

**Transactions**  
**Volume 39 1988**



---

**London & Middlesex Archaeological Society**



W. P. H. H. H. H. H.  
Y. H. H. H. H. H. H. H.

*Hon. Editor:*  
J. P. F. Mills

**Editor's Notes:**

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

Front cover: A Roman seal-box lid showing the bound Cupid before his mother Venus

LAMAS LIBRARY  
REFERENCE ONLY



*Transactions of the*  
*London & Middlesex*  
*Archaeological Society*  
*incorporating the*  
*Middlesex Local History Council*

*Volume 39*

*1988*

*Museum of London, London Wall, London EC2Y 5HN*

ISBN 0 903290 38 3

PAGE BROS

Printed in Great Britain by  
Page Bros, Norwich

# CONTENTS

Officers .....	iv
132nd Annual Report of Council and Accounts, 1986–87 .....	vi
Rules of the Society .....	xi
W. F. Grimes (1905–1988). <i>Jenny Hall and Jean Macdonald</i> .....	xvii
The Roman Occupation in the Area of Paternoster Square, City of London. <i>John D. Shepherd</i> .....	1
A Roman Seal-box Lid. <i>Martin Henig and Christine Jones</i> .....	31
A Roman Pipe from London. <i>Graeme Lawson and Angela Wardle</i> .....	35
A Gazetteer of Middle Saxon Sites and Finds in the Strand/Westminster Area. <i>Robert Cowie</i> .....	37
Two Middle Saxon Occupation Sites: Excavations at Jubilee Hall and 21–22 Maiden Lane. <i>Robert Cowie and Robert Layard Whytehead with Lyn Blackmore</i> .....	47
The Hidation of Middlesex. <i>Keith A. Bailey</i> .....	165
North-west London Families at the Royal Mint. <i>K. J. Valentine</i> .....	187
East Ham: Problems of Local Government and Relations with the Local Government Board. <i>S. C. W. Mason</i> .....	191
REVIEWS	
<i>Hugh Alley's Caveat: The Markets of London in 1598</i> by I. Archer, C. Barron and V. Harding (Eds) (Tony Dyson) .....	207
<i>Good and Proper Materials: the Fabric of London since the Great Fire</i> by RCHME and London Topographical Society (Averil Harper Smith) .....	208
<i>The Victoria County History of the County of Middlesex Vol. IX</i> by T. F. T. Baker (Ed.) (Derek Renn) ...	209

# London & Middlesex Archaeological Society

*incorporating Middlesex Local History Council*

ESTABLISHED IN 1855

## **Patrons:**

The Most Rev. The ARCHBISHOP OF CANTERBURY  
The Right Rev. The BISHOP OF LONDON  
The Right Hon. The LORD MAYOR OF LONDON  
H.M. LIEUTENANT FOR GREATER LONDON AND CUSTOS  
ROTULORUM  
H.M. ASSISTANT LIEUTENANT for the MIDDLESEX AREA of GREATER  
LONDON  
The Very Rev. The DEAN OF ST. PAUL'S  
*COUNCIL AS AT 14th MARCH, 1988*

## **President:**

DEREK RENN, Ph.D., F.I.A., F.S.A., F.S.S.

## **Past Presidents:**

Professor W. F. GRIMES, C.B.E., D.Litt., M.A., F.S.A., F.M.A. (1950–1958)  
D. B. HARDEN, C.B.E., M.A., Ph.D., F.S.A., Hon. F.B.A., F.M.A. (1959–1964)  
R. MICHAEL ROBBINS, C.B.E., M.A., P.S.A. (1965–1970)  
ARNOLD J. TAYLOR, C.B.E., M.A., D.Litt., F.B.A., Hon. V.P.S.A., F.R.Hist.S.  
(1971–1973)  
RALPH MERRIFIELD, B.A., F.S.A., F.M.A. (1974–1976)  
M. G. HEBDITCH, M.A., F.S.A., F.M.A. (1977–1979)  
Dr VALERIE PEARL, M.A., D.Phil., F.S.A., F.R.Hist.S. (1980–1981)  
Professor JOHN WILKES, B.A., Ph.D., F.B.A., F.S.A. (1982–1984)  
JOHN KENT, B.A., Ph.D., F.B.A., F.S.A. (1985–1987)

## **Vice-Presidents:**

ARTHUR H. HALL, F.S.A., F.L.A. Miss E. D. MERCER, B.A., F.S.A.  
W. J. SMITH, M.A., F.R.Hist.S.  
E. E. F. SMITH, F.S.A. N. M. D. FUENTES  
L. S. SNELL, M.A., F.S.A., F.R.Hist.S., F.R.S.A.  
C. H. J. FARTHING, O.B.E., B.A., F.S.A. A. TRIBE, F.C.A., F.S.A., A.T.I.I.  
K. A. BAILEY, M.A., F.R.G.S. D. R. WEBB, B.A., A.L.A.

## **Trustees:**

BARCLAYS NOMINEES (Branches) LTD.

## **Bankers:**

BARCLAYS BANK LTD.  
(Cocks, Biddulph Branch)

## **Council:**

O. H. J. PEARCEY, B.Sc. (Chairman)  
K. A. BAILEY, M.A., F.R.G.S. (Deputy Chairman)

*Ex-Officio:* The Officers mentioned in Rule 9

R. P. MORRIS, B.A. N. M. D. FUENTES  
M. J. STONE, B.A., A.I.F.A. T. HARPER SMITH, Ph.D., M.Th., B.D., A.K.C.  
JOHN A. CLARK, M.A., F.S.A., A.M.A. G. A. THOMPSON, B.A., M.I.F.A.  
ROBIN DENSEM, B.A., M.I.F.A. ALLAN TRIBE, F.C.A., F.S.A., A.T.I.I.  
C. H. J. FARTHING, O.B.E., B.A., F.S.A. MRS. E. M. BOWLT, B.A.

*Co-opted:*

K. A. BAILEY, M.A., F.R.G.S. D. G. CORBLE H. L. SHELDON, B.Sc., F.S.A.

**Editorial Advisory Committee:**

*Ex-Officio:*

DEREK RENN, Ph.D., F.I.A., F.S.A., F.S.S.  
O. H. J. PEARCEY, B.Sc. MISS J. K. MACDONALD, B.A., F.S.A.  
(*Chairman of Council*) (*Hon. Secretary*)  
H. R. CLEAVER, M.A., A.C.A.  
(*Hon. Treasurer*)  
TONY WILMOTT, B.A., M.A., M.I.F.A. (*Hon. Editor (Transactions)*)

**Archaeological Research Committee:**

*Chairman:* H. L. SHELDON, B.Sc., F.S.A.

*Secretary:* J. COTTON, B.A., M.A., Museum of London, London Wall, EC2Y 5HN

**Historic Buildings and Conservation Committee:**

*Chairman:* D. G. CORBLE

*Secretary:* Miss HELEN SMITH, 50 The Riding, Woking, Surrey GU21 5TA.

**London Region Local History Committee:**

*Chairman:* K. A. BAILEY, M.A., F.R.G.S.

*Secretary:* Miss P. A. CHING, 40 Shaef Way, Teddington, TW11 0DQ

**Youth Section:**

*Chairman:* N. M. D. FUENTES

*Secretary:* Miss ELIZABETH BANNAN, Museum of London, London Wall,  
EC2Y 5HN.

**Honorary Editor (Transactions):**

TONY WILMOTT, B.A., M.A., M.I.F.A.

**Honorary Editor (Newsletter):**

ANDREW DOIDGE

**Honorary Librarian:**

Miss JOANNA CLARK, B.A., A.L.A.

**Honorary Archivist:**

R. E. SAMWAYS, B.A.

**Honorary Treasurer:**

H. R. CLEAVER, M.A., A.C.A.

**Honorary Secretary:**

MISS J. K. MACDONALD, B.A., F.S.A.

**Honorary Director of Lecture Meetings:**

MRS. ALISON PARNUM

**Honorary Director of Visits:**

T. W. M. ANDERSON, M.C., T.D., B.A.

**Honorary Auditors:**

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

# London & Middlesex Archaeological Society

*incorporating Middlesex Local History Council*

132nd ANNUAL REPORT OF COUNCIL FOR THE YEAR ENDING  
30 SEPTEMBER 1987

## **Meetings**

The Annual General Meeting, on 25 February 1987, was followed by Dr. John Kent's second Presidential Address, on *Coinage and Currency in the City of London and Middlesex Records, Part II*.

A Special General Meeting called for the same day approved various amendments to the Society's Rules proposed by Council. The changes mainly affect the position of Past Presidents and Vice-Presidents and also redefine the Society's geographical scope following the disappearance of the G.L.C. The revised Rules will be printed in full in a subsequent volume of *Transactions*.

The lecture meetings of 1986–87, all arranged by Alison Parnum, began on 29 October 1986 with a private view of the Museum of London's autumn exhibition *Capital Gains! Archaeology in London 1970–86*, with an introductory talk by Dr. Hugh Chapman. There followed: *The Historic Buildings of Uxbridge*, by John Mills, 26 November; *The Riches of British Archaeology*, by Andrew Selkirk, 17 December; *The Society of Antiquaries of London and its Library*, by John Hopkins (the George Eades Memorial Lecture), 21 January 1987; *Lloyd's Great Room*, by Dr. Priscilla Metcalfe, 25 March; *Recent Buckinghamshire Archaeology*, by Mike Farley, 29 April; *Bone, Antler and Horn in the Medieval Period*, by Arthur MacGregor, 20 May; and *Excavations on the Site of the Royal Mint*, by Peter Mills, 23 September. Peter Mills' lecture began at 6.30 instead of the customary 6.45. This slightly earlier timing will be adopted for the 1987–88 lectures, to see whether members prefer it.

Marsden Anderson organized four visits. Two were in London, the *Guildhall Library* on 4 March and a tour of the *Inns of Court, the Royal Courts of Justice and the Old Bailey* on 15 July. The longer-distance excursions were to *Newstead Abbey and Wollaton Hall, Nottinghamshire*, on 11 April; and *St Mary's Church and Odda's Chapel, Deerhurst, and Tewkesbury Abbey*, on 20 June. A week-end trip to York had to be cancelled as a result of problems in York, and poor bookings forced the cancellation of a visit to Hatfield.

At the Stow Service at St Andrew Undershaft on 29 April, the address, on *Stow, yesterday and today*, was given by a Council member, John Wittich, the Parish Clerk.

## **Publications**

The main publishing event was the production of the lavishly-illustrated Special Paper No. 8 *The Roman Quay at St. Magnus House, London*.

Andrew Doidge produced three issues of the *Newsletter*.

## **Council**

Keith Bailey continued to serve as Chairman of Council and O. H. J. Pearcey took over from Nicholas Fuentes as Deputy Chairman. Council came to realise the Society needed an Hon. Archivist and in March appointed Richard Samways to the post. Most of our old records previously kept at the Museum of London have been moved temporarily to the Greater London Record Office, where Mr. Samways has sorted and boxed the miscellaneous documents. Other appointments made during the year were: Miss Joanna Clark as Hon. Librarian and Miss Elizabeth Bannan as Hon. Secretary, Youth Section, following Mrs. Karen Eyre's resignation from both offices; and Richard Lock as joint Hon. Auditor.

As reported in the *Newsletter*, Council has been reviewing the Society's present and future role, particularly in relation to archaeology and to the membership figures, and it will report to the 1988 Annual General Meeting.

## **Archaeological Research Committee**

The Committee met three times during the year. In addition to receiving regular reports on the work of the Department of Greater London Archaeology, it studied the recording of standing buildings and other

matters. To aid Council's general review (above), it considered the Society's present and potential role in archaeology, and informed Council on the organization of archaeology in London.

The highlight of the Committee's year was the special conference on *The Archaeology of the London Region to AD 1500*, on 25–26 October 1986, timed to coincide with the 10th anniversary of the Society's Special Paper No. 1 *The Archaeology of the London Area*. Thirteen lectures examined many aspects of London's past; they are to be published as a Special Paper in due course.

The Committee also arranged the 24th Annual Conference of London Archaeologists, on 14 March. Following a morning session devoted to recent excavations in and around London, the afternoon theme *Archaeology above ground – recording standing buildings* was addressed by Scott McCracken, Colin Bowlt, Richard Lea and Richard Harris.

### **Historic Buildings and Conservation Committee**

The Committee welcomed a new member, Dr Colin Bowlt.

During the year the Committee considered 302 listed building applications, mostly on behalf of the Council for British Archaeology, compared with 186 last year. It made representations in 33 cases. The cases emanated principally from the following local authorities (last year's figures in brackets):

Merton	80 <sup>(1)</sup>	(39)
Westminster	39	(10)
London Docklands	37	(15)
Lambeth	23	(13)
Camden	21	(8)
Redbridge	17	(8)
Richmond	13	(20)
City	12	(11)

<sup>1</sup>Includes Conservation Area applications

Twenty-three other districts submitted less than 12 cases each.

Amongst the cases considered were: Acton Precinct; Bancrofts School; Cromwell House, Highgate; Fulham Football Ground; old Langham Hotel; Natural History Museum; Osterley Park; Romford Golf Club; Royal Free Hospital, Islington; Royal Mint site; Royal Opera House; old St George's Hospital; St Pancras Station Hotel; Spitalfields Market; and Wimbledon Town Hall area. A number of buildings have been recommended for listing.

The Committee has also supplied information for a revised edition of Collins *Guide to Parish Churches* and a National Trust book of monuments.

### **London Region Local History Committee**

The 21st Local History Conference on 22 November, on *Domesday London and Beyond*, was the Society's contribution to the 900th anniversary celebrations. Dr Elizabeth Hallam provided the keynote talk with a survey of Domesday Book through the ages. Other speakers were Tony Dyson on Alfredian London, Jennifer Mills on Lewisham and its links with Ghent, and Doris Hobbs on medieval Croydon. It is unfortunate that fewer people than usual attended a most stimulating day.

The much enlarged Committee – now renamed the London Region Local History Committee in recognition of its role in co-ordination at county level – has been active during 1987. Conference and Development sub-committees have been set up. The small Conference sub-committee, headed by Paddy Ching and John King, planned the 1987 Conference. The Development sub-committee, led by Tom Harper Smith, is arranging to collect from affiliated societies lists of speakers, publications and research in progress, and hopes to publish them within twelve months. Meetings are planned to enable local historians to discuss the running of societies. Efforts will be made to persuade more local societies to affiliate and so increase the scope and authority of the Committee.

### **Youth Section**

During the year 12 new members joined, bringing the total membership to about 90, about a quarter of whom are actively involved.

Karen Eyre organized the first three meetings, beginning in January with members 'Putting on an Exhibition', using the Museum of London's *Capital Gains!* exhibition. A conservation day in March, also at the Museum, was followed in June by a visit to Hampton Court for all the family.

In July, Elizabeth Bannan took over and arranged the usual varied three-day Summer Special for August. After a day spent with the Museum's environmental archaeologists and at the Royal Mint excavation, the party visited historic buildings in Canterbury and, back in London for the third day, prepared and ate Tudor-type food and saw over the Middle Temple.

Three *Newsletters* were produced. The possibilities of closer links with the main Society and with the Young Archaeologists' Club are being considered. Finally, thanks must be recorded to all who helped with the meetings and contributed to *Newsletters*.

### **Membership and Finance**

During the year, 68 individual members and two local societies joined the Society, total membership on 30 September being 812. This is a welcome gain of 10 members over last year's figure of 802, but regrettably there is still a long list of members with unpaid subscriptions due for early removal from membership.

Membership at 30 September 1987 was made up as follows (last year's figures in brackets):

Honorary members	5	(5)
Life members	45	(45)
Ordinary members	600	(589)
Student members	27	(22)
Institutional members	90	(100)
Affiliated societies	45	(41)

The income of the Society from subscriptions and other sources remained broadly in line with the previous year's. General expenditure also continued at much the same level. There is, however, a small deficit, resulting from the publications programme, which is exceptionally heavy and will have to be financed to a greater degree than usual by the Society.

There have been two extraordinary sources of funds in the current year. The sale of library books not transferred to the Museum of London raised £2,779. £872 of this was spent on providing shelving for the Society's books remaining with the Museum, leaving £1,907 as a fund for the Society. In addition, the Society received a generous bequest from its former member, the late Mr John Nevinson.

The future subscriptions rate will continue to depend on the level of publications produced by the Society and the extent to which grants can be obtained towards their cost. For the moment, subscriptions will be maintained at their current level.

By direction of the Council  
KEITH BAILEY,  
Chairman of Council

JEAN MACDONALD,  
Hon. Secretary





## W. F. GRIMES (1905–1988)

The death of Professor William Francis Grimes, President of the London and Middlesex Archaeological Society from 1950–1959, on 25 December 1988, brought to an end an important era in the history of London's archaeology.

An archaeologist of the old school with an eye for meticulous detail and a flamboyant style of dress of check trousers, waistcoat and a flower in his buttonhole, his prolific career and personal dedication to archaeology have earned him a lasting reputation for being one of London's leading archaeologists.

His first contact with the London area was during the war years when, seconded to the Ministry of Works from Ordnance Survey, he had the task of undertaking rescue archaeology on sites being developed for wartime defences. During this time he excavated the important site at Heathrow in advance of airport construction, where the structural evidence indicated a religious centre of a scattered farming community of *c.* 300–100 BC.

In 1945 he was appointed Director of the London Museum. At that time the Museum was homeless, packed away in wartime storage. During the next six years he acquired a temporary home for the Museum at Kensington Palace and devised new galleries which opened in 1951 to coincide with the Festival of Britain. The galleries were to survive in that form until the creation of the new Museum of London.

Those who worked with Professor Grimes at this time remember not only his high professional skills but his amazing range of talents, and his patience and good humour. Despite the incessant calls

on his time, he was always willing—when he was available—to help with all kinds of problems, major and minor: diplomatically settling disputes, devising record systems, sorting out book-keeping difficulties, improving typing layouts. His high speed arrivals and departures were electrifying. One of the abiding memories of the London Museum at Kensington Palace is the sight of Professor Grimes striding rapidly past the windows on his way back to the City, followed by a small, breathless train of people taking down his instructions, while he more or less simultaneously exchanged information and instructions with other members of staff leaning out of the windows.

In 1956 he became Director of the Institute of Archaeology and Professor of Archaeology at the University of London where he was to remain until his retirement in 1973. His vast wealth of experience and his thoroughly professional attitude to archaeological fieldwork enabled him to lead the Institute through a period of growth culminating in the inauguration of honours degrees in archaeology.

His post-war career, based in London, was to bring him into public prominence in a way he would have liked to avoid—preferring to concentrate on the task in hand. While carrying out his duties at both the London Museum and the Institute of Archaeology, he had one of the greatest opportunities for excavation ever afforded to an archaeologist. In 1946 he was appointed Director of Excavations of the Roman and Mediaeval London Excavation Council (RMLEC), an excavation body set up by the Society of Antiquaries



W. F. Grimes

to investigate the bomb sites of the City of London.

Due to the lack of time, money and adequate staffing, full-scale excavations were impossible. Instead, Grimes dug positioned trenches to answer specific questions. To most of us, Grimes's excavations were epitomised by the discovery of the Temple of Mithras in 1954. Grimes himself regarded it as a fluke and indeed almost a nuisance as it intruded on his original intention of finding the position and width of the Walbrook stream at that point. Having hit upon structural remains, he concentrated on his Walbrook stream section and only returned to the building when he had completed his plan. The public imagination ran riot at the discovery of the Temple with 30,000 people queuing to watch the excavations over nine days. The newspaper coverage and discussion on whether to save the remains was not to be matched until the excavations of 1989 heightened public archaeological awareness of the fate of the Rose Theatre in Southwark. There was, however, a down side to the heightened interest. It made negotiations for future excavations more difficult. Developers were wary of archaeological discoveries delaying redevelopment and contemporary cartoons warned of workmen finding anything that might delay building. It is a fear that survives to the present day.

Grimes was later to admit that although the find of the Temple was exciting, his favourite discovery was the Roman fort in the Cripplegate area of the City. In one of the most war-devastated parts of the City and over some four years in the late 1940s, Grimes excavated the scant remains of the twelve-acre Roman fort. A series of trenches showed the construction of the City wall differed from elsewhere. It was found to be of double thickness but it was not until Grimes excavated the wall at Noble Street and found

that the outer wall curved unexpectedly at right angles while the inner wall came to an end that he was able to show that the inner wall was merely a thickening added to the north and west walls of the fort when the City wall was built in about AD 200. His wall excavations provided much additional information on the existing upstanding sections of wall and his excavations of the defensive towers (Bastions 13 and 14) beside the Museum of London supported the theory that towers were added to the outside of the western section of wall during the medieval period. All the construction phases, both Roman and medieval, can be seen in the north-west area of the City where Grimes later acted as adviser to the Corporation of London on their preservation.

Both Grimes and the Society of Antiquaries considered the investigation of medieval sites to be just as important as Roman. Grimes provided the first secular evidence for late Saxon London when he excavated sunken Saxon houses on the Financial Times site in Cannon Street, Bucklersbury and Addle Street. In the main, however, he will be remembered in a post-Roman context for his work on the City churches and religious houses such as Charterhouse. The Council excavated several different church sites, all with early origins, and later additional buildings, many rebuilt by Wren after the Great Fire. At St Bride's, Fleet Street, in particular, he was able to do for archaeology what historical records could not—trace the history of the church from the 11th century onwards.

His archaeological work in London continued until the end of 1962. Post-war labour and funding were scarce and his digging team consisted of paid labourers supervised by experienced volunteers who could act in his absence. In 1962 the decision was made to cease excavating and to concentrate upon the publication

of the information accumulated over the previous 15 years. A general survey of the activities of the Council was published in 1968 by Grimes in his book *The Excavation of Roman and Mediaeval London*. Fifteen year's excavation of over 50 sites cost merely £40,000. One wonders what might have been accomplished with the opportunities and resources afforded to archaeologists today.

Whilst Director of the London Museum and of the Roman and Mediaeval London Excavation Council, Grimes also became involved with the London and Middlesex Archaeological Society. He became a member in 1948 and was elected to the Council the next year. In 1949 he was also appointed as the Society's representative on the Sulloniaca Excavation Committee, the group set up in 1937 by LAMAS and three local societies to investigate the Roman potteries site of *Sulloniaca* (Brockley Hill, Middlesex) and which later expanded into the North Middlesex Archaeological Research Committee. He took an active interest in the Committee's excavations and surveys, particularly those at *Sulloniaca* and the Grim's Dyke earthwork, published in *Transactions* in the 1950s, and he remained a member of the Committee until its dissolution in about 1970.

With his close involvement with London's archaeology at this time, he was an ideal choice to become President of the Society in 1950. The annual report for 1950 records his election and commends him for giving up his valuable time to the Society's affairs. To have such an eminent President must have boosted the Society's standing, and for such a busy man he became as active a participant as was possible.

His Presidential Annual Address for that year concentrated on the prehistory of the London area, a subject dear to his heart and, to accompany his talk, an

exhibition of items selected from the London Museum's collections was displayed for two days in the Bishopsgate Institute. In 1954, he was able to keep the Society's members abreast of the news by lecturing on the recent discoveries at St Bride's Church, Fleet Street. However, the most important celebration for the Society at this time was its centenary in 1955. There were various events which included an exhibition of London and Middlesex antiquities in the Guildhall Museum, then established in the Royal Exchange. Amongst the exhibits were finds from Grimes's excavations: the celebrated sculptures from the Mithraeum and the pre-Roman temple at Heathrow.

The actual centenary fell on 14 December 1955 and Grimes, in a speech, covered a topic still pertinent to this Society—the financial difficulties faced by such a society. He stressed that the Society's function would become ever more important with the publication of original work anticipating the Society's present importance as a vehicle for publishing reports of archaeological excavations in the London area. He emphasized that the regular investigation and publication of unexciting background information was of the first importance in the advancement of knowledge. With his recent Mithraic experiences in mind he stressed the importance of recognizing the value of the surviving evidence of the past and that organized public opinion should speak up for it. Thirty years on, the situation remains the same.

He returned to the theme of finances in 1957, when the Society, unable to pay fully for *Transactions*, had issued an appeal for funds. He urged first the Council, then the AGM, to raise subscriptions 'to a sum sufficient to enable the Society to maintain a high standard in its *Transactions*, as this was the primary reason for its continued existence'—a view many

members would consider still holds good. A few months later, subscriptions were duly raised.

During his Presidency, Grimes was also actively concerned with the protracted and ultimately unsuccessful struggle to preserve the medieval Moor Hall chapel at Harefield, the preservation of monuments in bomb-damaged churches, and the preservation of 16th-century wall paintings at Knightlands Farm, South Mimms. In 1959 he stepped down from the Presidency, having held the office for three three-year terms, a feat impossible today when the term of office is limited to three years.

He was later to sit on various Society committees, the most important being the Archaeological Research Committee, set up in March 1963. This sub-committee's intention was to formulate and execute a programme of excavations in London, Middlesex and the City. This they did by jointly funding, with Surrey Archaeological Society, excavations in Southwark and providing equipment and support for other archaeological excavation groups operating in the London area. Another enduring legacy of the Committee's early years was the initiation of the Society's annual conference for London archaeologists. Grimes became its first Chairman and continued in the post until 1969.

With all his other commitments, it seems almost miraculous that Professor Grimes was able to give as much attention as he did to LAMAS. It should not be forgotten that, in addition to his other duties, he played a highly important part in the CBA during his years in London, being successively its Secretary, Presi-

dent, Vice-President and Treasurer, and Chairman of its Implement Petrology Committee and of its Industrial Archaeology Research Committee. Nevertheless, when he was re-elected for his third term as LAMAS President in 1956, he was praised for the amount of time and practical help he had given to the Society and for his attendance at Council meetings—evidently something of an innovation at that time.

It is perhaps a fitting epitaph to such an inspirational man that archaeology has reached the heights it has. He was the guiding light in London's archaeology at a time when post-war destruction in the City provided the opportunity of large-scale rebuilding. Grimes's determination to piece together the jig-saw without deviating from his intentions is to be praised when conditions were particularly against him. He was left with an enormous backlog of sites to be published. In 1987/8 the Museum of London and Grimes agreed that the Museum should take into its care all documents and finds relating to the Roman and Mediaeval London Excavation Council's excavations in the City with a view to their publication and arrangement into an organized and accessible archive.

His Presidency of the London and Middlesex Archaeological Society from 1950 to 1959 enhanced the Society's reputation and his active archaeological presence in London was a forerunner to the various excavation groups that have been established since.

Jenny Hall  
Jean Macdonald



# RULES

*of the*

*London & Middlesex  
Archaeological Society*

# RULES

as revised at a Special General Meeting held on 25 February 1987

1. **TITLE.** The title of the Society shall be the 'LONDON AND MIDDLESEX ARCHAEOLOGICAL SOCIETY'.
2. **OBJECTS.** The objects of the Society shall be:
  - (a) To promote, in co-operation with other societies and institutions, studies in the history and archaeology of Greater London and the London region;
  - (b) To publish the results of such studies in *Transactions*, *Special Papers* or otherwise;
  - (c) To stimulate the study of archaeology and local history through lectures, visits, the maintenance of a library and other means, and to assist local societies or other bodies formed for that purpose;
  - (d) To undertake and encourage archaeological excavations and historical and archaeological research;
  - (e) To promote the preservation and recording of historic buildings, ancient monuments, documents and other remains.
3. **MEMBERSHIP.** (a) The Society shall consist of:
  - (i) *Ordinary Members.* Ordinary membership shall be open to individuals.
  - (ii) *Corporate Members.* Corporate membership shall be open to institutions such as livery companies, universities, colleges, schools and libraries.
  - (iii) *Life Members.* Life membership shall be open to individuals only.
  - (iv) *Honorary Members.* Persons who have rendered outstanding service to the Society or to the study of archaeology or history may be elected by Council as Honorary Members.
  - (v) *Student Members.* Student membership shall be open to persons who are attending full-time a school, college or university.
  - (vi) *Affiliated Local Societies.* Affiliation shall be open to any society in London and in the London region having among its principal objects the promotion of the study of archaeology and/or local history.
  - (b) Persons, Institutions and Societies shall become Members upon being elected by Council.
  - (c) A Member may resign upon giving notice thereof to the Honorary Secretary in writing and paying all subscriptions due from him.
  - (d) The Society may at a Special General Meeting, by a majority of two-thirds of those present and voting, remove the name of any Member from the list of Members of the Society without assigning any reason therefor.
4. **PRIVILEGES OF MEMBERSHIP.** (a) *Subject to Rule 13(c)* all Members shall be entitled to attend all meetings of the Society (Corporate Members and Affiliated Local Societies being represented by one person each) and to use the library (subject to such regulations as Council may from time to time make).
  - (b) All Members shall be entitled (i) to one vote at meetings of the Society; (ii) to receive *Transactions* and such other publications as may be issued free of charge to Members.
  - (c) Affiliated Local Societies shall be entitled to describe themselves as 'affiliated to the London and Middlesex Archaeological Society' and to receive all such support and assistance in the conduct of their affairs as the Society can give.
  - (d) No Member of the Society shall by virtue of his membership have any share in or claim upon the property or funds of the Society.
5. **YOUTH SECTION.** (a) There shall be a Youth Section of the Society to encourage an interest in archaeology and local history and undertake activities related thereto among young people not more than sixteen years of age.
  - (b) The Chairman of Council and the Honorary Treasurer shall be *ex officio* Chairman and Honorary Treasurer respectively of the Youth Section.
  - (c) Council shall appoint an Honorary Secretary of the Youth Section who thereupon shall become *ex officio* a member of Council.
  - (d) Members of the Youth Section shall pay such annual subscriptions as Council shall from time to time determine.
  - (e) Members of the Youth Section shall not as such enjoy any of the privileges of Members of the Society as specified in Rule 4.
  - (f) The activities of the Youth Section shall be subject to the direction of Council and the Chairman or Honorary Secretary of the Section shall report regularly to Council.

6. OFFICERS. (a) The President shall be elected at an Annual General Meeting, on the nomination of Council, to hold office for not more than three years.

(b) An Honorary Treasurer, an Honorary Secretary, an Honorary Editor (*Transactions*), an Honorary Editor (*Newsletter*), an Honorary Librarian, an Honorary Director of Lecture Meetings, an Honorary Director of Visits, and any Assistant Officers that Council may consider necessary, may be nominated by Council, or by Members of the Society, provided that in the latter case such nominations are in writing, signed by a proposer and a seconder, intimate that the nominee is willing, and are in the hands of the Honorary Secretary by 1st December. Elections to all the above offices shall take place at the Annual General Meeting but any vacancies that may occur during the year may be filled by Council.

7. PAST PRESIDENTS AND VICE-PRESIDENTS. These shall be honorary designations. Each President shall, upon retirement, be styled a Past President for life. Vice-Presidents shall be retired Members of Council or retired Officers, nominated by Council in recognition of outstanding service to the Society and elected at the Annual General Meeting, to hold the distinction for life. Past Presidents and Vice-Presidents shall be entitled, if they so wish, to receive agenda, minutes and other papers relating to Council business but not to attend Council meetings. They shall, however, be eligible for election or co-option as Council Members or Officers.

8. AUDITORS. At the Annual General Meeting, two Honorary Auditors shall be elected, who need not be Members of the Society. Any vacancies that may occur during the year may be filled by Council.

9. COUNCIL. (a) The affairs of the Society shall be conducted by a Council, consisting of not less than ten nor more than twelve Members to be elected at the Annual General Meeting of the Society together with the President, the Officers elected under Rule 6(b) and the Honorary Secretary of the Youth Section as *ex officio* members. Five, including three elected members, shall form a quorum. Council shall, at its first meeting following the Annual General Meeting, elect from its own number a Chairman and Deputy Chairman.

(b) All the elected members of Council shall retire at each Annual General Meeting, and the two senior elected members shall not be eligible for re-election for one year. A retiring member shall not be eligible for immediate re-election unless he has attended at least two of the meetings held by Council during the previous twelve months. No new candidate shall be eligible for election unless two Members of the Society shall, fourteen days previous to the Meeting, have given to the Honorary Secretary notice in writing of their intention to propose and second such a person as a member of Council. Council shall have power to co-opt not more than four Members in addition to representatives of the Standing Committees.

(c) At all meetings of Council, the President of the Society, or in his absence the Chairman of Council or Deputy Chairman, shall preside. In their absence the chair shall be taken by such member of Council as the meeting may elect.

(d) Council shall meet at least four times a year, and shall have power to make its own rules of procedure.

10. POWERS OF COUNCIL. (a) The assets of the Society shall be under the control and management of Council, which shall have power to purchase books, or other articles, or to exchange or dispose of the same.

(b) The property and investments of the Society shall be vested in Corporate Trustees nominated by Council, who shall deal with the same as Council may direct.

(c) Council shall have the power to publish such books, papers and other documents as it may deem fit.

11. STANDING COMMITTEES OF COUNCIL (a) Council shall at its first meeting following each Annual General Meeting appoint from the membership of the Society standing committees as follows, such committees to hold office until the corresponding Council meeting in the following year:

(i) Archaeological Research Committee.

(ii) Local History Committee.

(iii) Historic Buildings and Conservation Committee.

(iv) Such other standing committees as Council may from time to time deem necessary.

(b) Each standing committee shall exercise the powers of Council in the areas of responsibility allocated to it by Council (but shall therein at all times be subject to the direction of Council, to which it shall regularly report). Council may at any time take back into its own hands all or any of the powers so exercised by a standing committee.

(c) The President, the Chairman of Council, the Honorary Treasurer and the Honorary Secretary shall *ex officio* be members of all standing committees.

(d) Each standing committee shall propose a representative who shall normally be its Chairman for co-option to Council.

(e) Each standing committee may co-opt additional members (who need not be Members of the Society), such co-options to be subject to the approval of Council and to annual review.

(f) Council shall have power to cancel the appointment of any member of a standing committee at any time.

12. MEETINGS (a) An Annual General Meeting shall be held in the month of January or February in every year, at such time and place as Council shall appoint, to receive and consider the Report of Council on the proceedings and financial position of the Society, to elect the Officers, Council and Auditors for the ensuing year, and for other business. Notice of the time and place of such meeting shall be sent to the Members at least twenty-one days previously.

(b) Council may at any time call a Special General Meeting and shall be bound to do so on a written requisition from at least ten Members specifying the business to be transacted. A notice stating the time and place of such meeting and specifying the business to be transacted shall be sent at least twenty-one days previously to all Members entitled to attend and vote, and no other subject shall be discussed or business transacted at that meeting.

(c) At all General Meetings of the Society ten Members shall form a quorum.

(d) Lecture Meetings shall be held at times and places appointed by Council for lectures, the reading of papers, and for other purposes relevant to the objects of the Society. Meetings shall be arranged to visit places of archaeological and historical interest.

(e) At all General and all Lecture Meetings of the Society, the President of the Society or in his absence the Chairman of Council or Deputy Chairman shall preside. In their absence the chair shall be taken by such member of Council as the meeting may elect.

(f) At every meeting of the Society, or of Council, the resolutions of the majority of those Members present and voting shall be binding. In the case of an equality of votes, the Chairman shall have a second, or casting vote.

13. SUBSCRIPTIONS. (a) Annual membership subscriptions shall become due on 1st October in each year at the rates from time to time agreed by the Members in General Meeting.

(b) Life membership compositions shall be accepted subject to the approval of Council and at rates determined by Council.

(c) No Member whose subscription is in arrears shall be entitled to any of the rights or privileges of membership.

(d) Council shall have power to terminate the membership of any Member whose subscription is twelve months or more in arrear.

(e) Any person or institution joining the Society after 1st October in any year shall pay the full subscription for that year, but Members elected after 30th June in any year shall pay the subscription appropriate to the following year, that subscription being deemed to cover also the remaining portion of the year of election.

14. ACCOUNTS. Audited Accounts for each year ending on 30th September shall be submitted to the Members at the Annual General Meeting.

15. LIFE MEMBERSHIP FUND. The whole of the composition of each Life Member shall be invested in any of the securities permitted by the Trustee Investment Act 1961 or any subsequent amendment or re-enactment thereof, only the interest being available for current disbursements. No portion of the principal so invested shall be withdrawn except under authority of a resolution passed at a General Meeting of the Society.

16. BORROWING POWERS. The Society may borrow or raise money for the purpose of the Society on such terms as may be thought fit, and may deposit security against such borrowings under authority of a resolution passed at a General Meeting of the Society.

17. DISSOLUTION OF THE SOCIETY. (a) The Society may be dissolved by resolution passed by not fewer than two-thirds of those present and voting at a Special General Meeting called for that purpose, notice of the meeting having been sent to all Members not less than two calendar months previously.

(b) In the event of dissolution, the Society shall after discharging all its liabilities transfer its assets to another body (being a registered charity) having similar objects, or, failing that, to some other registered charity.

18. ALTERATION OF RULES. No alteration shall be made in the Rules of the Society except by resolution at a Special General Meeting, passed by not fewer than two-thirds of those present and voting.

# THE ROMAN OCCUPATION IN THE AREA OF PATERNOSTER SQUARE, CITY OF LONDON

JOHN D. SHEPHERD

## SUMMARY

*This paper examines the region of the City of London to the immediate east of the River Fleet and to the north-west of St Paul's Cathedral and includes, amongst others, the sites of Paternoster Square (examined 1961-9) and Warwick Square (1880 and 1966). Discussions of these two sites elaborate previously published interims. Emphasis is placed upon the nature of Roman occupation, the siting of cemeteries, and the road systems, whose inter-relationship suggests a westward progression of the Roman city boundary from the pre-Flavian period to the late 2nd or early 3rd century. The city defences are not discussed in detail although their influence upon subsequent occupation is examined. The archaeological sequences from more recent excavations conducted by the DUA are referred to throughout.*

## INTRODUCTION

The line of Old Bailey marks the westernmost extent of this study area. Its north-western and south-eastern limits coincide with the southern limits of the Roman cemeteries in the vicinity of St Bartholomew's Hospital and with St Paul's Cathedral respectively. At the south-eastern extremity, the area adjoins the site of the Roman remains at Gateway House and Watling House (Fig. 2, no. 14) previously reported by this author (Shepherd 1986).

The main purpose of this study is to survey the general character of Roman occupation as indicated by numerous recorded observations and finds with a view to identifying changes and variations in the pattern of settlement. Many of the sites discussed here have appeared in print in the form of brief interim reports or summaries but there has not yet been a brief study of this kind. Rather than being the definitive report for the sites in this area and for the area itself it is hoped that this paper will encourage interest and debate for an often neglected part of the Roman city.

In general, the nature of archaeological research in this part of the City of London has been characterised by the examination of a few, but large, sites during the course of their redevelopment. It is possible to trace this activity back to Sir Christopher Wren who redeveloped the site of the medieval St Paul's Cathedral (Fig. 2, no. 12), destroyed during the Great Fire of 1666 (Wren 1750, 266). During excavations in 1672 to build the new cathedral foundations he recorded a number of archaeological features which are relevant to the location of Roman cemeteries and industries (see below pp. 26-28).

Detailed records were next made over two hundred years later when large office buildings around Newgate Street, King Edward Street and St Martin's le Grand were constructed. These were the sites of the General Post Office of 1907-8 in King Edward Street, just north of Newgate Street (Fig. 2, no. 1) (Norman and Reader 1912, 274-85), and on the east side of St Martin's le Grand, redeveloped in 1822 and 1913 (Fig. 2, nos 4 and 5) (Lambert 1915, 235-269). The former revealed

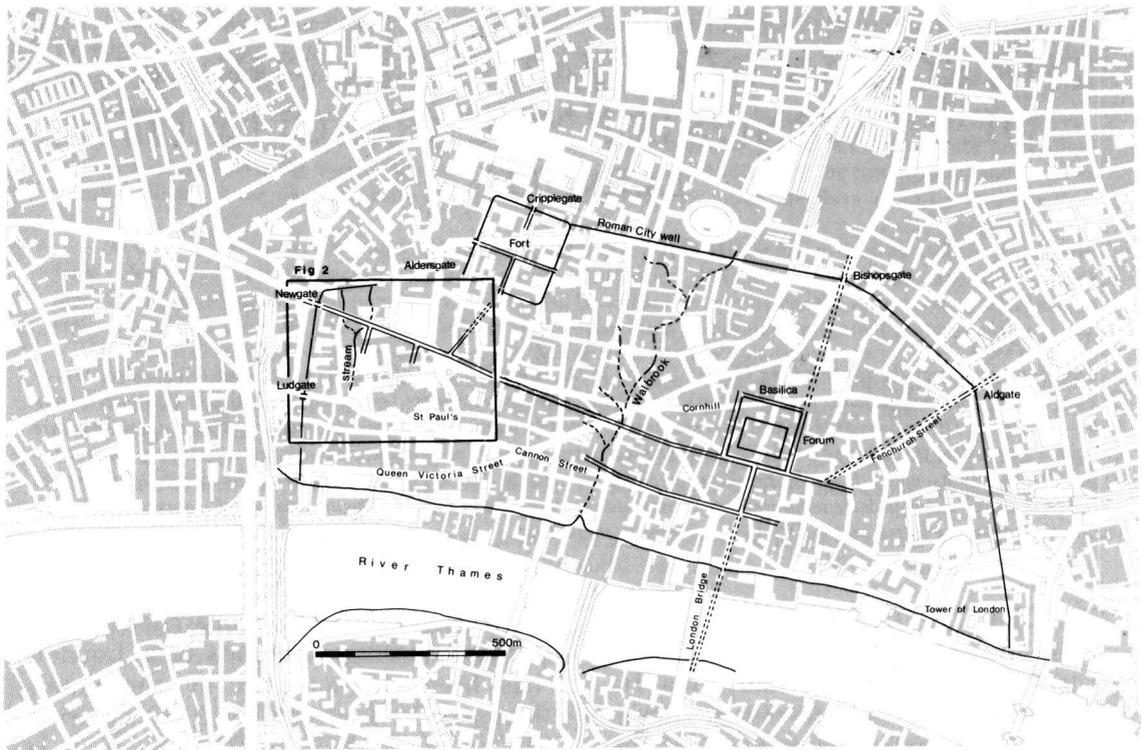


Fig. 1. Paternoster Square and Warwick Square: Location of study area.

details of the city wall as well as traces of two large north-south streams. One of them had a very large masonry wall on its east side (see below p. 6). Excavations on the St Martin's le Grand site of 1913 revealed a large number of rubbish pits and possible wells. The natural brickearth had been severely truncated by the construction of a vast concrete raft foundation for the previous building, completed in 1825, at which time a number of cremation burials were noted (see below p. 26) (Lambert 1915, 236)<sup>1</sup>.

To these can be added the examination in 1880 of a property on Warwick Square by Alfred Tylor (Fig. 2, no. 7) (Tylor 1884), who recorded not only the remains of the medieval Warwick Inn but also at least eight cremation burials. Many of

these were of a quality not normally encountered in Roman Britain.

A more detailed archaeological record, though still limited, began in 1961–2 with the redevelopment of the large area of bomb-damaged buildings around Paternoster Square. During the course of this redevelopment the site, a triangular area bounded by Warwick Lane on the west and Newgate Street and St Paul's churchyard on the north and south sides respectively (Fig. 2, no. 8) was examined by staff of the Guildhall Museum (GM) (Marsden 1963, 75–6), and also by the Roman and Mediaeval London Excavations Council (RMLEC) (Grimes 1968, 148). The investigations by these two bodies, the first directed by Peter Marsden and the other by the late W. F.

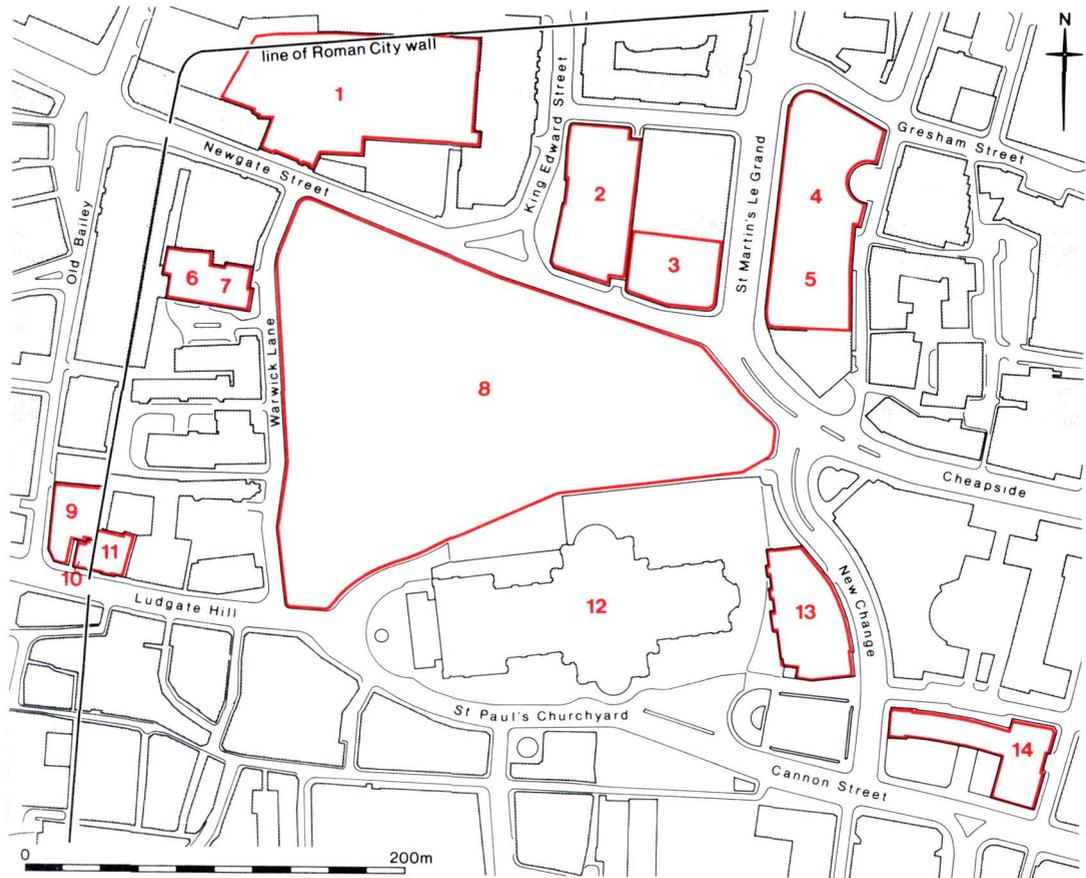


Fig. 2. Paternoster Square and Warwick Square: Detail of study area, with sites described in the Gazetteer shown in red and numbered.

Grimes, revealed a number of features of Roman, medieval and post-medieval date. Two north-south Roman roads were identified as well as what appeared to be the south side of the main east-west thoroughfare passing under Newgate Street. A large north-south stream was found, corresponding to the two streams recorded to the north of Newgate Street in 1907–8, and nearby was a possible Roman burial, a kiln and traces of masonry, clay and timber buildings (see below p. 17–26).

Unfortunately the mechanical removal of recent buildings and underlying

deposits on the Paternoster site took place at such a speed that archaeologists, especially those from the Guildhall Museum, were unable to record many archaeological features in detail (Marsden 1969b, 41)<sup>2</sup>. Similarly, although Grimes was able to record in great detail the exposed sections of a number of builders' trenches on the fringes of the site during the early stages of redevelopment (Grimes 1968, 148, n. 8)<sup>3</sup>, the pace of mechanical reduction of the site also hampered his examination of the archaeological record. It should be noted that much of Grimes' work on this site

involved only the cleaning and recording of sections and not the controlled excavation of trenches, a technique he was able to employ on the majority of his other London sites.

In 1966–69 Marsden was able to organise a controlled excavation with volunteers on a site on the north side of Warwick Square, west of Warwick Lane, before its redevelopment as an extension to the Central Criminal Court (the ‘Old Bailey’) to the west (Fig. 2, no. 7) (Marsden 1969a, 2–7). This site was immediately east of the site examined in 1880 by Tylor. Marsden also recorded substantial parts of the medieval Warwick Inn and, of specific interest to this paper, two Roman burials, pits, gullies and the corner of a Roman stone building.

On the west side of the Warwick Square site Marsden excavated the Roman city wall, its associated internal bank and an internal turret. These defences will be discussed in a future paper dedicated to the Roman defences in general, though details of the deposits which pre-date the construction of the defences and the effect that the defences had upon the topography in this area are considered here.

Since the late 1960s and the creation in 1973 of the Museum of London’s Department of Urban Archaeology (DUA), a number of sites have been excavated in a controlled fashion in this area<sup>4</sup>. Of these the most important is the main General Post Office site (GPO75) (Roskams 1980, 403–7) (see below p. 15–17, Fig. 2, no. 2). This site, excavated by Alan Thompson and Steve Roskams, lies on the north side of modern Newgate Street, whose line corresponds approximately with that of the main Roman road leading westward through the city from the Walbrook crossing at Bucklersbury to the gate at Newgate. Excavated from 1975 to 1979, it revealed a continuous sequence of residential and industrial occupation from *c.*

AD 50–55 until the mid-2nd century which is vitally important when trying to understand this region. The nature of this occupation has an important bearing upon the interpretation of the Paternoster Square and Warwick Square sites to the south and south-west. Other recent excavations (42–6 Ludgate Hill—LUD82 (Fig. 2) and 1–3 St Paul’s Churchyard—PCH85 (Fig. 2)) have revealed evidence of the Roman defences and a major north-south aligned stream or ditch corresponding to the major feature discovered in the 1961–62 Paternoster Square investigations.

Details of the Roman features from the two major pre-DUA sites, Paternoster Square 1961–2 and the Central Criminal Court extension (Warwick Square) 1966 are included at the end of this paper. Some details from both sites have been previously published as short interims (Marsden 1963, Marsden 1969). Although the accounts included here should not be regarded as final or definitive (for instance medieval and post-medieval features are omitted and full finds sections are not published) it is hoped that they will be an addition to the sparse record for this area of the city.

Also summarised are other relevant observations made in this study area since Sir Christopher Wren and his contemporaries noted burials and evidence of industrial activity in 1672, including brief summaries of the more recent, controlled DUA excavations.

All records and documentation related to sites referred to in this paper can be examined upon request in the archive of the Department of Urban Archaeology, Museum of London. Only the significant dating evidence has been referred to here, together with those finds which give some bearing upon the nature of past occupation. The finds from the pre-DUA sites were accessioned according to the Ex-

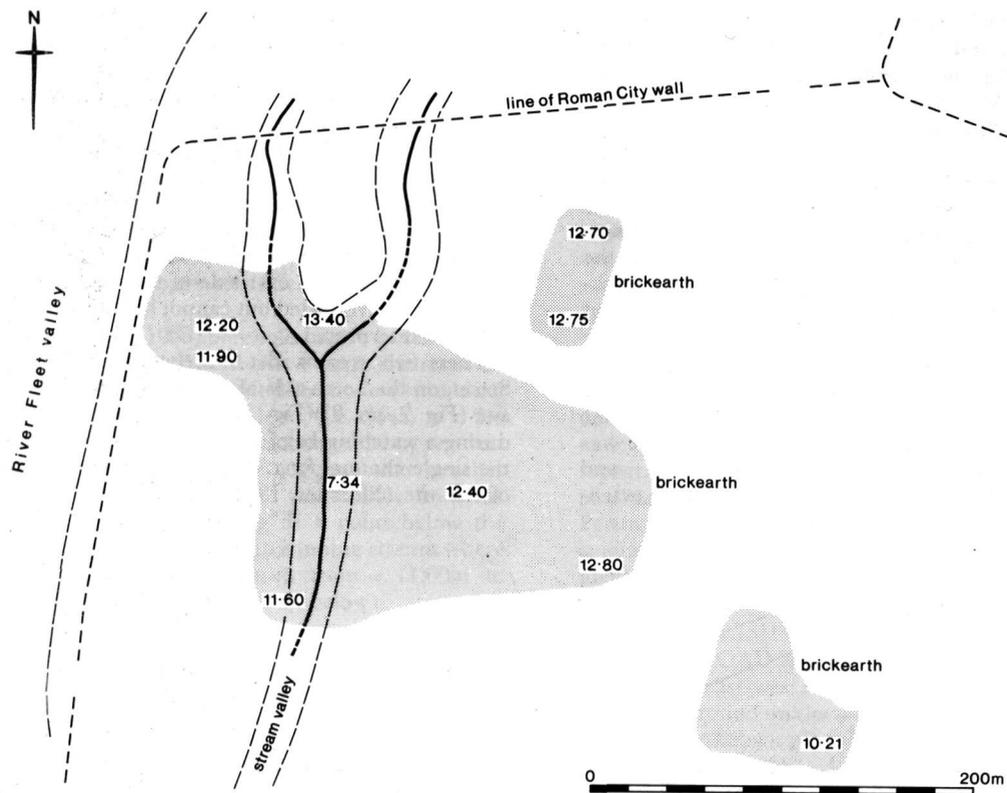


Fig. 3. Paternoster Square and Warwick Square: Known natural topography showing the recorded brickearth and the stream.

cavation Register (ER) entry system. By this system groups of associated finds were recorded under unique numbers, with details of their specific findspots, in excavation notebooks. These and all quantitative information regarding the finds from any of these sites can be obtained from the DUA archive. All 'spot-dates', a date range derived from the analysis of the pottery from a single context or ER group, have been supplied by staff of the Finds Department of the DUA. It should be stressed again that this paper is concerned only with the Roman period. Researchers interested in the pre-Roman, medieval and later periods in this study area are also referred to the DUA archive.

#### NATURAL TOPOGRAPHY

The study area is located at the top of the west side of the westernmost of the two low hills around which the walled Roman and medieval cities of London were located. To the west, beyond the extent of the late Roman city limits, the ground falls rapidly towards the River Fleet (Fig. 3) which, in a buried and canalised form, still flows south to meet the River Thames beside Blackfriars Bridge. In the south-west and the south there are gentler slopes towards the confluence of the Fleet and the Thames. However, the area of study itself is fairly flat with only a slight fall towards the south, though to the south-east and east the ground level rises very slightly before falling away towards the Walbrook valley. This almost imperceptible rise in ground level towards the south-east coincides with the highest point of the western hill (now dominated by St Paul's Cathedral) and, followed by Cheapside, continues to the east as far as the

Walbrook valley. To the north, a rather slight rise in the natural topography is recorded (P. Allen *pers. comm.*) but beyond that the terrain slopes gently downwards.

The geology of this part of the City consists of a blue-grey clay (London Clay) overlaid by the terraces of gravel deposited by the Thames. In places this gravel is capped by a yellow-orange brickearth which varies in thickness from *c.* 1m to a few centimetres thick. In the study area, the brickearth capping was generally *c.* 0.50m in thickness (Fig. 3), and it varied in height from about 13.40m O.D. in the north-west corner, between the two branches of the stream on the Paternoster Square site (Fig. 2, no. 8), to *c.* 11.60m O.D. in the south-west corner of the same site. On the remainder of the Paternoster Square site it was fairly flat at between 12.20m O.D. and 12.40m O.D. At the Central Criminal Court exten-

sion site (Warwick Square) 1966 (Fig. 2, no. 7) the top of natural brickearth lay between 11.90m and 12.20m O.D.

Passing through the area from north to south was a stream. This feature was first noted in 1907-8 by Philip Norman and Francis Reader on the then new General Post Office site, Newgate Street (Fig. 2, no. 1) (Norman and Reader 1912, 282f). It comprised two stream beds approximately parallel and also running north-south. A large ragstone wall on the east side of the easternmost of the two was recorded but cannot be satisfactorily dated or interpreted.

These two streams met to the south of Newgate Street, on the north side of the Paternoster Square site (Fig. 2, no. 8) (Fig. 3) (see below p. 18), and during a watching-brief Marsden was able to trace the single channel for *c.* 200m down the west side of the site (Marsden 1965, 136-7). Recently the

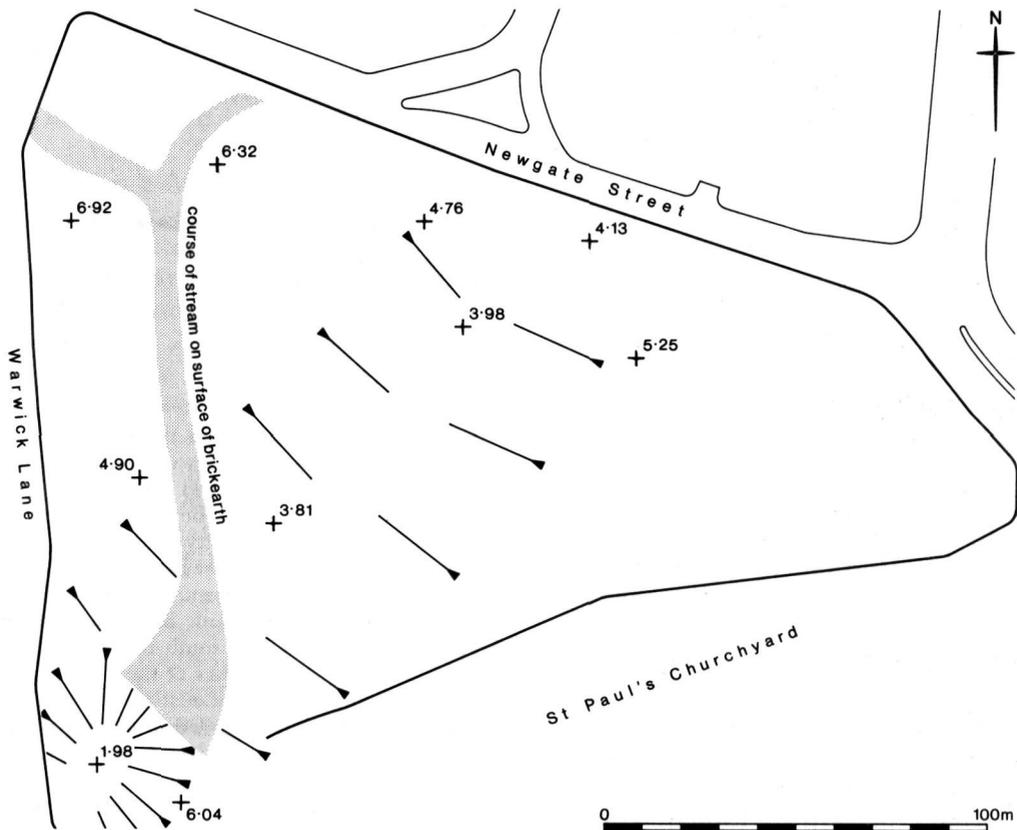


Fig. 4. Paternoster Square and Warwick Square: Reconstruction of the surface of London clay with the course of the stream on the Paternoster Square redevelopment site, 1961-2.

feature was studied by Bentley, who reconstructed its course southwards towards the River Thames (Bentley 1987).

Bentley concluded that the stream sprang from the river terrace gravels north of the City and flowed for *c.* 600m to reach the Thames near Blackfriars. The succession of fills—alluvial silts overlain by dark organic deposits and dumps of gravel and brickearth—indicated a fast-flowing stream which became sluggish, culminating in a near marsh-like environment before it was back-filled (see below p. 18).

In 1960 and 1963, boreholes made in the south-west corner of the Paternoster Square site revealed the presence of a deep drift-filled hollow extending to *c.* 16.5m below surface level (i.e. down to *c.* 2m O.D.) (Fig. 4)<sup>5</sup>. A reconstruction of the uppermost level of the London Clay suggests that another drift-filled channel ran into this hollow from the north-east (Fig. 4) joining at a point below the south end of the north-south running stream where the latter's width increased from *c.* 11.60m to *c.* 21.35m (see also Figs 11–13 below).

## PRE-FLAVIAN TO HADRIANIC OCCUPATION

Since much of this study area was examined under unsatisfactory conditions, it may never be possible to establish the exact character of the earliest Roman occupation. Undoubtedly the best detailed evidence comes from the GPO75 site (Fig. 2, no. 2) (see below pp. 15–17), though it is possible on other evidence to make broader tentative suggestions about the character of occupation and land usage during the early decades of Roman occupation in London.

### THE EARLIEST ACTIVITY *c.* AD 50–55

One of the earliest planned Roman features in this region was the main thoroughfare running approximately east-west on the line of modern Newgate Street. A survey of the very small ceramic assemblage from the large Paternoster Square site (Fig. 2, no. 8) on its south side (ER nos 708–709) suggests that there was possibly some occupation here during the earliest period of Roman occupation in London although this is by no means conclusive. The excavations at GPO75 (Fig. 2, no. 2) have revealed early occupation evidence (Roskams 1980, 403). The Period I on that site was represented by a portion of a circular hut and

a short length of gully. Admittedly this gully was the only linear feature dated to this period and so it might be unwise to place too much significance on it; but it should be noted that its alignment differed entirely from all alignments of later periods which respected the line of the Roman road (Road 1). This might imply that Period I features predated the construction of the first road but there is evidence to suggest that Period II features, which appear to align with the road to the immediate south, represent a reorganisation of the properties against that road.

This does not add or detract from the argument that there was no Period I road. It merely stresses that it would be unwise to concentrate too much upon the GPO75 Period I features in an attempt to determine the earliest date for such an important topographical feature as the main east-west road passing through this part of the Roman city (D. Perring *pers. comm.*). Elsewhere on the GPO75 site evidence for small-scale brickearth quarrying was identified.

## THE ESTABLISHMENT OF A PRE-FLAVIAN ROAD SYSTEM

The main east-west road (Road 1) running along the higher ground on the east side of the Walbrook is the earliest known planned feature in the Roman city (Merrifield 1983, 42). This road (Fig. 1), beneath Fenchurch Street and the east end of Lombard Street, proceeded westwards and crossed the Walbrook at Bucklersbury. From there it took an oblique course to the south of modern Cheapside, whose line it crossed just beyond Bread Street. At this point the route deviated slightly to the north before returning to its original alignment just before St. Martin's le Grand and immediately east of the Paternoster Square site. It is likely that an early city boundary accounts for this slight 'kink' (Bentley 1985). From there it made a straight line for what was later to become the site of the Roman city gate at Newgate (Fig. 5).

To the east of the Walbrook, in the Forum area, the road lay in a built-up district and was of pre-Boudiccan origin (Marsden 1987, 17), probably dating from about AD 50. Although the number of remetalings of the road on the west side of the Walbrook prior to the date of the Boudiccan rebellion is not known, the Period II evidence from the GPO75 site is of significance because it shows that the extension of this road across the western hill of the city was pre-Flavian. Where seen elsewhere, for example 76–80 Cheapside (Shepherd 1987, 28–33) and 10–13 Newgate Street (Grimes 1968, 148–50), the lowest metalling of this period lay immediately upon natural brickearth, as was

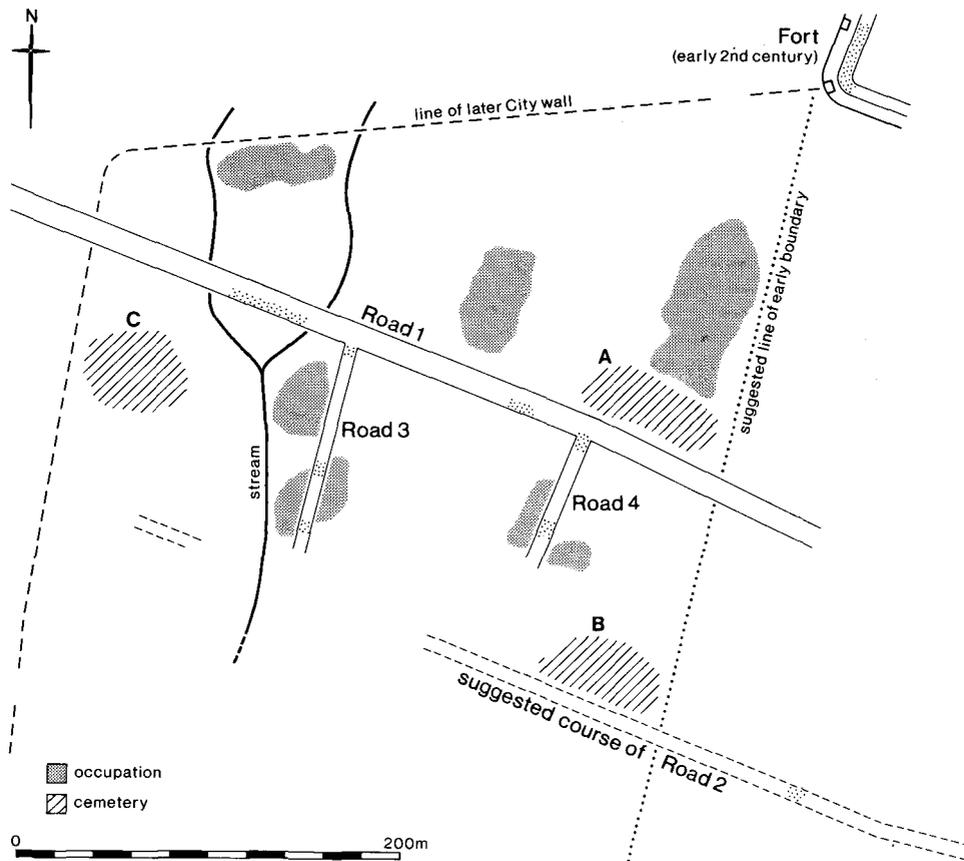


Fig. 5. Paternoster Square and Warwick Square: Known pre-Flavian to early 2nd-century occupation and cemetery locations.

the case on the north side of the Paternoster site (Feature 8. See below p. 23).

A second road (Road 2) existed on the east side of the Walbrook (Fig. 1). This ran parallel to the road described above but *c.* 420 Roman feet (*c.* 124m) to the south, its course approximating with modern Cannon Street. Evidence for the continuation of this road on the west side of the hill is sparse. A crossing point of the Walbrook was noted in 1954 at the south end of Bucklersbury House (Merrifield 1965, 266–7, no. 251) and a 1.20m thick section of cambered gravel metalling resting on natural brickearth was recorded by Marsden in 1965 at the St Paul's Choir School (Marsden 1968, 2–3). It is possible that the alignments of Flavian buildings at Watling Court (Perring and Roskams forthcoming)<sup>6</sup>, Watling House and Gateway House respect the line of an east-west road to the north which perhaps survives under the modern street pattern (*i.e.* Ludgate Hill and Watling Street) and

which would presumably have crossed the site of St Paul's Cathedral (Shepherd 1986, 141).

It should be noted that the projected line of the realignment of the walls on the Gateway House, Watling Street site crosses the St Paul's Choir School site at the point where the cambered metallings were recorded (Fig. 6). These walls at Gateway House probably date to a post-Hadrianic period, but elsewhere in the northern area later walls were seen to follow earlier alignments (Shepherd 1986, 130, Fig. 5).

#### LATE 1ST AND EARLY 2ND-CENTURY OCCUPATION

Apart from the three cemetery zones (see below p. 11) the emphasis of occupation in this area is industrial. On the Paternoster Square site in 1961, Marsden recorded what was first interpreted as a flue to a hypocaust (Marsden 1963, 76) but

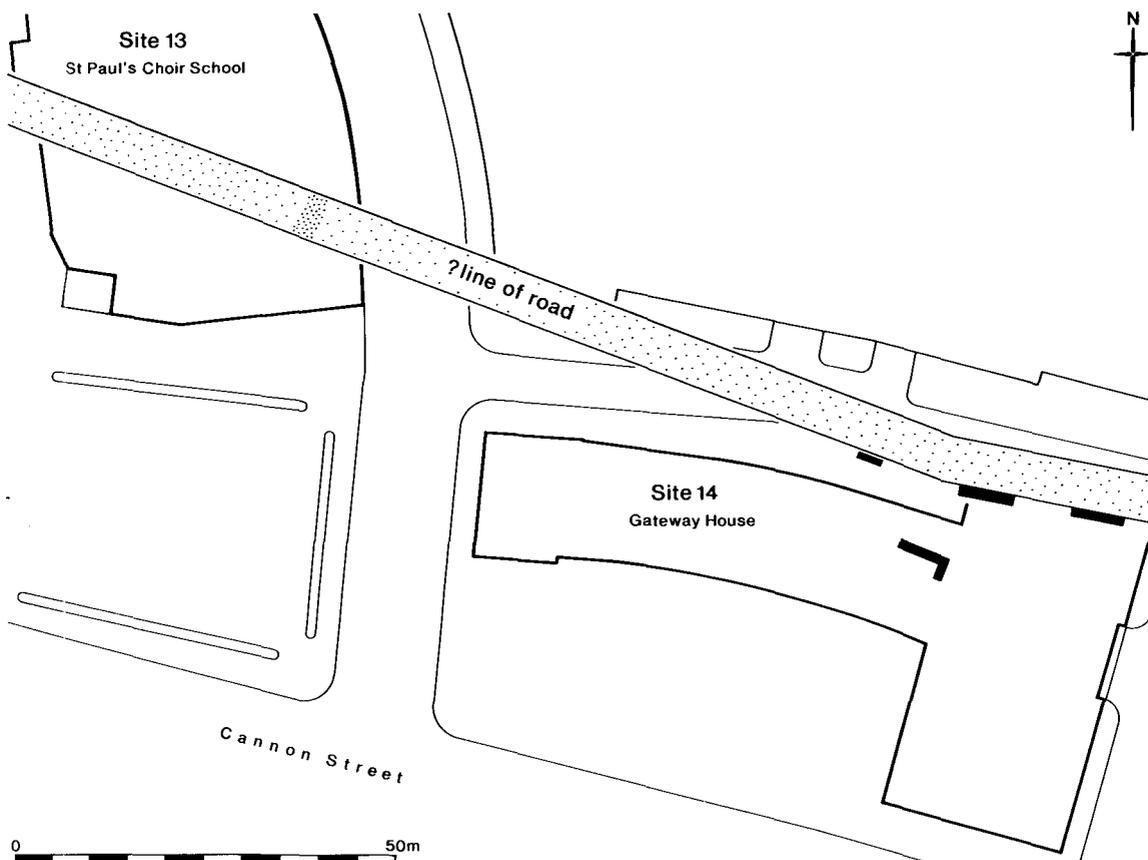


Fig. 6. Paternoster Square and Warwick Square: Detail of possible road realignment of Road 2 at Gateway House, Watling Street.

subsequently proved to be a pottery kiln (Marsden 1969b, 41).

In addition to this kiln, Marsden drew attention to the other evidence for a Roman pottery industry in the area: (a) an area of prepared white clay on the Paternoster Square site to the south of the excavated kiln (Feature 7, see below p. 23); (b) kilns discovered during the construction of foundations of the north transept of St Paul's Cathedral in 1677; (c) clay pits and other areas of prepared clay on the Christ's Hospital site examined in 1907-8 (Norman and Reader 1912, 285). The material from these kilns would appear to date to the late 1st or early 2nd centuries. Although the presence of the water in the north-south stream must have encouraged the location of such industrial processes in this area, it is interesting to note that they also must have lain on the fringes of

the contemporary city, in keeping with established practices.

Evidence for industrial activity in the area came from the GPO75 site where buildings fronting onto the main east-west road (Road 1) were furnished with hearths in a number of rooms to the rear of the property (see below p. 17). Iron slag, distorted glass melon beads and large quantities of furnace and hearth slag from unspecified industries indicate a range of industrial processes. Furthermore, a crucible was found at Paternoster Square (Pit, 1961-2, ER751), suggesting metal working, and leather-working waste came from the stream. The proportionally large amount of evidence for industrial activities in this area might suggest that it served as an industrial 'quarter'. However, the generally poor nature of the archaeological record should be borne in mind. It is possible that the

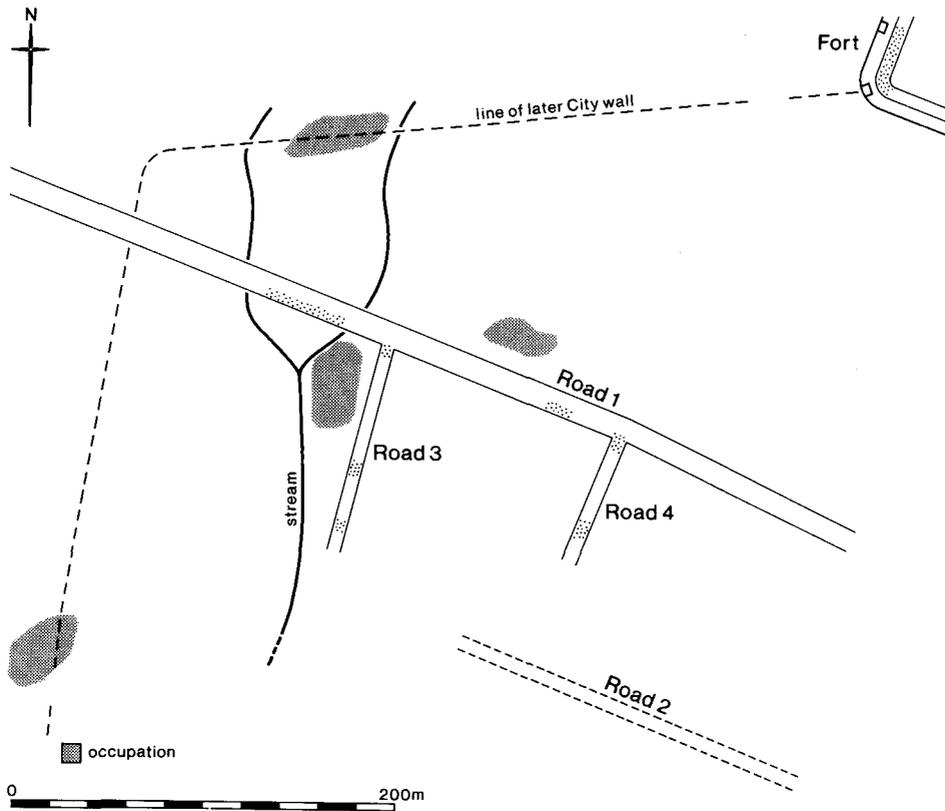


Fig. 7. Paternoster Square and Warwick Square: Known 2nd-century occupation.

total evidence here merely represents a 'normal' mix of low status housing with industry rather than a specific industrial quarter.

The area south of the main east-west road (Road 1) was served by two north-south Roman roads (Fig. 7, Roads 3 and 4). These may have connected with the suggested road (Road 2) running westward from St Paul's through Ludgate<sup>7</sup>. The dates for their construction can be estimated as Flavian, not only because the earliest metallings lay on the natural surface in an area that was first occupied during the Flavian period, but because the roads were needed to serve the contemporary industries and housing in that area. It should be noted, in support of a Flavian date, that the few sherds of pottery from a pit cutting Road 3 (ER698, see below p. 20) also date to the late 1st century and that this pit was back-filled with rammed gravel suggesting that the road had remained in use. Associated deposits to either side of both north-

south roads suggest that they continued in use into the 2nd century (see below p. 21). Indeed, the four metallings of the eastern road, totalling c. 1.75m thick, and the thickness of the western road (0.60m, at least three metallings), are indicative of their long use.

It would appear that this area was severely affected by the Hadrianic fire, as were the Period VII buildings on the GPO75 site (Roskams 1980, 406). At Paternoster Square layers of fire debris dated to the early 2nd century and probably related to the Hadrianic fire, appear alongside Road 3 (ER711). The nature of this debris suggests that clay and timber buildings lined these streets.

#### CEMETERIES

The presence of many burials on the western side of the Roman city but within the limits of the city walls has often been a cause for debate. It was the opinion of Wheeler that these represented 'part

of a single cemetery extending from Warwick Square on the west to the southern end of St Martin le Grand on the east' (RCHM 1928, 153). The excavations in recent years at Warwick Square 1966 (Fig. 2, no. 7), Paternoster Square 1961–2 (Fig. 2, no. 8) and GPO75 (Fig. 2, no. 2) show however that the notion of a single continuous cemetery is false. Only two burials were discovered at the first, just one dubious amphora burial at the second and none at the third though it is possible that others might have been machined away at the Paternoster Square site.

More generally, the burials within the confines of the later city defences separate into three distinct groups: (1) St Martin's le Grand/Newgate Street area (Fig. 2, no. 5; Fig. 5, A) (see p. 26); (2) St Paul's Cathedral (Fig. 5, B) (see p. 26); and (3) Warwick Square (Fig. 2, no. 6; Fig. 5, C) (see p. 28). A single tile burial found in 1839 on Paternoster Row (Fig. 14, no. 13) lay on the fringe of the St Paul's Cathedral group (see p. 25). The possible amphora burial at Paternoster Square lies in the middle of that site and is approximately equidistant from all three groups (Feature 2. See p. 19).

- (1) The St Martin's le Grand cemetery (Fig. 5, A) was situated along the north side of the main east-west road (Road 1), and its location supports the hypothesis that an early city boundary lay to the east (Marsden 1976, 47–9; Bentley 1985). The pottery which still survives from the 19th-century excavations in the Museum of London collections (see below p. 26), is predominantly mid- to late 1st century.
- (2) To the south, the St Paul's Cathedral group (Fig. 5, B), for which only notes and sketches survive from 1672 and 1679 (Wren 1750, 266; RCHM 1928, 154) appears to have been a nucleated group close to the street (Road 2) seen at the Choir School in 1965 (see above p. 13) and which ultimately appears to have passed through the later Roman gate at Ludgate (Fig. 5). The pottery illustrated by the sketches appears to be of late 1st or early 2nd-century date<sup>8</sup>. Its location also supports the hypothesis of an early boundary to the east.
- (3) The Warwick Square cemetery (Fig. 5, C), to the west, appears to have been more distant from the main roads, though the pottery and glass from this site also date from the late 1st and early 2nd century showing that it too was contemporary. Its position on one of the highest points overlooking the Fleet valley would have made it conspicuous to anyone on the opposite valley side or approaching the city from the west. Its location and the high quality of the interments might therefore suggest that the cemetery occupies an area especially set aside for

an individual family or for dignitaries and notables. Archaeological excavation at the edge of the cemetery area (see p. 29) suggests that it was not surrounded by an enclosure. It was located within the circuit of the later Roman city defences and it might have been redundant long before the wall was built.

#### MID-1ST TO EARLY 2ND-CENTURY— CONCLUSION

There is clear evidence that an expansion of the Roman city, from a Flavian boundary to the east of the Paternoster Square site to the later city defences (see below p. 13) in the west, occurred between the late 1st/early 2nd century AD and c. AD 200. The position of the Flavian boundary may be marked by the kink in the main east-west road (Road 1) immediately east of Paternoster Square, for no cemeteries occur east of that point.

In addition to cemeteries, the area west of the Flavian boundary was infilled with domestic and industrial occupation. Pottery kilns, clay preparation areas, some leather- and metal-working debris from the Paternoster site, together with hearths and industrial waste from the GPO75 site, indicate a range of industries. These were served by ancillary roads and probably took full advantage of the water-supply offered by the north-south stream. Moreover, the presence of the burials shows that it was officially an 'extra-mural' area beyond the official city limit.

The Warwick Square cemetery to the west of this stream was broadly contemporary with those to the east and, as stated above, would appear in part to be an area especially designated for the burial of the more notable citizens of London.

#### POST-HADRIANIC OCCUPATION

##### 2ND-CENTURY OCCUPATION

Although the effects of the Hadrianic fire in this area as a whole cannot be precisely determined, it is evident at GPO75 that the burnt Roman buildings had been demolished and levelled. This suggests that their destruction by fire must have been almost complete. The vacant plots were then built upon (Period VIII) (see p. 17) but the earlier property boundaries were still retained<sup>9</sup>.

The post-fire rebuilding of clay and timber buildings on the Paternoster Square site cannot be positively identified but this is probably due to the difficult conditions encountered by the archaeologists rather than an actual lack of evidence. The masonry building (Building 1, Fig. 18) in the north-west corner of the Paternoster site showed no evidence of fire-damage and, at the time of recording,

it was considered to be late in the Roman sequence. It certainly post-dated at least one late 1st or early 2nd-century drain on the same site (P. Marsden *pers. comm.*).

The area immediately to the west of the stream appears to have been left clear of buildings. The cemetery at Warwick Square is the only tangible evidence for the use of the land in that area but that would appear to have been closed sometime during the 2nd century.

On the other hand, there is evidence for some habitation slightly further westwards in the Old Bailey area. Excavations in 1982 at 1–6 Old Bailey/42–6 Ludgate Hill (LUD82—Fig. 2, no. 9; Fig. 7, Site 9) by Peter Rowsome of the Museum of London have revealed circumstantial evidence that some masonry buildings had to be dismantled to allow the city wall to follow a straight line southwards from the gate at Newgate towards the

Thames<sup>10</sup>. The examination there of the Roman city wall revealed a layer of broken tiles, chalk, ragstone, wall-plaster, mortar and *opus signinum* some 0.10m thick which were derived from a construction other than the city wall. Although no trace of a demolished structure was noted in plan it is assumed that this material derives from a building which had been in the path of the wall.

A similar example was found at Christ's Hospital in 1907–8 (Fig. 7, Site 1) where a tile pavement had been cut by the construction trench of the city wall (Norman and Reader 1912, 280).

#### THE WALL, GATES AND ROADS

The masonry city wall and defensive ditch were constructed during the late 2nd or early 3rd centuries (Marsden 1980, 121). They enclosed the top of the terrace, and its western limit followed the upper edge of the deep valley of the River Fleet

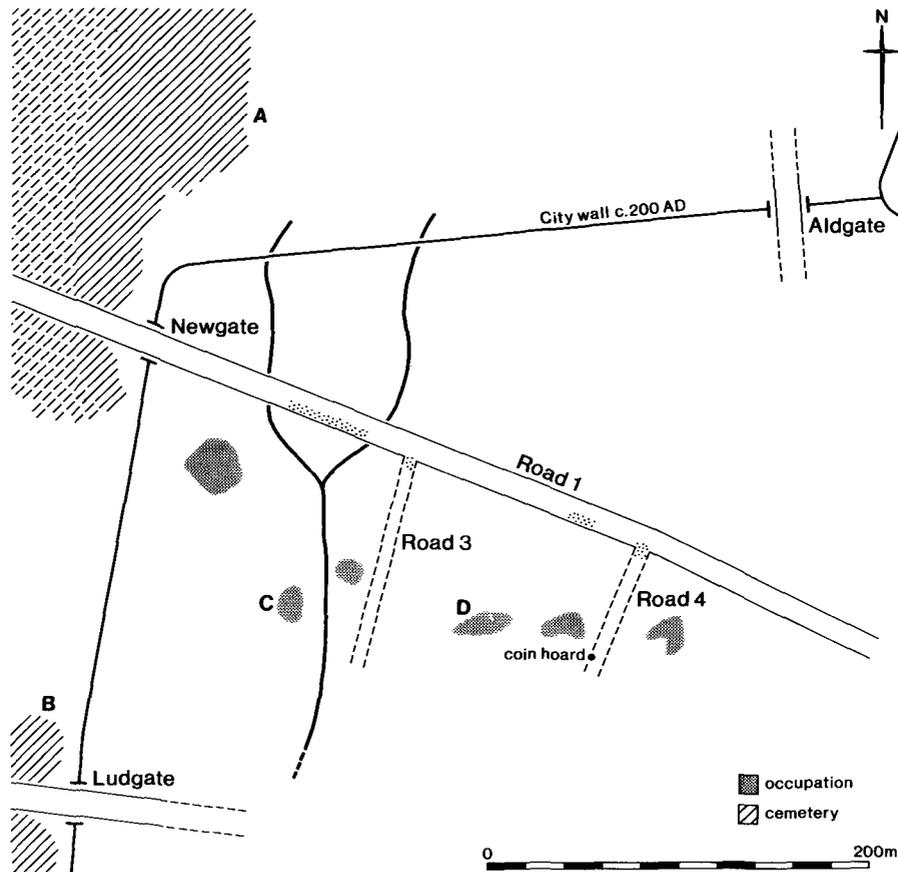


Fig. 8. Paternoster Square and Warwick Square: Known 3rd and 4th-century occupation.

(Fig. 8). There were access gates at Aldersgate, Newgate and Ludgate, the latter two being on the sites of earlier streets leaving the city. Unfortunately there have been few opportunities to examine the wall along this side of the city and so it is difficult to reconstruct the landscape immediately prior to the wall's construction. The limited evidence from the 1982 excavation (LUD82) implies the presence of buildings in the path of the wall but this material may have derived from another source. It is just feasible that the masonry construction was wider than an early boundary on the same line.

While the main road passing through Roman Newgate was of 1st-century origin the date of the road passing out of Ludgate to the south is unclear. Indications of its line have been found at Gateway House (Fig. 2, no. 14), through the St Paul's Choir School (Fig. 2, no. 13) and passing south of the Roman cemetery at St Paul's Cathedral (Fig. 5). But this line, when continued to the west, does not meet the wall at Ludgate, and it is possible that the road did not extend that far before the construction of the gate, when an intermediate change in its alignment would have been necessary.

The later history of the two north-south roads (Figs 6 to 8, Roads 3 and 4) on the Paternoster site is unclear. However the presence of a pit cut into the gravel metallings of Road 4, in which a coin-hoard was deposited after AD 276, suggests that some form of encroachment, if not actual abandonment of this road (see p. 22), might have occurred towards the end of the 3rd century (Fig. 8). Similar encroachments upon the edges of roads during the 3rd century were found in the King Street area<sup>11</sup>.

### 3RD AND 4TH-CENTURY OCCUPATION

The excavation at Warwick Square (Fig. 8, Site 7) disclosed little trace of later Roman occupation other than dark earth. One 4th-century pit, some traces of early 3rd-century coin-forging (Merrifield 1983, 161–3) and the angle of a stone building were all that was found. The foundations of the building cut a late 2nd-century pit and were in turn cut by the single 4th-century pit referred to above. No associated floors or debris were discovered to assist in the interpretation of this structure.

The GPO75 site (Fig. 2, no. 2) showed that intense residential occupation had ceased before the end of the 2nd century to be replaced by dark earth (Roskams 1980, 406–7). Small stake or root holes suggest some activity, agricultural or otherwise.

Some early references to Roman remains in the Paternoster Square region (Fig. 8, C and D) (see

p. 25) show, however, that there were substantial buildings with plain and decorated mosaic floors and masonry walls. Other later Roman buildings found at Gateway House and Watling House, Watling Street, to the south-east (Fig. 2, no. 14) (Shepherd 1986, 138–40), post-dated the Hadrianic fire but had ceased or been altered in character by or during the 4th century.

Dark earth was recorded on the north and south sides of the Paternoster Square site and also sealed Room 4 of Building 1 (Fig. 18, see p. 23). This distinctive soil appeared to bury a north-south wall (Fig. 18, Wall A) of the masonry building at Paternoster Square, suggesting that there its deposition occurred after occupation had ceased. A similar sequence was recorded at GPO75 (see p. 17). Of course, the limited nature of the record for much of this area does not permit us to say if this was true for the entire region. It is possible that occupation continued in parts of the area at the same time as dark earth was accumulating.

