved Sequences and the Perception of Prehistoric Country in South-East England; The Surrey Historic Landscape Characterisation Project) or specialised functions (Roman Religious Sites in the Landscape). The medieval and post-medieval periods are also covered thematically (*Sūþre-gē* – the Foundations of Surrey; Manors and other Settlements; Vernacular Architecture; The Impact of Royal Landholdings in the County of Surrey, 1509–1649). There are two locally-based studies (Medieval Settlement in the Blackheath Hundred; Kingston – Saxon Royal Estate Centre to Post-Medieval Market Town), a study of Surrey's relationship to London (What Did London Do For Us? London and Towns in its Region, 1450–1700), three chapters on industrial archaeology (The Archaeology of Industrialization: Towards a Research Agenda; Surrey's Industrial Past: a Review; Iron Production in Surrey), and one on Second World War defences.

One's first impression is of the impact of the PPG 16 regime. Sites have been investigated across the county in a way that simply did not happen before, and although some may regret the development-driven nature of this work, it does help to lift archaeological research out of the dangers of self-fulfilling prophecies. At last, the absence of evidence may begin to mean something. The synthesis of large amounts of relatively 'small scale' data requires new skills of analysis and perception, which are demonstrated well here.

The second impression is of how much we still have to learn, before we can really understand some of the main themes in Surrey's past. The contribution 'The Environmental History of Surrey', a bold attempt that would scarcely have been considered at an earlier conference, highlights how little evidence we yet have, and the extreme difficulty of making sense of, and communicating, such a sparse dataset. The post-Roman settlement of the county is still relatively poorly understood, as the study of the relationships between manors and villages makes clear. Here, perhaps, the 'scatter gun' approach of PPG 16 is less effective, and more carefully targeted research will be needed. It is good to see the work on the Surrey Historic Landscapes Characterisation Project presented as a backdrop against which archaeological discoveries are made, but its maps, beautiful though they are, disappoint in the sense that many of their colour codes are almost indistinguishable.

The paper 'What Did London Do For Us?' is particularly valuable; from at least the medieval period, and probably from the Roman, Surrey would not have been Surrey as we know it without the expanding presence of London on its borders. This point is reinforced by the

contribution on royal land-holdings, which shows one effect of the proximity of London on large swathes of northern Surrey. It is important, too, to be reminded of Surrey's industrial past. The range of industries in the county comes as a surprise — from the well-known Surrey ware pottery through extractive industries, iron and glass production, gunpowder and paper making, to the manufacture of motor vehicles and aircraft. There is a clear need to record a fast-changing scene while at least some of the evidence is still with us. The same can be said of the physical remains of WWII sites, where priorities for preservation still need be to be established.

The contributions have been well put together to form a coherent whole, aided by a common geological base map, over which authors have laid sites relating to their particular topics. Colour is used sparingly but on the whole effectively, and the bibliographies will be of immense help in bringing readers up to date; there is a comprehensive index. But, as 'towards' in the title reminds us, this book, however valuable, is just one step on the way to our understanding of the past of this varied and fascinating county; hopefully it will lead researchers on to further discoveries and interpretations.

Clive Orton

Towards a New Stone Age: Aspects of the Neolithic in South-East England. Edited by Jonathan Cotton and David Field. Pp. xxi + 237, 80 figs, 18 tables. Council for British Archaeology Research Report 137, 2004. ISBN 1 902771 39 7. Price: £28.00 pb.

With the appearance of this volume, a significant gap in the prehistory of Britain is at least partially filled. Hitherto, there had been no overview of the Neolithic of the South-East of England, despite the huge advances made in fieldwork and analysis over the last two decades or so. What comes through strongly in many of the papers in this volume is that, although it may have been much eroded through later occupation and land use, the South-East has abundant Neolithic evidence, some of it in Wessex-like concentrations, some of it (such as the flint mines) fairly distinctive but under-appreciated at the national level.

There are 21 papers in total, ranging from opening and closing overviews by Barber and Kinnes (historical and continental, respectively) to reports on single sites, and even single artefacts (the Chelsea 'beater', by Webber and Ganiaris). Like many such multi-author volumes, it has clearly taken a long time for the volume to come together and some of the papers are less up-to-date than they might have been. The editors also note that some potentially important contributions did not in the end find their way into print. However, these problems are an inevitable fact of life when assembling this kind of overview, so the editors are to be congratulated on their perseverance in bringing this volume to final publication.

Perhaps the most useful papers are those which summarise either recent significant fieldwork, or which bring together knowledge on a particular topic in a new synthesis. Allen *et al*'s paper, for example, is a fascinating summary of excavations at the Eton Rowing Course and the Maidenhead-Windsor Flood Alleviation Channel. A huge area of landscape has been investigated (the latter alone covers a transect 15km long and 60m wide) with excellent *in situ* preservation and good environmental evidence. Particularly important is the evidence for long-term early Neolithic occupation close to the banks of the Thames, represented by spreads of trampled domestic material. This includes carinated bowl fragments and some of the earliest secure dates for cereal cultivation in Britain (*c.*3900–3530 cal BC). Lipid residue analysis also seems to show that dairying was practised from the early Neolithic.

Lewis and Welsh summarise the Neolithic aspects of the impressive fieldwork campaigns at Perry Oaks, which may already be familiar to followers of London archaeology. They make a convincing case that the Neolithic monuments, most significantly the cursus, were 'the formalisation of practices that had been in existence for several millennia', such as processional routes through the landscape.