### POST-HADRIANIC OCCUPATION— CONCLUSION

It is frustrating that the archaeological record for such a large part of the Roman city is so fragmentary and that so much has been destroyed by 20th-century redevelopment. Little survives intact and so the full picture of Roman occupation in this area might never be reconstructed but the little which has been recorded does indicate changes in the character of occupation during the 2nd century. No industrial material associated with any post-Hadrianic deposits can be identified and the Warwick Square cemetery ceased to function. To this can be added the probability that the area was scattered with large, well-built and decorated masonry buildings similar to those seen at Gateway House, Watling House, Lloyds Building on Lime Street and elsewhere through the city (Marsden 1980, 150–151).

Finally the construction of the city wall concentrated road communications on the gates of Newgate and Ludgate, and burials now took place outside the defences to the north and north-west of Newgate and, possibly, around Ludgate (Fig. 8) (Bentley and Pritchard 1982).

### GAZETTEER OF SITES

#### LUDGATE HILL 1669 AND 1806

To the west of St Paul's Cathedral a number of inscribed and sculpted stones have been recovered. Most of these were discovered on the site of the

London Coffee House (Fig. 2, no. 10) where, in 1806 a 'singular tower and staircase' was found (Treloar 1892, 128). Another inscribed stone, dating to the 3rd century, was found at St Martin's church in 1669 during Wren's rebuilding (RCHM 1928, 153). The coffee house to the west and the church to the east shared a common property line which coincides exactly with the line of the Roman city wall. It may be possible that the 'singular tower' represents a Roman bastion or gate-tower. The stones, some showing signs of secondary use, perhaps came from such a structure. Re-used

masonry and sculptured blocks are a common feature in the late Roman bastions added to the eastern side of the city wall circuit (Price 1880). There, the recycled tombstones were assumed to have derived from an earlier cemetery in close proximity to the later building work.

NEWGATE STREET (*not located on plan*)

In December 1851, a glass vessel containing burnt bones was found in Newgate Street. The type is not well-dated but it is probably not later than the beginning of the 2nd century. This burial was

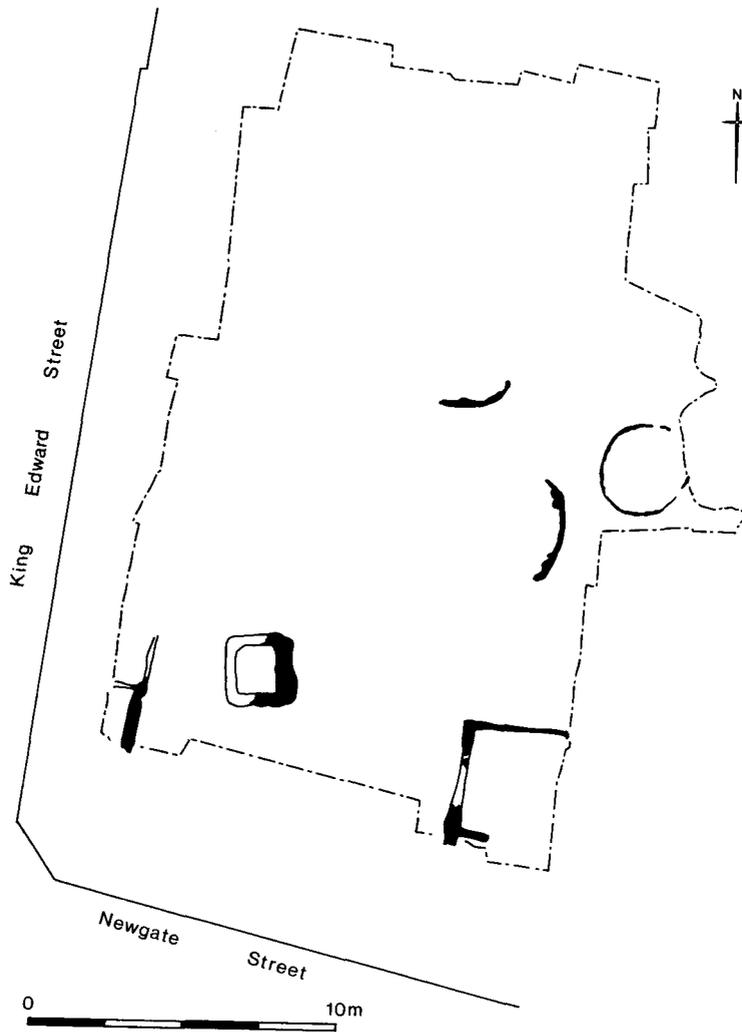


Fig. 9. Paternoster Square and Warwick Square: GPO site, Newgate Street, 1975-9. Flavian features, Period III. (After Perring)

probably found within the line of the late 2nd or early 3rd-century Roman defences (RCHM 1928, 154, Fig. 63, no. 10).

**GENERAL POST OFFICE, NEWGATE STREET, 1975-9** (*Fig. 2, no. 2*)

The site of the General Post Office building excavated in 1975 lay between St Martin le Grand and King Edward Street, and was bounded by Newgate Street to the south (*Fig. 2, no. 2*). The site was excavated by Alan Thompson and Steve Roskams of the DUA, Museum of London over several years, and its significance needs to be

assessed in relation to the Paternoster and Warwick Square sites (Roskams 1980)<sup>12</sup>.

The earliest evidence of building activity (Period I, *c.* AD 50-55), dating to the pre-Boudiccan period, was part of a circular hut found in the southern part of the site. Its foundation trench had been cut into the natural brickearth. No associated floors were noted though a ditch was found to the north, probably marking a boundary and perhaps contemporary. The filling of these two features contained pre-Flavian pottery. The alignment of this ditch did not respect the main east-west Roman thoroughfare running under Newgate Street to the

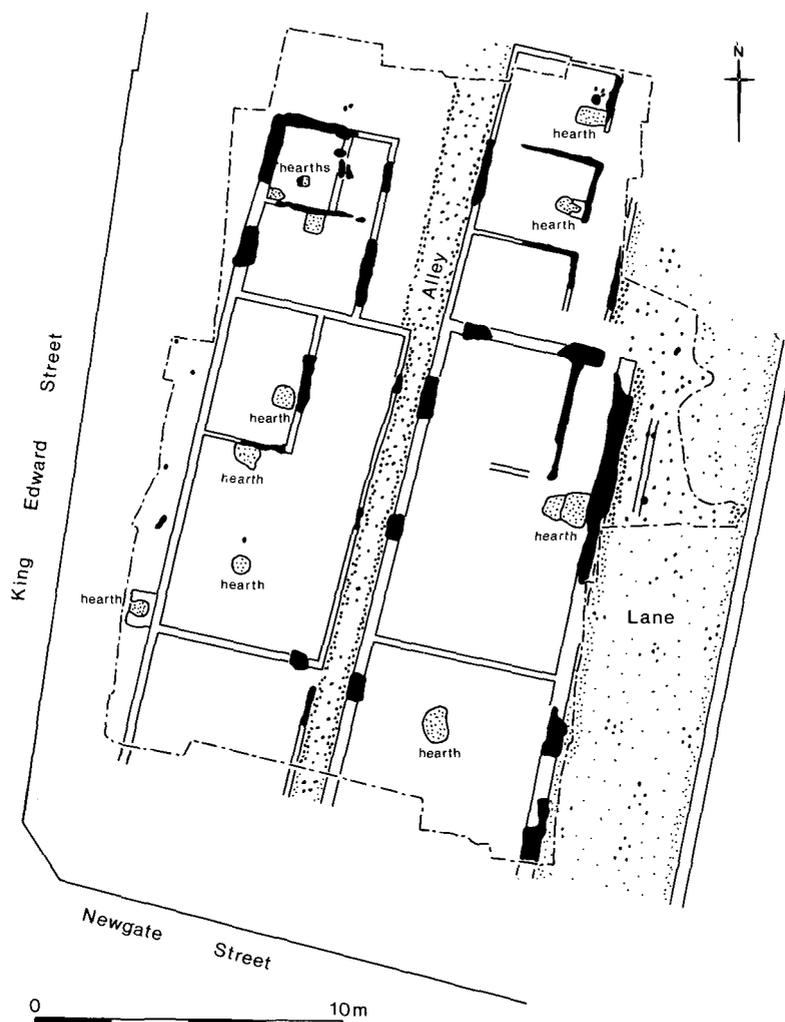


Fig. 10. Paternoster Square and Warwick Square: GPO site, Newgate Street, 1975-9. Period VII buildings destroyed in Hadrianic fire. (After Roskams and Perring)

south, in contrast with all other Roman alignments of later periods. This raises the possibility that the ditch was earlier than the road but this cannot be proved. Elsewhere on this site the primary activity was brickearth quarrying on a small scale.

The next period of activity (Period II, *c.* AD 50–55) was represented by the cutting of several ditches draining southwards and perpendicular to the line of the main Roman road, though the road itself lay beyond the site beneath Newgate Street and its south edge lay at the north side of the Paternoster site (see p. 23). These ditches suggest the date at which the road was in use for it is likely that they carried rain water into the roadside drainage system. At the north end of one of them a series of stake-holes probably represented an insubstantial wattle-framed hut or pound.

This phase of land-preparation was followed by the construction of two rectangular timber-framed buildings (Period III, *c.* AD 50–60), with sunken sill-beams and daub superstructures, apparently

fronting onto the main road (Fig. 9). To the north, several circular huts of wattle and daub construction were noted. All these buildings were destroyed by a fire which is thought to be the Boudiccan destruction of AD 60–61. It is interesting to note that both rectangular and the more traditional circular ground-plans were employed together at this time.

Following the destruction of these buildings there was a slight gap in the structural sequence, in which the only activity was the cutting of pits and drainage gullies (Period IV, AD 60–70). Eventually two north-south paths were laid down showing that formalised property planning had begun in this particular area by the early Flavian period.

Strip properties, substantial timber-framed structures with lean-tos against the external north walls, were developed in Period V (*c.* AD 65–85). They suggest an integrated property development, though the two structures had different histories and internal arrangements. In Period VI

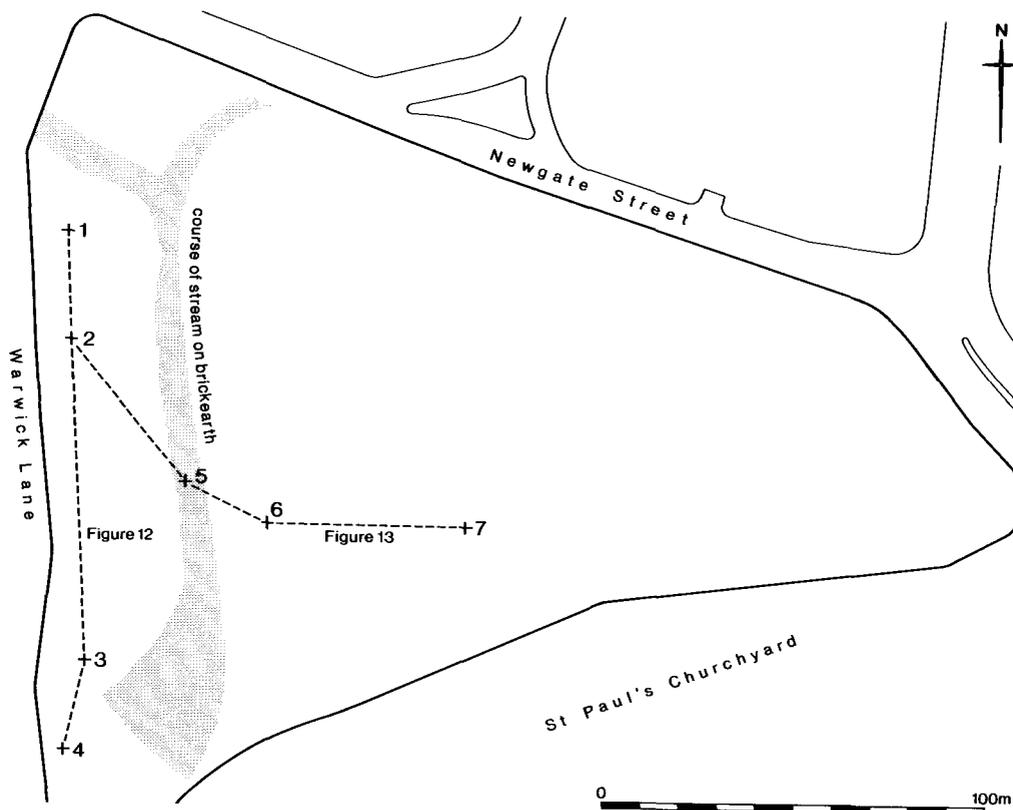


Fig. 11. Paternoster Square and Warwick Square: Paternoster Square, location of boreholes and sections (Figs. 12 and 13).

(c. AD 85/90–100), the western structure was removed and since the eastern building remained in use for longer, its western wall was modified. At the same time a large brickearth quarry was dug in the north-east corner of the site which contained a number of discarded bricks in its lower fill. Presumably this quarry supplied the building material, and was later back-filled with organic waste.

The following period (VII, c. AD 90–125) was represented by the construction of two new buildings, essentially timber and clay, which reproduced earlier property boundaries. These buildings appeared to have contained shop units on the roadside frontage (south end) with domestic and minor industrial areas to the rear (north) (Fig. 10). Further floor space for storage and residential purposes would have been available in the upper storey. The industrial evidence consists of small hearths (domestic hearths were also recorded) with, from many contexts, iron slag in abundance and numerous fire-distorted and waste glass melon beads.

These buildings were totally destroyed in the Hadrianic fire and the resulting debris was spread across the entire site. The intensity of the conflagration is shown by the presence of portions of collapsed mud-brick walls, the bricks partially fired, originating from internal and external walls.

New buildings were constructed in Period VIII, (c. AD 120–160) using the earlier property lines. They so exactly followed earlier lines that it can only be surmised that records had been kept and were referred to before rebuilding to prevent boundary disputes. The presence of possible industrial hearths and the continuity of plan indicates a continuity of function.

Before the end of the 2nd century, the Period VIII buildings were intentionally dismantled and levelled and the site became covered by a layer of dark earth. Although this horizon contained numerous stake or possibly root holes, it effectively marked the end of Roman structural activity on this site.

#### PATERNOSTER SQUARE

##### REDEVELOPMENT 1961–2 (Fig. 2, no. 8)

This large triangular site, with Newgate Street on the north, Warwick Lane on the west and St Paul's Churchyard on the south, covered approximately 25,000 square metres (Fig. 11), and was examined by Peter Marsden of the Guildhall Museum (Marsden 1963, 75–6; 1965, 136–7; 1968, 2), and by Professor W. F. Grimes for the Roman and Mediaeval London Excavation Council (Grimes 1968, 148). While Grimes was able to examine a number of machine-cut trenches on the fringes of this large site<sup>13</sup> Marsden had to contend with the difficulties of retrieving archaeological information during the mechanical clearance of the site. Although the information for the larger part of the site is limited, some major features were investigated, particularly a stream, three roads, a pottery kiln, and the remains of a substantial building in the north-western quarter of the site. Remains of one possible cremation burial were also discovered.

##### Natural topography

Thirty-nine borehole sections were made available by the site contractor<sup>14</sup>. Some caution had to be exercised in their interpretation since Roman, medieval and post-medieval pits had all been cut into natural deposits in many areas of the site<sup>15</sup>.

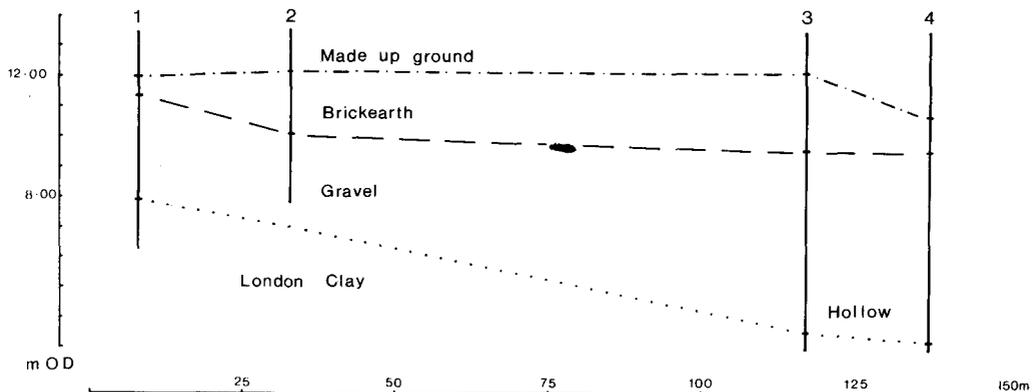


Fig. 12. Paternoster Square and Warwick Square: Boreholes and reconstructed geological section through drift-filled hollow.

The sub-soil everywhere was brickearth except where cut by the stream (Feature 1, Fig. 13). The highest level of brickearth was between 13.10m and 13.40m O.D. in the north-west corner of the site, between the two converging arms of the stream. The natural surface appears to have been reasonably flat east of this, varying between 12.20m and 12.80m O.D.

At the south-west corner of the site, fifteen boreholes (only seven are illustrated in Figs 11–13) revealed a deep geological feature. This feature extended *c.* 26.5m below surface level (down to *c.* 2.5m O.D.) and has been interpreted as a deep drift-filled hollow in the surface of the underlying London clay (see p. 7 and Fig. 4)<sup>16</sup>. The coincidence of this subterranean hollow and the south end of the stream (Feature 1) should be noted (Fig. 4) though their true geological relationship is unknown.

*Feature 1. The stream (Fig. 14, no. 1)*

This feature was exposed for approximately 200m north-south across the site. At the northern end, two arms converged into the single channel at a point *c.* 30m south of Newgate Street. At the south end of the site it turned slightly to the south-west. Along the entire length the feature showed up as a broad dark stain, contrasting well with the orange brickearths and gravels (Merrifield 1965, pl. 18) through which it cut.

No profiles were recorded but some measurements were obtained. The stream was V-shaped in the north part of the site and was formed by two converging branches or arms each measuring *c.* 9.45m across. South of this, towards the centre of the site, the feature widened to *c.* 11.60m. At the southern end the maximum width of the feature

was *c.* 21.34m, more than twice the width *c.* 80m to the north. In the centre of the stream, a borehole (Fig. 13, no. 5) showed that its fills lay *c.* 4.90m below the surviving natural (i.e. *c.* 7.35m O.D.). Other boreholes give an approximate indication of the profile of this stream's valley and also of the subterranean drift-filled channel in the London Clay running from the north-east into the drift-filled hollow in the south-east corner of the site (Figs 4, 11, 12, 13 and 14).

The fills of this feature were seen in a number of places. In the western arm a deposit *c.* 2.1–2.4m thick of 'black peat and pebbly grey sand' was overlaid by 'yellow sand'. Pottery of the late 1st century came from this peat deposit. Similar deposits indicating a wet environment were recorded midway along the line of the stream ('black silt') and at the south end ('peaty gravel'). At the north end of the site, in the east and west arms, 'clay and brickearth' and 'sandy clay' dumps sealed the earlier deposits described above<sup>17</sup>.

To the north of Paternoster Square the two streams noted by Norman and Reader (1912, 282), joined the converging arms recorded by Marsden in 1961–2. The source of the waters feeding this stream can be located at a spring-line running north-east to south-west immediately north of the city wall (Bentley 1987, 333, Fig. 3). The recorded filling in this feature suggests a fast flowing stream which drained a marshy region to the north. Though flowing in the early Roman period, in time the stream was deliberately back-filled, and was blocked up at the northern ends of the two arms by *c.* AD 200 when the city wall was built. It should be noted that the feature coincides with the ward boundary across Paternoster Square for more than 100m, an indication that during the early Middle

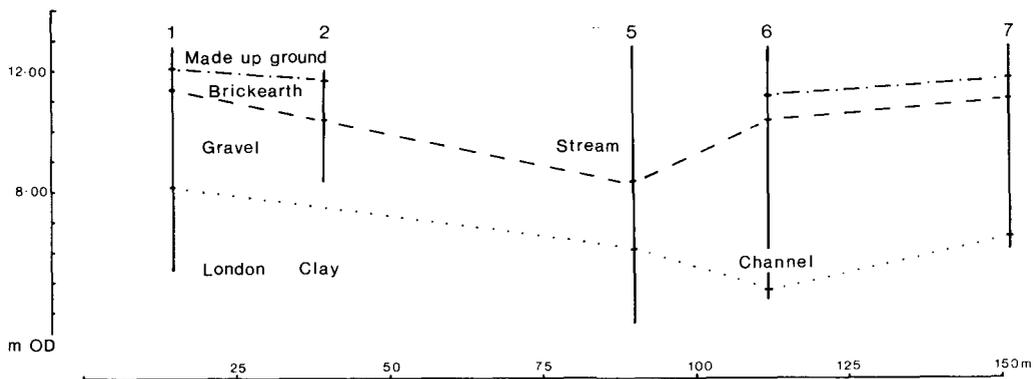


Fig. 13. Paternoster Square and Warwick Square: Boreholes and reconstructed geological section across stream (Feature 1)

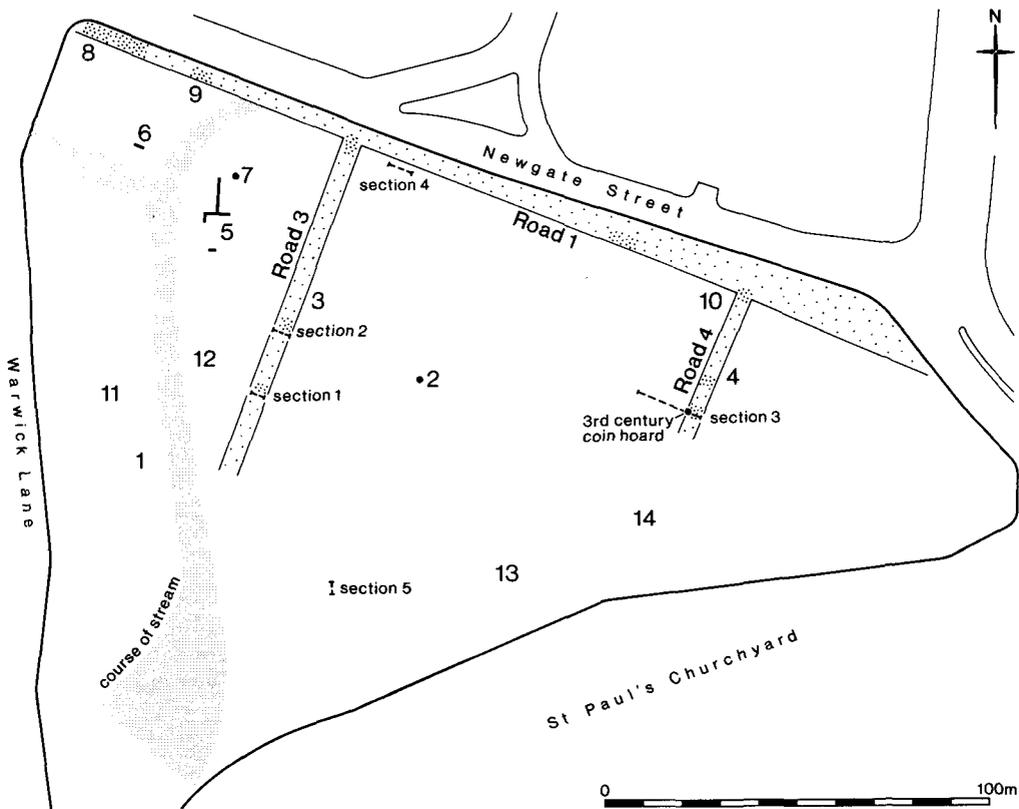


Fig. 14. Paternoster Square and Warwick Square: Paternoster Square redevelopment site, 1961–2. 1. The stream; 2. cremation burial; 3. Road 3; 4. Road 4; 5. Building 1; 6. Drain 3; 7. Kiln; 8–10. road metallings; 11. Pavement, 1883; 12. Mosaic pavement, 1884; 13. Burial and pavement, 1839–41; 14. Mosaic pavement, 1961.

Ages it was probably still visible as a stream, gully or drain.

*Feature 2. Cremation burial (?) (Fig. 14, no. 2)*

A possible amphora burial (ER710)<sup>18</sup> was discovered in approximately the centre of the site. The group, consisting of a Brockley Hill ware flagon (MOL Acc. No. 23868) and a fragmentary globular amphora (Dressel 20, MOL Acc. No. 23874) had been badly disturbed by a mechanical excavator. The flagon lay alongside the amphora. There were no traces of cremated bone. The vessels date to the 1st or early 2nd century.

*Roads (Fig. 7, Roads 3 and 4)*

Traces were discovered of two roads running approximately north-south across the site, one immediately east of the stream and the other on the eastern side of the site.

*Feature 3 (Road 3) (Fig. 14, no. 3)*

Two sections (Fig. 14, Sections 1 and 2) were seen through this road which ran down the east side of the stream (Feature 1). The road and the stream were not parallel but converged towards the southern end of the site. Both sections were recorded in the centre of the site.

The southernmost of the two sections (section 1, Fig. 15) showed that the top of the road had been truncated by a medieval pit filled with black mud and gravel. The surviving depth of road revealed four thin bands of dirty gravel (each c. 5–15cms in thickness) with three thicker bands of clean gravel between (each c. 15–30cms in thickness). The total surviving thickness of the layers rested upon a layer (thickness unknown) of weathered yellow clay with ash. This in turn lay upon natural brickearth with a weathered interface. Cutting the road on the western side was a pit filled with rammed gravel

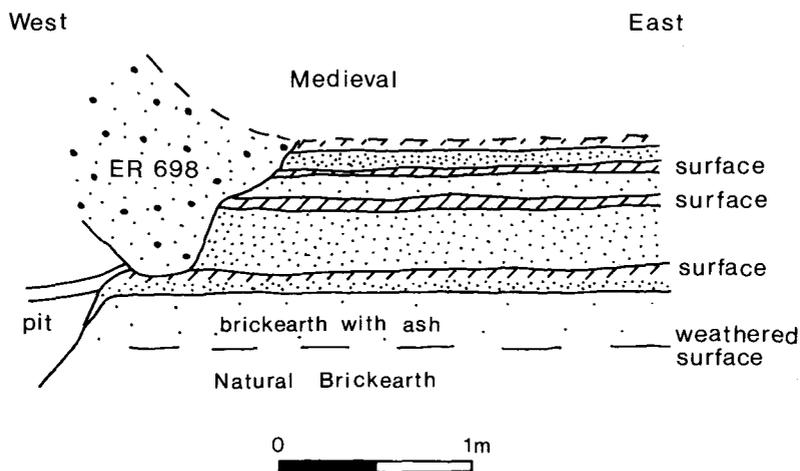


Fig. 15. Paternoster Square and Warwick Square: Section 1 across Road 3.

(ER 698). The few sherds of pottery from this pit date to the late 1st century, suggesting that the road gravels below had accumulated before that date. The presence of the pit might suggest that some encroachment or abandonment had occurred but its rammed gravel filling indicates that, even if this were so, the surface of the road was con-

solidated for use. The road surface through which the pit was cut cannot be identified. Pottery from one of the road metallings (exact position unknown) can be dated to the late 1st century also (ER 702).

Section 2 (Fig. 16) to the north showed a similar picture of alternating thin dirty gravel layers and

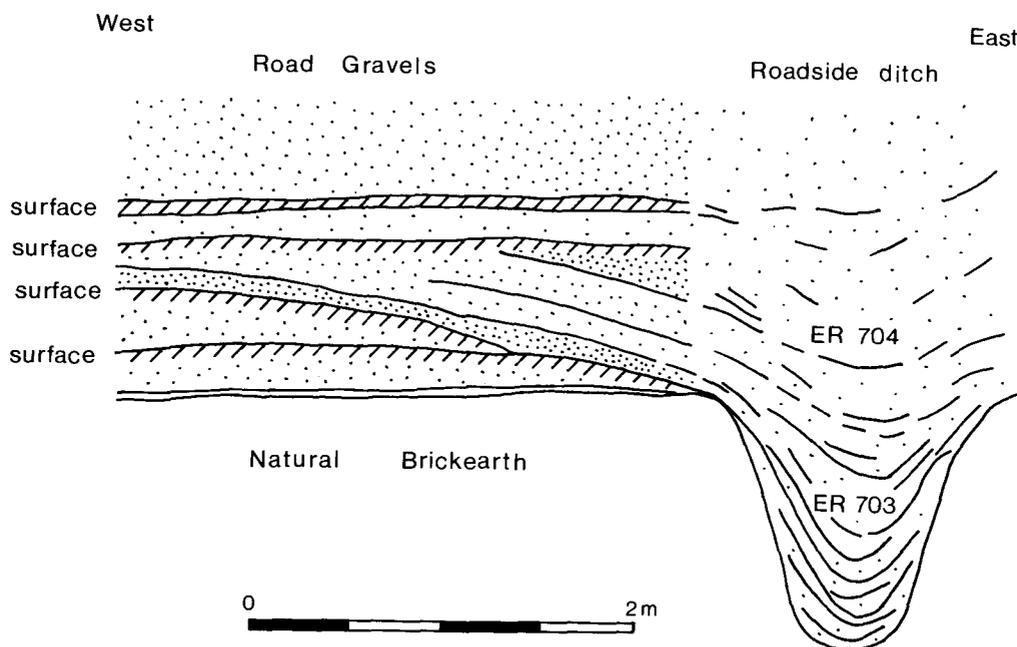


Fig. 16. Paternoster Square and Warwick Square: Section 2 across Road 3.

thicker clean gravel. On the east side the earliest road-side ditch (ER 703) contained pottery dated *c.* AD 55–80. Pottery (ER 704) from the fill of a later roadside ditch but immediately above ER 703 can be dated to *c.* AD 70–100.

relation of the two sets of records has proved impossible. Indeed it is possible that two different features are represented.

*Feature 4 (Road 4), (Fig. 14, no. 4)*

This road was recorded by both Marsden and Grimes on the east side of the site, although cor-

The exact orientation for this road cannot be exactly fixed but, as it was running roughly north-south, it appears to have been approximately perpendicular to the line of the main east-west road to the north (Road 1). It was approximately 6.00m wide. No trace of the road, however, was found on the southern side of the site.

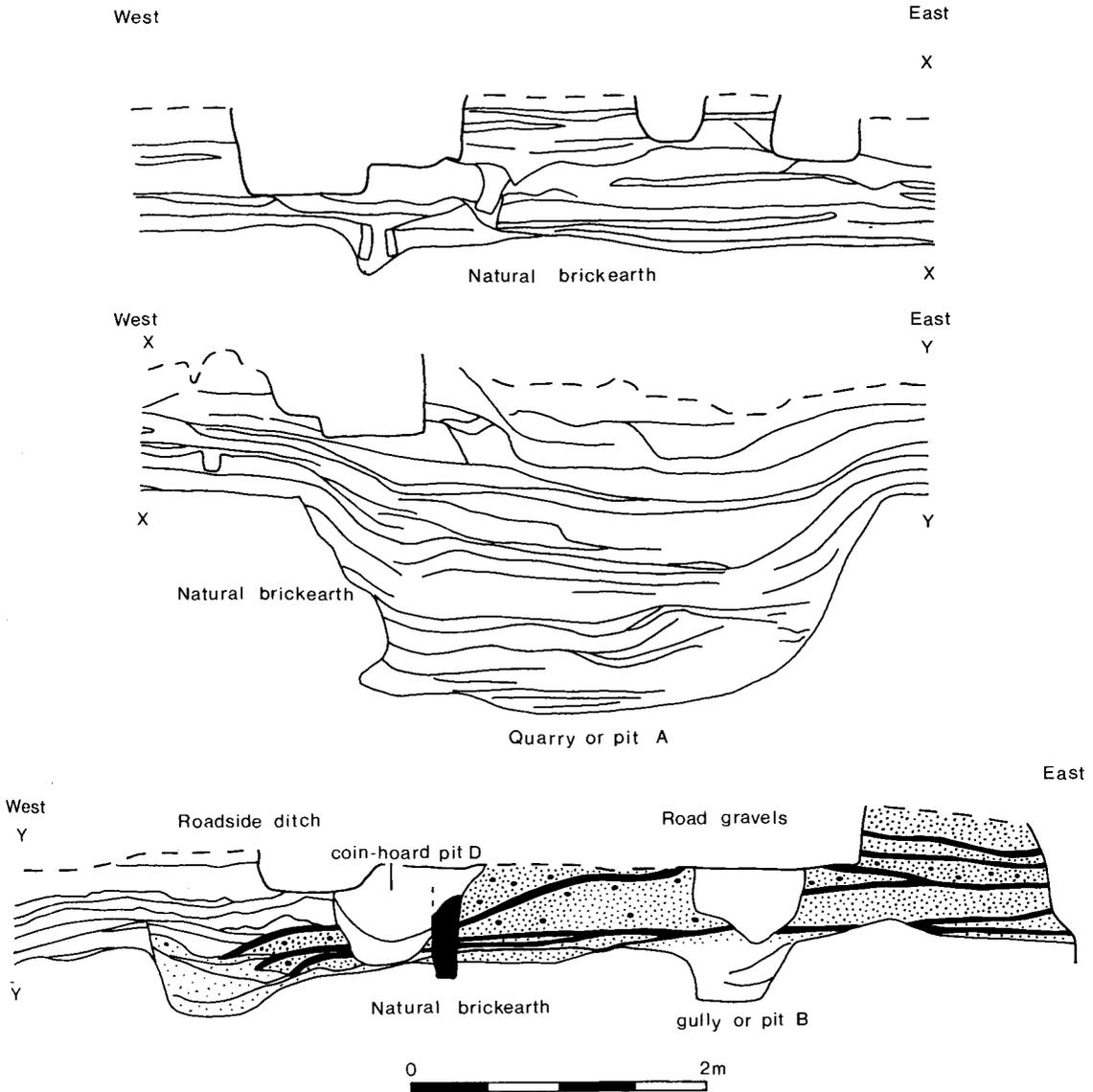


Fig. 17. Paternoster Square and Warwick Square: Section 3 across Road 4.

Grimes was able to record a detailed section through this road and the deposits on its west side (Fig. 14, Section 3 and Fig. 17). This was located on the north side of the east end of Paternoster Row. About 1.20m of accumulated clay and gravel make-up layers, interspersed with burnt clay debris and occupation layers, spread across the greater part of this site. Many of these layers had subsided into a deep pit (A) which had penetrated the natural gravels, and which was one of the earliest features. A number of gullies or small pits were seen in section, some immediately above earlier examples and suggesting possible continuity of land use in this area.

The gravel metallings were recorded at the extreme eastern end of this section. Although the lowest rested upon natural brickearth it also sealed a shallow pit or gully (B). At least three gravel road surfaces can be identified. Each was sealed by dirty gravel and silt and the total thickness was c. 60cm. A very slight camber was evident.

On the west side of the gravels a roadside ditch (C) showed a number of recuts. Gravel from the road had periodically slumped into this ditch. The road had been cut on the west side by a pit (D) in which was found a hoard of about 530 *antoniniani* deposited after AD 276 (Grimes 1968, 150). The latest road surfaces and the top of that pit had been truncated by post-Roman features.

The road was not seen in the southern part of the site and Merrifield points out that its projected line would be blocked by a building with a tessellated pavement (Merrifield 1965, 193, no. 16; 194, no. 20).

*Feature 5 (Building 1) (Fig. 14, no. 5)*

In the north-west corner of the site a building with ragstone walls with courses of bonding tiles was recorded (Fig. 18)<sup>19</sup>. The plan of the structure is too incomplete to be able to identify positively its form and function. No levels are available for its features.

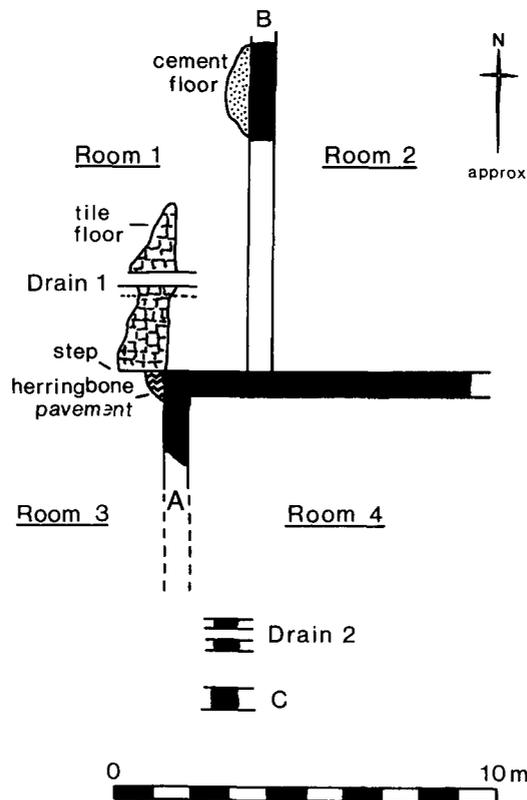


Fig. 18. Paternoster Square and Warwick Square: Paternoster Square redevelopment site, 1961–2. Details of Building 1.

Wall A of this building was c. 0.60m in width and survived to a height of 1.05m. Two bands of tile coursing, the lowest of two the highest of three, were separated by five courses of ragstone. At least three courses of ragstone rested upon the uppermost tile course. Pink cement or plaster was used as a facing on the west side of the wall.

Inside the building different media were used for flooring materials. In Room 1 bricks had been laid on concrete, through which ran an east-west open tiled drain (Drain 1) (Fig. 18). To the north, perhaps in the same room, a cement floor was noted. The floors of the rooms (Rooms 2 and 4) to the east and south-east were not found. On the west side of Room 4 a grey earth deposit was dumped against Wall A. This was at the same level as the herringbone pavement (see below) on the west side of Wall A. This grey earth deposit (ER 712) contained a single late 2nd-century sherd of a Cologne barbotine decorated beaker.

Room 3 to the south of Room 1 was reached by a step up c. 18cm high. In the north-east corner of this room a small expanse of herringbone pavement set in a 10cm thick layer of *opus signinum* was revealed.

In addition to the open tiled drain (Drain 1) in Room 1, there was another drain (Drain 2), also east-west, to the south of Room 4. This was possibly earlier than the building, for there was no evidence that it was part of the building with the stone walls. Indeed, a search was made and the general impression was that it was most likely part of structures pre-dating the stone building (P. Marsden *pers. comm.*). It was associated with the early Roman deposits, as was a drain (Feature 6) on the west side of the stream (Fig. 14), whereas the building seemed to be associated with later Roman deposits, particularly the 'dark earth' (ER 719).

The southern wall of Drain 2 was vertical while the northern wall arched southwards to meet it. Pottery from its fill (ER 715) was dated to the Flavian-Trajanic period. Material from the construction trench for this drain (ER 717) and a layer overlying it (ER 716) dated to the same period. A small undated brick wall (Fig. 18, C), noted immediately to the south of this drain, may have been part of the later Roman building.

A 'dark earth' layer (ER 719) overlying these features contained pottery normally considered to be 3rd-century in date including Nene valley colour-coated wares and flanged bowls. Some of these fragments are burnt. This layer covered Wall A of Building 1.

The evidence available would suggest that the structure was in use not earlier than the late 1st

and early 2nd century and it may have been in use considerably later. Apart from the few burnt sherds in the dark earth layer there was no evidence for burning or destruction by fire at any time during its history.

The presence of the apparently open drain (1) in the floor certainly suggests that the supply or disposal of water was a necessary task associated with the function of this building. The earlier drain, unassociated with any building, might be more closely related to the late 1st and early 2nd-century industrial activities in the area (e.g. the kiln, Fig. 14 Feature 7).

*Feature 6 (Drain 3) (Fig. 14, no. 6).*

On the west side of the stream was another drain, without any associated structure. It was c. 40cm wide internally and its two parallel east-west walls had four courses of brick to the north and six to the south. The base was of bricks on a 2.5cm bed of *opus signinum*. At its eastern end the drain began to curve to the south towards the stream.

The fill of the drain was a yellow clay but the only dating evidence came from a layer overlying the southernmost wall. This contained pottery dated to the Flavian-Hadrianic period (ER 721).

*Feature 7 (Kiln) (Fig. 14, no. 7)*

A small kiln c. 1.20m in diameter was recorded (Marsden 1969b, 41–44). Material from the furnace area dates to the late 1st or early 2nd century (ER 731 and 732). To the south was recorded an area, dimensions unspecified, of prepared white clay (ER 709).

*Feature 8 (Road metalling) (Fig. 14, no. 8)*

A c. 0.28m thick layer of gravel metalling was noted at the extreme north-west corner of the site. It lay immediately upon natural brickearth, the latter being at 13.10m O.D. This represented part of the southern edge of Road 1 whose upper surfaces at this point had been truncated by modern cellars (Merrifield 1965, 190, no. 5).

*Feature 9 (Road metalling) (Fig. 14, no. 9)*

To the east of Feature 8 was a small section of ramed gravel road-metalling with the indications of a roadside ditch c. 0.60m wide. It is possible that this 'ditch' was a pit. Gravel spreads extending up to 5.18m south of this probable road edge may not represent road metallings but possibly courtyard surfaces fronting onto the Road 1<sup>20</sup>.

*Feature 10 (Road metalling) (Fig. 14, no. 10)*

A thick deposit of gravel metalling was recorded at the north-eastern end of the site. This was on

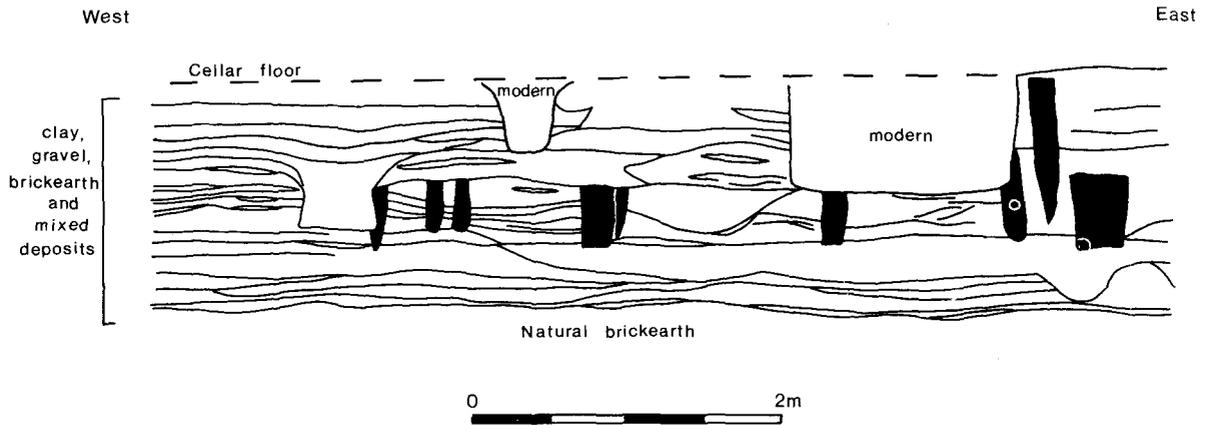


Fig. 19. Paternoster Square and Warwick Square: Section 4.

the line not only of the main east-west Road 1 but also the postulated north-south Road 4 and might represent part of the junction of the two (Merrifield 1965, 193, no. 15).

#### Sections 4-6

In addition to the features and sections recorded by Marsden and Grimes and described above, Grimes recorded three other sections which are relevant to this study.

#### Section 4—Newgate Street. Grimes Site 27 (Fig. 14, Section 4)

The location of this section is approximate only. It was situated east of Ivy Lane and c. 4.26m south of and roughly parallel to the 1961 Newgate Street frontages. A total of three sections were examined but only one was recorded in detail (Fig. 19) (Grimes 1965, 148).

Natural brickearth was recorded at between c. 12.25m and c. 12.75m O.D. Unfortunately, at present it is not possible to calculate a more accurate level from the available records. Above this was a 1.50m accumulation of clay and gravel make-up deposits interspersed with thin black or dark coloured occupation layers. At one level midway up the section were at least eight large, pointed timbers, some in pairs, which had been driven vertically into the ground. These varied in width from 8 to 34 centimetres but were mainly c. 10cm wide. Similar posts had been driven into overlying deposits and Grimes refers to others seen at lower levels, but not recorded in his section. These groups of posts presumably fulfilled a similar but unknown

function. As Grimes suggested, this section probably represents a longitudinal section through an often retained boundary approximately parallel with the main Road 1 under Newgate Street.

#### Section 5—Paternoster Row. Grimes Site 29 (Fig. 14, Section 5)

A section cleaned at the west end of Paternoster Row, south of the road itself, revealed that most of the Roman levels had been truncated by medieval and post-medieval cellars and pits (Fig. 20). At one point, however, the cut and fill of a deep Roman pit or hollow survived. This feature, cut through natural brickearth, was steep sided with a flat bottom which coincided with the top of natural gravel. Its fill consisted of clean clay and silt (1), representing a natural silting, overlain by thick dumps of organic waste (2-4). Oyster shells predominated in the uppermost layer which had been truncated by a post-Roman pit. This feature was evidently a brickearth quarry backfilled with domestic organic refuse. Grimes pointed out its possible association with the pottery industry in the region (see above p. 9).

#### Section 6—Paternoster Row Grimes Site 26

At the extreme east end of Paternoster Row, a north-south orientated section revealed make-up and occupation layers overlying natural brickearth (not illustrated). The latter, with a height of approximately 12.40m O.D. was seen to be irregular. Pottery from the lowest levels dated to the mid-to late 1st century and a pit cutting through the layers referred to above contained early 2nd-century pottery. No structural elements were noted.

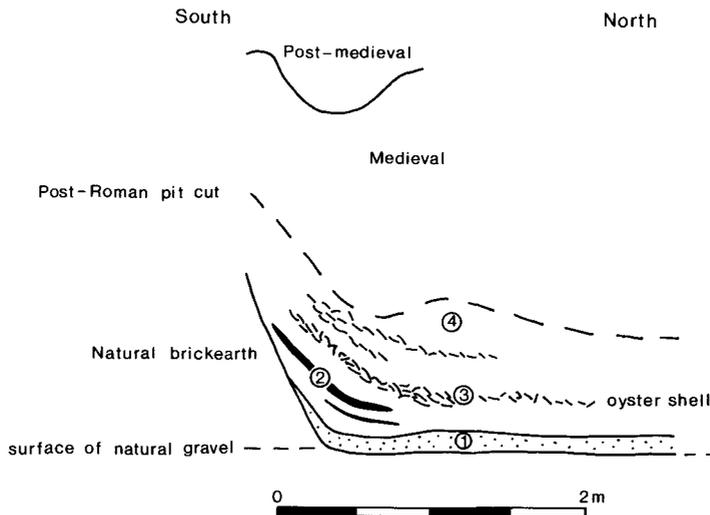


Fig. 20. Paternoster Square and Warwick Square: Section 5.

#### Miscellaneous observations

During the 19th century and also during the more recent redevelopment of this site in 1961–2 a number of small observations were made which cannot be accurately located on plan or associated with any of the major features described above. However, their intrinsic importance warrants their inclusion here.

#### Pavement—1883 (Fig. 14, no. 11)

In 1883, during the excavation for the foundations of a party wall in the Paternoster Square frontage of a building at the corner of Rose Street and the Square itself, a 'quantity of Roman pavement was discovered at a depth of 17ft (c. 5.18m) below the ground line' (RCHM 1928, 135)<sup>21</sup>.

#### Mosaic pavement—1884 (Fig. 14, no. 12)

In 1884, at the north-west corner of Paternoster Square, was found a plain mosaic pavement and various forms of tiles, including box-tiles and *pilae* (RCHM 1928, 135).

This and the 1883 observation come from find-spots only c. 10–15m apart. However, they were on different sides of the stream (Feature 1) suggesting that they were parts of different Roman buildings. The date of these mosaics is unknown but, when seen elsewhere in this and the Gateway House study area to the south-east, buildings with mosaics occur late in the Roman sequence (i.e. Post-Hadrianic) (Shepherd 1986, 138–40).

#### Burial and pavement—1839–41 (Fig. 14, no. 13)

A tile burial was discovered in 1839 ('... a skeleton in a framework of tiles, an interment analogous to that found in Bow Lane...') near the corner of Cannon Alley, towards the west end of Paternoster Row. It was found at a depth of c. 3.80m. Roach Smith regarded the burial as 'deposited long anterior to the construction of the pavement' which was found at the same time.

The pavement extended for over 12 metres and had a design of birds and animals in individual zones within a border of guilloche and rosettes (Roach Smith 1842, 155).

#### Layers—1961–2, ER 708 and 709

Two groups of pottery from the lowest occupation layers c. 9.00m to the west of Section 2 (Road 3). All the fragments came from Neronian types (e.g. Highgate 'B' bead rim jars) and can be broadly dated c. AD 55–80. Many sherds were burnt but cannot be associated with any major fire deposit (e.g. Boudiccan).

#### Layers—1961–2, ER 706 and 711

These layers were found in the vicinity of ER 708 and 709 described above. Pottery from and beneath the c. 22cm thick red burnt layer (ER 706) can be dated to the late 1st and early 2nd century. Some fragments are burnt. Pottery from the burnt layer itself dated c. 100–120 and showed severe burning. This layer probably represents debris from clay and timber buildings destroyed in the Hadrianic fire.

*Pit—1961-2, ER 751*

It is not possible to locate this pit on plan. Its approximate position was in the middle of the north side of the site. Pottery from it dates to the late 1st and early 2nd century. Amongst this assemblage was a fragment of a metal-working crucible.

*Mosaic pavement—1961 (Fig. 14, No. 14)*

A small fragment of *in situ* tessellated pavement in coarse red tesserae was recorded in the south-east corner of the large Paternoster area. It was located 'under the north frontage of Paternoster Row' and to the east of Cannon Alley (both roads now destroyed). There was no indication of any associated walls or other features. No dimensions or levels are available. It is significant that, in the opinion of the archaeologists, this floor lay in the line of the apparent north-south road to the north. However there is no evidence at all to confirm or deny that the road and the pavement were ever contemporary (Merrifield 1965, 194, no. 20).

#### THE ST MARTIN'S LE GRAND CEMETERY (Fig. 2, nos 3, 4 and 5)

Archaeological features relevant to the Paternoster and Warwick Square sites have been found on the block of buildings bounded by St Martin's le Grand, Cheapside, Foster Lane and Gresham Street (Fig. 2, nos 4 and 5) (Lambert 1915, 235-269), and on another block to the west between Newgate Street and Angel Street (Fig. 2, no. 3) (Lambert 1915, 235-269)<sup>22</sup>.

An examination of the finds in the collections of the Museum of London reveals many objects from St Martin's le Grand. Of special significance are those which, on account of their completeness and form, can be interpreted as being cremation urns and grave-goods. All of these have only the street name for their provenance and were discovered in or before 1870.

Amongst the earliest list of donations to the Guildhall Museum there is reference, in 1829, to Mr H Cureton's gift of an amphora, a cinerary urn containing burnt bones, some fragments of samian and other objects found in St Martin's le Grand<sup>23</sup>. Unfortunately these can no longer be located. It is probable that these references relate to 1822 when a massive concrete raft was laid down as a foundation for the building designed by Sir Robert Smirke<sup>24</sup>. This was demolished in 1913 and the subsequent excavations by Frank Lambert revealed that the natural brickearth had been heavily truncated by the building works of 1822. Furthermore, the blasting of the concrete foundation of 1822 and the reduction of the site was carried out simultaneously in 1913 so that only the

lower fills of deep pits and wells survived. As a result, no further evidence of burials was forthcoming from the 1913 excavations.

*Summary of cemetery contents*

The collection of the Museum of London retains only thirteen complete or slightly damaged vessels recovered from the St Martin's le Grand region during building work in the early to mid-19th century<sup>25</sup>. Of these just one still holds cremated remains (MOL Acc. No. 394). The forms represented include urns, miniature pots (two), a flagon, bottle and strainer<sup>26</sup>.

#### ST PAUL'S CATHEDRAL CEMETERY AND INDUSTRY (Fig. 2, no. 12)

*Burials*

All the Roman archaeological observations from the area of St Paul's Cathedral (i.e. the Cathedral itself and St Paul's Churchyard) occurred during the rebuilding of the cathedral following the Great Fire of 1666.

Sir Christopher Wren, during the digging for the foundations of the new cathedral in 1672, discovered the following below medieval interments:

'... Roman urns intermixed: this was 18ft deep or more, and belonged to the colony when Romans and Britains lived and died together. The most remarkable Roman urns, lamps, lachrymatories and fragments of sacrificing vessels, etc., were found deep in the ground towards the north-east corner of St Paul's Church near Cheapside' (Wren 1760, 266).

Conyers, a contemporary diarist, gives some further details. He writes that:

'... at the east end of St Paul's ... on the north side ... there was found a sort of Redd earthen Pottsheards the Pott as Redd and firme as sealing wax ... som glass and potts like broken urnes which were curiously laid one the outside withlike thorne pricks of rose trees and in the manner of raised work this upon potts of murry collour and here and there greyhounds and staggs and hares all in rais'd work, other of these were Cinamon collour urne fashion and were as gilded with gould ... Juggs the sides bent in so as to be six square and these raised work upon them and curiously pinched. ... Many of these potts of the finer sort are lite and thinn and these workes raised or indented were instead of colours. ...'<sup>27</sup>

Unfortunately none of these appear to have survived or can be identified. A sketch by Conyers, always thought to show material from St Paul's, illustrates a range of vessel forms including narrow-necked jars, flagons, 'poppy-head' beakers, a mortarium, miniature pots, a lamp and a three-handled urn with a spout<sup>28</sup> which can be dated to the late 1st and early 2nd centuries. It is probable, however, that this sketch refers to material from an entirely

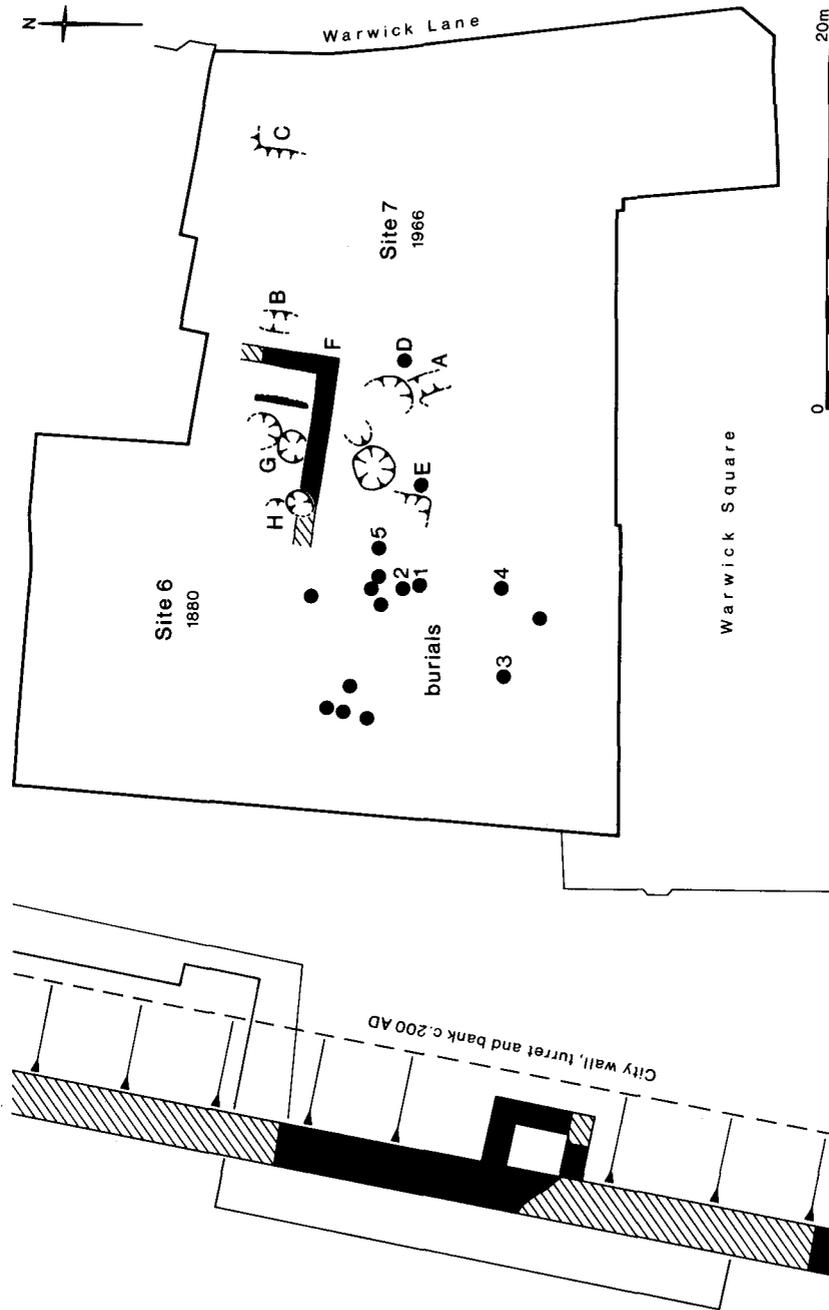


Fig. 21. Paternoster Square and Warwick Square: Warwick Square 1880 and 1966. Location of features of all periods.

different site because the diary entry on the page immediately following this sketch begins:

these potts broken were throwne overboard or at least was the first rubbish brought and layed in laystall for the bounding in the fleet river wch then was without bounds by reason of the then unskillfulness of the old brittains.<sup>29</sup>

and continues to discuss the River Fleet.

#### *Industry*

In 1677, also during the excavation of foundations for the cathedral, four Roman pottery kilns were located.

The kilns, four arranged in a cross pattern with a central chamber, were cut into the 'sandy loam' which presumably indicates the brickearth. Only one survived in a fair condition. This stood to a height of *c.* 1.5m and was of approximately the same diameter. The floor was supported on a single column with vents through the floor itself. The contents of the kiln were coarse wares which appear from an illustration to be 1st or 2nd-century in date. Another kiln was located during the construction of the cathedral. This '... potters kiln, the shape of which was circular was ... on the south side of the said west end ...' (Marsden 1969b, 41).

#### WARWICK SQUARE, 1880 (*Fig. 2, no. 6*)

During 1880 the excavation of a sub-basement for the building belonging to Messrs J. Tylor and Sons was observed by Alfred Tylor, a member of the same firm (*Fig. 21*) (Tylor 1884). The site was located immediately to the east of the Roman and medieval city wall but no details of this major feature were examined. Tylor recorded at least eight cremations, including some of a type and character not known elsewhere in London.

Tylor's report included a plan of the site which was annotated with section-lines through the medieval buildings and earlier deposits (Tylor 1884, *Fig. 1*). He published only one of these but the present author was able to locate Tylor's original watercolour sections in the Library of the Society of Antiquaries in London<sup>30</sup>. These show the relative positions of the cremation deposits to the natural features on the site but are primarily concerned with illustrating the medieval and post-medieval remains.

The cremation graves noted by Tylor formed a dense concentration of very luxurious and elaborate cremation urns and containers. They were found on the level of natural brickearth (*c.* 12.00m O.D.) or just below it, presumably in shallow pits<sup>31</sup>. Not only were lead cists and glass urns discovered but also a fine quality turned stone urn.

#### *Summary of Cemetery contents*

Unfortunately, it is not possible to reconstruct the original compositions of all of the original grave groups. All the objects, a total of twenty-eight, from this cemetery were donated by Messrs Tylor to the British Museum in 1882. These include four ceramic urns, two with lids, a two-handled ceramic jar, two ceramic flagons, a ceramic colour-coat drinking vessel, two sherds of coarse pottery, a fragment of scored tile, a two-handled glass cinerary urn with lid, a two-handled stone cinerary urn with matching lid<sup>32</sup>, two copper alloy bells, two unidentified copper alloy objects, a *dupondius* of Claudius, three cylindrical cinerary urns with lids and fragments of a fourth lead cinerary urn (RCHM 1928, 153).

The stone urn, and its lid, contained cremated bone and the Claudian coin (*Fig. 21, no. 1*). No other grave good was recorded. A cylindrical lead cinerary urn, bearing the relief decoration of a charioteer, was discovered to the immediate north (*Fig. 21, no. 2*). It contained the two-handled glass urn and lid which, in turn, contained the cremated remains. The remaining lead cinerary urns were found to the south and north-east of these two graves (*Fig. 21, nos 3–5*). The remaining graves contained ceramic vessels but it is not possible to correlate the vessels with the known findspots.

It should be noted that there was no evidence for any amphora burials or inhumations such as the examples found in 1966 on the Warwick Square site to the immediate east.

#### *Conclusions*

The quality of the graves recorded by Tylor is striking. The material dates from the late 1st–2nd centuries and the burials were contained within an area measuring just *c.* 10 × 14m (20 × 14m including the easternmost 1966 discovery). The northern extent of this group was at least *c.* 50m south of the Newgate road. That the intrinsic quality of these graves is so high and is entirely different from any other cremation group from the cemeteries of Roman London might indicate that this cemetery had been isolated in some way from any other activity in the region. Neither Tylor nor Marsden recorded any features in the adjacent cellar which could be interpreted as being part of the wall of an enclosed cemetery. However the facts that (a) the graves were so densely distributed, (b) were distant from the main road (Road 1) passing to the north, and (c) were separated by a considerable distance from the two cemeteries alongside the contemporary city boundary to the east do suggest that this cemetery was strictly defined in some form.

The social status of the occupants of this cemetery cannot now be established, though the quality of their interments and their apparent isolation from all other topographic features does suggest a high social or economic status within London.

#### CENTRAL CRIMINAL COURT EXTENSION (WARWICK SQUARE) 1966

(Fig. 2, no. 7)

In 1966, the construction of an extension to the Central Criminal Court on the north side of Warwick Square enabled Peter Marsden to conduct a formal excavation of the cellars adjacent to the one in which Tylor recorded the cremation burials in 1880 (Marsden 1969, 2–7)<sup>33</sup>.

Deposits contemporary with the burials proved to be fairly featureless. Natural brickearth was recorded across the entire site between c. 11.88 and 12.20m O.D., and where large expanses had been exposed it was noticed that it had not been disturbed by any agricultural activity. Similarly, no traces of pre-Roman or Roman timber buildings were found. The only visible features were numerous small and irregular root holes which did not form any pattern. Above these was a light grey loam layer c. 0.60m thick. Little was recorded in this layer apart from flecks of burnt wood and wood ash and a scatter of pottery, much of it abraded, and other domestic rubbish dating to the 1st and 2nd centuries (ER 1177). This grey loam filled several small drainage gullies which had been dug into the natural brickearth (Fig. 21, A, B, C). A few scattered Roman rubbish pits containing pottery of the late 1st and early 2nd centuries were noted, but it was apparent that no significant activity occurred on the site (Fig. 13) until the deposition of burials during the Flavian period.

Two burials were located during the excavations, one cremation and one inhumation (Marsden 1969a, 4–6). Medieval pits may have destroyed others but it is clear that the eastern and northern edges of the cemetery lay on this site and that no trace of a contemporary walled enclosure existed.

#### *Burial 1 (Fig. 21, D)*

This was a cremation within a globular amphora which lay on its side in the bottom of a shallow pit. The rim, neck and handles of the amphora had been removed and discarded prior to the vessel being deposited. Included with the cremated remains were some iron nails, a few small pottery sherds and wood ash. Two clay lamps, apparently well-used and damaged at the time of their deposition, were placed just inside the amphora on top of the cremated remains. The aperture of the amphora had been blocked with a building brick

set vertically on edge and two others had been placed on either side of it on the same axis as the amphora (east-west with the opening to the west). This formed a small box-like structure within which were placed the other accessories i.e. three deliberately smashed cooking pots and three complete lids. A bone pin or spindle had been fixed point first into the ground at the angle between one of the east-west orientated bricks and the brick sealing the amphora aperture, but outside the box-like structure. The analysis of the cremated remains revealed that two individuals were represented i.e. an adult aged at least 20 years and an infant of between 18 months and 2 years old. It dates to the late 1st or early 2nd century.

#### *Burial 2 (Fig. 21, E)*

This was the inhumation of an adult who had been placed within the grave in a crouched position without a coffin of any kind. Unfortunately the grave had been severely truncated by medieval rubbish pits and only the leg bones survived. No grave goods were noted, but the burial pre-dates a 3rd-century rubbish pit (ER 1172) which cut through part of the grave fill.

Further evidence of Roman occupation was represented by two walls with foundations of chalk and ragstone set in mortar which formed a corner (Fig. 21, F). These foundations had been overlaid by a tile bonding course. Medieval activity had totally removed all deposits directly associated with these walls and so an absolute date is not available. However, the foundations cut a late 2nd-century rubbish pit (ER 1197) (Fig. 21, G) and were in turn cut by a 4th-century rubbish pit (ER 1187) (Fig. 21, H). These two walls may relate to a wall found on a similar alignment in 1880 (see above p. 28).

Within the area of these walls was discovered a row of shallow angular cuts (Fig. 21, I), roughly square in plan but triangular in section filled with, and overlaid by, the light grey loamy soil containing pottery of the late 1st and 2nd centuries (ER 1208). The alignment of these cuts conforms to that of the walls. Experiments suggested that these had been produced in antiquity by a spade and the additional evidence of the concentration of root holes on the east side of the spade cuts would suggest that this was part of a formal garden.

#### ACKNOWLEDGEMENTS

I would like to thank the many people who have helped in some way with the preparation of this report, in particular Patrick Allen, Gill Andrews, David Bentley, Sue Cole, Francis Grew, Jenny

Hall, Chris Jones, Geoff Marsh, Penny Mac-Connoran, Peter Rowsome, Agnès Shepherd, Peter Stott, Tracy Wellman and the librarians of the Society of Antiquaries, London.

Thanks are especially due to the late Professor Grimes, for giving myself and the Museum access to his archive and Peter Marsden, who had a personal involvement with a number of the sites referred to in this paper.

Finally, I would like to thank Peter Marsden, Tony Dyson and Dominic Perring for reading earlier drafts of this paper. As always, I remain responsible for any errors of fact or interpretation which might still remain.

## NOTES

- See also *Illustrations of the Site and Neighbourhood of the New Post Office* (1830)—attributed to W. Herbert, Guildhall Librarian—p.2.
- This echoes the problems encountered by Ivor Noël-Hume when he was responsible for recording London's archaeology as it was being removed by machines in the course of redevelopment (Noël Hume 1978).
- Grimes 1968, 148 and MS notes by Professor W. F. Grimes, Records Office, Museum of London.
- 44–6 Ludgate Hill/1–5 Old Bailey, EC4 (LH74) (Fig. 2, no. 9); Post Office/81 Newgate Street, EC1 (GPO75) and GPO Middle Area Newgate Street, EC1 (POM79) (Fig. 2, no. 2); 42–6 Ludgate Hill/1–6 Old Bailey, EC4 (LUD82) (Fig. 2, no. 9).
- Contractor's plans and notes, Paternoster Square 1961–2, Department of Urban Archaeology Archive, Museum of London.
- See also Watling Court (WAT78), Department of Urban Archaeology archive, Museum of London, and Perring, D. and Roskams, S. with P. Allen, *Development of Roman London West of the Walbrook*, (forthcoming).
- Bentley 1985, 128, refers to a sighting in 1840 of road gravels under Ave Maria Lane. No alignment was recorded. He interprets these as part of a road running on approximately the line of Paternoster Row. This findspot lines up with the St Paul's Choir School and Gateway House observations. The resulting line is parallel to the main Roman road under Newgate.
- Proc. Society of Antiquaries*, 1913–14, 2nd ser. vol. 26, 233–4, Fig. 4.
- Even though there was a discernible interval between the two periods. See Roskams (*op cit* in Note 12) 404.
- LUD82 Department of Urban Archaeology archive, Museum of London.
- 34–5 King Street, 1955, Feature 9 (Shepherd 1987, 45).
- Roskams 1980. See also Museum of London, *DUA Archive Catalogue* (1987), 102–105.
- The Grimes archive is currently stored in the Records Office, Museum of London. It is hoped that this material will provide the basis for future studies.
- DUA archive, Museum of London.
- Similar problems were encountered during the examination of the bore-hole samples and sections at 33–4 Old Jewry. Shepherd 1987, 53–55.
- Sheet TQ 38 SW*, Geological Survey of Great Britain, 1982.
- For details to these references see 'Paternoster Square 1961–2' DUA archive, Museum of London.
- All references to ER nos. (Excavation Register numbers) can be found in the Excavation Register Daybook, VII, 7–72 *passim*; IX, 1; X, 24.
- Excavation Register Daybook, VIII, 13ff.
- For example, courtyard surfaces adjacent to road at Ironmonger Lane—Norton J., 'Ironmonger Lane', *London Archaeol.* 4 (1982) 171–6.
- RCHM 1928, 135. *The Builder* 1883, II, 226.
- No primary references occur for this site.
- Museum of London object files. Guildhall Museum donor catalogue.
- The pamphlet attributed to W. Herbert (1830) refers to cremations and other Roman objects being found in 1822 during the excavation of the foundation for this building. In an apparent attempt to 'dramatise' his text, the author has used and expanded Wren's (*Paternalia*, 1750, 266) description of objects found during the construction of St Paul's.
- Museum of London Acc. Nos. 356, 374, 388, 392, 394, 404, 412, 2730, 2744, 2960, 2961, 3032, 3325.
- See RCHM 1928, 153–4, Fig. 63, nos. 1, 2, 3, 4, 5 for MOL Acc. Nos. 392, 388, 394, 356, 412 respectively. Fig. 63, no. 6 can no longer be located.
- Proc. Soc. Antiqs. London* (1913–14) 2nd ser. xxvi, 222–4 and 92. Burnby 1984.
- Proc. Soc. Antiqs. London* (1913–14) 2nd ser. xxvi, Fig. 4 and Burnby 1984, Fig. 2 for Sloane MS 958 f.107v.
- British Library, Sloane MS.958 f. 108r, Burnby 1984, 76.
- London and Westminster Portfolio, Library of the Society of Antiquaries of London.
- A plan of this site by Henry Hodge (Guildhall Library, 630/WAR) shows the outlines of three 'pot-holes' or small pits. None of these can be related to any of the graves located on Tylor's published plan. Hodge's drawing records the findspots of many Roman, medieval and post-medieval objects, many with no indication of date. Tylor's plan of the locations of the graves is the most complete.
- The stone of this urn has recently been identified by Mr R. W. Sanderson, Petrology Unit of the Geological Museum, as a greyish black *porphyritic olivine-dolerite*. No comparative samples are available to suggest a source for the material.
- Marsden 1969a, 2–7. The Roman wall and an internal turret to the west of this and Tylor's 1880 excavation were also excavated by Marsden. These are not discussed here.

## BIBLIOGRAPHY

- BENTLEY (1985), D. Bentley 'Roman London: a first century boundary' *London Archaeol.* 5, No. 5 (1985) 124–9.
- BENTLEY (1987), D. Bentley 'Western Stream reconsidered: an enigma in the landscape', *London Archaeol.* 5, No. 12 (1987) 328–334.
- BENTLEY AND PRITCHARD (1982), D. Bentley & F. Pritchard 'The Roman Cemetery of St. Bartholomew's Hospital' *Trans. London Middlesex Archaeol. Soc.* 33 (1982) 159–61.
- BURNBY (1984), J. Burnby 'John Conyers: London's First Archaeologist' *Trans. London Middlesex Archaeol. Soc.* 35 (1984) 63–80.
- GRIMES (1968), W. F. Grimes *The Excavation of Roman and Mediaeval London*. (London 1968).
- LAMBERT (1915), F. Lambert 'Recent Roman Discoveries in London' *Archaeologia* 57 (1915) 225–274.
- MARSDEN (1963), P. R. V. Marsden 'Archaeological Finds in the City of London, 1961' *Trans. London Middlesex Archaeol. Soc.* 21, pt. 1 (1963) 70–77.
- MARSDEN (1965), P. R. V. Marsden 'Archaeological finds in the City of London, 1962' *Trans. London Middlesex Archaeol. Soc.* 21, pt. 2 (1965) 135–9.
- MARSDEN (1968), P. R. V. Marsden 'Archaeological finds in the City of London, 1965–6' *Trans. London Middlesex Archaeol. Soc.* 22, pt. 1 (1968) 1–17.
- MARSDEN (1969a), P. R. V. Marsden 'Archaeological finds in the City of London, 1966–8' *Trans. London Middlesex Archaeol. Soc.* 22, pt. 1 (1968) 1–26.
- MARSDEN (1969b), P. R. V. Marsden 'The Roman Pottery Industry of London' *Trans. London Middlesex Archaeol. Soc.* 22, pt. 2 (1969), 39–44.
- MARSDEN (1976), P. R. V. Marsden 'Two Roman Public Baths in London' *Trans. London Middlesex Archaeol. Soc.* 27 (1976) 1–70.
- MARSDEN (1980), P. R. V. Marsden *Roman London* (London 1980).
- MARSDEN (1987), P. R. V. Marsden *The Roman Forum Site in London* (London 1987).
- MERRIFIELD (1965), R. Merrifield *The Roman City of London* (London 1965).
- MERRIFIELD (1983), R. Merrifield *London, City of the Romans*, (London 1983).
- NOËL HUME (1978), I. Noël Hume 'Into the Jaws of Death Walked One' in ed J. Bird, H. Chapman and J. Clark *Collectanea Londiniensia LAMAS special paper n. 2* (1978) 7–23.
- NORMAN AND READER (1912), P. Norman & F. W. Reader 'Further Discoveries relating to Roman London, 1906–12' *Archaeologia* 53 (1912) 257–344.
- NORTON (1982), J. Norton 'Ironmonger Lane' *London Archaeol.* 4 No. 4 (1982) 171–6.
- PRICE (1880), J. E. Price *On a Bastion of London Wall or, Excavations in Camomile Street, Bishopsgate* (London 1880).
- RCHM (1928), Royal Commission on Historical Monuments *London Vol. III, Roman London*, (1928).
- ROACH SMITH (1842), C. Roach Smith 'Observations of Roman Remains recently found in London' *Archaeologia* 29 (1842), 155.
- ROSKAMS (1980), S. Roskams 'GPO Newgate Street 1975–9: The Roman levels' *London Archaeol.* 3 No. 15 (1980) 403–7.
- SHEPHERD (1986), J. D. Shepherd 'The Roman Features at Gateway House and Watling House, Watling Street, City of London' *Trans. London and Middlesex Archaeol. Soc.* 37 (1986) 125–144.
- SHEPHERD (1987), J. D. Shepherd 'The Pre-urban and Roman Topography in the King Street and Cheapside Areas of the City of London' *Trans. London and Middlesex Archaeol. Soc.* 38 (1987) 11–58.
- TRELOAR (1892), W. P. Treloar *Ludgate Hill: Past and Present*. (London 1892).
- TYLOR (1884), A. Tylor 'New Points in the History of Roman Britain, as illustrated by Discoveries at Warwick Square, in the City of London' *Archaeologia* 48 (1884) 220–45.
- WREN (1750), C. Wren *Paternalia*. (London 1750).

# A ROMAN SEAL-BOX LID

MARTIN HENIG AND CHRISTINE JONES

The Museum of London has recently obtained several items with a London findspot from the Bardury Collection<sup>1</sup> (Museum of London Accession Number 88.3). Acquired by private treaty, the material included a complete jug of Rhineland Granular Grey Ware (MOL Acc. No. 88.3/4) of AD 43–80 (Anderson 1981, pp. 92–106), three fragments of Roman leather one-piece shoes (MOL Acc.No. 88.3/6–8) and a seal-box lid of copper alloy (MOL Acc.No. 88.3/9).

Whilst the pottery and leatherwork were labelled with their provenances, the exact findspot of the seal-box lid is not clearly recorded and has been presumed 'London'. Despite the lack of detail, however, the decoration on the seal-box lid is of such a style as to warrant discussion in its own right (pl. 1).



Plate 1. A Roman seal-box lid: the seal-box lid from the Bardury Collection. Scale 2:1. *Museum of London*

Made of a thinly cast plate of copper alloy, the lid is ovoid in shape but with a straight edge along one narrow edge to accommodate the hinge fitting. The relief

decoration is slightly worn with a loss of some of the finer details. The reverse contains several indentations. The lid measures 21.5mm by 15.5mm.

Seal-boxes were intended to protect sealings on wax made with signet-rings. This perhaps needs stating from time to time, because it is often hard to see a cultural/iconographical link between the two types of artefact. Engraved gems always reflect 'classical' art but seal-boxes from the North-West provinces at any rate are often ornamented and enamelled in the 'Celtic' taste. There are exceptions, of course, amongst them the lids from London ornamented with Imperial portraits.<sup>2</sup> Doubtless seal-box lids decorated with Graeco-Roman themes were common enough in the Empire at large.<sup>3</sup>

The theme of this seal-box is Cupid punished for mistreating Psyche by singeing her wings (Fig. 1).<sup>4</sup> He is bound to a



Fig. 1 A Roman seal-box lid: the copper alloy lid showing the bound Cupid before his mother Venus. Scale 2:1. Drawing by N. Griffiths.



Plate 2. A Roman seal-box lid: impression from an intaglio now in Canterbury Cathedral library showing the punishment of Cupid. Scale 3:1. Photograph: Nick Pollard, Institute of Archaeology, Oxford.

column on top of which sits the griffin of Nemesis. In front of him his mother Venus sits upon a rock. She wears a mantle over her loins and legs but the upper part of her body is naked. The goddess supports herself with her left hand and in her right hand holds a torch (?).

A number of gems show Cupid bound. Generally a torch appears in the field and there is often an accompanying inscription in Greek, ΔΙΚΑΙΩΣ, 'justly', for the mischievous boy was justly punished. Illustrated here is the impression of a bloodstone intaglio collected in the seventeenth century by Canon John Bargarve of Canterbury and now in the Cathedral library (pl. 2).<sup>5</sup> The type of Venus appears on a cornelian intaglio by the first-century BC gem cutter Aulos and on related glass copies and adaptations (Vollenweider 1966).

As Henig (forthcoming) pointed out in discussing another gem, now in Cambridge, showing Venus seated with Cupids around her, Venus as mother and herself representing love, often restrains but does not herself mete out punishment (Henig 1988). This is the task of Nemesis, often represented as on our seal-box lid by a griffin.

It remains to add that the punishment of Cupid (Eros) appealed to Hellenistic and Roman artists and poets and is the theme of several epigrams in the Planudean Appendix to the Palatine Anthology (Paton 1918).

## NOTES

1. Bardury Collection auctioned at Sotheby's, September 1987. R. P. Bircham-Bardury kindly provided details of his father's collection for the Museum of London archive. Alexandre Bhaduri was born in Kennington, London on 4th November 1908 and from an early age, he and his brother Arthur were collecting curios. During the First World War he obtained Roman items from a curio shop in Clapham and he seems to have been encouraged and helped by a "curator called Mr Lawrence" (pers. comm.). The latter would appear to be the antiquarian collector G. F. Lawrence who from 1912 to 1927 was connected with the London Museum, then based at Kensington Palace. G. F. Lawrence acquired many items of interest for the Museum, especially Roman objects, from workmen engaged on building works of all types in and around the City of London. It is possible, that under the guidance of Lawrence, the young Alexandre Bhaduri acquired the Roman seal-box lid in question. However, Mr Bhaduri's passion for collecting was life-long. Thus the seal box lid could have been found amongst the bomb debris of the City of London following the Second World War or indeed from a stall on the Portobello Road in the 1950s, areas visited on many occasions by Mr Bhaduri. Despite not having a close provenance, it is clear that as with all the items in the collection, the lid was acquired by Mr Bhaduri because he was fascinated by it and liked it rather than because of any financial value it may have gathered.
2. H. Chapman and T. Johnson, 'Excavations at Aldgate and Bush Lane House in the City of London; 1972' *TLAMAS* 24 (1973) 48, no. 9, pl. 4 and see for this type, H. B. Walters, *Catalogue of the Bronzes, Greek, Roman and Etruscan in the Department of Greek and Roman Antiquities British Museum* (London 1899) 307, nos. 2228, 2229 and R. Nicholls *The Wellcome Gems. A Fitzwilliam Museum Catalogue* (Cambridge 1983) 26-7, nos 100, 101.
3. Apart from the portraits see Walters, *op. cit.* no. 2225 (Armed Venus) and nos 2230, 2231 (Divine Heads); Nicholls, *loc. cit.* no. 99 (Drunken Hercules and satyr).
4. For the theme see L. Curtius, 'Poenitentia', in *Festschrift für James Loeb* (Munich 1930) 53-62; P. Bruneau, 'Lampes Corinthiennes', *Bulletin de Correspondance Hellénique* CI (1977) 252-5 no. 32 (Éros Enchaîné?). For Cupid burning the Psyche-butterfly see M. Henig *A Corpus of Roman Engraved Gemstones from British Sites* (BAR British Series 8 2nd ed. 1978) 75 and 201, nos 119-123.
5. M. Henig in D. Sturdy and M. Henig *The Gentle Traveller. John Bargarve, Canon of Canterbury, and his Collection* (1983) 4, pl. e. For others see B. Y. Berry, *Ancient Gems from the Collection of Burton Y. Berry* (Indiana 1969) 71 no. 130; A. Dimitrova-Milcheva, *Antique engraved gems and cameos in the National Archaeological Museum in Sofia* (Sofia 1981) 92, no. 280. All these show both torch and inscription; M. F. Boussac and P. Starakis Roscam, 'Une Collection d'intailles et de camées du Musée d'Alexandrie', *Bulletin de Correspondance Hellénique* CVII (1983) 466-7, no. 25 fig. 24 (torch but no inscription).

## BIBLIOGRAPHY

- ANDERSON (1981) A. C. Anderson 'Some Unusual Coarseware Vessels from London and their Continental Background' in A. C. Anderson and A. S. Anderson (eds) *Roman Pottery Research in Britain and North West Europe* BAR Int. Ser. 123(i) (1981) 93-106.
- HENIG (forthcoming) M. Henig *Classical Gems: ancient and modern intaglios and cameos in the Fitzwilliam Museum, Cambridge* (Cambridge University Press) no. 167.
- PATON (1918) W. R. Paton, *The Greek Anthology*, vol. 5 Loeb Classical Library 1918), 273-6, Book xvi, nos 195-9.
- VOLLENWEIDER (1966) M. L. Vollenweider *Die Steinschneidekunst und ihre Künstler in Spätrepublikanischer und Augusteischer Zeit* (Baden-Baden 1966), 40-41, pl. 31, 1 and 2, 4 and 7.

# A ROMAN PIPE FROM LONDON

GRAEME LAWSON AND ANGELA WARDLE

An unusual musical discovery has recently been made in London where a piece of bone and copper alloy tubing has been identified as the remains of a Roman pipe, one of a pair of *tibiae*, of the kind so often seen in classical paintings, sculpture and mosaics, but so rarely found (Pl. 1).<sup>1</sup>

The pipe was recovered from spoil removed from the River Thames waterfront site at Thames Exchange, Lower

Thames Street, EC4, where excavations by the Department of Urban Archaeology, Museum of London, had uncovered waterlogged deposits that included Roman material.<sup>2</sup> The object was at first thought to be post-Roman as nearby finds were of medieval date. However, parallels from several continental sites suggested an earlier Roman date and this has now been confirmed by

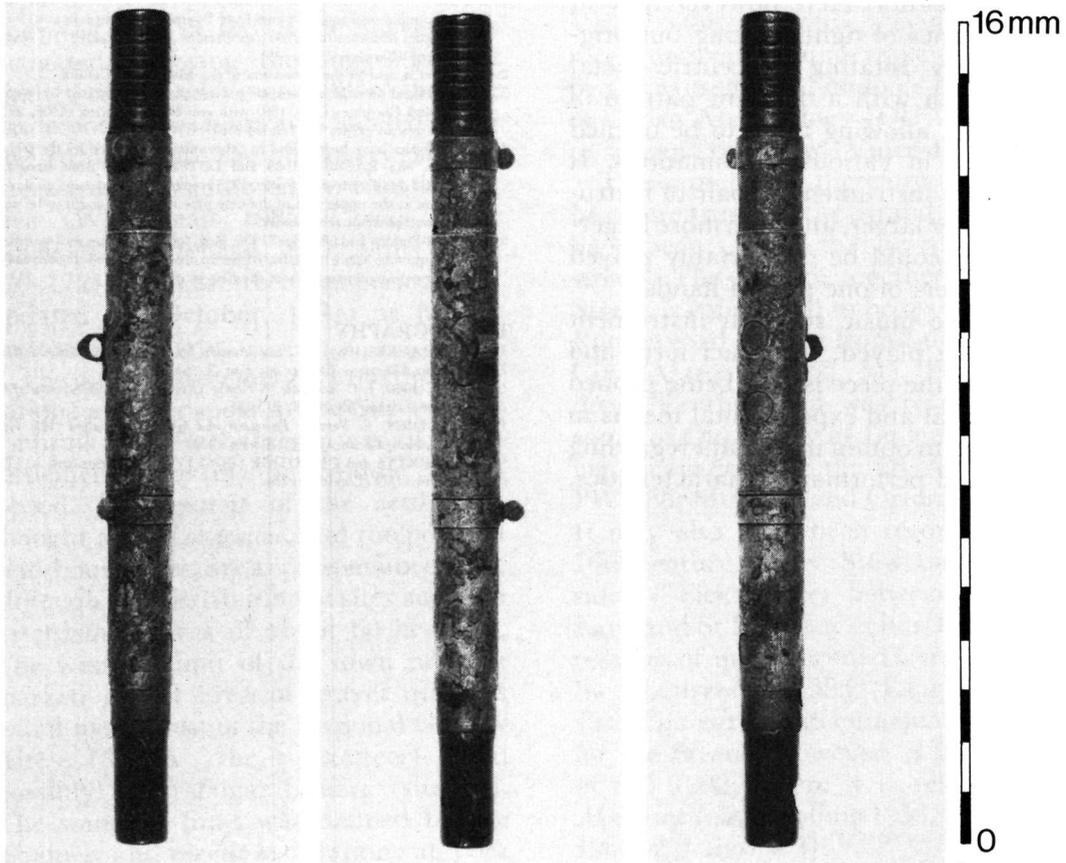


Plate 1. A Roman Pipe from London. Three views showing the copper alloy sleeves and fingerholes. The bone tube can be seen projecting at the upper and lower ends. Scale 1/1. (Scale on photograph in mm)

fibre-optic endoscopy.<sup>3</sup> The surrounding metal sheathing conceals details of the instrument's construction even on stereoradiographs but endoscopic survey has revealed that the internal bone structure is in sections. One of these, at the end of the pipe, is identical with a type of small bone cylinder of confirmed Roman date, already suspected to be of such musical use.<sup>4</sup>

The surviving length of the pipe is astonishingly well preserved, showing a complex sophisticated structure machined to impressively fine tolerances. The cylindrical bone internal sections have finger-holes to allow the production of different musical pitches rather like the modern recorder. Here however they fit inside a series of tightly fitting but originally freely rotating concentric metal sleeves, each with a different pattern of finger-holes allowing them to be opened and closed in various combinations. It suggests an instrument or pair of instruments rather larger, and with more finger-holes than could be comfortably played by the fingers of one pair of hands.

As to the music such an instrument would have played, the exact form and function of the piece is now being probed by analytical and experimental means in an attempt to obtain more data regarding its tone and performance characteristics.

Comparison with previous studies suggests that such narrow, cylindrically bored instruments which would have been blown using a reed like a modern oboe or bagpipe chanter (and quite unlike a flute), would have had a variety of tonal qualities, from low and soft to a loud and raucous skirling, according to need. In contemporary illustrations they are frequently shown in dance and processional contexts.<sup>5</sup>

The new pipe is a remarkable find of international importance and is a major contribution to the complex puzzle of reconstructing the form and place of music in Roman life.

#### NOTES

1. For an example on a mosaic panel from Pompeii showing rehearsal for a play (Naples Museum inv. 9986) see Pernice (1938, 99 and 171); Ward-Perkins and Claridge (1976, 314).
2. The object is now in the possession of the Museum of London.
3. One of several *tibiae* from Pompeii is conveniently illustrated by Ward-Perkins and Claridge (1976, 199) with references. Landels (1968, 231–38) discusses an earlier but related type.
4. Two examples have been found in excavations conducted by the DUA; Accession Nos RAG82-1420-89 and LCT84-3570-213 from Rangoon Street, EC3 and Leadenhall Court, EC3 respectively. They are similar to the section at the upper end of the new pipe and are thought to be part of the mouthpiece or reed holder.
5. See Ward-Perkins and Claridge (1976, 262), for a Pompeian wall-painting of a banqueting scene (Naples Museum inv. 9016) and Fleischhauer (1964 *passim*) for illustrations of the *tibia* in daily life.

#### BIBLIOGRAPHY

- FLEISCHHAUER (1964) G. Fleischhauer *Musikgeschichte in Bildern Band 11.5 Musik des Altertums—Etrurien und Rom* (Leipzig 1964)
- LANDELS (1968) J. G. Landels 'A Newly Discovered Aulos' *Annual of the British School at Athens* 63 (1968) 213–38
- PERNICE (1938) E. Pernice *Pavimente und figurliche Mosaiken* (Die Hellenistische Kunst in Pompeji VI) (Berlin 1938)
- WARD-PERKINS and CLARIDGE (1976) J. Ward-Perkins and A. Claridge *Pompeii AD79* (London 1976)

# A GAZETTEER OF MIDDLE SAXON SITES AND FINDS IN THE STRAND/ WESTMINSTER AREA

ROBERT COWIE

This gazetteer was prepared as part of the Strand Survey; a topographical survey of an area extending from the Fleet Valley (the line of which is followed by Farringdon Street) to Westminster (Fig. 1), carried out by the Museum of London's Department of Greater London Archaeology (DGLA) in 1987. The Survey was instigated following the suggestion by Biddle (1984) and Vince (1984a) that the Saxon port of *Lundenwic* was located along the Strand, and the discovery shortly afterwards of Middle Saxon sites in this area (Whytehead 1985; Cowie 1987; Cowie & Whytehead 1989; Mills 1991, 170–172). The gazetteer was periodically updated (to October, 1991) as further finds came to light.

The picture that emerges from the excavations and findspots in the Survey area confirms the view that there was an urban settlement here in the Middle Saxon period. The extent of the settlement thought to be *Lundenwic*, and the position of its boundaries, are at present uncertain, although the distribution of sites suggests a settlement area of about 60 hectares. The western limit of the town may be marked by an area of gravel quarries found to the west of the National Gallery (site 13 in the gazetteer) and possibly in Trafalgar Square (site 12). The southern limit was defined by the Thames, and recent excavations at York Buildings (site 22) indicate that the Middle Saxon waterfront at this point was

about 160m north of the modern riverside. Occupation sites have been found as far north as Shorts Gardens (site 33), and as far east as Somerset House (site 54). While stray finds in the vicinity of Fleet Street suggest that the settlement may have extended further east up to the Fleet Valley, the 'negative' evidence from recent excavations undertaken in this area by the Museum of London's Department of Urban Archaeology (DUA) tends not to support this view (Vince 1990, 16).

The settlement, therefore, appears to be centred around the Strand, which may have been one of the town's principal streets. The Strand, together with Fleet Street, is considered to be on the line of a Roman road leading from Ludgate in the City (Margary 1955, 51). Physical evidence for this road was recently found south of Old Bailey at Ludgate Hill during excavations by the DUA (site code: PWB 88; McCann and Orton 1989, 105). It may also have been recorded by the 16th-century writer Stow on the north side of Fleet Street between Chancery Lane and St Dunstan's church, where the remains of an earlier road were uncovered by labourers in 1595 (Kingsford 1908, 43). The earliest documentary evidence for the Strand, however, is in a charter of AD 1002, where it is referred to as *Akemannestraete* (Gelling 1953, 102; Sawyer 1968, 275, no. 903).

Most of the Middle Saxon settlement lay north of the Strand, and considerable

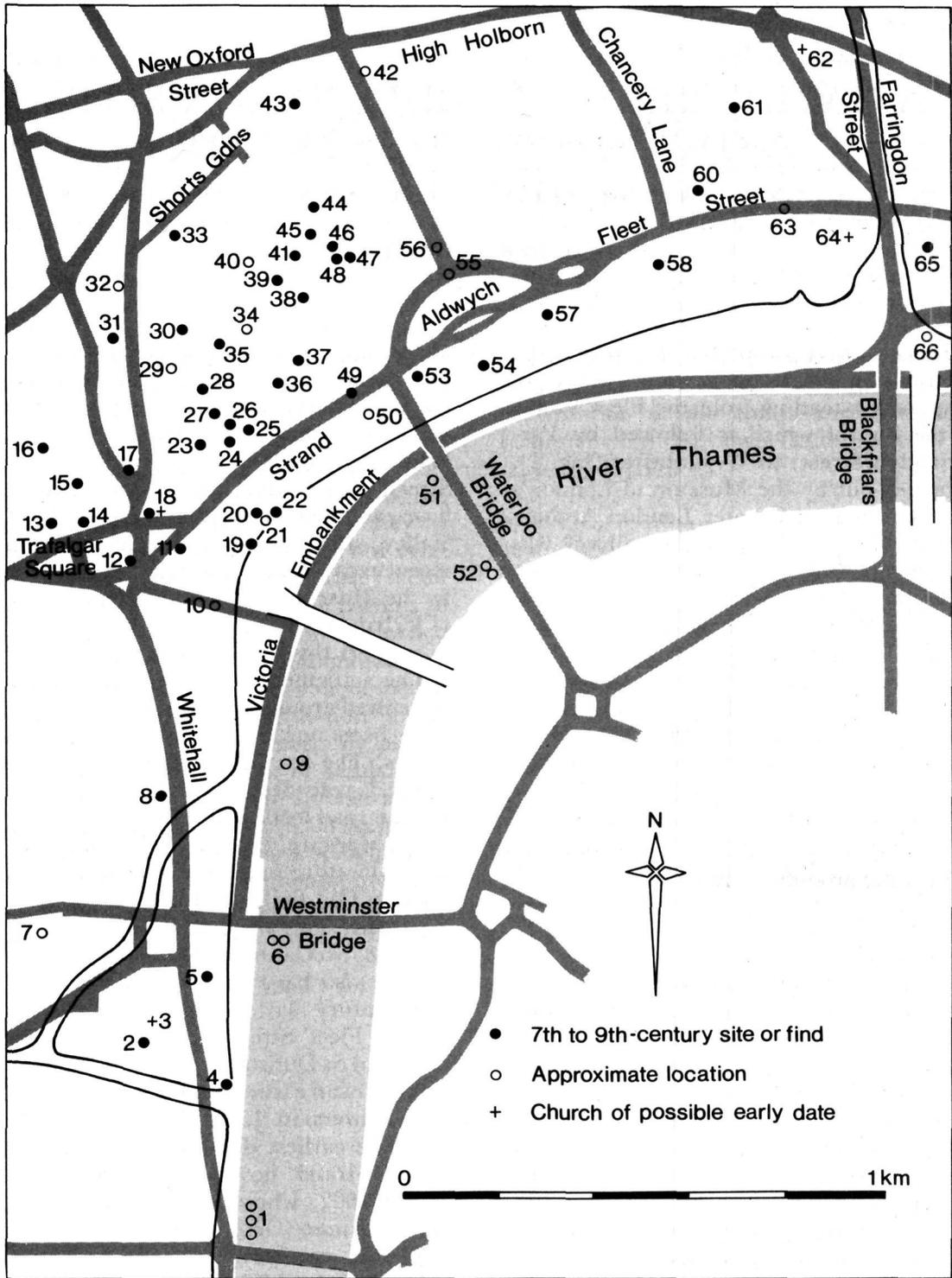


Fig. 1 Gazetteer map showing the supposed position of the River Thames and its tributaries in the Middle Saxon period, and 7th- to 9th-century sites between the Fleet and Westminster.

evidence of occupation of this date has been found in this area, notably at the Peabody Site (site 23), Maiden Lane (site 25), Shorts Gardens (site 33), Jubilee Hall (site 37), and Long Acre (site 41). Occupation sites in the locality are mainly characterised by dump layers, metalled surfaces, pits, wells, and structural features such as postholes, stakeholes, beamslots, and brickearth floors. The finds assemblages from these sites provide evidence for long-distance trade with the Continent, inter-regional trade, industrial activity, and crafts. Animal bones and plant remains have also been recovered, and so far assemblages from the Peabody Site, Maiden Lane, Jubilee Hall, and the National Gallery Basement (site 14), have undergone detailed examination, and have provided information about the Middle Saxon agricultural economy, and the diet of the inhabitants of *Lundenwic* (Rackham, forthcoming).

Five churches are located on or near the Strand, including St Dunstan in the West, St Clement Danes and St Mary-le-Strand, and may, as Biddle (1984, 24, 26) has tentatively suggested, be of 'early date'. Nevertheless, only St Martin-in-the-Fields (site 18) and St Bride's (site 64) have produced any archaeological evidence to support this suggestion.

Two isolated mid-Saxon inhumations have been found in the Survey Area, at the Peabody Site and Jubilee Hall, but the location of the cemeteries of *Lundenwic* remains uncertain. However, it is thought there may have been a Continental-style cemetery at St. Martin-in-the-Fields, while undated burials in King Street (site 34), and at 51-4 and 67-8 Long Acre (sites 39 and 41), suggest the existence of a cemetery (possibly Saxon) to the north of Covent Garden Piazza.

A notable feature of this gazetteer is the high proportion of discoveries made in the last six years. Before 1985 *in-situ* Middle

Saxon strata had been found only at the Treasury (site 8) and possibly at the Savoy (site 50). However, by October 1991 at least twenty-five sites with deposits of known or probable Middle Saxon date had been recorded by the DGLA. It seems reasonable to conclude from this that Wheeler's (1935, 141) suggestion that groups of Saxon buildings lay along the riverside between the City and Westminster was not followed up, and that many Middle Saxon sites in the area were destroyed without record. One such site may have been observed in Bedford Street (site 27), where pits were apparently seen. This loss was suffered partly because the significance of finds like those at the Savoy was not fully recognised until recently, and also because of the inadequacy of archaeological cover before the creation of the London Archaeological Service in 1983. Furthermore, in comparison with often more substantial remains of Roman and medieval date, Saxon features and artefacts may be easily overlooked, and are perhaps less likely to be reported when disturbed.

The gazetteer was compiled from Museum of London records, articles, previous gazetteers—notably those by Wheeler (1935) and Vince (1984b), and other sources, all of which are cited in the text. The unpublished archive reports included in the bibliography can be consulted by arrangement with the Museum of London.

#### 1. Lambeth Bridge, Thames foreshore

(i) A *sceat* series T type 9 (Metcalf 1986, 2; Rigold and Metcalf 1984, 255; Stott 1991, 307, no. 42); (ii) A coin of Baldred of Kent (c. AD 823–5) found by Mr R. J. Savage 60 ft upstream in 1973, and identified by M. Archibald, British Museum (Blunt 1974; Stott 1991, 309, no. 61); (iii) A coin of Alfred, lunette type (AD 871–75), found in 1974 and now in a private collection (Stott 1991, 309, no. 67).

#### 2. Westminster Abbey

The origins of Westminster Abbey are uncertain, mainly because there is little archaeological data, and, as Carpenter (1966, 5–6) points out, much of the early docu-

mentary evidence is spurious. Nevertheless, some sources suggest that the Abbey was founded in the Middle Saxon period (see Vince 1990, 66), and finds from the Undercroft (site 3) at least indicate activity in the area at this time. Rosser (1989, 12) suggests that a minster church may have preceded the first 'fully-fledged' monastery founded by St. Dunstan in *c.* AD 960, itself the precursor of Edward the Confessor's Abbey. Evidence for St. Dunstan's monastery may have been found beneath the subvault of the Misericorde of the Abbey when structural features of apparently Late Saxon date were excavated by the Inner London Archaeological Unit in 1975 (site code: WAM 75; Black 1976).

### 3. Undercroft Museum, Westminster Abbey (TQ 3008 7942)

A coin of Egberht of Wessex (*c.* AD 825–828; Stott 1991, 309, no. 62) found during an excavation by the DGLA in 1986 (site code: WST 86), presumably redeposited. Other finds included a few sherds of Ipswich-type ware and Badorf-type amphora, which were probably residual. A quarry which had silted up by the 10th century was also discovered (Blackmore & Redknap 1988, 226; Youngs *et al.* 1987, 133–4; Mills in prep.).

### 4. Victoria Tower Gardens, Westminster (TQ 3025 7934)

An 8th-century sword, found 35ft below modern ground level during excavations for the foundations of a boiler-house in the Gardens on the south side of the House of Lords in 1948 (Dunning and Evison 1961).

### 5. Cromwell Green, Palace of Westminster (TQ 3018 7953)

Two pieces of oak plank, dated to AD 600+/-80 and AD 720+/-80 by radiocarbon dating (HAR-2692 and HAR-2696), were found in clay filling an old water channel during an excavation in 1978 by the Inner London Archaeological Unit (site code: WCG 78; Mills 1980, 22).

### 6. Westminster Bridge (TQ 304 796)

(i) An 8th- to 9th-century binding strip made of gilded silver, dredged from the Thames in 1866. It had a dragon's-head terminal and a runic inscription. Its precise function is open to conjecture, but it was most probably a scabbard fitting (British Museum acc. no. 69, 6–10, I: VCH London, 1, 166–7, Fig. 30; Vulliamy 1930, 266; Wilson 1964, 152–3, pl. XXV; Webster 1991, 225, no. 179); (ii) A possible 9th-century coin hoard from Westminster Bridge. There is some confusion regarding the findspot of these coins, for it is believed they may have come from Waterloo Bridge (Pagan 1965, 24; Blackburn and Pagan 1986, 294).

### 7. Old Queen Street (TQ 298 797)

A circular bone gaming piece with central perforation, found in Long Ditch in 1917 (Museum of London acc. no. A 19193). Although described as Saxon, it may be medieval.

### 8. The Treasury, Whitehall (TQ 3009 7994)

An excavation by H. J. M. Green for the Ministry of Works in 1961/2 revealed evidence of late 8th- to early 9th-century occupation, including buildings, pits, and the revetted (E-W) edge of a stream. An ovoid, flat-bottomed pit, with traces of a wood floor, may have been a sunken-featured building. It was 0.38m deep, 1.80m

wide and possibly twice that in length. A subrectangular timber building with a sunken floor, *c.* 7.30m N-S by 6.10m E-W, was also found. The sunken area contained sleeper beams and walling planks, preserved by wet conditions. The building was overlain by the eastern bay (5.64m wide) of a rectangular timber framed hall, with a porch at its east end. The floor of the hall was made of clay laid over a raft of planks from the earlier building. The hall had at least four phases. The first consisted of the main building and its eastern porch. Another porch was later added to the north wall of the building, which was subsequently damaged by fire and rebuilt. A ditch (2.42m wide, 0.43m deep) and bank (2.0m wide) may have marked the western boundary of the area occupied by the buildings and associated features. The pottery assemblage comprised 50+ % Ipswich-type ware, 40% handmade shell-tempered ware, 5% chaff-tempered ware, and 5% imported Badorf and Tating wares. Other finds included quernstones, loomweight fragments, bone thread pickers, fragments of bone combs, scramasax iron knives, a bronze hairpin, and a chalk spindlewhorl (Green 1963; Green and Thurley, forthcoming; Sturdy 1976, Figs. 4 & 5). Of the bones examined, those of cattle were the most frequent; sheep and pig occurred in smaller quantities and a few bones of horse, dog, deer, and bird were also found (Chaplin 1971, 124–38; 1976). The site was probably part of a farm just outside *Lundenwic* (Cowie & Whytehead 1989, 706, 714).

### 9. Thames at Whitehall (TQ 304 800)

(i) A 9th-century iron axe of Petersen type E (Shetelig 1940, 86, Fig. 54); (ii) A Saxon knife, 190mm long, dredged from the river bed (Smith 1852, 243).

### 10. Northumberland Avenue (TQ 302 804)

A coin of Burgred of Mercia (AD 852–74), moneyer Hugerud, found before 1889 (Pagan 1965, 22).

### 11. Strand/ Craven Street (TQ 302 804)

Two bone thread pickers found in 1914. One is 90mm long and decorated with ring and dot motifs (Museum of London acc. no. A 13363), and the other is 99mm long (acc. no. A 13659). Vince (1984b) argues convincingly for an Early to Middle Saxon date.

### 12. Trafalgar Square (TQ 3005 8044)

Several archaeological features, some possibly of Middle Saxon date, were recorded in drain trenches during a DGLA watching brief in 1988 (site code: TSQ 88; Whytehead 1990a). (i) A sherd of Ipswich ware and a lava quernstone fragment were found with Roman and medieval artefacts in sandy clay deposits (possibly quarry fill) exposed along the entire length of a 30m trench, which extended eastwards from Nelson's Column. The deposits were on average *c.* 1.2m below ground level, and were at least 0.80m deep (extending below the trench bottom). (ii) Two barrel-lined pits or wells of unknown date were found cut into natural, and overlain by dark silty clay (possibly quarry fill), in a N-S trench on the east side of the Square. No datable artefacts were recovered from the strata, but Middle Saxon pottery was retrieved with medieval and post-medieval finds from machine-excavated spoil beside the trench. (iii) At least three rubbish pits containing Ipswich ware and a sherd of Badorf ware were revealed in a N-S trench on the east side of the western fountain. (iv) Evidence of gravel

quarries and two pits of unknown date were found in E-W trenches on the north side of the Square.

**13. The National Gallery Extension/Sainsbury Wing (TQ 2989 8051)**

An excavation undertaken by the DGLA in 1987 revealed several large gravel quarry pits probably dating to the Middle Saxon period (site code: NAG 87; Cowie 1988a; forthcoming a). One quarry was 2.75m deep and over 16m long, extending beyond the excavation area. The few finds included Middle Saxon pottery (predominantly Ipswich ware), fragments of lava quernstones, loomweight fragments, a dress pin, a Series T *secat* dating to AD 715–720 (Stott 1991, 307, no. 43), and animal bones.

**14. The National Gallery (TQ 2996 8054)**

A rescue excavation undertaken by the DGLA in 1987 in the National Gallery Basement revealed three 7th- to 9th-century pits (site code: NGA 87; Cowie 1987, 33; 1988a; forthcoming a). The pottery assemblage comprised Ipswich ware, chaff-tempered pottery, and foreign imports including fragments of North French pottery Badorf-type amphora. The pits also produced fragments of daub and 'whitewashed tile', loomweight fragments, several fragments of glass vessel, a spindlewhorl, a piece of bone comb, lava quernstone fragments, bronze and iron objects, and numerous animal bones, oyster shells, and plant remains (Davis 1989).

**15. Orange Street (TQ 2993 8061)**

Two intercutting pits, of possible Middle Saxon date, were discovered during a watching brief undertaken by the DGLA in 1987 (site code: NGA 87). The pits were observed near the bottom of a sewer shaft excavated near the rear entrance to the National Gallery. A chaff-tempered potsherd and a base sherd of East Anglian or North French Black ware were recovered from the pit fills.

**16. Leicester Square, south side (TQ 2985 8068)**

Residual Middle Saxon pottery, comprising two sherds of Ipswich ware and a chaff-tempered sherd, was found during an excavation by the DGLA in 1989. The sparsity of finds and the absence of Middle Saxon features suggests that the site lay outside *Lundenwic* (site code: LES 89; Hoard 1989a, 28).

**17. Cavell House, Charing Cross Road/St Martin's Lane (TQ 3003 8064)**

A pit or pits, of possible Middle Saxon date, were discovered during a watching brief by the DGLA in 1986 (site code: CAV 86). One sherd of Ipswich ware was recovered (Youngs *et al.* 1987, 133).

**18. St Martin-in-the-Fields (TQ 3003 8064)**

An unspecified number of stone coffins aligned N-S were found when the portico of the church was built in 1722–6 (Biddle, forthcoming). One coffin contained two glass palm cups, and another yielded an iron spearhead. One of the cups is now in the British Museum (Harden, 1956, pl. XVII A, e, Fig. 25 a ii 4). Biddle (1984, 25) suggests that these burials were part of a 'Continental-style' cemetery, and hints that the church may have been founded here in the Middle Saxon period.

**19. 12 Buckingham Street (TQ 3033 8048)**

Pieces of oak and what appeared to be wattle fencing

were recovered from two pile holes during a DGLA watching brief in 1988 (site code: BHM 88). One piece of worked wood was provisionally dated by dendro-chronological analysis to the 7th century, but without sapwood it may have come from a tree felled at a later date (Ian Tyers, pers comm). The wooden remains came from waterlogged deposits, which were estimated to be 0.5 to 1.0m deep, and which also contained a large quantity of animal bones. The wood may have come from waterfront structures, such as those excavated at York Buildings (site 22), or may represent an accumulation of driftwood at the water's edge.

**20. 17–19 John Adam Street, at the junction with York Buildings (TQ 3033 8054)**

Middle Saxon pottery and a loomweight fragment were found in post-medieval strata during excavations by the DGLA in 1989 (site code: JAD 89). The pottery comprised two sherds of Ipswich-type ware, and a sherd each of chaff-tempered ware, North French burnished ware, and shelly ware. On the northern and central parts of the site post-medieval strata lay immediately above river terrace gravel, which sloped down southwards towards the River Thames. Above natural gravel on the south side of the site was a waterlogged deposit at least 50mm deep containing Roman tile fragments, a potsherd of Roman or Middle Saxon date, and pieces of wood. The deposit was sealed by an undated, waterlogged layer of silt up to 0.50m thick, which also produced wood fragments. Further excavation may be undertaken (Christopher Thomas, pers. comm.).

**21. York Buildings, Adelphi**

Over 100 loomweights, of Early to Middle Saxon type, were reported to have been found in 1930 by F. W. Hennesen somewhere in York Buildings at a depth of 24–30ft (Vince 1984b, 14). One weight, with four impressions, is now in the British Museum (acc. no. 1930, 7-15, 1). The address where the find was made is not known, and the Building Act file for York Buildings (which might have shed light on the question) no longer exists (Robert Thorne, HBM London Division, pers. comm.).

**22. 18–20 York Buildings (TQ 3036 8054)**

Middle Saxon waterfront deposits, provisionally interpreted as an embankment, were recorded during an excavation and subsequent watching brief undertaken by the DGLA in 1988 (site code: YKB 88; Cowie 1989a; Cowie and Whytehead 1989, 710; Cowie, forthcoming b). The 'embankment' is estimated to have been at least 17m wide (NW-SE), and lay on top of a sandy foreshore. The deposits consisted of layers of brushwood (c. 0.30 to 0.80m thick) built up around oak and alder stakes driven into the foreshore, and were partly covered by a patchy layer of stone rubble and Roman tile, the top of which was located at c. +1.00m OD. The embankment produced Middle Saxon potsherds and loomweight fragments. Some stakes were in a row aligned approximately parallel to the Thames. The brushwood also surrounded a revetment of stakes with traces of wattle and oak planks placed vertically edge to edge, and aligned at right angles to the river. Dendrochronological dating indicates that seven of the planks came from oaks felled between AD 670 and 690 (Tyers, 1989). The southern part of the embankment

was covered by *c.* 0.50m of waterlaid clay containing Middle Saxon pottery.

23. *The Peabody Site, junction of Bedfordbury and Chandos Place (TQ 3019 8070)*

A 6/7th- to 9th-century occupation site excavated by the DGLA in 1987 (site code: PEA 87; Whytehead forthcoming). On the west side of the site there was a sequence of earthen floors with stakeholes sealed by a gravel surface. On the east side evidence of structures was found, but were too incomplete for coherent plans to be determined. Two pits or wells (one barrel-lined), and an extensive metallised 'yard' surface may have been associated with these buildings. The yard was covered with grey earth (possibly derived from building material), and a dump layer cut by a W-E adult inhumation with an iron spearhead. Rubbish or cess pits and concentrations of stakeholes were also discovered. Among the refuse were animal bones, oyster and mussel shells. The pottery assemblage comprised Ipswich ware, chaff-tempered ware, and Continental imports including Tating ware. Other finds included: glass beads and vessel fragments, a ceramic key mould, loomweights, a chalk spindlewhorl, lava quernstone fragments, a piece of amber, copper alloy pins and tweezers, bone and antler off-cuts, three *sceattas* (Series L, *c.* AD 732–40; Series M, *c.* AD 720–5; Series S, *c.* AD 730–40; Stott 1991, 306–7, nos 27, 30, 40), and part of an ivory comb (possibly post-medieval).

24. *Civil Service Stores (TQ 3027 8070)*

A plain roughly made bone pin, 67mm long, with a spherical perforated head. Purchased from a dealer, G. F. Lawrence, 7 West Hill, SW18, by the London Museum (Museum of London acc. no. 31.97/20). The pin is of uncertain date, but may be Saxon.

25. *21–22 Maiden Lane (TQ 3031 8072)*

A 7th- to 9th-century occupation site, excavated by the DGLA in 1986 (site code: MAI 86; Cowie 1987; 1988b; and this volume). The excavation revealed a 9th-century ditch (possibly defensive), between 1.9m and 2.3m wide and 2.0m deep. Beneath it were traces of an earlier ditch, on the same alignment. Rubbish pits, dump layers, metallised surfaces, a possible sunken-featured building, and stakehole concentrations, were also discovered. Systematic sampling of the deposits recovered animal bones (West 1988), coprolites, and plant remains (Davis 1988). Finds included: chaff-tempered pottery, Ipswich ware, imported Continental wares, pieces of glass vessels, glass beads, spindlewhorl and loomweight fragments, lava quernstone fragments, iron objects (including knife blades and a carding comb), copper alloy objects (including pins), bone and antler off-cuts and implements, a Series D type 8 *sceat* dating to AD 700–715 (Stott 1991, 305, no. 10), and a silver penny dating to between AD 796 and *c.* 805 in the reign of Coenwulf (*ibid.*, 308, no. 57).

26. *Bedford Street, the road outside nos 39–40 (TQ 3028 8072)*

Deposits of probable Saxon date were recorded in a 3m long trench during a DGLA watching brief in 1989 (site code: BDS 89; Cowie 1989b). A sherd of Ipswich ware, a sherd of North French burnished ware, burnt daub fragments, animal bones and oyster shells were found in

the strata. The deposits were *c.* 1.80m below ground level and at least 0.75m deep, and extended below the base of the trench.

27. *17–19 Bedford St (TQ 3023 8076)*

Pits, possibly Saxon. Mr John Nelson (District Surveyor's office, Westminster City Council) informed the DGLA that pits were found on this site in 1983. They were about 0.7–0.8m deep, cut into natural gravel, and filled with dark soil, which he searched for clay pipes but found nothing. When shown a slide of the Saxon pits at Maiden Lane he remarked on their similarity to those at Bedford Street.

28. *21–26 Bedford Street (TQ 3020 8079)*

A trial excavation undertaken by the DGLA in 1989 revealed five Middle Saxon rubbish pits (site code: BDF 89; Hoad 1989b). The pits contained pottery, loomweight fragments, pieces of burnt daub, a lava quernstone fragment, bone and antler off-cuts, animal bones and oyster shells. Undated features were also found, including two ditches and four pits, one of them a probable gravel quarry.

29. *Garrick St.*

A gold finger-ring overlaid with plaited gold wires, probably of 8th- or 9th-century date, now in the British Museum. (B.M. Cat. Finger-rings, no. 204; Hinton 1974, 11–12; Jessup 1950, 134; VCH London I, 157; Vulliamy 1930, 232).

30. *Site of the Bird in the Hand public house*

(demolished 1954/5), *17 Long Acre at the junction with Conduit Court (TQ 3015 8092)*.

A 6th- to 8th-century annular loomweight, diameter *c.* 115mm (Museum of London acc. no. 55.96.).

31. *10 Great Newport St (TQ 3001 8091)*

A pit was uncovered during a watching brief carried out by the DGLA in 1986 (site code: GTS 86; Cowie 1987, 31). Two sherds of Ipswich ware, a loomweight fragment, and iron slag adhering to fragments of furnace lining were found in the fill.

32. *Tower St*

A 6th-century copper alloy long cross brooch found in 1868 (British Museum acc. no. 91, 3-20, 19; VCH, London I, 149, Fig. 2). There is some disagreement about where the brooch was discovered, for it may have been found in Great Tower Street in the City.

33. *2–26 Shorts Gardens/19–41 Earlam Street (TQ 3013 8112)*

A Middle Saxon site, excavated in 1989 by the DGLA (site code: SGA 89; Connor, 1990). Substantial areas of complex strata survived up to 0.80m deep despite damage caused by modern basements. Excavation revealed traces of structures (notably a collapsed wattle and daub wall *c.* 8.00m long), a rammed gravel surface, brickearth floors, and eight hearths, two of which were attributed by archaeomagnetic dating to the 8th century. At least one hearth may have been used for iron-smithing, an activity also indicated by large amounts of slag. The artefactual evidence, especially the predominance of Ipswich-type ware in the pottery assemblage, suggests that the strata may date from the 8th century. Among the finds were a few potsherds of Rhenish and North French origin, pieces of glass vessel, loomweights, lava quernstone fragments,

three *sceattas*, copper alloy pins, over 150 iron objects (including knife blades and a bucket handle), a bone needle, a bone comb, bone thread pickers, and bone/antler off-cuts.

#### 34. King Street

Human burials were recorded in 'King Street and the northern side of Covent Garden Square' in the mid-18th Century (Maitland 1760, 1347). At the time they were assumed to have either belonged to the cemetery of St Martin's Church, or a plague burial ground. However, Vince (1984b, 14) points out that although 'there is no record of associated finds' the possibility that they were Saxon cannot be ruled out. This reference, together with the recent discovery of burials at sites 39 and 41 (see below), may support the theory that a Saxon cemetery lies just north of the Covent Garden Piazza.

#### 35. 35 King St/17-18 Floral Street (TQ 3023 8088)

Evidence of Middle Saxon occupation was found during a DGLA watching brief carried out in 1988 (site code: KIN 88; Williams 1988a; Stephen Haynes, in prep.). The remains of a sunken-floored building, and possibly two other structures were discovered. The building had apparently burnt down, for the clay floor was covered by successive layers of charcoal and burnt daub, and a charred plank lay against the side of the sunken area. Rubbish pits and undated gravel quarries were also recorded. The pottery assemblage comprised chaff-tempered ware, Ipswich ware, North French wares and Badorf ware. Other finds included loomweight fragments, quernstone fragments, a copper alloy pin, slag, worked bone, and considerable quantities of burnt daub.

#### 36. 26-27 Southampton Street (TQ 3037 8080)

An excavation and watching brief undertaken by the DGLA in 1989 (site code: SOT 89; Cowie, 1989c) revealed evidence of 7th- to 9th-century occupation, including rubbish pits, dump layers, and traces of a post-built structure aligned E-W. The ceramic assemblage included Ipswich ware, shelly ware, chaff-tempered pottery, and Continental wares such as North French burnished ware, Badorf ware, and Tating-type ware. Among other finds were pieces of glass vessels (some decorated), a glass linen-smoother, a glass bead, loomweight fragments, lava quernstone fragments, iron blades, a copper-plated iron bell, copper alloy pins, bone needles, a bone spindlewhorl, a bone comb fragment, animal bones, oyster and mussel shells, and coprolites.

#### 37. Jubilee Hall, Covent Garden (TQ 3040 8085)

A 7th- to 9th-century occupation site, excavated in 1985 by the DGLA (site code: JUB 85; Blackmore 1986, 215-16; Cowie 1987, 31; Whytehead 1985; 1988; and this volume). Excavation revealed one adult male inhumation (Henderson 1987), traces of timber-framed structures, pits, wells, and a metallised surface. The pottery assemblage mainly comprises chaff-tempered and Ipswich wares, although c. 12% were Continental imports. Other finds included: pieces of glass vessels, loomweights, a spindlewhorl, lava quernstone fragments, iron objects (including knife blades, an axe, and fragments of a dish or frying pan), copper alloy objects (including a key), a Series V *sceat* dating to AD 720-725 (Stott 1991, 307, no. 46), bone pins, comb fragments, antler offcuts, animal bones, and plant remains.

#### 38. The Royal Opera House car park, Bow Street (TQ 3043 8099)

A trial excavation undertaken by the DGLA in 1989 (site code: ROH 89; Cowie 1989d) revealed six Middle Saxon rubbish pits and a posthole. The features produced sherds of Ipswich ware, chaff-tempered ware and Badorf ware, a loomweight fragment, burnt daub, pieces of lava quernstone, antler off-cuts, oyster shells and animal bones.

#### 39. 45-7 Floral Street/51-4 Long Acre (TQ 3031 8104)

Strata revealed by trial pits during an archaeological evaluation by the DGLA in 1990 (site code: ROH 90; Cowie 1990) probably included deposits of Middle Saxon date. Artefactual evidence was sparse, and some finds, including sherds of Tating ware, North French ware, Ipswich ware, and chaff-tempered ware, may be residual. Two undated inhumation burials (C14 results pending), one adult and one adolescent, and a number of residual human bones were also found.

#### 40. Hanover Court, Long Acre (TQ 3033 8105)

A loomweight, Museum of London acc. no. A 3689 (Vince 1984b, 13).

#### 41. 67-8 Long Acre (TQ 3037 8113)

A Middle Saxon site, excavated in 1991 by the DGLA (site code: BOB 91; Malcolm in prep.). The earliest features were two inhumation burials, which are at present undated, although a belt buckle from one grave is provisionally identified as a copy of a Merovingian type suggesting an Early or Middle Saxon date. They were post-dated by extensive Middle Saxon occupation deposits including traces of a large timber building next to an area of gravel metalling, probably representing a yard. Elsewhere patches of brickearth floors, and groups of stakeholes and postholes indicated other structures, and hearths and rubbish pits were also found. Late in the Middle Saxon sequence was an irregular 'ditch', aligned NW-SE, which was up to 2.50m wide and 1.40m deep. The pottery assemblage comprised Ipswich ware, chaff-tempered ware, and foreign imports. Other finds included: a piece of decorated glass vessel, loomweight fragments, burnt daub, lava quernstone fragments, iron and copper alloy objects, residual human bones, animal bones, oyster shells, a coprolite, and carbonised plant remains. Small quantities of industrial waste were recovered, comprising iron and copper slag, worked bone, and antler off-cuts.

#### 42. Kingsway/Gate Street

A sherd of Ipswich-type ware with impressed decoration, Museum of London acc. no. A 21049. Erroneously described in the Museum's accessions register as a fragment of 17th-century vase.

#### 43. 27-29 Macklin Street (TQ 3041 8140)

A sherd of Ipswich ware was found during a DGLA excavation in 1989 (site code: MAC 89; Hoad 1990a). It was recovered from a layer of silty clay overlying natural brickearth.

#### 44. 141-7 Drury Lane (TQ 3045 8116)

A complete 7th-century chaff-tempered pot, which was burnished and fluted (Myres 1937, 432), was found c. 3.50m below modern ground level. A human mandible

was found 40ft (12.2m) away, but may not be associated with the pot (Meaney 1964, 167).

45. *44–46 Drury Lane (TQ 3043 8114)*

Pits and layers of probable Saxon date were found during a DGLA watching brief in 1987/88 (site code: DRU 88; Whytehead 1990b). Among the finds were chaff-tempered potsherds, Roman tile, and a considerable quantity of slag.

46. *55–7 Drury Lane (TQ 3048 8110)*

An excavation undertaken by the DGLA in 1990 (site code: DRY 90; Hoad 1990b) revealed Middle Saxon features including postholes and a slot, which possibly indicated a rectangular post-built structure, and wells and rubbish pits. The excavator suggests that some pits were wood-lined, and may have been used initially for storage (*ibid.*, 212). The finds included chaff-tempered ware, Ipswich ware, pottery from northern France and the Rhineland, burnt daub, loomweight fragments, a spindlewhorl, glass fragments, a glass bead, a whetstone, lava quernstone fragments, copper alloy and iron objects, one *scaet* (provisionally identified as Series C), two Late Roman coins, bone pins, antler offcuts, animal bones and oyster shells.

47. *Drury House, at the junction of Drury Lane and Russell Street (TQ 3053 8106)*

A Middle Saxon pit was recorded by the DGLA in a sewer shaft during a watching brief in 1987 (site code: RUS 87). The pit produced sherds of Ipswich ware, a flint-tempered potsherd, and a slag fragment.

48. *Crown Court (TQ 3051 8106)*

A pit, possibly Middle Saxon, was recorded during a DGLA watching brief in 1987 (site code: RUS 87). The layers filling the pit produced half a loomweight, daub fragments, animal bones and carbonised remains.

49. *Strand, the road outside no. 366 (TQ 3053 8079)*

A rubbish pit, of probable Saxon date, was found 2.80m below modern street level in a trench during a DGLA watching brief in 1989 (site code: STN 89; Cowie 1989b). The pit was 1.50m in diameter, and, although truncated by brick vaults, it survived to a depth of 0.65m. Four fragments of lava quernstone, an unidentified potsherd, and numerous animal bones were found in the pit.

50. *Savoy Steps/105–109 Strand (TQ 3054 8076)*

Four Early to Middle Saxon loomweights (Museum of London acc. nos A 27090–3), a complete burnished pot (acc. no. A 27191), and a sherd of Ipswich-type ware with stamped decoration (acc. no. A 27145) (Wheeler 1935, 139–141, Pl. VI Fig. 22). According to Wheeler the finds come from the site of the Savoy Palace, and an etching by Ian Strang depicting the demolition of the Savoy Steps in 1924/5 (Beresford Chancellor 1927, Pl. XI) suggests they were found during this work at 105–109 Strand (John Clark pers. comm.).

51. *Waterloo Bridge (TQ 306 807)*

An 8th- to 9th-century Saxon sword of Petersen type H, Museum of London acc. no. A.3670 (Shetelig 1940, 78–81).

52. *Waterloo Bridge*

A coin hoard dating to c. AD 875, discovered during renovation work on Waterloo Bridge (*Numismatic Chronicle*, 1884, 349–50; Thompson 1956, no. 256; Blackburn

and Pagan 1986, 294). Andrew (1911, 102) records its discovery thus: ‘When, in 1882, I saw the large hoard of coins of the reigns of Burgred, Aethelred, and Alfred, all of “Mercian type”—with one exception, a curious *scaetta*—fresh from its discovery on the west side of the second pier from the Surrey shore of Waterloo Bridge and mixed with the mud of the Thames, it included a quantity of fragments of pennies of which I believe, some were cut halfpennies; but later when I saw the treasure, these pieces had been discarded with mud as worthless’.

53. *138 Strand (TQ 3066 8084)*

Two cut features were found in trial pits excavated (sideways) at double basement level during a watching brief by the DGLA in 1987 (site code: STN 87). One feature located under the west wall of no. 143 the Strand (the Strand Hotel), produced a sherd of Ipswich ware, a fragment of burnt clay (possibly daub), animal bones and oyster shells.

54. *Somerset House (TQ 3077 8083)*

Two test pits (from a total of 15) produced evidence of Middle Saxon deposits during a watching brief undertaken by the DGLA in 1988 (site code: SOM 88). In one test pit a deposit of black soil produced a large chaff-tempered sherd and animal bones. The top of the deposit, possibly a pit fill, was located at c. +8.80m OD (Letch and Hoad, 1988). In another test pit chaff-tempered potsherds and animal bones were recovered from a thin layer of brickearth, which was cut by three features about 0.80m deep. The top of the features, which were probably pits, was located at c. +11.20m OD. One feature contained a chaff-tempered potsherd (Williams 1988b). An undated pit containing pieces of burnt clay or daub, and animal bones was found nearby at 152–8 Strand (site code: KIL 90; Gordon Malcolm, pers. comm.).

55. *Aldwych*

Gold ear-wires found 7ft deep (Vulliamy 1930, 232).

56. *Kingsway*

A loomweight of coarse red ware, 126mm in diameter (Museum of London acc. no. A 21088). It was found in the Kingsway in January 1920, but there are no details of its precise provenance.

57. *Arundel House, the Strand (TQ 3094 8093)*

Residual 7th- to 9th-century pottery and a loomweight were found during an excavation in 1972 (Haslam 1975, 221–2, Fig. 6). The pottery assemblage consisted of seventeen sherds of Ipswich ware, and one sherd each of chaff-tempered and fine sandy ware.

58. *2–3 Hare Court, Middle Temple (TQ 3115 8109)*

A hoard of more than 250 coins, deposited c. AD 842, and discovered in 1893 (Blackburn and Pagan 1986, 294; Dolley 1966, 20; Thompson 1956; Vince 1990, 113–4, Fig. 58).

59. *The Temple Church*

A sword of Petersen’s type S, with a five-lobed silver-plated pommel decorated with ‘Jellinge’ style animal ornament (British Museum 1887). Supposedly found in the tomb of the Earl of Pembroke in the Temple church, but its condition suggests that it may have been recovered from the Thames (Read 1887, 530; Shetelig 1940, 77–8, Fig. 45).

60. 133–7 Fetter Lane, Site of St Dunstan's House (TQ 3125 8124)

A residual loomweight fragment was discovered during an excavation by the Inner London Archaeological Unit in 1976 (site code: FET 76; Platts 1978, 87; Whytehead and Blackmore 1983, 84)

61. 43 Fetter Lane (TQ 3131 8139)

(i) Pottery, possibly of Saxon date, was found during an excavation in 1921 by H. S. Gordon at the junction of Fetter Lane and Nevill's Court. It was reported in *The Observer* newspaper (6th March, 1921) that 'Saxon silica ware pottery' had been found by the excavators. (ii) Before this excavation a silver sword pommel had been found nearby. The pommel, which is now in the British Museum (acc. no. 93, 7–15, 1), dates to about AD 800 (British Museum 1923, 93, Fig. 112; VCH, London I, 154; Vulliamy 1930, 256; Wilson 1964, 148–9, Pl. XXIII; Webster 1991, 221, no. 173).

62. St Andrews Church, Holborn (TQ 3147 8152).

Referred to in King Edgar's Charter of AD 959 as an 'old wooden church', and assumed to be the precursor of the present church (Birch 1885–93, no. 1048; Gelling 1953, 103).

63. Fleet Street

A coin of Coenwulf of Mercia (AD 796–c. 805), found in 1914. Precise findspot not known (Blunt *et al.*, 1963, 51, no. 11; Stott 1991, 308, no. 56).

64. St. Bride's Church (TQ 3155 8113)

The church was excavated in 1952 by the Roman and Medieval London Excavation Council (Grimes 1968, 182–203). A number of Late Roman or Saxon burials were found. Some burials had been disturbed by a pit containing a solitary sherd of a Late Saxon pitcher dating to the 9th to 11th century. The pit pre-dated the remains of the apse of the first church. Besides the apse, the church consisted of a nave, and a presbytery with a transept on the south side. The earliest surviving part of this church is the south wall of the nave, said by Grimes (*ibid.*, 185) to be no later than Late Saxon, and is on display with other remains beneath the Wren church. Information boards on the nave wall state that it dates to the 6th century, presumably on the dubious grounds that the church was dedicated to a 6th-century saint (see Brooke & Keir 1975, 139). Nevertheless, this claim has no apparent archaeological basis. The lay-out of the first church in its final form is 'Anglo-Norman' in plan, and suggests that it was completed in the 11th century. Merrifield (1983, 133) suggests that a Roman building beneath the church may have been a mausoleum, possibly Christian. He speculates 'its (the mausoleum) survival into the Late Saxon period, perhaps with recognisable Christian symbolism still visible upon it, may have been the reason for the establishment of a church'.

65. Car park bounded by Pilgrim Street, Waithman Street, and Blackfriars Lane (TQ 3172 8110)

A residual sherd of Ipswich ware was found during an excavation by the DUA in 1988 (site code: PWB 88).

66. Blackfriars

A mid 7th-century gold Tremissis (Witmen type), found in 1848, and sold to a private collection. Its precise

findspot is unknown (Rigold 1975, 675; Stott 1991, 305, no. 1; Sutherland 1948, 90, no. 62a).

## ACKNOWLEDGEMENTS

The Strand Survey was funded by the Historic Buildings and Monuments Commission. I am indebted to all those who helped me compile the gazetteer, and especially to Lyn Blackmore, John Clark, Peter Stott, and Robert Whytehead of the Museum of London for their assistance. I would also like to thank Michael Jones for drawing the distribution map.

## BIBLIOGRAPHY

- ANDREW (1911), W. J. Andrew 'A numismatic history of the reign of Stephen' *Brit. Num. Jnl.* 8 (1911) 87–136.
- BERESFORD CHANCELLOR (1927), E. Beresford Chancellor *Disappearing London* (London, 1927).
- BIDDLE (1984), M. Biddle 'London on the Strand' *Popular Archaeology* Vol. 6 No. 1 (1984) 23–7.
- BIDDLE (forthcoming), M. Biddle 'St. Martin-in-the-Fields and the problem of Mid-Saxon London' *Antiquaries Journal* (forthcoming).
- BIRCH (1885–1893), W. de G. Birch *Cartularium Saxonum* (1885–93).
- BLACK (1976), G. Black 'Excavations in the sub-vault of the Misericorde of Westminster Abbey' *Trans. of London and Middlesex Archaeol. Soc.* 27 (1976) 135–178.
- BLACKBURN & PAGAN (1986), M. Blackburn and H. Pagan 'A revised check-list of coin hoards from the British Isles c. 500–1100', in M. Blackburn (ed.) *Anglo Saxon Monetary History* (Leics. Univ. Press: 1986) 291–314.
- BLACKMORE (1986), L. Blackmore 'Early and Middle Saxon buildings in the Greater London area', *The London Archaeologist* 5 no. 6 (1986) 207–16.
- BLACKMORE & REDKNAP (1988), L. Blackmore and M. Redknap 'Saxon and Early Medieval Imports to the London Area and the Rhenish Connection' in D. Gaimster, M. Redknap & H.-H. Wegner (eds.) *Zur Keramik des Mittelalters und der beginnenden Neuzeit im Rheinland; Medieval and later pottery from the Rhineland and its markets* B.A.R. International Series S440 (1988) 223–39.
- BLUNT (1974), C. Blunt 'A new coin of Baldred king of Kent' *Brit. Num. Jnl.* 44 (1974) 75–6.
- BLUNT *et al.* (1963), C. E. Blunt, C. S. S. Lyon, and B. H. I. H. Stewart 'The coinage of southern England 796–840', *Brit. Num. Jnl.* 32 (1963) 1–74.
- BRITISH MUSEUM (1923), *British Museum Guide to Anglo-Saxon Antiquities* (1923).
- BROOKE & KEIR (1975), C. Brooke and G. Keir *London 800–1216: the shaping of a city* (London, 1975).
- CARPENTER (1966), E. Carpenter *A House of Kings. The History of Westminster Abbey* (London, 1966).
- CHAPLIN (1971), R. E. Chaplin *The Study of Animal Bones from Archaeological Sites* (London, 1971).
- CHAPLIN (1976), R. E. Chaplin *Report on the animal bones from a Saxon occupation site, Whitehall London* Archaeozoological Research Report 9 (Archaeozoological Services). 'Netherfield', Upper Blainslie, Etrick and Lauderdale, Scotland.
- CONNOR (1990) A. Connor 'Archaeological Excavations at 2–26 Shorts Gardens and 19–41 Earlam Street, June–October 1989', DGLA archive report (unpublished).
- COWIE (1987), R. Cowie 'Unravelling the Strand' *Archaeology Today* 8 (1987) 30–5.
- COWIE (1988a), R. Cowie 'Archaeological excavations' *The National Gallery Report 1985–1987* (1988) 49.
- COWIE (1988b), R. Cowie 'An Archaeological Excavation at 21–22 Maiden Lane, Covent Garden', DGLA archive report (unpublished).
- COWIE (1989a), R. Cowie 'An Archaeological Excavation at 18–20 York Buildings, WC2', DGLA archive report (unpublished).
- COWIE (1989b), R. Cowie 'Watching brief in Bedford Street, Chandos Place, and the Strand, WC2', DGLA archive report (unpublished).
- COWIE (1989c), R. Cowie 'An archaeological excavation and watching brief at 26–27 Southampton Street, WC2', DGLA archive report (unpublished).
- COWIE (1989d), R. Cowie 'A trial excavation in the Royal Opera House car park, Covent Garden, WC2', DGLA archive report (unpublished).
- COWIE (1990) R. Cowie 'An archaeological evaluation of the Royal Opera House Development area, Covent Garden, WC2', DGLA archive report (unpublished).

- COWIE (forthcoming a), R. Cowie 'The National Gallery' in R. L. Whytehead and R. Cowie 'Excavations at the Peabody site, Chandos Place, and the National Gallery' *Trans. London and Middlesex Archaeol. Soc.* (forthcoming).
- COWIE (forthcoming b), R. Cowie 'Archaeological evidence for the waterfront of Middle Saxon London' *Medieval Archaeology* (forthcoming).
- COWIE & WHYTEHEAD (1989), R. Cowie and R. Whytehead 'Lundenwic: the archaeological evidence for middle Saxon London' *Antiquity* 63 (1989) 706-18.
- DAVIS (1988), A. Davis 'Plant remains from Maiden Lane', Museum of London Environmental Section, archive report (unpublished).
- DAVIS (1989), A. Davis 'Plant remains from the National Gallery Basement', Museum of London Environmental Section, archive report (unpublished).
- DOLLEY (1966), R. H. M. Dolley *The Hiberno-Norse Coins in the British Museum* (London, 1966).
- DUNNING & EIVSON (1961), G. C. Dunning and V. I. Eivson 'The Palace of Westminster Sword' *Archaeologia* 98 (1961) 123-158.
- GELLING (1953), M. Gelling 'The boundaries of the Westminster Charters' *Trans. London and Middlesex Archaeol. Soc.* 11 (1953) 101-104.
- GREEN (1963), H. J. M. Green 'Secrets of Whitehall: evidence of Roman, Saxon, and medieval Westminster revealed during the current rebuilding of the Treasury and Downing Street—Part 1' *Illustrated London News* 242 (June 29, 1963) 1004-7.
- GREEN & THURLEY (forthcoming), H. J. M. Green and S. Thurley 'Excavations on the west side of Whitehall 1960-2, part 2: prehistoric times to late medieval', *Trans. London and Middlesex Archaeol. Soc.* (forthcoming).
- GRIMES (1968), W. F. Grimes *The Excavation of Roman and Medieval London* (London, 1968).
- HARDEN (1956), D. B. Harden 'Glass vessels in Britain and Ireland, AD 400-1000' in D. B. Harden (ed.) *Dark Age Britain* (London: 1956) 132-67.
- HASLAM (1975), J. Haslam 'The Saxon pottery' in M. J. Hammerson, 'Excavations on the site of Arundel House in the Strand' *Trans. London and Middlesex Archaeol. Soc.* 26 (1975) 221-2.
- HAYNES (in prep.), S. Haynes 'A watching brief at 35 King Street/17-18 Floral Street, WC2 2', DGLA archive report (in prep.).
- HENDERSON (1987), J. D. Henderson 'A skeleton from the Jubilee Hall, Covent Garden', English Heritage, Ancient Monuments Laboratory, Report 238/87 (unpublished).
- HINTON (1974), D. A. Hinton *A Catalogue of the Anglo-Saxon Ornamental Metalwork 700-1100 in the Department of Antiquities*, Ashmolean Museum (1974).
- HOAD (1989a), S. Hoad 'Archaeological excavation at the south side of Leicester Square', DGLA archive report (unpublished).
- HOAD (1989b), S. Hoad 'Archaeological evaluation report on 21-26 Bedford Street', DGLA report (unpublished).
- HOAD (1990a), S. Hoad 'Archaeological evaluation report on 27-29 Macklin Street', DGLA report (unpublished).
- HOAD (1990b), S. Hoad 'The archaeological excavation of 55-57 Drury Lane', DGLA archive report (unpublished).
- JESSUP (1950), R. Jessup *Roman Jewellery* (London, 1950).
- KINGSFORD (1908), C. L. Kingsford (ed.) *A Survey of London by John Stow. Reprinted from the text of 1603*. Vol. 2 (Oxford, 1908).
- LETCH & HOAD (1988), A. Letch and S. Hoad 'A report on the underlying archaeological features of Somerset House', DGLA archive report (unpublished).
- MAITLAND (1760), W. Maitland *History and Survey of London from its Foundation to the Present Time* 2 (London, 1760) 1347.
- MALCOLM (in prep.), G. Malcolm 'An archaeological excavation at 67-8 Long Acre, WC2', DGLA archive report (in prep.).
- MARGARY (1955), I. D. Margary *Roman Roads in Britain* 1 (London, 1955).
- MCCANN & ORTON (1989), W. McCann and C. Orton 'The Fleet Valley Project' *The London Archaeologist* 6 no. 4 (1989) 102-7.
- MEANEY (1964), A. Meaney *A Gazetteer of Early Anglo-Saxon Burial Sites* (London, 1964).
- MERRIFIELD (1983), R. Merrifield *London City of the Romans* (London, 1983).
- METCALF (1986), D. M. Metcalf 'Some finds of Thrymsas and Sceattas in England' *Brit. Num. Jnl.* 56 (1986) 1-15.
- MILLS (1991), J. Mills 'Before King Alfred: The Saxons in town and country' *Current Archaeology* 11 no. 4 (1991) 170-173.
- MILLS (1980), P. Mills 'Excavations at Cromwell Green in the Palace of Westminster' *Trans. London and Middlesex Archaeol. Soc.* 31 (1980) 18-28.
- MILLS (in prep.), P. Mills 'Excavations at Westminster Abbey' for *Trans. London and Middlesex Archaeol. Soc.* (in prep.).
- MYRES (1937), J. N. L. Myres 'Three styles of decoration on Anglo-Saxon pottery' *Ant. Jnl.* 17 (1937) 424-37.
- NUMISMATIC CHRONICLE (1884), *Numismatic Chronicle* 3, IV (1884) 349-50.
- PAGAN (1965), H. E. Pagan 'Coinage in the age of Burgred' *Brit. Num. Jnl.* 34 (1965) 11-27.
- PLATTS (1978), E. Platts 'The finds' in J. Siegel, Excavations at Fetter Lane, 1976 *Trans. London and Middlesex Archaeol. Soc.* 29 (1978) 86-89.
- RACKHAM (forthcoming), J. Rackham 'Saxon London and its environment', in J. Rackham (ed.) *Environment and Economy in Anglo-Saxon England* CBA Research Report (forthcoming).
- READ (1887), C. H. Read *Archaeologia* 50 (1987) 530.
- RIGOLD (1975), S. E. Rigold 'The Sutton Hoo coins in the light of the contemporary background of coinage in England' in R. L. S. Bruce-Mitford *The Sutton Hoo Ship-burial* 1 (1975) 653-77.
- RIGOLD & METCALF (1984), S. E. Rigold and M. H. Metcalf 'A revised check-list of English finds and sceattas' in D. Hill and M. Metcalf (eds.) *Sceattas in England and on the Continent* B.A.R. 128 (1984) 245-68.
- ROSSER (1989), G. Rosser *Medieval Westminster 1200-1540* (Oxford, 1989).
- SAWYER (1968), P. H. Sawyer *Anglo-Saxon Charters: an annotated list and bibliography* (London, 1968).
- SHETELIG (1940), H. Shetelig *Viking Antiquities in Great Britain and Ireland* pt IV (Oslo, 1940).
- SMITH (1852), C. Roach Smith *Collectanea Antiqua, Etchings and Notices of Ancient Remains* 2 (London, 1852).
- STOTT (1991), P. Stott 'Saxon and Norman coins from London' in A. Vince (ed.) *Aspects of Saxo-Norman London II: Finds and Environmental Evidence* London and Middlesex Archaeol. Soc. Special Paper 12 (1991) 279-325.
- STURDY (1976), D. Sturdy 'Mid pleasures and palaces: archaeological work at the royal sites of London' *London Archaeologist* 2 no. 16 (1976) 417-22.
- SUTHERLAND (1948), C. V. Sutherland *Anglo-Saxon Gold Coinage in the light of the Crondall Hoard* (London, 1948).
- THOMPSON (1956), J. D. A. Thompson *Inventory of British Coin Hoards AD 600-1500* Royal Numismatic Soc. Special Publication no.1 (no.366) (1956).
- TYERS (1989), I. Tyers 'York Buildings, WC2, Saxon timbers' Museum of London Environmental Section Dendrochronology Report 1/89 (unpublished).
- V.C.H. *Victoria County History*, London 1.
- VINCE (1984a), A. Vince 'The Aldwych: mid-Saxon London discovered?' *Current Archaeology* 8 no.4 (1984) 310-12.
- VINCE (1984b), A. Vince *The topography of Mid-Saxon London* (unpublished typescript).
- VINCE (1990), A. Vince *Saxon London: An Archaeological Investigation* (London, 1990).
- VULLIAMY (1930), C. E. Vulliamy *Archaeology of Middlesex and London* (London, 1930).
- WEBSTER (1991), L. Webster 'The Mercian supremacy: metalwork', in L. Webster and J. Backhouse (eds.) *The making of Anglo-Saxon Art and Culture AD 600-900* (British Museum Press, 1991) 220-239.
- WEST (1988), B. A. West 'Saxon birds and mammals from Maiden Lane', Museum of London Environmental Section, archive report (unpublished).
- WHEELER (1935), R. E. M. Wheeler *London and the Saxons* London Museum Catalogues no. 6 (London, 1935).
- WHYTEHEAD (1985), R. Whytehead 'The Jubilee Hall site reveals new evidence of Saxon London' *Rescue News* no.37 (1985).
- WHYTEHEAD (1988), R. Whytehead 'Jubilee Hall Site Report', DGLA archive report (unpublished).
- WHYTEHEAD (1990a), R. L. Whytehead 'Site-watching during drain-laying operations at Trafalgar Square, London WC2', DGLA archive report (unpublished).
- WHYTEHEAD (1990b), R. L. Whytehead 'Archaeological investigation at 44-46 Drury Lane, WC2', DGLA archive report (unpublished).
- WHYTEHEAD (forthcoming), R. L. Whytehead 'The Peabody site' in R. L. Whytehead and R. Cowie 'Excavations at the Peabody site, Chandos Place, and the National Gallery' *Trans. London and Middlesex Archaeol. Soc.* (forthcoming).
- WHYTEHEAD & BLACKMORE (1983), R. Whytehead and L. Blackmore 'Excavations at Tottenham Court, 250 Euston Road, NW 1' *Trans. London and Middlesex Archaeol. Soc.* 34 (1983) 73-92.
- WILLIAMS (1988a), K. Williams 'Archaeological Survey at 35 King Street/17-18 Floral Street, WC2', DGLA archive report (unpublished).
- WILLIAMS (1988b), K. Williams 'Archaeological Survey at Somerset House', DGLA archive report (unpublished).
- WILSON (1964), D. Wilson *Anglo-Saxon Decorative Metalwork, Catalogue of Antiquities of the later Saxon period* 1 (London, 1964).
- YOUNGS *et al.* (1987), S. M. Youngs, J. Clark & T. Barry 'Medieval Britain and Ireland in 1986' *Medieval Archaeology* 31 (1987) 110-191.

# TWO MIDDLE SAXON OCCUPATION SITES: EXCAVATIONS AT JUBILEE HALL AND 21–22 MAIDEN LANE

ROBERT COWIE and ROBERT LAYARD WHYTEHEAD with LYN  
BLACKMORE

EDITED BY ROBERT COWIE

## SUMMARY

*The two excavations provided the first substantial archaeological evidence of Middle Saxon London, then known as Lundenwic, a trading settlement contemporary with other North European emporia such as Hamwic, Ipswich, Dorestad, and Quentovic.*

*At Jubilee Hall structures, wells, rubbish pits, and an inhumation were found; features at Maiden Lane included ditches, pits, and a midden. The excavations produced important new evidence about farming, trade and crafts in the London area during the mid-Saxon period.*

*Of particular importance is the fabric type series, which forms the basis for the first detailed classification and analysis of Middle Saxon pottery from London in the local and wider context. Small finds composed of fired clay, glass, metal, stone, and bone are also described and discussed. The environmental evidence is summarised, and supports the interpretation of these sites as part of an 'urban or mercantile' settlement.*

## INTRODUCTION

The two excavations discussed in this report marked the beginning of a series of site investigations in the area around the Strand by the Museum of London's Department of Greater London Archaeology (hereafter DGLA), which have revealed evidence of a 7th- to 9th-century settlement, the Middle Saxon trading port or emporium of *Lundenwic*. The present configuration of these mid-Saxon sites (Cowie, this volume) suggests that the emporium covered at least 60ha between Trafalgar Square and Aldwych, with Jubilee Hall and Maiden Lane near the centre of the settlement.

The excavation at Jubilee Hall, Covent Garden (TQ 3040 8085), in June 1985, followed the discovery of Middle Saxon features during a watching brief undertaken by the DGLA while contractors were clearing the site in advance of

redevelopment. The site was adjacent to Jubilee Hall on the south side of Covent Garden, and bounded to the south and west by Tavistock Street and Southampton Street respectively (Fig. 1). An emergency excavation was carried out at great speed to minimise delay to the contractor's schedule, and in the course of one week much was salvaged from the site. Nevertheless, some archaeological strata were entirely lost, while other deposits were recorded in haste, and only limited sampling was possible.

One month later Middle Saxon deposits were exposed during trial excavation by the DGLA at 21–22 Maiden Lane (TQ 3031 8072). The site was located about 60m north of the Strand, on the west side of the Adelphi theatre, and bounded to the north and west by Maiden Lane and Exchange Court respectively (Fig. 1). The deposits were

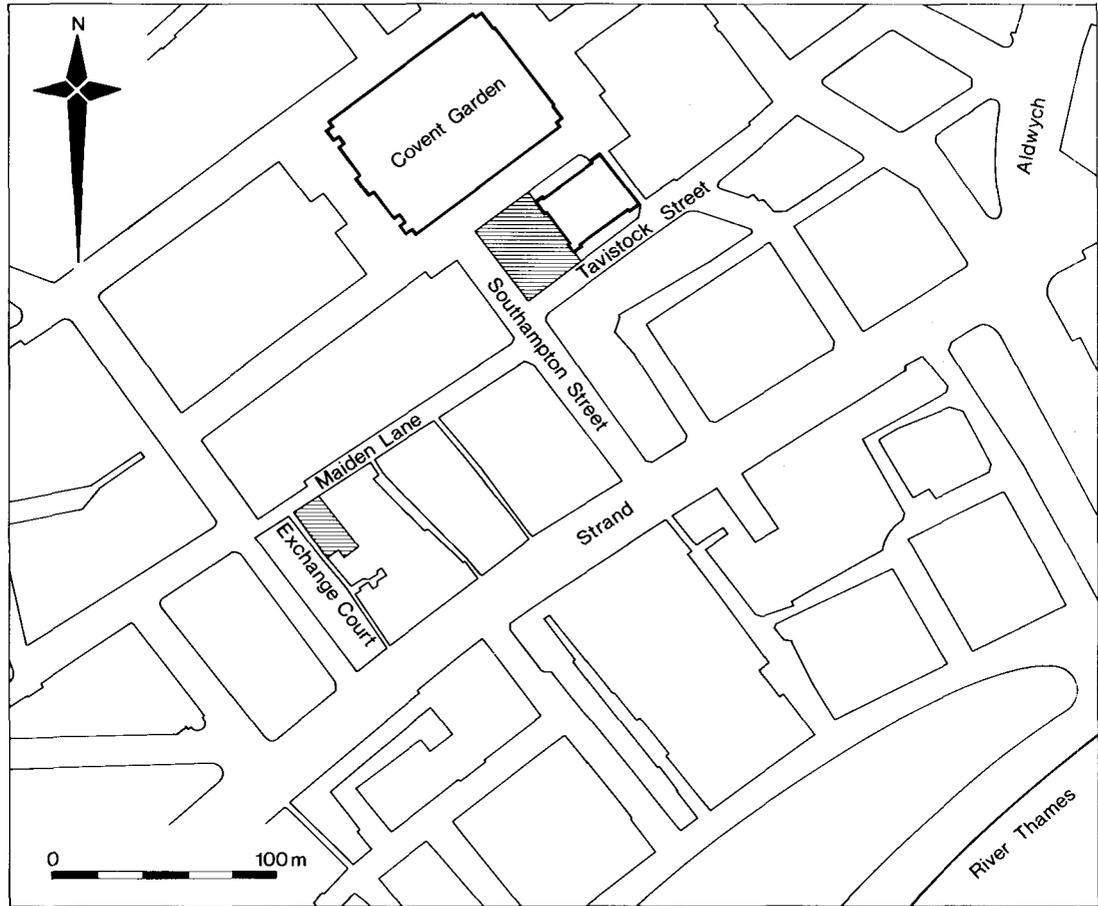


Fig. 1. Jubilee Hall and 21-22 Maiden Lane: Site location.

investigated during an excavation from April to June 1986 prior to the proposed redevelopment of the site.

The purpose of the excavation was to investigate fully and to record the Middle Saxon strata, with the recovery of economic and environmental data as a major objective. Unlike the hurried excavation at Jubilee Hall, there was sufficient time at Maiden Lane to undertake a controlled investigation of the Middle Saxon deposits, and for all contexts to be sampled for sieving and flotation.

Archive reports for the excavations at

Jubilee Hall (Whytehead 1988) and Maiden Lane (Cowie 1988) are held by the Museum of London and may be consulted on request. The contexts have been renumbered for this report; correlation tables are included in the archive. The accession (SF) numbers for the registered finds are unchanged.

#### THE TOPOGRAPHY AND GEOLOGY

The Middle Saxon trading port of *Lundenwic* was built on brickearth-covered river terraces on the north side of the

River Thames, about a kilometre upstream from the site of the Roman City, and to the west of the River Fleet, the course of which now lies beneath Farringdon Street and New Bridge Street. It is thought that the Strand follows the line of a Roman Road (Cowie, this volume, p. 37), which may have become a major route through *Lundenwic* (Cowie and Whytehead 1989, 710). The main residential area of the settlement probably lay to the north of the Strand, since to the south the ground sloped steeply down to the waterfront, part of which was found during recent excavations at York Buildings, where a Middle Saxon embankment was uncovered (Cowie 1989; Cowie and Whytehead 1989, 710; Cowie this volume, site 22).

Today Maiden Lane lies at the top of a moderate incline (1:24) up from the Strand, but the gradient decreases between here and Jubilee Hall. At Jubilee Hall the modern ground level on the south side of Covent Garden has been built up, possibly to level the area around the market.

According to the 1:10560 geological map (BGS 1982) both sites are on river terrace deposits (number 3a) comprising clayey or sandy gravels. The natural geological deposits in the excavation areas consisted of 'brickearth' overlying sand and gravels. The more deeply cut archaeological features at both sites penetrated through the brickearth into the underlying sand and gravel, the top of which was located between +14.00m and +14.90m OD. Variations in the level at which water is now encountered in the Covent Garden area suggest the presence of buried watercourses. At Jubilee Hall, for example, water was reached in a Saxon well (150) at +14.77m OD, but at Maiden Lane the deepest feature was free of water at +13.00m OD. However, water was not encountered in three shallower wells at

Jubilee Hall, or in a possible well at Maiden Lane, which also suggests that there may have been marked changes in local hydrography since Saxon times.

The river terrace sands and gravels were covered by brickearth, a term that has been used to describe fine-grained deposits of both aeolian and alluvial origin (Penn and Rolls 1981, 6). At Maiden Lane it consisted of a pale yellowish/reddish brown, fine sandy clay, the top of which occurred at heights of between +14.80m OD and +15.30m OD. The thickness of the brickearth varied, but was generally about 0.50m. The deposits at Jubilee Hall also contained bands and pockets of gravel and sandy gravel. Topsoil horizons were not identified beneath surviving areas of Middle Saxon strata at either site, suggesting that the original land surface had been removed, partly truncating the brickearth subsoil.

## THE EXCAVATION AT JUBILEE HALL

by ROBERT LAYARD  
WHYTEHEAD

### CIRCUMSTANCES AND METHOD OF EXCAVATION

The original development plan involved building from ground level, sinking a retaining wall and pile shafts. A watching brief was undertaken by the DGLA to record archaeological deposits disturbed by this activity.

The initial contractors' excavation of the retaining wall trench revealed unsuspected hollow brick vaults and loose fill on the western and southern sides of the site, and a last minute decision was made to dig out to the base of this fill and to build a basement over the entire area.

The contractors' clearance was carried out in two broad N-S strips, the western half being excavated first. The western strip roughly coincided with the vaults, which had almost entirely destroyed the earlier archaeological levels, although the bottoms of some scattered deep pits survived. The first of these to be uncovered, in the NW corner of the site (Fig. 2), produced no dating evidence,



Plate 1. Jubilee Hall: General view of the excavation area, looking north towards Covent Garden.

although subsequently the pits have been assumed to be Saxon.

The eastern edge of the initial stripped area coincided with an area of Saxon strata, which included a grave containing an articulated human skeleton (see p. 156). An area, measuring 4.50 by 3.00m, was cleared around the skeleton, to enable it to be exposed and lifted, and adjacent features to be examined. No further burials were found, but

a sequence of features containing Saxon pottery was recorded.

A second, eastern portion of the site was then cleared, commencing some 3.50m from the north boundary. Here archaeological deposits survived beneath basement floors to a depth of 0.80m. The deposits included a capping layer of 'dark earth' *c.* 0.20m deep, and covered an area measuring 30m N-S and up to 24m E-W. The bulk of the fill had

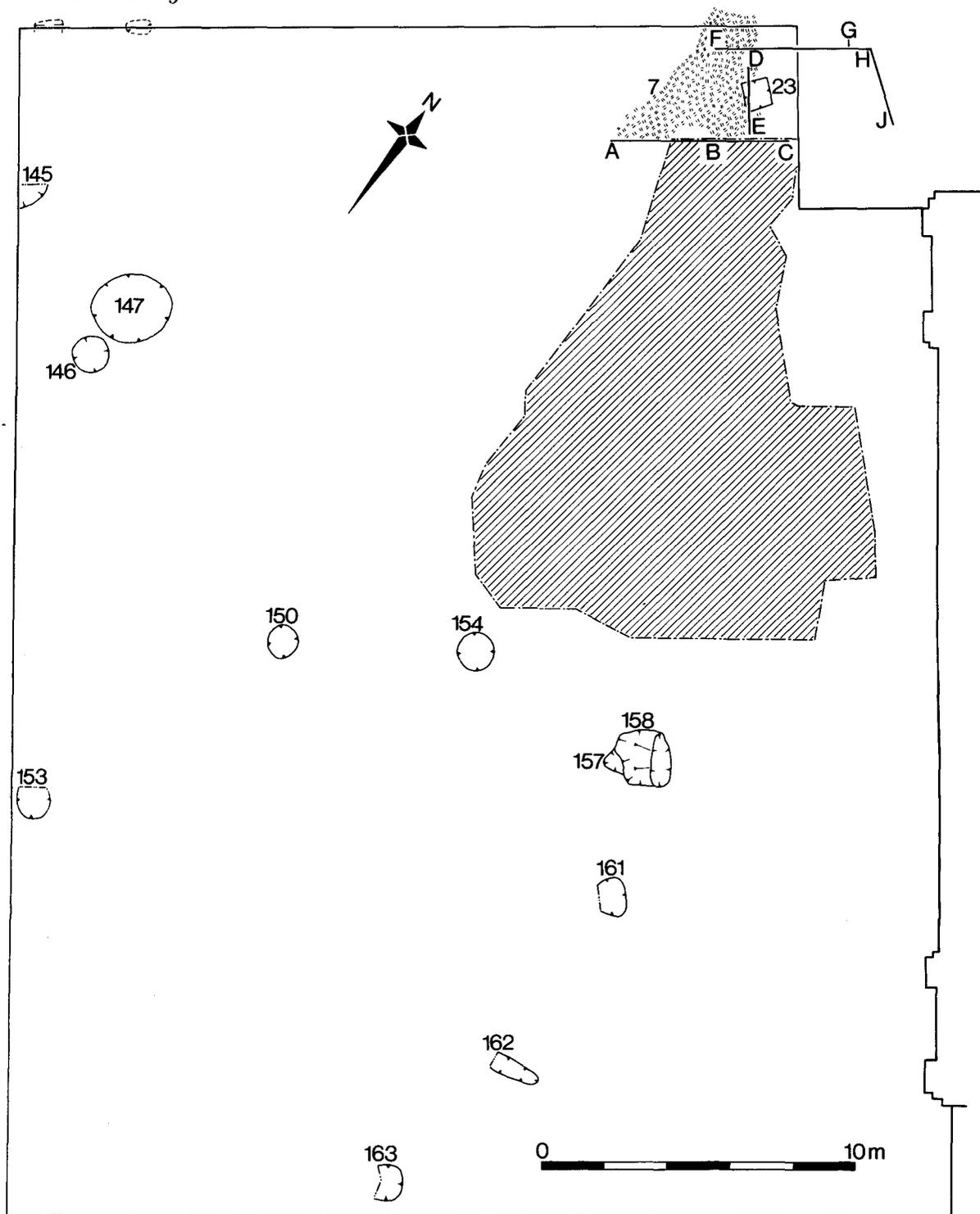


Fig. 2. Jubilee Hall: Site plan showing the excavation area, features outside the excavation area, and the location of the sections north of the excavation area.

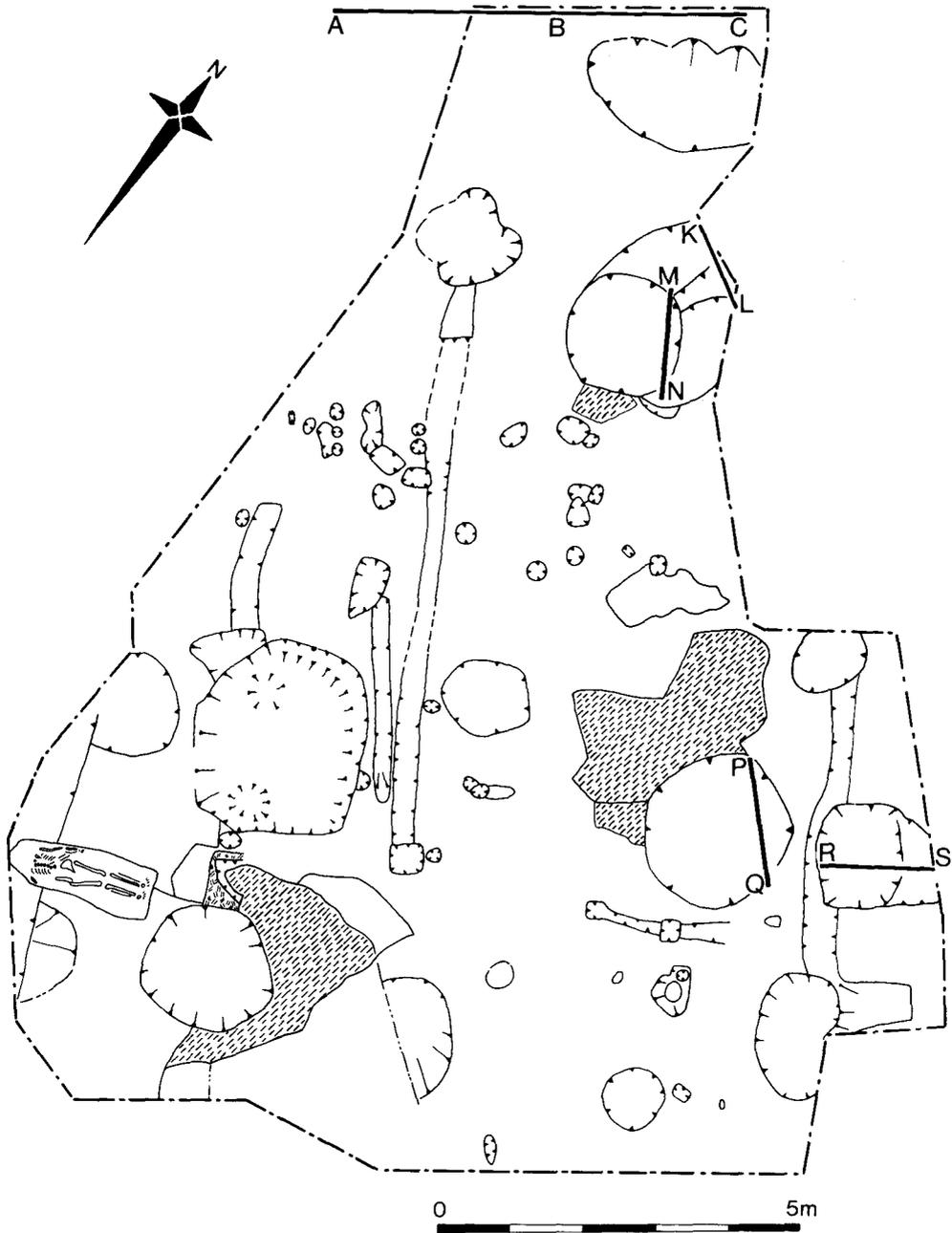


Fig. 3. Jubilee Hall: Multi-phase plan of the excavation area.

to be removed from the site, but the machined level was raised, from +16.00m OD. to c. 16.70m OD., so that the earliest Saxon ground surface remained for excavation (Fig. 3), although the overlying strata were largely removed. Occupation levels survived in a limited area in the SW corner of the excavation area.

A block of earth was retained in the NE corner of the building site for structural reasons and was subsequently removed by machine; sections through the deposits were recorded, and a sequence established. Sections were also recorded where underpinning operations dug beyond the previously existing walls on the north site boundary.

The bottoms of some deep Saxon pits were excavated to the south and west of the main excavation area.

The excavated features were in three distinct, and physically separate, groups:

1. Occupation levels in the NE corner of the site.
2. Features within the excavation area.
3. Cut features outside the excavation area.

1: THE OCCUPATION LEVELS

The evidence for the sequence of occupation levels is almost entirely based on the analysis of sections, as excavation in plan was not practical for safety reasons.

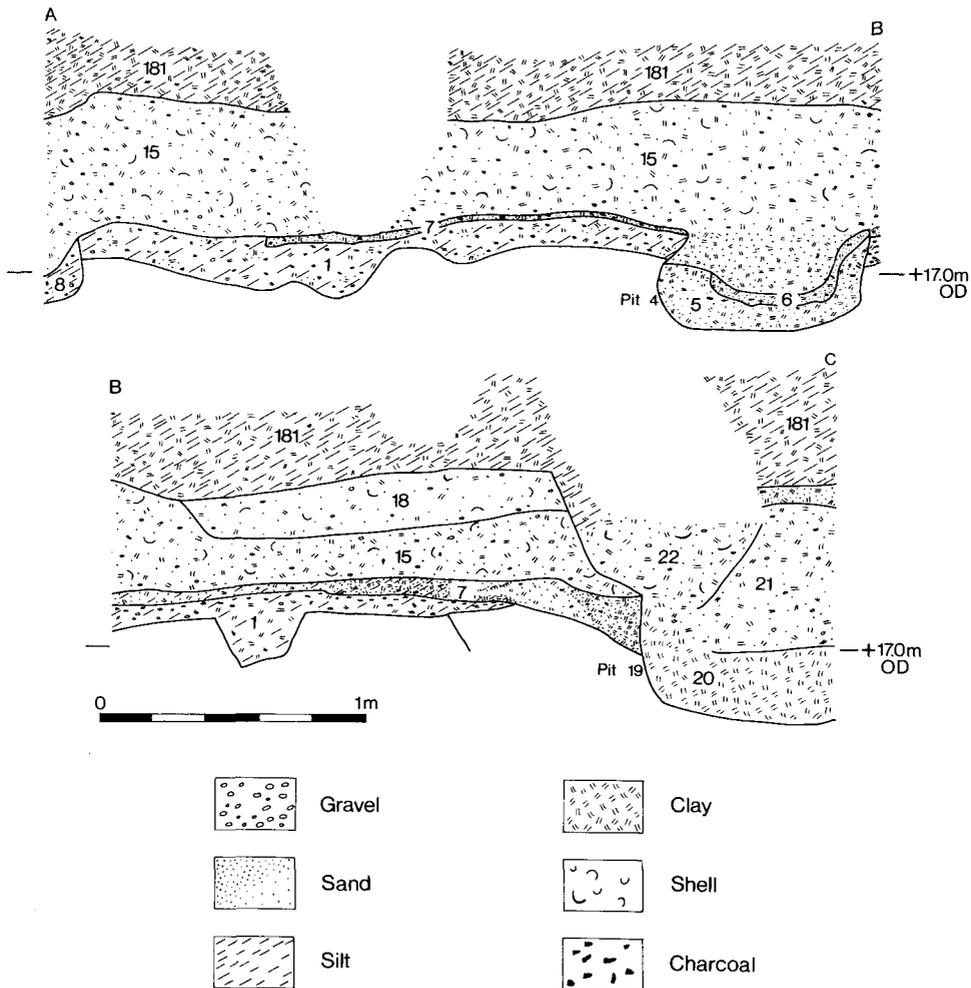


Fig. 4. Jubilee Hall: West-east section, A–C.

Three principal sections were recorded:

An E-W section (Fig. 4, A-C), on the northern edge of the area available for excavation, but physically isolated from the features in the excavation area by machine disturbance.

A N-S section (Fig. 5, D-E), extended at right angles to the north of section A-C.

A W-E section (Fig. 6, F-J) on the northern edge of the site, which turned at the NE corner to run roughly N-S. The section was extended westwards as features came to light during underpinning.

#### *Strata observed in sections*

The earliest occupation activity was marked by disturbed 'natural' brickearth (Fig. 4 (1)), comprising pale yellow silty clay mixed in places with numerous charcoal flecks (Fig. 6, (2)). This layer was particularly uneven along the north edge of the site (Fig. 6) and shallow cut features, such as (3), lay at this level.

Pit (4) (Fig.4) was cut into the brickearth; it extended 0.30m north of section A-C (Fig. 3), and had curved corners. The lower fill of the pit was a dark grey sandy clay (5), on to which a layer of clay (6) had subsided. The clay layer appeared to adjoin a surrounding clay layer (7), interpreted as a floor. A third pit (8) (Fig. 4) may also belong to this phase.

Floor (7) was composed of orange-yellow silty clay, 25-45mm deep, which sealed the brickearth (1). It extended from section A-C north and east to beyond the limits of the site (Fig. 2), but it is not known how far this layer might have spread to the south. Micromorphological analysis (Macphail in this report, p. 158) suggests that it comprised two horizons; a lower brickearth floor overlain by fallen daub composed of similar material.

Floor (7) incorporated a hearth (9), which consisted of a sequence of three superimposed brick-earth layers, each with a burnt, reddened surface

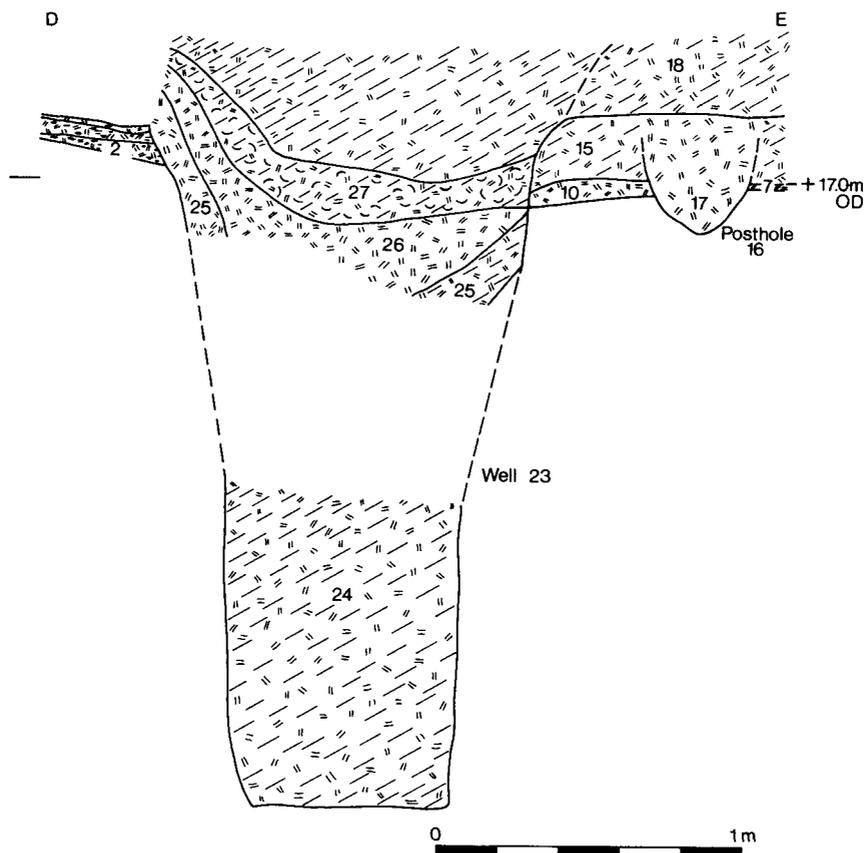


Fig. 5. Jubilee Hall: North-south section, D-E.

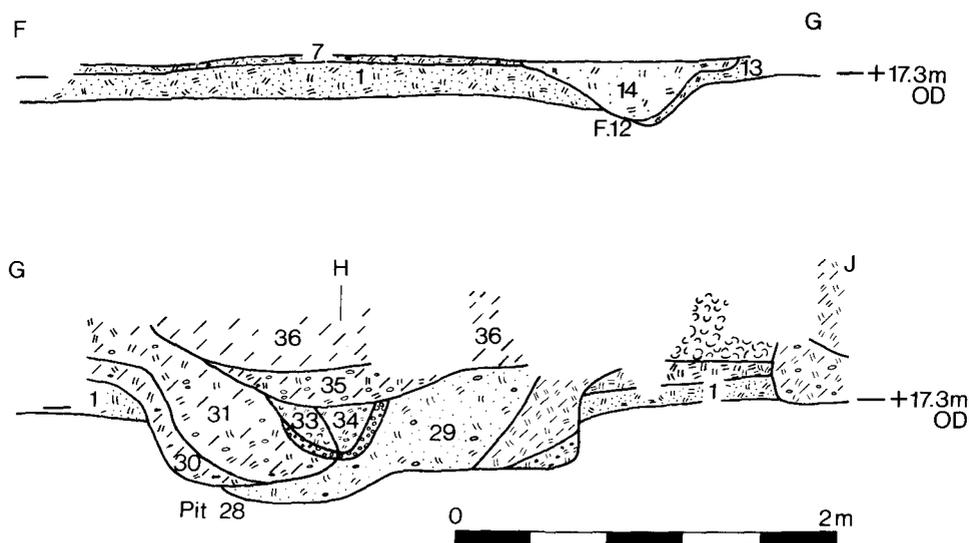


Fig. 6. Jubilee Hall: West-east section, F–J.