From the point of view of environmental archaeology, Bates and Whittaker have contributed an important paper which identifies five stages in landscape evolution over the last 30,000 years. By plotting radiocarbon age estimates for sites with organic remains, they construct a model of the speed of landscape change for the north Thames in the area of Barking Creek, which concludes that '75% of the former floodplain landscape within this area was lost to wetlands between 4700 and 4000 cal BC'. This has important implications for our understanding

of prehistoric societies in the area, and merits further development and investigation. This paper sits well alongside that of Sidell and Wilkinson on Neolithic river development and floodplain archaeology of the central London Thames. The principal theme here is the deposition of sands in the early Neolithic leading to eyot formation and the development of peats as a result of the waterlogging of the floodplain in the later Neolithic. As both papers argue, the time is ripe for a detailed synthetic study of the archaeology and palaeoenvironment of the Neolithic of the London area to provide an integrated model of development.

In terms of synthetic overviews of specific themes, a number of papers stand out. Field provides a useful and accessible summary of new approaches to landscape archaeology where 'places that spirits inhabit are as important a component in the landscape as those occupied by the living'. More specifically, he suggests that through controlled burning the Mesolithic landscape of the South-East may have been much more open than is generally imagined, and that the early Neolithic inhabitants were principally forest dwellers obtaining a living from the woodland, rather than through farming.

Russell's provocative paper challenges the conventional categories of 'burial monument', 'industrial monument', and 'enclosure' and argues for their replacement by more neutral terms. This is because, he argues, the three kinds of monument are different versions of the same principle, which is to imprint the identity of local cultural groups into the landscape. Long mounds, for example, may not be burial monuments because sometimes other material is privileged within them, such as flint waste, pottery or carved chalk. The same is argued for flint mines which have seemingly symbolic deposits suggesting non-utilitarian facets of their use.

This latter point is explored in greater detail in Topping's excellent paper on the South Downs flint mines. A survey of ethnographic evidence for the mining of flint and stone suggests that certain artefacts would be held sacred and the extraction and working of flint would be embedded within ritual behaviour. A study of the deposits in the South Downs mines shows their structured nature, and parallels are drawn with similar ones in causewayed enclosures. The presence of burials in some mines suggests that 'certain mines were paraphrasing, conceptually, tombs and barrows', linking the ancestors with the raw material. His conclusion is that, through these conceptual links with other kinds of monuments, 'the flint mines played a unique role as the origin of a symbolic stone derived from the psychological interface between the living communities and their gods'. The symbolic importance of the stone was further expressed through its crafting into special artefacts such as axes which were curated perhaps for many generations.

There is much that is useful and fascinating in some of the shorter contributions, such as Perkins's paper on the dense concentration of barrows on Thanet, and Cotton and Johnson's account of two Peterborough bowls from the Thames at Mortlake. The photographs of the fingertips and nails of a (probable) woman from some five thousand years ago humanise the Neolithic in an uncanny way.

Overall, then, this volume represents a major step forward in putting the Neolithic of the South-East and its significance onto the UK archaeological map, and the questions it raises will inform the research agenda for many years to come.

Nick Merriman

Roman Burials, Medieval Tenements and Suburban Growth. By Dan Swift. Museum of London Archaeology Service Archaeology Studies Series 10, 2003. Pp. xi + 88, 69 figs, 23 tables. ISBN 1 901992 41 1. Price: £9.95 pb.

Investigating the Maritime History of Rotherhithe: Excavations at Pacific Wharf, 165 Rotherhithe Street, Southwark. By Kieron Heard and Damian Goodburn. Museum of London Archaeology Service Archaeology Studies Series 11, 2003. Pp. xi + 58, 44 figs. ISBN 1 901992 40 3. Price: £7.95 pb.

Excavations at Hunt's House, Guy's Hospital, London Borough of Southwark. By Robin Taylor-Wilson. Pre-Construct Archaeology Limited Monograph 1, 2002. Pp. vii + 68, 41 figs, 3 tables. ISBN 0 9542938 0 0. Price: £7.00 pb.

These three reports, ranging from 58 to 88 pages long, fulfil the need to publish something other than a journal article, but less than a major monograph. The two MoLAS reports are in their Archaeology Studies Series (distinct from

their Monographs), the PCA report is their Monograph No. 1. The two MoLAS studies are Nos 10 and 11 in their series and demonstrate the confidence derived from their editorial and production experience. Integration of the different contributions has been well thought through, and systematically presented, graphics and layout are well designed, to a format familiar to their readership.

Swift's account of excavations at 201 Bishopsgate, and Taylor-Wilson's of work at Guy's Hospital, both cover urban fringe sites, providing an arbitrary slice through Roman, medieval, and post-medieval archaeology. They are very different, in that the first lay just outside the Roman and medieval walls, with Roman burials beside Ermine Street, and medieval tenements in the purlieus of St Mary Spital; the second in marshes on the fringe of the Southwark islands, at the head of the Guy's Channel, subject to the fluctuations of the Thames. Heard and Goodburn's report has a more focused theme of the evolution of a riverbank wharfage in Rotherhithe Street, from *c.*1650 to the present.

Production of such reports demands consideration of what is worth publishing, taking into account the findings of the CBA's user needs survey *From the Ground Up* (2003). Although all three reports cite the circumstances of the fieldwork, none allude to those of post-excavation assessment, which leads to the selection of data for publication. Only Taylor-Wilson sets out the research objectives, five in all, for his project, and shows that these influenced the choice of results for publication. Questions that could have been asked of 201 Bishopsgate might be inferred from Swift's introduction to each period description. Heard and Goodburn set out a straightforward account of what was found.