(Fig. 4). Floor (7) had been burnt in other places (Fig. 5, (10), (11)).

The floor seemed to incorporate a small cut feature (12) (Fig. 6). This feature was lined on the south side with burnt brickearth containing charcoal fragments (13), and had been filled with brickearth (14) raising it to the level of the adjacent clay (7).

There were no clear signs of a structure related to the floor, but its clayey composition must mean that it was covered as it would have been unsuitable for wet conditions. This problem has been discussed in relation to a similar clay floor at Ramsbury (Haslam 1980, 10). Pit (4) may have contained a timber upright. A layer of clay which had slumped into the pit may have been part of floor (7) indicating that the pit pre-dated the floor, or may have been unburnt daub which had fallen elsewhere on the floor (in which case the relationship of the pit and floor is unclear). If unburnt daub lay on the floor, as micromorphological analysis suggests, this may provide the best evidence for a superstructure. The extent of the layer would indicate a substantial building, and therefore it is surprising that no large postholes or beamslots were identified even in the limited sections observed.

The brickearth floor and fallen daub were covered by an apparently homogeneous layer of grey silty clay (Fig. 4 (15)), which micromorphological analysis (see below) suggests was mostly collapsed

organic building material, including daub, burnt daub, and charcoal, roughly reworked by earthworms, and to a certain extent by wireworms and slugs. Activity may have taken place during the accumulation of this layer as a posthole (16) (Fig. 5), filled with grey-brown sandy clay (17), was seen to cut through only the lower half of the layer. A distinctive layer of light grey material incorporating brickearth (18) lay above layer (15).

The grey earth (15) was not observed in two sections recorded to the south of the excavation area where 'dark earth' appeared to overlie either a shallow occupation layer of mixed material, or the natural brickearth. It seemed that no buildings had stood to the south and that the 'grey earth' was confined to the area of the clay floor; thus it may well have been composed of the debris of the structure which stood there. It may have been an indication of abandonment as the debris was not cleared and was reworked by natural action, presumably before the re-use of the area marked by the digging of well (23).

Pit (19) (Fig. 4) appears to have been dug through the grey earth, and had very dark grey primary fill (20), overlain by either upper fills, or later occupation layers (21)–(22).

A well (23), the shaft measuring 0.75m square, was apparently cut through layer (15), and possibly through (18) (Fig. 5). Most of the fill was a homogeneous grey-brown silty clay (24); however, in the upper part where the shaft splayed out, there were

several layers (25)–(27), some containing large amounts of oyster shell, which may have been later occupation levels which had slumped in as the main fill subsided.

It was not clear from which level pit (28) (Fig. 6) had been cut. It was filled with several layers (29)–(36), one of which (29) contained a sherd of Badorf ware, which suggests a late date for the filling of the pit (Blackmore in this report, p. 93).

The fill of well (23) was overlain by a layer of 'dark earth' consisting of homogeneous dark grey/black silty clay (37), which sealed the entire sequence of strata in the excavation area. Its surface was cut by later features. Micromorphological analysis (MacPhail in this report, p. 159) showed that it contained organic building material similar to that in layer (15) beneath it, but much more finely reworked, in particular by wireworms as well as earthworms.

The importance of wireworms in the creation of 'dark earth', stressed by Macphail (in this report, p. 159), may help to explain how this distinctive deposit develops. As wireworms occur mostly in the top few centimetres of natural soils the 'dark earth' may have accumulated gradually. A section (not illustrated) observed during machining to the south of the excavation area showed a spread of roof tiles with pegholes which overlay *c.* 0.30m of 'dark earth' but was in turn overlain by a further 0.25m of similar 'dark earth'. The site lies within the 'convent garden' which belonged to Westminster Abbey, first recorded 1199–1216 (GLC, Survey of London, 1970, 19); this walled area was cultivated for a wide variety of produce until it was redeveloped by the Fourth Earl of Bedford in the 1630s. Thus the 'dark earth' here would seem to be the product specifically of a long period of market gardening.

## 2. FEATURES WITHIN THE EXCAVATION AREA

This part of the site was truncated by machining roughly to the surface of the 'natural' deposits. The north end of the area was dug particularly deeply, but to the south the machine-excavated level was higher, undulating between *c.* +16.55m OD and *c.* +16.85m OD. Most features in the area were truncated and isolated, but in the SW corner of the excavation area a sequence of horizontal layers and cut features survived, enabling tentative phasing. This sequence is described first. The phase plans A–D (Figs 7–10) illustrate the sequence of features in the SW corner of the excavation area, but also show other features which were potentially, but not necessarily, contemporary. Intercutting features shown in Fig. 3 are separated out across the

phase plans, but cannot be directly related to those in the SW corner.

The natural subsoil into which the Saxon features had been cut was an orange-brown brick-earth, the surface of which was discoloured to a light greyish-brown (38).

### Phase A (Fig. 7)

The following features cut into the brickearth (38) and were subsequently sealed by a layer of redeposited and contaminated brickearth (51) in the SW corner of the excavation area:

A shallow W–E grave (39) (Fig. 7) cut through the brickearth to a depth of *c.* +16.38m OD. It had irregular sides, and a straight east end; the west end had been truncated but appeared to taper around the head.

An adult male (Henderson in this report, p. 156) [Pl. 2] had been laid prone in the grave, with the head at the west end. The arms had been pushed to the right hand side of the body; the right arm was straight with the hand resting on the side of the grave. The left arm was flexed at the elbow, which lay under the stomach area, so that the hand lay against the side of the grave under the right forearm. The feet both pointed to the body's right. The skull was damaged by the contractors' machining and its attitude could not be determined. The grave was filled with light grey-brown clay (40) containing a patch of greenish silty clay along the north side. The skeleton has a C-14 date of 1370 ± 60 b.p. (HAR-8936) calibrated to AD 630–675 (calibration curve in Stuiver & Pearson 1986), and a sherd of Seine Valley ware was found in the grave fill.

The burial was apparently isolated, although further graves may once have lain in the more disturbed ground to the west. Single burials have been found in an urban context at *Hamwic*, and the two from site XX (Holdsworth 1980, 38–9) predated other activity there. Whether this burial predated or was contemporary with the early structure is not certain. Prone burial in the Romano-British and Anglo-Saxon periods has been interpreted elsewhere as indicative of a criminal or outcast (Harman *et al.* 1981, 167–8), which may explain the grave's apparent isolation.

To the east of the grave there were four postholes (Fig. 7), dug to a similar depth. Three (41)–(43) were closely grouped, and filled with greenish grey silty clay, similar to the overlying layer (51); a fourth (44) was filled with pale grey clayey silt, and therefore may have been unrelated.

The slight trace of what also might have been a posthole (45), 0.18m deep, lay nearby (Fig. 7). It may have been associated with the other postholes,

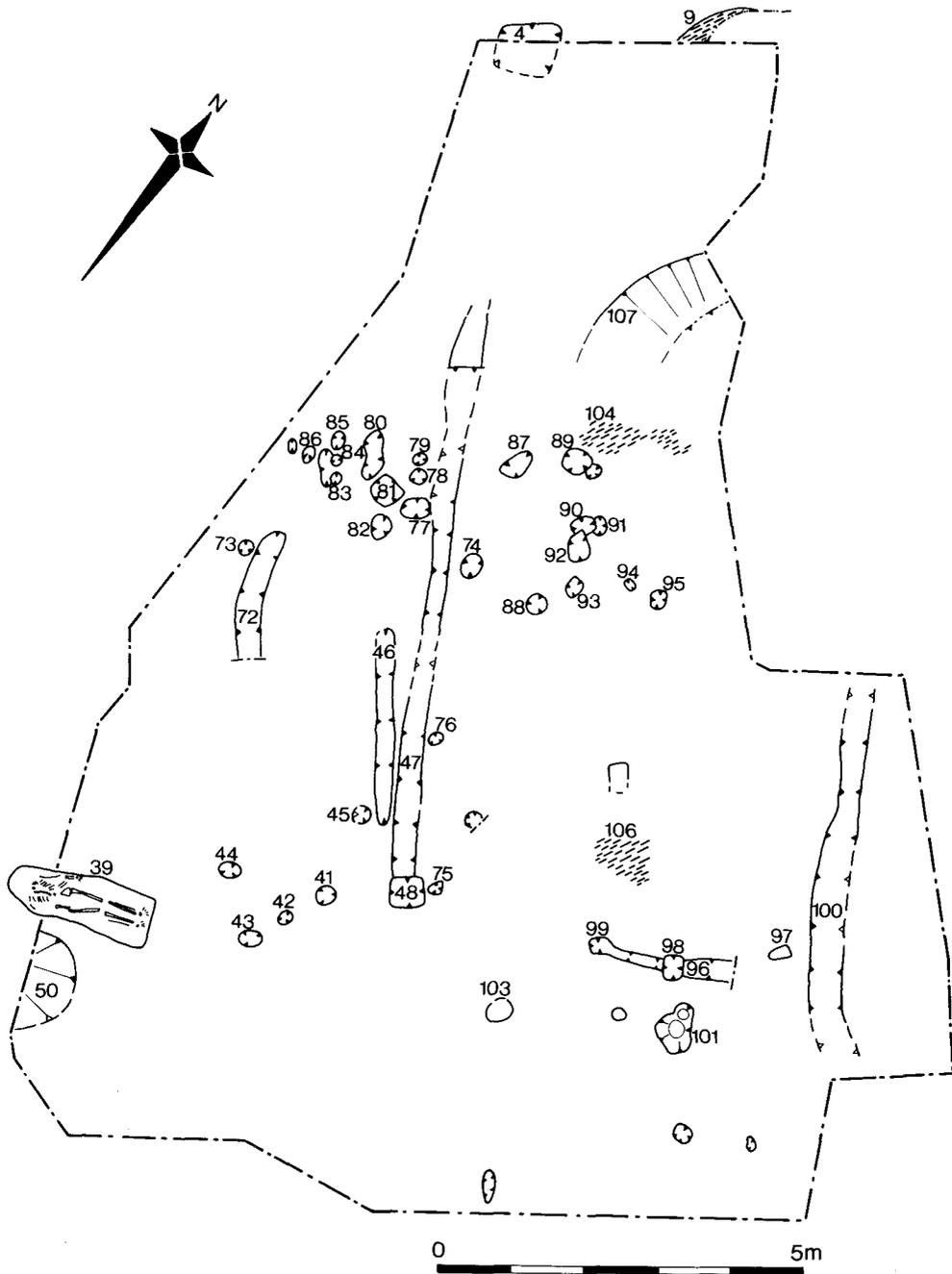


Fig. 7. Jubilee Hall: Suggested phase plan A.

and was filled with similar material. It might also be associated with an adjoining linear slot (46), which had a flat base and gently curving sides.

A long slot (47) (Fig. 7), lay to the east of slot (46). Although disturbed in places, it could be traced over 7.80m. A square posthole (48), may have marked its southern end. It may have extended further north to the limit of the excavation area (see discussion below). At the north end a dark inner fill, (49), was surrounded by lighter

earth, which might have been stained 'natural' brickearth around a beam, or possibly the fill of a construction cut for the timber. It is assumed that the darker, inner, fill was where a beam lay; it survived to a depth of 0.13m and had a D-shaped profile with a curved base and slightly curved sides. The slot was quite distinctive in plan at its south end, where it was 90mm deep; the east side was near vertical but the west side sloped gently in to the base.

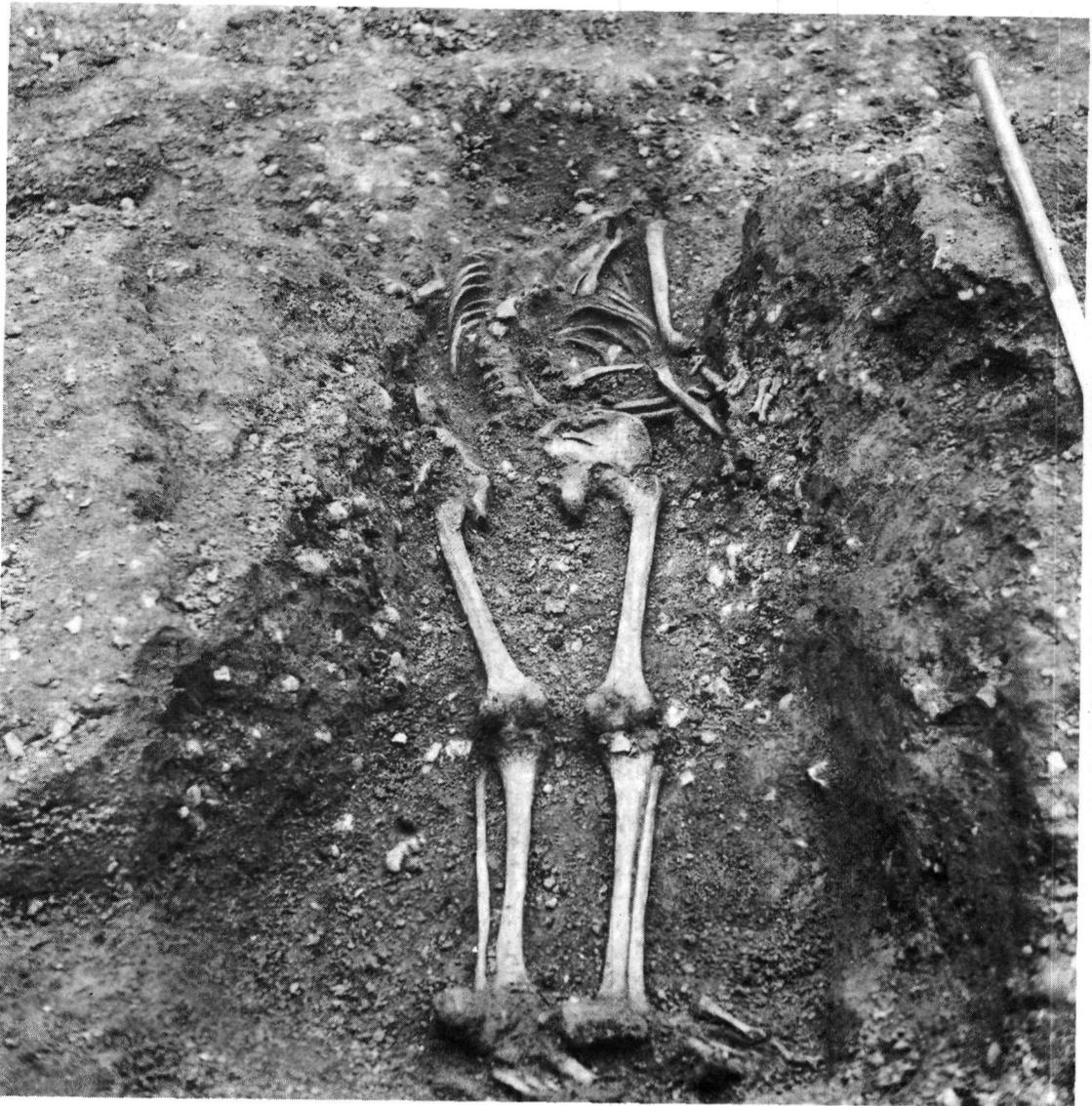


Plate 2. Jubilee Hall: Prone adult inhumation burial (grave 39), looking west.

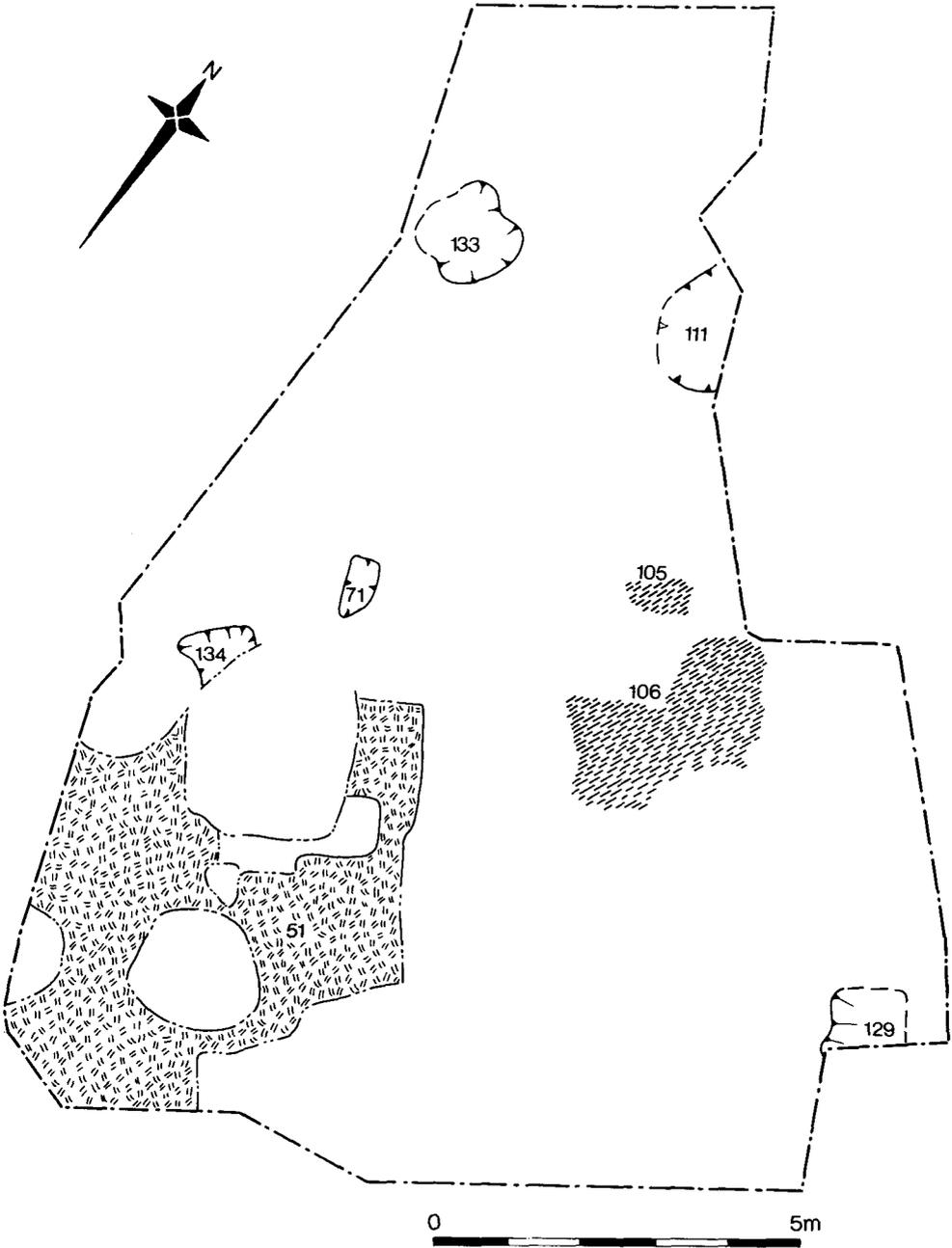


Fig. 8. Jubilee Hall: Suggested phase plan B.

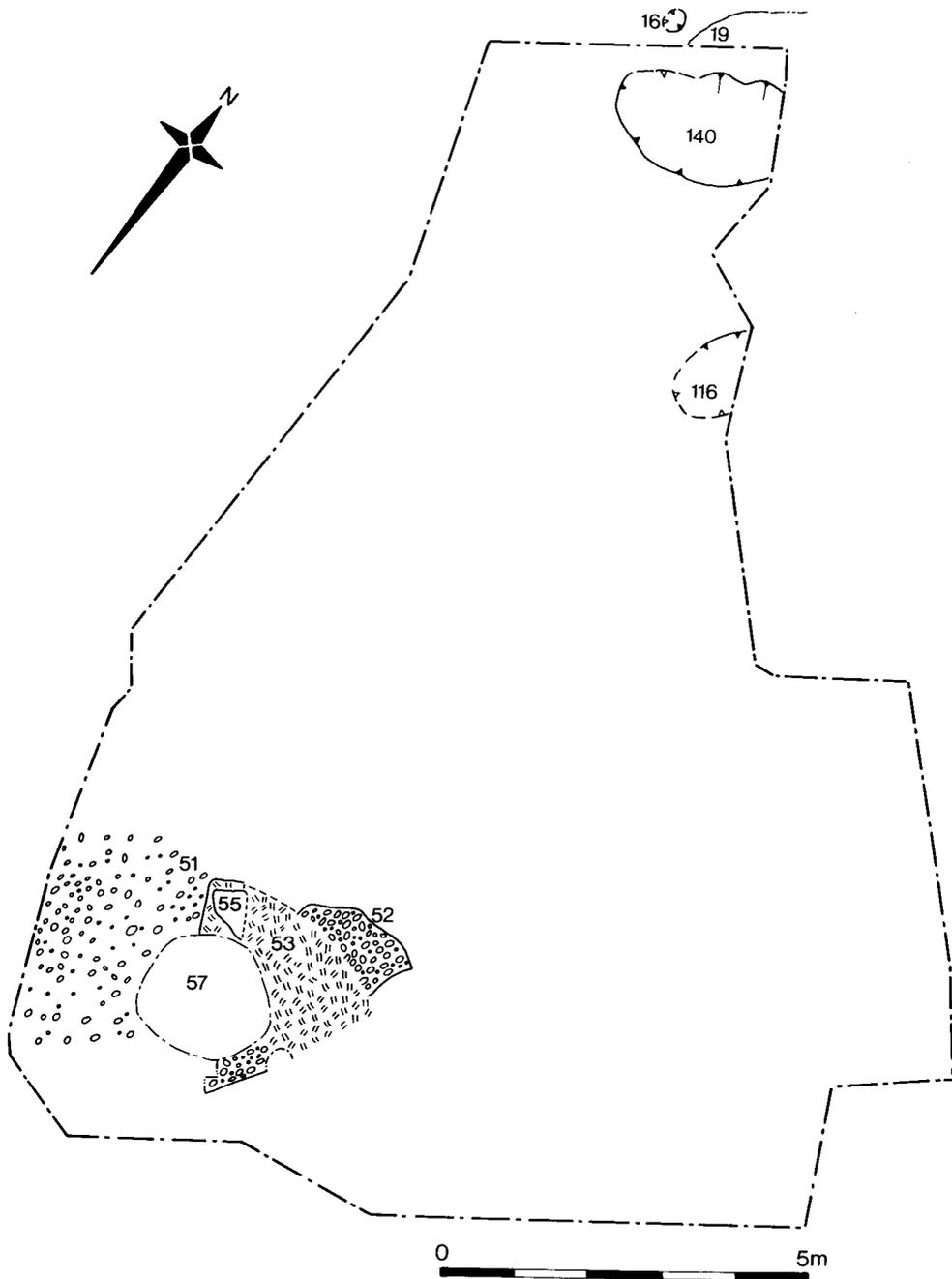


Fig. 9. Jubilee Hall: Suggested phase plan C.

The posthole (48), abutted the west side of slot (47) at its south end, and may have been contemporary with it. Slots (46) and (47), and posthole (48), were filled with green-grey silty clay, but slot (47) had more charcoal flecks in its fill. Disturbance to the south of (48) destroyed any evidence for the continuation of the slot.

Pit (50) was filled with dark grey silty clay containing lumps of charcoal, and appeared to be sealed by layer (51).

#### *Phase B (Fig. 8)*

Layer (51) (Fig. 8), which sealed the southern end of slot (47), was composed of greyish-green silty clay containing frequent charcoal flecks and animal bones. It extended over the SW corner of the excavation area, and its eastern limit lay just beyond the eastern edge of slot (47). The surface of the layer was at +16.75m OD.

#### *Phase C (Fig. 9)*

A gravel layer (52) (Fig. 9), overlay clay layer (51); it survived only in the SW corner of the excavation area, and appeared to fill a hollow where layer (51) had subsided into the grave (39). The surface of the gravel lay at *c.* +16.80m OD. It did not appear to be a rammed gravel metallised surface, but was perhaps make-up for the overlying clay 'floor' (53).

The gravel was covered with a layer of orange brickearth, (53) (Fig. 9), *c.* 50mm deep, probably a floor. It was cut by a roughly circular posthole (54), 0.18m deep, and a small pit (55), possibly a posthole, which had an irregular shape and was 60mm deep. Both were filled with similar material.

#### *Phase D (Fig. 10)*

A spread of burnt clay, burnt daub, and charcoal mixed with some animal bone (Fig. 10, (56)), *c.* 50mm deep, overlay the floor' (53). It was the last of this sequence of layers to survive and was badly disturbed by later activity. It would seem to mark the destruction by fire of a timber and wattle-and-daub structure built over the brickearth floor.

The entire sequence of layers described above was cut on its west side by a pit (57) (Fig. 10). This pit was circular, with steep sides and a flat base dug to +16.10m OD. It had been filled with dark grey sandy clay containing debris including animal bone, slag, fragments of ragstone and Roman tile.

Pits (58) and (59) (Fig. 10) cut layer (51) where it spread beyond the surviving extent of the overlying layers, and therefore their direct relationship to the stratigraphic sequence cannot be established. Pit (58) was roughly circular, and was 0.70m deep.

It was filled with green-grey sandy clay containing animal bone and oyster shell. Pit (59) was irregular, and was 0.75m deep. The primary fill (60), which was composed of grey silty clay containing frequent charcoal flecks, had subsided towards the centre. The resulting hollow was filled with layers of varying material (61)–(65), all of which contained frequent charcoal flecks except layer (65) which was pure gritty gravel. It was overlain by a series of deposits mostly of charcoal and burnt daub (66)–(70), about 0.20m deep in total, which spread beyond the pit to the east. These layers of burnt material extended north of layer (56) and may have been associated with it. The layers which filled the hollow in layer (60) may have been later occupation layers truncated elsewhere during machining.

A scoop (Fig. 8 (71)), cut the northern edge of slot (46). Its fill contained a potsherd which joined with sherds from layers (61) and (64).

The following slots and postholes (Fig. 7) may have been associated with slot (47), although they were not sealed by brickearth layer (51).

To the west of slots (46) and (47) lay a short slot (72), which had steep sides and was 80mm deep. The slot had been filled with greenish grey silty clay containing frequent charcoal flecks, resembling the fill of slot (47). A small, circular, posthole (73), 0.20m in diameter, lay on the west side of the north end of slot (72).

Three postholes, (74)–(76) (Fig. 7), between 60mm and 0.16m deep, and spaced roughly 2.00m apart, lay close to the east side of slot (47).

A group of postholes lying immediately to the west of slot (47) may have been associated with it. Three postholes (77)–(79) lay adjacent to the slot. To the west lay three more postholes aligned N-S ((80), a double posthole, (81) and (82)); and further west were four more postholes (83)–(86). A group of nine postholes (87)–(95) (Fig. 7) lay to the east of slot (47).

An E-W slot (96), with a 'D-shaped' profile and incorporating square postholes, lay at right angles to slot (47) (Fig. 7). The east end was not well-defined but there were traces of what might have been a terminal posthole (97) beyond it. The central posthole (98) appeared to straddle the slot, and was dug to the same depth. Posthole (99), at the west end, was shallower and projected slightly to the north of the slot. Any evidence for the relationship between this slot and slot (47) had been removed by later intrusions.

A N-S linear cut feature (100) lay to the east of slot (96). It was excavated over a length of 4.10m and survived to a depth of 0.18m. It had a steep west side and a more gradually sloping east side, with a slight step in it; the base was very slightly

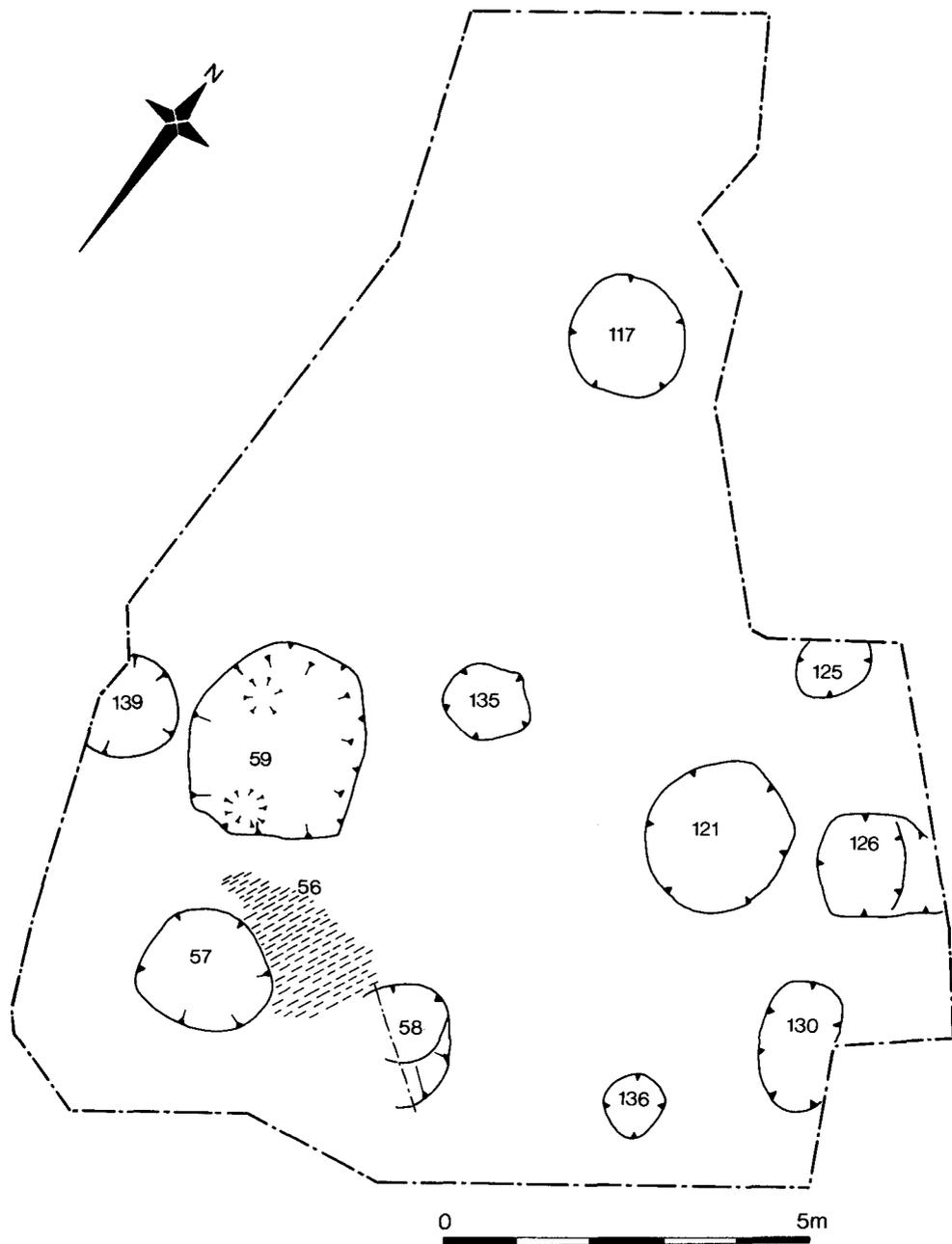


Fig. 10. Jubilee Hall: Suggested phase plan D.

curved or flat. It may have been a substantial slot or a gully. The fill consisted of grey silt.

#### *Discussion of the structural evidence (Fig. 7)*

The evidence for structures described above can be divided between those features sealed by layer (51), (i.e. slots (46) and (47) and the postholes to their south and west), and the remaining features which were possibly contemporary. Although modern disturbance separated them, slot (96) seemed to run roughly at right angles to the south end of slot (47), and may have been associated with it. Both slots were quite narrow and do not indicate substantial structures. Slot (96) appeared to have been interrupted at regular intervals by vertical postholes, which might have framed panels of wattle. Slot (47), however, was over 7.80m long, yet only one posthole, at what might have been its south end, was directly associated with it. It probably held a ground-beam, for there were no indications that it held planks, posts or stakes. It is not clear what sort of superstructure such a length of apparently narrow sill-beam could have supported—perhaps only a light wattle fence.

If projected northwards the base of slot (47) would coincide with the base of pit (4). It is possible that the pit was a posthole for a large upright, perhaps a terminal post for slot (47), and is therefore likely to have pre-dated clay floor (7).

Although there were rows and groups of postholes close to the long sill-beam they may not all have been contemporary. In particular the clay spread (51) which overlay the slot appeared to have a definite edge parallel with the eastern side of the slot and stopping short of postholes (75) and (76). It is therefore possible that these postholes, which were in line with (74) further north, mark a fence line replacing the beamslot. Similarly postholes (101)–(103) to the south of slot (98) may have been a fence replacing that structure.

If the postholes near the eastern side of slot (47) were contemporary with it then they may have been tied to its superstructure as supports, although their profiles did not incline toward it. The concentration of post and stake holes on the western side of the slot seemed to be grouped in threes, each group having similar fills, suggesting that one group replaced the other. It is not clear what sort of structure they comprised. The postholes to the east appeared to form rows at right angles and could have been fence or partition lines.

Slots (47) and (96) enclose an area with three burnt patches (Fig. 7 (104)–(106)). There was no sign of a deliberately laid floor or yard surface, but the burnt patches suggest domestic activity on a plain earth floor, which would presumably have

been roofed over; so that despite the insubstantial nature of the slots and postholes they may have been part of a building, perhaps internal partitions rather than simple fence lines. Feature (100) could have been a slot for upright wall timbers set in a trench, such as structure C10 at Cowdery's Down (Millett 1983, 213–5), and may have been part of a more substantial building lying to the east against which the timber-framed structure in the excavation area had been built. The short surviving length of (100) made interpretation difficult, and it could simply have been a gully.

The two slots (46) and (72), which lay to the west of slot (47) are hard to interpret and should, perhaps, be associated with the postholes to their north. Short slots such as these have been used to hold floor joists, but further evidence for a building to the west of slot (47) was not found.

#### *Cut features*

The remaining cut features in the excavation area were isolated from any stratigraphic sequence although some were intercut with one another. The localised sequences are described first.

On the NE edge of the excavation area a small patch of burnt clay (104), lying on the natural brickearth was cut by the latest in a sequence of pits (Fig. 3). The earlier pits lay on the edge of the excavation and could not be completely excavated. The initial pit (107) (Figs 7, 11, 12), was relatively shallow, with a curved northern edge and gently curved sides. The pit was filled with layers of brown clay (108)–(109), and a final layer containing numerous fragments of burnt daub and charcoal (110).

A deep pit (111) (Figs 8, 11), probably a well, had been dug through the fill of pit (107), to at least +15.30m OD. It was filled with layers of silty clay (112)–(115). Into the upper fill had been dug a steep-sided pit (116). Its fill contained numerous charcoal and burnt daub fragments as well as animal bone and oyster shell.

All three of the above pits were cut by a well (117) (Figs 10, 12), which was c. 1.60m in diameter, with vertical sides curved slightly at their base to the flat base cut to +15.00m OD., which lay on a water-bearing gravel layer below the brickearth. The two lower layers of fill (118)–(119), were silty clays with green staining and contained numerous charcoal fragments, burnt daub fragments, and artefactual debris, particularly loomweight fragments. Layer (119) contained lumps of 'natural' brickearth which had probably slumped in from the sides. The section showed that layer (118) had subsided before, or perhaps as a result of, the deposition of (119). Layer (119) had nearly filled

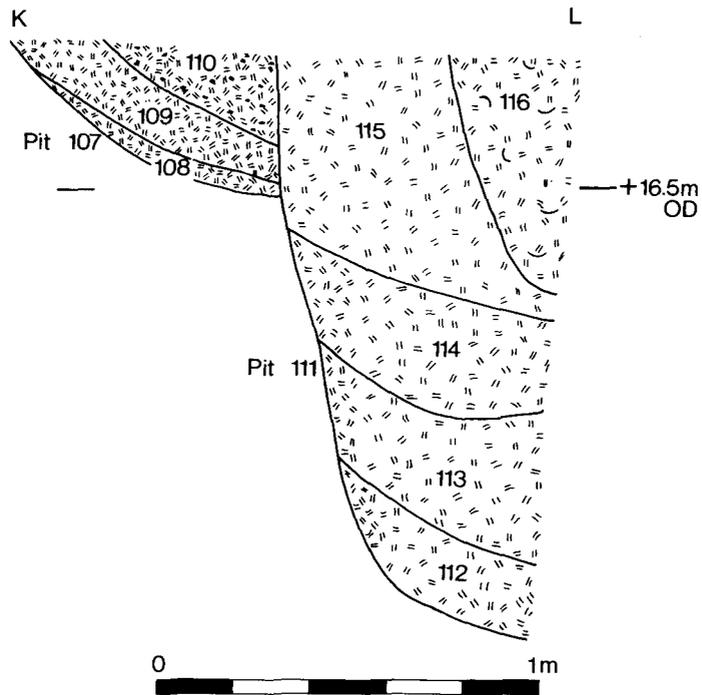


Fig. 11. Jubilee Hall: North-south section, K-L.

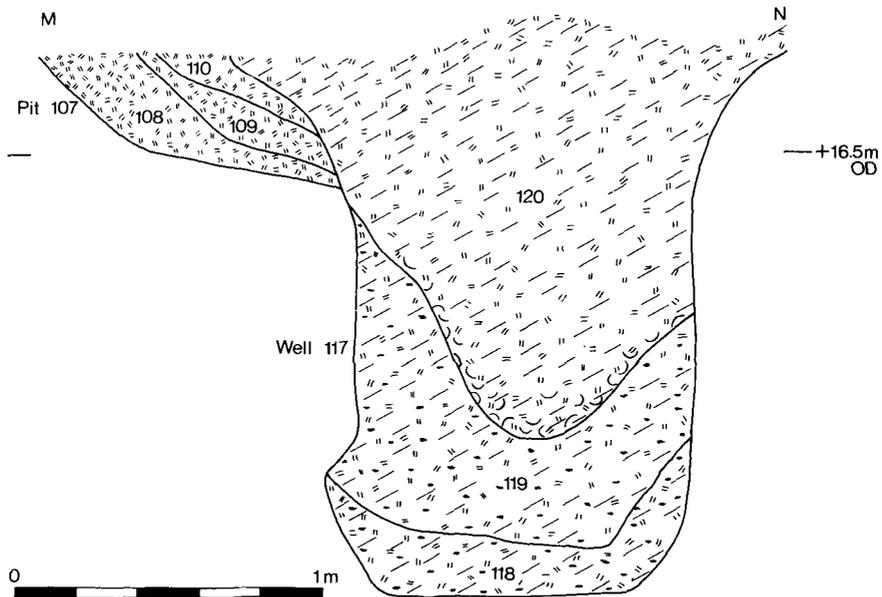


Fig. 12. Jubilee Hall: North-south section, M-N.

the well, but had subsided massively in the centre. The bulk of the fill was one deposit (120), similar to the earlier fills, but lined by a spread of oyster shells and lacking any significant amount of burnt material. This layer produced a series V *scaet* dating to AD 720-5 (Stott in this report, p. 126).

Another well (121) (Figs 10, 13), also cut an area of burnt clay and charcoal (106) lying on 'natural' brickearth. The well was 1.95m deep. Backfill layers (122) and (123) were composed of brown silty clay with quantities of animal bone and oyster shell; layer (123) also contained frequent charcoal fragments. The primary fill (122), had subsided significantly, and the overlying layer (123), seemed to have subsided with it. A layer of brown silt with animal bone and oyster (124) completely filled the remaining hollow.

Feature (100) was cut by four pits (125), (126) (129), (130) (Figs 8, 10), which produced

numerous animal bones, suggesting that they were dug for rubbish disposal. Pit (125) was 0.30m deep and was filled with dark grey sandy silt. Pit 126 (Fig. 14) was 0.58m deep and was filled with grey sandy loam (127), and, black organic silt (128), containing frequent oyster shells and some Roman tile fragments. Pit (129) was 0.40m deep, and was filled with dark grey sandy silt containing gravel. Pit (130) cut pit (129), and was roughly oval. It was 0.45m deep, and was filled with dark grey silt with gravel (131), overlain by a small patch of reddish brown sand and charcoal (132).

Pit (133) (Fig. 8), which cut slot (47), had an irregular 'clover-leaf' shape. Its fill contained a considerable amount of animal bone, burnt daub, and charcoal flecks. Scoop (134) (Fig. 8) was a slight feature cutting slot (72) and was in turn cut by pit (59).

Four isolated pits (135), (136), (139), (140) (Figs

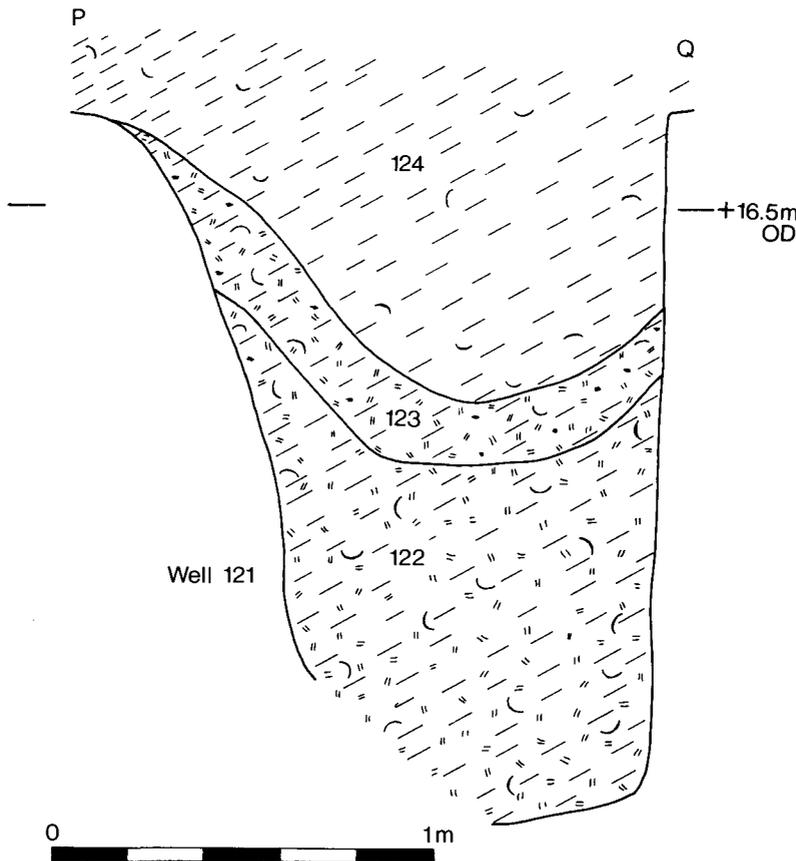


Fig. 13. Jubilee Hall: North-south section, P-Q.

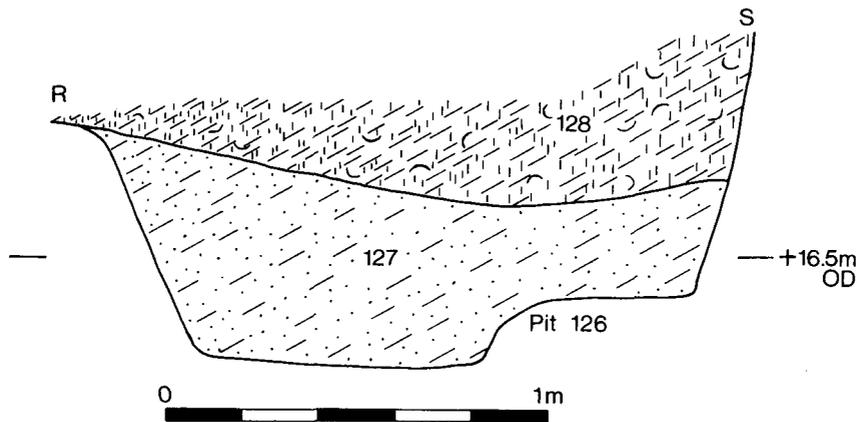


Fig. 14. Jubilee Hall: West-east section, R-S.

9, 10) lay in the excavation area. Pits (135), (136), and (139) were roughly circular, and pit (140) was roughly oval. Pit (135) was filled with material similar to 'dark earth', and may have been post-Saxon; pit (136) was filled with green grey silty clay (137) overlain by a layer of dense charcoal flecks and lumps with a little silt (138); pit (139) was filled with dark grey sandy clay; and pit (140) was lined with greenish brown silty clay (141), possibly containing human excreta, overlain by grey clayey silt containing frequent charcoal flecks, gravel, animal bone and oyster shell (142).

### 3. FEATURES OUTSIDE THE EXCAVATION AREA (Fig. 2)

A number of features survived beneath the deeper site disturbance surrounding the excavation area. The contractors reduced this area to below the previously existing vault floor level, to *c.* +16.00m OD. over the north half, and to *c.* 15.60m OD. over the southern half of the site. Five pits were noted in the NW corner (143)–(147), but there was little time to examine them, and while they are assumed to have been Saxon no dating evidence was obtained.

Pit (143) lay beyond the site boundary and was revealed in section during underpinning work. It had a vertical west side and sloping east side and a flat bottom dug to +16.04m OD.

Pits (144)–(146) survived to about 1.00m below the contractors' floor level, and were filled with grey clay. Pits (144) and (145) had large quantities of charcoal in their fills. Pit (147) was roughly oval, and was 0.70m deep. It appeared to have been lined with a layer of grey clay (148), with a main

fill of grey, mottled brown, clay (149), in the centre of which lay a dump of slag, probably iron, and charcoal.

The deeply cut pits south of the excavation area were examined in more detail than those above, and all produced Saxon dating evidence. To the west there was a deep, circular, clay-lined well (150). The vertical well cut was excavated to +14.77m OD where the water table was encountered. The grey clay lining (151) extended to a depth of +14.90m OD, the inner well shaft was 0.80m in diameter at the truncated surface, tapering to 0.45m at the base. The shaft had been filled with grey sandy clay (152).

Pit (153) lay against the west side of the site. Only the curved base of the pit survived at +15.50m OD. It was filled with silty clay, containing fragments of an iron axehead (Fig. 36).

Immediately to the south of the excavation area there lay a clay lined pit (154). It was circular, and survived to a depth of 0.50m. It had steep sides curving at their base to a slightly curved bottom, with a maximum depth of +14.90m OD close to the water-table. The clay lining (155), was between 0.10m and 0.20m thick, coloured in dark green, dark orange, and grey bands, and contained frequent charcoal flecks. The pit had been filled with dark yellow silty clay (156) containing animal bone. The clay lining must indicate a special function for the pit. Whether it held dry or liquid contents was unclear, but the discolouration of the lining and the amount of charcoal flecks within it may suggest that dry contents such as grain had been burnt in it.

A small pit (157), which may have been roughly

circular, survived to a depth of 0.15m. It was filled with greenish brown, charcoal-flecked clay, and was cut by a larger pit (158). Pit (158) was 0.88m deep and was filled by layer (159) containing charcoal fragments, which was overlain by a layer (160) containing oyster shell and animal bone as well as charcoal.

Pit (161) had an irregular shape and survived to a depth of 0.52m. The fill was a grey clay, pebbly at the base, and contained bands of redeposited 'natural' clay, which may suggest that the pit had been left open and silted up naturally.

Pit (162) survived to a depth of 0.17m, and was filled with black clay, probably waterlaid, which contained animal bone.

Pit (163) survived to a depth of 0.40m, and was filled with dark grey clay, containing animal bone.

To the south of the excavation area a small block of strata survived behind cellar walls. In the southern section the 'dark earth' lay directly above the 'natural' brickearth, which was cut by a shallow feature (164), the fill of which contained a loomweight fragment.

## THE EXCAVATION AT MAIDEN LANE

by ROBERT COWIE

### INTRODUCTION

An area of approximately 10m by 20m was available for excavation, all of which was investigated with the exception of an area of modern basement in the southern part of 21 Maiden Lane, which was considered too deep for archaeological deposits to survive. Shallower post-medieval basements elsewhere on the site had almost entirely removed Middle Saxon occupation levels, which survived as truncated 'islands' of strata, and the lower parts of deep features.

The Saxon deposits occurred in four areas separated by post-medieval walls, designated in this report as A, B, C, D (Fig. 15).

### AREA A

The presence of stakeholes, postholes, a gully and a slot, suggest that this area was occupied by structures in the Middle Saxon period, although these features formed no apparent pattern. Among other features which may be associated with habitations were areas of baked clay, where the ground had been scorched by fires, and a well (199). The deposits in area A produced relatively little domestic refuse, unlike those in areas B and C, where rubbish pits and a midden were found.

The earliest strata in the southern part of the area produced a prehistoric potsherd and a flint blade. The artefacts were probably residual, although a prehistoric date for these deposits cannot be ruled out altogether. The flint-tempered potsherd came from a layer of greenish-yellow sandy clay (165) immediately above the natural brickearth. The top of the layer, which was 150mm deep, was located at *c.* +15.00m OD, and was cut by a stakehole and two small postholes or pits (166) and (167). Above layer (165) was a lens of fire-reddened, carbonaceous clay (168) measuring 0.34m across. This was sealed by layers of sandy clay (169), which produced a long flint blade, and (170).

Above the earliest deposits were a series of features and layers distinguished from the former by the presence of Middle Saxon artefacts. Among them were several small pits or postholes (171)–(174), and a group of stakeholes, which cut layer (165). Layers (169) and (170) were cut by a sequence of small pits (175)–(177), which were overlain by a layer of greenish-grey sandy clay (178). Layer (170) was also overlain by a layer of reddened, burnt sandy clay (179), 20mm thick and 0.65m across, and was pierced by three stakeholes probably associated with the group mentioned above. All of the stakeholes were cut by a shallow gully (180), which was filled with a greenish grey-brown silty clay. This was partly covered by a layer of dark grey silty clay (184) up to 90mm thick, which sealed a sequence of pits or postholes (181)–(183) west of the gully. The layer was cut by a small rubbish pit (185), and overlain by lenses of reddened burnt silty clay and black carbonaceous material (186) that measured 0.72m N-S.

In the SE corner of the area, pits or postholes (166) and (174) were covered by a layer of greenish-yellow sandy clay (187), on average 80mm thick, the top of which was located between +15.10m and +15.20m OD. This was cut by three pits or postholes (188)–(190), and a narrow slot (191) only 50mm deep. The slot pre-dated a sequence of pits (192)–(195).

To the north was an isolated block of archaeological strata about 1.20m square. A layer of brickearth (196) with root and worm holes lay immediately above 'natural' brickearth. The top of the layer, which was 50 to 100mm deep, was located at +15.15m OD. It was covered with a layer of light brown loam with an average thickness of 50mm, which was cut by a pit (197). The pit was sealed by a thin layer of dark grey-brown fine sandy clay (198), the top of which was at +15.22m OD.

Near the middle of area A an isolated pit (199),

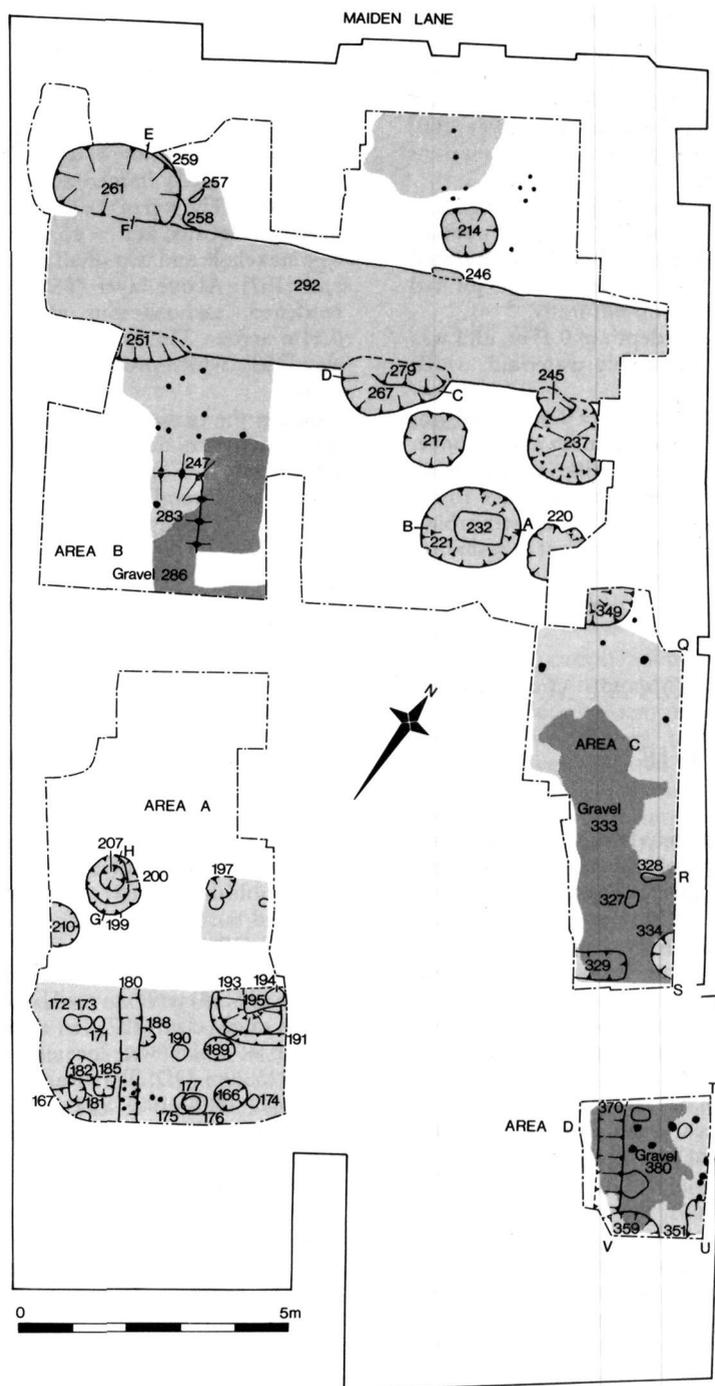


Fig. 15. Maiden Lane: Plan of the site in Maiden Lane showing the excavation areas, and the extent of the mid-Saxon deposits (light grey) including metallurgy (dark grey). For detail of ditch (292) see Fig. 17.

probably a well, cut the 'natural' brickearth and gravel (Fig. 16). Although truncated the pit survived to a depth of 1.25m. A vertical interface (200) between two sequences of fill marked the position of a lining. The space between the lining and the edge of the pit had been backfilled with greenish-grey gravelly clay (201)–(203), while the main fill consisted of layers of greenish-grey sandy clay (204), (205) and reddish brown sandy clay (206), which produced a sherd of Badorf-type ware dating to the late 8th or 9th century.

Cut into the uppermost fill of the well was a circular pit (207), which was 0.42m deep and filled with greenish-grey gravelly sand (208) and greyish-brown silt (209).

The remnant of a steep-sided rubbish pit (210) lay 0.20m SW of the well. It was filled with layers of greyish-brown and greyish-green clayey silt (211)–(213), and produced sherds of Ipswich ware.

#### AREA B

The strata in this area mainly consisted of Middle Saxon rubbish pits and layers, some of which were cut by a ditch. Most artefacts from these deposits range in date from AD 650 to 850, although finds from four pits, (221), (237), (261) and (267), and ditches (287) and (292), probably date to the late 8th and 9th centuries. This suggests that these pits (and consequently pits (232), (245) and (279) which cut them) were the latest pits in Area B, and that some were in use after AD 800.

#### Isolated pits

Pit (214) was 0.35m deep, with steep sides, and was filled with layers of grey silty clay. The presence of coprolites, probably human, and a relatively high number of mineralised plant remains including plum or sloe stones, in the primary fill (215) suggests the feature was used initially as a

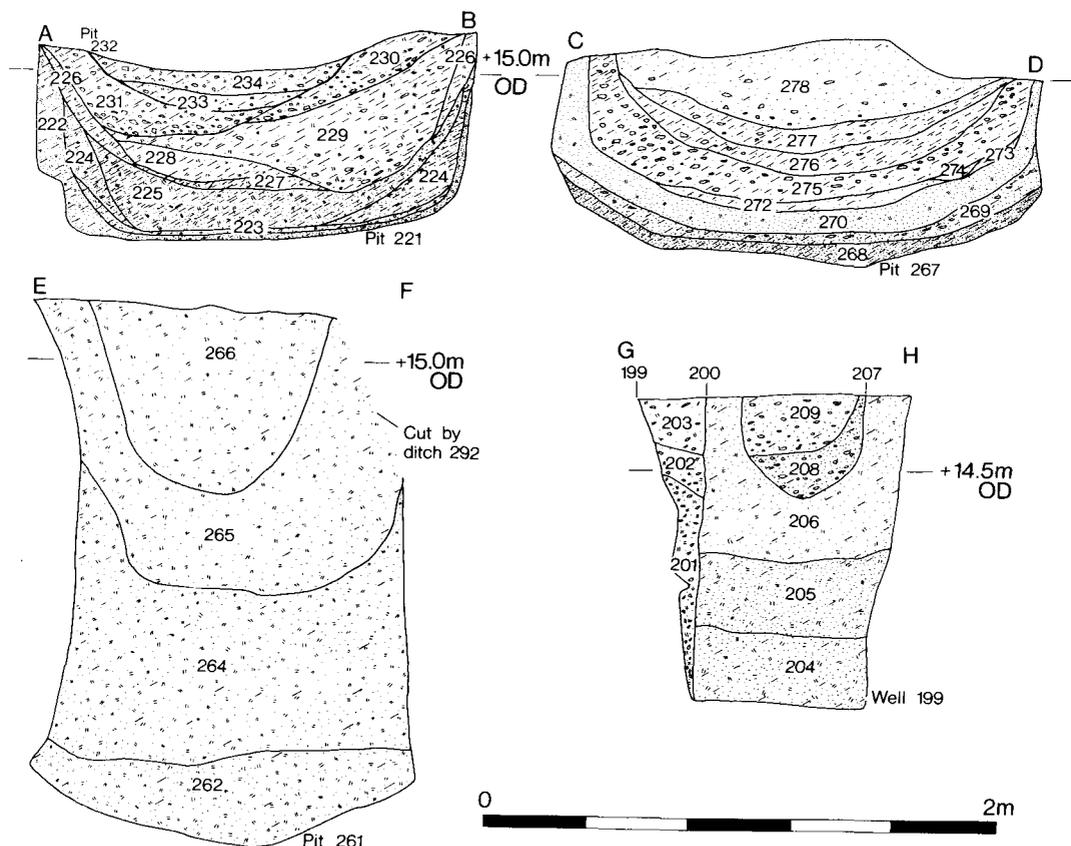


Fig. 16. Maiden Lane: Sections of well (199), and rubbish pits (221), (261) and (267).

cesspit. The fill also contained a large number of fish bones (53% of the site's total assemblage), especially those of eel and herring, which would have been ingested and passed in excreta (Locker in this report, p. 150). A notable find from the upper fill (216) was a series D *sceat* dating to AD 700–715, the earliest Middle Saxon object of known date from the site (see Stott in this report, p. 126; Pl. 8).

Pit (217) was heavily truncated, and only survived to depth of 100mm. The remnants of the sides were steep, and the base was flat. A layer of grey sandy clay formed the primary fill (218), which was overlain by a darker fill (219).

Pit (220) survived to a depth of 0.27m, and was filled with greyish-brown fine sandy clay.

Pit (221) was 0.78m deep (Fig. 16). The lower fills (222)–(229) were of greyish-brown silty clay; the upper fills consisted of orange-brown clayey sand (230), and grey-brown sandy clay (231). Some fills lay at a steep angle near the sides of the pit, partly due to subsidence caused by the compression of fills at the centre of the pit (a common characteristic of pit fills at both Jubilee Hall and Maiden Lane).

Pit (232) was 0.15m deep, and cut into the upper fill of pit (221). The primary fill (233) was a greenish-grey clayey sand, overlain by an upper fill of orange-brown sandy gravel (234).

A group of stakeholes cut into 'natural' brick-earth was found at the northern end of the area, next to pit (214). Four were overlain by two layers of grey silty clay (235) and (236), each no more than 50mm thick, containing chaff-tempered potsherds.

#### *Pits and layers cut by ditch 292*

Pit (237) was 1.60m deep, with almost vertical sides and a rounded base. The lower fill consisted of four layers of greenish-grey sandy clay (238)–(241) containing chaff-tempered pottery, while the upper layers (242)–(244) were composed of greyish brown sandy clay, and contained Ipswich ware, a shell-tempered sherd (suggesting the pit was open in the late 8th or 9th century), and a lot of charred wheat.

Pit (245) had steep sides, and was cut into the upper fills of pit (237). The north side had been cut by the ditch. The pit was 0.60m deep, and filled with dark greyish-brown sandy silt containing numerous shells (mainly oyster, although a few mussel were also present) totalling 4kg in weight.

Pit (246) had been so heavily truncated to the south by the ditch that only its curved northern edge survived. It was filled with layers of brown and grey silty clay.

A 'L-shaped' feature (247), possibly a brickearth quarry, measured 4.50m N-S, 2.80m E-W and 0.40m deep, and had eight stakeholes in the bottom. It was filled with layers of grey silty clay (248)–(250), and cut by pit (251).

A steep-sided pit (251) was heavily truncated to the west by a modern drain and to the north by the ditch, but survived to a depth of 0.95m. It was filled with layers of greyish-brown silty clay containing lumps of brickearth (252)–(256). The lower layers produced mineralised plant remains as well as a considerable number of charred barley grains.

In the NW corner of Area B were three small features cut into 'natural'. Two were irregular cuts (257) and (258) 70mm and 90mm deep respectively, filled with yellowish-grey sandy clay. To the north was a steeply sloping cut (259) probably the remnant of a pit almost completely removed by pit (261). It was 0.16m deep, and filled with dark grey sandy clay. These features were sealed by a layer of dark grey sandy clay (260). The top of the layer, which was cut to the west by pit (261), was located at +15.32m OD.

Pit (261) was 2.10m deep, and was clipped to the south by the ditch (Fig. 16). The fill was composed of dark brown and grey sandy clay layers (262)–(266) containing a large amount of domestic refuse, including numerous charred wheat grains from the upper fills. As in pit (237) there was a marked difference between the pottery in the lower fills (262)–(264), which mainly comprised chaff-tempered ware, and that in the uppermost fill, which was mainly Ipswich ware (Blackmore in this report, p. 99). The uppermost fill also produced a silver penny dating to between AD 796 and c. 805 during the reign of the Mercian king Coenwulf.

Pit (267) had been severely truncated to the north by the ditch. It was 0.90m deep, and mainly filled with layers of grey and brown sandy silt and clay (268)–(271), (273), (275)–(277), although there was also an ashy lens (274), and layers of brown sandy loam (272) and (278) (Fig. 16). Fragments of an almost complete 8th-century urn from northern France (Pl. 5) were found in the primary fill (268).

Pit (279) was cut into the upper fills of pit (267), and had also been truncated by the ditch. The fill consisted of three layers of grey and brown sandy clay (280)–(283).

#### *A possible sunken-featured building, and metalled surfaces*

The remnant of a shallow feature (283), cut in the natural brickearth, clipped the edge of feature (253). Despite modern disturbance to the SW and

SE it survived to a length of 2.20m, and a depth of up to 0.20m. The sides sloped down at a 45 degree angle to a flat bottom at *c.* +15.20m OD. A large rectangular stakehole was found at the north end of the base. Although severely truncated, the shape of the feature is reminiscent of Saxon sunken-featured buildings found elsewhere in Greater London (Blackmore, 1986, 208, Fig. 1). However, it is possible that the feature is no more than a fortuitously shaped brickearth quarry. There is a cautionary tale from Germany where at one time pits next to neolithic longhouses were interpreted as sunken dwellings but are now thought to be quarries for daub (Barker 1985, 141). The feature was filled with light grey silty clay (284) containing brickearth inclusions, and a Roman coin identified as an irregular copy of a coin of Constantinopolis produced *c.* AD 340–6 (Hammerson in this report, p. 125; Pl. 7), and a Saxon carding comb.

Feature (283) was overlain by a layer of gravel metalling (285), which was 100mm thick, with a surface between +15.14m and +15.31m OD. It was overlain by a second layer of compact gravel (286), presumably added as a resurfacing, the surface of which was located between +15.29m and +15.38m OD. Although the metalling was isolated from similar gravel layers (333) and (380) (Fig. 15) on the east side of the site, their similar composition and height suggests that they were related, and may have formed part of a road or a yard surface.

#### *The ditches*

Ditch (287) was steep-sided with a slightly rounded base located between +13.35m and +13.53m OD (Figs 17; 18, section N–P). It predated ditch (292), which was on the same alignment and overlay it. It was filled with layers of silty and sandy clay (288)–(291) containing one chaff-tempered potsherd and one of Badorf-type ware.

A substantial 9th-century ditch (292), interpreted as defensive (see discussion p. 79), was aligned approximately WSW–ENE, and bisected Area B. A total length of 11.60m was recorded, although its full length was not discovered since the ditch extended beyond the excavation area. At the top it was 1.90m wide at the east end, and widened to 2.30m at the west end. A maximum depth of 2.06m was recorded at the east end of the ditch: it would originally have been deeper, but had been truncated by post-medieval activity. It had a ‘U-shaped’ profile, with steep sides and a slightly rounded base. The ditch was mainly cut through sandy gravel, but there was little evidence of erosion apart from a short stretch near the

bottom (see Fig. 18, section J–K) where shallow layers of sandy gravel (293) and (294) may have slumped in from the sides. These deposits were partly removed by feature (295), a shallow irregular cut, which may have been dug to clear the bottom of the ditch. Nevertheless, the lack of erosion suggests that the ditch only remained open for a short period, especially in view of the quite severe erosion that occurred in one part of the ditch during the few weeks of archaeological excavation.

The ditch was mainly filled with layers of dark greyish-brown sandy clay (293)–(326), most of which contained considerable quantities of flint pebbles and lumps of brickearth. The similar composition of the layers gave the ditch fill a fairly homogeneous appearance. This suggests that most of the layers may have derived from a single source, possibly the upcast from the ditch which would have incorporated a substantial amount of brickearth and gravel from the geological deposits into which the ditch was cut. Many of the layers sloped down from the south side, suggesting that the fill was mostly tipped in from the southern edge.

The pottery from the ditch included chaff-tempered ware, Ipswich ware, Badorf-type ware and North French grey and black wares. Among the other finds were half a loomweight, whitewashed daub fragments with wattle impressions, a rim fragment of a funnel beaker, copper alloy objects, fragments of iron-smithing slag and iron slag, a piece of a limestone hone, lava quernstone fragments, and pieces of worked bone and antler.

#### AREA C

This part of the site, like Area B, was mainly used for rubbish disposal during the Middle Saxon period, for a midden containing large quantities of domestic refuse had accumulated in a hollow, and had spilled out onto a layer of gravel metalling to the south.

The earliest features in the area (327)–(329), were cut into natural brickearth. Feature (327) was a shallow subrectangular cut, 80mm deep, and filled with dark grey sandy clay. An irregular slot (328), 60mm deep, and filled with an orange-brown sandy clay, was located a little to the north. Pit (329) survived to a depth of only 40mm. The primary fill mainly consisted of charcoal with dark grey silty clay (330), overlain by dark greenish-grey sandy clay (331).

The shallowness of these features, and the absence of natural topsoil above the natural brickearth indicated that the original land surface had been truncated (332) (Fig. 19), possibly to provide a level base for a layer of compact gravel metalling

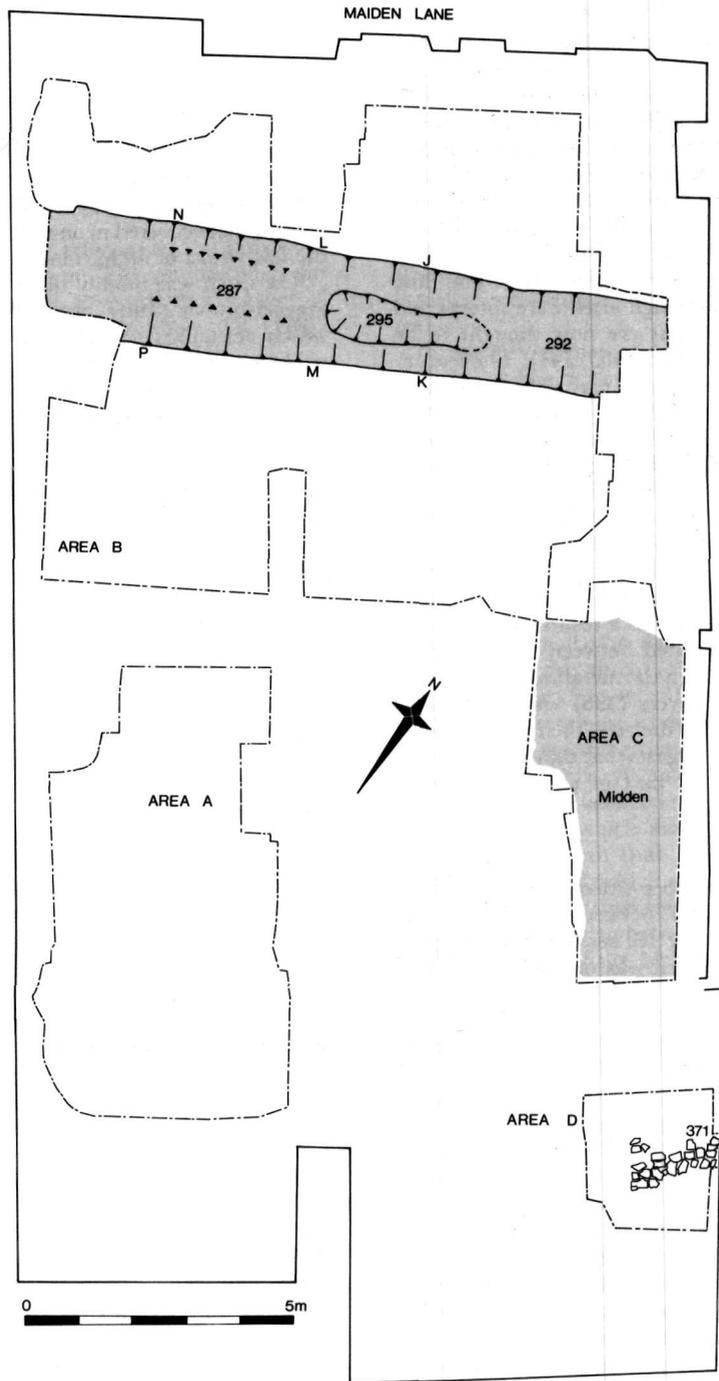


Fig. 17. Maiden Lane: Plan of ditches (287) and (292), the midden, and the tile paving (371).

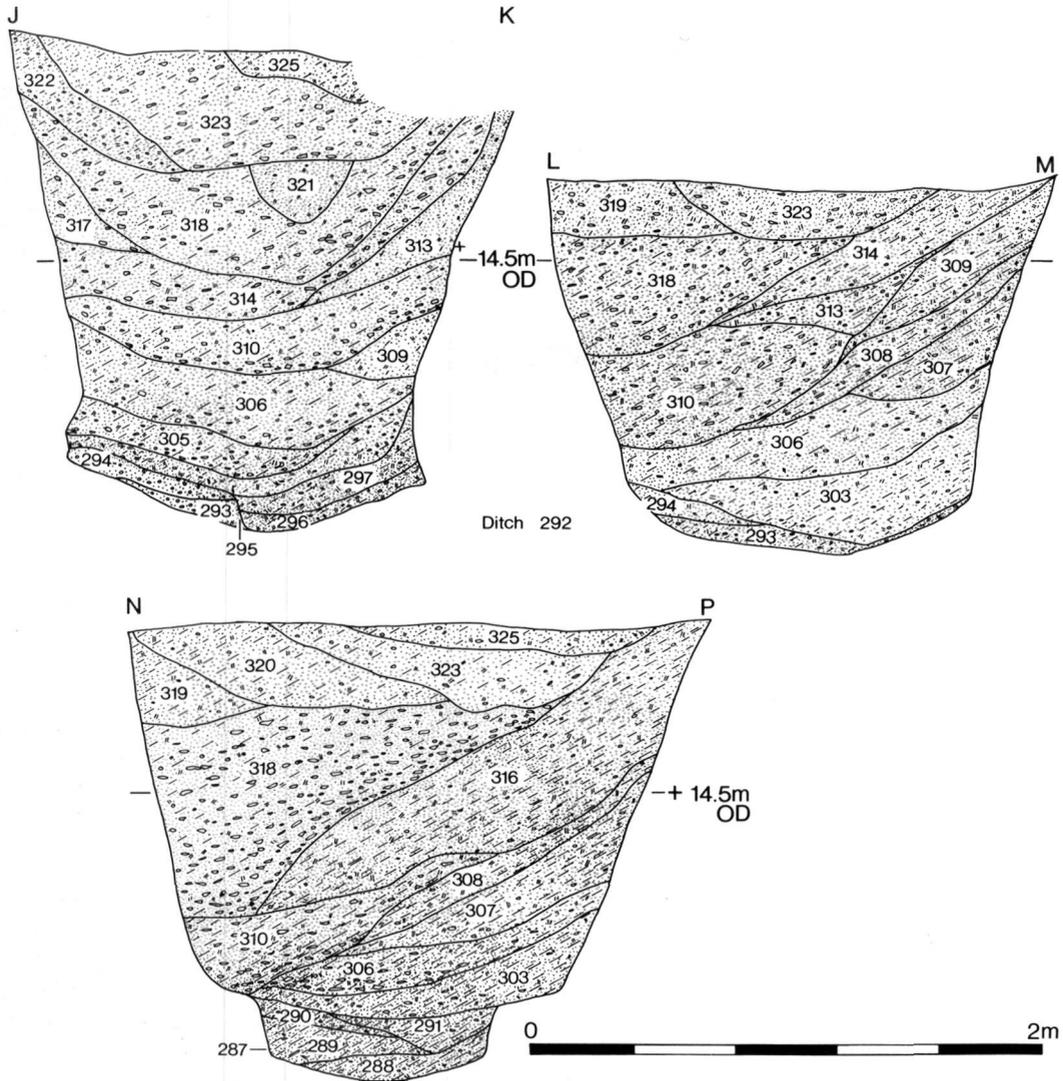


Fig. 18. Maiden Lane: Sections across ditch (292).

(333), or perhaps for brickearth quarrying. To the SE the gravel was cut by a steep-sided pit (334) with a dark greenish-grey silty clay primary fill (335), and a brown silty clay upper fill (336). North of the gravel layer, where the ground had been truncated more severely by cut (332), there was a shallow depression. Four stakeholes and a possible posthole were found cut into the bottom of the depression, towards the north end of area C.

*The midden (Fig. 19, section Q-S)*

The depression (332) had been used as a rubbish tip, and was filled with a sequence of layers (337)–(348) mainly composed of light to dark grey fine sandy clay, containing large quantities of domestic refuse including animal bones, shells, coprolites (deposited by scavenging dogs), charred cereal grains, and, of particular interest, rare examples of fig and grape. Most of the pottery is chaff-

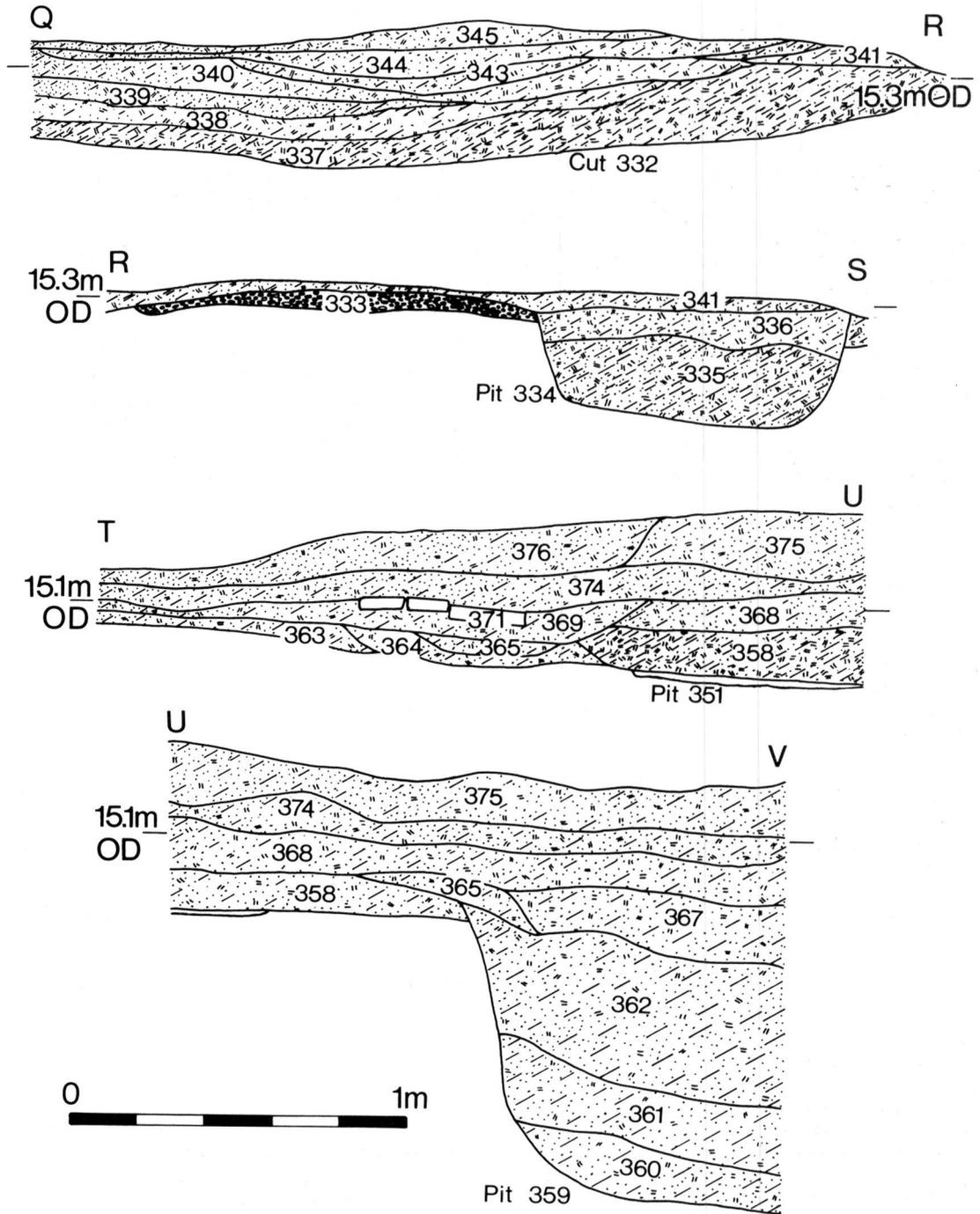


Fig. 19. Maiden Lane: Sections across areas C and D.

tempered; other artefacts include glass beads, loomweight fragments, pieces of spindlewhorl, a quernstone fragment, a piece of grey limestone which may have been part of a quern, copper alloy pins, and worked bone and antler. Fragments of human cranium were found embedded in the surface of the brickearth beneath the midden. One of the uppermost midden layers (347) was mainly composed of burnt daub fragments cleared from a fire-damaged structure (see discussion p. 78), and was up to 50mm thick. Most of the midden lay within the depression, although layers (341) and (337) spilled over to cover the gravel metallurgy (333) and pit (334) to the south. Extensive excavations at *Hamwic* have revealed only one midden, and it remains to be seen if middens were as rare in *Lundenwic*.

At the north end of the area a pit (349) cut through layer (337). Only the SE quadrant of the pit survived truncation by modern wall footings. The pit was 0.38m deep and filled with grey silty clay (350), containing chaff-tempered pottery.

#### AREA D

The earliest features in this area were pit (351), which was filled with a dark grey silty clay, and a cluster of stakeholes and postholes cut into natural brickearth (352)–(357). They did not appear to form a coherent pattern, although the group may have constituted part of a structure. Pit (351) was sealed by a layer of dark grey silty clay (358). The layer was cut to the west by a steep-sided pit (359) filled with layers of yellowish and greyish-brown sandy clay (360)–(362).

These features were covered by a series of dump layers (363)–(369) (Fig. 19, sections T–U, U–V), mainly consisting of greyish-brown to dark grey silty and sandy clay, which produced a loomweight fragment and chaff-tempered pottery. However, layers (363) and (366) were principally composed of yellowish-brown brickearth. To the west the layers were cut at +15.08m OD by a shallow linear feature (370) up to 0.15m deep. To the east the dump layers were overlain by an area of tile paving (371) (Fig. 17). The paving was made of large fragments of re-used Roman tile, some with *opus signinum* adhering to their surfaces. Both the paving and cut (370) were overlain by a further series of dump layers composed of brown and grey silty clay (372)–(379). The pottery from these layers mainly consisted of chaff-tempered and sandy wares. Other artefacts recovered included a loomweight fragment, pieces of glass palm cup, a fragment of lava quernstone, a bone comb fragment and a bone pin.

Above the dump layers was a layer of gravel metallurgy (380), the surface of which lay between +15.23m and +15.28m OD (Fig. 15).

## DISCUSSION

ROBERT COWIE with ROBERT LAYARD WHYTEHEAD

Until recently mid-Saxon London was an enigma. Contemporary documentary sources imply that it was a substantial settlement. Bede, for example, described it in his *Historia Ecclesiastica* as ‘a mart of many nations coming to it by land and sea’ (translation in Whitelock 1955, 609). This was apparently contradicted by numerous excavations undertaken by the Museum of London’s Department of Urban archaeology in the City during the 1970s and early ’80s, which failed to find evidence for the settlement. Faced with this problem Biddle (1984) and Vince (1984) reviewed the evidence for Saxon London, and using place-name and topographical evidence, supported by a few chance finds from the area of the Strand, proposed that the mid-Saxon emporium lay about a kilometre upstream from the City on the north bank of the River Thames. The theory, however, still required verification by fieldwork. This came with the excavations at Jubilee Hall in 1985 and at Maiden Lane the following year. These, and subsequent investigations nearby, confirmed that the area between Trafalgar Square and Aldwych was intensively occupied during the Middle Saxon period (Cowie and Whytehead, 1989). The discovery of the trading settlement has filled a substantial gap in our knowledge of London’s past, and the results of the excavations discussed in this report and the gazetteer (Cowie, this volume) will undoubtedly make a considerable contribution to the study of the ‘Dark Age’ emporia of northern Europe.



Plate 3. Maiden Lane: The 9th-century ditch (292), looking ENE. Traces of ditch (287) can be seen in the foreground at the bottom of ditch (292) (vertical scale 1.0m, horizontal scale 0.5m).

## EVIDENCE FOR PREHISTORIC AND ROMAN ACTIVITY

There is little evidence for occupation in the area before the 7th century, when it was probably open countryside, although residual prehistoric artefacts have been found at a few sites (Merriman 1987, Figs 1 and 2), notably the flint assemblage at Maiden Lane (Merriman in this report, p. 132). Similarly, while Roman artefacts have been recovered from some sites in the area of the Strand, no Roman buildings have been found west of St Brides, Fleet Street (Grimes, 1968, 183). Most Roman artefacts in the area are probably residual, but some items were certainly re-used by the Saxons. At Maiden Lane, for example, Roman tiles had been laid haphazardly as paving during the mid-Saxon period. The two 4th-century coins from Jubilee Hall and Maiden Lane (Hammerson in this report, p. 124), and a Late Roman dolphin brooch and a ?belt-fitting from Shorts Gardens (Aileen Connor pers. comm; Cowie, this vol., site 33) were found in mid-Saxon features and may have been lost in the Saxon period. Likewise, it is probable that at least some of the thirty-six Roman copper coins from *Hamwic* (Southampton) are not residual (Andrews 1988, 25).

## MIDDLE SAXON STRATA

The areas of mid-Saxon deposits found at sites around Covent Garden, including those at Jubilee Hall and Maiden Lane, have been small, and often severely truncated. Nevertheless, where strata survive Saxon features are often quite densely packed; possibly an indication of the urban nature of the settlement.

Patterns in the distribution of features have sometimes been apparent. At Maiden Lane, for example, structural features were mainly located at the southern end of the site, while most rubbish pits lay in the northern half. Similarly, at the

Peabody site, 26–7 Southampton Street, and the Royal Opera House car park (Cowie, this volume, sites 23, 36 and 38), groups of Saxon rubbish pits were found only in certain areas, presumably those allotted specifically for rubbish disposal. Some properties were undoubtedly re-organised during the life of the settlement; for at Jubilee Hall wells were dug in an area apparently once occupied by structures, and at the Peabody site deep pits had been dug through an extensive layer of metallurgy.

## DATING

The Saxon pottery at both sites ranges in date from *c.* AD 650 to 850. On the present evidence the stratigraphic distribution of the different wares suggests that in London the ceramic assemblages may be divided into two phases. The first may have ended *c.* AD 750, and the second, which saw the introduction of Ipswich ware, probably lasted from the mid- 8th century to mid- or later 9th century (Blackmore in this report, p. 106). However, due to the small size of the assemblages, a substantial part of which come from isolated features, it has so far proved difficult to test this hypothesis, and to refine further the mid-Saxon pottery sequence in London. The opportunities to apply independent and often more precise dating methods (numismatic, archaeomagnetic and dendrochronological) have been few, but will undoubtedly prove useful as further mid-Saxon sites are excavated, particularly those with long stratigraphic sequences.

## BUILDINGS/STRUCTURES

At Jubilee Hall one of the earliest occupation features appeared to be a sill-beam structure. It is not certain whether this was a building, or simply a yard division, but the area enclosed by beamslots was probably 12m N-S and at least 6m E-W.

The earthfast timbers may have rotted quickly, perhaps surviving as little as fifteen years (see Barker 1977, 85–7), and postholes apparently found in association with the ‘building’ may have belonged to a later structure. There are, however, no archaeological data to indicate the average life-span of mid-Saxon buildings in *Lundenwic*, for well-preserved and closely dated sequences of structures have yet to be found. Nevertheless, it seems likely that buildings in this period were as durable as their Late Saxon successors, about which more is known. For example, Late Saxon buildings found near Botolph Lane, in the City, were estimated normally to have lasted between five and twenty-five years, and in one case at least forty years (Horsman *et al.* 1988, 109).

The extensive brickearth floor on the north side of the Jubilee Hall site, measuring at least 5m E-W and 4m N-S, is likely to have been internal, and although no contemporary structural features were confidently identified, the collapsed daub on the floor, and the overlying ‘grey earth’, would suggest the presence of a building. The wooden hall excavated on the Treasury site, Whitehall, had a clay floor lying within a building 5.64m wide (Green and Thurley, forthcoming).

There was little conclusive evidence for buildings at Maiden Lane, for although concentrations of postholes and stakeholes were recorded, no coherent pattern was discernible. Feature (283), however, might have been part of a sunken-featured building. Such structures were less common in the Middle Saxon period than in the preceding Migration period and it is thought that generally they may have been used as outbuildings (Blackmore 1986, 207).

Numerous fragments of burnt daub recovered from both sites indicate that wattle and daub buildings must have been constructed on or near the sites. At Jubilee

Hall a spread of burnt material including burnt daub lying on a patch of a clay floor may have been *in-situ* collapsed material.

The daub from both sites was made of fine sandy clay, almost certainly local brickearth, to which plant matter such as grass was frequently added (Goffin in this report, p. 115). Fragments often bore impressions of timbers and wattle, and a few pieces had imprints of both vertical and horizontal members. They suggest that walls were between 80mm and 100mm thick, and were sometimes white-washed, for the surfaces of over ninety pieces (mostly from Area B at Maiden Lane) were covered with an off-white limewash. While some clay may have been baked in the course of industrial and domestic activities, most probably came from fire-damaged buildings.

The remains of fire-damaged mid-Saxon buildings have been found nearby at four sites: the Treasury, where the hall was consumed by fire in the 9th century (Green and Thurley, forthcoming), 17–18 Floral Street, where a sunken-floored building had burnt, and possibly at Jubilee Hall and 26–27 Southampton Street, where burnt daub lay over clay floors. Archaeological and documentary evidence suggests that conflagrations were an endemic hazard in *Lundenwic*, a settlement built largely of combustible materials. The scale of the problem is illustrated by a 12th-century manuscript, the *Historia Regum*, which mentions that London was destroyed by fire in AD 764, 798 and 801. The reliability of this document is open to question, although some of the manuscript, attributed to Simeon of Durham, is thought to be drawn from earlier sources (Whitelock 1955, 239).

## THE PITS

A considerable number of pits were found at both sites, and were used as rubbish tips and cesspits. A few wells with

evidence for linings were also found. Few bones were weathered or gnawed, which might suggest that rubbish was disposed of quickly. With the exception of the midden at Maiden Lane most domestic rubbish appears to have been disposed of in pits and disused wells; generally the richest source of artefacts on mid-Saxon sites in central London. The pottery in the lower layers of some pits and wells was typologically different from that in the upper fills. This might indicate that the features were filled during the transition between the first and second ceramic phases (see Blackmore in this report, p. 106), or that the upper layers were later ground level deposits which had subsided into the features.

It was common for layers in pits and wells to have subsided at the centre. Where such subsidence occurred, overlying 'surface' deposits may have slumped into the features. It is possible, therefore, that even where the Saxon ground levels have been truncated, vestiges of occupation layers might have survived in certain pits, for example wells (117) and (121) at Jubilee Hall. This may also have happened at *Hamwic*, where conjoining potsherds from one widespread occupation layer were found in separate features some distance apart (Timby 1988, 116–20; P. Andrews and A. Morton, pers. comm.).

#### THE MAIDEN LANE DITCHES

The most impressive feature at Maiden Lane was the 9th-century ditch (292), which cut through an area of earlier rubbish pits. It was probably only used for a brief period before it was backfilled, possibly with the up-cast from the ditch banked up on its south side. The size and shape of the ditch suggests that it was defensive, and it was similar to a Late Saxon (probably 10th-century) ditch found at Cox Lane, Ipswich, which may

have been dug to protect an individual property before the 'collective' town defences were constructed (West 1963, 245). The Maiden Lane ditch may have had a similar function, for if it had been intended as a town defence then it should have been located on or near the periphery of the settlement, but the distribution of Middle Saxon sites in the locality (see Cowie, this volume, Fig. 1) suggests that the ditch was well inside the settlement area. The 9th-century date of the Maiden Lane ditch supports the interpretation that it was defensive, for it was dug during the period of Viking raids on the British Isles. *Lundenwic* was vulnerable to attack, located as it was on a tidal estuary on the eastern coast of England, for, as the Anglo-Saxon Chronicle tells us, London was raided in AD 842 and 851, and the 'Great Army' wintered there in AD 872 (Whitelock 1955, 173).

Ditch (292) seems to have been preceded by an earlier ditch (287) on the same alignment, which judging by the presence of Badorf-type ware was also 9th-century, indicating two phases of defences.

#### CRAFTS

Small amounts of industrial waste were recovered from both sites, which with finds from other mid-Saxon sites in the area suggest that crafts such as bone-working and metalworking were undertaken on a small scale across *Lundenwic*. The antler and bone offcuts, horncores and waste from metal working (mainly iron-smithing slag) found at Jubilee Hall and Maiden Lane do not necessarily indicate craft activity at these sites, for considering the amounts involved it is likely that such waste was produced elsewhere in the settlement.

Loomweights, probably made from local brickearth, are a common find on archaeological sites around the Strand,

including Jubilee Hall and Maiden Lane, which suggests that weaving was undertaken in most parts of the settlement. Cloth production is also indicated by the presence of spindlewhorls, bone thread-pickers, and a carding comb. No cloth has yet been recovered from mid-Saxon London, but textile impressions have been found on a potsherd (Pl. 4) and two pieces of daub (Pl. 6) from Maiden Lane.

### FOOD PRODUCTION AND CONSUMPTION

Barley and wheat were the most common cereals at Jubilee Hall and Maiden Lane, and were sometimes grown as pure crops (Davis and de Moulins in this report, Table 17, p. 146). Rye was present in smaller quantities. Among the other food plants consumed in the settlement were hazelnuts, apples/pears, sloes/plums, blackberries/raspberries and strawberries.

At both sites cattle were the most important domesticated followed by pig and then sheep (West and Rackham in this report, Table 22, p. 152; also see O'Connor 1991, Fig. 41 comparing the relative abundance of major domestic taxa at Saxon sites, including Jubilee Hall and Maiden Lane). A large proportion of animals were killed at a young age to supply the inhabitants with good quality cuts of tender meat. Fewer animals were kept into maturity presumably for breeding, milk, and wool. It is also likely that some cattle were used as draught animals.

The virtual absence of chaff and large weed seeds at Jubilee Hall and Maiden Lane suggests that cereal grain was not processed on site, and likewise most animals were probably butchered before being brought to site, possibly at farms close to *Lundenwic*. The low number of foot bones in the faunal assemblages at Jubilee Hall and Maiden Lane suggest that these poor quality cuts were trimmed off animal

carcasses elsewhere. The assemblage from the site at the Treasury is quite different. Here such waste bones, were noticeably frequent, and were interpreted as 'commercial debris', which suggests that the site may have been a farm supplying *Lundenwic* (Chaplin 1971, 136; Cowie and Whytehead 1989, 714).

Hunting apparently played little part in the provision of food, but local rivers were fished for eels (common at both sites), *Cyprinidae*, roach, salmonids, and pike. Oysters and mussels, and plaice and flounder probably from the Thames estuary, were brought upstream to the settlement, together with haddock, whiting, and cod, which may have been caught in the sea near the estuary (Locker in this report, p. 149).

### TRADE

The principal function of *Lundenwic* was probably as a trading port, and evidence of regional and long distance trade was found at Jubilee Hall and Maiden Lane. The settlement was well situated for this purpose, for it probably lay below the tidal head of the Thames, which would allow the port to be easily reached by ships moving upstream, and long distance land routes would have been provided by surviving Roman roads.

*Lundenwic* probably relied on regional trade to obtain raw materials such as wool, antlers, and metals for its crafts (discussed above). Links with Kent might be indicated by the presence at Jubilee Hall and Maiden Lane of pieces of Kentish ragstone honesstones, quern fragments made of grey limestone probably from the Hythe Beds (Blackmore and Williams, in this report), and a series *V sceat*, which may have been minted in Kent (Stott, in this report, p. 126). Some sand-tempered and shelly wares found at these sites may have had a Kentish provenance (Blackmore in this report,

pp. 87–88). Certain wares in the pottery assemblages suggest links with other parts of England. The sandy gritty ware, for example, was probably produced in Surrey, the chalk-tempered ware may have come from the North Downs or the Chilterns, and an East Midlands source is suggested for the pottery tempered with igneous rock (Blackmore in this report, p. 89).

The evidence for the trading port's Continental connections is mostly based on imported pottery types and Rhenish quernstones. The Continental pottery appears mainly to have come from northern France, although some pottery also came from the Low Countries and the Rhineland (Blackmore in this report, Table 1, p. 83). The Continental wares comprise about 12% (sherds) of the assemblage at Jubilee Hall, and 8% of the assemblage at Maiden Lane (counting the urn from pit (267) as one sherd). These assemblages, however, may not be representative of the settlement as a whole, and it should be noted that at *Hamwic* greater quantities of imported wares were found near the waterfront area of that settlement, perhaps where most mercantile activity took place, or where there may have been an enclave of foreign traders (Timby 1988, 117–118).

The source of the rock from which the lava quernstones were made has been identified as the Mayen-Niedermendig area of the Eifel Hills in Germany (Blackmore and Williams, in this report, p. 132).

It is thought that the 'black stones' referred to by Charlemagne in a letter to Offa were lava quernstones:

'As for the black stones which your reverence begged to be sent to you, let a messenger come and consider what kind you have in mind, and we will willingly order them to be given, . . . and we will help with their transport. But as you have intimated your wishes concerning the length of the stones, so our people make a demand about the

size of the cloaks, that you may order them to be such as used to come to us in former times'.

(translation in Whitelock, 1955, 782)

A fragment of ?honestone from Jubilee Hall was made of schist, which may possibly have come from Eidsborge in Norway. The provenance of a number of items of possible Continental origin is ambiguous. For example, the glass with reticella threads is generally found in the North Sea and Baltic Sea areas (Evison in this report, p. 122).

Surprisingly, international trade is barely reflected by the numismatic evidence (Stott 1991, 282; Stott in this report, p. 125), for the number of *sceattas* from London are low compared with the amount from *Hamwic* or East Kent, and only one coin from excavations near the Strand is thought to have been minted on the Continent, namely the series D *sceat* from Maiden Lane (Pl. 8). However, it is perhaps premature to make such inter-regional comparisons while so few sites in London have been excavated.

Although it is unlikely that foodstuffs were traded internationally on a large scale (Hodges 1982, 128), some items found at Maiden Lane were probably transported considerable distances, including ling from the northern part of the North Sea (Locker in this report, p. 149) and figs, grapes, and possibly lentils, which may have been shipped from warmer parts of the Continent (Davis and de Moulins, in this report, p. 139). Some of the Continental table wares found at sites near the Strand also provide indirect evidence that wine was imported (Blackmore and Redknapp 1988, 225).

## THE POTTERY

by Lyn Blackmore

### INTRODUCTION

Until 1985, Middle Saxon pottery from the immediate vicinity of the City of London was lim-

ited to a few sherds and loomweight fragments from the site of the Savoy (Wheeler 1935, 39, 54, 139), a complete chaff-tempered pot found near Drury Lane (Myres 1937, 432; 1969, 30), and a few sherds of Ipswich-type ware from Arundel House in the Strand (Haslam 1975, 221–22). A little to the south-west is the 9th-century site at the Treasury, Whitehall (Green 1963; Green and Thurley, forthcoming). The Museum of London and British Museum collections contain a few single pots, sherds and loomweight fragments from both outside and within the City, but the findspots are imprecise. Within the City, Late Saxon artefacts are plentiful, yet despite the fact that a new Bishopric was established there *c.* AD 604, presumably with associated ecclesiastical and secular buildings, extensive excavations over many years have recovered only a few residual sherds of Middle Saxon pottery (see Vince, 1990, *passim*).

By 1984 it was suspected that the focus of Middle Saxon occupation lay to the west of the City (Biddle 1984; Vince 1983, 1984), but it was only in 1985 that the first well-stratified Middle Saxon domestic pottery was found at Jubilee Hall. Although small (353 sherds), this assemblage is of importance as the basis of a fabric type series for this period, which has been enlarged with material from Maiden Lane (672 Saxon sherds) and other sites excavated since 1986 (Blackmore, forthcoming). Other Saxon sites in the London area include Althorpe Grove, Battersea (Blackmore 1986, 214), possibly of 8th-century date; Rectory Grove, Clapham (Densem and Seeley 1982) and Tottenham Court (Whytehead and Blackmore 1983), both possibly of Early-Middle Saxon date; Hampstead Heath; Hendon; Northolt (Hurst 1961, 211–99), Staines (Jones and Shanks 1976, 101–13; Jones 1982), Shepperton (Canham 1979), Waltham Abbey (Huggins 1976) and Barking Abbey (Blackmore and Redknapp 1988, 231–6).

This report is divided into four sections:

1. The fabric types, incorporating notes on the petrology by Alan Vince, and discussion of the forms represented in each ware/ware group, with comments on specific sherds. Further thin-section work and analysis of the organic inclusions in the chaff-tempered wares is intended (a preliminary report by Ian Tyers on organic content of sherds from Jubilee Hall is included in the finds archive held by the Museum of London). It is hoped to publish a fuller statement on the pottery fabrics from the Middle Saxon settlement in due course.
2. Jubilee Hall—the stratigraphic distribution of the pottery (contexts 1–164).

3. Maiden Lane—the stratigraphic distribution of the pottery (contexts 165–380).
4. Discussion and dating of the pottery from both sites with reference to York, Ipswich, Canterbury and *Hamwic*.

#### METHOD OF ANALYSIS

The classifications and quantification in this report are based on vessel fabric. During the initial sorting, the pottery from each context was divided into fabric groups based on the dominant inclusion and other visual and textural criteria, and each sherd was given a unique number. Selected sherds from Jubilee Hall were then examined in thin-section to confirm the macroscopic identifications. All sherds in each fabric group were studied together to identify sherd links or non-joining sherds from the same vessels, although this was not easy for the chaff-tempered sherds. Form types are limited to cooking pot/jar, jug/pitcher, bowl/dish for the rim sherds (all fabrics) and imported wares. As a rule base and body sherds could not be assigned to a specific form. The pottery was recorded on pro forma sheets using a series of codes to describe fabric, vessel type, sherd type, surface treatment, decoration, use, wear, sherd links and illustration (see appendix). The numerical data comprise the context number, sherd number, weight, rim diameter, percentage of rim present, and wall thickness. Base diameters were not normally recorded.

The computerised records were then sorted to study fabric groups or the stratigraphic distribution of the material. The pottery archives for each site thus comprise a detailed record on paper and on computer of every sherd. These will be stored together with the finds and thin-sections at the Museum of London. Details of the pottery stamps, classified by Teresa Briscoe and Paul Blinkhorn, are also held in their respective archives of Anglo-Saxon pottery stamps.

#### FABRIC GROUPS

The main fabric groups are as follows:

1. Chaff-tempered
2. Ipswich-type
3. Non-local: Sand, chalk, grit, limestone, shell
4. Imports: North French/Belgian, Rhenish.

These groups have a number of sub-groups, each of which has a unique fabric code. The wares are discussed in this order with regard to fabric, manufacture and the forms represented. To this end the illustrations are ordered as far as possible by stratigraphic location within fabric and form types. Dating is considered in the final discussion. Details of the type sherd, comprising site code,

TABLE 1: The composition of the assemblages from Jubilee Hall and Maiden Lane based on sherd count and weight in grammes (excluding medieval and later sherds).

Fabric	Jubilee Hall				Maiden Lane			
	Sherds	%	Weight	%	Sherds	%	Weight	%
Prehistoric					2	0.27	18	0.14
Roman	15	4.25	106	1.2	45	6.25	315	2.59
Chaff	179	50.71	3038	34.4	426	59.16	4244.5	35.01
Ipswich	65	18.41	3719	42.1	135	18.75	4465.5	36.83
Surrey?	18	5.01	276	3.12	3	0.41	53	0.43
Sand	2	0.56	34.5	0.39	17	2.36	123	1.01
Coarse sandy	—	—	—	—	5	0.69	22	0.18
Grog	—	—	—	—	1	0.14	21	0.17
Chalk	1	0.28	123	1.39	—	—	—	—
Shell	14	3.97	184.5	2.08	9	1.25	32	0.26
Limestone	14	3.97	278.5	0.31	2	0.27	14	0.11
Igneous rock	3	0.85	65	0.73	1	0.14	1	0.01
Fine flint	—	—	—	—	12	1.67	1.6	0.95
Flint/grit	—	—	—	—	3	0.41	69	0.56
Beauvais	2	0.56	13	0.14	—	—	—	—
Seine Valley	10	2.83	97	1.09	—	—	—	—
French black	13	3.68	375.5	4.25	12	1.67	70.5	0.58
French grey	8	2.27	104	1.18	26*	3.61	2171.5	17.91
French red	2	0.56	285	3.22	—	—	—	—
France/Belgium	2	0.56	16	0.18	2	0.27	75	0.61
Rhenish	5	1.42	117	1.32	19	2.64	309	2.54
Total	353		8832		720		12122	

\*Includes many sherds from a near complete vessel

context, sherd number and thin section number are given where appropriate, at the end of each ware description. The general proportions of the ware groups present in each assemblage are illustrated in Table 1. It must be stressed that although comparison with pottery from Canterbury, *Hamwic*, Ipswich and York suggests that some fabrics are occurring on a number of widely distributed sites, the quantities involved are small and the origin of most non-local and imported wares remains unclear. While the picture is improving as the amount of material available for study increases, much work remains to be done on both sides of the Channel before the way in which pottery was produced and distributed in the Middle Saxon period can be fully understood.

#### KEY TO FABRIC CODES USED IN THE POTTERY ANALYSIS

##### *Chaff-tempered wares*

CHAF—chaff-tempered  
 CHSF—sparse chaff-tempered  
 CHFS—sand-and-chaff-tempered  
 CHFQ—chaff-tempered with large quartz grits

CHFI—iron-rich chaff-tempered

CHFG—chaff-tempered with grog/tile

##### *Ipswich-type wares*

IPSF—fine Ipswich-type ware

IPSM—intermediate Ipswich-type ware

IPSC—coarse Ipswich-type ware

##### *Other local and non-local wares*

SSANA—sand-tempered (?Kentish)

SSANB—sand-tempered (?Hampshire)

SSANC—sand-tempered (?Surrey)

SHGS—coarse sand-tempered (?Hampshire)

SLGSA—Lower Greensand ironstone sand in brickearth (?Surrey)

SLGSB—as above, ?Reading Beds clay (?Surrey)

SLGSC—as above, London clay (?Surrey)

SGRG—sand-tempered with grog/tile

MSFG—mixed sand, flint, grit and shell (?Hampshire)

SSFL—fine sand with sparse flint

MSCH—mixed sand, flint, chalk

MSSA—?shell-tempered (abundant voids)

MSSB—abundant bivalve shell, hard

MSSC—abundant bivalve shell with sand/organic inclusions, hard

MSSD—sparse shell, hard

MSSE—abundant bivalve shell (fine or coarse)

MSSF—abundant very fine shell, soft

SSSL—sandstone and limestone or shelly-limestone

MSOL—oolitic limestone

MSIG—sandstone and igneous rock (?East Midlands)  
SGFM—sand, granite, felspar, mica

#### Imports

NFBWA—North French blackware, brown/pink body  
NFBWB—North French blackware, reduced throughout  
NFBWC—North French blackware, bluish-white body  
NFGWA—North French grey ware, coarser sand-tempered  
NFGWB—North French grey ware, finer sand-tempered.  
NFGWC—North French grey ware, hard red body  
NFGWD—North French grey ware, micaceous, fine sand-tempered  
NFGWE—North French grey ware, very fine sand-tempered  
NFGWF—?North French grey ware, abundant iron  
NFEBA—North France/Eastern Belgium, grey ware  
NFEBB—North France/Eastern Belgium, hard grey ware  
NFRWA—North French red ware  
NFSVA—?North France, Seine Valley coarse buff ware  
NFSVB—?North France, Seine Valley, fine buff ware  
BEAV—North France, Beauvais white ware  
BEARP—North France, Beauvais red-painted  
BADOA—Rhenish, Badorf/Walberberg-type ware (soft, coarse)  
BADOB—Rhenish, Badorf-type ware (hard fine)

## THE WARES

*Chaff-tempered*: CHAF, CHSF, CHFS, CHFQ, CHFI, CHFG

Organically-tempered pottery here covers most fabrics containing vegetable matter of any kind as a dominant inclusion. Most of this pottery is almost certainly locally made, but some non-local products may be identified by other inorganic inclusions which are thus used as the basis of classification. These wares mainly fall into the possible Surrey group SLGS, although the limestone-tempered fabric SSSL also has organic inclusions (see below). Chaff-tempered ware has been discussed by, amongst others, Brown (1976, 192) with reference to Walton, Bucks, and by Hodges (1981, 6, 46, 55–56) and Timby (1988, 78–80) with reference to *Hamwic*. It has been suggested (Vince 1990, 99) that the chaff-tempered wares used in London were made in south-west Essex.

CHAF: abundant organic temper in London Clay or brickearth matrix; the dominant inclusion appears to be barley chaff, but other plant fragments are also present. This is the most common ware at both Jubilee Hall and Maiden Lane.

CHSF: similar to the above but finer, with sparse organic material. The sherd examined in thin-section also contains moderate fine clear, milky and red quartz; sparse white mica up to 0.1mm, and sparse angular flint or chert up to 2mm. This ware is not common on either site.

CHFS: London Clay or brickearth with varying combinations of abundant clear, milky and red quartz up to 1.0mm, moderate organic material up to 5mm, sparse angular flint or chert up to 3.0mm and sparse white mica up to 0.1mm. When not wiped the surfaces have a pimply feel. Not common on either site.

Thin section: JUB 162:4 (MOL TS. No. 1060).

CHFQ: London Clay or brickearth with organic temper and frequent large quartz inclusions; a few sherds from Maiden Lane only.

MAI 172: 2 (not thin-sectioned).

CHFI: London Clay or brickearth normally with sparse to moderate flecks of haematite or iron oxide and moderate organic temper. One oxidised sherd from Maiden Lane with very abundant iron inclusions up to 2mm giving a speckled appearance to the burnished outer surface. Also from Maiden Lane are a number of sherds from a jar or bottle (Fig. 27, No. 46), possibly from a white firing clay, with a reduced core and pinkish-brown surfaces; this vessel may relate to fabric group SLGSB.

MAI 243: 1 (not thin-sectioned).

CHFG: Grog-tempered. One highly fired sherd from Jubilee Hall, with a grey core and oxidised surfaces, has an iron-rich fabric with moderate grits of what appears to be crushed Roman tile (mostly 2–3mm but up to 5mm across).

JUB 119: 1 (not thin-sectioned).

## MANUFACTURE

This pottery is all hand-made, mainly by the coil technique. Some pots, notably MAI Fig. 25, Nos 26–29, may have been finished on a turn-table but in general rims are irregular and wall and base thicknesses vary greatly. The majority of sherds are reduced; a small number are partly oxidised, and very few are completely oxidised; one such sherd from Jubilee Hall appears to be under-fired, suggesting that pottery may have been produced on or near the site. Many sherds have externally smoothed or burnished surfaces, and some have a distinctive scoring of the inner wall caused by roughly wiping the pot with grass while it was still wet. Several sherds bear grain impressions.

The quantities of the different wares are described in Table 2.

Table 2: Chaff-tempered wares: quantities.

	Sherds	Rims	EVEs	CHAF	CHSF	CHFS	CHFQ	CHFI	CHFG
JUB	178	8	0.65	161	5	12			1
MAI	426	37	3.29	329	4	51	12	30	

FORMS AND DECORATION (Jubilee Hall: Fig. 20, Maiden Lane: Figs 24, 25).

*Cooking pots/jars* appear in three size groups. The smallest have a rim diameter up to c. 150mm (JUB: No. 1; MAI: Nos 1–8, and 11). The medium size has a rim diameter of 160–240mm (MAI: Nos 23–25; MAI No. 23 has been placed in this group on the basis of wall thickness and profile). The large cooking pot/storage jars have a rim diameter of over 240mm (JUB: Nos 3, 4; MAI: Nos 26–27). The medium and larger sizes are less common, possibly because the stronger Ipswich wares were used instead. The cooking pots/jars from both sites mainly have a simple everted rim. The rim and body sherds from Jubilee Hall (Nos 3, 4) are probably not from the same pot, but give an impression of the type of globular flat-based vessel they would have come from; this form is long-lived, and is found on both Early and Middle Saxon sites. The rim form of No. 26 from Maiden Lane (and possibly also No. 27), on the other hand, appears later, and to be copying an Ipswich ware form and is probably of 8th-century date. A similarly 'evolved' form found at Portchester Castle was also dated to the first half of the 8th century (Cunliffe 1970, 72).

The *small straight-sided jar* with a distinctive groove below the rim (JUB: Nos 5, 6; MAI: No. 12) has been found on other sites in the Covent Garden area, and at Barking Abbey, Essex (Blackmore and Redknap 1988, Fig. 6 and others more like those illustrated here: Redknap, pers. comm.).

The *necked jar* is an uncommon form, found only at Maiden Lane (No. 16). The smaller pot has a pale grey very highly burnished surface. The larger vessel (MAI: No. 28) may also fall into this group, although insufficient of the body survives to be certain. This form has also been found at *Hamwic* (Timby 1988, Fig. 2, No. 2). The unusual jar or bottle from Maiden Lane (Fig. 27, No. 46) may be a chaff-tempered Surrey product (see below).

The *cup/small bowl* is represented by only one vessel (JUB: No. 8).

The *medium-sized bowl* is absent at Jubilee Hall, but both open and closed forms are present at Maiden Lane (Nos 13–15 and ?11: open; Nos 18–19: closed, both highly burnished). An irregularity on the rim of No. 18 suggests that this has broken at the junction of the rim and a lug. The open forms mainly have a slightly everted 'bead' rim reminiscent of Iron Age pottery.

*Other forms* include an unusual upright rim from Jubilee Hall (No. 2) which appears to be from a very large vessel. Two pots from Maiden Lane have flat-topped rims, one probably from a small jar (No. 17), the other a massive thick-walled vessel (No. 29).

*Decoration* is rare on both sites, possibly because on current evidence it appears to be a 6th–7th-century trait. One pot (No. 7) from Jubilee Hall (and possibly also No. 18 from Maiden Lane) has the scar of a lug on the rim, while another from Maiden Lane has the remains of a vertical perforated lug on the shoulder, (No. 9). One small sherd from Maiden Lane (No. 1) has a comb impression (Briscoe category N1b); comb-stamped decoration has also been found at the Peabody site (Blackmore, forthcoming). Both lugs and comb-stamped decoration are present in the Mucking assemblage (Jones

and Jones 1975, 159). The jar from Maiden Lane (Fig. 27, No. 46) is unusual but not unique in London. A near complete Middle Saxon chaff-tempered vessel, described as a shouldered beaker with flaring rim, found in 1935 in Drury Lane (Myres 1937, 432, Pl. XCIVa; Myres 1977, Fig. 87 No. 713), has a similar, but more pronounced decoration in the style known as 'melon-ribbing'. This comprises narrow vertical bosses which are more closely spaced and stand in higher relief than on the Maiden Lane vessel, where the decoration has degenerated into broad panels defined by shallow grooves.

The *bases* of all vessels may be either flat or sagging, in which case they are not always distinguishable from the mass of body sherds; one exception, possibly a later form, has a foot-ring with finger impressions around the outer base angle (MAI No. 20). Where measurement has been possible, it appears that most bases from Jubilee Hall are between 10–13mm thick, with one at 18mm. At Maiden Lane most fall between 7–9mm thick, with smaller groups of 5–7mm and over 10mm.

#### USE

At Jubilee Hall one vessel was externally sooted, two had external sooting and an internal deposit (one white); four had an internal deposit, two definitely of food debris.

At Maiden Lane, fourteen sherds were sooted externally, and three were sooted on both surfaces. Twenty-eight were sooted internally and one had both sooting and a white deposit internally. A further twelve sherds had internal deposits ranging from white to yellow to purplish-white. Most probably derive from water or other liquid foods, but the purple deposit may indicate the use of vegetable dyes such as madder.

#### *Ipswich ware*: IPSF, IPSM, IPSC.

Ipswich ware was produced in a number of kilns in Ipswich, notably in the Cox Lane/Carr Street area (Smedley and Owles 1963; West 1963), and the Buttermarket (Blinkhorn 1989). The ware has been discussed by Hurst (1959, 14–9; 1976a, 299–303), and Hodges (1981, 59–60). For dating see discussion.

**IPSF**—Normally has few visible inclusions apart from a little silver mica; analysis shows sparse rounded clear and milky quartz up to 0.5mm, abundant angular and sub-angular quartz up to 0.2mm, moderate black iron ore up to 0.2mm and sparse white mica up to 0.1mm. Some sherds of inferior quality contain organic inclusions as a part of the clay matrix. The latter are less well fired, with streaky orange-grey surfaces.

Thin section JUB 57:2 (MOL TS. No. 1077).

**IPSM**—as above, but an intermediate ware with a scatter of coarser rounded quartzite grains up to 1mm.

**IPSC**—Moderately to heavily tempered with rounded red-brown, dark grey and white quartz up to 1mm. There is considerable variation in the quantity, size and sorting of the inclusions in the coarse wares.

#### MANUFACTURE

Ipswich ware is generally hand-made and wheel-finished. The bases are normally sagging, with knife-trimming around the base angle, although flat bases do occur

(MAI unstratified, Fig. 26, No. 40). The upper body of the cooking pots/jars bear characteristic girth grooves, while the rims are of simple everted form and fall into a number of standard types. Analysis of c. 60,000 sherds from various sites in Ipswich indicates that there is no chronological sequence in either fabric type, form or rim form (Blinkhorn, pers. comm.). One completely oxidised fine ware sherd from Maiden Lane (context 266) apparently has spots of clear glaze on the outer surface. Unless this is an intrusive sherd of later date, these must be regarded as accidental. One small ?base sherd of Ipswich fine ware has a textile impression on the outer surface, possibly a four-shed twill (F. Pritchard, pers. comm; Pl. 4).

The quantities of the different wares on the two sites are described in Table 3.

Table 3: Ipswich ware: quantities.

	Total sherds	Rims	EVEs	IPSF sherds	IPSM sherds	IPSC sherds
JUB	65	7	1.04	36	7	22
MAI	135	15	1.22	39	38	58

#### FORMS AND DECORATION. (Jubilee Hall: Fig. 21; Maiden Lane: Fig. 26)

In Ipswich itself over 90% of the Middle Saxon pottery comprises cooking pots/jars (West 1963, 247; Blinkhorn, pers. comm.); minority wares include pitchers, bowls, lamps and lids. These are mainly reduced, but partly or completely oxidised wares do occur. The recently excavated 'Buttermarket kiln' was producing a different range of cooking pots/jars and bottles in a variant of the usual coarse fabric, with very distinctive decoration (Blinkhorn 1989), but so far these have only been recognised at Brandon (Suffolk), and Raunds (Northants).

The *cooking pots* (in all three fabric types) fall into three size groups on rim diameter. The small pots range between 130–170mm in rim diameter. The intermediate size is 170–240mm, the large size over 240mm; at Jubilee Hall this group was represented by base sherds only (one at 320mm diameter), but at Maiden Lane Nos 39, 43 are 280mm and 300mm in diameter. Early work at Ipswich found a range of 100–200mm with 75% falling between 110–170mm (West 1963, 247–48). Recent research has shown that the most common sizes were 120–140mm for the fine wares, and 120–160mm for the coarse wares (Blinkhorn, pers. comm.). No examples of perforated lugs or perforated necks are present, although this form occurs in the National Gallery basement assemblage (Blackmore, forthcoming).

The cooking pot/jar rim forms found on both sites fall into the types defined by West (1963, 248):

Group I: simple everted—JUB: Nos 10,15; MAI: No. 30

Group II: internal seating—JUB: Nos 11,12,16,18; MAI: Nos 31, 32

Group III: external bead—MAI: Nos 34–37  
internal bead—MAI: Nos 38, 39.

Other forms comprise the *storage jar* (fine ware only, MAI: No. 44); the *globular jar* (fine ware only, JUB: Nos 14, 22); the *pitcher* (fine ware only), one stamped vessel (JUB: No. 16), and possibly a *lamp*—one flat base sherd (coarse ware: MAI: No. 40).

#### DECORATION

Stamped decoration is limited to one vessel from each site. The large storage jar/pitcher type with a type IIK rim (West 1963, 248) and alternating upright and pendant triangles, JUB No. 16, is one of a number now known from the London area. The first was found at The Savoy (Wheeler 1935, 139–141; Hurst 1959, Fig. 4, No. 6), the second at Althorpe Grove, Battersea (Blackmore 1986, 214). Further examples have been found at Barking Abbey (eg. Blackmore and Redknapp 1988, Fig. 6, Nos 5, 6) and other sites in the Covent Garden area. The pendant triangle stamp is also found in Ipswich (West 1964, Fig. 50, P16 L5 No. 1; Blinkhorn, pers. comm.).

The Jubilee Hall stamp (Blinkhorn corpus no. TG7.1; Briscoe group E.8) is much smaller and neater than the Althorpe Grove example, and much neater than the Savoy example, although almost identical in size. Measuring 10mm across the base, and 11–12mm in height, the stamp comprises five rows of triangles and rhomboids; these define an 'X', which creates a triangle within the larger triangle, the point of which is missing, presumably worn through use. The stamp has been firmly and evenly applied around the neck of the pot, and the impressions are generally clear and deep (up to 2mm). It is possible, but not definite, that the large base sherd, No. 20, is also from this vessel.

The two stamped sherds from Maiden Lane (Nos. 41, 42) are probably from the same spouted pitcher, which has a red-grey vertically burnished surface. The stamp is a simple blank circle which cannot usefully be dated or paralleled.

Burnished decoration is found on the pitchers and globular jars. The burnish may be horizontal, vertical or latticed decoration, apparently copying pitchers from Eastern Belgium or Northern France such as have been found in London, York, Ipswich, Canterbury and *Hamwic* (see below), which may have been regarded as status symbols, possibly through an association with wine (Hodges 1981, 59). Of the Jubilee Hall finds, No. 14 has a horizontal burnish over the upper part of the body, and a vertical burnish over the lower half; No. 22 has an all-over horizontal burnish or smoothing over the upper part of the body, while Nos 17, 20 and 21 have a patchy burnish.

In addition to the above, one pot from Jubilee Hall (No. 13) has an incised cross, possibly a maker's mark.

#### USE

At Jubilee Hall nine sherds were externally sooted, and one internally; four were sooted on both surfaces, and one was externally sooted with an internal food deposit. Other internal deposits were noted on eleven sherds: seven white, one yellow-white, one brown and two purplish-white (including Fig. 21, No. 20).

At Maiden Lane, seven sherds were sooted externally, one was sooted on both surfaces, and three were internally

sooted. Internal deposits were observed on twenty-five sherds: fifteen white, five yellowish-white, one brown, and four purple (see chaff-tempered wares).

#### Other local and non-local wares

Sand-tempered wares: SSANA, SSANB, SSANC, SHGS.

This is a small group which currently embraces three different fabrics with both fine and coarse temper, the sources of which are unknown. At *Hamwic*, some of the sandy-gritty wares listed below are included in the sand-tempered group.

SSANA—Fine micaceous clay matrix with abundant fine quartz sand, and moderate larger angular rose quartz grits up to 1mm; moderate fine iron oxide; and small blue-black streaks from burnt-out organic inclusions. The body, which has a granular texture, varies from pale pink to pinkish-brown in colour, with a dull, slightly darker inner surface. The outer surface is frequently knife-trimmed and/or irregularly burnished; the inner surface may be knife-trimmed or wiped.

JUB 163: 16 (not thin-sectioned).

Two sherds from Jubilee Hall, five from Maiden Lane. This ware occurs in small amounts on almost every site within the settlement. Although these vessels are handmade, some appear to have been finished on a turntable; several sherds exhibit knife-trimming on one or both surfaces. The similarity of this ware to a group of Middle Saxon sand-tempered vessels from Canterbury (especially Fabric MLS2) suggests a Kentish origin, although a similar ware (not sourced) has been found at *Hamwic* (Timby 1988, 84; Fabric 12). It is not impossible that some of this pottery was produced in East Anglia.

SSANB—A hard dense slightly micaceous fabric containing abundant quartz grains, fine organic inclusions, and occasional flint grits up to 4mm; grey-black body and surfaces. Eleven sherds, from Maiden Lane, including Fig. 27, No. 45, many with external sooting and several probably from the same vessel. This ware is distinct from CHFS, and appears to match the description of *Hamwic* Fabric 13 (Timby 1988, 84).

MAI 250:32 (not thin-sectioned).

SSANC—A hard dense slightly micaceous fabric with a pale grey core and buff surfaces, possibly from a white-firing clay. This ware may be related to fabric SLGSB below, although there are no apparent iron-coated quartz grains. The inclusions comprise abundant very fine quartz sand, moderate fine black iron, sparse larger rounded quartz grains up to 2mm, occasional flecks of iron oxide/haematite and frequent fine blue-black streaks and voids from burnt-out organic inclusions. One sherd only from Maiden Lane (Fig. 27, No. 49), with an unusual carinated shoulder and scored 'decoration' reminiscent of the Ipswich ware bottles (eg. Hurst 1976a, 300, Fig. 7.7). This was found in a later context, but a stratified handle from the Peabody site shows that this is a Saxon fabric.

MAI unpublished context: 1 (not thin-sectioned).

SHGS—A soft-medium hard fabric containing abundant fine quartz grains (clear, milky, yellow, red or pink), together with moderate fine flint, rounded black iron and angular red iron and grog/clay pellets; pinkish-

brown body with grey surfaces. This is similar to Ipswich coarse ware, but different, and may be related to the SLGS group. The nearest equivalent ware at *Hamwic* appears to be Fabric 8 (Timby 1988, 82). Five small sherds from Maiden Lane only, four probably from the same vessel, and one externally wiped oxidised neck sherd from ditch (292).

MAI 379:4 (not thin-sectioned).

Sandy-gritty wares: SLGSA, SLGSB, SLGSC

SLGSA—Brickearth(?) matrix with angular and sub-angular quartz and some white mica, tempered with Lower Greensand(?) ironstone sand. Abundant iron-coated quartz up to 1.0mm; abundant angular red iron ore fragments up to 1.0mm. The finer variant of this fabric is macroscopically the same as *Hamwic* Fabric 10 (Timby 1988, 82).

Thin-sections; JUB U/S:8 (Fig. 22, No. 24; MOL TS. no. 1076). JUB 155:1 (Fig. 22, No. 25; not thin-sectioned).

SLGSB—Micaceous white-firing clay (Reading Beds?) with whitish clay pellets and little visible quartz, tempered with Lower Greensand(?) ironstone sand. Abundant iron-coated quartz up to 1.0mm; abundant and sub-angular rounded iron-coated quartz up to 0.5mm; moderate angular red iron ore fragments up to 0.5mm; moderate organic temper. Both sherds examined have a black core and oxidised outer margin and surface.

Thin-sections: JUB U/S:5 (MOL TS. no. 1084). JUB 49:1 (MOL TS. no. 1078).

SLGSC—Fine micaceous London Clay tempered with Lower Greensand ironstone sand, probably from Surrey. Abundant rounded iron-coated quartz up to 1.0mm, moderate red iron ore up to 1.0mm; sparse organic temper. The mica content varies from low to high. Some sherds have abundant sub-angular and rounded iron-coated quartz up to 0.5mm, and a higher organic content. The surfaces are generally black, the core a dark grey. Also provisionally included in this group is a very hard reduced micaceous ware with abundant fine white quartz sand and very fine iron-coated quartz grits.

Thin-sections: JUB 51:6 (MOL TS. no. 1080). JUB U/S:4 (MOL TS. no. 1079). JUB unpublished context: (MOL TS. no. 1075). JUB 62:1 (MOL TS. no. 1083).

#### MANUFACTURE AND FORMS (Jubilee Hall: Fig. 22; Maiden Lane: Fig. 27)

These wares all contain a distinctive iron-rich sand which is characteristic of parts of the Lower Greensand around the Surrey-Hampshire Borders, in Bedfordshire and Central Buckinghamshire. At *Hamwic* sand-tempered wares account for 29% of the total sherds, with Fabric 10 being the most common (Timby 1988, 82). At Staines sparse fine ironstone is present in all the Early—Middle Saxon sand-tempered wares, and also in some of the chaff-tempered pottery (Jones 1982, 198–9). In London these wares are not common, and are usually represented by body sherds. Two hand-made vessel types are represented, cooking pots and globular jars. Of the former, JUB No. 24 is in a very coarse version of SLGSA, with

abundant large grits and additional organic temper; the outer margin and roughly wiped surface are pinkish-brown, the core is black. The inner surface is weathered so that the inclusions stand proud. No. 47 from Maiden Lane is very similar, but less weathered.

The bag-shaped jar JUB No. 25 is very fine, with no organic temper, a burnished outer surface and possibly knife-trimmed inside the neck. This pot is similar to a jar from *Hamwic* (Timby 1988, Fig. 4, No. 50), and a little smaller, but otherwise almost identical in form to that found on the site of the Savoy (Wheeler 1935, Fig. 22, No. 1; Hurst 1959, Fig. 4, No. 7). The latter, however, is thought by Vince (1990, 99) to have been made in the London area using a clay rich in brickearth sand, and to date to the 7th century. The jar or bottle from Maiden Lane (No. 46, iron-rich chaff-tempered fabric), which appears to be made in a white-firing clay, may also belong to this group.

#### Sand-and-grog-tempered: SGRG

One highly fired sherd from Maiden Lane in a red-brown fabric with wiped surfaces and external sooting; the fine sandy body is tempered with abundant angular grits of what appears to be crushed Roman tile (up to 5mm).

MAI 266:1 (not thin-sectioned).

#### Mixed grit-tempered ware: MSFG

A very distinctive hard brown or black ware with a very hackly fracture. The abundant inclusions comprise coarse ill-sorted rounded quartz with moderate round and angular patinated flint grits up to 5mm, frequent rounded black iron, sparse grog or weathered clay, and shell. Both inner and outer surfaces are wiped. This fabric is very similar to a group of closely related wares found at *Hamwic* (Timby 1988, 84–5, Fabrics 55, 56). Three sherds only from Maiden Lane, all from the same vessel. The ware has also been found at Shorts Gardens (Connor 1990).

MAI 269:3 (not thin-sectioned).

#### Flint-tempered: SSFL

A very fine micaceous clay matrix (?brickearth), with sparse fine flint 'dust' and occasional larger flint inclusions up to 3mm. One, possibly two vessels only from Maiden Lane (Fig. 27, No. 48), with patchily oxidised margins, and a pale grey core and surfaces. Flint-tempered wares occur as a minority group at *Hamwic*, where the closest parallel to SSFL is Fabric 24 (Timby 1988, 88), and as a larger proportion of the wares in Middle Saxon deposits at Canterbury. The production centre(s) is unknown.

MAI 318:25 (not thin-sectioned).

#### Chalk-tempered ware: MSCH

A slightly micaceous clay matrix with few visible inclusions, tempered with moderate rounded chalk(?) up to 2.0mm, and sparse black chert and grey flint up to 2.0mm. This ware probably comes from a chalk region such as the North Downs or the Chilterns. Found only at Jubilee Hall, a few sherds from a large storage jar

(burnt); although distorted, this appears to have had a simple everted rim and a slack shoulder. Chalk-tempered wares are common in *Hamwic*, where they form 15% of the total assemblage (Timby 1988, 81–82), and also occur as a minority ware in Canterbury (MacPherson-Grant, pers. comm.).

Thin-section: JUB 119:2 (MOL TS. no. 1073).

#### Shell-tempered wares: MSSA, MSSB, MSSC, MSSD, MSSE, MSSF

A range of shell-tempered wares is present, but all in such small quantities as to preclude accurate provenancing at this stage; only thirteen sherds from Jubilee Hall, and eight from Maiden Lane, probably deriving from two vessels at the most. It is possible that some wares were coming downstream from Oxfordshire, while others were coming in from Kent. Shell-tempered wares have also been found at *Quentovic* in northern France (Coutts and Worthington 1986, 24, Fig. 1). Most sherds are clearly from hand-made vessels, but it is possible that JUB No. 27 was wheel-finished if not wheel-made. Both techniques are found among the shell-tempered wares at *Hamwic*. For dating see discussion.

MSSA—Sparse to moderate rounded red clear and milky quartz up to 1.0mm; white sandstone (silica cement); overgrown quartz grains giving a sugary appearance up to 1.0mm; abundant voids (original content unknown) up to 1.0mm. Pale grey fabric throughout, badly laminated.

Thin-section JUB 140:1 (TS. no. MOL. 1058).

MSSB—Abundant bivalve shell up to 2.0mm; sparse rounded quartz up to 0.5mm, sparse gastropod shell up to 1.0mm, sparse angular red iron ore up to 2.0mm, sparse wood fragments. This ware, which has a pale grey-buff core and slightly darker surfaces, is similar to the later Saxon fabric OXB at Oxford, but is harder and the rim form of JUB: No. 26 is unlike the Oxford forms (M. Mellor, pers. comm.).

Thin-section JUB 57:3 (Fig. 22, No. 26; TS. no. MOL. 1062).

MSSC—Abundant shell fragments up to 1.0mm; sparse rounded quartz up to 0.5mm; sparse wood fragments up to 3.0mm. This is macroscopically very similar to MSSB and to fabric OXB from Oxford, but is harder (M. Mellor pers. comm.).

Thin-section JUB 57:4 (TS. no. MOL. 1063).

MSSD—One reduced sherd only from Jubilee Hall, with a very hard dense body and a hackly fracture. Moderate to abundant heat-altered shell fragments up to 2.0mm; these show on the inner surface, but not in the (fresh) fracture. There is a purple deposit on the inner wall, and a reddish mineral deposit on the outer surface, apparently acquired after deposition.

JUB 57:7 (not thin-sectioned).

MSSE—Packed with abundant bivalve shell fragments up to 2.0mm; sparse red iron ore up to 1.0mm. The sherd examined has an oxidised outer margin and surface, and a grey body; the inner surface is leached. This is the most common shell-tempered ware at Maiden Lane and on other sites in the settlement; it is possible that a finer and a coarser variety exist.

Thin-section JUB 123:1 (TS. no. MOL. 1061).

MSSF—a fine clay matrix with abundant finely crushed shell up to 1.0mm, sparse subangular to rounded quartz to 0.5mm, sparse wood fragments to 2.0mm. The rim examined from Jubilee Hall is a pale grey throughout, with numerous small voids in the surfaces where the shell has leached out; a black deposit of food debris covers most of the inner surface.  
JUB 162 (Fig. 22, No. 27, not thin-sectioned).

#### Sandstone and Limestone or Shelly-Limestone: SSSL

Reduced micaceous fabric with sparse white sandstone up to 1.0mm; sparse red sandstone (subangular to rounded quartz grains) up to 1.0mm; abundant angular quartz up to 0.5mm; sparse sub-angular shelly-limestone with a brown muddy matrix up to 3.0mm, and sparse chaff. This hand-made ware is found only at Jubilee Hall, with fifteen sherds from the same vessel.  
Thin-section: JUB 120:11

#### Oolitic limestone-tempered: MSOL

Two sherds only from Maiden Lane, from the same vessel. Fine micaceous body with abundant fine rounded grains of oolitic limestone up to 1mm, abundant very fine quartz sand, occasional larger quartz grains, sparse fine red grains of iron oxide. The outer surface of both sherds is smoothed, the inner surface missing, so that it is uncertain whether they derive from a hand-made or a wheel-made vessel. See also MSIG.  
MAI 340:23 (not thin-sectioned).

#### Igneous rock-tempered: MSIG, SGFM

Igneous-rock-tempered wares comprise a small but significant group at *Hamwic* (1% of the total sherds). It is suggested that these come from Southern England, but a source is not proposed. This ware is very rare in London; the inclusions suggest a source in the East Midlands.  
MSIG—Moderate white sandstone up to 1.0mm; moderate fine grained limestone, rounded up to 1.0mm (possibly fossiliferous ooliths and gastropods); moderate angular acid igneous rock fragments up to 1.0mm; matrix contains little quartz but is micaceous. This probably derives from the Charnwood Forest area of the East Midlands (Vince 1990, 101).

Thin section JUB 57:6 (TS. no. MOL. 1074)

SGFM—One hand-made sherd from Maiden Lane and another from Jubilee Hall with a sooted outer surface. David Williams comments: 'fairly hard smoothish sandy fabric with some felspar inclusions visible. Dark grey outer surface and core (Munsell, 2.5 YR N4-), lighter grey inner surface. Thin-section shows that large discrete grains of potash and plagioclase felspar are scattered throughout the fabric; also present are grains of quartz, some of them polycrystalline, a few flecks of mica and some small fragments of granite or grano-diorite. This is obviously not a local product. Similar granitic inclusions have been noted in an increasing amount of Early and Middle Saxon pottery from a number of sites mainly situated in the east of the country. The origin of this distinctively tempered pottery has yet to be identified, but a possible source

is in the Charnwood Forest area to the south-west of Leicester, or the post-Tremadoc diorites around Nuneaton'.

JUB 128:14 (Southampton TS.)

#### The imports

The imports pose many problems, as few Merovingian or Carolingian production centres have been excavated, and although the Rhenish wares are comparatively well researched, much remains to be done on the French material (Hurst 1976a, 311; Evison 1979, 298–9). The following owes much to the work on the *Hamwic* pottery by Hodges (1981) and Timby (1988), but the identifications must still be regarded as provisional. The terms 'North French' or 'East Belgian' are used for convenience despite the inherent political and geographical problems. Until such time as the sources and dating of these wares are known it is thought better to use contemporary general terms even though the Continental definition of Northern France is geographically much smaller than the English interpretation, which tends to include the whole of Normandy, Paris and even Brittany in this area. It should also be noted that fragmented grey and black wares cannot always be identified as such with confidence, since a pot may be inherently grey, but appear black when burnished, and some vessels could fall into either group. As a rule the term 'black ware' is used here for pots which would have been totally black (either burnished or unburnished); grey wares include sherds which may be partly black through burnishing.

All the imported wares are wheel-made, and appear to be table wares, mainly for serving liquids; a variety of sizes is present. Their dating is discussed below, but probably spans the early 7th to mid-9th centuries. The earlier wares have been discussed by Evison (1979); the imported wares from *Hamwic* and the Continental industries have been fully discussed by Hodges (1981). Other useful summaries and reviews of imported pottery and trade connections include those by Dunning (1956; 1959), Hurst (1969) and Hodges (1977).

#### North French Black: NFBWA, NFBWB, NFBWC

These wares correspond broadly with Hodges' Class 14 (Hodges 1981, 21–25; 68–70) and Timby's Fabrics 130–140 (Timby 1988, 93–6). Some are easily matched in the *Hamwic* collection, but further thin-section work is required to confirm other parallels.

NFBWA: Very fine pinkish-brown fabric with black surfaces. Anisotropic matrix containing abundant sub-angular and rounded quartz up to 0.4mm, sparse angular flint up to 0.3mm, sparse to moderate red iron and brown clay pellets up to 1.5mm, abundant angular quartz up to 0.02mm, moderate white mica up to 0.1mm. Where not burnished the surfaces have a pimply feel. A coarser variant with the abundant iron/clay pellets is also present (Fig. 22, No. 31). This group equates with *Hamwic* Fabrics 129 and 130 and possibly with Fabric 131 (Timby 1988, 92–93).

Thin sections: JUB 120:16 (Fig. 22, No. 29). JUB U/S:7 (MOL TS. No. 1067). JUB 131:5 (Fig. 22, No. 30; MOL TS. No. 1071).

**NFBWB:** A micaceous fabric with abundant fine quartz sand up to 0.5mm; one sherd also has sparse angular flint inclusions. Reduced throughout; the inner wall may be dark grey, but the outer is black, with zones of vertical or horizontal burnishing (eg. JUB Fig. 22, No. 28). This ware resembles 8th- and 9th-century finds from Douai, Cambrai, Ghent and the Escaut valley (Callebaut, pers. comm.; De Molon, pers. comm.).

JUB 59: 6 (not thin-sectioned).

**NFBWC:** A very fine dense fabric with few visible inclusions, apparently from a white-firing clay. The core may be bluish-grey, as at Maiden Lane (Fig. 27, No. 51), or a pinkish-white as found on other sites in the vicinity; the surfaces are black. This fabric is similar to that of Tating ware.

MAI 323:4 (not thin-sectioned).

#### FORMS:

This group includes a range of jugs and pitchers with angular rims and wire-cut bases; the body may have cordons (JUB Fig. 22, No. 30) and be partly or entirely burnished (JUB Fig. 22, No. 29). No sherds with tin-foil decoration are present here, but Tating-type ware has been found at the Peabody site (Blackmore, forthcoming). The underside of the base may be smooth (MAI Fig. 27, No. 51) or roughly finished (JUB Fig. 22, No. 28). The latter has an uneven base angle and dents in the outer wall where the pot was held while the panels of vertical burnishing were applied. For dating see discussion.

North French Grey: NFGWA, NFGWB, NFGWC, NFGWD, NFGWE, NFGWF

This group corresponds broadly with *Hamwic* Class 15 (Hodges 1981, 21; 25–28), Fabrics 151–161 (Timby 1988, 96–8). Of the various sources postulated by Hodges for this material (ibid, 27; 70–73), Normandy, or the Pas-de-Calais region (eg. Baralle, near Douai), where greyware production dates from Roman times, seem geographically most likely.

**NFGWA:** Very fine clay matrix with abundant angular quartz sand up to 0.5mm, moderate red and black iron, blue-grey flecks and voids up to 1mm where organic matter has burnt out. Two varieties are present, one very hard with mid grey surfaces and a paler grey core, the other less highly fired with pale grey surfaces and a yellow-brown or pinkish brown core. The clay matrix can appear variegated. These resemble Fabric 131 at *Hamwic* (Timby 1988, 95).

Thin sections JUB 120:17. JUB 160:9 (MOL TS No. 1082).

**NFGWB:** Fine clay matrix with abundant fine sand and blue-grey flecks and voids up to 1mm where organic matter has burnt out; very occasional iron and/or weathered clay pellets. Pale grey surfaces with pinkish-brown core, burnished externally. This fabric is macroscopically similar to material from Huy in the British Museum reference collection (H12370).

Thin section: JUB 68:1 (Fig. 22, No. 32; MOL TS. No. 1069).

**NFGWC:** Very fine clay matrix with moderate fine quartz sand up to 0.5mm giving a pimply surface; thin walled

and very hard grey surfaces, pink core; the external burnish gives a metallic appearance and a superficial resemblance to Mayen ware. This fabric is similar to wares found in 8th- to 9th-century contexts at Arras (D. Callebaut, pers. comm.).

Thin section: JUB unpublished context:2 (MOL TS. No. 1065).

**NFGWD:** A fine clay matrix with abundant fine sand and silver mica and a tendency to laminate; where not burnished the surfaces have a very slightly pimply feel. This is a problematic ware, since it may appear black or grey, and a number of oxidised or partly oxidised sherds are present which probably also belong to this group. Found at Maiden Lane only, the main example being the bossed shouldered jar (Fig. 28, No. 56, Pl. 5).

MAI 268: SF.72 (not thin-sectioned).

**NFGWE:** A very fine micaceous clay matrix with few visible inclusions, evenly fired to a pale grey throughout, with a lightly burnished exterior. The fabric appears Roman, but the vessel from Maiden Lane (Fig. 27, No. 50) is clearly a Merovingian form.

MAI 285:11 (not thin-sectioned).

**NFGWF:** One unevenly fired sherd only from Jubilee Hall (Fig. 22, No. 34); this is a problem piece, which appears to be of a white-firing clay, and may be an unusual Seine Valley or Rhenish ware. Where reduced the sandy fabric appears similar to NFGWA, but where oxidised the fabric clearly contains abundant fine ferruginous inclusions up to 1mm. This sherd is in poor condition, being internally laminated and also covered with plant remains in a heavy iron-pan deposit.

JUB 117:1 (not thin-sectioned).

#### FORMS:

The grey wares appear in a wider range of forms and sizes than the black wares, but there is also a certain repetition of forms. A number of bases from small vessels in NFGWA have now been found (eg. JUB Fig. 22, No. 33) with a characteristic ridge, often grooved, just above the base angle; above this the body may, be wiped, or burnished in vertical panels and a wiped or which often has a groove in it.

Some sherds, such as JUB No. 32, have horizontal cordons which reflect their Frankish/Merovingian origin. Arguably the earliest of these is a small biconical pot from Maiden Lane, the upper part of which is corrugated (Fig. 27, No. 50). Merovingian biconical bowls/jars have been discussed by Evison (1979, 14–6; 36–41) and more recently by Tilkin-Peters (1986, 225–8). This vessel resembles finds from St. Peter's, Kent (grave 75), Prittlewell, Essex, and Breach Down, Kent (Evison, 1979, Fig. 14a; Fig. 16, a–c).

The tradition of rouletting on North French wares continues throughout the Merovingian period. Bosses are not common on wheel-thrown pots, and appear to be a 7th-century trait; the source is not known, but is probably in North-west France or Belgium (Evison 1979, 17–8; 41–2). Examples of bossed and rouletted shouldered jars of possible late 7th-century date have been found in Kent, Essex and Norfolk. The jar from Maiden Lane (Fig. 28, No. 56; Pl. 5) is a particularly elaborate example, with a

complex arrangement of six vertical bosses and a triple swag of segmented arcs, both pendant and standing; these have been irregularly applied so that the three elements do not always show clearly, especially where the stamps overlap. This pot may be of late 7th- or 8th-century date. Similar complete pots have been found at Broadstairs, Kent and Sint Joris Winge, Belgium (Evison, 1979, Fig. 21a; Fig. 32c); this stamp has also been found at Barking Abbey (Redknap, pers. comm., BA. 1, 85 2211), at Ipswich (Evison 1979, Fig. 19i; Wade 1988, Fig. 55 No. 2) and Fishergate, York (Mainman, pers. comm., 1986.9 3360; 1986.9 10183).

North-French or Eastern Belgian: NFEBA, NFEBB.

These wares correspond broadly with *Hamwic* Class 13 (Hodges 1981, 21) thought to come from Eastern Belgium, although the production centre is unknown. A possible source is Huy, where Merovingian kilns dated to c. AD 700 and producing rouletted pottery have been found (Willems 1986, 241–60), although this appears more similar to the Class 15 wares than Class 13.

NFEBA: A fine sandy matrix with abundant quartz sand up to 0.5mm with occasional iron-rich inclusions. Grey core, red margins, matt grey surfaces. Found only at Jubilee Hall (JUB Fig. 22, No. 35), with stamped or rouletted decoration in the Frankish tradition.

Thin-section: JUB U/S (MOL TS. No. 1072).

NFEBB: Very similar to the above, but much harder; sherds in this group typically have silvery grey surfaces, orange margins and a grey core, possibly resulting from double firing. The outer surface is frequently burnished. Found at Maiden Lane only, this ware equates with *Hamwic* Fabric 129 (Timby 1988, 92–3). MAI 374:2 (not thin-sectioned).

#### FORMS:

The stamped/rouletted sherds in NFEBA from Jubilee Hall (Fig. 22, No. 35) probably derive from a bottle with banded or random decoration of interlocking chevrons, examples of which have been found in the Kentish cemeteries (Evison, 1979, 11; Fig. 7c). Vessels in NFEBB include a strap-handled pitcher or jar (MAI Fig. 27, No. 52), a form which has been found on other sites in London, at Barking (Blackmore and Redknap 1988, Fig. 5, No. 5) and at Fishergate, York (1986.9, 5239; Mainman, pers. comm.).

North French Red: NFRWA

This ware is closely related to those in group NFEB, with a grey core, red margins and reddish-grey surfaces, but has a red slip over both surfaces, which when burnished gives a streaky red-grey appearance. A few flakes from Maiden Lane may also fall into this group, although they have been classified with the grey wares (NFGWD). This ware falls into *Hamwic* Class 21 (Hodges 1981, 30), Fabric 181 (Timby 1988, 100), although not exactly matched at *Hamwic*. Red burnished sherds of 7th-century date, possibly imitating Roman wares, have been found at Huy (Hodges 1981, 71–2; Tilkin-Peters 1986, 228; Willems 1986), and a source in North France or Belgium seems likely.

Thin sections: JUB 137:1 (Fig. 22, No. 37; MOL TS. No. 1053); 118:2 (Fig. 22, No. 36; MOL TS. No. 1054).

#### FORMS:

The two sherds from Jubilee Hall include a spouted pitcher and the base of a jug or pitcher, both burnished and possibly from the same vessel. This form is rare in pagan Saxon graves; the dating is unclear, but seems to be from the 7th century onwards. Examples in England include Woodnesborough, and St. Peter's (grave 225), both in Kent (Evison 1979, 4; 35–60; Fig. 13c, 13d).

?Seine Valley: NFSVA, NFSVB

NFSVA—A distinctive hard oxidised coarse ware with (streaky) yellow-buff to pinkish-grey surfaces, which have a pimply feel due to the abundant rounded quartz and quartzite up to 2mm. The quartzite is notably murky and the grain boundaries indistinct (possibly an altered rhyolite?). Also present are abundant spherical fragments of black iron ore up to 0.2mm, sparse lenses of gypsum or calcium carbonate up to 0.4mm long; moderate rounded brown clay pellets up to 0.4mm. The clay matrix is variegated with sparse angular quartz inclusions. Found at Jubilee Hall only; several sherds, mostly from the area of the burial, apparently all from the same vessel.

Thin section: JUB unpublished context:1 (Fig. 23, No. 38; MOL TS. No. 1049).

This fabric is the equivalent of *Hamwic* Class 25 (Hodges 1981, 31), and closely matches Fabrics 185–187 (Timby 1988, 100–101), and York buff ware 9 from Fishergate (Mainman, pers. comm.). Macroscopically this ware bears a resemblance to the later Normandy Gritty and coarser Rouen wares, and the suggested source in the Seine Valley seems likely (Hodges 1981, 31).

NFSVB—A hard sandy oxidised fabric, similar to the above, but very fine. The fabric is variegated, with a pink and white body with black streaks and cream to salmon pink surfaces; the outer surface is flaking slightly. The visible inclusions comprise fine mica with ?muscovite or biotite, black iron ore and red ?iron or weathered clay. This ware is very similar to *Hamwic* Fabric 135 (which although grouped with the black-wares has an unevenly fired body and is very like *Hamwic* Fabric 203). One sherd from Jubilee Hall only. This may prove to be a Rhenish ware.

Thin-section JUB 120:18 (Fig. 23, No. 41).

#### FORMS:

The NFSVA vessel is a jar decorated with incised horizontal and wavy lines, and possibly with strap handles (published as possibly Lower Rhenish in Blackmore and Redknap 1988, Fig. 3, No. 16). The form as reconstructed here resembles jars with combed decoration from Groningen and from Jersey, which were identified by Dunning as Badorf ware (Dunning 1956, 223; Fig. 49, No. 6; Dunning 1959, Fig. 26, No. 8), and another example from Ile Agois, Guernsey, classified by Hodges (1981, Fig. 4, No. 2) as a Class 15 grey ware. The NFSVB sherd has a flat base and traces of sooting externally.

**Beauvais: BEAV, BEARP**

A fine buff fabric with frequent fine voids but few visible inclusions apart from rare iron inclusions up to 5mm (BEAV). The surfaces may be white, yellow-buff or pale pinkish-brown, and have a slightly sandy feel. The outer surface may be wiped or knife-trimmed, and often has a red-painted decoration (BEARP). This equates with *Hamwic* Class 9 (Hodges 1981, 18–9), Fabric 125 (Timby 1988, 91).

Thin section: JUB U/S:11 (Fig. 23, No. 42).

**FORMS:**

One cooking pot/jar with red-painted decoration (JUB Fig. 23, No. 42) over a knife-trimmed surface.

**Badorf and Walberberg-type: BADOA, BADOB**

Pottery was produced at many centres in the Rhineland from the Roman period onwards, notably in the Vorgebirge area of Cologne, at Mayen, and in the Badorf area. The Carolingian Badorf-type wares have been divided by Tischler (1952) into early and later phases, dating to *c.* AD 720–780 (coarser) and AD 780–850 (finer), a rough chronology which has been generally accepted at Dorestad (Van Es and Verwers 1980, 77–8). At *Hamwic* this ware is Class 7, Fabric 122 (Hodges 1981, 18; Timby, 1988, 90–1). Some of the London sherds may derive from Walberberg rather than from Badorf, but although the two fabrics may be distinguished by scientific analysis (Van Es *et al* 1984), they are macroscopically quite similar, and the term Badorf-type is thus preferred for the London wares at present.

**BADOA**—Coarse Badorf-type ware; a fine buff matrix with ill-sorted inclusions of variable size and quantity, and variable surface colouring. Some sherds from other sites in London may belong to this group or be from the Walberberg kilns. The sherd examined contains moderate black iron ore up to 0.3mm, which has a curious reticulated outline and may be of biological origin, moderate sub-angular quartz up to 2mm but mainly less than 0.5mm, sparse sub-angular chert or quartzite up to 1mm. The matrix contains moderate angular quartz up to 0.1mm and sparse white mica up to 1mm. It is variegated with thin streaks of brown ?iron ore/clay and whiter clay.

Thin-section JUB 155:2 (Fig. 23, No. 44; MOL TS. No. 1048).

**BADOB**—Fine Badorf-type ware; a fine yellow-buff to orange ware with a sandy feel. Some sherds in this group have an ashy grey, slightly fused surface; these are similar to sherds from Fishergate, York (buff wares 7 and 9; Mainman pers. comm.).

JUB 29:2 (Fig. 23, No. 43; MOL TS. No. 55).

**FORMS:**

One jar in BADOA, with incised or brushed lines around the rim (JUB Fig. 23, No. 44); bowls and jars/amphorae in BADOB, notably several sherds from a large vessel found at Maiden Lane in ditch (292), and a cooking pot or jar with rilled and knife-trimmed outer wall and traces of ?red slip internally (JUB Fig. 23, No. 43). The jar with an applied thumbled strip (MAI Fig. 27, No. 55) is in a more sandy variant of BADOB; the

base sherds (MAI Fig. 27, Nos 53, 54 ?bowls) are in a finer variant similar to York buff ware 3 (Mainman, pers. comm.).

**JUBILEE HALL: THE STRATIGRAPHIC DISTRIBUTION OF THE POTTERY****Introduction**

The excavations at Jubilee Hall, 1985, produced a total of 353 sherds (2.35 EVES) weighing *c.* 8.80kg (including twenty-six unstratified Saxon sherds). With the exception of fourteen Roman sherds, all the stratified material is domestic pottery of 7th- to 9th-century date. The pottery is in generally good condition, apart from the chaff-tempered and shell-tempered wares, some of which have laminated or crumbled. The distribution of the pottery is according to the stratigraphic sequences described above, and summarised in Table 1. The codes used in the pottery catalogue (Tables 4, 5, 6, 7) are listed in the key below.

**KEY TO DESCRIPTIVE CODES USED IN THE POTTERY ANALYSIS**

Form: BOWL = bowl

CP = cooking pot

CUP = cup

JAR = jar

JUG = jug

PTCH = pitcher

SJ = storage jar

SPP = spouted pitcher.

Sherd: B = base

R = rim

S = sherd (handle not listed in comments).

Deposits (working from external to internal):

B = brown

DE, DI, DEDI = deposit: external, internal, or both surfaces

F = food

L = localised

P = purple

S = slight

SE, SI, SESI = sooting: external, internal or both surfaces

W = white

Y = yellow.

Surface (working from external to internal):

ABRE, ABRI, ABR = abraded: external, internal, or both surfaces

BURE, BURI, BUR = burnishing: external, internal or both surfaces

EROE, EROI, ERO = eroded: external, internal or both surfaces

KNE, KNI, KN = knife-trimming: external, internal, or both surfaces

SME, SMI, SMESMI = smoothing: external, internal, or both surfaces

WE, WI, WEWI = wiping: external, internal, or both surfaces.

Decoration: APP = applied  
 BUR = burnished  
 INCS = incised  
 MULT = multiple  
 ROUL = rouletted  
 STAM = stamped  
 TINF = tinfoil.

Comments: CF = internal parallels  
 GRAFF = graffiti  
 HAND = handle  
 OXD = oxidised throughout  
 OXD EXT = oxidised externally  
 OXD INT = oxidised internally  
 RDCD = reduced  
 SHL = sherd link.

#### Stratigraphic distribution

##### *Pottery from the west-east section A-C.*

The earliest ground occupation (1) and pit (3) each produced only a few small sherds of chaff-tempered ware. Pit (8) contained two joining sherds of North French black ware (Fig. 22, No. 31; Table 6).

The grey earth (15), which sealed the earliest features produced one sherd of shell-tempered ware, suggesting a date after *c.* AD 750 for this deposit. Pit (19), which cut this layer, contained one sherd of Roman pottery and one of ?Kentish sand-tempered ware. Pit (28), which appeared to post-date layer (15), contained one sherd of Roman pottery, one chaff-tempered, and one of Badorf ware (Fig. 23, No. 43; Table 7), which suggests a 9th-century date for this feature.

##### *Pottery from the SW part of the main excavation area*

The early ground surfaces (38) produced three sherds, two chaff-tempered and one of sandy-organic ware (SLGSC) possibly from Surrey. Cutting this deposit was the grave (39), which contained two sherds, one chaff-tempered and one from a jar with incised decoration, of ?Seine Valley ware (NFSVA, Fig. 23, No. 38; Table 7). The burial has been dated by C-14 to AD 630-675 (calibrated, one sigma; see p. 56). The beamslot (47) contained one sherd of Samian ware, and one of ?Surrey ware (SLGSB); posthole (76) produced one chaff-tempered sherd. Pit (50) contained one chaff-tempered rim sherd (Fig. 20, No. 1; Table 4).

The brickearth floor (51), which appeared to seal these features, contained a similar group of fifteen sherds, ten chaff-tempered, one possibly from Surrey (Fig. 22, No. 23, SLGSC; Table 6) and three ?Seine Valley as above (Fig. 23, Nos 38, 39, probably from the same vessel; Table 6).

The gravel surface (52), over (51), contained four chaff-tempered sherds and two of SLGSC. Pit (55) and posthole (54), which cut (52), contained two sherds of chaff-tempered ware and one small chip of Badorf-type ware respectively.

Pit (57), which cut these deposits, contained eleven sherds, one chaff-tempered (Fig. 20, No. 3; Table 4), the rest non-local or imported. These comprise Ipswich fine ware, sand-and-shelly limestone tempered ware (SSSL), a number of different shell-tempered wares (including Fig. 22, No. 26; Table 6), two igneous rock-tempered (MSIG), possibly from the East Midlands, and one sherd from Northern France (Fig. 23, No. 38; Table 7). The high proportion of shell-tempered ware, and the presence of a handled comb (Fig. 38, No. 6) in

Table 4: (Fig. 20) Jubilee Hall: catalogue of chaff-tempered wares (by fabric; rim diameters in mm)

No.	Feature	Context	Fabric	Total sherds	Rim Diam.	EVE	Comments
1	Pit 50	50	CHAF	1	120	11	SME; WI
2	Pit 57	57	CHAF	1	290	5	SMESMI
3	Floor	51	CHAF	1	250	5	SMESMI
4	Pit 59	61	CHAF	1			SMESMI
4	Pit 59	64	CHAF	1			SMESMI
4	PH 71	71	CHAF	1			SMESMI
4	Pit 154	156	CHAF	1			SMESMI
5	Pit 59	59	CHAF	1	140	11	SE, WEWI
6	Well 121	124	CHAF	2	150	20	
7	Pit 140	140	CHAF	1	—	—	WEWI; ?perf lug
8	Pit 158	159	CHAF	1	100	8	WEWI
9	U/S	—	CHAF	1	—	—	SMESMI

Table 5: (Fig. 21) Jubilee Hall: catalogue of Ipswich wares (by fabric; rim diametres in mm)

No.	Feature	Context	Fabric	Total sherds	Rim Diam.	EVE	Comments
10	Well 117	120	IPSC	1	240	13	SESI
11	Well 121	123	IPSC	1	160	8	SE(P)
12	Well 121	124	IPSC	2	170	44	
13	Well 121		IPSC	1			SE, incised '+'
14	Pit 126	128	IPSF	5			Vert/horiz burnish
15	Pit 157	157	IPSC	2	160	12	
16	Pit 158	160	IPSF	1	250	15	DI(W); stamped triangles
17	Pit 158	160	IPSF	1			DI(Y-W); BUR
18	Pit 158	160	IPSF	1	140	12	SE (slight)
19	Pit 158	160	IPSF	1			
20	Pit 158	159	IPSC	1			DI(P-W) madder?
21	Pit 158	160	IPSF	1			DI(B); BUR
22	Pit 162	162	IPSF	2			BUR

this pit suggest that it dates to the late 8th or 9th century.

Pit (58) contained one sherd of sand-and-chaff-tempered ware and one of North French grey ware with horizontal burnish. Pit (134) contained one sherd of chaff-tempered ware.

Pit (59), which cut pit (134), produced the largest group of pottery on the site, seventy-four sherds (1353g). Of these the great majority are chaff-tempered (sixty-one sherds including Fig. 20, Nos 4, 5; Table 4). Other fabrics comprise ?Surrey ware (two sherds SLGSC); North French black ware (Fig. 22, No. 28; Table 6), North French grey (including Fig. 22, Nos 32, 35; Table 6), ?Seine

Valley ware (Fig. 23, Nos 38, 40, probably the same vessel; Table 7), and one sherd of Roman pottery. An analysis of the vertical distribution of the pottery in the twelve pottery-producing layers showed that the different wares were scattered evenly throughout the pit, and sherds from a number of different vessels appeared in different layers. Two joining sherds from layers (61) and (64) in the pit also join with a sherd from posthole (71) (Fig. 20, No. 4; Table 4), and are very similar to sherds from pits (126) and (154). A number of sherds are either eroded or abraded on one or both surfaces, suggesting that these may have been deposited elsewhere before arriving in the pit,

Table 6: (Fig. 22) Jubilee Hall: catalogue of non-local and north French black, grey and red wares

No.	Feature	Context	Fabric	Total sherds	Rim Diam.	EVE	Comments
23	Gravel	52	SLGSC	2			DE (F); WEWI
24	U/S		SLGSA	3	220	10	WE
25	Pit 154	155	SLGSA	1	70	15	WEKNI; ABRI, BUR (light)
26	Pit 57	57	MSSB	1	250	5	
27	Pit 162	162	MSSF	2	160	7	EROI
28	Pit 59	59	NFBWB	2	70	100	Vert BUR panels
29	Well 117	120	NFBWA	1			BUR
30	Pit 130	131	NFBWA	2	100	17	BUR
31	Pit 8	8	NFBWA	2			BUR; horiz cordons
32	Pit 59	68	NFGWB	1			BUR; horiz cordon
33	Well 117	120	NFGWA	1			Vert BUR panels
34	Well 117		NFGWF	1	300	8	Laminated DEDI (iron)
35	Pit 59	59	NFEB	1			ROUL
35	U/S		NFEB	1			ROUL
36	Well 117		NFRW	1	100	5	Horiz BUR
37	Pit 136	137	NFRW	1	100	40	Vert BUR

which also contained a fragment of an early glass palm cup (Fig. 34, No. 1).

The beamslot (96) contained two chaff-tempered sherds similar to five chaff-tempered sherds from the nearby gully (100).

#### *Pottery from isolated features.*

The sequence of pits and wells in the NE corner of the site produced forty-three sherds, of which thirty-eight were found in well (117). The earliest pit (107) (fills (108), (109)), contained two sherds of fabric SSSL; the pit or well (111) (fill (113)) contained one sherd of shell-tempered ware.

The lower fills of well (117) (fills (118), (119)) produced a small but interesting group of four sherds: two chaff-tempered (one apparently also grog-tempered), one chalk-tempered, and the rim of a spouted pitcher in a red-burnished ware, probably from Northern France (Fig. 22, No. 36; Table 6). The chalk-tempered sherd, the only one on the site, is from a large storage jar which has been burnt, giving it a distorted shape and vitrified outer surface. Most of the pottery in the well was found in the upper fill (120), which contained twenty-five sherds in association with a series V *sceat*, dating to AD 720-725. These comprise four Roman sherds; seven chaff-tempered; five sherds of SSSL; four of Ipswich-type ware including Fig. 21, No. 10 (Table 5); three North French, two black and one grey (Fig. 22, Nos 29, 33; Table 6), and one base sherd probably North French (NFSVB) but possibly Rhenish (Fig. 23, No. 41; Table 7). Other sherds recovered from the general fill of the pit include the rim of a very large ?North French grey ware jar (Fig. 22, No. 34; Table 6). Above this, layer (104) contained four chaff-tempered sherds and

one of SSSL; all sherds in fabric SSSL from the well appear to be from the same vessel.

Well (121) is one of the few features in which the amount of Ipswich ware (all coarse) and chaff-tempered ware is equal (eight sherds of each). The latter include Fig. 20, No. 6 (Table 4). The former, mostly with external sooting, include Fig. 21, Nos 11, 12; Table 5) and one sherd from a cooking pot with an incised cross (Fig. 21, No. 13; Table 5). One sherd of shell-tempered ware is also present. The burnt clay spread (106) which was cut by well (121) produced one sherd of chaff-tempered ware.

A total of five chaff-tempered sherds was recovered from the gully or beamslot (100). Pit (129), which cut feature (100), contained only two sherds, one of ?Surrey ware (SLGSC) and one chaff-tempered. Pit (130) (fill (131)), which cut pit (129), produced four chaff-tempered sherds (two joining), and two joining sherds from a North French black ware pitcher (Fig. 22, No. 30; Table 6).

The primary fill (127) of pit (126), which also cut feature (100), contained only two sherds of chaff-tempered ware; the upper fill (128) contained two chaff-tempered sherds, one possibly from Fig. 20, No. 4 (Table 4) (see pit (59)); ten of Ipswich ware (both fine and coarse), five of which derive from a large burnished fine ware pitcher (Fig. 21, No. 14; Table 5); one sherd of sand-tempered ware (burnt) and one non-local sherd (fabric SGFM), probably from the East Midlands.

Pit (133) contained one chaff-tempered sherd and four small fragments of ?Surrey ware (SLGSB). Postholes (71) and (134) each contained one chaff-tempered sherd.

Pit (135) contained eleven sherds: nine of

Table 7: (Fig. 23) Jubilee Hall: catalogue of Rhenish and French buff wares (by fabric; rim diameters in mm)

No.	Feature	Context	Fabric	Total sherds	Rim Diam.	EVE	Comments
38	Grave 39	40	NFSVA	1			INCS
38	Floor	51	NFSVA	1			INCS
38	Floor	51	NFSVA	1			INCS
38	Floor	51	NFSVA	2			INCS
38	Pit 57	57	NFSVA	1			INCS
38	Pit 59	59	NFSVA	1			INCS
39	Floor	51	NFSVA	1			Strap handle
40	Pit 59	62	NFSVA	1			Strap handle
41	Well 117	120	NFSVB	1			
42	U/S		BEARP	1			KNE; red-painted
43	Pit 28	29	BADOB	1			SEDI; WEKNE; red slip spots
44	Pit 154	155	BADOA/WALB	2	260	7	EROE

Ipswich-type ware (mainly fine), one sand-and-chaff-tempered, and one of early Badorf-type ware; these suggest that this is a 9th-century feature.

Pit (136) contained the base of a burnished red-ware jug or pitcher from Northern France or Belgium (Fig. 22, No. 37, very similar to No. 36; Table 6).

Pit (140) layers (141), (142), a possible cesspit, produced twelve sherds: eight chaff-tempered, two of SSSL, one shell-tempered and one North French grey ware from a vessel which may have had vertical bosses in the style of the Maiden Lane urn (Fig. 28, No. 56; Table 12). The chaff-tempered sherds include a rim sherd, from a small vessel which probably had perforated lugs on the rim (Fig. 20, No. 7; Table 4).

#### *Pottery from features outside the main excavation area.*

Well (150) (fill (152)) contained only two sherds of chaff-tempered ware from the same vessel.

Pit (153) contained two chaff-tempered sherds, one with oxidised internal surface, one with additional sand, and one sherd of Ipswich fine ware.

The fill (156) of pit (154) contained four sherds of chaff-tempered ware; the pit-lining (155) produced part of a small bag-shaped pot in a fine sandy fabric, possibly from Surrey (Fig. 22, No. 25; Table 6) which is very similar to a small jar found on the site of the Savoy (see p. 82), and part of a jar in early Badorf-type ware (Fig. 23, No. 44; Table 7), which suggest a late (9th-century) date for this feature.

Pit (157) contained two joining sherds of Ipswich ware (Fig. 21, No. 15; Table 5); pit (158) (fill (160)), which cut pit (157), produced nineteen sherds, of which sixteen are of Ipswich ware, one is of North French black ware and two are chaff-tempered. The Ipswich wares include sherds from a number of different cooking pots and pitchers (Fig. 21, Nos 16–21; Table 5) including one with stamped decoration of opposing triangles (Fig. 21, No. 16; Table 5; see p. 86).

Pit (161) contained only one sherd of chaff-tempered ware. Pit (162) produced twenty-two sherds, two chaff-tempered from the lower fill, and twenty assorted wares from the upper fill, of which seven (including Fig. 20, No. 8; Table 4) are of Ipswich fine ware. Eight sherds from the same vessel are shell-tempered (Fig. 22, No. 27; Table 6), one is sand-tempered, and six are chaff-tempered.

Pit (163) contained one sherd of Roman pottery.

Feature (164) contained three sherds of sand-and-chaff-tempered ware, possibly from Surrey.

The unstratified material includes one sherd of North French/Belgian ware (Fig. 22, No. 35; Table

6), and one sherd of Beauvais red-painted ware (Fig. 23, No. 42; Table 7).

## MAIDEN LANE. THE STRATIGRAPHIC DISTRIBUTION OF THE POTTERY

### Introduction

The excavations at Maiden Lane produced a total of 724 sherds (12.217kg, 5.90 EVEs) of which forty-seven are prehistoric or Roman and five are medieval or post-medieval. The Saxon material includes twenty-five unstratified sherds.

As at Jubilee Hall, Ipswich wares are clearly dominant by weight, but chaff-tempered wares are the most common in terms of numbers, with thirty-eight chaff-tempered rim sherds to only fifteen Ipswich ware rim sherds. The chaff-tempered sherds however are generally small (282 sherds weigh 10g or less, 61 sherds weigh between 10–15g), although a few larger sherds are present, with sherd weights rising to 99g. The Ipswich wares are generally larger and heavier, with most over 10g; the heaviest sherd is 205g. The imports occur in approximately the same proportions as at Jubilee Hall in terms of sherd counts, but the weight of the North French wares is distorted by the near complete urn (Fig. 28, No. 56; Pl. 5), which weighs *c.* 2kg. The distribution of the pottery is discussed according to the stratigraphic sequences in the different areas of the site. The assemblage is summarised in Table 1. The fabric codes are listed in the Key on p. 83.

### *Area A.*

The pottery in this area comprises mainly chaff-tempered wares (47 sherds), of which eleven, probably from the same pot, have distinctive quartz grits (fabric CHFQ). Four of these sherds were found in two of the earliest postholes, (171) and (172) (two sherds in each); one sherd was found in gully (180), and three in pit (182), one of which joins with a sherd from pit (181). Two sherds were found in layer (184), which sealed these features, and one in pit (185) which cut this layer.

The other chaff-tempered wares were scattered throughout a number of features. Sherds of interest include a sherd of sand-chaff-tempered ware from pit (185) (Fig. 24, No. 1; Table 8), decorated with a comb or roulette stamp, apparently with four teeth (Briscoe category N1b); a very small jar (Fig. 24, No. 2; Table 8) from pit (177) fill (178); and two small cooking pots or jars (Fig. 24, Nos 3 and 4; Table 8) from slot (191) and gully (180). Stratigraphically the earliest sherd is a jar or cook-

ing pot with roughly wiped surfaces from posthole (171) (Fig. 25, No. 25; Table 9). Pit (177) also contained one sherd of Roman pottery and one sherd of limestone-tempered ware (SSSL), two further sherds of which were found in layer (184).

Layer (186) contained one sherd of 16th- to 17th-century Border ware, presumed intrusive.

The deposits in the northern part of Area A produced only two sherds of chaff-tempered ware, including a small cooking pot or jar (Fig. 24, No. 11; Table 8) from layer (198).

One of the latest features in Area A is pit (199), which probably dates to the late 8th or 9th century. The fills between the edge of the pit and the lining, (201) and (203), produced one abraded sherd of Ipswich coarse ware, two chaff-tempered sherds and one sand-tempered. In the main fill (206) were one sherd of sand-chaff-tempered ware, one of Ipswich coarse ware, and one of Pearly Badorf-type ware with an applied thumbed strip (Fig. 27, No. 55; Table 11) from an amphora or wine jar (see p. 92). Another late feature is pit (210), layers (211) (212), which produced three sherds of Ipswich ware.

An unusual sherd from a post-medieval pit (not published) in Area A, appears to be from a ?hand-made costrel or bottle (Fig. 27, No. 49, fabric

SSANC; Table 11). The upper part of the body has an irregularly grooved surface, but whether this was intended as decoration is unclear. A similar ware has been found on the Peabody site, and this may be a residual Saxon sherd (see above).

#### Area B.

The northern part of the site was the richest in terms of ceramic finds, but the distribution of the pottery varies greatly: several features have only one or two sherds, and most have less than twenty, while 198 sherds were found in ditch (292). The features cut by the ditch produced 255 sherds, in addition to many sherds and flakes from a near complete North French grey ware urn found in pit (267) (see below). A further seventy-five sherds were recovered from the isolated pits and stake-holes in this area.

Pit (214) contained twenty sherds. Of these, sixteen were in the lower fill (215), which also contained some unfired ?potter's clay. With the exception of one sherd of Roman pottery and one of North French black ware in fill (215), and one of North French grey ware in the upper fill (216), all the pottery is chaff-tempered.