At Bishopsgate a substantial 1st-century ditch, redug many times, ran north–south through the site, and would appear to have served Ermine Street, no trace of which was found. Two roadside funerary structures were identified, and four inhumation burials beside them. Two further burials were made after the structures had been demolished, when the area was used for refuse disposal. From *c.*1050 to 1197 the area seems to have gradually developed with extramural occupation, backyards utilised for rubbish disposal and cesspits. Three phases of land use are identified 1197–*c.*1400, and, associated with the founding of St Mary Spital, the masonry priory drain *c.*1280–1300 which subdivided the site. Various tenement structures, owned by the hospital, and related wells, cesspits *etc* are traced through to the Dissolution. The post-Dissolution evidence continued through to the 20th century, again largely in the form of wells, cesspits, and rubbish pits, and the refuse in their fills.

The descriptions of the Roman burials are compatible with those used in other MoLAS cemetery publications, allowing inter-site comparisons. Pottery is described in the text using the MoL fabric codes, and ceramics, as the main dating evidence, are usefully set out in tables for each period by feature, fabric, and associated date range. Other dateable material, such as glass, is simply described in the text. Specialist appendices include plant remains analysis tabulated by periods, and a more simple tabulation of animal bones by period.

The appropriate extent to which excavated evidence can be usefully discussed is a hard judgement. Thus the presence of cucurbit fragments, and glassware, in the 16th–17th centuries is taken as a sign of status, a lack of glass finds thereafter of declining status. Only map evidence is used in this discussion, which would have benefited from documentary research into the households, their relative wealth, and how this changed over time.

At Hunt's House the sequence begins in prehistory, with ardmarks indicating early cultivation. Roman management of this marginal land was in response to the changing Thames. It began in the early 2nd century with the construction of a post-and-plank revetment along the Guy's Channel, and a jetty, abandoned *c.*AD 170 due to severe flooding. Rare donkey bones were found with horse skeletons in the fill. As river levels fell, the channel silted up over the next two hundred years, the land beside it being drained, possibly for livestock. An amphorae tank was constructed in the later 3rd century. A rise in water levels in the later 4th century may have made the channel navigable again, and the ground level was raised by dumping. Ditched fields may have continued into the 5th century, after which the site was submerged until *c.*1300. The land was reclaimed for housing in the 18th century.

Ceramic and some other specialist information is integrated with the text, although the MoL fabric codes are not used, nor is the dating evidence quantified for each phase. Specialist reports summaries are given at the end, some containing detailed descriptions of specific artefacts. Roman animal bones are tabulated

and quantified by period, but plant remains are simply discussed.

The site sequence, divided between three main trenches and the channel, is helpfully summarised in a 'Land-use diagram', to illustrate the conclusions. The research design did not cover the post-Roman periods, nor was this remedied at post-excavation assessment stage; they are thus summarily dealt with, but the opportunity is taken to describe artefact groups from a small number of 18th-century fills to wells and pits. Their relationship to Rocque's map of 1745 is shown but no documentary evidence discussed.

In contrast Heard and Goodburn lead each of their period descriptions with the documentary and cartographic evidence for the site at that time. We learn of the fortunes of the site's owners, who mostly lived there, and how they managed their property. The archaeological description is largely of structures, with only some ceramic finds evidence to interpolate with the text for dating evidence. Their story commences in the 17th century, when the construction of a timber river wall enabled use of marginal land as a wharf, probably for timber. This was extended in subsequent centuries, and a wet dock constructed in the 18th century for shipbuilding. The site was used in the 19th century for ship-breaking — most famously that of the *Temeraire* — and for wharfage and warehousing from the 1870s until recently.

Such a close association with the timber trades has left a fascinating legacy of evidence for timber construction methods either in the primary construction of the riverfront structures or the reused elements, particularly from ships. These are ably described by Goodburn, who draws attention to a building trestle foundation of reused ship's timbers; the two parts of ship's pumps, one 17th-, the other 19th-century in date, are unusual. Crane bases were also identified, one incorporating parts of a naval anchor.

The two MoLAS reports benefit from being printed on good quality shiny paper, which enhances reproduction of photographs and line drawings. Reproduction in the PCA monograph is somewhat dull by comparison; the awkward length of their trench plans has caused the loss of the caption to fig 8(b), and the end of that to fig 26(b).

Overall these three volumes largely succeed in presenting succinct, integrated reports, which are readable, yet deliver a useful level of detail. Some standardisation for tabulation of specialist contributions, notably animal bone and plant remains, would facilitate inter-site comparisons; and thought should be given to a consistent approach to delivering ceramics evidence. The Pacific Wharf report demonstrates the value of documentary research to adequately set post-medieval archaeology in its context, for description and interpretation.

Rob Whytehead

St Paul's: the Cathedral Church of London 604–2004. Edited by Derek Keene, Arthur Burns and Andrew Saint. Yale University Press, 2004. Pp. xiv + 538, 389 figs, 7 tables. ISBN 0 300 09276 9. Price: £65.00 hb.

Mention of St Paul's Cathedral invariably includes a superlative or two and this mighty publication (weighing in at 2.5kg) provides us with ample information and insights to justify the cathedral's fame. There are 42 chapters by 43 contributors, arranged in three parts, the third and largest dealing with the present cathedral building, its contents, use, and context. The earlier history, particularly in Pamela Taylor's account of the Foundation and Endowment, is given full attention — Kerry Downes' account of Wren and the New Cathedral does not come until ch 19. These and other authors have summarised and brought up to date their previous work and having the summation of current thinking together in one volume is, of course, the great merit of such a book.

This is the latest and, as befits its subject, the grandest, of a recent line of collaborative volumes devoted to a particular cathedral. The last *History of St Paul's* in 1957, with six contributions edited by the then Dean W R Matthews and Canon Librarian W M Atkins, has some claim to be the first of them. However, the 1977 volume on York Minster was the first to commemorate the founding or rebuilding of the existing cathedral after the Norman Conquest. It set the formula for each chapter being written by a specialist, which can result in an uneven coverage if the available contributors do not match the needs of such a volume.