Pit (220) produced fourteen sherds, including chaff-tempered ware and a number of flakes from

Table 8: (Fig. 24) Maiden Lane: chaff-tempered wares (by fabric; rim/base diameters in mm)

No.	Area	Feature	Context	Fabric	Total sherds	Rim diam.	EVE	Comments
1	A	Pit 185	185	CHFS	1			Comb stamp
2	A	Pit 177	178	CHFI	1	80	10	Part OXD
3	A	Slot 191	191	CHAF	1	100	9	WEWI
4	A	Gully 180	180	CHAF	2	130	5	WEWI
5	B	Ditch 292	323	CHSF	1	110	5	SME; WI
6	B	Layer	285	CHFS	1	140	6	WEWI
7	B	Ditch 292	313	CHFS	1	120	6	SME; WI
8	B	Ditch 292	313	CHAF	4	130	7	SE, WEWI
9	C	Layer	344	CHFS	2	100	7	Perf lug
10	C	Layer	337	CHAF	1	150	6	SI, SME; WI
11	A	Layer	198	CHAF	1	100	11	SE, WEWI
12	B	Pit 221	229	CHFS	1	100	25	SE, WEWI
13	B	Pit 221	230	CHAF	3	140	14	SIDI(W), WEWI
14	C	Layer	337	CHAF	1	140	7	SE, SME; WI
15	D	Layer	365	CHAF	1	140	6	WEWI
16	C	Layer	340	CHAF	2	110	24	SMESMI
17	B	F. 247	249	CHAF	1	120	9	SME; WI
18	C	Layer	343	CHAF	1	140	8	SMI, BUR
19	C	Layer	341	CHAF	1	140	7	SI, SMI, BUR
20	B	Pit 237	241	CHAF	1	120	18	Laminated, WE; EROI
21	B	Ditch 292	323	CHFS	1	100	5	SME; ABRI
22	C	Layer	337	CHFS	1	100	14	DI, WEWI

Table 9: (Fig. 25) Maiden Lane: Chaff-tempered wares (by fabric; rim diameters in mm)

No.	Area	Feature	Context	Fabric	Total sherds	Rim diam.	EVE	Comments
23	B	Pit 237	241	CHAF	1	160	10	SMESMI
24	C	Layer	339	CHAF	1	180	7	SMESMI
25	A	PH 171	171	CHAF	1	200	13	WEWI
26	B	Pit 261	264	CHFS	1	240	10	WE; ABRI, OXD EXT
27	C	Layer	344	CHAF	1	240	8	WEWI; ABRI
28	C	Layer	339	CHAF	1	220	9	SME; WI
29	B	Pit 267	268	CHAF	1	300	6	SME; ABRI

a wheel-thrown vessel with cordons in a fine sandy oxidised ware, probably a variant of the North French grey wares (NFGWD).

Only three of the many fills in Pit (221), fills (228)–(230) contained pottery, a total of thirteen sherds in all. With the exception of one small knife-trimmed base sherd of Badorf-type ware in fill (229) (Fig. 27, No. 54; Table 11), and one of North French grey ware with vertical burnishing, all the pottery is chaff-tempered or sand-and-chaff-tempered; these wares include a small thick-walled jar or cooking pot and a bowl (Fig. 24, Nos 12, 13; Table 8).

Layers (235) and (236) which sealed a group of stakeholes, together produced nine sherds including chaff-tempered ware and four joining sherds of residual Alice Holt grey ware from layer (235).

The features cut by the ditch and the ditch itself produced the best ceramic sequence on the site, which benefits from the coin date from pit (261).

Pit (237) appears to have been open in the late 8th or 9th century. The pit contained forty-one sherds, of which twenty-seven, all chaff-tempered, were found in the lowest fill (240). The next fill, (241) contained three chaff-tempered sherds including an unusual base sherd with finger impressions showing how the footing was formed by pinching around the base angle (No. 20), which again appears to be a late form; and a bowl or jar (Fig. 25, No. 23; Table 9). The subsequent fill (242) contained no pottery, but the next deposit (243) contained one sherd of shell-tempered ware and two chaff-tempered sherds. The pottery from the upper fill (244), is different from that in the preceding deposits, with two abraded Roman sherds, no chaff-tempered ware, and six sherds of Ipswich ware, including one from a burnished jar or pitcher, and two with stamped impressions (Fig. 26, Nos 41, 42; Table 10). However, as the stamps are plain circles which could have been made with

Table 10: (Fig. 26) Maiden Lane: Ipswich wares (by fabric; rim diameters in mm)

No.	Area	Feature	Context	Fabric	Total sherds	Rim diam.	EVE	Comments
30	B	Pit 261	266	IPSM	1	180	13	DI(Y), WEWI
31	B	Ditch 292	318	IPSM	1	160	8	
32	B	Pit 261	265	IPSM	1	160	4	SE
33	B	Ditch 292	316	IPSC	1	210	12	OXD INT EXT
34	B	Ditch 292	306	IPSM	1	160	10	
35	B	Ditch 292	306	IPSF	1	220	8	
36	A	Pit 210	211	IPSC	1	200	5	RDCD EXT
37	A	Pit 261	266	IPSC	1	170	13	WEWI
38	B	Ditch 292	318	IPSM	1	160	12	
39	B	Pit 261	266	IPSM	1	280	18	WEWI
40		U/S		IPSC	2	100	35	SE, WEWI
41	B	Pit 237	244	IPSM	1			WI, STAM, OXD BURE WI, STAM, RDCD BURE
42	B	Pit 237	244	IPSM	1			
43		U/S		IPSF	6	300	9	
44	B	Pit 261	265	IPSC	3	240	9	SESI, WEWI
		Pit 261	266		1			

any tubular object, they cannot be usefully paralleled or dated. This type of stamp falls into Briscoe category Albi.

Pit (246) produced one sherd of sand-and-chaff-tempered ware.

The fill (248) of the sub-rectangular cut feature (247) contained thirteen sherds of chaff-tempered ware, including many joining base sherds. The two dumped deposits (249) and (250) contained two and thirty-nine sherds respectively, which with the exception of four sherds of sandy-gritty ware, are all chaff-tempered. These include a small jar with an unusual flat-topped rim (Fig. 24, No. 17; Table 8) and a number of sherds from (250) which join to form a substantial part of the base and wall of a large cooking pot, probably the same vessel as that found in (249).

Pit (251), which cut these layers, contained eighteen sherds: one Roman, the rest chaff-tempered, with several joining sherds from the same vessel in the second fill, layer (253).

Layer (260), which was cut by pit (261), contained one sherd of sand-and-chaff-tempered ware.

Pit (261) produced seventy-four sherds, most of which were found in the upper fills (265) (twenty-four sherds) and (266) (thirty-two sherds). Joining sherds between these upper fills indicate that they were deposited in close succession. The distribution of the fabric types is similar to that in pit (237). The lower fills (262)–(264) contained Roman pottery,

chaff-tempered wares, one sherd of SSFL, and a few small sherds of North French blackware, but no Ipswich ware. The chaff-tempered wares include the rim of a large jar, apparently copying an Ipswich ware form (Fig. 25, No. 26; Table 9). In the next fill (265), chaff-tempered ware and Ipswich ware (which includes part of Fig. 26, No. 44; Table 10) each account for approximately one third of the pottery; other wares comprise one sherd of Roman date, one of ?Kentish sandy ware, two sherds of shelly ware and one North French and one of fine Badorf-type ware, from the same vessel as that found in ditch (292). In the upper fill (266), the distribution of the wares is reversed, and 87.5% of the pottery is of Ipswich-type, including both small and large cooking pots/jars (Fig. 26, Nos 30, 32, 37, 39; Table 10) with one probable storage jar (Fig. 26, No. 44, joining sherds from (264) and (265) (Table 10)). Minority wares comprise two sherds each of chaff-tempered and shell-tempered ware, one of coarse Badorf-type and one with both organic inclusions and crushed Roman ware (the only one of its kind on the site). These were found together with a coin of Coenwulf (AD 796–805), which clearly dates this feature to *c.* AD 800 or later.

The material from the pre-ditch features includes the most spectacular find from the excavation, a near complete North French grey ware urn found in the lowest fill (268) of pit (267) (Fig. 28; Pl. 5;

Table 11: (Fig. 27) Maiden Lane: non-local and imported wares (by fabric; rim diameters in mm)

No.	Area	Feature	Context	Fabric	Total sherds	Rim diam.	EVE	Comments
45	B	Ditch 292	323	SSANB	1	180	8	WEWI
46	D	Layer	369	CHF1/ SLGSB	11	90	42	WEWI; Vert grooves
	D	Layer	365		1	90	18	
		U/S			1			
47	D	Layer	376	SLGSA	1	120	10	DEDI
48	B	Ditch 292	316	SSFL	2			
			318		2			
			313		4	140	15	SME; WI
			310		2	140	10	
			307		1			
49	A	U/S		SSANC	1			WEWI, INCS
50	B	Layer	285	NFGWE	3			SME
51	B	Ditch 292	323	NFBWC	1			
52	B	Ditch 292	318	NFEB	1	160	15	BUR
53	B	Ditch 292	318	BADOB	1			KNE; WEWI
54	B	Pit 221	229	BADOB	1	60	25	SI; KNE; WEWI burnt?
55	A	Pit 199	206	BADOB	1			ABR; thumbd strip; ?burnt

Table 12). The upper body of the urn is both burnished and elaborately decorated with slight vertically elongated bosses at intervals, over which is an interlocking and repeating design of stamped segmented arcs, both standing and inverted (Briscoe category G2c). The burnishing has caused the already laminated fabric to spall, and many flakes from this vessel were recovered by sieving the fill of this pit. Sherds with very similar stamped decoration have been found at the Peabody site, at Barking (Redknap pers. comm.) and at Fishergate, York (Mainman, pers. comm.).

Also found in fill (268) was part of a very large chaff-tempered bowl or storage jar with a heavy flat-topped rim and burnished surfaces (Fig. 25, No. 29; Table 9), which appears to be a developed late chaff-tempered form, and two sherds of mixed grit-tempered ware (fabric MSFG); a third sherd was also found in the subsequent fill (269). The three other sherds from this pit were all of chaff-tempered ware. Pit (267) is one of the earlier features in this area, but it is suggested that it is of later 8th-century date.

Fill (281) of pit (279), which cut pit (267), contained only two sherds, one of Ipswich coarse ware, and one of burnished North French grey ware from a vessel very similar to the urn.

The two metallised surfaces (285) and (286) contained eleven and seven sherds respectively, some joining; all are chaff-tempered (including Fig. 24, No. 6; Table 8) apart from two sherds of sandy-gritty ware from (286), and three from a small North French grey ware jar from (285) (Fig. 27, No. 50; Table 11). This has a biconical profile and corrugated upper body in the Merovingian tradition, and would appear to be of 6th- or 7th-century date.

Fill (291) of ditch (287) contained only two sherds, one chaff-tempered, and one small chip of fine Badorf-type ware. The main ditch (292), which is probably of mid 9th-century date, produced a total of 198 sherds (3.26kg).

The pottery from the lower fills of the ditch includes one prehistoric sherd from a lower fill (296), five sherds from a fine Badorf-type ware amphora (also found in pit (261)), and flakes derived from the urn in pit (267), which was cut by the ditch. Ipswich ware is absent from the

primary fills in ditch (292), but is present in almost every layer above (302); all other wares, including Roman pottery (nineteen sherds), are distributed throughout, and sherds from the same pots (eg. Fig. 27, No. 48; Table 11) frequently occur in different layers. This is the only feature in which Ipswich ware (seventy-four sherds) is more abundant than chaff-tempered ware (fifty sherds). The latter include a range of small cooking pots/jars (Fig. 24, Nos 5, 7, 8, 21; Table 8). The Ipswich wares (mainly coarse), include a number of medium-sized cooking pots/jars (Fig. 26, Nos 31, 33–35, 38; Table 10). Non-local fabrics include: three sherds of shell-tempered ware, two sherds possibly from Surrey, a fine micaceous ware with sparse flint grits (eleven sherds Fig. 27, No. 48; Table 11), three types of sand-tempered ware (four sherds including Fig. 27, Nos 45 and 49; Table 11), and one sherd of coarse gritty ware (fabric SGFM) possibly from the East Midlands. Imports comprise fifteen sherds of North French pottery, both grey and black, including a base sherd (Fig. 27, No. 51; Table 11), a grey-ware strap handle, and part of a burnished strap-handled jug from Northern France/Eastern Belgium (Fig. 27, No. 52; Table 11), and thirteen sherds of Badorf-type ware (BADOB), including seven from the vessel noted above, and a base sherd (Fig. 27, No. 53; Table 11).

The upper fill of the ditch, layer (323), contained two sherds of medieval pottery and a fragment of field tile.

#### Area C.

This area was less productive than Area B, with most pottery coming from the dumps in the depression (332). The earliest features produced only one residual sherd from a Verulamium ware flagon (from pit (327)). Pit (329) contained three sherds of chaff-tempered ware.

Most of the fifty-nine sherds found in the depression came from the middle fills (339) (twenty-seven sherds) and (340) (twenty-five sherds), with a few joining sherds from the different deposits. The bulk of the pottery (forty-eight sherds) is chaff-tempered, including two sherds with an iron-rich fabric, and eleven with additional sand. The latter include three sherds from a small vessel with a

Table 12: (Fig. 28) Maiden Lane: north-French ware (by fabric; rim diameters in mm)

No.	Area	Feature	Context	Fabric	Total sherds	Rim diam.	EVE	Comments
56	B	Pit 267	268	NFGWD	—	156	85	ROUL; BUR

perforated lug(s) (Fig. 24, No. 9; Table 8), and a flat base sherd (Fig. 24, No. 22; Table 8). The standard chaff-tempered wares include a cooking pot/jar (Fig. 24, No. 10; Table 8), a bowl (Fig. 24, No. 14; Table 8), a necked jar (Fig. 24, No. 16; Table 8), and two rims (possibly from the same vessel) from a bowl or jar with an unusual closed rim form (Fig. 24, Nos 18, 19; Table 8). Larger pots include cooking pots/jars (Fig. 25, Nos 24, 27; Table 9), and a probable storage jar with a closed form (Fig. 25, No. 28; Table 9). Other wares comprise seven sherds of Roman pottery, two sherds of limestone-tempered ware, one shell-tempered sherd and one sherd of burnished North French grey ware. Pit (349), which cut through layer (337) in the depression, contained only five sherds of chaff-tempered ware.

#### Area D.

The earliest feature, stakehole (354) contained only two sherds, one chaff-tempered, and one burnt sherd of micaceous sand-tempered ware.

Three of the dumps over this (364) (365) (369) yielded thirty-one sherds of chaff-tempered ware, of which twenty-six came from layer (369). These include Fig. 24, No. 15 (Table 8), and twenty-three sherds from a jar or bottle (Fig. 27, No. 46; Table 11) decorated with panels formed by shallow vertical grooves at regular intervals around the pot; although in a heavily chaff-tempered iron-rich fabric this may be a Surrey product.

The later dumps (373) (374) (376) (379) contained twenty-two sherds, thirteen of which were found in (376): With the exception of one sherd of North French black ware, and two small sherds of sandy-gritty ware, all the pottery is of chaff-tempered type, with three sherds of sand-and-chaff-tempered ware and one possibly from Surrey (Fig. 27, No. 47; Table 11).

## DISCUSSION

### Dating

Dating the pottery from these sites is difficult for several reasons:

1. The geographical dispersion of the key sites, Southampton, Canterbury, London, Ipswich, York, each of which has its own local pottery and a different range of non-local material.
2. The lack of good published sequences. In London, *Hamwic* (Timby 1988, 111) and York (Mainman, pers. comm.) most pottery comprises single sherds from different vessels and most comes from stratigraphically discrete features; the best sequences are those at Canterbury (eg Wilson 1983; Tatton-Brown and Mac-

Pherson-Grant 1985), many of which are still being analysed.

3. The difficulty of distinguishing between contemporary and redeposited material if the latter is not noticeably abraded.
4. The longevity/curation of the imported finer wares.
5. Different functional uses of different wares which may have affected their distribution within the settlement.
6. Personal preferences of the occupants of the settlement for different wares (see also Timby 1988, 111).

Nonetheless, some general observations have been made on the Middle Saxon ceramic chronology, against which the London evidence, as it is currently understood, may be compared.

Chaff-tempered ware appears to have continued in use from the later 5th century to the 9th century. It is the dominant ware at Early-Middle Saxon sites such as Mucking and West Stow, and seems to have been most popular in the 7th century, but in most areas was superseded by other fabrics in the later 8th century. On the evidence from Portchester and from *Hamwic* available at the time, Cunliffe (1970, 72–3) suggested that chaff-tempered wares had probably been abandoned in favour of the gritty wares by the mid 8th century. The same conclusion was reached by Hodges (1981, 46) and by Timby (1988, 111), who suggests that there is a transition from thick-walled vessels in the Early Saxon tradition with a dense organic temper to a much finer, sandier fabric. In Canterbury it appears that this ware was declining by the late 7th century, and that it had virtually disappeared by c. AD 725, being replaced by more sandy local wares (MacPherson-Grant, pers. comm.). In Ipswich the situation is rather different, and chaff-tempered ware disappears in the very early 7th century.

Ipswich ware is conventionally dated to c. AD 650–850. This ware was widely distributed along the East Coast, reaching as far as York, where it occurs in small amounts from c. AD 700 onwards at Fishergate (Mainman, pers. comm.). Ipswich ware is present on a very small scale in some late 7th-century groups in Canterbury, but is most common there from c. AD 775–850 when it accounts for up to c. 40% of the pottery recovered (MacPherson-Grant pers. comm.). The ware has been found on many sites in East Anglia and in the Lower Thames Valley, and also occurs in Aylesbury (Bucks), and Winchcombe (Glos.). The *Hamwic* collection also appears to include some Ipswich-type ware, although this remains to be confirmed.

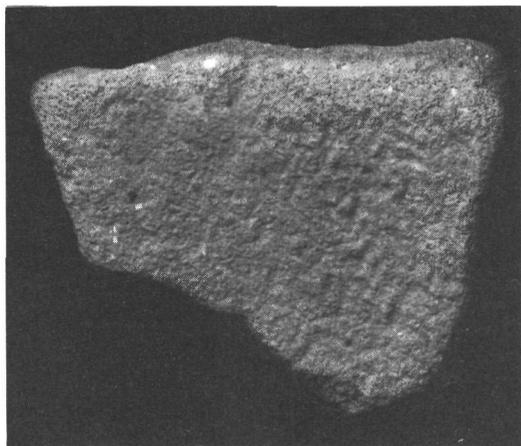


Plate 4. Maiden Lane: Textile impression on a sherd of Ipswich fine ware.

Of the non-local wares, most occur in such small amounts and with such regional clustering that inter-site comparisons are not easy. At present the shell-tempered wares appear to be the most useful for dating purposes in Southern England. At Canterbury a few shell-tempered wares have been

found in contexts dating to the period *c.* AD 450–750, but these are rare and some may be late or sub-Roman; it is not until the second quarter of the 8th century that they become more common. At *Hamwic* also shell-tempered pottery is more frequent in the upper fills of features, being found together with the mixed grit wares which by then may account for up to 50% of the later pottery (Timby 1988, 114). Shell-tempered wares continue throughout the entire Saxon sequence in Canterbury, albeit on a very small scale, but become more common in the second quarter of the 8th century.

The imports should offer a better means of comparing the trends on different sites, but here again regional patterns prevail. At *Hamwic* there is a much stronger bias towards Northern France than the Rhineland, whereas in York a wider range of Rhenish wares is present. In Canterbury (Wilson 1983, 232) and London pottery is coming in from both areas, although the distributions may vary on different sites and with time. At *Hamwic* it has been suggested (*ibid.*, 114) that the North French black wares are more common in the earlier deposits, while the grey wares and white wares such as Beauvais are more common in the later Middle Saxon groups.

Badorf-type ware certainly occurs in England in the first half of the 9th century, but whether it

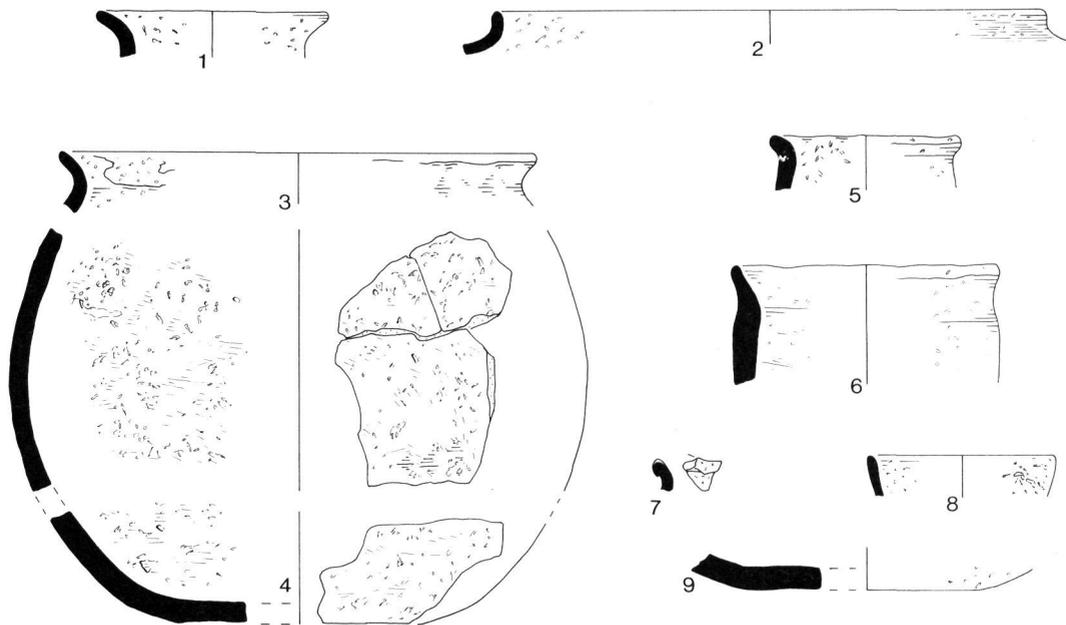


Fig. 20. Jubilee Hall: The chaff-tempered wares.

was imported before this is not certain; it is not impossible that it was reaching England in small quantities from *c.* AD 750. At Dorestad it was suggested that production of relief band amphorae in the classic later Badorf fabric, formerly thought to date to *c.* AD 825, may have started in the second half of the 8th century, and that the rouletted jars were of a similar date (Van Es and Verwers 1980, 68; 77–8).

#### The London Sequence

The ceramic distribution at Jubilee Hall and Maiden Lane may be summarised as follows.

Chaff-tempered pottery is scattered across both sites, although the main concentration at Jubilee Hall was in the area of pit (59). At Maiden Lane the lower fill of pit (237) contained twenty-seven chaff-tempered sherds, pit (214) contained eighteen sherds and pit (251) contained seventeen sherds; forty-nine sherds were found in ditch (292) and eighteen in pit (261), ten of which were in the upper fills. Most other features on both sites contained less than five sherds of chaff-tempered ware. Ipswich wares have a more limited distribution. At Jubilee Hall, with the exception of one sherd in pit (153), Ipswich-type wares were found only to the east of an imaginary north-south line



Plate 5. Maiden Lane: The North French bossed and stamped jar (height *c.* 300mm). (Photo: Museum of London, Jon Bailey).

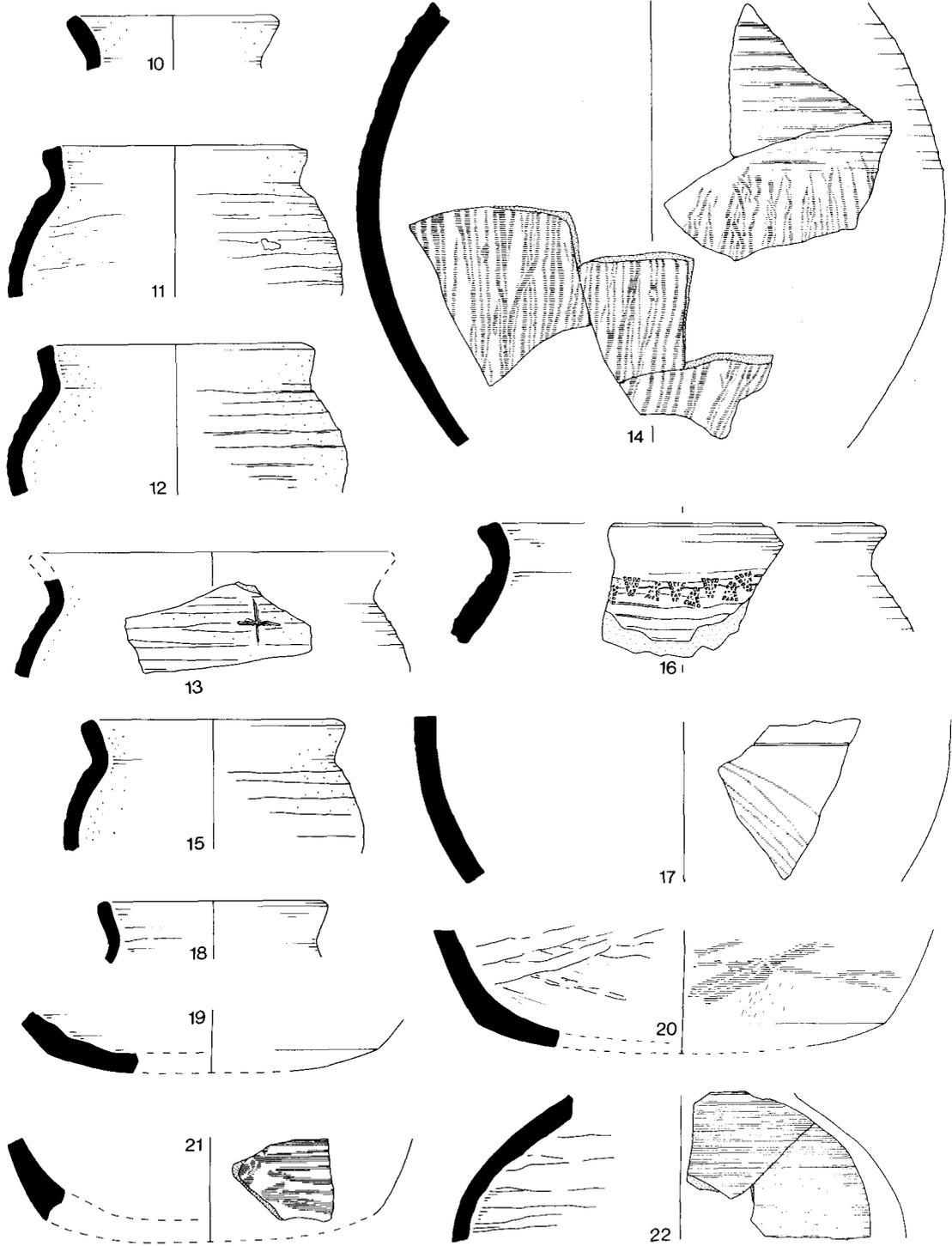


Fig. 21. Jubilee Hall: The Ipswich wares.

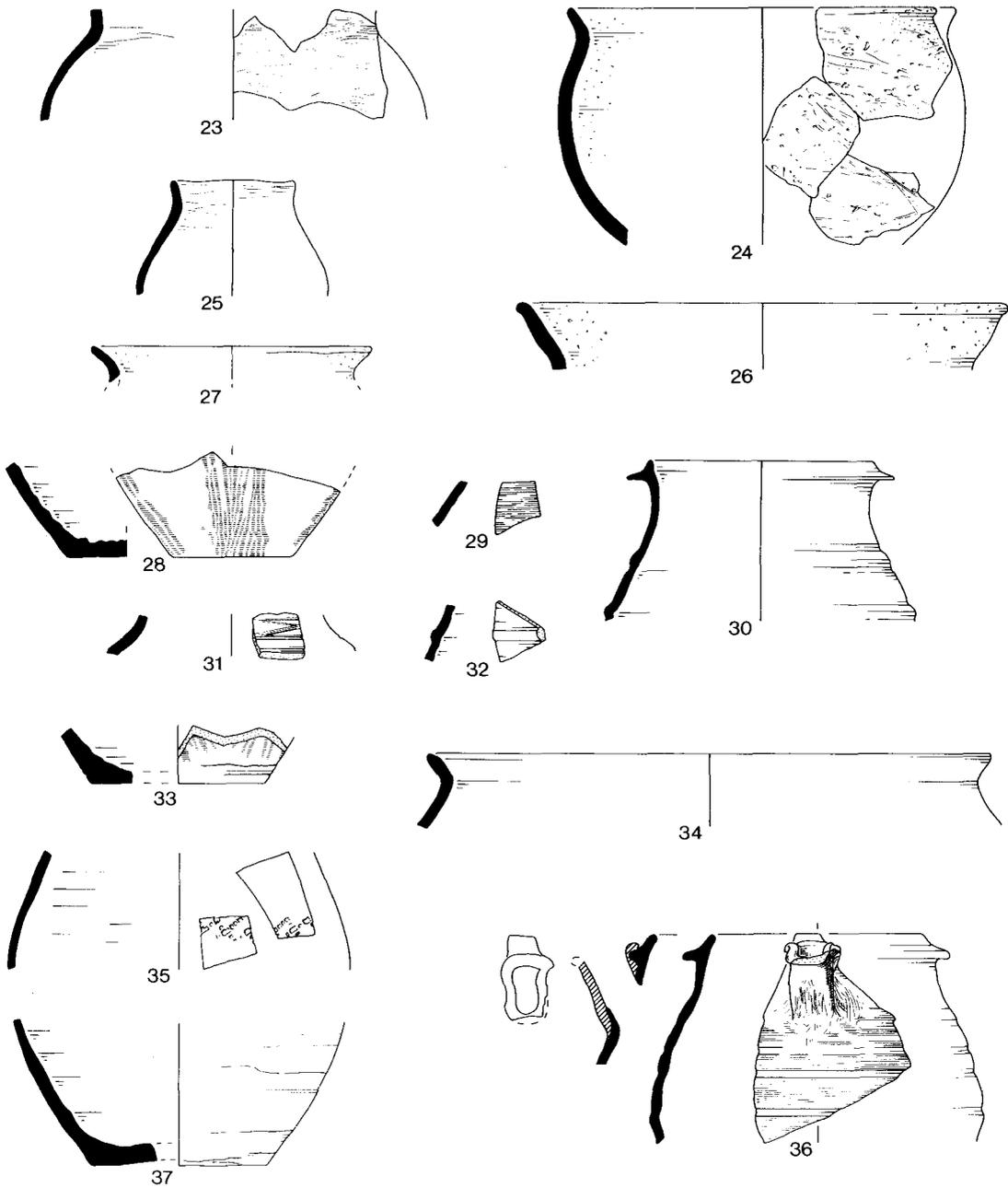


Fig. 22. Jubilee Hall: Non-local and imported pottery (Nos. 23-25 ?Surrey; Nos. 26-27 shell-tempered; Nos. 28-31 North French black ware; Nos. 32-34 North French grey ware; No. 35 North French/Eastern Belgian; Nos. 36-37 North French red burnished ware).

which roughly bisects the site. On both sites Ipswich-type ware only occurs in features which cut other features, and/or in the upper fills of pits or wells which have more than one layer, suggesting that these may have been left partially filled, or that slumping has occurred. Two such features have associated coin dates; that from well (117) at Jubilee Hall (a series V *sceat* dated *c.* AD 720–725) may be residual, but the presence of a coin of Coenwulf (AD 796–805) is important for establishing an approximate date for pit (261) at Maiden Lane and for the ditch cutting this pit (one of the few features on this site where Ipswich pottery is the dominant ware). Shell-tempered wares are more limited but follow the same pattern as Ipswich ware. North French black and grey wares occur in all areas, and it is not possible as yet to test the *Hamwic* evidence with this material. However, Seine Valley ware (NFSVA) is usefully dated to the mid 7th century by association with the C-14-dated burial, while Badorf-type ware is clearly confined to the later features.

This confirms the hypothesis (Vince 1984b, 433; 1990, 98–9) that there are two main ceramic phases. The first (pre-Ipswich ware) phase perhaps

dates from the 7th century to *c.* AD 750; the second, with Ipswich ware, from *c.* AD 750–850. Chaff-tempered wares are still well-represented in these apparently later groups, and the residuality factor is unclear since certain forms from Maiden Lane are quite developed (perhaps copying Ipswich wares), and may be contemporary with the deposits in which they are found. If so this suggests that these features may date to the mid 8th century, and that there is some overlap of the two 'ceramic phases'. The current absence of the North French/Low Countries trellis burnished pitcher, which occurs in later 9th- and 10th-century deposits in Canterbury (Wilson 1983, Fig. 97, No. 325), and which has been found within the City of London, is of interest, and lends support to a mid 9th-century end date for the Strand settlement.

While remembering that the absence of Ipswich ware or other fabric types in features may reflect factors other than chronology, it would appear that the following features on each site (and thus all those that cut them) belong to the second ceramic phase (MSS = Middle Saxon shelly; IPS = Ipswich-type; BADO = Badorf-type; BEAV, BEARP = Beauvais):

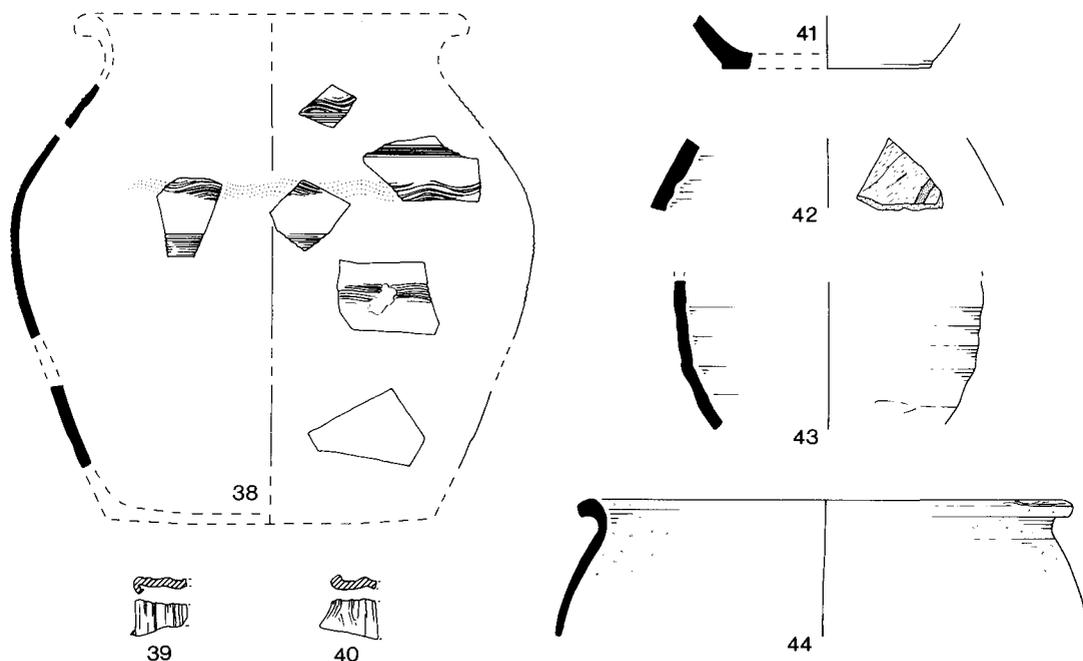


Fig. 23. Jubilee Hall: The imported pottery (Nos. 38–42 North French white wares; No. 43–44 Badorf-type).

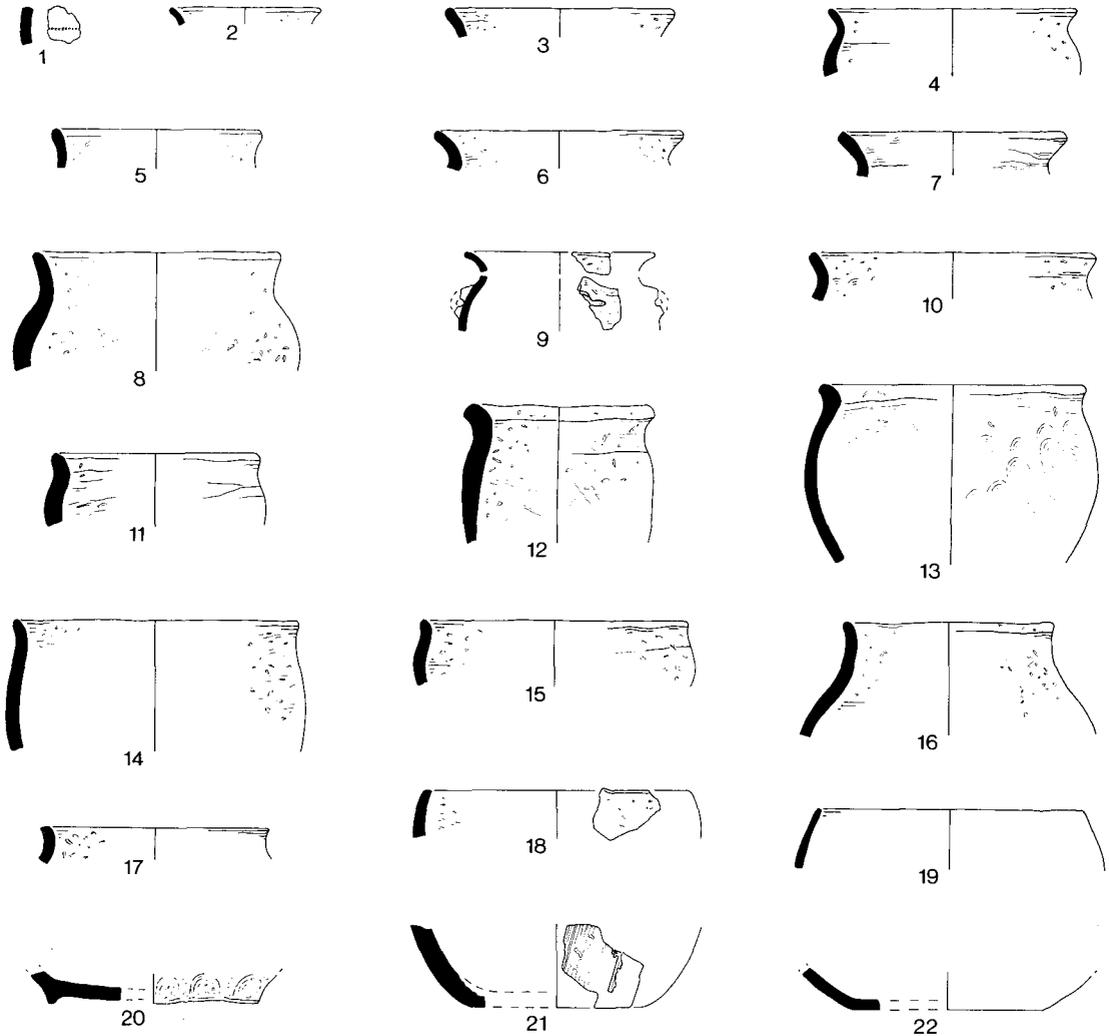


Fig. 24. Maiden Lane: The chaff-tempered wares.

Jubilee Hall: pits (140) (111) (MSS); pit (57) (MSS, handled comb); pit (126), well (117) (IPS: upper fill; *sceat*); pit (153) (MSS, IPS: upper fill); pits (157) (IPS); pit (162), well (121) (MSS, IPS); pit (135) (IPS, coarse BADO); pit (154), posthole (54) (coarse BADO); pit (28) (BADO).

Maiden Lane: pits (237), (261) (MSS, IPS: upper fill); pits (210), (279) (IPS) pit (221) (BADO middle fill); ditch (287) (BADO) pit (199), ditch (292) (IPS, BADO amph).

To conclude, this study has formed a good basis on which to develop future fabric analysis and classification in the London area. However, the numbers of sherds in most fabric groups is small, while the bulk of the material is derived from stratigraphically isolated features. Only when more sites with a better stratigraphic sequence have been excavated will it be possible to answer the many questions currently posed regarding residuality, and the currency and quantity of different wares at different times.

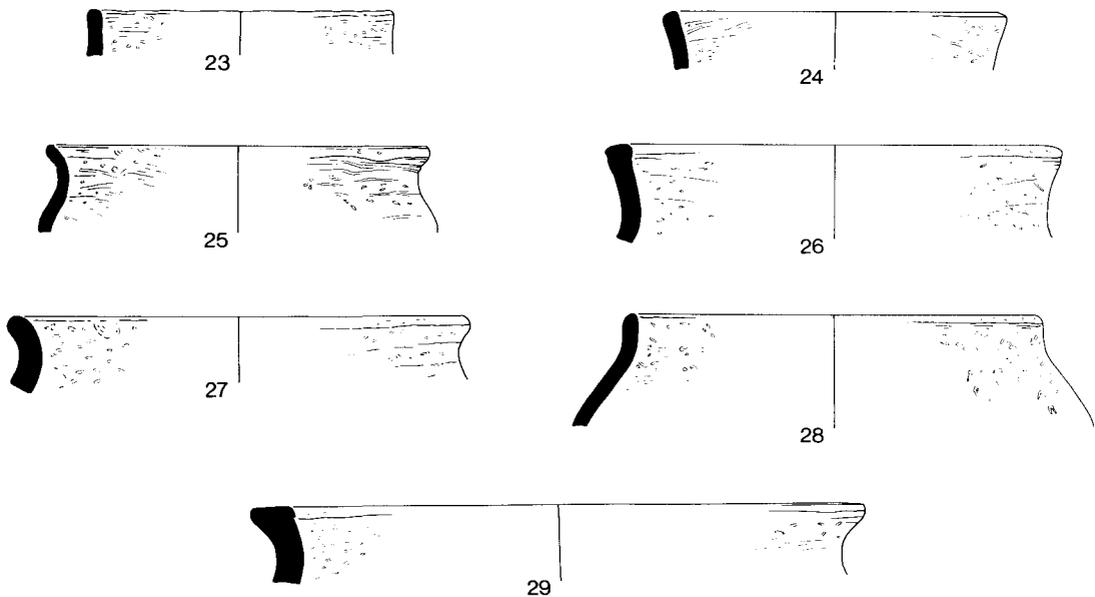


Fig. 25. Maiden Lane: The chaff-tempered wares.

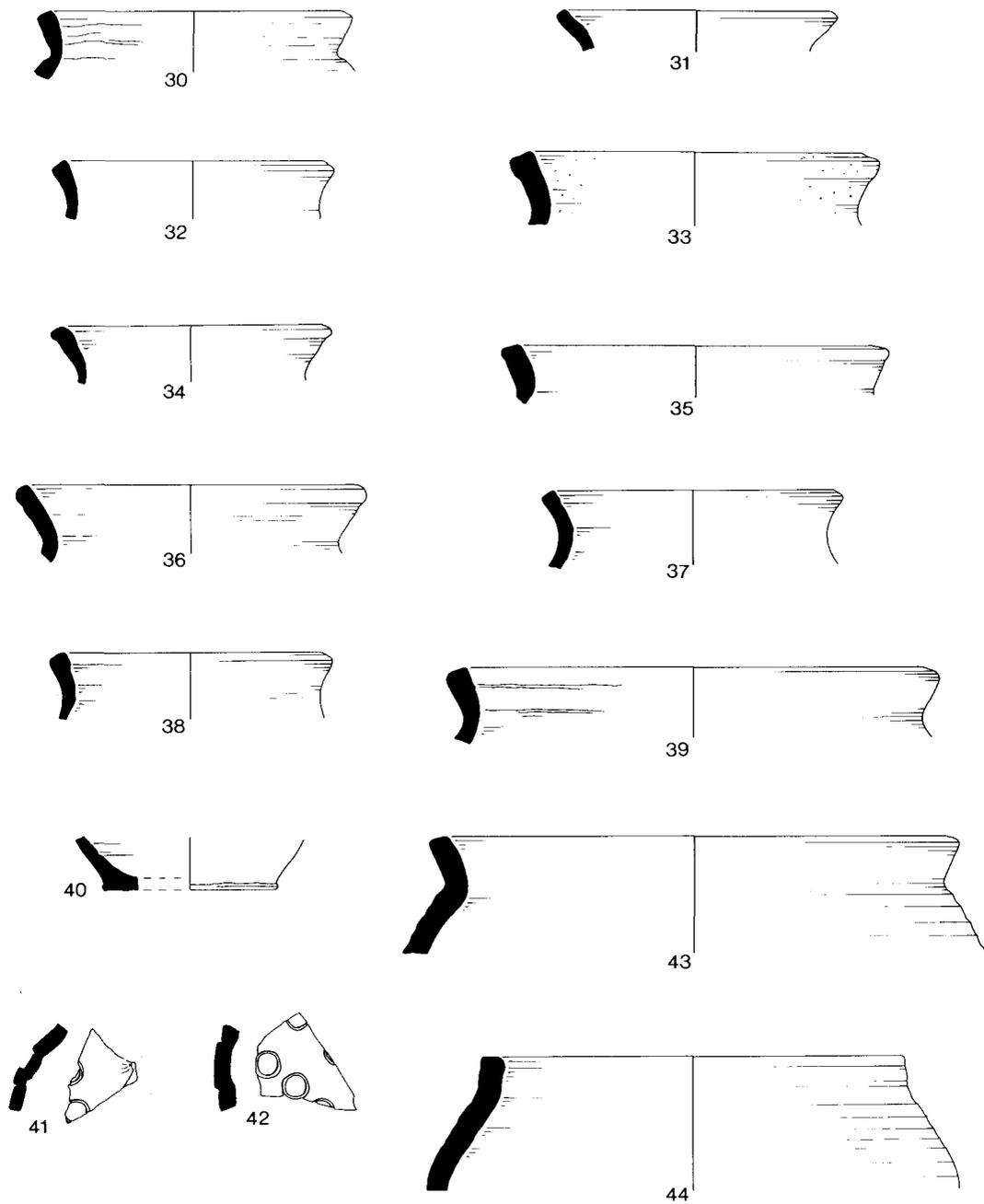


Fig. 26. Maiden Lane: The Ipswich wares.

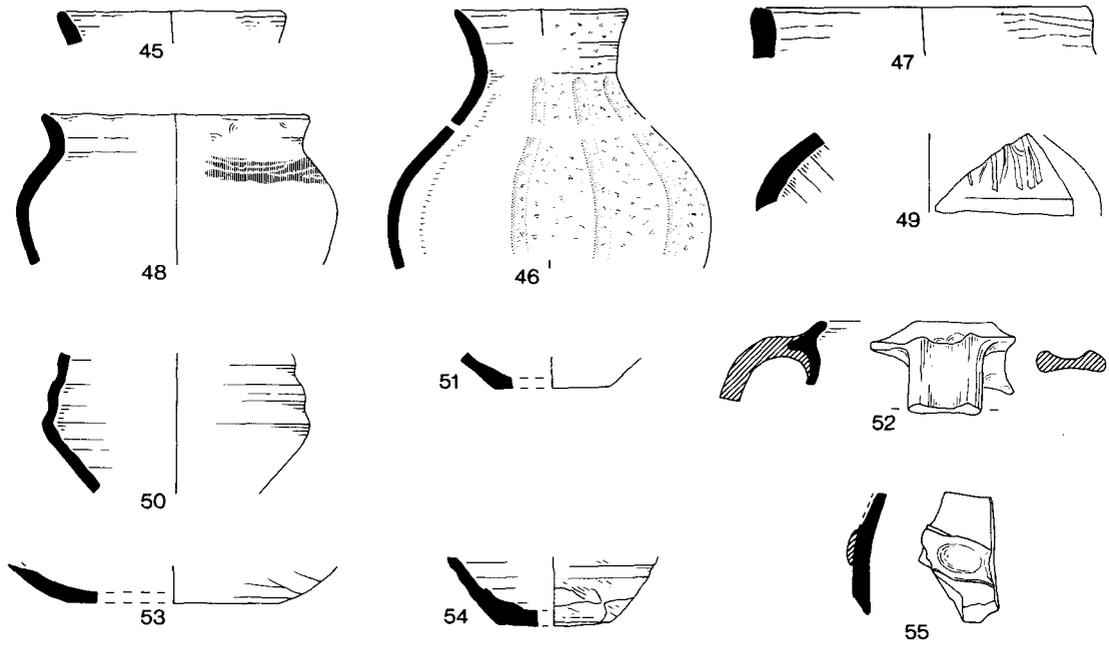


Fig. 27. Maiden Lane: Non-local and imported wares (Nos. 45–47 ?Surrey; No. 48 fine flint-tempered; No. 49 sand-tempered; Nos. 50–51 North French grey wares; No. 52 North French/Eastern Belgian; 53–55 Badorf-type).

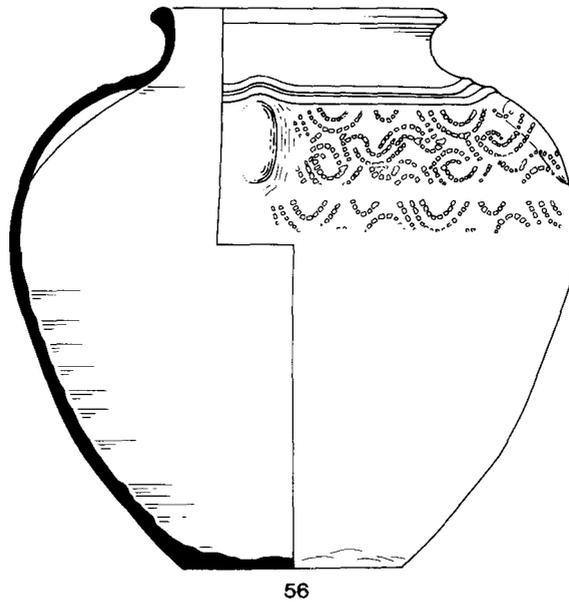


Fig. 28. Maiden Lane: The North French bossed and stamped jar.

## THE LOOMWEIGHTS AND SPINDLEWHORLS

by Lyn Blackmore

Although Middle Saxon loomweights have been found on a number of sites, little work has been done on them apart from an early classification by Hurst (1959, 24). The excavations at Jubilee Hall and Maiden Lane have afforded the opportunity to study these finds in greater detail.

### THE FABRICS

Two broad fabric types are present, with sub-groups as described below, although the fabrics vary from one weight to another, blurring the 'edges' of the fabric groups and suggesting that the weights were made as required rather than in large batches. All fabric types are represented on both sites (see Table 13). No examples of unfired loomweights are present, and although two lumps of unfired clay similar to fabric 1a were found at Maiden Lane (context 243), these could equally be associated with daub production (see above).

*Fabric 1a:* A fine micaceous fabric, with some organic content, probably an intrinsic part of the clay matrix. The inclusions comprise moderate/abundant very fine quartz sand up to 0.5mm, scattered larger grains of rose and milky quartz, sparse/moderate rounded black iron ore, sparse angular flint inclusions up to 5mm, occasional large flint inclusions (maximum 17 × 7mm), and very sparse white mica. Larger organic inclusions are evident as impressions and voids where they have burnt out in the firing. Several weights bear stem impressions: at Jubilee Hall one (SF.84) contains a stem impression 31 × 5mm, another (SF.76) contains a large fragment of carbonised twig in a diamond-shaped void 14 × 7mm. Both of these were found in well (117). A third fragment (MAI 364 SF.133) has two woody inclusions, one 15 × 5mm. Most of these weights are poorly made; the clay is poorly prepared, with numerous air-pockets, and is low-fired, so that the weights are soft and friable, with a tendency to laminate or crumble. They normally have a reduced core and oxidised surface, but some have a partly reduced surface; very few are oxidised throughout (eg MAI 264 SF.154). The surface is usually smoothed, but may have a rough sandy feel.

Thin section: JUB 54 SF.133.

*Fabric 1b.* As above, but finer and denser. This fabric has some organic inclusions, but they are both smaller and sparser, and the number and size of the voids are correspondingly reduced. The other inclusions are as above,

but all are sparse, although the flint inclusions may be large. One weight contains a large fragment of animal bone in addition to the other inclusions (MAI 376 SF.158). Firing appears to be at a higher temperature than group 1a. One weight (Fig. 29, No. 1, JUB layer (164) SF.63) has an impression of ?comb teeth.

*Fabric 1c.* Similar to fabric 1b in manufacture and firing, but coarser. One weight has abundant sand and finely crushed flint (JUB 162 SF.102), another (JUB 137 SF.74) has quartz grits up to 5mm and numerous large pebble inclusions. This weight bears the impression of a twig or plant stem (30 × 6mm) on the upper surface near the central hole.

*Fabric 1d.* Similar to fabric 1a, but much coarser, with abundant sand and moderate angular white flint inclusions up to 10mm which protrude from the surface. This fabric is rare on both sites.

*Fabric 2a.* A fine brickearth matrix with abundant fine quartz sand giving an abrasive surface, sparse/moderate fine flint inclusions; one weight (JUB 128 SF.69, Fig. 29, No. 2) contains a large gravel flint pebble 30 × 12mm. These weights are oxidised throughout; the outer surface is not smoothed.

*Fabric 2b.* As above, but with moderate to abundant fine to medium flint grits, and frequent larger flint pebble inclusions. One weight in this group has deep stab marks (JUB 162 SF.104, Fig. 29, No. 6). The surfaces of these weights are generally smoothed.

### THE TYPES

Being hand-made, most weights are extremely irregular both in section and in form. Very few are completely circular, and many have a slightly triangular shape. On the basis of this sample, three main groups have been defined on the basis of the cross-section (although it should be noted that this can vary considerably from one side of the weight to another, as in Fig. 29, No. 3):

Group 1: flattened/annular with horizontal U-section (Fig. 29, Nos 1, 2),

Group 2: rounded with D-section (Fig. 29, Nos 3, 4, 5),

Group 3: roughly biconical with C-section (Fig. 29, Nos 6, 7).

Group 1 weights are annular in form; the height (average 40mm) generally being less than the thickness of the ring, and the width of the hole greater than the thickness of the ring.

Group 2 weights fall into two sub-groups: those with an average central height of c. 40–50mm, and those with a central height of 51–60mm. In most

Table 13. The distribution of fabric types (excluding very small fragments from samples)

	1a	1b	1c	1d	2a	2b	Total	Weight
Jubilee Hall	38	18	2	2	1	6	66	11.741kg
Maiden Lane	13	7	2	3	3	3	31	3.891kg

cases the height is greater than the radius of the weight, while the diameter of the hole is the same as or less than the thickness of the ring.

Group 3 weights are normally the largest and the heaviest (Fig. 29, No. 7 is an unusual variant of this type); the central height averages *c.* 60mm and is greater than the radius of the ring. The diameter is normally *c.* 140mm, and the projected total weight would be *c.* 1000g. This form is found at Dorestad.

#### DIAMETER

Due to the irregular shape of the weights it is impossible to assign individual fragments to precise diameters. However, where possible, each fragment was measured on a rim chart in order to gain an approximate guide to the original size of the loomweights. This showed that most weights fall within 110–120mm, with a smaller group at 130–140mm. No pattern was observed in the relationships of diameter, profile and fabric.

Some loomweights may have been formed from a ball of clay, but other examples such as Fig. 29, No. 4 have cracks or have broken in such a way as to suggest that they were made from two sausages of clay. Additional features such as comb stamps and stabbing are discussed below.

#### DATING

The three broad groups correspond with those first identified by Hurst (1959, 23–5), who suggested on the evidence available at the time that the annular weights appeared to be of Early Saxon date, the D-sectioned 'intermediate' weights were of Middle Saxon date, the biconical 'bun-shaped' type of Late Saxon date. Further research has shown that this general pattern holds good, and at West Stow, most of the illustrated loomweights appear to be of the annular type (Group 1), although the section is described as D-shaped (West 1985, 138; Fig 297). However, as noted by Hurst, there do seem to be a number of intermediate types, and there are problems in that the annular shape, although typical of the Early Saxon period, is also found on the 9th-century site at Whitehall (Huggins, forthcoming). The early weights tend to have a large central hole, while the Whitehall examples have a small hole, but if only fragments are found it will be impossible to date this type securely. On the present evidence it would seem that in London at least all three types were in use at the same time, and that the different proportions of the different shapes reflect the function of the weight as much as a real chronological development.

#### USE

Loomweights such as these were used on a warp-weighted loom (Wilson 1976, 271; Owen-Crocker 1986, 175–7; 180–4; Fig. 180). In some Anglo-Saxon settlements, it appears that weaving was carried out in specific buildings, and not in the general living quarters, although this has been questioned (Wilson 1976, 271). At West Stow it was suggested that some of the looms may have been free-standing rather than attached to posts set in the ground, and moved from one building to another, so that the presence or absence of loomweights in a building cannot be used as more than an indication of the extent of weaving in a settlement (West 1985, 138). No obvious evidence for looms was found at either Jubilee Hall or Maiden Lane. At West Stow (*ibid*), Grimstone End, Pakenham (Brown *et al* 1957), and Mucking (Jones and Jones 1975, 155, 161, Fig. 52) it has been suggested that some loomweights were used in an unfired state, although the possibility remains that they were merely being stored ready for firing when they were accidentally burnt. The lack of loomweights in the Late Saxon period has been attributed to a change from the warp-weighted loom to a horizontal or beam-tensioned loom (Wilson 1976, 271).

#### JUBILEE HALL: THE LOOMWEIGHTS.

A total of 66 fragments (11.44kg) was recovered from 23 different contexts at Jubilee Hall. The main concentration of large fragments was in well (117) (forty-one fragments, twenty-five (85g) recovered by sieving); pit (135) and pit (162) each contained five fragments. Most contexts contained only one or two fragments, and although in some cases the numbers are inflated by a quantity of fragments recovered by sieving, the weights involved are small. The fabrics and shape types are described above. Most of the weights fall into Group 2.

#### Additional features

One weight bears an impression of comb teeth (Fig. 29, No. 1). This feature has also been found at West Stow, where a weight has two parallel rows of impressions of comb teeth, one on either side of the hole (West 1985, Fig. 297, No. 14).

A number of weights have stabbed impressions, probably to aid the firing process. The first, a complete weight (Fig. 29, No. 3, pit (135), SF.56), has three impressions made with a pointed object approximately 3mm in diameter. These are all on the same surface, and form an approximate triangle; two are 10mm deep, the third, on the rounded edge of the weight, is *c.* 4mm deep. Another weight (Fig. 29, No. 6, pit (162), SF.104) also probably had three stabbed impressions; two survive, one *c.* 20mm deep. Two other fragments (well (117), SFs.79 and 80)

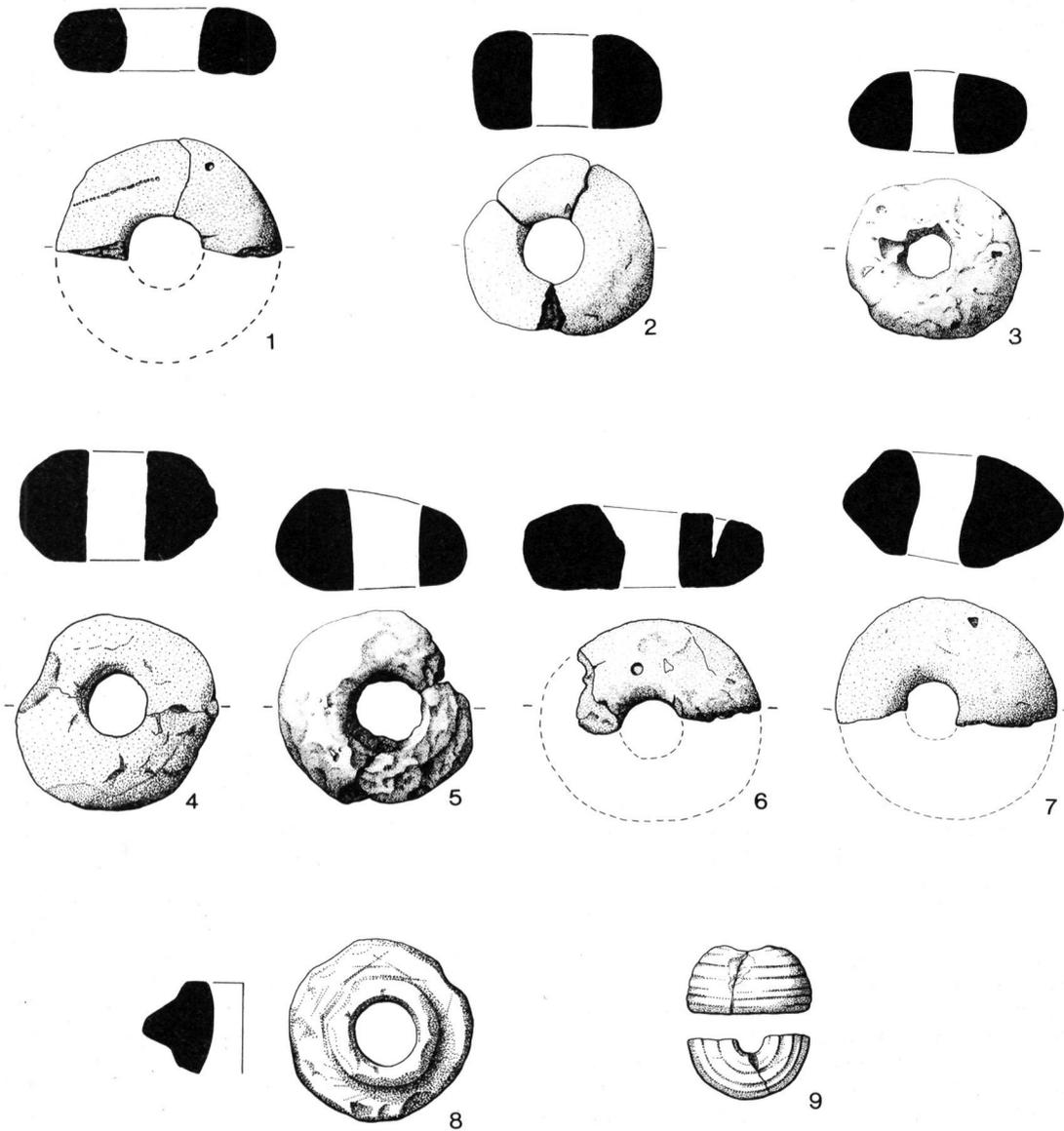


Fig. 29. Jubilee Hall and Maiden lane: The loomweights and spindlewhorls (Nos. 1-3, 5-8 Jubilee Hall; Nos. 4, 9 Maiden Lane).

each have one large oval impression 15 × 10mm; that on SF.80 has a maximum depth of 15mm, the other is slightly less. These two fragments are probably from the same weight, although they do not join. Stabbed impressions have also been noted at Mucking (Jones and Jones 1975, 161, Fig. 55, No. 13).

One weight (Pit (158), SF.93) has a white surface deposit inside the hole and over the fracture which is similar to the white surface on many of the daub fragments. This weight also has a small splash of what appears to be a green glaze inside the hole and over the white deposit. Both features are almost certainly accidental and acquired after the weight was broken.

#### MAIDEN LANE: THE LOOMWEIGHTS.

A total of 37 fragments from *c.* 31 weights was recovered from 17 stratified contexts, with one unstratified fragment; the total weight is 3.85kg, including one complete weight weighing 581g. Given the size of the site and controlled nature of the excavation, the number of loomweights recovered is low compared to that from Jubilee Hall. On the evidence of the spindlewhorls and woolcomb (see below) it would appear that wool and possibly other fibres were prepared on the site, but it is possible that the cloth was mainly woven in another area of the settlement.

Most contexts contained only one or two loomweight fragments, and with one exception, none have more than three fragments; layer (337) in Area C produced nine fragments, but these weigh only 252g. Pits (237) and (261) in Area B, and layer (376) in Area D each produced three fragments. Those in layer (376) comprise a complete weight (Fig. 29, No. 4), part of a biconical weight and part of a large Group 2 weight with a height of over 60mm. Pit (237) also contained fragments of two large biconical weights. Pit (261) contained one fragment which appears to have been burnt after being broken.

As at Jubilee Hall, where profiles survive most of the weights are of Group 1 or 2. Most weights are *c.* 120mm in diameter; of the seven fragments which are *c.* 140mm in diameter, three are biconical in section (Group 3). The average height is *c.* 40–50mm, but five are over 60mm, while the three 140mm diameter biconical weights from pit (237) and layer (376) are between 65–70mm. Most pieces represent about 20–25% of the original circumference; apart from the one complete weight (Fig. 29, No. 4), only two fragments represent over 25%, one from fill (306) in ditch (292) is 55%, and one from layer (340) is 30%. A number of small fragments weighing *c.* 6–15g are also present.

#### Additional features.

Of some interest are two unfired lumps (219g) of clay from fill (243) of pit (237). The fabric is very similar to

fabric 1a above, but as organic inclusions were also present in some of the daub samples, the waste clay may have been intended for either purpose. The complete weight and one other piece appear to have been made of two half rings of clay joined together (see above).

One fragment from feature (247) ((fill (248)) in Area B appears to have a white slip over the surface inside the central hole; unfortunately most of the outer surface of this weight is missing so it is not known whether the entire weight was dipped in slip or whether this is some sort of scale, as noted on other Saxon sites in London (Williams, forthcoming; see also Jubilee Hall).

#### SPINDLEWHORLS

In the Anglo-Saxon period all spinning was carried out by hand, using a wooden distaff, spindle and a whorl or fly-wheel made of wood, pottery, bone or of a bead (Owen-Crocker, 1986, 177–8). Despite the large number of loomweights, only one spindlewhorl was found on each site.

The Jubilee Hall example is in a pinkish-white very hard chalk (Fig. 29, No. 5, well (121), SF.127), with an irregular, faceted edge to the flange, and knife marks on either side of the flange and around the central hole from the carving process.

At Maiden Lane one half of a chalk spindlewhorl was found in one of the fills of the depression in Area C (Fig. 29, No. 6; context (345), SF.41). This has a simple domed profile, with a flat base 32mm in diameter, and flattened upper surface; the height is 17mm, the diameter of the central hole 7mm. The surfaces are all decorated with incised concentric rings. An almost identical chalk spindlewhorl was found at Whitehall (Huggins, forthcoming).

#### THE SAXON DAUB

by Richenda Goffin

At Jubilee Hall 6.95kg (approximately 529 fragments) of daub were recovered, but there was no systematic sampling policy. At Maiden Lane 21.75kg (approximately 977 fragments) of daub were recovered. Here daub fragments were usually retained, especially if they had impressions or limewash, but not when they were very small or degraded. A considerable amount of daub was retrieved from sieve residues.

#### INTRODUCTION

Initially the number, weight and fabric types of daub fragments from each context were noted on the standard Building Materials sheet used by the Museum of London. A second form was devised to record the fabric, weight and colour of fragments displaying characteristics such as impressions, limewash, corner pieces etc. The measurements of

wood impressions, the thickness and number of layers of limewash, and other features of interest were described; the fragments were sketched and recommendations for illustration or photography made. The text of each individual report, with the catalogue and the illustrations and photographs is included in the archive.

### THE FABRICS

Two main fabrics were identified from both sites by visual examination; a fine sandy one, tempered with organic material, and one containing coarser sand. In some cases the dividing line was not clear, making it difficult to assign fragments to a fabric group.

An examination of samples submitted for thin sectioning and petrological analysis confirmed this basic distinction (Williams, 1989). Samples from Fabric 1 show a groundmass of frequent angular to subangular quartz grains predominantly under 0.20mm, with a scatter of larger grains ranging up to 1.20mm across. Also present are a few pieces of flint (generally small but with at least one fragment over 2mm in length), flecks of mica, some iron oxide, a few well-rounded reddish to light brown and opaque grains of glauconite, and occasional elongated voids suggesting vegetable matter, probably chaff or grass. At least one fragment from Maiden Lane shows evidence of a seed or seed casing from a cereal or grass. Pieces of shell were also observed in a few fragments from this site, and in one instance a piece of bone 18mm in length. Fragments from Fabric 1 are often uniformly brick red in colour and baked quite hard. Others have buff and/or dark grey patches and tend to be more crumbly. Most fragments from both sites belong to this fabric group; 6.15kg (88.5% by weight) from Jubilee Hall, and 21.39kg, (98.4% by weight) from Maiden Lane.

Fabric 2 is characterised by closely-packed grains of angular and subangular quartz in the range of 0.10mm–0.60mm, with fragments of flint ranging up to 2mm in length, flecks of mica, iron oxide and some well-rounded reddish to light brown opaque grains of glauconite. An important feature of this variant is the lack of organic voids and impressions that are so common in Fabric 1. One fragment from Maiden Lane has a scatter of clay pellets up to 5mm in length. The daub is brick red to light brown in colour, although some fragments also have dark grey patches. A total of 794g (11.5% by weight) from Jubilee hall, and 358g (1.6% by weight) from Maiden Lane belong to this group.

Since the two sites are close to each other the fact that the daub fabrics are the same is not

surprising. Both sites are located on the natural brickearth overlying terraced gravels, which has been used from Roman times as a convenient source of building material. The daub had a similar range and number of mineral inclusions as a sample of the local brickearth, suggesting that this was the source of the clay used (Williams, 1989). There was no evidence of organic material in the brickearth, so it seems likely that it was added to Fabric 1, perhaps in the form of animal dung, to improve the raw brickearth. This would have reduced the risk of cracking once the daub had dried (Williams-Ellis 1947, 89). There are also indications that more sand had been added to the daub mixture. Further analysis might provide more information about the preparation of the raw material.

### LIMEWASH.

Three fragments from Jubilee Hall have a layer of limewash rendering between 1mm and 5mm thick applied to the outer surface. Other pieces which were obviously part of the smooth facing of a wall, show no definite signs of limewash.

At Maiden Lane ninety fragments with limewash were recovered. Again, some pieces have flat surfaces, which may once have been treated in this way, although no evidence of it now remains. The limewash is off-white to pale buff, although on a few fragments the bottom part is pale orange, perhaps discoloured by heat. The wash was crudely applied in a single coat varying in thickness from

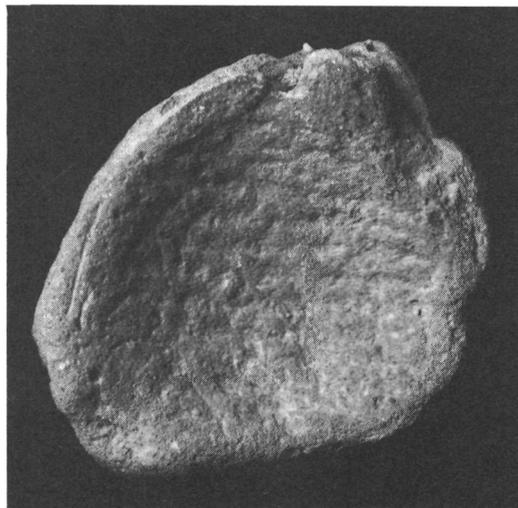


Plate 6. Maiden Lane: Daub fragment with textile impression.

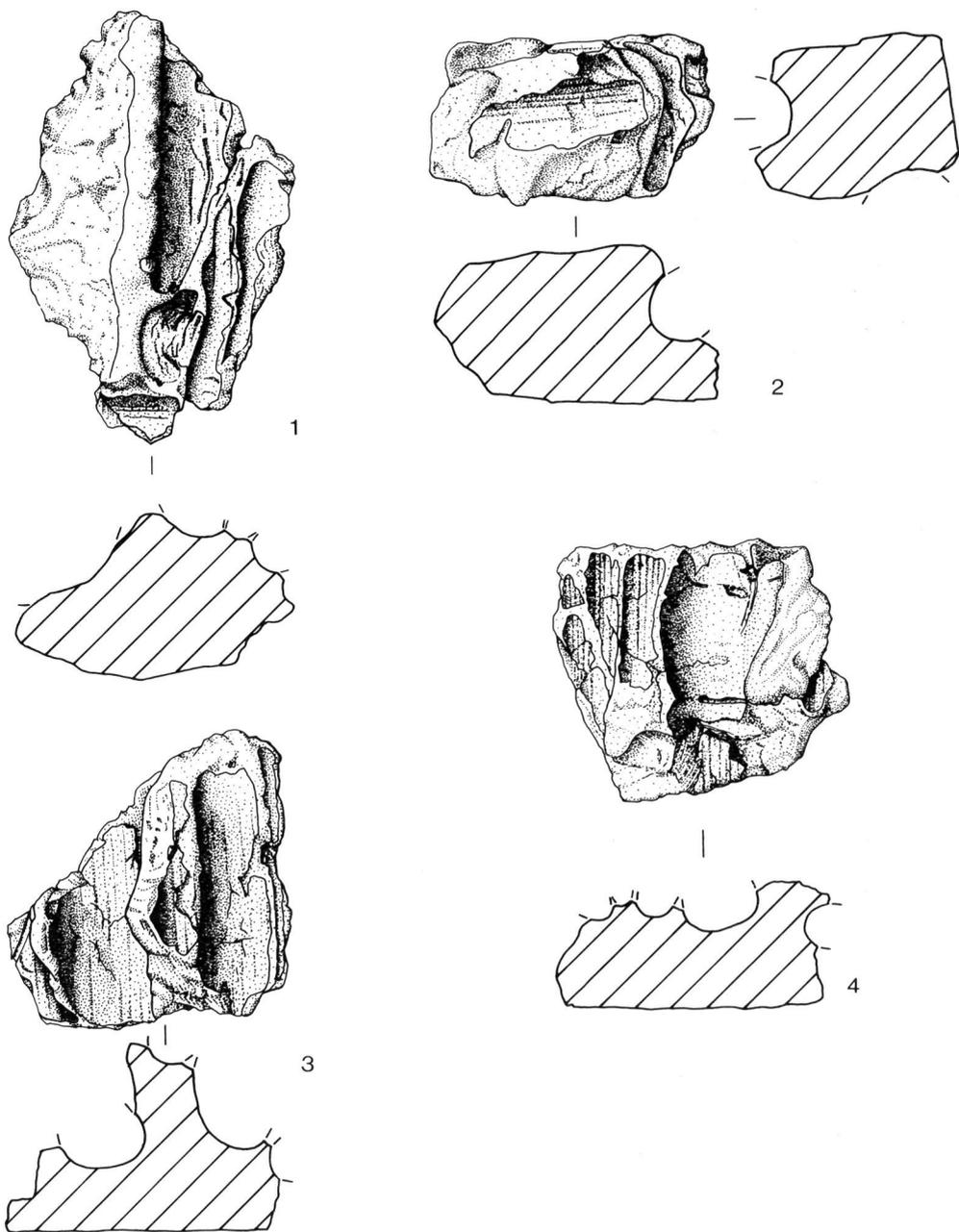


Fig. 30. Jubilee Hall and Maiden Lane: Daub fragments with structural impressions (No. 1 Jubilee Hall; Nos. 2-4 Maiden Lane).

1 to 5mm. Most (eighty-one fragments) of the limewashed pieces are from the northern end of the site; twenty-three are from ditch (292), and fifty-eight from pits (237), (245), (251) and (261) which are cut by the ditch. One small fragment came from the midden in Area C.

Some form of coating for external structures would have protected walls from the elements. However, preliminary examination shows no evidence of renewal, although further analysis is being undertaken.

### TEXTILE IMPRESSIONS

Two pieces from Maiden Lane bore textile impressions, which have been identified by F. Pritchard. The first, from ditch (292), has the impression of a 2/2 twill weave, with 7/8 threads per 10mm (Pl. 6); the second piece, from pit (245), is of an open textured tabby weave, with 8/9 threads per 10mm. Although the twist of the yarn cannot be identified in either case, the second impression is of a finer grade than the first. In both examples the cloth had not been filled.

Textile impressions have also been found at *Hamwic* (F. Pritchard, pers. comm.). It may be that woven material was used to cover apertures such as windows and doors.

### TIMBER AND WATTLE IMPRESSIONS

#### Jubilee Hall

Clear indications of wattle and/or timber impressions were observed on forty-eight fragments from Jubilee Hall. Out of the seventy-five impressions that are measurable, 43% are between 10 and 15mm in diameter, and were probably used as wattle infill. In three instances both horizontal and vertical impressions have survived on the same fragment. The thickness of these pieces (c. 40–45mm) suggests that these walls were between 80 and 100mm thick.

One fragment (Fig. 30, No. 1) has wattle impressions next to a ridge and a concavity which suggests a more substantial timber impression. A third impression of a rod 15mm in diameter at right angles to the wattling, passes in front of it into the possible timber impression. These impressions could be interpreted in several ways. One possibility is that they represent the junction between a panel of vertical wattling and a wooden upright, with the rod inserted into the timber to provide stability. A parallel for this method of construction comes from the Roman site at Newgate Street in the City of London (Perring and Roskams, forthcoming), where daub from the destruction debris of Building J (c. AD 100–125) apparently has impressions of vertical rods woven around hori-

zontal lath-like members. It is suggested that such fragments come from panels which fitted into timber uprights with slots, similar to the stud excavated at Pudding Lane (Milne 1981, Area F). A similar technique may have been used at Jubilee Hall, the difference being that the horizontal members were wattle rods of similar thickness to the vertical ones, rather than more substantial laths. If this was so, it is likely that a ground timber was used to provide stability with perhaps another beam running across the top of the wall.

A second, less likely interpretation is that the wattle panel was connected to a more substantial plank running vertically into a ground timber. Examples of this method of construction have been found at Cowdery's Down, where six out of twelve structures of this phase may have been built in this manner (Millett 1983, 228–9). It is also possible that the wattle ran horizontally into the framework.

#### Maiden Lane

Impressions of wattle and more substantial timber post/stakes were found on 184 fragments. Details of surface characteristics such as faint bark impressions and vessels are discernible, although it is not possible to identify species from such slight evidence (Ian Tyers, pers. comm.).

Of the impressions that can be measured, 43% are between 10 and 15mm in diameter, suitable for wattle infill. Several pieces show clearly the pattern of interwoven withies or rods (Fig. 30, No. 2). Others show the impressions of rods with a diameter of 25mm (Fig. 30, No. 3). One fragment has the impression of a rod 20mm in diameter with three smaller rods of 10mm, 10mm and 5mm running parallel to it (Fig. 30, No. 4). The spacing between the rods varies between 2mm and 30mm. As at Jubilee Hall, it appears that the overall thickness of the walls was between 80 and 100mm. Several fragments have a thickened edge, so that they are slightly concave in shape; and may come from junctions between floors, ceilings, walls or windows. One fragment shows evidence of a possible corner (Fig. 31, No. 5); it has a thickened ridge of clay between two limewashed surfaces at right angles to each other. There are two parallel impressions of 18mm diameter, interspersed with two impressions of 18mm at an angle of 45 degrees. These angled impressions may represent rods passing behind a thicker rod, for which we have no evidence.

Three similar pieces from Maiden Lane show impressions of wattle rods of between 10 and 15mm in diameter lying between 40 and 50mm from the limewashed surface; in front of these, between 5 and 15mm from the outer facing, a small post or

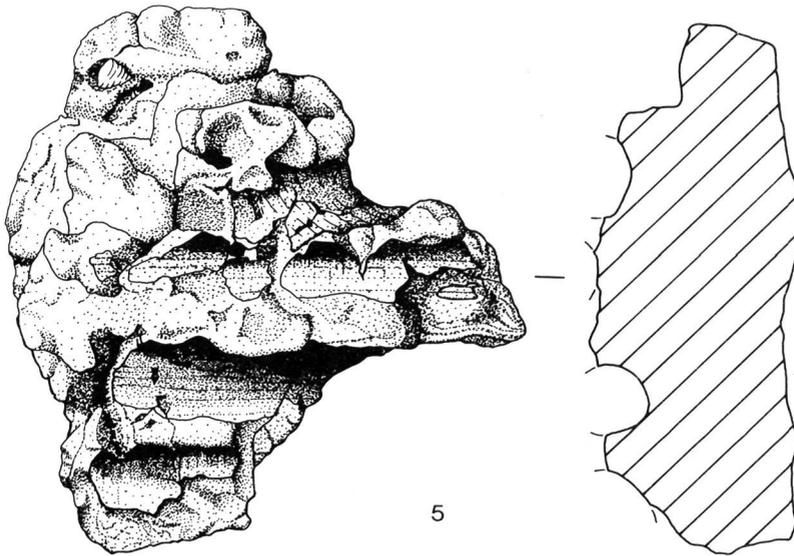


Fig. 31. Maiden Lane: Daub fragment with structural impressions.

rod (diameters between 22 and 40mm) has been set in the same direction as the wattle impressions (Fig. 32, Nos 6-7). It seems likely that these pieces are from a structure made from two wooden components, the wattling and a supporting framework. It may be that a core of wattle was set up against uprights either placed on one side, or on both sides running parallel front and back, or positioned

alternately. This was probably set into a slot in the ground or into a beam to provide greater stability.

The structure was then covered with daub and given a coat of limewash. This pattern seems to have been fairly common. For example, a Late Saxon building at Well Court, in the City, had a double row of postholes *c.* 150 × 100mm, with a line of stakeholes running between them, sug-

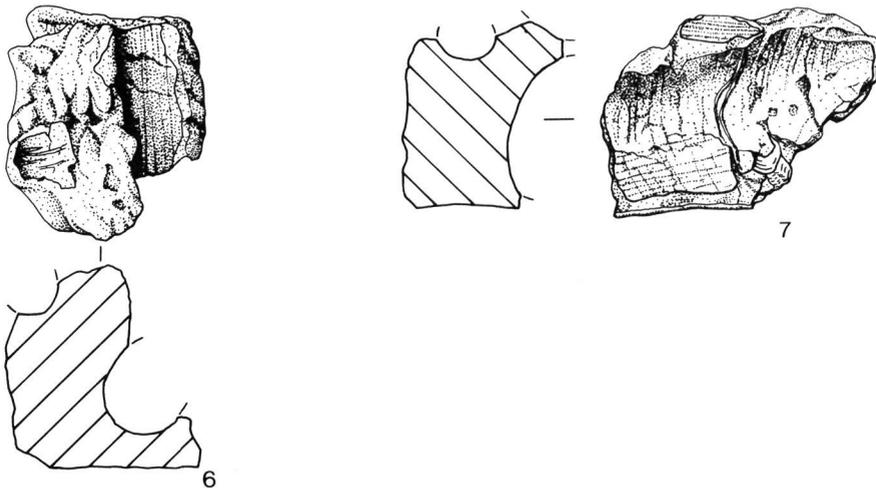


Fig. 32. Maiden Lane: Daub fragments with structural impressions.

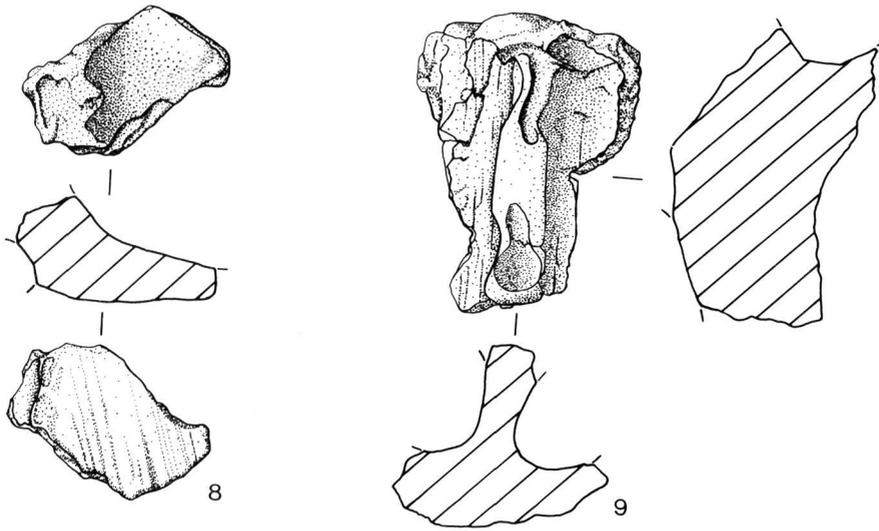


Fig. 33. Maiden Lane: Daub fragments with structural impressions.

gesting a wattle wall held in a framework which had been set in a foundation slot packed with building material and clay (Allen 1988, 61-2).

A second example comes from the internal dividing walls of Building I at Melbourne Street, Southampton, where wattle panels had been set between stakes (Holdsworth, 1976). Another variation was to use planks rather than posts as a framework for the wattling: at Cowdery's Down both B4- and C12-type wall panels were constructed in this way (Millett and James 1983, 227-32), and at Chalton it is suggested that horizontal planking was used instead of wattle in Buildings A1 and A2, clasped between vertical posts in continuous slots, and in fences A4 and A5 (Addyman *et al.* 1972, 17-25).

Two other fragments show wattle and timber in the same construction. One has the impression of a flat piece of timber *c.* 35mm wide with a shallow impression of wattle 11mm wide running almost parallel (Fig. 33, No. 8); on the second two closely spaced rods *c.* 24mm and 30mm in diameter run at right angles to a wood impression with angled sides and an almost flat bottom 25mm in width (Fig. 33, No. 9).

## DISCUSSION

The evidence for timber-framed structures and possible clay floor surfaces at Jubilee Hall has already been discussed; no burnt daub was recovered which could definitely be associated with

any of these features. The majority of the material was redeposited, and may be demolition material cleared from nearby buildings.

No structural features can definitely be attributed to Saxon buildings at Maiden Lane. One heavily truncated feature (283) in Area B could possibly have been the remains of a sunken building, but no building material was recovered from it. Most of the daub (80.6% by weight) from Maiden Lane was recovered from ditch (292) and the pits it cut. Substantial amounts also came from an upper layer (347) in the midden in Area C and from a series of dump layers in Area D. Structures made from wattle, timbers and daub would by their very nature be extremely vulnerable to fire, especially if they were thatched, and were probably frequently renewed.

## THE GLASS

by Vera I. Evison

Most of the glass fragments from Maiden Lane have suffered from burial in the soil and are not in very good condition, the surfaces being dull, iridescent or weathered in streaks. There are fourteen pieces of vessel glass, of which ten show some indication of features, and there are also beads, two of glass plus one fragment, and one amber bead. One piece, No. 26, is of probable Roman date. From Jubilee Hall there are six fragments,

most in better condition and distinctive types, and one bead fragment.

Fragment No. 1 (Fig. 34), represents the earliest of these glass forms. In the late 6th and 7th centuries the rim of one type of palm cup was folded outwards so that it was hollow-rolled at the top and continued downwards in a folded band which partly merged into the wall of the vessel. This wall descended in an S-curve to a rounded base. On this fragment the wall and fold have merged together at the top, but the join is clearly visible between the lower part of the wall and the smoothed edge of the fold. The beginning of the S-curve can be distinguished in the angle of the wall (Harden 1956, Fig. 25, X a ii 4, b1. d2, plates XVII Ae, XVIII m, o, p).

The frequent occurrence of this form in pagan Anglo-Saxon graves and in Merovingian graves on the Continent shows that it began well before the end of pagan burial. The palm cup continued to develop in the 8th and 9th centuries into a more elongated form, but how long a deeply folded rim continued to be produced, and whether it survived the 7th century, is not known. A similarly broad folded rim on a blue vessel occurred at *Hamwic*, where most of the finds belong to the Middle Saxon period. The publication is confusing, however, as the drawing shows it as an out-folded rim on a bowl, whereas the description states that the rim is folded inwards (Hunter 1980, 59, Fig. 11, 2, 8).

Amongst the vessel glass there are two light blue-green rims, Nos 4 and 5 (Fig. 34), which are folded inwards, leaving a hollow space throughout. Rolled and folded rims, which began to appear on vessels at the end of the Early Saxon period, particularly on palm cups, were continued as the palm cups became taller in shape in the 8th century. There are few published illustrations and descriptions of glass sherds which clearly show the rim forms, but narrow, infolded rims like No. 5 are evident on palm cups from a Dutch collection (Ypey, undated, 382ff.,afb.11, 13, 14 and 15), and at Southampton (Hunter 1980, 63, Fig. 11, 3, No. 15).

Two other rims in light blue-green, No. 6 (Fig. 34), and a light green, that is nearly colourless, No. 7 (Fig. 34), are simple and smoothed, no doubt belonging to funnel-beaker shapes which represent a later development of the palm cup form (Ypey 1962-3, Abb.40).