This is certainly not a criticism one can level at this book though. It includes chapters beyond the obvious subjects (architecture, liturgy, music, furnishings, and monuments), on the role of

the cathedral in national history (including the book trade) and the City of London, on its conservation and its reputation. The last (by Andrew Saint) tries to address the intangible qualities that the building expresses, thankfully without using the word 'iconic', but finally concluding somewhat laconically, 'in short, it is admirable, because it is *there*'.

Anybody who works closely with a big cathedral is bound to absorb its magnitude and quickly come to accept its great status as a matter of course. This must be even more the case for those associated with St Paul's, because, alongside the sheer scale of the building and the supporting institution that is required to service it, there are further expectations raised by its widely accepted role in national history. In his preface, Derek Keene explains how, despite not being at the top of the ecclesiastical hierarchy, an inevitable consequence of being in the capital city is that St Paul's has 'attained a unique position among English cathedrals'. Nevertheless, he goes too far in maintaining in ch 1 that it dominates its city 'in a manner unmatched by any other English cathedral'. Most of the ancient cathedrals physically dominate, and influence the planning of, their immediate surrounding cities. Some, like Durham or Lincoln, continue to command more distant views, especially now that so many high rise buildings surround St Paul's. This topic is itself covered by Simon Bradley in a chapter that unveils a depressing story of City concern for the setting of the cathedral overcome by shorter term priorities. He ends with justified hope that the latest rebuilding north and south of the cathedral will finally succeed in giving the cathedral a setting it deserves.

Before it was burnt off in 1561, the medieval lead-covered spire must indeed have been 'unmatched', and not just in England. Carol Davidson Cragoe describes it in comparison with the tower beneath as 'a plain affair, which gloried in its height, not its decoration'. However, it was almost certainly covered in lead laid in herringbone fashion (as some illustrations show) and topped by a golden ball and cross. Even if it only attained about the same 404ft height as Salisbury's stone spire that Gordon Higgott deduces (and not the 520ft Stow estimated), this was by far and away the tallest timber structure in England, if not Europe. It must be queried whether both tower and spire were really completed in 1221, as the spire looks to be a development from, rather than the precursor of, the early to mid-13th-century stone spires of Lincolnshire and Oxfordshire. Lincoln Cathedral's great central timber spire — the nearest rival to St Paul's in England — was about contemporary with Salisbury; even if of an early 14th-century date, St Paul's spire was still a wonder of its age.

In fact, only one chapter is given over to the fabric, tombs, and precinct of the medieval cathedral, perhaps because much of what can be said has been set out already, most recently in the 1990 British Archaeological Association's Conference Transactions. On the other hand, there are five short studies of practical aspects of the medieval cathedral, including an entertaining insight into the household and daily life of a 15th-century dean. It is not easy to interpret the Hollar engravings and Carol Davidson Cragoe gives an efficient summary of recent thinking. However, the semi-circular Romanesque nave arcades were surely not stilted — they were no more that shape than the ill-fitting arcs that Hollar gives the Gothic choir arches in his attempt to draw in perspective. John Schofield holds out hope for more information becoming available from the islands of archaeological strata he believes are still available. Recent perforation of the Wren crypt walls, made up from the debris of the old cathedral, has yielded much of interest to Gordon Higgott in verifying just what Inigo Jones and others did to the medieval cathedral, which, according to Carol Davidson Cragoe, was 'quietly mouldering away' by the mid-16th century.

The extraordinary two-storey cloister surrounding the chapter house (itself important to the development of the Perpendicular Gothic style) was one of three enclosures within the precincts around the cathedral that witnessed national, as well as City, events, from early in the Middle Ages. The more recent role of the cathedral itself as the nation's place of worship is fully explained in two chapters; John Wolfe gives us much more than a list of events in his chapter on national occasions since 1800, but Arthur Burns' chapter 'From 1830 to the Present' is even more revealing, especially of the clergy that have served it. In many respects, conduct at St Paul's has reflected national sentiments; its Chapter were not the only clergy to feel uneasy in having a Christmas crib and tree inside their church. The 'gloomy Dean', W R Inge (1911–34), is probably not the first priest to have taken a book to read during services — or the first to find that

the choir singing disturbed his concentration (despite being tone deaf!).

Cathedrals have undergone a major revival in the last thirty years or so, not just in attracting tourists or academic interest, but also in their primary purpose, worship and mission. Since they lost their shrines, the role of a cathedral beyond the commemorative has long been dependent on the strength of individual members of the Chapter and St Paul's like all others has suffered from a lack of talented men. Providing the right facilities to satisfy the demands of today's visitors, and balancing the needs of those who come to gawp with those who come to pray, is a real challenge. Charging for entry has caused less consternation here, perhaps, than elsewhere, partly because the balance between worshippers and tourists is so uneven. Unlike many other cathedrals, St Paul's has very little ancillary accommodation, except beneath (in the crypt) and above (in its capacious galleries, that include the library and fabric archives), and both have limited access.

The Surveyor to the Fabric, Martin Stancliffe, tells us of recent physical changes and it is a great pity that the rewarding first results of the huge cleaning works now being undertaken were too late to be illustrated in this book. Donald Gray, a cleric from the other place, Westminster Abbey, writes of liturgy up to 2004, but otherwise there is no input from the present Dean and Chapter (though their initiative and support for the publication is fully acknowledged). The Bishop of London, the only one of today's diocesan bishops to be elected to the Antiquaries, writes a stirring foreword — though surely there is much in this volume alone that contradicts his view that history has no 'directly applicable lessons to teach'. In view of the current high level of activity and innovation at the cathedral, a contribution from the cathedral clergy on their vision of the role of St Paul's in the early 21st century would have completed the picture for me.

Other things I missed were complete lists of Deans and Surveyors and a large scale plan of the present and pre-Fire cathedrals in an easily accessible place, all of which would have made many chapters easier to follow. An overview of the diocese — not least, its contraction over the last two hundred years — would have also rounded out the broader context of the cathedral, between City and nation. There are a very few inexplicable typos — prince Charles? — but overall, this is a magnificently produced and lavishly illustrated book, bringing together many images that have not been published together before (and not only in Ralph Hyde's fascinating 'Images of St Paul's' chapter). For anyone with an interest in learning about the broad development of the principal aspects of English cathedrals (with the exception of medieval architecture), this is a very good primer, especially with its extensive bibliography. At this price, length, and weight, this book is for the serious student of St Paul's, but it is excellent value for money and will surely remain unsurpassed for many years. Indeed, I somehow doubt that we will see the like of it again.

Richard Halsey

London in the Later Middle Ages: Government and People 1200–1500. By Caroline M. Barron. Oxford University Press, 2004. Pp. xvi + 472, 12 figs, 2 tables, 1 map. ISBN 0 19 92577 9. Price: £55.00 hb.

Caroline Barron has been a dominant and creative presence in the field of medieval London studies. The influence of her wide-ranging interests and her generous encouragement of other researchers in the field have caused her presence to be felt already in an impressive catalogue of doctoral theses, articles, and books concerned with the late medieval capital. The appearance of her own gathered thoughts in book form is a major event.

At the heart of Professor Barron's engagement with London's past lies her unique knowledge of the City's administration. As a former pupil of May McKisack, she researched in the late 1960s a doctoral dissertation on the government of London in the 15th century (much consulted ever since), which provides an intellectual link back to the earlier, foundational studies of English medieval urban history, focused as many of these were on constitutional questions, by James Tait and his pupils. The subsequent decades have seen the emergence of new and diverse approaches to London history, of which arguably the most revelatory have been based upon topographical and archaeological research, but which include additionally a range of social and cultural studies. In all of these, Caroline Barron herself has participated, and her new book reflects these interactions (although, with regard to topography, it is a pity

that the map provided is neither easy to read in this format nor much drawn upon in the text). Yet it remains a distinguishing and exemplary strength of her work that she understands, as does no other scholar in the field, both the structure and the spirit of London's government in the later medieval centuries.

In her writing about what might appear to be the unpromising subject of urban bureaucracy, present and future researchers will appreciate and learn from Caroline Barron's sensitivity to the ways in which administrative and constitutional changes helped to construct new traditions, collective memories, and, in short, civic identity. Her analysis of the procession at the instauration of the mayor, of the Midsummer watches which were traditionally held for the defence of the City, and of the magnificent structure of the Guildhall (on which she has published a separate monograph), are integral to Barron's persuasive account of how urban government operated not through bureaucratic process alone, but also through the elaborate construction of its own image. This was a continuous process; but in this study one period stands out as uniquely rich in evidence of that kind. The late 14th century was marked simultaneously by the greatest social tensions recorded within the period treated in this book, and by a distinct elaboration of City government: the latter appears to have been a direct, and in Barron's view largely effective, response to the former development.

The tone of the book is marked throughout by its author's fundamental optimism. A characteristic summary of civic measures to deal with the catastrophic effects of plague in London concludes: '... So, by the combined efforts of individual Londoners, churchmen, and the mayor and aldermen, the surviving Londoners were able to bury their dead, find clerks to pray for them, and secure food and services at reasonable prices' (241). In broad terms this positive report seems justified. Even if her picture of the Revolt of 1381 underestimates, as is possible, the extent of Londoners' active participation in the challenge to authority, one must acknowledge that the late medieval capital was largely peaceful — more so than many an Italian or Flemish city of the period. Yet one is left wondering how far the centripetal force of civic self-promotion succeeded in drawing in the large number of Londoners outside the core of privileged citizens. Freemen comprised about a third of all adult men in late medieval London. The others could not hold office, so the question of their participation in the public life of the City focuses on the wards, parishes, and guilds to which all but the truly poor might belong. On each of these, Barron has new and interesting things to say. The life of the two dozen wards of the City she describes as 'grassroots democracy', and indeed it is tempting to envisage these as the context for the enrolment of artisans and shopkeepers in the political culture of London. It is unfortunate that relatively little is known of the internal life of the wards. Barron notes that their respective aldermen may not have been required to summon a meeting of the ward council more than once a year; but one may surmise that this was not always the case, and it would be worthwhile to explore the comparison with the contemporary Florentine *gonfaloni*, whose fragmentary surviving records tell of a lively, if largely parochial, political activity which more or less effectively connected the various neighbourhoods of the city with the centre and with the image of the urban community as a whole.

Parallel to this positive record of London politics is Caroline Barron's upbeat assessment of the economy of the late medieval capital. To the extent that the economy remained buoyant in the context of endemic plague, she convincingly argues that this was sustained by the demand of a substantial market of consumers, about whom one would only wish to add that they were not confined to the 'largely wealthy' spenders who are the chief focus of discussion here, but must have included a significant proportion of the middling group of society, whose shopping needs and desires — of clothing, kitchen utensils, and basic furniture — will have been less rarefied than those of the urban and rural aristocracy, but more stimulating to local industrial production.