The striking vivid green-blue colour of the rim No. 2 (Fig. 34) does not appear in post-Roman times earlier than the 7th century, as in the claw-beaker in grave 6 at Valsgarde in Sweden (Ard-widsson 1942, 70, Taf.31 right). A fragment of similarly vivid green-blue colour was found at Whitby, where it was probably part of the rim of

a squat jar (Peers and Radford 1943, 73, Fig. 22, 1).

The funnel-beaker shape was widespread in northern Europe, fragments being found, for instance, at Dorestad (Isings 1980, 227, Fig. 153, 3), and Southampton (Hunter 1980, eg. Fig. 11, 3, 5), while complete examples occur amongst those which were deposited in graves at Birka in Sweden in the 9th century (Arbman 1940, Taf. 189, 2: Taf. 190, 2-4; Taf. 191, 1-3; Baumgartner and Krueger 1988, 60-64).

A light green wall fragment, No. 8 (Fig. 34), is decorated with moulded vertical ripples, and begins to curve in and thicken, suggesting a position near the base of a palm cup, possibly like the palm cup with out-folded rim found at St. Martin-in-the-Fields near the Strand (Harden 1956, Pl. XVIII A, e), or a taller version (Ypey undated, 383, Afb. 13). The light green-blue fragment No. 9 (Fig. 34) thickens from 1mm to 4mm, and belongs near the base of a tall palm cup. One other wall fragment, No. 24, a very light blue-green, is decorated with a very fine trail in glass of the same colour. The rather spherical shape indicated by the light blue fragment No. 26 is more likely to be part of a Roman than a Saxon form. The rest of the formless vessel fragments are in more distinctive colours which do not occur in the Early Saxon period but which first appear in the 8th century: No. 23 is very thin, light blue and streaky, the fragments No. 21 are very dark, opaque brown although only 1 to 2mm thick, and No. 22 is 1mm thick and a very dark olive.

Fragment No. 3 is of a hollow-blown linen-smoother (Fig. 34), a patch of parallel scratches in one part of the outer surface showing the effects of the rubbing use to which it had been put. Spherical glass linen-smoothers continued in use until the 18th and 19th centuries. They were found frequently in late Viking graves in Norway, mostly female, and twenty-eight were listed by Petersen (1951, 328-9, Fig. 178) with only one dated as early as the 9th century. These are of solid glass, but one of blown glass was found in an earlier context, a Frankish woman's grave of the 7th century at Worrstadt, Rheinhesen (Haevernick and Haberey 1963, 131, Taf. 24, 3).

Both types of spherical linen-smoother occurred at Birka, solid forms in black or brown-green glass, or hollow-blown in lighter, translucent colours, with one of a different, oval shape. Many fragments of linen-smoothers, both solid and blown, have been found at Dorestad (Isings 1980, 233, Fig. 156, 1-4), and the general distribution appears to be confined to countries situated north of the Alps (Haevernick and Haberey, 1963, 135). Examples

found in Viking contexts in the British Isles were listed in 1963 (Haevernick and Haberey 1963, 133-4). Among subsequent finds in England there were four fragmentary examples of solid linen-smoothers at Thetford (Harden 1984, 116, Fig. 151, 3-5), and another solid glass version has been found in London in a late 9th-century deposit (Pritchard 1984, 67, Fig. 18, 13).

A second colour appears on fragments No. 15. Basically a light blue-green, they have the bright opaque yellow trails which were a common form of decoration in the mid-Saxon period, and which were frequently carried right up to the edge of the rim. These fragments could have been part of the vertical rim of a squat jar. Fragment No. 19 is in similar colours.

Fragment No. 10 (Fig. 34) is the most distinctive piece. The wall of this vessel is light green, extremely thin, with a slightly curved profile, i.e. it must be part of a bowl with a vertical wall. Applied vertically to this is a light green and opaque yellow reticella rod with a regular twist. The vessel is therefore identifiable as one of the most ornate produced in the Middle Saxon period, of which a complete example was found in grave 6 at Valsgarde (Arwidsson, 1942, colour plate Taf. 30; Baumgartner and Krueger 1988, 70, No. 12), demonstrating that the reticella trails were applied both horizontally round the body and vertically from the base. The same pattern of trails also

occurs less often on squat jars of the same colouring (Baumgartner and Krueger 1988, 73, No. 15).

Decoration of vessels by the application of reticella trails is an important feature of glass production in the Middle Saxon period, and the process has attracted a considerable amount of discussion (Hunter 1980; Evison 1983a, 1983b; Nasman 1986, 76ff; Baumgartner and Krueger 1988, 69ff; Koch 1987, 1, 265-7). The latest find is that furthest north, in the Lofoten Islands (Munch *et al.* 1986). Fortunately the vessels ornamented by reticella trails stand a good chance of survival, at least as fragments, as the trails themselves are sturdy and they often acquired increased solidity when applied close together in parallel lines. In the case of the Valsgarde bowl type the rim was equally distinctive as yellow trails were applied right up to the lip, and then the rim was folded over outwards, enclosing the applied yellow trails and a hollow space inside. Fragments of the Valsgarde type of bowl have also been found at Dorestad, Holland (Isings 1980, Abb. 8), Eketorp II and Helgo, Sweden (Nasman 1986, 76ff.), Esslingen, Germany (Haevernick 1979, pl. 1, 2), and in England at Whitby, Yorkshire (Evison 1988b, Fig. 6), Wicken Bonhunt, and Barking, in Essex (Evison 1988b, Fig. 7) and Ipswich and Brandon in Suffolk. It is likely that there are others at sites which have not yet been published.

The distribution of reticella threads on vessel

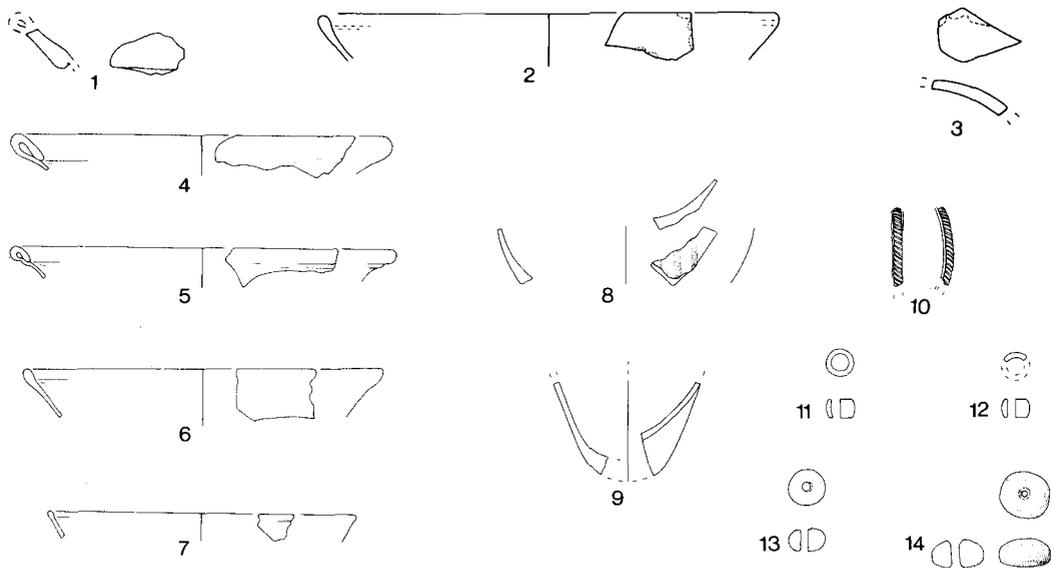


Fig. 34. Jubilee Hall and Maiden Lane: The glass (Nos. 1-4 Jubilee Hall; Nos. 5-16 Maiden Lane).

glass is so far centred mostly at sites in the vicinity of the North Sea and the Baltic (distribution maps: Evison 1983a, Fig. 2; 1983b, Fig. 7; Nasman 1986, Fig. 9; for recent additions see Evison 1988b, 240; and Baumgartner and Krueger 1988, 69). The dates of the find contexts belong in the main to the 8th or 9th centuries, but cannot be more precisely established. The earliest datable occurrences may have been in Sweden in the middle of the 7th century, which is regarded by Nasman as the date of the well-furnished grave 6 at Valsgarde, and of the second phase of the settlement at Eketorp (Nasman 1986, 80ff). A recent discussion of the probable place of manufacture by Nasman was too early to take account of the preliminary publication of the excavation at San Vincenzo in Italy, where a glass oven was found in company with reticella rods, vessel fragments and a crucible containing glass in a context so far identified as being 9th century (Moreland 1985). Although therefore this discovery suggests the possibility that reticella rods were actually made in Italy in the 9th century, the time when it began and whether there was continuity from the Roman period is not yet clear, and the source of supply in the 8th century is still in question, although fragments of the specific Valsgarde 6 bowl type are so far more numerous in England.

The Jubilee Hall fragments are types which belong to the late 7th to 9th century. The forms of glass vessel found at Maiden Lane are therefore the unstratified reticella bowl and possible squat jars Nos 15 and 16, which belong to the 7th or 8th century; tall palm cups, Nos 3, 5, 9 and 19, which were current mostly in the 8th century; funnel beakers, Nos 6 and 7, which belong mostly to the 9th century; and dark brown and dark olive colours, which occur in Middle Saxon contexts. The typological sequence of the tall palm cups and funnel beakers accords at Maiden Lane to some extent with the dating indicated by the coin of Coenwulf (AD 796–c. 805) found in the fill of pit (261) containing the palm cups and one funnel beaker, for the pit pre-dates the 9th-century ditch containing another funnel beaker.

The monochrome barrel- and disc-shaped beads, Nos 11–13 (Fig. 34), are common types which have a long life, occurring in the Early Saxon period as well as later. The forms appeared regularly in pagan cemeteries, such as the Buckland Estate, Dover (Evison 1987, barrel—Text Fig. 11, B10; disc—Text Fig. 11, B01), and continued into the Viking period, as may be seen from the beads in the 9th-century Hon Hoard in Norway (Graham-Campbell 1977, plate 2). Amber beads continued in use from the early to the Middle Saxon period,

although the usually rough shapes found in the pagan graves gave way to more carefully worked shapes like the smooth disc of No. 14 (Fig. 34).

The glass fragments found at these two sites are in relatively small numbers and scattered, and so cannot represent any commercial activity such as manufacture or an importing warehouse centre, either of which would be appropriate to the emporium of Anglo-Saxon London. They appear rather to represent domestic use over a period of a hundred years or more.

#### CATALOGUE OF GLASS

Measurements given are maximum length and thickness (in mm):

1. (Fig. 34) Light blue-green, small bubbles, one large bubble in fold. The lower edge of a deep folded rim of a palm cup.  $22 \times 1.5$ mm, diameter of mouth c. 90mm. JUB (60), SF. 122.
2. (Fig. 34) Vivid green-blue fragment of rim slightly thickened and turned in, small bubbles, scratched surface.  $24 \times c. 1$ mm, diameter of mouth c. 100mm. JUB (51), SF. 121.
3. (Fig. 34) Light blue-green fragment of spherical shape, minute bubbles. Scratches on part of outer surface.  $21 \times 2.5$ –3mm. JUB (120), SF. 120.
4. (Fig. 34) Light blue-green, hollow rim folded to the inside; palm cup.  $37 \times 1$ mm. Diam. c. 100mm. MAI (376), SF. 105.
5. (Fig. 34) Light blue-green, hollow rim folded inwards, elongated palm cup.  $29 \times 1$ mm. Diam. c. 100mm. MAI (266), SF. 75.
6. (Fig. 34) Light blue-green, slightly thickened rim; funnel beaker.  $24 \times 1$ –2mm. Diam. c. 80mm. MAI (266), SF. 126.
7. (Fig. 34) Very light green—colourless, small bubbles, smoothed rim; funnel beaker.  $10 \times 1$ mm. diam. c. 80mm. MAI (311), SF. 29.
8. (Fig. 34) Light green, small bubbles, vertical rippling; probably near the base of an elongated palm cup.  $19 \times 1$ –3mm. MAI (375), SF. 120.
9. (Fig. 34) Light green-blue, iridescent, base of elongated palm cup.  $28 \times 1$ –4mm. MAI (265), SF. 77.
10. (Fig. 34) Light green vessel, very thin wall slightly curved, vertical applied light green and yellow reticella rod regularly wound; bowl shape.  $21 \times 2.5$ mm. MAI unstrat., SF. 6.
11. (Fig. 34) Blue-green bead, barrel-shape. MAI (175). SF. 60.
12. (Fig. 34) Green bead fragment, barrel shape. MAI (250), SF. 74.
13. (Fig. 34) Dark blue or black bead, iridescent, disc-shaped. MAI (345), SF. 39.
14. (Fig. 34) Amber bead, disc. MAI (376), SF. 110.
15. Light blue-green, two fragments, one a simple, smoothed rim, the other a wall fragment. The surface is roughened and the shape twisted by heat. Decoration by fine, opaque yellow horizontal trails to the edge of the rim. 19mm and  $13\text{mm} \times 2$ –2.5mm thick. JUB (162), SF. 35.

16. Light blue-green, globular form, top of vertical looped trail.  $15 \times 1.25$ mm. JUB (15), SF. 142.  
 17. Light blue-green, small bubbles, iridescent.  $23 \times 1$ mm. JUB (109), SF. 141.  
 18. Green bead fragment. JUB (18), SF. 6.  
 19. Light blue-green, small bubbles, remains of yellow trail in near-empty channel.  $10 \times 1$ mm. MAI (318), SF. 150.  
 20. Light yellow-brown, ?fluted moulding.  $8 \times 0.5$ mm. MAI (318), SF. 151.  
 21. Two fragments, dark brown opaque.  $14 \times 2$ mm,  $10 \times 1$ mm. MAI (219), SF. 128.  
 22. Dark olive.  $16 \times 1$ mm. MAI (243), SF. 97.  
 23. Light blue streaky.  $7 \times 0.5$ mm. MAI (293), SF. 33.  
 24. Very light green, iridescent, one fine trail.  $10 \times 1$ mm. MAI (174), SF. 32.  
 25. Light blue-green, ?near base of palm cup.  $21 \times 5-6$ mm. MAI (253), SF. 90.  
 26. Light blue-green, iridescent, bubbly, spherical shape.  $355 \times 2-4.5$ mm. MAI (337), SF. 61.

## SCIENTIFIC ANALYSIS OF THE GLASS FROM MAIDEN LANE USING INDUCTIVELY COUPLED PLASMA SPECTROMETRY

by Michael Heyworth and Stanley Warren

The analytical technique of inductively coupled plasma spectrometry (ICPS) is currently being applied to the study of Saxon and early medieval glasses in a major research Project at the University of Bradford. This analytical programme includes a small number of fragments of glass from recent excavations at Maiden Lane. The results have yet to be assessed in the overall context of the current work and what follows is a preliminary interpretation of the London glass data.

Table 14. Composition of the glass fragments from Maiden Lane

	No	No	No	No	No	No	No	No
	25a	25b	8	26	9	6	4	5
Al <sub>2</sub> O <sub>3</sub> (%)	2.80	2.85	2.80	1.68	2.95	3.10	2.80	2.89
Fe <sub>2</sub> O <sub>3</sub> (%)	0.69	0.71	0.89	0.70	1.08	1.26	0.96	1.10
MgO (%)	0.91	0.91	0.78	1.76	0.84	0.85	0.82	0.87
CaO (%)	7.37	7.54	7.21	7.23	7.35	7.37	6.92	7.12
Na <sub>2</sub> O (%)	15.7	15.7	15.7	18.0	15.4	14.4	15.6	15.2
K <sub>2</sub> O (%)	1.40	1.33	1.18	1.70	1.42	1.57	1.36	0.59
TiO <sub>2</sub> (%)	0.11	0.11	0.12	0.15	0.14	0.16	0.14	0.15
P <sub>2</sub> O <sub>5</sub> (%)	0.16	0.16	0.40	0.30	0.45	0.65	0.46	0.47
MnO (%)	0.30	0.31	0.43	0.09	0.48	0.45	0.48	0.53
Pb (%)	0.04	0.04	0.18	0.00	0.64	0.59	0.67	0.62
Sb (%)	0.03	0.03	0.13	0.00	0.19	0.20	0.23	0.22
Ba (ppm)	2440	2470	2430	1450	2890	2920	2690	2950
Ce (ppm)	21	21	24	20	27	29	23	26
Co (ppm)	8	8	12	5	16	15	22	19
Cr (ppm)	20	19	20	23	20	28	27	22
Cu (ppm)	721	738	4490	96	3550	6200	4480	4080
La (ppm)	1	1	1	1	1	1	1	1
Li (ppm)	456	467	722	266	760	836	722	874
Nb (ppm)	3	3	3	3	4	4	4	4
Ni (ppm)	29	20	23	15	25	27	24	27
Sc (ppm)	2	2	2	2	2	2	2	2
Sr (ppm)	463	467	445	569	430	411	428	434
V (ppm)	18	18	20	17	23	24	23	24
Y (ppm)	9	9	10	6	11	12	10	10
Zn (ppm)	52	35	110	25	101	123	98	106
Zr (ppm)	46	46	47	6	56	53	42	61
SiO <sub>2</sub> (%)	70.1	69.9	69.4	68.2	68.3	68.4	68.7	68.4
Colour	Light Blue/Green	Light Blue/Green	Light Green	Light Blue/Green				
Fe/Mn ratio	2.3	2.3	2.1	7.8	2.3	2.8	2.0	2.1
Vessel type	Palm Cup	Palm Cup	Palm Cup	Roman form	Palm Cup	Funnel beaker	Palm Cup	Palm Cup

The ICPS technique gives compositional data for a wide range of elements at the major, minor and trace levels. This is particularly important for the analysis of glass where major and minor elements determine the general type of glass and minor and trace elements have an important influence on its colour. In the present programme data was obtained for 27 oxides and elements:  $\text{Al}_2\text{O}_3$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{MgO}$ ,  $\text{CaO}$ ,  $\text{Na}_2\text{O}$ ,  $\text{K}_2\text{O}$ ,  $\text{TiO}_2$ ,  $\text{P}_2\text{O}_5$ ,  $\text{MnO}$ ,  $\text{Pb}$ ,  $\text{Sb}$ ,  $\text{Ba}$ ,  $\text{Ce}$ ,  $\text{Co}$ ,  $\text{Cr}$ ,  $\text{Cu}$ ,  $\text{La}$ ,  $\text{Li}$ ,  $\text{Nb}$ ,  $\text{Ni}$ ,  $\text{Sc}$ ,  $\text{Sr}$ ,  $\text{V}$ ,  $\text{Y}$ ,  $\text{Zn}$ ,  $\text{Zr}$  and  $\text{SiO}_2$ . The figure for silica was obtained by difference as the silica is removed in the sample preparation procedure, described in Heyworth *et al.* forthcoming.

Eight analyses were undertaken on seven glass fragments from the Maiden Lane excavations (one fragment was sampled twice to check analytical reproducibility). The full compositional data are contained in Table 14. All the glass is of the durable, soda-lime-silica type, with some variations in composition.

Of particular interest is the composition of fragment No. 26 which Evison (in this report) suggests may be a Roman vessel form. The composition of this fragment is different from all the other fragments in having significantly higher levels of magnesia, soda and potash and lower levels of alumina, iron oxide and silica. These oxides are considered to be associated with two major components of the glass; the sand and the alkali. This would suggest that the sherd was made of different raw materials to the other fragments.

The other fragments are from palm cup/funnel beaker forms (Evison, this vol., p. 120). The one funnel beaker sherd (No. 6), which is typologically later than the other fragments, can be distinguished from the earlier palm cup sherds on the basis of the lower soda content and higher iron and phosphorus oxide levels. The palm cup fragments are more similar, though fragment No. 25 (analysed twice) has a much lower copper and lead content.

The colours of the fragments are all very similar lightly tinted blue-greens, though fragment No. 8 is rather greener. There is much evidence for the use of manganese as a decolouriser in the post-Roman period (Sayre 1963) and it is interesting to note the lower manganese oxide content of fragment No. 26. The colour of these lightly tinted glasses is largely controlled by the iron and manganese contents, together with conditions in the furnace when the glass is made. The iron gives the colour and manganese acts as a decolourant. The Fe/Mn ratio for the palm cup fragments cluster within the range 2.0–2.3, whilst the ratio for the funnel beaker sherd is rather higher at 2.8. This

further supports the argument for the typological distinctions between the sherds.

Further work is now underway to compare the glass from London with contemporary glass from other sites in Britain. This work will be published in due course.

## THE ROMAN COINS

by M. J. Hammerson

Two Roman coins were recovered from Saxon deposits. Roman objects, including coins, are known from Saxon contexts in England (see p. 77). The function of Roman coins during the Saxon period is problematical. The rarity of the excavated evidence suggests that there is little that can, at present, usefully be said on why Roman coins might have been used during the Saxon period.

It would appear that coinage as a means of exchange was reintroduced in England in the late 7th century. It is unlikely that the Saxons would have relied for supplies of coinage on casual finds of Roman coins or hoards. There is little evidence of how such chance finds were used; although on the Continent they were sometimes used in jewellery.

If any understanding is to be gained of what appears to be little more than a casual practice of keeping accidentally-discovered antiquities, it is necessary to collect all available data as to the numbers, dates and contexts of Roman coins from Saxon sites. The author would be glad to receive details of any such finds.



Plate 7. Maiden Lane: A coin of Constantinople; obverse and reverse.

## CATALOGUE

1. House of Constantine, AE3, reverse type of GLORIA EXERCITVS (1 standard), AD 337–41 (Carson *et al.* 1965, No. 87). The coin is heavily corroded and it is impossible to determine either its state of wear or whether it was a regular or an irregular coin. Its diameter, at 18mm, is large for this type, and it is therefore likely to be an official coin. JUB well (117) SF. 5.
2. Irregular copy, House of Constantine, AE 15mm, produced *c.* AD 340–46 (Pl. 7). This is a hybrid type, with obverse copying the VRBS ROMA issue of AD 330–35 (Carson *et al.* 1965, No. 51) and reverse copying the contemporary CONSTANTINOPOLIS issue (Carson *et al.* 1965, No. 52). MAI context (283) SF. 84.

## THE MID-SAXON COINS

by Peter Stott

The present contribution discusses mid-Saxon coins from the first controlled excavations to indicate that, in the three centuries or so prior to Alfred's seizure of London in 886, the area along the north bank of the Thames to the west of the present City contained considerable habitation and activity. Before the results of work at the sites of Jubilee Hall and Maiden Lane put flesh on the bones of supposition, the evidence of coin-finds had been used to direct the course of future investigations. Martin Biddle (Biddle 1984), who helped to pioneer the idea of 'London on the Strand', noted the significance in this respect of coin hoards from the Middle Temple and Waterloo Bridge (Blackburn and Pagan 1986, nos 50 and 65). The 'Thames Hoard' and other *sceattas* from the Roach Smith collection may be demonstrated as originating probably from the Thames at the City of London. There is certainly no evidence to suggest, as Biddle has, that they were discovered or deposited in the northern foreshore between Blackfriars and Charing Cross (Rigold and Metcalf 1984, 254; Stott, 1991). Biddle also noted a lone single find, a 'Witmen' tremissis found in 1848 at Blackfriars (Sutherland 1948, 90, No. 62a; Stott 1991, No. 1).

Further coins exist which were discovered prior to 1984 and which are relevant to these investigations, but their significance has only emerged in retrospect as a result of the increased interest.

A hoard of coins of Burgred appears to have been discovered *c.* 1895 at Westminster Bridge, although doubt has been cast over whether this can be distinguished from the find at Waterloo Bridge (Blackburn and Pagan 1986, No. 68; Pagan

1965, 24). Whatever the actual findspot, a coin of Burgred in an American collection is recorded as having been found at Westminster Bridge and may be from this hoard (Brady 1982, No. 207), while an anomalous *sceat* in the Waterloo Bridge hoard is probably best regarded as a separate, single 8th-century deposit discovered coincidentally with the 9th-century hoard (Metcalf 1986, 2).

Known single finds are a series T *sceat* from Lambeth Bridge (Metcalf 1986, 2; Stott 1991, No. 42), a coin of Coenwulf from Fleet Street (Blunt, Lyon and Stewart 1963, 51, No. 11; Stott 1991, No. 56), of Baldred from Lambeth Bridge (Blunt 1974; Stott 1991 No. 61), of Burgred from Northumberland Avenue (Pagan 1965, 22; Stott 1991, No. 65) and of Alfred ('Lunette' type) from Lambeth Bridge (Stott 1991, No. 67). At the time of writing, a further four *sceattas* and a coin of Ecgerht of Wessex, all from excavations conducted by the Museum of London in the so-called Strand area, have been discovered since the three coins under consideration here, but these will be discussed in a future publication (the Ecgerht is included in Stott 1991, No. 62).

Coin finds alone, therefore, provide an impressive group of evidence for activity, possibly commercially based, in the area to the west of the City in the mid-Saxon period. This is particularly remarkable when compared with finds of coins of the post-Alfredian period, which reveal an almost exclusive concentration within the intra-mural City, and a total absence from the Strand area. It should, however, be noted that this situation was not reversed in the mid-Saxon period, for coin finds of the time are known from the City area. It cannot thus be claimed that the area occupied by Roman London was completely deserted by succeeding inhabitants in favour of the Strand area (Stott, 1991).

Finds of *sceattas* from London have been listed elsewhere (Rigold and Metcalf 1984, 254–255; Stott 1991, 305–8). The present two finds have the distinction of being the first found as a result of archaeological excavation in central London, and thus the first with indisputable, precise findspots where the context of deposition can be held under close scrutiny. Collectively, finds of *sceattas* from London complement the evidence of discovery elsewhere by demonstrating that, in comparison with coinages of the succeeding two centuries, the currency of *sceattas* was very large, which apparently suggests that their period of production witnessed a wider acceptance of a money-based economy than either the preceding post-Roman period or the succeeding period up to Eadgar's reform (Stott 1991). They also show London to have been one

of the main centres of the money-market in the south and south-east of England, although, if the rate of discovery is at all representative, the town's success in attracting custom must be qualified when compared with *Hamwic* and the East Kent ports (see below; Rigold and Metcalf 1984; Stott 1991, 282). There has been far more extensive excavation of *Hamwic* than of mid-Saxon London, which may suggest that this comparison is not entirely fair. However, given that only a small proportion of the total likely area of *Hamwic* has been investigated, and that further archaeology would probably yield similar quantities of *sceattas*, the primacy of *Hamwic* in relation to London and elsewhere in this respect should not seriously be doubted (Metcalf 1988, 17–18).

## CATALOGUE

### 1. *Sceat*

#### Series V (Type 7)

O: Bird and vine

R: She-wolf and twins

1.17g

Fill of a well, Jubilee Hall, Covent Garden, 1985

JUB 85 (120) SF2.

This is a corroded example and appears also to be worn, although the extent of wear is difficult to determine.

This *sceat* is probably of the mid-Secondary phase and is dated towards the end of the first quarter of the 8th century (Grierson and Blackburn 1986, 182 and 188). Finds of series V have previously been concentrated in East Kent, although finds from elsewhere at Bitterne, Southampton, Reading and now London equal these in number. However, the geographical concentration in

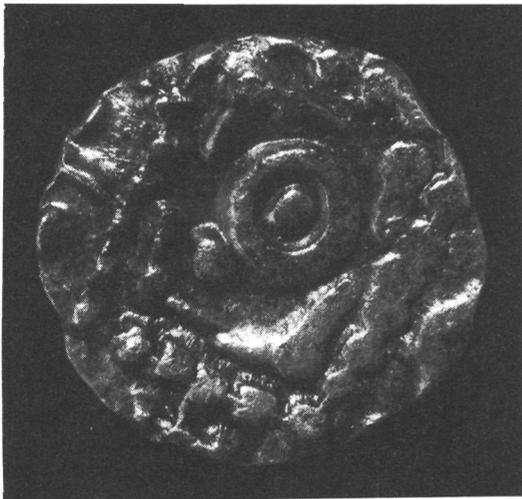


Plate 8. Maiden Lane: A series D type 8 sceat (photo: Museum of London, Louise Woodman).

Kent still suggests that the mint for the series may have been in that vicinity (Metcalf 1984, 44). The she-wolf and twins design on the reverse is derived from Roman issues and is depicted again in the late 8th century on a coin of Aethelberht, King of East Anglia (North 1980, No. 431). Indeed, the scene appears to have been particularly associated with East Anglia (Campbell 1982, 67), and it has been suggested that it was a punning emblem adopted by the Wuffingas, the East Saxon royal house. However, the distribution of series V does not indicate an East Anglian origin.

### 2. *Sceat* (Pl. 8)

#### Series D (Type 8)

O: Cross with letters (undecipherable)

R: Standard

1.20g

Maiden Lane 1986

MAI 86 (216) SF8.

This example exhibits minimum wear.

The distribution of finds of series D indicates a continental, very likely Frisian, origin (Op den Velde, De Boone and Pol 1984, 127–128). A number of single finds have been made in England, but the bulk of the series from this country comes from the Aston Rowant hoard (*Coin Hoards I*, 1975, 87) where it accounts for 179 of the full hoard of 324 coins. Both on the continent and in England, Type 8 is less common than Type 2c, the other type included under series D. In the Aston Rowant hoard, for example, there were 17 examples of Type 8 against 162 of 2c. The geographical distribution of Type 8 mirrors that of 2c, while in England, with the exception of Aston Rowant, it is notably limited to the east coast, with finds from Yorkshire, East Anglia, Kent and London providing no clue to any mint-site in this country and reflecting a likely origin across the North Sea (Op den Velde, De Boone and Pol, *ibid*). Type 8 may be regarded as, a double-reverse issue as it is related to its series D companion by the use of the 'cross-and-letters' reverse, while the standard is used as a reverse on series C and E. It is dated to the first two decades of the 8th century (Grierson and Blackburn 1986, 188).

Finds of foreign currency, where they occur in significant numbers, may be taken as an indicator of international trade, and there are sufficient finds of foreign *sceattas* to demonstrate that there must have been few, if any, restrictions on the circulation of foreign currency in England. This appears to be the first series D to have been found in London, and on the assumption that London was a major international port, more might have been expected prior to this. However, finds of foreign *sceattas* in London interestingly fall short of those found in *Hamwic* and East Kent. The three main series of continental *sceattas* distinguished by Metcalf, series D, E and X, account for approximately 15% of the total number of *sceattas* found singly in London, whereas in both *Hamwic* and East Kent, the proportion is in the region of 25% (Metcalf 1984a, 161; the London proportions are according to Rigold and Metcalf 1984, with the addition of the present example, a series E from Barking Abbey—Stott 1991, No. 15, and a series X from Rotherhithe—*Brit Num Journ* 57, 137.). This evidence adds further weight to the proposition made elsewhere (Stott 1991, 282) that, on the

basis of the volume of *sceatta*-finds, London appears to have played a role in the money-market, both locally and internationally; that was secondary to that played by *Hamwic* and the East Kent towns.

### 3. Coenwulf

Group I (796–c. 805)

O: M in centre (for Mercia)

COENVVLFREX

R: Tribach moline of three lines

IB./:B/:A.

Ibba, London

(cf Blunt, Lyon and Stewart 1963, Cn16)

1. 09g; 225

Pit of domestic refuse, Maiden Lane, 1986

MAI 86 (266) SF68.

This coin has no wear, but is slightly bent.

Two others of the same variety and moneyer have been found previously. One is from Breedon-on-the-Hill, Derbyshire, while the other is possibly from Shropshire. This second coin shares the same obverse die as the present example (Blunt, Lyon and Stewart 1963, 51). On the basis of this distribution alone, there would be an inclination to relate the moneyer Ibba to a probable mint at Tamworth, the centre of Mercian royal power. However, it would appear that, from the time of Offa and through the 9th century, coin production for both Mercia and Wessex was concentrated in the south-east (Blunt, Lyon and Stewart 1963; Pagan 1986) and Stewart has demonstrated why Ibba should be associated with a mint at London (Stewart 1986, 29–33).

## THE METALWORK

by Lyn Blackmore

### COPPER ALLOY

1. (Fig. 35, 1). Key comprising a square-sectioned shaft and a flattened baluster terminal (7mm) decorated with three grooves. A little below the mid-point of the shank (41mm and 51mm below the terminal) are two further grooves. The key was bent in antiquity above the prongs, which are 15mm long and 6mm apart. Keys are rare in stratified Saxon deposits apart from graves, although several examples have been found, notably at the settlement site of West Stow (West, 1985). The Jubilee Hall find is rather delicate for a key; the most common type has a more substantial 'T' shape similar to the girdle hanger. JUB pit (28) fill (29) SF. 7.

2. (Fig. 35, 2). Perforated object of unknown function, made from a single strip of copper alloy 41mm long and 2mm thick, which tapers slightly from 10mm at the rounded, perforated end, to 7mm at the broken end. The decoration on both sides comprises three parallel lines across the approximate mid-point of the surviving portion, below which is a diagonal cross. The fact that the object is decorated on both sides, and moreover broken, suggests it may have been part of a key or girdle hanger rather than a strap end (L. Webster pers. comm.). JUB pit (4), SF. 1.

3. (Fig. 35, 3). Mount with attachment loops, 45mm long with a maximum width of 18mm; the 'butterfly' shape is approximately symmetrical, with two rounded lobes or 'wings' on either side of a roughly square centrepiece. This is indented at top and bottom, while each lobe has a small projection at the midpoint of the curve. The cast decoration is indistinct due to corrosion, but appears to be in the 'chip-carved' style, with two diamonds enclosed by an arc at either side. This may be from a belt or a harness. The form appears to be a North European type, and similar objects have been found at Birka, but no exact parallels are known (L. Webster pers. comm.). MAI layer (338), SF. 57.

4. (Fig. 35, 4). Buckle plate(?) comprising a rectangular plate with two rivet holes at the corners, and a ? third rivet through the centre and two prongs. MAI ditch (292) layer (295), SF. 28.

5. (Fig. 35, 5). Pin or toilet implement with perforated head for attachment to a chain, of which one link remains in place. Surviving length 44mm. MAI layer (344), SF. 55.

6. (Fig. 35, 6). Pin or toilet implement with perforated head (slightly bent). Length 53mm. MAI layer (344), SF. 42.

7. (Fig. 35, 7). Part of a chain with two types of link, a flat 'S' and a twisted 'S'. MAI layer (344), SF. 144.

The function of the above three items is uncertain; the two pins may have been 'link pins' or 'union pins' joined by the chain to form a late example of a form of dress accessory found in earlier Saxon graves, for example in the 7th-century cemetery at Long Wittenham (S. Ross, pers. comm.). However, as part of a third pin was found in the same feature (No. 13) it is possible that these were all part of a set of toilet articles suspended from the belt on a chatelaine chain. A typical set of toilet implements comprises one or two pin-like tools for cleaning the nails and teeth, and a spoon-shaped 'ligula' for cleaning the ears. The chatelaine is most common in the 7th century, although the practice of carrying toilet articles and tweezers appears less common in 7th- to 9th-century graves than previously; tweezers are more commonly found in male than female graves (Owen-Crocker, 1986, 47). It is suggested that the fashion for chatelaines died out in the 8th or 9th century (*ibid.*, 101).

8, 9. (Fig. 35, 8, 9). Two dress or garter hooks, one (SF. 100) with seven perforations, the other (SF. 101) with eight. Such hooks date from the 7th-9th centuries, but the type continues into the 12th century. Anglo-Saxon examples have been found in cemeteries in Cambridgeshire, Oxfordshire and at Winchester, where they were found at the head or hip as well as at the knees (Owen-Crocker, 1986, 92; 126). A similar hook found at Schouwen in Holland has an all-over ring and dot decoration (Capelle 1978, Fig. 16, No. 80). MAI context (245) SFs. 100, 101.

10. (Not illustrated). Composite object of unknown function, possibly a box fitting or from a musical instrument. X-radiography suggests that this comprises a piece of wood c. 2mm thick (now carbonised) between two copper alloy plates held together by two nails. At the exposed end the wood is 'rounded' as if complete. There is wood on both outside surfaces, but whether this is intentional

or from burial is unclear (H. Ganiaris, pers. comm.). JUB pit (59) fill (63), SF. 4.

11. (Not illustrated). Strip with rounded, perforated ends; no decoration. Length 49mm, width 5mm, thickness 1mm. MAI pit (237) fill (242), SF. 106.

12. (Not illustrated). Four fragments, 30 × 5mm and 50 × 5mm (two joining). The curving, expanding shape of these fragments suggests that they may derive from a miniature pair of shears, but one of the two non-joining fragments appears to be from a composite copper alloy/iron/wooden object, and has traces of replaced wood adhering. MAI pit (261) fill (264) SFs. 115, 116.

13. (Not illustrated). Shaft and point of a pin, surviving length 41mm. MAI pit (261) fill (265), SF. 87.

14. (Not illustrated). Three small fragments of pin shaft. MAI layer (276), SF. 104.

15. (Not illustrated). Shaft and point of a pin, surviving length 13mm. MAI ditch (292), layer (323), SF. 12.

16. (Not illustrated). Shaft and point of a pin, surviving length 10mm. MAI layer (339), SF. 143.

17. (Not illustrated). Two fragments of very fine wire found in the uppermost layer of the midden may be of Saxon or later date. MAI layer (348), SF. 172.

## LEAD

1. (Not illustrated). One small fragment of lead waste, bent back on itself. MAI ditch (292) layer (311), SF. 30.

## IRON

1. (Fig. 35, 10). Five joining fragments from a dish or frying pan with slightly convex base, c. 220mm in diameter, with a shallow rim c. 10mm. Made from a single iron sheet, surviving thickness 5mm; the underside is in very poor condition. Frying pans were used from the Roman period onwards, but are rarely found, and the interpretation of fragmented vessels relies heavily on finds from cemetery sites. In England the most common metal vessels in graves are hanging bowls of copper alloy. At Krefeld-Gellep, Germany, however, a range of well-preserved metal cooking vessels was found. These include a 3rd-century iron frying pan, and a copper alloy dish/bowl with loop handles from a late 6th/early 7th-century grave (Zabern 1986, Fig. 55; Fig. 164). A perforated sheet from *Hamwic* has been interpreted as part of a sieve colander (Hinton 1980, 75). JUB well (121), SF. 3; dump layer ?(51), SF. 8; pit (130), SF. 11; pit (116), SF. 12.

2. (Fig. 36, 1). Axe head, with traces of wood surviving inside the socket; the dimensions after conservation are 200mm across the upper edge, 60mm across the slightly rounded cutting edge. The depth of the socket is c. 55mm, the socket itself 40mm × 50mm. In form this resembles Wheeler's Type I woodsman's axe, a type which seems to have altered little from Roman times onwards (Wheeler 1927, 23, Fig. 6, Fig. 8, No. 1). The size of the blade, however, suggests that this may have been a finishing tool rather than a chopping implement (D. Bateman, pers. comm.). JUB pit (153), SF. 13.

3. (Fig. 36, 2). Knife blade with tang; total surviving length including tang 120mm, length of blade c. 72mm; the blade width is 15mm. This would appear to be an angled-back knife of West type D (West 1985 124, Fig.

240, Nos 18–28), although the poor state of preservation makes it difficult to be certain. The illustration is taken from the X-ray. JUB pit (107) layer (110), SF. 44.

4. (Fig. 36, 3). Large rivet with rounded head c. 30mm in diameter, rounded shank c. 10mm in diameter, and diamond-shaped rove 50 × 30mm in place. Length 75mm; the timbers held in place would have been c. 500–550mm thick. Although not as large as the possible boat nails from *Hamwic* (Hinton 1980, 75), it is nonetheless suggested that this may be from a small boat. Loose lozenge-shaped rivets have also been found at *Hamwic* (*ibid*). MAI ditch (292) layer (306), SF. 125.

5. (Fig. 36, 4). Composite wood and iron woolcomb, comprising a wooden block 12mm thick cased in iron, with a double row of staggered iron teeth. The original width of the mount was probably c. 40mm; the length is unknown. In all eleven teeth survive on each side, the longest being 78mm (ie. a total length of 90mm). There is no evidence for a handle. MAI context (284), SF. 83.

The structure of these tools did not change much from the Saxon period to the 18th century (Hoffman 1964, 284–6, 381–3, Figs 117–9). They were used in pairs, each comb consisting of one or two rows of pointed iron teeth, which may be straight or slightly curved, attached to a narrow wooden mount. The handle is fixed at right angles to the centre row of the teeth, which are normally 100–120mm long. The sequence of construction for this example would probably have been as follows:

1. Wooden block cut to size and holes drilled for the teeth.
2. Iron plate cut to size and holes made for the teeth.
3. Iron teeth inserted through the iron plate and through the entire thickness of the wood.
4. Iron plate wrapped around the wood and probably welded to the teeth on the upper side.

If found loose and fragmented, the teeth from such combs would be extremely difficult to distinguish from nails. A number of pointed iron objects found at Shakenoak and at West Stow have however been provisionally identified as woolcomb teeth (Brodrigg *et al.* 1972, 115; West 1985, 124); complete carding combs have been found at Wicken Bonhunt (West 1985, 124) and *Hamwic* (Pay 1987, 10).

Besides the knife (No. 3) fragments of four other knives were found:

6. (Not illustrated). Five joining fragments of blade and tang in very poor condition; insufficient survives to be sure of the profile. JUB gully (100), SF. 113.

7. (Not illustrated). The tip of the blade (surviving length 55mm); this appears to be of West type B (West, 1985, 124) with the back and cutting edge curving to a point. JUB unstratified, SF. 119.

8. (Not illustrated). The tip of an angle-backed knife blade, surviving length 45mm, maximum width 18mm. MAI pit (261) fill (265) SF. 78.

9. (Not illustrated). Two joining fragments from a knife with a rounded end and tang with twisted square section. Surviving length c. 82mm (tang c. 17mm, blade 65mm). The fracture suggests that the blade was formed by folding a sheet of iron around itself three times. This object is in very poor condition. MAI layer (376), SF. 111.

Both angle-backed knives and knives with curved backs

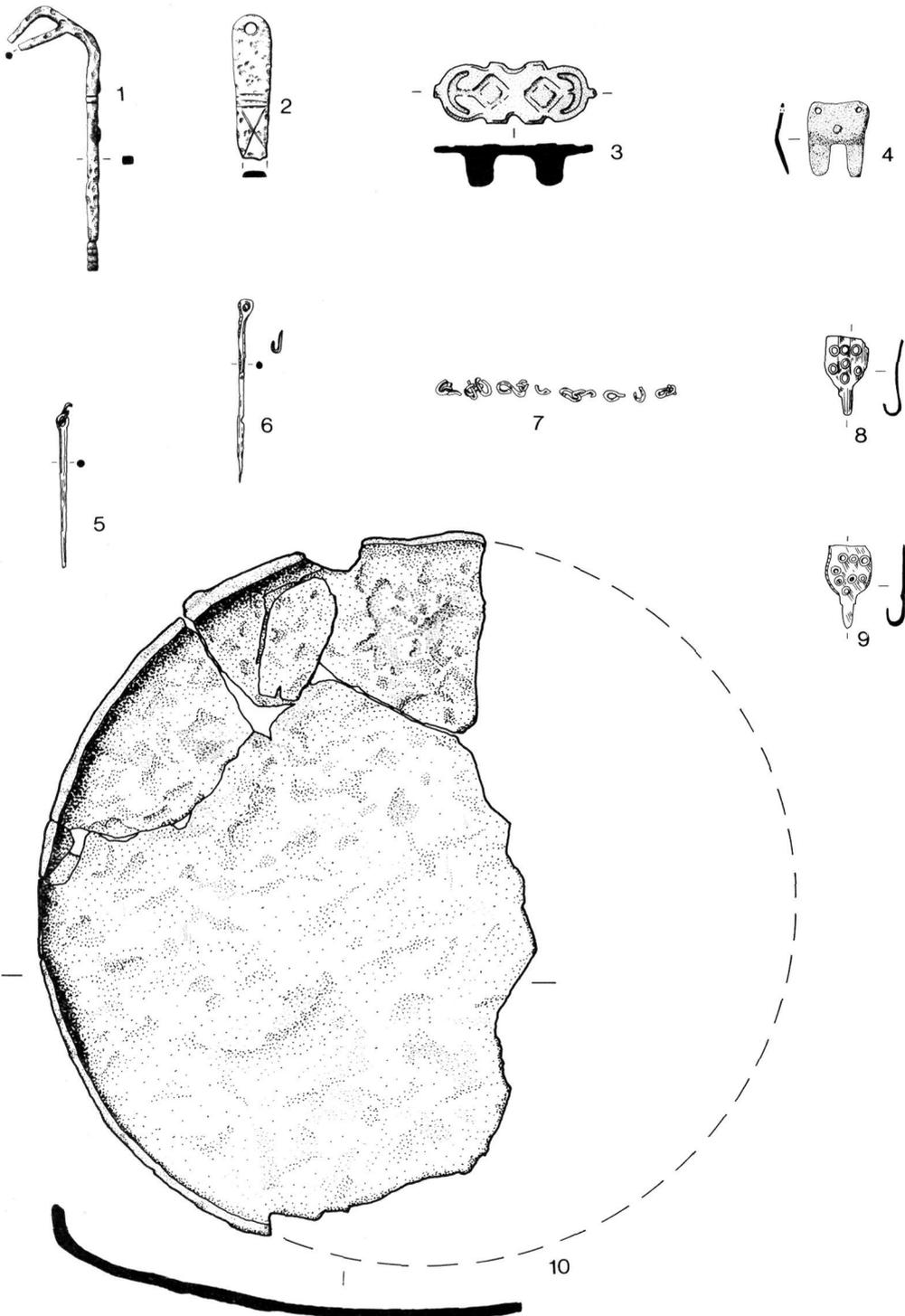


Fig. 35. Jubilee Hall and Maiden Lane: The copper alloy (Nos. 1-2 Jubilee Hall; Nos. 3-9 Maiden Lane). The iron frying pan (No. 10 Jubilee Hall).

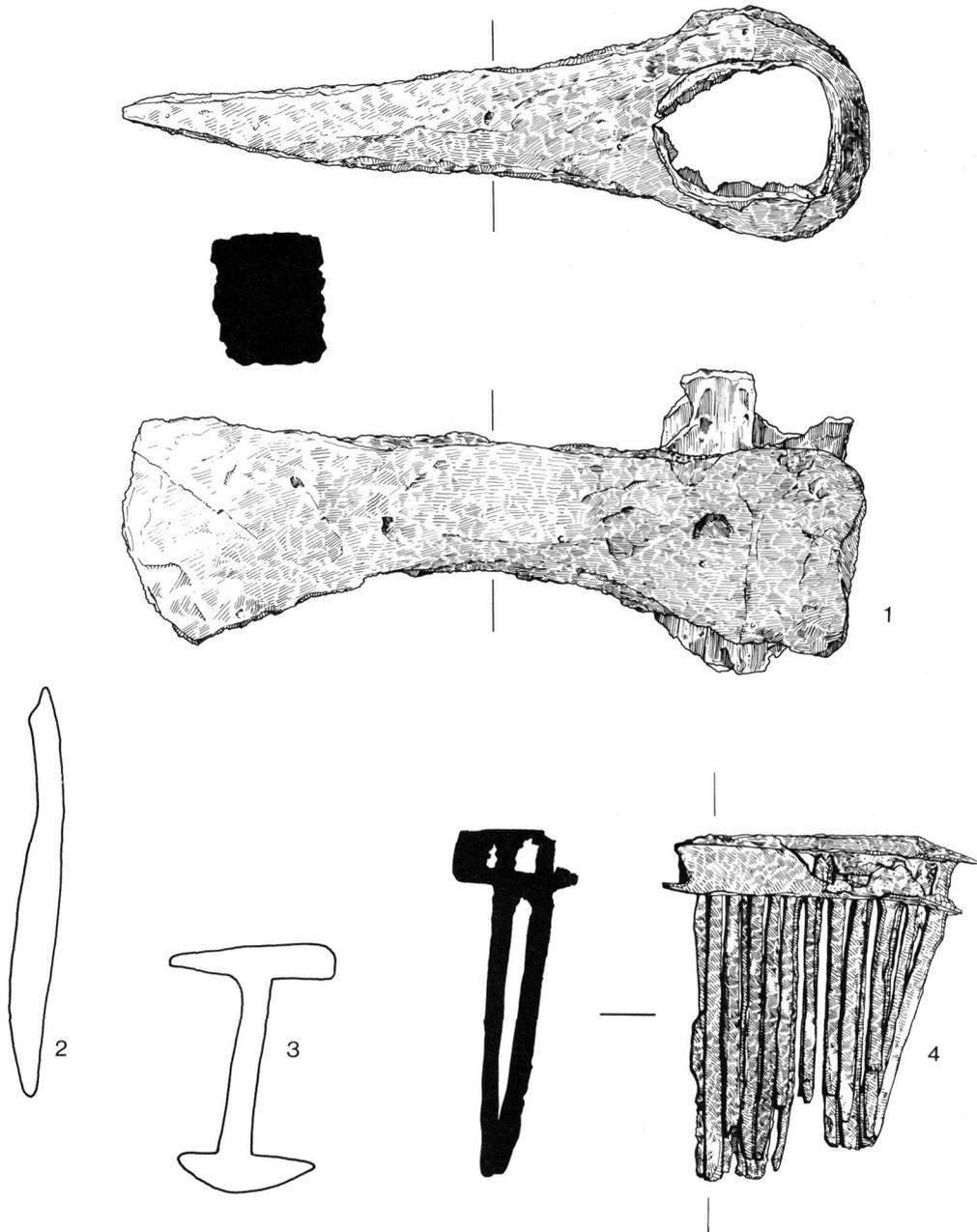


Fig. 36. Jubilee Hall and Maiden Lane: The iron (Nos. 1-2 Jubilee Hall; Nos. 3-4 Maiden Lane).

and blades are found at *Hamwic* (Addyman and Hill 1969, 65; Holdsworth 1980, 74). An angle-backed knife from Whitehall (Huggins, forthcoming) has a groove along the edge of the blade in the Late Saxon tradition, a trait also seen at Portchester (Cunliffe 1976, 200; Fig. 133, Nos 23–25).

The iron finds also include a number of large nails and other objects possibly associated with building work such as spikes and staples.

10. (Not illustrated). One 'L-shaped' ?bracket fragment. JUB well (111) fill (114), SF. 43.

11. (Not illustrated). Three fragments, two joining, of a rod 7 × 8mm in diameter, slightly curving, and possibly expanding at one end. JUB well (121) fill (124), SF. 116.

12. (Not illustrated). Three fragments from an unidentifiable flat object; one fragment of nail with head and part of the shank; one ?nail fragment. JUB pit (124), SFs. 41, 42.

13. (Not illustrated). Nail head with part of shank, and broken fragment of shank. JUB pit (126) fill (127) SF. 115.

14. (Not illustrated). Part of a staple. JUB pit (136) fill (137), SF. 118.

15. (Not illustrated). Head and shank of a very large nail or spike, surviving length 140mm, diameter of head *c.* 30mm, and the shank and point of a nail or spike, surviving length 72mm. Possibly from the same object. MAI pit (261) fill (265), SFs. 80, 81.

16. (Not illustrated). Staple; the lengths of the prongs are 45mm and 55mm respectively. MAI pit (237) fill (244), SF. 95.

17. (Not illustrated). Part of a staple, broken at the curve; surviving length 60mm. MAI unpublished context, SF. 127.

18. (Not illustrated). Nail head with part of shank; surviving length *c.* 50mm. MAI Ditch (292) layer (310), SF. 141.

19. (Not illustrated). Part of a spike; surviving length 90mm. MAI layer (339), SF. 51.

20. (Not illustrated). Part of a spike; surviving length 80mm, the diameter tapers from 30mm to 10mm. MAI layer (380), SF. 98.

21. (not illustrated). Roughly diamond-shaped sheet, slightly bent; dimensions 55 × 50mm × 10mm. MAI layer (376), SF. 107.

Other finds not included in the above categories are:  
22. (Not illustrated). Part of a mount or socketed object with a projected diameter of 50mm, heavily encrusted on the outer surface with corrosion products, which contain some organic matter. This object is of most unusual construction, comprising a curved rivet plate *c.* 25mm across (surviving height 25mm) with two rivet holes, which has been folded back over itself concealing the rivets. The rivets would appear to have been copper alloy. JUB pit (19) fill (20), SF. 114.

23. (Not illustrated). Fitting or part of a key, surviving dimensions 30mm long with a squared end 10mm across. MAI layer (341), SF. 44.

## THE TECHNOLOGICAL MATERIAL

by Michael Heyworth and Paul Wilthew

Both the excavations at Jubilee Hall and Maiden Lane produced some technological material. However, the small quantity recovered does not suggest that any industrial activity was taking place on these sites. The material probably represents a background scatter of material such as is commonly found on settlement sites of all periods.

The site at Jubilee Hall produced a total of 2554g of technological material, most of which is iron-smithing slag. The smithing slag, which is produced during blacksmithing, was scattered over the site in pits (57), (59), (135), (139), (162) and well (117). Fragments of hearth lining, the vitrified clay lining of a hearth used at high temperatures and usually associated with ironworking, were found in pits (57) and (162). A small amount of fuel ash slag was found in pits (133), (136), and in well (117). Fuel ash slag is the result of a high temperature reaction between ash and silica-rich material such as sand or clay and is not necessarily associated with metalworking.

Evidence for non-ferrous metalworking was recovered from the site at Jubilee Hall in the form of a lump of lead-rich material which also contained copper and may be part of a litharge cake associated with refining precious metals. Two clay crucible fragments used in copper alloy working were also found in pit (126) and in the 'dark earth' (181). The crucible fragments were analysed using qualitative X-ray fluorescence and showed traces of copper, zinc and tin, which suggests that a gunmetal-type alloy was being melted. Some lead was also detected, which is likely to have been in the alloy as a minor component. This type of mixed alloy is common on mid-Saxon sites in southern England (Bayley 1988). The crucible fragments were too small to allow any reconstruction of their original form.

The excavation at Maiden Lane produced *c.* 300g of technological material. This was mainly iron-smithing slag and fuel ash slag from the 9th-century ditch (292) (fills (305)(306)(310)(324)), which also contained a fragment of hearth lining (fill (314)). Fuel ash slag was also found in layer (345) of the midden in Area C, while fragments of hearth lining and fuel ash slag were also found in pits (237) and (261), which pre-date the ditch.

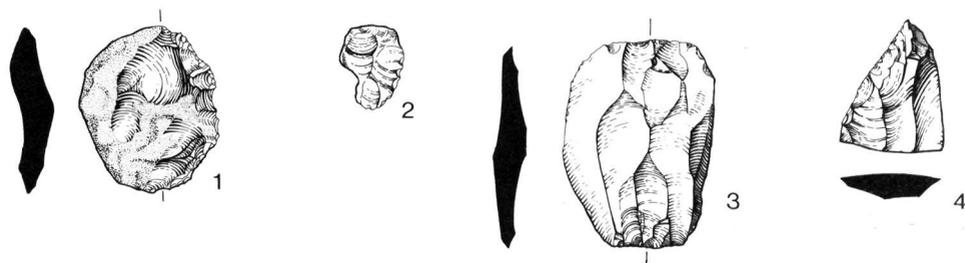


Fig. 37. Jubilee Hall and Maiden Lane: The flints (No. 1 Jubilee Hall; Nos. 2-4 Maiden Lane).

## THE FLINT

by N. Merriman

At Jubilee Hall a side scraper (Fig. 37, 1) was recovered during excavations. It is a residual find, and not diagnostic.

At Maiden Lane fourteen flint artefacts, probably all residual, were recovered. They comprise thirteen struck flakes (Fig. 37, 2, 3, 4), three with retouch, and one axe fragment re-used as a scraper. All of the flint used could have been derived locally from the river gravels.

As with many other residual flint finds in the London area, the assemblage could span several periods, from the Mesolithic to the Bronze Age. None of the finds, however, are exclusively diagnostic of a particular period, and it is most likely that they represent losses over a long time. The main significance of the assemblage is that it adds to the accumulation of evidence that the northern banks of the Thames in central London were definitely occupied at various stages before the Roman period (Merriman 1987).

## THE STONE

by Lyn Blackmore and David Williams

### INTRODUCTION

Fragments of worked imported stone were found on both sites, most of which derive from querns or hones. A few unworked fragments were also found. The petrological identifications were carried out by David Williams, whose full reports are available in the archives. The geological descriptions are incorporated at the relevant points below.

The majority of quernstone fragments are of volcanic rock from the Mayen-Niedermendig area of the Eifel Hills of Germany, a region well-known in both Roman and Saxon times for supplying

millstones and quernstones (Parkhouse 1976; Kars 1980; Peacock 1980). A few fragments made of non-local English stone, probably from Kent, are also present. While the possibility remains that these may be re-used Roman querns, the general lack of other Roman material on these sites makes it more likely that they are of Saxon date, and thus a further indicator of (?Anglo-Frisian) trade connections in the 7th-9th centuries, the more so as quernstone fragments from the same sources have subsequently been found at several other Saxon sites in the area, such as the Peabody site (Whytehead, forthcoming), the National Gallery (Cowie, forthcoming), Southampton Street, and Shorts Gardens (Connor 1990). A number of important questions, however, remain at present unresolved. It is not known, for example, if the querns imported into London were solely for use there, or if/how they were also distributed to other sites. Neither is it certain that the querns arrived ready-made. It is possible that they were imported half-finished for manufacture in London, as was the case at Dorestad, Haithabu, and possibly *Hamwic* (Parkhouse 1976, 185). At Dorestad, a number of highly abraded thick fragments of lava were interpreted as ballast which would have had a commercial value as well as a practical use (Parkhouse 1976, 186).

A study of the Dorestad lava querns showed that the stones may have been arranged in a number of ways (Parkhouse 1976). Two types of quern, rotating and oscillating, were defined, with five types of stone: lower stones, flangeless upper stones, flanged upper stones, and two types of upper stone with a stone rynd across the hopper. The Jubilee Hall and Maiden Lane fragments are all too small to allow reconstruction of any kind, but a few general observations are noted below.

The hones are all fragmented, but none appears to have been particularly distinctive in form. Most are of Kentish ragstone, with one possible Scandinavian import.

## GEOLOGICAL IDENTIFICATIONS

by David Williams

*Niedermendig Lava*

Most quernstone fragments are of a dark grey, fairly coarse vesicular lava, containing conspicuous dark phenocrysts of pyroxene. A small sample from each site was thin sectioned and examined under the petrological microscope. This revealed that the most prominent minerals are frequent grains of green and colourless clinopyroxene, mainly augite, set in a groundmass of small lath-shaped crystals of andesine/labradorite feldspar, opacite, leucite and some xenomorphic nepheline. The composition of the rock is particularly distinctive and it can be classified as nepheline-tephrite. This type of rock is found in the lavas of the Mayen-Niedermendig area of the Eifel Hills of Germany.

*Eidsborge schist*

One fragment of ?honestone from Jubilee Hall is a lightish grey quartz-mica-schist (origin unknown), perhaps belonging to Ellis' Type IA[1], a Norwegian ragstone from Eidsborge, Telemark, in central southern Norway.

*Grey Limestone*

A few quernstone fragments from both sites are of a grey glauconitic limestone, probably from the Hythe Beds of Kent (Smart *et al* 1966). Thin sectioning of fragments from both sites shows a granular mosaic of calcite grains with organic fragments. Glauconite and quartz occur as scattered grains.

*Glauconitic sandstone*

One ?quernstone fragment from Jubilee Hall is of a dark grey glauconitic sandstone (origin unknown).

*Grey glauconitic shelly limestone*

Two fragments of possible quernstone from Maiden Lane, possibly from the Lower Greensand of Kent (Smart *et al* 1966).

*Oolitic limestone*

One fragment from Jubilee Hall, of Jurassic origin.

*Kentish ragstone*

Three honestone fragments from Jubilee Hall and three from Maiden Lane are of a light grey sandy limestone; also one possible quern fragment from Maiden Lane. Thin-sectioning of fragments from each site shows a matrix of platy calcite crystals with frequent/abundant well-sorted angular quartz grains 0.10-0.20mm across, together with some glauconite and microfossiliferous grit. All five fragments are probably Kentish Ragstone from the Hythe Beds (Lower Greensand), which was widely used in the Roman and later periods as a sharpening stone (Moore 1983; Rhodes 1986). In his classification of Saxon and medieval honestones Ellis (1969) placed this stone in his Type IVB.

*Pennant sandstone*

Two fragments of ?honestone from Jubilee Hall are of a dark grey medium-grained sandstone containing quartz and micaceous grits. Possibly Pennant Sandstone from the Bristol and South Wales region.

*Calcareous sandstone*

One honestone from Jubilee Hall is of a well-bedded calcareous sandstone, light grey in colour, composed of angular or sub-angular quartz grains set in a matrix of platy calcite (origin unknown).

*Miscellaneous*

The few apparently unworked fragments of imported stone include a fragment of New Red sandstone, probably an erratic, and a piece of hard chalk from Jubilee Hall; from Maiden Lane are two irregular pieces of chalk, two irregular pieces of ?Lower Greensand, one piece of silica-rich rock, source unknown, and an irregular piece of shelly limestone with many fossil fragments and recrystallized calcite, possibly Purbeck Marble (from a medieval or later context).

## THE JUBILEE HALL STONE

by Lyn Blackmore

In all thirty-four fragments of lava quernstone were recovered, with a total weight of 8.895kg. No joins between contexts were found, but there are several joins within contexts, so that the maximum number of querns represented is eighteen. The fragments are generally substantial pieces from large quernstones, but the size and weight varies considerably, the lightest fragment being 48g, the heaviest (two joining fragments) 1536g.

Where both flat surfaces are present (thirteen fragments), the thickness of the quern can vary by several millimetres. It is thus difficult to draw any real conclusions, but two possible thickness groups are present. The first is 30–60mm thick, the second 70–90mm thick; these presumably represent upper and lower grinding stones respectively. Three fragments have one flat surface. Three pieces were found to have possible outer edges; the first, from fill (128) (SF. 19), comprises four joining fragments from a quern with a diameter of over 360mm. The thickness varies from 40mm at the outer edge to 50mm at inner break. The second, from pit (57) (SF. 20), is 70mm thick; the upper diameter is *c.* 360mm, the lower *c.* 380mm. The third, from pit (143) (SF. 150), is a small chip from the angle of a flat face and the outer edge, possibly burnt. One fragment from well (117) (SF. 21) appears to derive from the central hole.

The lava quern fragments were found in eight features, with most pieces coming from pit (158) (five fragments and six chips), well (117) (four fragments) and pit (163) (seven fragments). Eight possible quern fragments of sandy limestone were found, in pit (129), pit (133), pit (153) (two pieces) pit (163), and pit (161) (four pieces). This last feature also contained one ?quern fragment of glauconitic sandstone.

*The hones*

Six hones were found, of which three are of Kentish ragstone.

These are all well shaped with a rectangular or square cross-section, and were found in well (117) (SF. 38), pit (161) (SF. 26) and pit (162) (SF. 29). The others are of sandstone (well (121) SF. 32), calcareous sandstone (pit (158) fill (159) SF. 50), and Norwegian micaceous schist (pit (126) fill (127) SF. 27).

## THE MAIDEN LANE STONE

Twenty-one fragments of lava quern were recovered, with a total weight of 4.203 kg. Of these fifteen fragments were found in Area B, nine in ditch (292), four in pit (261), and one each in pits (217) and (237). Two fragments were found in Area A (pits (200) and (207)), two in Area C (layer (339) and pit (236)), and two in Area D (layers (280) and (376)). No joining fragments were found, either between or within contexts.

The fragments are generally smaller in size and more amorphous in shape than those from Jubilee Hall. No edge fragments were found, and only three pieces have two flat faces; two from pit (261) are 20–25mm and 42mm thick, the third, from layer (380), is 36mm thick. A further seven fragments have one flat face. Of these the largest, from pit (349), is over 75mm thick and weighs 862g; the flat face possibly has a white deposit and appears to be blackened. The flat surface of the smallest piece, from ditch (292), has acquired a smooth, highly polished surface through use. The remaining fragments are all very irregular, and may derive from waste chips as much as actual querns, so that it is impossible to draw any real conclusions about these pieces.

In addition to the above are one ?quernstone fragment of glauconitic limestone, probably from the Hythe Beds, from the midden in Area C (SF. 93), and two ?quernstone fragments of ?Lower Greensand (one in pit (207), the other residual).

*The hones*

Four hone fragments were found, one of fine-grained sandstone, with a hemispherical section from pit (245) (SF. 85) and three of Kentish Ragstone, from ditch (292) (SFs. 46, 185: flat rectangular section), and layer (347) (SF. 146, square section).

## THE WORKED BONE AND ANTLER

by Lyn Blackmore

## INTRODUCTION

Artefacts made of bone and antler were found at both sites, and it is clear that bone was worked within the settlement area. The number of finds from Maiden Lane, particularly antler off-cuts, is higher than that from Jubilee Hall, but the amounts involved are still small. The limited evidence from the various sites now excavated is more consistent with the general theory that bone was not worked in workshops at this time; but rather that simple domestic items such as pins were made by the individual as required, while specialist work such as comb manufacture was carried out by itinerant craftsmen (MacGregor 1989, 109–110). The most common objects are combs and pins; more unusual and important finds include a spoon and a handled comb from Jubilee Hall, and a decorated mount from Maiden Lane.

## JUBILEE HALL.

1. (Fig. 38, 1). The shaft of a highly polished bone object with a round section, made from the long bone of an ox-sized animal. Length 82mm, diameter 7mm, tapering slightly towards one end. The fracture suggests that this may originally have been a composite object such as a bodkin, but it may equally have been a bone threadpicker, a double-ended implement used in weaving (Farley 1976, 204, Fig. 18, No. 4; Fig. 22, No. 3; Fig. 25, No. 3). This would be consistent with the presence of two bone pins in the same context. Pit (135) SF. 37.

*Pins*

2. (Fig. 38, 2). Complete bone pin with perforated head, made from a pig fibula. Length 118mm. Pit (135) SF. 10.  
3. (Fig. 38, 3). Broken bone pin made from a pig fibula. Length 48mm. Pit (135) SF. 38.

This is a classic form of pin, made from a pig fibula with a perforation at the proximal end; the length of the pin depends on the size/age of the animal at death, but *c.* 120mm seems to be normal. The head may be unworked, as here, or rounded, as found at Walton (Farley 1976, 198, Fig. 14, no. 8). Pins of this type have been found on numerous Saxon sites, including Southampton (eg. Hodsworth 1980, 77, Fig. 15. 1).

*Combs*

Fragments from at least four combs are present, together with loose comb-teeth from pit (4) and well (111), which may derive from the combs described below.  
1. (Fig. 38, 4). One tooth-plate fragment from a double-sided composite comb made of antler cortex, with large well-rounded teeth *c.* 20mm long surviving intact on both sides; the distance between the rows of teeth is 11mm. Pit (4) fill (5) (sieved sample), SF. 34.

2. (Fig. 38, 5). Two fragments from a double-sided composite comb made of antler. The larger comprises a complete tooth-plate secured between two undecorated, bevelled connecting plates by an iron rivet. The smaller comprises a fragment of double-sided tooth-plate with the connecting plate surviving on one side only. The tooth-plate is 30mm wide; on one side the squared teeth are large and well-spaced, up to 18mm long; on the other they are more closely spaced (none intact). The distance between the rows of teeth is *c.* 15mm, the ribs 14mm wide. The edges of the ribs are nicked by saw cuts made by cutting the teeth after the tooth-plate was in place between the ribs. Beamslot (47), fill (49), SF. 9.

3. (Not illustrated). One tooth-plate fragment with part of a rivet hole from a double-sided composite comb made of antler cortex, with small squared teeth *c.* 15mm long on one side, and 12mm on the other; the distance between the rows of teeth is *c.* 13mm. Well (111), fill (114) (sieved sample), SF. 36.

4. (Fig. 38, 6). Cylindrical comb handle made of antler. The surviving portion is 76mm long, but the whole comb would originally have been *c.* 140mm long. The section is oval, and tapers slightly from 25mm × 22mm at the end to 21.5mm × 19mm at the point where it has broken. There appears to be a perforation at the back of the base, possibly to allow suspension on a cord from a belt. On the front face, there is a notch at *c.* 65mm, with two smaller notches on the side for inserting and securing the lowest tooth plate. Pit (57), SF. 140.

The incised decoration comprises a central motif of two chevrons, each with three parallel lines, banded by two groups of four horizontal lines. The chevrons start at the mid-point of the handle above the hole and interlock around the circumference of the handle, with the diagonal running from bottom left to top right over that from top left to bottom right, to form a pattern of three diamonds. Around the base of the handle, *c.* 9mm below the central design, is a band of six incised horizontal lines. Above the central design, around the back of the handle, is a repeating pattern of widely spaced chevrons between groups of four horizontal lines.

NB. First published as a knife handle (Cowie and Whythead 1989, Fig. 6).

Three types of comb were used in the Saxon period, single-sided composite, double-sided composite, and handled. These have been discussed by Addyman and Hill (1969, 75-7) and Roes (1963) amongst others. The first two types are of very similar construction. Early examples of single-sided combs tend to have an enlarged back, normally triangular or rounded. Later examples have a flatter back. At the Early-Middle Saxon site of West Stow (107 combs) single and double-sided combs were found in almost equal numbers (West, 1985). All three comb types are found at *Hamwic*, but the double-sided type is the most common. No single-sided composite combs have so far been recognised on any Middle Saxon site in London. Whether this is a reflection of the date of the settlement, of personal taste (or both), or survival factors is unclear; certainly fragmented examples would be hard to distinguish from double-sided combs.

The handled type of comb (which may itself be either single or double-sided) has generally been considered a

9th- to 10th-century type. This form is not common in England, with between only ninety and one hundred finds, and although the find spots are widely scattered, some forty examples nonetheless come from *Hamwic* (eg. Pay 1987, 14). The type is not unknown in London, with one example found at the Treasury site (Green and Thurley, forthcoming, Fig. 27, No. 1) and three from the Battersea area. One of these was found in the Thames at Wandsworth (Wheeler 1935, 152, Fig. 30; see also VCH London 1, plate facing p.158), another from the Middle Saxon site at Althorpe Grove, Battersea (S. McCracken, pers. comm.), and one unprovenanced from London (BM, M+LA 91, 4-18,16 Franks collection). Another example has been found in the Thames at Runnymede (Fortnum 1886-89).

Similar combs are known on the Continent. One example has been found at Haithabu (Riddler, forthcoming), and five examples have been found at Dorestad (Roes 1965, 59, Fig. 27). It was formerly thought that these combs might be of Scandinavian or Frisian origin, but it now seems more probable that they are of English manufacture (Hodges 1980; Riddler, forthcoming). The decoration on combs of this type is quite standard, and normally consists of groups of incised grooves alternating with a zig-zag design; a small but distinctive group, which includes the Haithabu find, also has perforations through the handle (Riddler, forthcoming). It now seems likely that handled combs were made from the 7th to the 10th century, so that precise dating is difficult.

#### Other

1. (Fig. 38, 7). Small bone spoon with incised decoration at the junction of the bowl and the oval-sectioned handle, possibly made of antler. Broken at both ends; the surviving length is 45mm. This find is unique in London. Bone spoons have been found in *Hamwic* but are as yet unpublished (I. Riddler and D. Brown, pers. comm). Well (117) SF. 126.

#### Bone and antler waste

1. (Not illustrated). One worked fragment from the mid-shaft of a long bone of an ox-sized animal, possibly an unfinished pin. Pit (140) sieved sample, SF. 124.

2. (Not illustrated). Two antler offcuts were found in well (117) (SF. 125, palm, partly sawn; SF. 123 cortex only, one end sawn), possibly from the same branch.

#### MAIDEN LANE

A total of 65 fragments of worked bone was recovered, including 29 fragments of antler waste (six fragments are possibly unworked). The worked bone was mainly concentrated in Area B, with nineteen fragments in ditch (292) (two ?unworked), ten in contexts pre-dating the ditch, and six in other features in Area B (one ?unworked). Four fragments were found in Area A (two ?unworked), seven in Area C (one ?unworked), and six in Area D.

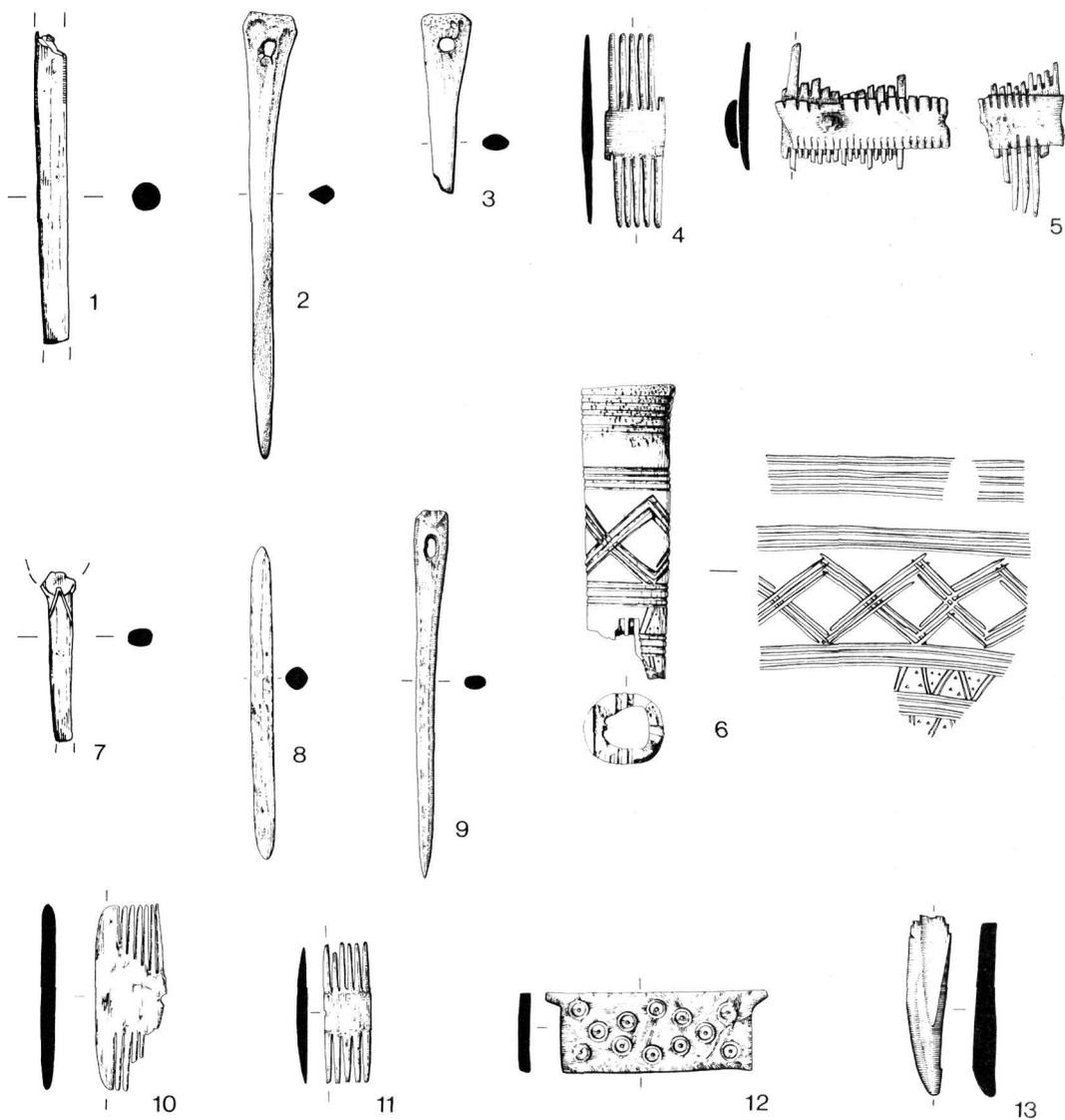


Fig. 38. Jubilee Hall and Maiden Lane: The worked bone (Nos. 1-7 Jubilee Hall; Nos. 8-13 Maiden Lane).

*Weaving tools*

1. (Fig. 38, 8). Complete pin beater, probably made from the shaft of a long bone of a cattle-sized animal, with a highly polished surface. Length 83mm, diameter *c.* 6.5mm. This type of tool is long-lived. A similar but larger example, thought to be of Early Saxon date, has been found by the DGLA at Harmondsworth, West London; mid-Saxon examples at Shorts Gardens in Covent Garden (Connor, 1990). Area B, pit (261) fill (266) SF. 76.
2. (Fig. 38, 9). Complete bone pin or needle with a very sharply pointed end and highly polished surface, made from the long bone shaft of a cattle-sized animal. Length 95mm. Area D, layer (379), SF. 134.
3. (Not illustrated). Part of the perforated head and shaft of a second pin, made from a long bone shaft. Surviving length 68mm. Area B, pit (261) layer (266), SF. 169.

*Combs*

Several comb fragments were found, but no complete or near complete examples. The larger pieces are illustrated; the unillustrated finds comprise one loose tooth (SF. 173, probably antler), and part of a connecting plate with parts of two rivet holes 15mm apart (SF. 114, antler), both from layer (379). Parts of two connecting plates with grouped incised lines were found in ditch (292) (fill (314), SF. 26; fill (307) SF. 27). Another fragment (pit (214) fill (216) SF. 167), with parts of three rivet holes 8mm and 11mm apart, may also be from a

connecting plate, although the close spacing of the rivets and thickness (3mm) are unusual. Two tooth plates with teeth on one side probably derive from single-sided composite combs (ditch (292) fill (314) SF. 17; layer (379) SF. 113, antler cortex).

Four rectangular blanks ranging from 54–56mm long and 13–23mm wide are probably unfinished tooth-plates. An unfinished connecting plate was also found (well (199) fill (201) SF. 11).

1. (Fig. 38, 10). End plate from a double-sided composite comb made of red deer antler cortex, with part of a rivet hole on the inner edge. On one side the six teeth are neatly graduated in size, rising from 10mm to 19.5mm; on the other side there is little difference in the length of the four surviving teeth. The surface of the tooth plate is slightly bevelled and polished; the underside is flat and rougher to the touch. Area C, layer (342) SF. 45.
2. (Fig. 38, 11). Tooth plate fragment with part of a rivet hole, from a double-sided composite comb made of antler. The teeth, set 8.5mm apart, are of different sizes, with five large teeth 14.5mm long on one side, to six teeth 13.5mm on the other. The upper face is convex and polished, the underside is flat and rough. Area A, pit (207) fill (209), SF. 3.

*Other*

1. (Fig. 38, 12). Decorative plate made from antler cortex, decorated with a roughly symmetrical incised ring and

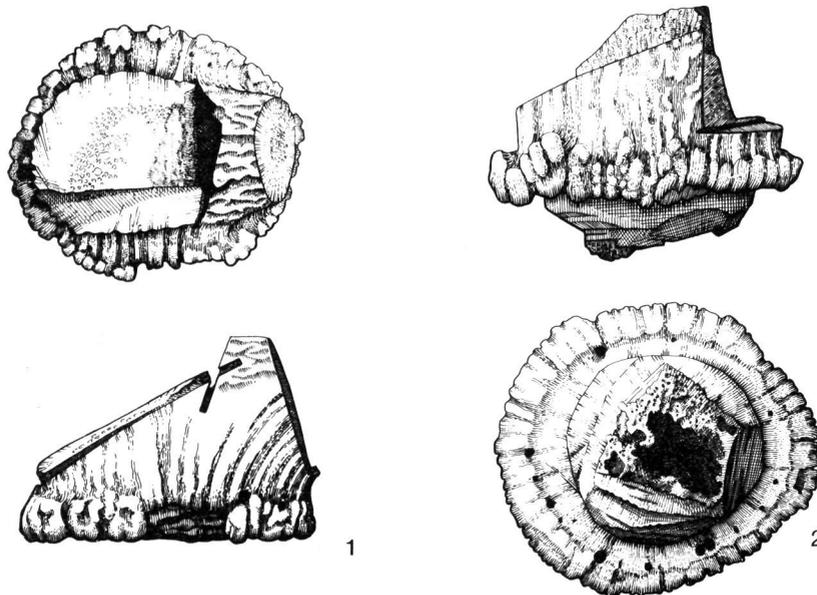


Fig. 39. Maiden Lane: The worked bone (antler offcuts).

dot design. Roughly rectangular in shape ( $50 \times 21 \times 3$ mm), the plate has two projections on one of the long sides which may have functioned as hinges. Both surfaces were originally polished, but the undecorated face is very worn. Area C, pit (349) fill (350), SF. 121.

#### *Antler tines.*

Fourteen antler tine fragments were found, ranging in length from *c.* 15mm, a tip stained green by contact with copper alloy, to *c.* 150mm. Two pieces of red deer tine are *c.* 80mm long, one is 70mm, another 60mm. A fragment of very dense red deer tine (context (338) SF. 56), possibly impregnated with iron salts, is sawn at one end, snapped at the other. Fig. 38, No. 13 (ditch (292) fill (293) SF. 21), is an unfinished object made from a red deer tine which has been shaved to create four flat faces; a similar, slightly larger piece was found in context (264) (SF. 176).

#### *Other antler offcuts.*

Four complete burrs, two with the pedicle and part of the skull attached, and one fragment from the base of the branch were found. The remaining off-cuts comprise fragments of palm and branch.

Fig. 39, Nos 1, 2 demonstrate two methods of detaching the brow tine and the beam from the burr. On No. 1, from a shed red deer antler (Ditch (292) fill (325), SF. 14) the beam was initially sawn through from above, and then diagonally from one side to a depth of 12mm. It was then sawn from the other side, the blade being swivelled around the branch over the first diagonal cut, creating a step where the two cuts meet. This left only a very small area to be snapped when the branch was pulled back. The brow tine was then sawn through from above, and cleanly snapped off at the base. The same technique was used on another fragment (ditch (292) fill (306), SF. 23).

On No. 2 (ditch (292) fill (310), SF. 15) the burr and branch were sawn away from the skull of a red deer using a series of tangential cuts. The beam was partially sawn through by working around the base of the branch in one cut; the brow tine was half-sawn through both horizontally and vertically. Both were snapped off at the cancellous tissue. A third burr (pit (251) fill (254), SF. 185), attached to the pedicle and skull of a red deer, was sawn in the same way. On the fourth burr (pit (237) fill (239), SF. 130), also attached to the pedicle and part of the skull of a red deer) the beam was partly cut diagonally from both sides, and the brow tine cut half-way through. It appears that both were then snapped off together.

## THE ENVIRONMENTAL EVIDENCE

by James Rackham

### INTRODUCTION

Because little is known about the Middle Saxon economy of the London region, the recovery of economic and environmental data is of major importance. On the Maiden Lane site recovery procedures were instituted for this material, and besides numerous animal bones found by the excavators, smaller faunal remains and plant material were also recovered by sieving and flotation. A limited number of samples from Jubilee Hall were also processed.

The environmental material studied for this report derives largely from rubbish discarded in pits, ditches and dumps. There is little archaeological evidence to suggest activity areas and a spatial analysis of the material has not been seriously attempted. The majority of the material studied was generated by human activity and little evidence survives that is pertinent to a more general reconstruction of the environment.

The short duration of the Jubilee Hall excavation severely limited environmental sampling. However, bulk samples were taken from fifty selected contexts, mainly the fills of pits and wells. These were later sub-sampled and assessed. Selected samples were floated in a modified Siraf tank (Jones 1983b) and the flot caught on a 0.5mm mesh sieve. A number of samples were incorrectly wet-sieved through a 2mm mesh without being submitted to flotation beforehand; only the material sorted from the residue was available for study, most of the items which would have been in the flot having been lost. Consequently no analysis of the carbonised plant remains was undertaken on these samples, even though some

appeared rich in cereal grains. The residue of material greater than 2mm was sorted for the small bones of fish, bird and mammal. Although the amount of environmental material recovered from the samples was therefore fairly small, it nevertheless made a useful contribution to the economic data from the site.

In contrast, at Maiden Lane there was sufficient time to undertake a systematic environmental sampling programme. Samples, comprising up to three buckets (15 litres per bucket) of soil per context, were taken from all Saxon layers and pit fills. They were mixed with water in a bucket, and after two minutes decanted onto a 0.5mm mesh sieve. The remaining dense fraction was then hosed through a sequence of 5mm and 2mm sieves, and the residues sorted. This method proved effective in retrieving a considerable quantity of faunal remains, notably fish and bird bones, as well as coprolites and carbonised plant material including cereal grains. A number of small artefacts were also found in the sieve residues from both sites. As a rule it is now recommended that a 0.25mm rather than a 0.5 mm mesh is used for catching flots.

## THE PLANT REMAINS

by Anne Davis & Dominique de Moulins

Thirty-seven samples from Maiden Lane were selected for study in the laboratory. These were chosen to represent all areas and feature types on the site. Flots were sorted at the Museum of London and identified using a modern reference collection. Samples from four contexts (268), (275), (337) and (343), were studied in depth by Catherine Rogers of the Institute of Archaeology for her MSc dissertation (Rogers 1987), and we are grateful to her for her contribution to the analysis of the site. The detailed data from these studies is being published elsewhere and is available in the archive at the Greater London Environmental Archaeology Section, Museum of London.

Plant remains from Jubilee Hall were recovered

from layers of ploughsoil, 'grey earth', wells and pits. The soil samples were taken from many different features and layers but only a few of them yielded botanical remains. No samples came from a structure or from features associated with a structure. The site was not very rich in plant remains except for one or two samples, but enough was present to give an idea of the type of site this was in relation to agricultural products.

Plant remains identified from both sites are shown in (Tables 15 and 16, and a summary Table (Table 17) shows the relative frequencies of plant groups in the richer features from both sites. Full tables of plants identified from each sample are published elsewhere.

## PRESERVATION

The overwhelming majority of plant remains recovered from both sites was preserved by charring. Many of these remains were in good condition and quite easily identifiable, but others had suffered distortion during charring, or post-depositional abrasion and breakage, making specific identification impossible in some cases.

Mineral-replaced seeds were also present in a few samples from Maiden Lane. These are preserved by the replacement of plant tissues by calcium phosphate from the surrounding medium, usually from faecal material (Green 1979a). The processing methods used on Maiden Lane were designed specifically to recover charred material. Small, dense, mineralised seeds are likely to have been lost with the discarded residue, so those species recovered from flots and the 2mm residue may not be representative. Their presence may be useful, however, in deciding the function of the features in which they were found.

A few anaerobically preserved seeds also survived in some flots from Maiden Lane. These are even more subject to the limitations of the processing method and little significance can be attached to them.

## CHARRED PLANT REMAINS

### Cereals

Cereal grains occurred in virtually every sample and were often the most abundant items recovered.

Barley (*Hordeum sativum*) was the most common cereal on Maiden Lane and was dominant in the majority of samples. Most of the grains were clearly hulled, and apparently included a mixture of 6-row and 2-row varieties. This can be determined using the ratio of twisted to straight grains and, while many grains were not sufficiently well preserved to classify, the consistently low ratio suggests that both varieties were present in most samples. 6-row

barley is common on sites of all periods but the 2-row variety seems to have been introduced to this country after the Roman period. Several occurrences have been recorded from Saxon sites, including one from a 10th-century oven at Peninsular House in the City of London (Jones *et al.*, in press).