Not all the contemporary opinions of London cited by Caroline Barron are equally enthusiastic. As late as the 16th century, Italian visitors fastidiously complained about the muddy streets of the City. This was a classical *topos* for civic achievement: in the late 14th century Petrarch, drawing similarly on Antique models, had recommended to the Marquis of Ferrara that he should clean up the streets of his city. This book implies that late medieval Londoners built up their own city in broad ignorance of classical example — and it would be hard, if tempting, to argue with that position. As Caroline Barron describes them, the Londoners who took on the

burdens of office as mayor, or as muck-raker, or as one of a long hierarchy of public responsibilities in between, were characterised by a very English sort of empiricism and practicality. Her account is almost entirely convincing; and every student of London will want to read it.

Gervase Rosser

The History of the Merchant Taylors' Company. By Matthew Davies and Ann Saunders. Maney, 2004. Pp. xiii + 316, 122 figs. ISBN 1 902653 99 8. Price: £49.50 hb.

We are all familiar with the phrase to be 'at sixes and sevens', and yet few probably know that it derives from the judgement of Lord Mayor Robert Billesden in 1484, when he was required to settle a 'variaunce and controversie' between the Tailors and the Skinners, as to which craft should have precedence in civic processions. With the judgement of Solomon, Billesden decreed that each company should take precedence over the other in alternate years, so when, in 1515, the order of precedence for all of the 'Great Twelve' Livery Companies had been fixed, the Tailors and Skinners occupied sixth and seventh positions in alternate years: a diplomatic solution which continues to this day.

The Livery Companies of the City of London have a long and distinguished pedigree, but over the last few years their role and ethos has undergone something of a renaissance. Much has been made of the companies' contribution to the fabric of London as 'the guardians of our great history and the trustees of our City', but also to the central part they play in modern society through their work to support charities and as a social and community force. This renewed sense of vigour and purpose is increasingly expressed in the form of collective 'Profile Reviews' and a spate of new company histories, many written by those who have a keen interest in the political and social significance of these remarkable institutions which, not withstanding the vicissitudes of centuries, continue to thrive and prosper. The publication of *The History of the Merchant Taylors' Company*, written by two eminent London historians, is therefore a timely and fitting tribute to the 700-year history of the guild of Merchant Taylors' and the 500th anniversary of the granting of their charter from Henry VII.

The book is divided into three parts, each covering a broad chronological sweep: 'The Medieval Company'; 'Reformation to Restoration'; and finally 'The Company in the Modern World'. The first section explores the development of the Company from its early origins in the 13th century as a religious and social fraternity and an assembly of tailors and linen-armourers, with chapters on the structural organisation of the Company and its craft, and the relationship of the Company to the City and Crown. The second part examines the threats posed by the Reformation; the Company's role in establishing educational provision in the 16th century; the social context of daily life in Elizabethan London; the relationship of the clothworking trades with each other, the City, and the Crown; the Company during the Civil Wars; the impact of the Great Fire and subsequent rebuilding; and finally the troubled years of the late 17th century when the 'seam between the Company and its craft' started to unravel. The third part is divided into three chapters, covering the period from 1700 to the 1960s. Key events in the Company during the last fifty years are considered in an epilogue, and there are appendices listing the Masters and Clerks from the 14th century onwards, together with a useful index showing the 'value of money' from 1300 to 2002.

Sometimes books written by two or more contributors are connected only by the covers that bind them, but in this case the styles of both authors are complementary and they have each taken responsibility for chronological periods as befits their particular area of expertise. Of the two, Davies has the more analytical approach, and his contributions are particularly interesting because he has tackled a range of knotty questions, such as the impact of religious change and the relationship of the Livery Companies to the government and politics of the City. Saunders has had to grapple with an almost overwhelming quantity of archival material and yet has managed to distil this into a coherent and very readable synthesis. Both authors have included fascinating biographies of distinguished members of the Company, such as Sir Thomas White (founder of St John's College, Oxford), the protestant martyr Richard Hunne, and the celebrated London chronicler John Stow; the book is worth reading for these alone.

Although the book is fully illustrated, I have a slight quibble with the choice of image and the layout on the page: it seems a pity that in the

chapter on 'Daily Life in Elizabethan London', figs 45 and 46 show documents dating to 1615. But these are minor concerns. The authors have accomplished an astonishingly difficult task with great skill, and are to be commended for producing one of the very best Company histories in recent years. *The History of the Merchant Taylors' Company* is no mere chronicle of events and has a relevance and value to anyone interested in the history of London.

Hazel Forsyth

The Small House in Eighteenth-century London. By Peter Guillery. Yale University Press and English Heritage, 2004. Pp. vii + 351, 278 figs. ISBN 0 300 10238 0. Price: £40.00 hb.

The Royal Commission on Historical Monuments (RCHM) used to carry out county-wide surveys of archaeological sites and historic buildings. These were replaced in the 1990s by thematic surveys of particular categories of buildings. Those who would bemoan the passing of the county surveys have nevertheless to recognise the worth of the latter approach. Both types of volume have always been produced to a very high standard, and have always proved enormously valuable to those working in the heritage sector, as well as to those with a less specialised interest in their historic environment. With the absorption of the RCHM into English Heritage in 1999, it has been reassuring that their publications, of which this is the latest example, have continued to appear. It is to be hoped that the Royal Commission tradition of research and publication will survive the continuing restructuring at English Heritage and the culture of change imposed by modern management regimes.

The strength of this book lies in its illustrations, the very large number of 19th- and 20th-century drawings and photographs of a London which has now disappeared and which make it a delight to handle. To someone more used to the architecture of the counties adjacent to the metropolis, the profusion of weatherboarding and gambrel roofs with pantiles is a revelation. The problem, however, is that most of the buildings have been demolished. The subject of Guillery's investigation no longer exists. The evidence, such as it is, is also confined largely to London suburbs, principally Spitalfields, Bethnal Green, Southwark, Bermondsey, and Deptford. The text thus consists of rambles round these areas with discussions of illustrated houses. The result is a social history, as the development of London's periphery is chronicled and explained and the houses put into context: 'this is a book about London, not one about a class of houses *per se*.' It is not so much about buildings as the meaning of buildings as cultural entities. The houses are mainly described in terms of plan form, and the series of house plans is very valuable and informative. But the houses themselves are submerged in an excessively discursive and prolix prose style and do not really come to life. For that, Dan Cruickshank and Neil Burton's *Life in the Georgian City*, or the work of Sir John Summerson, succeed rather better, though of course they were dealing with less modest houses. What does emerge better here is a picture of the people who lived in them. Guillery can, for example, illustrate the house in Whitby that Captain Cook lived in as an apprentice, the one he occupied in the Mile End Road as a young man, and the one in Clapham where his widow spent the end of her life.

In terms of vernacular architecture, London is a great unknown, a place presumably where styles and traditions merged and new fashions developed. Seen from the perspective of the surrounding counties, it ought to have been hugely influential and significant, but the dearth of surviving evidence makes it difficult, if not impossible, to assess. This is true of the late medieval and early modern periods, and also to a large degree of the 18th century, as Guillery effectively shows. But it does seem certain that restricted urban space had transformed the ground plans of houses such that by the end of the 15th century the predictable hall house formula was no longer recognisable and had been replaced by a variety of layouts. This variety continued to prevail into the 18th century, though the factors influencing it, the interplay of tradition, emulation, and pattern of occupancy, prove difficult to untangle, leaving 'a great muddle of smaller eighteenth-century houses'. This situation was probably in part the result of what was mainly piecemeal development by small artisans, predominantly carpenters. The simplest plan type identified, comprising houses one-room deep over two or more storeys, is to be found already at the end of the 16th century in Cloth Fair, Smithfield, and in the Treswell surveys of 1607–12. Guillery argues that such houses with stairs at the front were designed for

multiple occupancy and effectively functioned as tenements. This simple plan form, often in timber, was remarkably persistent until quite late in the century. Of plan forms two-rooms deep, older examples with central stacks and stairs resemble lobby-entry houses turned on their sides with their narrow ends to the frontage. This looks like a rural house in an urban context, but whether influences have moved from the country to the town, or vice versa, is unclear. Central stacks remained common well into the 18th century, especially south of the river. By the end of the century, plan forms had become more uniform, with stacks attached to party walls and stairs at the rear of the house. The Building Acts, initially limited in their effect, increased the degree of standardisation in the last quarter of the 18th century. So too did the growing role of architects and surveyors and a change from artisan to large scale developers. Such factors completed the transition from houses which preserved elements of a remoter vernacular tradition to a new urban vernacular — brick-fronted with parapets, sash windows, with a relatively standard plan and more or less influenced by a degree of classical taste.

No one who has read this book will be able to walk past frontages of older houses in London's suburbs without giving them a second glance and puzzling over their development. Post-medieval vernacular architecture, unlike late medieval and early modern, has not yet been the object of detailed study and survey. This book contributes to putting it firmly on the agenda. If we are to achieve a fuller appreciation of such buildings, then a corpus of thoroughly analysed and phased examples is required, advantage being taken in particular of major repair work and restoration. The surviving London evidence may be limited, but Guillery has indicated the links between the metropolis and provincial towns, and it may be there that more progress can be made.

David Andrews

A History of Pinner. By Patricia A Clarke. Phillimore, 2004. Pp. 224, 104 figs. ISBN 1 86077 287 0. Price: £16.99 pb.

Here is a comprehensive history of Pinner, written by a well-known local historian, Patricia A Clarke, a former chairman of the Pinner Local History Society as well as the London and Middlesex Archaeological Society, who has previously published numerous papers on Pinner's history and a book, *Pinner, a Pictorial History*. She has lived in the area for more than forty years and has done an enormous amount of research using every type of source from medieval court rolls and ministers' accounts to 20th-century developers' brochures and oral history. Many of her secondary sources, publications of the Pinner Local History Society, are based upon her own research and interpretation of documentary material. It is therefore a cause for regret, to the author as well as the reviewer, that the publisher deemed the sources too numerous for full footnotes or even a comprehensive list to be printed in this relatively short book.

Pinner was a hamlet in the manor of Harrow, whose lord was the Archbishop of Canterbury from late Saxon times until 1546. Three large demesne estates, Woodhall, Pinner Park, and Headstone Manor, cut a swathe across Pinner from north-west to south-east and affected the layout of the settlements, but the ecclesiastical owners' main concerns lay in other parts of the country and they rarely visited them.

After a short chapter describing Harrow's prehistory, archaeology, and the implications of Saxon charters, the book devotes a roughly equal amount of space to the medieval period, the 16th and 17th century, 1700–1850, and the last 150 years. Within this framework, the author tells the story of Pinner, bringing to life, with a wealth of fascinating and often entertaining detail, the people of each period and their concerns, which varied with new landowners, and changing social customs and economic conditions. John Swetman married his daughter off without the lord's licence in 1337. Richard Peryman of Hatch End had a dog 'which bites everyone' in 1427. Both were fined.

As in the neighbouring north-west Middlesex parishes woodland covered the northern uplands of Pinner and there were commonfields to the south. The main settlement, Pinner Street (now High Street) with the church of St John at the top, and eight smaller groups of houses, lay between. The history of individual houses is traced from the 14th century in several cases and the author's keen interest in and study of old buildings is apparent.

A layman, Edward, Lord North, Chancellor of the Court of Augmentations, purchased Harrow in 1547, but, like his predecessors, his major interests lay elsewhere. He had a survey

made, which has been used effectively by the author to reconstitute property boundaries. Later sales of the demesne brought in lawyers and citizens of London who purchased property in Pinner as an investment, gradually displacing the former yeomen families. Fashionable houses for Londoners continued to be built in the 18th century and many families are examined in detail. Road communications improved and carriers and coaches provided regular services to London. A movement started to enclose the old-fashioned commonfields throughout the manor of Harrow. Poor Relief was also modernised as a workhouse was built in 1785.

Despite these trends Pinner remained undisturbed until opened up by the coming of the railways, first the London and Birmingham Railway at Hatch End in 1842 and then the much more intrusive Metropolitan Line in 1885. The story of the developments that followed, particularly in the 1930s, and the newcomers who mainly travelled daily to work in London completes this fascinating book.

The well-chosen photographs of places and named people enhance the text. The book is aimed at the general reader and tells the story of Pinner well, but those who require more detail about estates *etc* and references need to look at the author's earlier articles in Pinner Local History Society publications and LAMAS *Transactions*.

Eileen Bowlt

Flood! The Brentford Flood of 1841. By Valerie Bott. Brentford and Chiswick Local History Society, 2002. Pp. 54, 10 figs. ISBN 0 9508025 0 6. Price: £7.99 pb.

The Cresswells of Winchmore Hill. By Peter Hodge. Southgate District Civic Trust, 1999. Pp. 271, 60 figs. ISBN 0 905494 07 5. Price not given, pb.

Victorian Seven Dials. By David Hayes. Camden History Society, 2001. Pp. 52, 18 figs. ISBN 0 904491 50 1. Price: £5.95 pb.

When the Bombs Fell. By Paul Barnfield. Borough of Twickenham Local History Society, 2001. Pp. 36, 10 figs. ISBN 0 903341 73 5. Price: £4.50 pb.

These four books from local history societies in the Greater London area are specimens of the numerous publications produced by such groups. Valerie Bott's book won the LAMAS Local History Award 2004 and the others were joint runners up. Unlike the Pinner book, which tells the general history of a parish, all focus upon a single event, a particular family, or a specific time.

Flood! The Brentford Flood of 1841 is exceptionally well presented, with a dramatic cover and clear print and format. Newspaper accounts and street directories, plans and engravings are reproduced and discussed, but there is very little in the way of references or bibliography. The story has not been told before, possibly because there was little loss of life, owing perhaps to the swift warnings issued by one gallant policeman when he saw the waters rising, although there was much damage to property and businesses. A child was snatched to safety from a boat that was about to be smashed and the Duke of Northumberland got his name into the papers through the actions of his gardener, who gave succour to boat families who climbed over the wall at Syon. The author considers the effects upon the local economy, and shows that the cause of the flood was the incompetence of Grand Junction Canal Company officials at its Brent Reservoir. Other local historians might be inspired to assess the effect of sudden disasters upon their own areas of study.

Henrietta Cresswell (1855–1931) like many Victorian young ladies drew the scenery around her and took an interest in botany. The book she published in 1912, *Winchmore Hill: Memories of a Lost Village*, inspired Peter Hodge to find out more about what turned out to be a generally talented family whose world was the church, law, and medicine. In *The Cresswells of Winchmore Hill*, he traces five generations from the mid-18th to the early 20th century and sets those who lived in Winchmore Hill in the context of the wider family in Kent, Devon, and London. It would have been helpful if the pedigree showed places of residence. The book is illustrated by paintings and drawings executed by Henrietta's father, a doctor, as well as her own, and a splendid run of family photographs and modern views of the houses where they lived.

In 1865 an anonymous member of the Young Men's Christian Society for the Relief of the Poor in the Neighbourhood of St Giles' gave a talk about his labours in this notorious part of London. His script, in which he describes the area and some of the inhabitants in detail, has survived. David Hayes, in *Victorian Seven*

Dials, by reference to census returns and other contemporary sources has, in a series of long footnotes, given the historical background of buildings and topographical features and built a picture of Victorian life in Seven Dials. The document itself, as a record of mid-Victorian Christian endeavour and attitudes, deserved more comment and discussion.

As a tool oral history tends to be under-used by local historians, but some of the most interesting parts of Paul Barnfield's account of the Blitz in Twickenham, *When the Bombs Fell*, come from this source. Other records from newspapers and the PRO are skilfully brought together to complete the story. The result may be a revelation to newcomers to Twickenham and younger inhabitants who may wonder whether later developments have done even more destruction to the appearance of the town than the bombs.

Eileen Bowlt

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L F Pitts

Page numbers in italic denote illustrations

NOTES FOR CONTRIBUTORS

1. Contributions should be sent to the Archaeology/Local History Editors (see inside front cover).
2. Submission of articles on computer disk is usual. A clean print-out should also be supplied for editorial use; this should be on A4 paper, printed on one side only, in double spacing throughout, with generous margins all round. The disk and hard copy should be identical.
3. Editing is done using Word. Disks using other standard systems may be submitted, but to avoid loss of formatting it is recommended that whenever possible authors output onto the disk in Word.
4. *Transactions* style should be followed, but complex layout should not be attempted. For style refer to previous copies of *Transactions* (contact Production Editor for detailed style sheet). All papers should start with a summary of their aims, main points and conclusions. Tables usually need rekeying; they should be supplied in a separate file and a clear print-out on separate sheets provided. Figure and table positions should be noted in the margin of the print-out.
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6. On submission papers should be complete in every particular. Every alteration made by an author in proof means higher production costs. Unless there are exceptional circumstances first proofs only will be submitted to contributors.
7. Contributors will receive 6 offprints of articles gratis. Additional copies may be ordered at cost price.

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