The barley from Jubilee Hall included hulled and possibly naked forms. On the whole there was less barley on the site than wheat. One or two hulled grains appeared to be twisted; this might indicate that 6-row hulled barley was present. However, the numbers were very low and it is possible that the distortion of these few grains may have been caused by the charring. The barley was not as well preserved as some of the wheat.

Very little chaff was recovered from the Maiden Lane samples, and none from Jubilee Hall. This is not unusual as the chaff of free-threshing cereals like barley and bread wheat tends not to survive burning (Hillman 1978). Sample (219) from Maiden Lane, however, contained a number of poorly preserved barley rachis fragments as well as numerous cereal culm nodes and straw fragments.

Wheat grains were ubiquitous on the Maiden Lane site, though rarely dominant. Notable exceptions were the top fills (265) and (266) in pit (261) and, to a lesser extent, the top fills (243) and (244) in pit (237), in which wheat grains substantially outnumbered barley. The Jubilee Hall samples tended to contain more wheat than barley, particularly those from the pits.

On both sites wheat grains had the typical rounded shape of bread or club wheat (*Triticum aestivum*/*Triticum aestivo-compactum*). This is the most common species of wheat found in southern England in the post-Roman period, but is rarely accompanied by the diagnostic chaff fragments necessary to separate the two varieties. No wheat chaff was recovered from any of the samples.

Several grains of rye (*Secale cereale*) were present in most Maiden Lane samples, suggesting that it may have been a common weed of other cereal crops, as has been found on many other sites of the Saxon period (Green 1979b). In context (275) however, rye was more numerous than barley or wheat, implying that it may have been grown as a crop in its own right, or at least as a deliberate maslin (mixture of crops).

Oats (*Avena* spp.) made up a very minor component of the Maiden Lane and Jubilee Hall cereals. It is impossible to separate cultivated oats (*Avena sativa*) from the wild species unless the floret bases are preserved intact, and although only one specimen could thus be positively identified, it is quite likely that all the oats here were wild species growing as weeds of other cereals.

#### Weeds

Very few weed seeds were recovered from the Jubilee Hall samples, but some of those from Maiden Lane contained quite high numbers.

Most of the weed seeds were from species which commonly grow in arable fields, as well as other habitats, and could have been accidentally gathered and burnt with cereal crops. Examples of these are fumitory (*Fumaria* sp.), corn spurry (*Spergula arvensis*), stinking mayweed (*Anthemis cotula*) and the docks (*Rumex* spp.).

Several grassland species were also present, such as self-heal (*Prunella vulgaris*), hoary plantain (*Plantago media*), clover (*Trifolium* spp.) and other legumes. Context (219) from Maiden Lane had a particularly high concentration of these.

Plants requiring damp conditions such as spike rush (*Eleocharis palustris/uniglumis*), water plantain (*Alisma* sp.) and buttercups (*Ranunculus* spp.), and a few, like the goosefoot (*Chenopodium* spp.) and stinging nettle (*Urtica dioica*) from disturbed and waste ground habitats were also fairly common. Most of these could have arrived on site with crops, despite their apparently diverse habitat preferences, having grown in drainage ditches, low-lying areas of fields, adjacent unploughed fields or field margins. Alternatively they may have been brought to the site by other means and burnt with sweepings or other refuse, becoming mixed with cereals after disposal in pits and dumps.

#### Other food and economic plants

Very few charred food plants (apart from the cereals) were found, but fragments of hazel nut (*Corylus avellana*) were common, and single examples were found at Maiden Lane of apple or pear (*Malus/Pyrus* sp.), blackberry or raspberry (*Rubus* sp.), grape (*Vitis vinifera*) and possible lentil (*Lens culinaris*).

Grape and lentil may have been imported from warmer regions. Grapes are common finds on Middle and Late Saxon sites and Green (1981) believes them to be associated with sites of high social status.

Two seeds of flax (*Linum usitatissimum*) from context (215) constitute the only non-cereal crop represented at Maiden Lane. These may have arrived on site with cereals, as a remnant of a previous rotation crop, and no economic significance can be assumed at Maiden Lane from such a small presence.

#### MINERALISED AND ANAEROBICALLY PRESERVED SEEDS FROM MAIDEN LANE

The majority of mineralised and anaerobically preserved seeds were ruderal species, such as fat

Table 15: Charred plant remains from Maiden Lane and Jubilee Hall (see Table 16 for the habitat key) (continued on following page)

Species	Common name	Habitat	Maiden Lane	Jubilee Hall
<b>Cereals:</b>				
<i>Triticum aestivum/aestivo-compactum</i>	bread/club wheat	FI	x	x
<i>Triticum sp.</i>	wheat	FI	x	x
<i>Hordeum sativum</i>	cultivated barley	FI	x	x
<i>Hordeum sativum</i>	barley rachis	FI	x	x
<i>Hordeum/Triticum sp.</i>	barley or wheat	FI	x	x
<i>Triticum/Secale sp.</i>	wheat/rye	FI	x	x
<i>Hordeum/Secale sp.</i>	barley/rye rachis	FI	x	x
<i>Secale cereale</i>	rye	FI	x	x
<i>Secale cereale</i>	rye rachis	FI	x	x
<i>Cerealia</i>	ind. cereal	AFI	x	x
<i>Cerealia</i>	ind. cereal culm node	AFI	x	x
<i>Cerealia</i>	ind. cereal straw	AFI	x	x
<b>Other plants:</b>				
<i>Ranunculus acris/repens/bulbosus</i>	buttercups	ABCDEG	x	
<i>Ranunculus cf. flammula</i>	lesser spearwort	EG	x	
<i>Ranunculus sp.</i>	—	ABCDEG	x	
<i>Thalictrum flavum/minus</i>	meadow-rue	DE	x	
cf. <i>Papaver sp.</i>	poppy	ABGHI	x	
<i>Dianthus sp.</i>	pink	CD	x	
<i>Fumaria sp.</i>	fumitory	A	x	
<i>Brassica sp.</i>	wild cabbage/turnip/mustard	ABI	x	
<i>Brassica/Sinapis</i>	mustard, etc	ABEGHI	x	
<i>Viola sp.</i>	violet	ABCDG	x	
<i>Agrostemma githago L.</i>	corn cockle	A	x	x
<i>Cerastium sp.</i>	mouse-eared chickweed	ABD	x	
<i>Stellaria media (L.) Vill.</i>	chickweed	AB	x	
<i>Stellaria graminea L.</i>	lesser stitchwort	CD	x	
<i>Stellaria sp.</i>	chickweed/stitchwort	ABCDEG	x	
<i>Spergula arvensis L.</i>	corn spurrey	A	x	
<i>Arenaria cf. serpyllifolia</i>	thyme-leaved sandwort	ABD	x	
<i>Caryophyllaceae</i> indet.	—	—	x	
<i>Montia fontana ssp. chondrosperma L.</i>	blinks	AE	x	
<i>Chenopodium album L.</i>	fat hen	ABFH	x	
<i>Chenopodium ficifolium</i>	fig leaved goosefoot	AB	x	
<i>Chenopodium rubrum/glaucum</i>	red/glaucous goosefoot	AB	x	
<i>Chenopodium sp.</i>	goosefoot etc.	ABFH	x	x
<i>Chenopodium/Atriplex sp.</i>	goosefoot/oraches	ABFGH	x	
<i>Atriplex sp.</i>	orache	ABFGH	x	
<i>Chenopodiaceae</i> indet.	—	—	x	x
<i>Malva cf. sylvestris</i>	mallow	BF	x	
<i>Malva sp.</i>	mallow	BCDF	x	



Table 15: Charred plant remains from Maiden Lane and Jubilee Hall (continued)

cf. <i>Artemisia</i> sp.	mugwort, etc	B	x
<i>Carduus/Cirsium</i> sp.	thistles	ABDEG	x
<i>Centaurea</i> sp.	knapweed/thistle	ABDGH	x
<i>Compositae</i> indet.	—	—	x
<i>Alisma</i> sp.	water-plantain	E	x
<i>Juncus</i> sp.	rush	ABCDE	x
<i>Eleocharis palustris/uniglumis</i>	spike-rush	E	x
<i>Eleocharis</i> sp.	spike-rush	E	x
cf. <i>Scirpus</i> sp.	club-rushes	EH	x
<i>Cladium mariscus</i> (L.) Pohl	sedge	E	x
<i>Carex</i> spp.	sedge	CDEH	x
Cyperaceae indet.	—	ABCDEFI	x
<i>Avena fatua/ludoviciana</i>	wild oat	A	x
<i>Avena</i> sp.	oat	AI	x
<i>Avena/Bromus</i> sp.	oat/brome grass	ABCDFI	x
<i>Avena/Secale</i> sp.	oat/rye	AI	x
<i>Lolium/Festuca</i> sp.	rye-grass/festue	BCD	x
cf. <i>Poa</i> spp.	poa	ABCDE	x
<i>Avena/Bromus</i>	oat/brome	ABD	x
<i>Bromus</i> sp.	brome grass	ABD	x
cf. <i>Agrostis</i> sp.	bent-grass	ABCD	x
cf. <i>Phleum</i> spp.	cat's-tail	D	x
Gramineae indet.	—	ABCDEHIF	x

Table 16: Anaerobically preserved and mineralised plant remains from Maiden Lane.

Species	Common name	Habitat	Anaerobic preservation	Mineralised preservation
Papaver somniferum L.	opium poppy	BGHI	x	
Fumaria sp.	fumitory	A	x	
Chenopodium polyspermum	all-seed	AB	x	
Chenopodium album L.	fat hen	ABFH	x	
Chenopodium spp.	goosefoot etc.	ABFH	x	x
Chenopodium/Atriplex spp.	goosefoots/oraches	ABFGH	x	x
Atriplex sp.	orache	ABFGH	x	x
Chenopodiaceae indet.	—	—		
cf. Vicia/Lathyrus sp.	vetch/tare/vetchling	CD		
Rubus fruticosus/idaeus	blackberry/raspberry	CFGH	x	
Fragaria vesca L.	wild strawberry	CDF	x	
Prunus spp.	—	CFGI		x
Rosaceae indet.	—	—		x
Conium maculatum L.	hemlock	CEG	x	
Rumex spp.	docks	ABCDEFGI		
Umbelliferae indet.	—	—		
Urtica urens L.	small nettle	AB	x	
Urtica dioica L.	stinging nettle	BCDEFGH	x	
Prunella vulgaris L.	self-heal	BCDG		x
cf. Compositae indet.	—	—		x
Alisma sp.	water plantain	E		
Ficus carica L.	fig	I	x	
Mentha sp.	mint	ABCEFGI	x	
Stachys sp.	woundwort	ACEG	x	
Sambucus nigra L.	elder	BCFGH	x	
Eleocharis palustris/uniglumis	spike-rush	E	x	
Eleocharis sp.	spike-rush	E	x	
Carex spp.	sedges	CDEH		x
Graminae indet.	—	ABCDEHIF		

## Habitats:

- A. Weeds of cultivated land
- B. Ruderals. Weeds of waste places and disturbed ground
- C. Plants of woods, scrub, hedgerows
- D. Open environment (fairly undisturbed)
- E. Plants of damp/wet environment
- F. Edible plants
- G. Medicinal and poisonous plants
- H. Commercial/industrial use
- I. Cultivated plants
- K. Others (e.g. parasitic)

hen (*Chenopodium album*), elder (*Sambucus nigra*) and stinging nettle (*Urtica dioica*), which probably grew on or near the site and arrived in the archaeological deposits by accidental means (see Table 16). A few seeds of edible plants were found however, giving a hint, despite the limited recovery, of the diet of the Maiden Lane inhabitants.

Mineralised plum or sloe stones (*Prunus* spp.) were common in the residue from sample (215), and fig (*Ficus carica*), strawberry (*Fragaria vesca*) and blackberry or raspberry (*Rubus* sp.) were preserved anaerobically in contexts (244) and (348). Figs provide more possible evidence for foreign trade, although some varieties can be cultivated in this country (Harrison *et al.*, 1985). The limited capacity of Saxon boats has led Hodges (1982, 128) to believe that large-scale international trading in foodstuffs was unlikely in this period.

Nevertheless it seems probable that these 'exotics' were imported, presumably dried, rather than grown locally in this period.

## DISCUSSION

The lack of chaff and large weed seeds in most Maiden Lane samples, and in all the Jubilee Hall samples studied, suggests that the early stages of crop processing had been completed elsewhere (see Hillman 1981; 1984; Jones 1984). Grain would therefore have been brought on to the site in a clean or semi-clean state and any fine sieving necessary to remove the remaining small, dense seeds would be carried out as the grain was required.

Charring may have happened by accident, for instance while grain was being parched prior to grinding, or during cooking. However, most charred plant remains are likely to have been deliberately burnt as waste from fine sieving, or as spillages swept into the fire with other refuse.

Although these general observations concerning crop processing can be applied to most samples from the two sites, there was some variation in the composition of the assemblages from individual features. These are discussed below, and are summarised in Table 17.

Maiden Lane (see Tables 15 and 17)

Area A produced poor flots with low numbers of seeds per unit volume of soil, and poor preservation of those which did survive. Most cut features were small and so produced little soil, and no real conclusions can be drawn except that this did not seem to be an important area for the disposal of domestic waste.

Area B contained several large pits and produced much richer samples. The more interesting ones will be discussed individually.

Fill (219) in pit (217) contained the usual mix of cereal grains, with barley predominating. These were greatly outnumbered, however, by weed seeds, many of which were from species characteristic of arable fields and grassland. This sample also contained considerably more chaff than any others, mainly in the form of culm nodes and straw fragments.

Unfortunately it is impossible to know, when dealing with refuse contexts, whether cereal remains are from one source or many, as mixing is very likely, though not inevitable. In this case a single, semi-cleaned crop product is a possibility, perhaps intended as animal fodder rather than for human consumption. The grassland weeds and stem fragments may also suggest the presence of hay (Greig 1984). A sample from a 10th-century oven at Peninsular House (Jones *et al.*, *op. cit.*) was similarly contaminated with weeds and was interpreted as animal fodder. Alternatively the assemblage may consist of waste from fine sieving operations, mixed after disposal with grain from another source.

Context (215), the primary fill of pit (214), contained very mixed cereals and weeds, and included apple/pear and flax. A number of mineralised seeds including sloe/plum were found, and dog coprolites and human faecal material were identified by de Rouffignac (see below). This gives the impression of a general rubbish pit containing assorted household debris which functioned initially as a cesspit.

Pits (237) and (261) both contained a lot of wheat in their upper fills ((243), (244) and (265), (266) respectively), and little or no cereal in the lower ones (context 262; the lower fills of pit (237) had no flot at all. Fills (265) and (266) had very few weeds, indicating a fully cleaned crop product. The relatively high incidence of barley as well as wheat may signify a mixed crop, or deliberate mixing of two separate crops before consumption. Fill (262), at the bottom of pit (261), contained a number of waterlogged seeds, and fragments of a marine hydrozoan, possibly *Obelia geniculata* (identified by Dr K. Thomas, Institute of Archaeology, University College, London). The origins of this are a mystery, but it may have been introduced to the site attached to edible shellfish.

Fill (275) in pit (267) was also rich in cereals, but in this case rye made up approximately 50% of the grains. The weeds suggested a semi-cleaned crop or crops.

Fills (252) and (253) in pit (251) contained very pure barley with few weeds or other cereals. Obviously fully cleaned grain had been disposed of in this pit, perhaps as the result of a cooking



accident, and had not become mixed with other cereal remains. Mineralised weed seeds were also recovered from these deposits.

Two pits from Area C were examined: pit (329) contained only small fills and produced virtually no plant remains. Fill (335) in pit (334) included another reasonably pure deposit of barley, with few weeds or other cereals.

Layers from the midden in Area C provided samples rich in plant remains. Layers near the bottom (337)–(338) contained few cereals and many times more weeds, probably indicating fine cleanings from the final sieving of crops, perhaps mixed with general sweepings. Samples from higher in the sequence, layers (343), (345), and (348), were rich in barley, layers (343) and (348) being very pure and relatively weed-free, while (345) contained more weeds. Several mineralised seeds were present in (345) which also contained dog coprolites, as did (338) and (343).

Other samples were less rich and so could not be interpreted as specifically as those above, but all contained a mixture of cereal grains with barley predominating. Proportions of weeds varied, depending on whether or not the grain had been fine sieved, and on the degree of mixing with other products.

No obvious pattern of refuse disposal was apparent from this study, either between areas or feature types. It is not possible, therefore, to suggest specific activities concentrated in particular areas of the site.

#### Jubilee Hall (see Table 17)

The samples from the pits in this excavation were the most productive in terms of charred remains, especially the samples of fills (135) and (137). Fill (137) of pit (136) included a lot of bread wheat, some oat and very few barley grains. The fill of pit (139) was also rich in grain but no analysis could be made because of the way it had been processed (see above p. 145). The pits are not associated with any structure, so that it is possible only to say that the plant remains must have been thrown away in them. The wells also contained cereal grains and a whole large legume seed, a probable *Vicia faba*, Celtic bean/horsebean, was recovered from fill (124) of well (121).

There was no evidence from the plant remains that some of the fills came from wells. The flots recovered from these features were all typically charred flots without any trace of remains preserved by waterlogging. It is possible that none of the samples came from the bottom of the features. It is also possible that the wells had dried up before being turned into rubbish pits.

An interesting feature of the site is that there was a tendency for grains of one sort rather than the other to occur in each feature. Bread wheat was dominant in the fills of pits (135) and (136) while barley was more significant in the two fills of well (117) where no bread wheat was found. The remains from fill (124) of well (121) only contained bread wheat and no other cereal.

#### CONCLUSIONS

The ubiquitous nature of cereals in the domestic refuse at Maiden Lane and Jubilee Hall is an indication of the important part they, and their preparation, must have played in the daily lives of the inhabitants.

Barley, wheat and rye were all consumed by the occupants of the sites or their animals. Their relative importance cannot be proved, however, because of the element of chance involved in the preservation of charred remains.

Some or all the cereals were brought on to the site in a semi-cleaned state, ready for piecemeal final cleaning before food preparation. Where flotation had been carried out on the samples from Jubilee Hall it was apparent that the cereals were thoroughly cleaned and almost certainly for human consumption. Some of the grain from Maiden Lane, however, was probably destined for animal feed. Hay and straw may also have been imported for animal fodder, bedding and other purposes.

Several samples from Maiden Lane contained very pure deposits of barley, showing that it was grown and used alone as a single crop. Wheat and rye were always accompanied by other cereals on this site, however, and may either have been grown together, been deliberately mixed before consumption, or become accidentally mixed after disposal. At Jubilee Hall wheat was also found as a pure crop. Final sieving of the clean barley and wheat to dispose of small weed seeds may have taken place on site, or it may have arrived fully processed.

A few seeds of native food plants, such as legumes, were found, and these were probably gathered locally. Dried fruits and the possible lentil may indicate foreign imports.

#### THE COPROLITES

by Clare de Rouffignac

The recovery of coprolites from archaeological excavations has been well documented in recent years. Coprolites are formed when faecal material or stools are preserved either by desiccation or mineralisation. Coprolites recovered from archaeological excavations can give information on diet

Table 18: Canine coprolites from Maiden Lane and Jubilee Hall.

Context	5mm sieve	No. coprolites	No. frags	Weight (g)	<i>Taenia</i> present
Jubilee Hall					
5		1	1	not rec.	not tested
57		1	1	7.8	tested
60		2	2	6.6	
62		1	1	3.6	
129		1	2	9.9	
141		1	1	9.7	
Maiden Lane					
205		1	1		no
215	yes	3	2	36.41	no
262	yes		2	15.27	no
338		12	12	186.3	yes
339	yes	9	3		
			2		
			2	146.65	yes
340		1	2	30.78	yes
343	yes	1		5.35	yes
345	yes	1		8.51	yes
364		2		31.04	no
376		1		14.3	no
unstratified		1		10.96	no

and show evidence of infestation and illness in the human and animal populations by the analysis of the included seeds, pollen, bone and parasites.

Treatment of coprolites to enable recovery of these remains involves soaking to allow reconstitution. Chemical preparations such as 0.5% aqueous sodium triphosphate were pioneered by Callen (1969) but good results were obtained by Wilson and Rackham (1976) and de Rouffignac (1985a and b) by merely soaking the coprolites in distilled water.

Certain species of parasite are host-specific and their identification can allow the determination of the species that produced the coprolite.

Coprolites were recovered from ten contexts at Maiden Lane and six at Jubilee Hall. Investigation revealed that the coprolites were mostly those of dogs. Table 18 shows the numbers of canine coprolites from each context, their recovery method and the total weight per context. A 'coprolite' was considered as a whole stool or a fragment comprising more than half a stool. Microscopic examination of the suspensions obtained from various canine coprolites revealed a number of ova of the tapeworm, *Taenia* sp. Tapeworms are known to commonly infect dogs, even today. The coprolites also contained a small number of phytoliths (Powers, pers. comm) and very fragmentary insect remains. Neither is unexpected in scavenging dogs.

Nine fragments of 'mineralised faecal material', as opposed to coprolite, were recovered from context (215) at Maiden Lane and some also from context (127) at Jubilee Hall. This material was far more irregular in shape than the actual coprolites and the Maiden Lane examples when soaked produced a suspension containing large numbers of *Trichuris trichura* ova. This species is parasitic on man and pigs (Jones 1983a), so it seems most likely that the faecal material was of human origin, deliberately disposed of in the pit. The botanical and fish remains (see above and below) from pit (214) at Maiden Lane support the interpretation of this feature as a cesspit. A number of canine coprolites were also recovered from the pit, so it is possible that it was used for the disposal of other refuse apart from human excreta.

## CONCLUSION

The coprolites from both sites are interesting finds. They materially illustrate the presence of scavenging dogs and the unidentifiable character of the bone fragments that survive after ingestion (see Table 19). The parasitological data are indicative of worm infections in both man and his domestic animals. They also show that such evidence may survive even when waterlogging has not occurred, if the deposits have become mineralised.

Table 19: Bones from three coprolites from Maiden Lane.

Context	bone (g)	coprolite (g)	% bone/ coprolite	mean bone wt
364(1)	1.28	20.81	6.2	0.064
364(2)	0.31	10.23	3.0	0.005
unstratified	1.65	10.96	15.1	0.066

## THE FISH BONES

by Alison Locker

Fish bones were recovered from a number of Saxon contexts on both sites. The total numbers of fish that may be assigned to species or group are displayed in Table 20. Most contexts on Maiden Lane were sieved, ensuring the recovery of the very smallest bones, but only eight sampled contexts from Jubilee Hall produced fish bones. Very few skull fragments were recovered from any species: the remains were largely vertebral centra, so reconstruction of the size of the individual fish based on skull measurements was not possible.

The following species were identified: eel (*Anguilla anguilla*), herring (*Clupea harengus*), Salmonidae, pike (*Esox lucius*), roach (*Rutilus rutilus*), cf. rudd (*Scardinius erythrophthalmus*), Cyprinidae, cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), whiting (*Merlangius merlangus*), ling (*Molva molva*), cf. hake (*Merluccius merluccius*), cf. bass (*Dicentrarchus labrax*), cf. sea bream (*Sparidae*), cf. brill (*Scophthalmus rhombus*), plaice (*Pleuronectes platessa*), flounder (*Platichthys flesus*), and flatfish indet.

The Saxon contexts principally comprise dump layers, and the fills of pits and ditches. The most numerous occurring species throughout is eel, comprising 87% of all identified bones at Maiden Lane, although only 40% of the much smaller sample from Jubilee Hall. Eels would have been caught during their migration seawards in traps such as 'eel bucks', or speared. Wheeler (1979, 60-64) discusses the importance of the eel fishery in the Thames within historic times, noting that the eel-bucks were frequently associated with mills much further upstream than Maiden Lane. The main 'season' for fishing during the seaward migration was November to January, so the fish may have been caught in the Thames adjacent to the settlement during the latter part of this period.

Herring bones were the second most frequent species at Maiden Lane, comprising 5% of all identified fish. The annual southward migration of herring down the North Sea in large shoals led to

the development of an important fishing industry in the medieval period. Herring were also exploited in earlier periods.

Fishing in the Thames is represented by a number of species, the largest group being the cyprinids. Roach and rudd were identified and a broken pharyngeal was from chub, dace or gudgeon (the broken teeth precluded a positive identification). The virtual absence of pharyngeal and other skull bones prevented the specific identification of some of the cyprinids. At Jubilee Hall the cyprinids were the most common group of fish, 44% of the total identified. In one feature at Jubilee Hall, context (135), some of the cyprinid vertebral centra were very close to Tench (*Tinca tinca*). Together with pike (all the pike vertebral centra suggested small specimens) these fish could have been caught locally on rod and line. The fragments of Salmonid vertebral centra were all from mature specimens that are known to have been common in the Thames in the past (*ibid.*, 51).

Of the flatfish, both plaice and flounder were positively identified, and could have been caught in the Thames estuary, along the shoreline in traps or on lines. The small immature fish enter estuaries and the size of the vertebral centra suggested that many of these were from small fish. Brill was tentatively identified and this species has also occasionally been recorded from the outer estuary (*ibid.*, 198).

The other species positively identified are of marine origin. Ling is found in deep water in the northern part of the North Sea. It would have been caught on lines and must have been brought down to London in a dried or salted condition. Cod are widely distributed in the North Sea and may also have been dried or salted. Whiting, present in low numbers, could have been a common inshore catch, caught in nets or on lines. Haddock, living close to the sea bed, would have been caught on lines. The latter three species could all have been caught in the southern part of the North Sea adjacent to the Thames estuary, and brought up river by boat.

The Late Saxon pits at Pudding Lane (Locker 1986) showed a greater concentration of marine fish than at Maiden Lane. The sample was much

Table 20: Fish species identified from samples and excavated material collected from Maiden Lane and Jubilee Hall.

Species	Maiden Lane	Jubilee Hall
Eel, <i>Anguilla anguilla</i>	2558	79
Herring, <i>Clupea harengus</i>	151	7
Salmonidae	22	1
Pike, <i>Esox lucius</i>	12	1
Roach, <i>Rutilus rutilus</i>	4	9
Rudd cf., <i>Scardinius erythrophthalmus</i>	6	
Cyprinidae	89	85
Cod, <i>Gadus morhua</i>	5	
Haddock, <i>Melanogrammus aeglefinus</i>	28	
Whiting, <i>Merlangius merlangus</i>	2	
Ling, <i>Molva molva</i>	2	
Hake cf., <i>Merluccius merluccius</i>	1	
Bass cf., <i>Dicentrarchus labrax</i>	2	
Sea Bream cf., Sparidae	1	
Brill cf., <i>Scophthalmus rhombus</i>	1	
Plaice, <i>Pleuronectes platessa</i>	35	12
Flounder, <i>Platichthys flesus</i>	5	
Flatfish, indet.	29	

smaller, but cod and whiting were the two predominant species. There is no evidence at Pudding Lane of the exploitation of the Thames itself, only of local marine waters. The fish from Jubilee Hall have a very similar species composition to those from Maiden Lane, reflecting local fishing in the Thames. In part the dominance of eel at both Maiden Lane and Jubilee Hall may be the result of sieving a large number of contexts, ensuring the small vertebral centra were not missed. However the infrequent occurrence of cod and whiting at Maiden Lane and Jubilee Hall compared to Late Saxon Pudding Lane and later medieval deposits at Trig Lane (Locker 1986) does suggest a different emphasis on the type of fish consumed at these Middle Saxon sites. The overall absence of skull fragments implies the fish were already beheaded prior to their disposal, and there appears to be no significant difference between features other than a particularly high concentration of eel vertebral centra in context (215), a pit fill. Some of the eel vertebrae have become distorted as if by passage through the gut (Jones 1984) which supports evidence presented above that this feature is a cesspit.

## BIRDS AND MAMMALS

by Barbara West with contributions from James Rackham

### INTRODUCTION

From the Middle Saxon levels at Maiden Lane, a total of 19,599 animal bones (385.4kg) were

analysed, of which 13,675 (371.3kg) were identified. Although the bones from three types of feature (pits, dumps and ditch) were analysed separately, no patterns emerged to distinguish the use of one group of features from another. The collection from Jubilee Hall comprised a further 3937 animal bone fragments (87kg) collected during the excavation from the Middle Saxon levels. Data from Maiden Lane and Jubilee Hall was compared with the published information from seven other sites of the period or broadly contemporary: the Treasury site in London (Chaplin 1971); *Hamwic* in Southampton (Bourdillon & Coy 1980); Saxon Portchester (Grant 1976); Dorestad in The Netherlands (Prummel 1983); Haithabu, Feddersen Wierde and Elisenhof in Germany (Reichstein & Tiessen 1974). Maiden Lane and Jubilee Hall form part of a detailed analysis of Saxon faunal material from London to be published elsewhere (West and Rackham, in press), and only a summary and interpretative discussion of the results is presented here. All methodology is fully described in the archive report.

### DIET AND FOOD PREPARATION

As can be seen from Table 21, most of the meat in the diet of the inhabitants of these two sites was provided by cattle, followed by pig and sheep. The predominance of pigs over sheep on these sites is quite interesting, since almost all the comparative sites yielded far more sheep than pig: ie Portchester, *Hamwic*, Dorestad and the Treasury site. Pigs pre-

dominated only at Haithabu, a major sea port and merchant town.

Chaplin (1971) notes the value of pigs in reducing the risks of husbandry: their rapid reproductive rate, foraging abilities and adaptable diet means that they are a source of fresh meat in winter, when sheep and cattle are in poor condition. Noddle (1975) and others suggest environmental constraints, i.e., that low numbers of pig bones on Saxon and medieval sites indicate deforestation. However, King (1978) emphasizes cultural and economic factors as being more important than environmental constraints in choosing pigs over sheep; i.e., the Romans simply preferred pork to mutton. Also, Clutton-Brock (1976) points out the discrepancy between the paucity of pig bones from Saxon sites and the historical evidence for very large herds of swine during this period. In a study of medieval pig husbandry at Peterborough Abbey, Biddick (1984) provides historical evidence that there was no relation between the size of the pig herds and the woodland resources.

It has been suggested that pork was considered something of a luxury food item in medieval York-

shire (Ryder 1956) and in Wales during the Saxon period (Alcock 1963). It has also been pointed out by West (Armitage & West 1985) that on medieval monastic sites, high levels of pork consumption relative to mutton correlate with historical evidence for prosperity and high status, while low levels correlate with evidence for a more frugal lifestyle. Thus it is proposed here that environmental constraints such as woodland resources can be dismissed as a factor in influencing pork consumption, and the large numbers of pig bones relative to those of sheep from Maiden Lane reflect the wealth of the Saxon inhabitants. It is nevertheless possible that the paucity of sheep relates to the lack of extensive areas of pasture suitable to sheep. The local economy may have favoured the pasturing of cattle on the available grasslands, while sheep only became common on later sites when the large market character of London encouraged the droving of animals in from much further afield.

The remaining species found on the two sites (Table 21) are similar to those on the comparative sites noted above. Those included in the diet of the Maiden Lane and Jubilee Hall Saxons were small

Table 21: Number of fragments and weight of species and unidentified bones from the middle Saxon deposits at Maiden Lane and Jubilee Hall.

Species	No. of Fragments	MAIDEN LANE			JUBILEE HALL			
		% of ident.	Weight in grams	% of ident.	No. of Fragments	% of ident.	Weight in grams	% of ident.
Horse	11	.08	1493.0	.4	3	.09	372.7	0.4
Cattle	2898	21.0	188202.4	51.0	843	26.0	51657.7	60.2
Goat	11	.08	1320.0	.3	7	.2	732.0	.85
Sheep/goat	850	6.0	14846.2	4.0	307	9.5	4729.6	5.5
Sheep					22	.7	505.3	.6
Pig	1547	11.0	35521.5	9.6	365	11.3	7738.5	9.0
Dog	4	.03	154.0	.04	33	1.0	70.9	.08
Cat	33	.2	95.3	.02	5	.15	17.1	.02
Red deer	28	.2	1278.0	.3	6	.2	200.7	.2
Roe deer					1	.03	8.1	.009
Chicken	80	.6	179.0	.04	24	.7	55.4	.06
Goose, domestic	61	.4	340.0	.09	14	.4	68.4	.08
Duck, domestic	4	.03	10.0	.003				
Goose species	4	.03	27.0	.007				
Teal	1	.007	1.0	.0003				
Sparrowhawk	2	.01	2.0	.0005				
Raven	3	.02	8.0	.002	2	.06	3.8	.004
Unident. bird	39	.2	75.0	.02	5	.15	9.5	.01
Cattle size	5898	43.0	116850.0	31.5	1188	36.7	18212.5	21.2
Sheep size	2200	16.0	10941.5	3.0	413	12.7	1439.9	1.7
Small mammal	1	.007	.3	.00008				
Unident. mammal	5924		14089.0		699		1273.0	
Total identified	13675		371344.2		3238			
Total	19599		385433.2		3937		87095.1	

numbers of goat, domestic chicken, goose, duck and teal. Goose was more important in the diet than chicken. One unusual possible food item at Maiden Lane was apparently dog. A humerus was found which had been chopped (butchered?) and later gnawed by a dog (or fox). Alternatively since the few other dog bones indicated very large mastiff sized beasts, and no other site has yielded evidence for Saxons eating their dogs, this animal may have suffered a blow from a sharp weapon on its shoulder. It may have died or been put down and subsequently been consumed as carrion by dogs and other scavengers.

Food preparation and disposal were indicated by evidence of butchery, cooking and gnawing. There were very consistent proportions amongst the domesticates from both sites of bones bearing butchery marks (3–8%) in the form of chops and knife cuts (although the butchered pig bones from Jubilee Hall constituted just over 1%), as well as evidence of burning (1%) and cooking such as boiling or roasting (0.3%). Roughly 1% of the bones had been gnawed by dogs (none by rodents) and only a few others were weathered. However, this apparent lack of bones lying about on the surface outdoors does not necessarily mean that these Saxons disposed of their rubbish quickly. Dogs may well have completely destroyed the component of rubbish lying about with only a few gnawed and weathered bones being kicked into the pits and ditches. Many of the completely unidentified fragments could result from such destruction.

The overall ratios of cattle/pig/sheep were remarkably consistent throughout, despite the different sample sizes (see Table 22). The more rapid recovery necessitated by the circumstances of the excavation at Jubilee Hall does not appear to have biased the assemblage. The ratio of the main domesticates is very similar to that at Maiden Lane, except that sheep remains, the smallest and most generally missed during rapid excavation, are in fact more abundant (Table 22). The limited sample size at Jubilee Hall has precluded any detailed intra-site analysis.

Table 22: Relative proportions of the three main domesticates

	% fragments		% weight	
	MAI	JUB	MAI	JUB
Cattle	55	55	79	79
Pig	29	24	15	12
Sheep/goat	16	22	6	9

Table 23: Relative proportions of identified fragments and weight in feature types at Maiden Lane.

	No. fragments	% fragments	% weight
Ditch	1424	10%	10%
Pits	4979	36%	44%
Dumps	6332	46%	40%

The distribution of skeletal elements for the three main domesticates recovered from the pits, dumps and ditch was used to assess the relative quality of meat consumed by the inhabitants of the site (see Table 23). In both weight and fragment numbers, there were consistently high proportions of the best quality meat (represented by the bones of shoulder, hip, upper legs and back), as well as the lesser quality cuts (represented by the lower legs and head), and low proportions of the poorest quality meat (represented by the feet) (see West and Rackham, in press, and archive report for data). Intact proximal metapodials are considerably more frequent than distal ends, suggesting either butchery of this bone, the feet being left with the skin, or possibly increased destruction of the less robust or unfused distal epiphyses. The preponderance of cattle mandibles and metapodials at the Treasury site was not reflected at Maiden Lane or Jubilee Hall, although at the Treasury the figures are based upon minimum numbers. The inhabitants of Maiden Lane and Jubilee Hall were apparently eating well and utilising most of the carcass of cattle, sheep and pigs. Comparative information on meat quality was not readily available from the other sites mentioned previously.

#### HUSBANDRY PRACTICES

The calculations of withers heights (height at the shoulder) indicate that the cattle and pigs from Maiden Lane were larger than those from all the other comparative sites, while the sheep were smaller (see archive report). As demonstrated by Prummel (1983), the average withers height can indicate different types of cattle husbandry. In the case of Maiden Lane cattle, the high average withers height (1179mm) suggests that most of the bull-calves were not killed, but castrated and kept to adulthood (since castration results in longer-limbed animals). However, individual measurement comparisons indicate that the cows and oxen from Maiden Lane were also larger in general than, for example, their counterparts from Dorestad.

Over half the cattle from the two sites were killed between 2 and 4 years old (aged on the basis of Silver, 1969), while about 30% (on the basis of

epiphyseal fusion and tooth cementum lines) were kept until 8-9 years and above. More females than males were slaughtered (on the basis of metrical data), which emphasizes the importance of beef and traction rather than dairy products (i.e., most females were killed for beef and not kept for milk, while more males were kept for traction). The use of cattle as draught animals may be supported by the high proportion of arthritic changes found compared to the other sites, particularly in the regions of shoulder, hip, "ankles" and feet.

This contrasts markedly with the patterns at Dorestad and *Hamwic*, where the majority of cattle were not killed until they were at least 4 years old, and probably not until they were too old to be used for milk or traction. At *Hamwic*, the good health and general maturity of the cattle was noted. This suggests that the Maiden Lane and Jubilee Hall Saxons could afford the prime quality meat of younger animals. In addition, the high percentage of calves' bones (11%) is similar to that from Haithabu and Feddersen Wierde, and points to a higher level of prosperity as reflected by the consumption of veal (discussed by Reichstein and Tiessen, 1974).

The Maiden Lane pigs were also larger than those from other sites (even measurements of juveniles indicated that their average adult withers heights were well in excess of 729mm), but still within the size range of domestic rather than wild pigs.

Nearly one-third of the pigs were slaughtered at or before 1 year of age, and half at 2-2½ years, while a mere 5% survived to be more than 3-3½ years old. The data for Jubilee Hall are very similar but with a few percent more juveniles. The sample size is, however, small and this variability may not be real. More males than females were killed, which merely indicates that some sows were kept until adulthood for breeding. This pattern of age and sex distribution is similar to that found at Dorestad and *Hamwic*, and reflects the importance of pigs as meat producers. Although there were various instances of pathology, such as arthritic changes, slight infections and fractures, there were no discernible patterns or evidence for tethering (as postulated at *Hamwic*).

Unlike the large cattle and pigs, the Maiden Lane sheep were diminutive animals, smaller than the sheep from all the other sites (average withers height: 606mm). Although a few were slaughtered as lambs less than a year old, two-thirds were killed between 1 and 3 years, and one-quarter survived to be over 4 years old. The pattern is again very similar among the Jubilee Hall remains, but again with a slightly higher percentage of juveniles.

Twice as many males as females were killed, as suggested by innominate morphology and the measurements of bones from Maiden Lane, and only 10% of the total killed were identified as castrates. This pattern of age and sex ratios implies that good quality meat from younger sheep was of primary importance to the inhabitants, while wool and milk were only secondary. Only one-quarter (mainly females and castrates) were kept well into maturity: the females for wool, milk and breeding; the castrates for the large quantities of wool they produce.

This pattern is quite different to that at Dorestad and *Hamwic*, where many more lambs under 1 year were killed, but the majority of sheep were kept into maturity, with the emphasis on wool production. The pathological changes in the sheep bones were mostly arthritic in nature, and not concentrated in any particular areas.

While geese were generally larger than those from *Hamwic*, the chickens were similar in size. All the geese and chickens found were adult birds, and sex could only be determined for six chickens: 3 males, 2 females from Maiden Lane and 1 female from Jubilee Hall. The presence of medullary bone indicates that the 2 hens from Maiden Lane were egg-laying when they were killed.

A further examination of pathology at Maiden Lane sheds an interesting light on the animal injuries, some of which may have been inflicted by humans. In addition to the blow to the dog's shoulder mentioned earlier, the very badly healed fracture of a chicken femur is also suspicious, as this robust bone, well-protected by being held close to the body, is one of the least likely to be broken from natural causes, unlike the more exposed bones of wings and feet. A human or animal kick could have broken the femur quite easily. One pig forelimb had been fractured and subsequently healed. In one cattle skull, the right horn had been so violently wrenched that the skull sutures were torn apart and the frontal bone itself cracked, leaving a gap 140mm long and 20mm wide, which subsequently healed. This extraordinary fracture may have been the result of the animal's panic-stricken efforts to free itself after its horn became wedged, or of human efforts to pull it out of some place of entrapment, such as a quagmire.

#### OTHER SPECIES

Other species, none of which were likely to have been eaten, occurred in very small numbers on the site (as is the case with most other sites of the historical period), and amongst these were horse, dog and cat. Little data could be gathered on withers height, age or sex from the few bones

available, other than the withers height for dog (651mm), indicating a large animal the size of a mastiff.

Horn and antler-working are indicated by two cattle horn cores whose tips had been sawn off for horn removal, and twenty-eight fragments of red deer antler, all of which had been sawn, at Maiden Lane. At Jubilee Hall cattle horn cores were proportionally more abundant and much heavier by weight than at Maiden Lane, and goat and sheep horn cores also occurred. Most of the cattle horn cores were found in pit (59) and well (117). Five fragments of red deer antler were found at Jubilee Hall, but also a single postcranial fragment of red deer and one of roe deer, indicating that at this site at least venison was eaten. Only one antler from Maiden Lane was attached to the skull, indicating butchery rather than collection of cast antlers in the forest. However, since there is no other evidence from this site for the consumption of venison, these antlers were probably purchased separately as part of the horn and antler-working trade.

One female sparrowhawk was found, which may have been kept for falconry, as the female birds are much larger than males (however, the lack of wild birds from the site either discounts this, or reflects rather badly upon the skill of this particular bird). In medieval times, sparrowhawks were considered suitable falconry birds for priests. Sparrowhawks were not found on any of the sites used for comparison.

The occurrence of raven in three separate contexts at Maiden Lane and one at Jubilee Hall is intriguing, as it is actually a rare occurrence on archaeological sites in London. Only two other bones have been found: one from 14th-century Trig Lane, and one from the Roman levels at St Magnus. Although easy to dismiss as a scavenger (as some authors have done), its significance will be investigated further.

## CONCLUSIONS

Judging from the faunal evidence, then, the Maiden Lane and Jubilee Hall Saxons were quite a prosperous lot; more so, apparently, than many of their contemporaries in Britain and Europe. Their cattle and pigs were larger than those from other sites, but their sheep were small and delicate. Meat was of primary importance in their diet, and they ate all the best quality cuts from young, tender animals, including veal. All other animal products, such as milk, cheese, butter, wool and even eggs were of secondary concern (as shown by their willingness to slaughter egg-laying hens). Unlike some of their contemporaries, they were not forced to economise by waiting to slaughter until their

cattle and sheep had outlived their usefulness as milk or wool producers, although they did utilise most of the carcass afterward. Many bulls, however, were castrated as calves and later used as draught oxen, suffering arthritic changes in their joints (some females may have been used as well).

Also unlike most of their contemporaries, they much preferred pork to mutton, and goose to chicken. It is proposed here that environmental constraints can be dismissed as an influencing factor in pork consumption, although not necessarily in mutton consumption, and that the preponderance of pig bones over those of sheep at Maiden Lane reflects the relative wealth of the Saxon inhabitants. They consumed very small numbers of goat, domestic duck and teal, and apparently were not interested in hunting wild animals or birds, but were content with the meat provided by their domestic animals.

There is evidence that their animals were occasionally, injured, as in the interpretation of a blow across a dog's shoulder, and a severe kick breaking a chicken's leg, possibly intentional human actions. In one cattle skull, the right horn had been so violently wrenched that the skull was cracked and torn apart, but this animal (as well as the chicken) survived for a considerable time afterward.

The Maiden Lane and Jubilee Hall Saxons were also engaged in working horn and antler on a small scale, and although the general results appear to reflect a 'town' economy rather than the farm which Chaplin proposed for the Treasury site nearby, definitive statements will be reserved for the succeeding publication (West and Rackham, in press).

## CONCLUDING SYNTHESIS

by James Rackham

Little evidence for the early foundation of post-Roman London has been found apart from excavations of an as yet unpublished 9th-century site at the Treasury, Whitehall. Those reported here are the first two excavations of Middle Saxon London that have produced evidence of the diet and agricultural economy. More recently there have been other excavations within the Middle Saxon settlement (see Cowie, this volume), but these are still undergoing

study. The environmental evidence reported above therefore constitutes, as yet, our only interpreted study of these aspects of Middle Saxon London. With a wealth of further material presently undergoing study, it would be premature to be too dogmatic about the conclusions from Maiden Lane and Jubilee Hall, but we can certainly summarise aspects of these sites' economies.

First, despite some differences in the scale of excavation and recovery, it is interesting to note that the assemblages of plant and animal material from both sites are similar. It is clear that the contemporary Saxon farmers were growing barley, wheat and probably also rye. There is little or no evidence for oats as a crop but flax may have been, since it rarely survives long 'wild'. Despite this evidence, the sites have produced nothing to suggest that the immediate inhabitants were themselves concerned with this cultivation. Most of the cereal was 'cleaned', and it is suggested that one or two which were 'semi-cleaned' with some chaff and high numbers of weed seeds may be animal fodder with some evidence perhaps of hay.

The lack of evidence for post-harvest cereal processing activities suggests that we are dealing with domestic activities at the market end of this economic system. The presence of remains of fig, grape and possible lentil, perhaps give further support to this, which although including only single occurrences of the latter two, probably indicate purchase of imported foodstuffs. The remaining plant foods give us no information since apple/pear, sloe/plum and raspberry/blackberry would presumably have been available to all sections of the population.

The fish remains include a number of marine fish, evidence of trading upriver to the settlement; but whether they were brought in fresh, salted or dried we cannot

say. Oysters were fairly common, which suggests a daily trade of fresh marine produce or transport alive in water containers. The fish are fairly small in size and in no way suggest that any major industry had developed. All of these finds are from fishes that could readily have been caught in the estuarine waters of the Thames or inshore areas of the East Coast, although ling is traditionally thought of as a deep water fish of the northern North Sea. The low numbers of marine species by comparison with the abundance of eels and the presence of freshwater species suggests that this trade was small, particularly by comparison with medieval material from London. The freshwater fishes indicate local river fishing, the abundance of eels probably reflecting availability and ease of capture.

Recognition of imported or traded material is relatively easy for plants and fish but among the mammal and bird remains only antler, for crafting, fits this category. Unfortunately, antler is ubiquitous on Saxon and early medieval settlements of both rural and urban character, and can give us no information on the nature of the settlement. It is clear that craft-working was carried out using bone and red deer antler since finds include finished objects, half completed or worked fragments and shavings. These could derive from itinerant craftsmen (MacGregor 1989) or home manufacture, since apart from the combs little of the worked bone need have been produced by specialist craftsmen. Pieces of sawn cattle horn core testify to the presence of saws, tools unlikely to be in the hands of any but a craftsman, and it is probable that horns of cattle, sheep and goat were being worked. None of these remains are in sufficient numbers to suggest a 'workshop' nearby such as those found elsewhere at this period (see MacGregor, 1985; 1989).

The mammal assemblages are inter-

esting. The young age profile of the killed animals and a dependence upon cattle and pig suggests a 'meat' market rather than a pastoral system geared to secondary products, such as wool or milk. The absence of foot bones, while often attributed to recovery methods, may on these sites reflect the removal of skins and feet, with only the meat bearing elements arriving on the site. These patterns perhaps suggest a 'market' rather than subsistence economy and would indicate an urban or trading settlement. The presence of remains of some very young pigs indicates pig keeping in the settlement, along with geese and chickens, but cattle and sheep were probably farmed elsewhere, outside the settlement, the latter being of some importance as wool producers as well as meat.

The general conclusions from the environmental analysis suggest an urban or mercantile settlement, trading locally with the coast and surrounding countryside and possibly over much greater distances with the European mainland, but nevertheless probably maintaining some domestic stock of their own. The 'urban' character is much less marked than on later sites where the evidence for imported plants and animals is much more extensive. This picture contrasts with the interpretation of the mid-9th-century site at Whitehall as a Saxon farm.

### A SKELETON FROM JUBILEE HALL

by Janet D. Henderson

Examination of the human skeletal remains from grave (39) showed that most of the bones of the skeleton were represented but that preservation was only poor to fair. Observations were made for age, sex, stature and any skeletal anomalies or abnormalities. A complete catalogue of these results is held in the site archive and a full archive inventory of the bones and teeth present is kept in the Ancient Monuments Laboratory.

The skeleton was that of an adult male (aged approximately 35–40 years). Stature was estimated at 1.72m (c. 5'8").

With the exception of the presence of an *os trigonum* (accessory bone) on the right foot no unusual metrical or morphological anomalies were found.

Evidence for pathological change was noted on the teeth, the vertebrae and the right ulna. Orally there was a carious lesion affecting the maxillary right first molar. In addition there was marked bony recession of the alveolar margins which is generally taken to indicate some form of gingivitis (gum disease) during life. On the spine the evidence was all for joint disease. Only the cervical and thoracic vertebrae were sufficiently complete for examination, but it was possible to establish that only the vertebral bodies were affected (i.e. not the posterior joints) and that the presence of marginal osteophytes and Schmorl's nodes suggested that there had been some intervertebral discal degeneration. This was not considered to be of any great significance since such changes are common and may occur as early as the second decade of life (Resnick and Niwayama, 1981). Finally there was a fracture of the right ulna. This kind of injury is often described as a 'parry' fracture since it is often caused by parrying a blow with the forearm. However it may also result from an indirect force, such as a fall on the hand, so it should not automatically be assumed that it represents violence (Adams, 1978). The bone and radiographic evidence suggested that the fragments had united and were partially consolidated, both features generally taken to be indicators of healing (Watson-Jones 1946).

### SOIL REPORT ON THE MIDDLE SAXON FLOOR AND 'DARK EARTH' AT JUBILEE HALL

by R. I. Macphail

The section studied (Section A–C, Fig. 4) featured a brickearth clay floor (7) immediately overlain by 'grey earth' (15) which merged into 'dark earth' proper (37). These layers were investigated by micromorphology and analysis of organic carbon and calcium carbonate (Avery and Bascomb 1974; Bullock *et al.* 1985; Courty *et al.* 1989).

### RESULTS AND DISCUSSION

These are presented in detail in Table 24 and in the Micromorphological Description and Interpretation. Briefly, the investigation shows that a Middle Saxon, rather pure brickearth floor seems

to have had 'carnivorous' type, probably human, coprolites incorporated into it during its use. The floor was also affected by water containing organo-phosphatic solutions from the hearth, which produced a form of ironpanning, and possibly with soluble coprolitic material, which also produced amorphous iron nodules and infills featuring vivianite ( $\text{Fe}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$ ).

On the surface of the floor an 'omnivorous'/herbivorous type coprolite occurs beneath what may be interpreted as a collapse of 'daub wall' material. Ash over the coprolite suggest fire accompanied by collapse. The 'wall' material included very pure brickearth together with brick-earth mixed with organic matter (Table 24), which was some form of clay wall daub. Burning of this material reddened layers of the daub.

The horizon which is called 'grey earth' was in places re-worked by soil fauna. Probable *Enchytraeidae* produced organo-mineral micro-aggregates, typical of 'dark earth' (Macphail, 1981; 1983), whereas earthworms produced casts of rather 'pale' soil because the 'digestible', organic matter had been removed leaving just the charcoal. The analysis of the 'dark earth' here and elsewhere (Macphail and Courty, 1985), suggests that this finding indicates the role of earthworms in 'dark earth' formation to have been over-stressed, whereas *Enchytraeidae* may have been overlooked. The 'dark earth' at Jubilee Hall again seems to have developed from the accretion of re-worked debris from insubstantial buildings (Macphail and Courty, 1985), leading to a finely calcitic fabric being developed through a combination of fires (ash) and the breakdown of such materials as plaster and mortar.

Table 24. Micromorphological analytical data.

Horizon	% Organic	
	Carbon	Carbonate
'Dark earth' (37)	1.1	2.2
Brickearth collapse/ 'Grey earth' (15)	1.2	0.9
Brickearth floor (7)	0.5	trace

#### MICROMORPHOLOGICAL DESCRIPTION—JUBILEE HALL

In the description the following abbreviations are used:

PPL = viewed under Plane Polarised Light

OIL = viewed under Oblique Incident Light

Colour photomicrographs are held in the archive.

The limit set between 'Coarse' and 'Fine' mineral was 10µm.

#### THIN SECTION A: THE 'DARK EARTH'

*Structure* very weakly prismatic; micro-aggregate micro-structure.

*Porosity* 35%; very dominant, open-walled, medium vughs (voids); few medium open-walled, dominantly vertical, channels.

*Mineral*. Coarse/Fine 50:50.

*Coarse* unsorted; dominant silt size, very fine, fine, medium sand-size quartz; few coarse quartz; frequent medium, coarse, very coarse and gravel size flint; few fine to very coarse opaques, glauconite etc; rare feldspar, limestone. Common daub, burned daub, brickearth fragments (see Fine); rare probable oyster shell fragments—disintegrating; frequent coarse to fine bone, rare weathered, biogenic calcite sometimes burned.

*Fine* heterogeneous; a) dominant (micro-aggregate) very dark brown, blackish; heavily dotted (PPL); low birefringence; dark brownish, black specks (charcoal) in OIL (biologically worked 'dark earth'). b) few pale brown, speckled (PPL), moderate birefringence; pale orange in OIL (calcitic mortar/plaster; ashey fabric). c) frequent, very dark brown, blackish, heavily dotted (PPL); very low birefringence; very dark brown in OIL (slaked daub fabric, sometimes blackened or reddened by burning). d) few yellowish-brown to dark brown (PPL), generally low to moderate birefringence; blackish, dark brownish and reddish in OIL (brickearth fragments, mainly burned).

#### Organic

*Coarse* bone as above; few charcoal.

*Fine* very abundant, charred organic matter, obscuring most of fine fabric; humifying organic matter; rare phytoliths.

*Groundmass* porphyric, (closely embedded), weak to moderate crystallitic b-fabric.

*Pedofeatures*. Excrements very dominant, thin organo-mineral, probable *Enchytraeids*: rare mammilated fragments (possible relic), rare biogenic calcite ?*Arionid*.

*Textural*. Common intercalations of fine fabric in daub (unworked biologically, perhaps because baked by burning). *Fabric* heterogeneous mix of anthropogenic fabric, commonly reworked biologically.

*Amorphous*. Few yellowish-brown fragments of ?organo-phosphatic and iron character?

#### THIN SECTION B:

2 = 'Grey earth': Biologically worked collapsed building materials (15)

3 = Brickearth: ?collapsed daub

4 = Brickearth floor (7)

#### Structure

3 and 4, massive with massive microstructure;

2, massive and sub-angular blocky, with massive, vughy, micro-aggregate and total excremental microstructures.

*Porosity* 3 and 4, 10–15%; 2, 30%.

3 and 4, very dominant, moderately smooth-walled, medium vughs, few fine channels.

2, common, medium to coarse, moderately smooth-walled vughs; frequent, very coarse, moderately smooth-walled channels (earthworm).

*Mineral.* Coarse:Fine 60:40 generally.

*Coarse* very similar to Section A, but:- very abundant silt-size quartz (brickearth), frequent gravel size flint; frequent burned and unburned bone. Large amount of inclusions, including brickearth floor and burned and indurated areas.

The rest of the description is divided into three levels:

#### 4—'Brickearth floor'

*Organic.*

*Coarse.* many large fragments of reddish-brown, ferruginised bone—cooked—digested?; occasional wood charcoal.

*Fine.* Many organic fragments—charred grass, humified grass; rare phytoliths. Abundant, yellow, yellowish-brown to dark brown amorphous, organic matter as concretions organic (?root) pseudomorphs, and as septaric and concentric nodules; generally non-birefringent, yellow or brown in OIL; occasionally associated or includes blue/green vivianite crystals. Many relate to decalcified ashy areas where only phosphate staining and minor clay coating formation left, others are probably coprolitic. These features are complex, some presumed to be some form of organo-phosphate—probably mainly derived from ash; although some may be influenced by cess. Others appear to be coprolite fragments.

*Fabric.* Mineral 'background' is predominantly brickearth with minor organic mixing. Other features are 'iron panning' or staining of layers of brickearth, and brown amorphous infills—iron and manganiferous hydromorphic impregnation—seems to decrease away from hearth direction. There could be some association with amorphous organo-phosphatic features as described above, which also occur elsewhere in this layer as nodules.

#### 3—'Brickearth, collapsed daub?'

This layer, mainly of brickearth, has been strongly perforated by biological (earthworm) activity. Includes gravel, coarse charcoal etc; many fine charred and humified often 'grassy' organic matter; therefore deposit originating from 'mixed' brickearth daub, plaster etc. Organo-phosphatic infills also occur in small amounts.

#### 2—'Grey Earth'

This is a very complicated layer which includes brickearth fabric, many inclusions, and two main types of biological working.

*Excements.* Many excellent, coarse, mammilated mineral earthworm excements occur as 'loose' infills of coarse channels. These can be differentiated from the general fabric by being very pale brown, dotted (PPL), very low birefringent, and grey to very pale yellow OIL. They contain abundant, fine organic matter, which is predominantly black—presumably charred—with extremely little yellowish-brown organic matter present. The coarsest mineral inclusions are fine sand (*c.* <500um). Surrounding soil is less well sorted (including all the inclusions—bone, shell, burned daub, stained brickearth,

brickearth etc), and much darker because it contains very abundant, fine organic matter, much of which is yellowish-brown and amorphous (i.e. fresh, 'edible', organic matter is present). Also present are many thin organo-mineral excements, probably *Enchytraeids*—wire worms, which have not digested all the organic matter.

### INTERPRETATION

The Middle-Saxon floor (7) is made up of brickearth. This constructional material, which was commonly used for 'clay' floors and 'clay' walls in Roman times has been previously studied from both City and Southwark sites (Macphail and Courty, 1985), and from destruction levels at Colchester (Macphail, 1986). It is also being currently investigated from the Courage Brewery and 28 Park Street sites in Southwark. Although a large proportion of the brickearth material at Jubilee Hall is from uncontaminated brickearth—i.e. a geological clay loam deposit generally low in organic matter—much has been mixed with organic matter. This suggests some re-use.

The brickearth layer may not just be a floor which is contemporary with the hearth in this part of the site. Close inspection seems to suggest that there may be two 'layers'; the floor itself and an overlying brickearth deposit including brickearth daub.

#### *The Floor:*

In the floor, which is made up of both pure and contaminated brickearth, inclusions such as coarse flints, coprolites (see below) and large fragments of (partially digested) bone both phosphatised (Ultra Violet light illumination) and ferruginised bone occur. The floor was also affected by hydromorphic (gleying) iron and manganese staining (impregnation) or ironpan formation—probably contemporary with the site because it is fractured. This discontinuous pan may also have been more strongly developed towards the hearth. Localised near-surface wetting and even slaking of dirt floors is a common phenomenon (Courty *et al.* 1989), and this pan formation here probably relates both to wetting and the influence of 'organo-phosphorus' solutions derived from hearth ash residues—the latter enhancing biochemical effects of hydromorphism and ferruginous impregnation elsewhere.

In addition, there are nodular infills 1–3mm in size, yellow with dark brown to black edges, amorphous, non-birefringent and yellow and brown in reflected light, but which do not fluoresce under UV. These also sometimes contain the blue/green iron-phosphate mineral vivianite which, although a mineral common to fen soils, has clear associations with anthropogenic deposits (Keeley and Macphail 1981; Macphail 1983), and is also present within phosphatised (digested) bone. There are two probable interpretations of these nodules. First that they can be the result of a combination of hydromorphism (mobilising iron in the reduced state), and water containing organo-phosphorus from dissolved wood ash from the nearby hearth. In fact, because of some obviously impregnated outer margins, this effect must be at least contributory. Secondly, they can be coprolitic in origin. Some are definitely coprolites (from reference thin-sections, Macphail 1987; Courty *et al.* 1989) on the

grounds of morphology, with discrete, dark brown margins and strongly phosphatised bone fabrics; whereas others are more nodular and possibly represent ferruginous organo-phosphorus residues—ferruginisation also effecting bone fragments. The high quantity of amorphous material, the lack of phytoliths and plant inclusions, but the presence of bone with 'digested' margins and phosphatised possible 'pseudomorphic bone' all indicate that these coprolites are from carnivores. The presence of human coprolites at Maiden Lane suggests the possibility that these are from mainly meat-eating humans, as opposed to dog, because the latter tend to scavenge and their coprolites may have an 'omnivorous' content. In the case of the amorphous yellow ('amber') coprolitic residues, similar examples have been associated with such pure carnivores as hyenas (Goldberg, 1979).

#### *The collapse (15):*

Much coprolitic material occurred in one area, approximately at the junction between the floor and the 'collapse'. Here, although amorphous organic matter predominates, there are a few phytoliths and frequent plant fragments suggesting an omnivorous/herbivorous origin. It seems to have been deposited in a semi-liquid state, as some of the surrounding soil became impregnated. The coprolite is then directly succeeded by what may be interpreted as 'collapse' or 'destruction' deposits. These look very similar to the brickearth floor because they are essentially of the same mineral origin—*i.e.* brickearth. Here, however, the brickearth, although containing 'pure' fragments, is mainly mixed with organic matter—phytoliths; fine, often charred, organic matter; and coarse plant remains and plant pseudomorphic porosity all suggest a daub or 'clay wall' origin. Fragments of decalcifying 'plaster' also occur, but of course these may be secondary. Within the 'collapse' are small areas of ash (calcite crystals) associated with organic rich daub fabrics. Also in this part of the thin section are thin layers of charcoal, burned 'brickearth' with charcoal and ash (e.g. on top of the omnivorous/herbivorous coprolite). Some burning may therefore be associated with the collapse/destruction of this building. Further coprolitic material and organo-phosphatic/vivianite deposition also characterise this deposit.

#### *Post-depositional events; accretion of 'dark earth' (37):*

It appears that the loose 'collapse' deposit ('grey earth') was moderately perforated by fauna, although the brickearth floor, probably because it is more dense and rather 'sterile', was much less biologically worked. Two main types of faunal working can be recognised and it is important to differentiate between them. Frequently, dark organo-mineral excrements probably relate to *Enchytraeidae* (wire worms) which are known to produce stable soil aggregates and occur in hundreds of thousands in the top few centimetres of natural soils. In addition, *Arionidae* (slugs) were also present chewing over decaying organic matter, as evidenced by their (now decalcifying) calcite granules. *Enchytraeidae* and *Arionidae*, however, were less efficient in re-working the deposit than earthworms which produced very coarse channels and mammilated casts or excrements from the anthropogenic mixture of brickearth

mineral, organic matter and charred organic matter. Detailed studies of these excrements and surrounding 'grey earth' of the 'collapse' and re-worked 'collapse' show similar sorting and birefringence. The excrements, however, are much paler, because although they still contain much charred organic matter as in the juxtaposed sediment, all of the 'digestible' organic matter has been removed. This characteristic is typical of casts.

It is very important to note that in the 'dark earth' deposit, sampled some 500mm above the base of the floor, the fabric appears to be purely that of micro-aggregates—typical of 'dark earth' (Macphail 1981; 1983; Macphail and Courty 1985), and apparently the result of *Enchytraeidae*. This clear evidence suggests that the impact of earthworms on 'dark earth' deposits may have been over-emphasised in the past. The origin of 'dark earth', although still under study (Macphail, Courage Brewery and 28 Park Street AML reports in prep.) relates in part to the destruction of insubstantial buildings (Macphail and Courty, 1985), and the fine calcium carbonate present within the matrix at Jubilee Hall is a typical result. The presence of *Enchytraeid* excremental fabrics throughout the 'dark earth' at a number of sites clearly demonstrates that 'dark earth' occurs through accretion because *Enchytraeids* are most common in the top few hundred millimetres of soils and only occur down to 200mm depth, whereas *Enchytraeid* worked 'dark earth' can be over a metre thick.

## ACKNOWLEDGEMENTS

Robert Whytehead would like to thank the developers, Speyhawk Land and Estates Ltd, especially Geoff Brown, Derek Parkes, and Andrew Whitehorn, for permission to excavate the site at Jubilee Hall. Thanks are also due to the contractors, Tellings, especially Ian Ward, Lewis Hughes, and all the site staff, for their practical help; and the architects, the Covent Garden Housing Project, especially Martin Dyke-Coomes, Chris Green, and Jim Monahan, for their interest and encouragement; and Gill Chitty, GLC Historic Buildings Division, whose support enabled access to the site.

He is grateful to those colleagues at the Museum of London who responded at short notice to help with the emergency excavation, including the following: Liz Allan, Robert Cowie, James Drummond-Murray, Gavin Evans, Mike Hutchinson, Paul Falcini, Tom McDonald, Peter Mills, Steve Pierpoint, Steve Tucker; to John Clark, Peter Stott, and Alan Vince for their advice and assistance both during and after the excavation; and to Robert Cowie and Peter Hinton for their assistance in the preparation of this report.

The plans and section drawings were prepared by Elizabeth Hawkins and Sue Hurman.

Permission to excavate the site at Maiden Lane

was given by Country and New Town Properties plc, who generously sponsored the excavation.

Robert Cowie is especially grateful to the engineers, R.T. James and Partners, for their cooperation during the fieldwork, and in particular to their representative Mr N.H. Tidmus.

Thanks are due to the excavation team: Clare Copper, Lesley, Dunwoodie, Nick Elsdon, Paul Falcini, Ann George, Stuart Gibson, Ian Grainger, Richard Hilton, Nigel Nayling, Caroline Pathy-Barker, Chris Phillpotts, Dave Pritchard, Barney Sloane, Chris Thomas, Steve Tucker, and Ken Whittaker (who helped organise the environmental sampling).

Thanks are also due to Lyn Blackmore, Peter Hinton and David Whipp, for commenting on the text. The plans and section drawings were prepared by Alison Hawkins, Sue Hurman, and Michael Jones.

Lyn Blackmore wishes to express her gratitude to those English and Continental colleagues who have commented on aspects of the pottery, in particular Paul Blinkhorn (now of Northampton Archaeological Unit), Teresa Briscoe, John Clark, Cathy Coutts, Duncan Brown (Southampton Archaeological Unit), Richard Hodges, John Hurst, Philip Jones, Ailsa Mainman (York Archaeological Trust), Nigel Macpherson-Grant (Canterbury Archaeological Trust), Nicole Meyer, Clive Orton, Phil Philo (Gunnery Museum), Frances Pritchard, Mark Redknapp, Henk Stoepker, Jane Timby, Ian Tyers, Frans Verhaege, Pim Verwers, David Williams, and especially Alan Vince for the work on the thin-sections. Any errors in the text are those of the author.

David Bateman, John Clark, Vera Evison, James Rackham, Ian Riddler, and Leslie Webster are also thanked for their comments on the small finds.

The initial finds processing, recording and conservation of the finds was carried out by Richenda Goffin, Steve Pierpoint, Gill Sinkinson, Carol Williams and members of the Museum of London Conservation Section.

Illustrations: The pottery and glass were drawn by Lyn Blackmore; the small finds were mainly illustrated by Dorrie Orchard (loomweights, metalwork, bone, flint); additional illustrations were prepared by Susan Hurman (loomweights, metalwork, bone) and James Bennett (metalwork). The daub was illustrated by Alison Hawkins.

Richard Macphail wishes to thank Dr M. A. Courty and the INA P-G (Grignon) for thin section manufacture, and Anne Gebhardt, Stephen Carter, Anne Bickerton for technical assistance.

## BIBLIOGRAPHY

- ADAMS (1978), J. C. Adams *Outline of Fractures* (Edinburgh: 1978).
- ADDYMAN & HILL (1968, 1969), P. V. Addyman and D. H. Hill 'Saxon Southampton: A review of the evidence' *Proc. Hants. Field Club Archaeol. Soc.* 25 (1968) 61-93; 26 (1969) 61-96.
- ADDYMAN *et al.* (1972), P. V. Addyman, D. Leigh and M. J. Hughes 'Anglo-Saxon houses at Chalton, Hampshire' *Medieval Archaeology* 16 (1972) 13-31.
- ANDREWS (1988), P. Andrews (ed.) *The Coins and Pottery from Hamwic. Southampton Finds*. Vol. 1 (Southampton City Museums: 1988).
- ALCOCK (1963), L. Alcock *Dinas Powys: An Iron Age, Dark Age and Early Medieval Settlement in Glamorgan*. (Cardiff, Univ. of Wales Press: 1963).
- ALLEN (1988), P. Allen 'The timber buildings catalogue: Cheapside study area', in V. Horsman *et al.* (eds.) *Aspects of Saxo-Norman London: I Building and Street Development* London and Middlesex Archaeol. Soc. Special Paper 11 (1988) 52-65.
- ARBMAN (1940), H. Arberman *Birka I, Die Graber, Tafeln*. (Stockholm: 1940).
- ARMITAGE & WEST (1985), P. L. Armitage and B. West 'Faunal evidence from a late medieval garden well of the Greyfriars, London' *Trans. London and Middlesex Archaeol. Soc.* 36 (1985) 107-136.
- ARWIDSSON (1942), G. Arwidsson *Valsgarde 6*. (Uppsala: 1942).
- ARWIDSSON (1984), G. Arwidsson *Birka II, I*. (Uppsala: 1984).
- AVERY & BASCOMB (1974), B. W. Avery and C. L. Bascomb *Soil Survey Laboratory Methods* (Harpenden, 1974).
- BARKER (1985), G. Barker *Prehistoric Farming in Europe* (Cambridge University Press: 1985).
- BARKEK (1977), P. Barker *Techniques of Archaeological Excavation* (London, Batsford: 1977).
- BAUMGARTNER & KRUEGER (1988), E. Baumgartner and I. Krueger *Phoenix aus Sand und Asche. Glas des Mittelalters* (Bonn, Basel: 1988).
- BAYLEY (1988), J. Bayley 'Non-ferrous metal working: continuity and change' in E. A. Slater and J. O. Tate (eds.) *Science and Archaeology: Proceedings of a Conference on the Application of Scientific Techniques to Archaeology, Glasgow, September 1987* B.A.R. British Series 196 (1988) 193-208.
- BGS (1982), British Geological Survey, Sheet TQ 38 SW 1:10560.
- BIDDICK (1984), K. Biddick 'Pig husbandry on the Peterborough Abbey Estate from the twelfth to the fourteenth century AD' in C. Grigson and J. Clutton-Brock (eds.) *Animals and Archaeology 4: Husbandry in Europe*. B.A.R. International Series 227: 161-177.
- BIDDLE (1984), M. Biddle 'London on the Strand' *Popular Archaeology* Vol. 6 No. 1 (1984) 23-7.
- BLACKBURN & PAGAN (1986), M. Blackburn and H. Pagan 'A revised check-list of coin hoards from the British Isles c. 500-1100', in M. Blackburn ed. *Anglo Saxon Monetary History* (Leics. Univ. Press: 1986) 291-314.
- BLACKMORE (1986), L. Blackmore 'Early and middle Saxon buildings in the Greater London area', *The London Archaeologist* 5 no. 8 (1986) 207-16.
- BLACKMORE (forthcoming), L. Blackmore 'The Anglo-Saxon pottery' in R. L. Whytehead and R. Cowie 'Excavations at the Peabody site, Chandos Place, and the National Gallery' *Trans. of London and Middlesex Archaeol. Soc.* (forthcoming).
- BLACKMORE & REDKNAP (1988), L. Blackmore and M. Redknapp 'Saxon and Early Medieval Imports to the London Area and the Rhenish Connection' in D. Gaimster, M. Redknapp & H-H Wegner (eds.) *Zur Keramik des Mittelalters und der beginnenden Neuzeit im Rheinland: Medieval and later pottery from the Rhineland and its markets* B.A.R. International Series S440 (1988) 223-39.
- BLINKHORN (1989), P. Blinkhorn 'Middle Saxon pottery from the Buttermarket, Ipswich' *Medieval Ceramics* 13 (1989) 12-16.
- BLUNT (1974), C. Blunt 'A new coin of Baldred king of Kent' *Brit. Num. Jnl.* 44 (1974) 75-6.
- BLUNT *et al.* (1963), C. E. Blunt, C. S. S. Lyon, and B. H. S. Stewart 'The Coinage of Southern England 796-840' *Brit. Num. Jnl.* 32 (1963) 1-74.
- BOURDILLON & COY (1980), J. Bourdillon and J. Coy 'The animal bone' in P. Holdsworth (ed.) *Excavations at Melbourne Street, Southampton 1971-76* CBA Research Report 33 (1980) 79-121.
- BRODRIBB *et al.* (1972), A. C. C. Brodrigg, A. R. Hands, and D. R. Walker *Excavations at Shakenoak III* (Oxford: 1972).
- BRADY (1982), J. Brady *Sylloge of Coins of the British Isles American Collections* (1982).
- BROWN (1976), P. D. C. Brown 'Some notes on grass-tempered pottery', in M. Farley 'Saxon and medieval Walton, Aylesbury: Excavations 1973-74' *Rec. of Bucks* 20 part 2 (1976) 191-93.
- BROWN *et al.* (1957) D. G. W. Brown, G. M. Knocker, N. Smedley and S. E. West 'Excavations at Grimstone End, Pakenham' *Proc. Suffolk Inst. Archaeol.* 26 (1957) 189-207.
- BULLOCK *et al.* (1985), P. Bullock, N. Federoff, A. Jongerious, G. Stoops, T. Tursina *Handbook for Soil Thin Section Description* (Wolverhampton, 1985).
- BULLOCK & MURPHY (1983), P. Bullock and C. P. Murphy (eds) *Soil Micromorphology* (Berkhampstead: 1983).

- GALLEN (1969), E. O. Callen 'Diet as revealed by coprolites' in D. R. Brothwell and E. S. Higgs (eds.) *Science in Archaeology* (2nd edition, Thames and Hudson: 1969) 235–243.
- CALLMER (1977), J. Callmer *Trade Beads and Trade in Scandinavia c. 800–1000 A.D.* (Lund: 1977).
- CAMPBELL (1982), J. Campbell *The Anglo-Saxons* (Oxford, Phaidon Press: 1982).
- CANHAM (1979), R. Canham 'Excavations at Shepperton Green 1967 and 1973' *Trans. London and Middlesex Archaeol. Soc.* 30 (1979) 97–124.
- CAPELLE (1978), T. Capelle 'Die Karolingischen Funde von Schouwen 2' *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 7 (1978).
- CARSON *et al.* (1965), R. A. G. Carson, P. V. Hill and J. P. C. Kent *Late Roman Bronze Coinage, AD 324–498* (London, Spink & Son Ltd: 1965).
- CHAPLIN (1971), R. E. Chaplin *The Study of Animal Bones from Archaeological Sites* (London, Seminar Press: 1971).
- CLUTTON-BROCK (1976), J. Clutton-Brock 'The animal resources' in D. M. Wilson (ed.) *The Archaeology of Anglo-Saxon England*. London, Methuen: (1976) 373–392.
- COIN HOARDS, I (1975), Royal Numismatic Society, London (1975).
- CONNOR (1990), A. Connor 'Archaeological Excavations at 2–26 Shorts Gardens and 19–41 Earlharm Street', DGLA archive report (in prep.).
- COURTY *et al.* (1989), M. A. Courty, P. Goldberg, and R. I. Macphail *Soil Micromorphology in Archaeology* (Cambridge: 1989).
- COUTTS & WORTHINGTON (1986), C. Coutts and M. Worthington 'The Early Medieval Pottery from Quentovic — an interim note' *Medieval Ceramics* 10 (1986) 23–28.
- COWIE (1988), R. Cowie 'An Archaeological Excavation at 21–22 Maiden Lane, Covent Garden', DGLA archive report (unpublished).
- COWIE (1989), R. Cowie 'An Archaeological Excavation at 18–20 York Buildings, WC2', DGLA archive report (unpublished).
- COWIE (forthcoming), R. Cowie 'The National Gallery' in R. L. Whythead and R. Cowie 'Excavations at the Peabody site, Chandos Place, and the National Gallery' *Trans. London and Middlesex Archaeol. Soc.* (forthcoming).
- COWIE & WHYTEHEAD (1989), R. Cowie and R. Whythead 'Lundenwic: the archaeological evidence for middle Saxon London' *Antiquity* 63 (1989) 706–18.
- CROUCH (1976), K. Crouch 'The archaeology of Staines and the excavation at Elmsleigh House' *Trans. London and Middlesex Archaeol. Soc.* 27 (1976) 71–134.
- CUNLIFFE (1970), B. Cunliffe 'The Saxon Culture-sequence at Portchester Castle' *Antiq. Jnl.* 50 pt. 1 (1970) 67–85.
- CUNLIFFE (1976), B. Cunliffe *Excavations at Portchester Castle* Vol. 2 (Saxon Rep. Res. Com. Soc. Antiq. London 33 (1976)).
- DENSEM & SEELEY (1982), R. Densum and D. Seeley 'Excavations at Rectory Grove, Clapham, 1980–1' *The London Archaeologist* 4 No. 7 (1982) 178–84.
- DIMBLEBY (1968), G. W. Dimbleby 'Appendix 1, Interim report on environmental investigations' in M. A. Cotton and S. S. Frere 'Ivinghoe Beacon Excavations, 1963–1965', *Rec. Buckinghamshire* 18, 3 (1968) 250–251.
- DUNNING (1956), 'Trade Relations between England and the Continent in the Late Anglo-Saxon Period' in Harden (ed.) *Dark Age Britain: studies presented to E. T. Leeds* (London, Methuen: 1956) 218–33.
- DUNNING (1959), G. C. Dunning 'Imported pottery' in G. C. Dunning, J. G. Hurst, J. N. L. Myres and F. Tischler 'Anglo-Saxon Pottery: a Symposium' *Medieval Archaeology* 3 (1959) 49–71.
- EDGREN & JOGNER (1985), Edgren and Jogner (eds.) Proc. 3rd Nordic Archaeometry, Finnish Arch. Soc. *I SKOS* 5 (1985).
- ELLIS (1969), S. E. Ellis 'The petrography and provenance of Anglo-Saxon and Mediaeval English honestones with notes on some other hones' *Bull. British Museum (Natural History), Mineralogy* 2 (1969) 135–187.
- EVISON (1979), V. I. Evison 'Wheel-thrown pottery in Anglo-Saxon graves' (Royal Archaeol. Inst. Monograph Series: 1979).
- EVISON (1983a), V. I. Evison 'Some distinctive glass vessels of the post-Roman period' *Journal of Glass Studies* 25 (1983) 87–93.
- EVISON (1983b), V. I. Evison 'Bichrome glass vessels of the seventh and eighth centuries' *Studien zur Sachsenforschung* 3 (1983) 7–21.
- EVISON (1987), V. I. Evison *Dover: the Buckland Anglo-Saxon cemetery* (London: 1987).
- EVISON (1988a), V. I. Evison 'Vieux-Marche, Place Saint-Lambert, Liège—The glass' *Les Fouilles de la Place St-Lambert a Liège, Le Vieux Marche Etudes et Recherches Archeologiques de l'Universite de Liège* 23 (1988) 215–219.
- EVISON (1988b), V. I. Evison 'Some Vendel, Viking and Saxon glass' in B. Hardh *et al.* (eds.) *Trade and Exchange in Prehistory* Acta Archaeologica Lundensia Series 8 no.16 (1988) 237–245.
- FARLEY (1976), M. Farley 'Saxon and medieval Walton, Aylesbury: Excavations 1973–74' *Rec. of Bucks* 20 pt. 2 (1976).
- FORTNUM (1886–89), C. Fortnum '1886–1889: Exhibition of an iron spearhead and the remains of a bone comb of unusual form' *Proc. Soc. Antiq.* 6 (1886–89) 188.
- GLC (1970), Greater London Council *Survey of London: the Parish of St Paul Covent Garden* 36 (London, The Athlone Press, University of London: 1970).
- GOLDBERG (1979), P. Goldberg 'Micromorphology of sediments from Hayonim Cave, Israel' *Catena*, 6 (1979) 167–181.
- GRAHAM-CAMPBELL & KIDD (1980), J. Graham-Campbell and D. Kidd *The Vikings* (London, British Museum Publications: 1980).
- GRANT (1976), A. Grant 'The animal bones' in B. W. Cunliffe (ed.) *Excavations at Portchester Castle, Vol. II: Saxon*. Reports of the Research Committee of the Society of Antiquaries of London, 33 (1976) 262–287.
- GREEN (1979a), F. J. Green 'Phosphatic mineralisation of seeds from archaeological sites' *Jnl. Arch. Sci.* 6 (1979) 279–284.
- GREEN (1979b), F. J. Green 'Plant remains' in C. M. Heighway, A. P. Garrod and A. G. Vince, Excavations at 1 Westgate St., Gloucester *Medieval Archaeology* 23 (1979) 186–190.
- GREEN (1981), F. J. Green 'Iron age, Roman and Saxon crops: the archaeological evidence from Wessex' in M. Jones and G. Dimbleby (eds.) *The Environment of Man: the Iron Age to the Anglo-Saxon Period* B.A.R. British Series 87 (1981) 129–153.
- GREEN (1963), H. J. M. Green 'Secrets of Whitehall: evidence of Roman, Saxon, and medieval Westminster revealed during the current rebuilding of the Treasury and Downing Street—Part I' *Illustrated London News* 242 (June 29, 1963) 1004–7.
- GREEN & THURLEY (forthcoming), H. J. M. Green and S. Thurley 'Excavations on the west side of Whitehall 1960–2, part 2: prehistoric times to late medieval' for *Trans. London and Middlesex Archaeol. Soc.* (forthcoming).
- GREIG (1984), J. Greig 'Information on the palaeoecology of British grasslands based on the study of archaeological finds and modern species-rich meadow, in W. Van Zeist & W. A. Casparie (eds.) *Plants and Ancient Man* (Rotterdam, Balkema: 1984).
- GRIERSON & BLACKBURN (1986), P. Grierson and M. Blackburn *Medieval European Coinage, 1, The Early Middle Ages* (Cambridge University Press: 1986).
- GRIMES (1968), W. F. Grimes *The Excavation of Roman and Medieval London* (London: 1968).
- HAEVERNICK (1979), T. E. Haevernick 'Karolingisches Glas aus St. Dionysius in Esslingen' *Forschungen und Berichte der Archäologie des Mittelalters in Baden-Württemberg* 6 (1979).
- HAEVERNICK & HABERY (1963), 'Glatte Steine aus Glas' *Jahrbuch des Romisch-Germanischen Zentralmuseums Mainz* 10 (1963) 130–138.
- HALL (1983), A. R. Hall *Cereal bran and human faecal remains from archaeological deposits—some preliminary observations* Symposia of the Association for Environmental Archaeology 2.
- HARDEN (1956), D. Harden 'Glass Vessels in Britain and Ireland AD 400–1000', in D. Harden (ed.) *Dark Age Britain: studies presented to E. T. Leeds* (London, Methuen: 1956) 132–67.
- HARDEN (1984), D. B. Harden 'The glass' in A. Rogerson and C. Dallas, Excavations in Thetford 1948–59 and 1973–80 *East Anglian Archaeology* 22 (1984) 116.
- HARMAN *et al.* (1981), M. Harman, T. I. Molleson and J. L. Price 'Burials, bodies and beheadings in Romano-British and Anglo-Saxon cemeteries' *Bull. Br. Mus. nat. Hist. (Geol.)* 35 (3) (1981) 145–188.
- HARRISON *et al.* (1985), S. G. Harrison, G. B. Masefield and M. Wallis *The Oxford Book of Food Plants* (Oxford University Press: 1985).
- HASLAM (1975), J. Haslam 'The Saxon pottery' in M. J. Hammerson, 'Excavations on the site of Arundel house in the Strand' *Trans. London and Middlesex Archaeol. Soc.* 26 (1975) 221–2.
- HEYWORTH *et al.* (forthcoming), M. P. Heyworth, J. R. Hunter, S. E. Warren and J. N. Walsh 'The Role of Inductively Coupled Plasma Spectrometry in Glass Provenance Studies' in *Proceedings of the 25th Symposium on Archaeometry, Athens, 1986* (forthcoming).
- HILLMAN (1978), G. C. Hillman 'On the origins of domestic rye *Secale cereale*', *Anatolian Studies* 28 (1978) 158–74.
- HILLMAN (1981), G. C. Hillman 'Reconstructing crop husbandry practices from charred remains of crops' in R. Mercer (ed.) *Farming Practice in British Prehistory* (Edinburgh University Press: 1981) 123–162.
- HILLMAN (1984), G. C. 'Interpretation of archaeological plant remains: the application of ethnographic models from Turkey' in W. Van Zeist & W. A. Casparie (eds.) *Plants and Ancient Man* (Rotterdam, Balkema: 1984) 1–42.
- HINTON (1990), D. Hinton 'The bronze, iron, lead and wood' in P. Holdsworth (1980) *Excavations at Melbourne Street, Southampton, 1971–76*. CBA Research Report 33 (1980) 73–5.
- HODGES (1977), R. Hodges 'Some early medieval French wares in the British Isles: an archaeological assessment of the early French wine trade with Britain' in D. P. S. Peacock *Pottery and Early Commerce: Characterisation and Trade in Roman and Later Ceramics*. (Academic Press: 1977).
- HODGES (1980), R. Hodges 'Dark Age Handled Combs—a note' *Archaeologia Atlantica* 3 (1980) 145–186.
- HODGES (1981), R. Hodges 'The Hamwih Pottery: the local and imported wares from 30 years' excavation at Middle Saxon Southampton and their European context'. CBA Research Report 37 (1981).

- HODGES (1982), R. Hodges *Dark Age Economics: the Origins of Towns and Trade A.D. 600-1000* (London, Duckworth: 1982).
- HOFFMAN (1964), M. Hoffman 'The Warp-weighted Loom' *Studia Norvegica* 14 (Oslo: 1964).
- HOLDSWORTH (1976), P. Holdsworth 'Saxon Southampton—a new review' *Medieval Archaeology* 20 (1976) 26-61.
- HOLDSWORTH (1980), P. Holdsworth 'Excavations at Melbourne Street, Southampton, 1971-76' CBA Research Report 33 (1980).
- HORSMAN *et al.* (1988), V. Horsman, C. Milne and G. Milne *Aspects of Saxo-Norman London: 1 Building and Street Development* London and Middlesex Archaeol. Soc. Special Paper 11 (1988).
- HUGGINS (1976), R. Huggins 'The pottery' in P. J. Huggins 'The excavation of an 11th-century Viking hall and 14th-century rooms at Waltham Abbey, Essex' *Medieval Archaeology* 20 (1976) 75-134.
- HUGGINS (forthcoming), R. Huggins 'The pottery and other finds' in H. J. M. Green and S. Thurlay 'Excavations on the west side of Whitehall 1960-2' *Trans. London and Middlesex Archaeol. Soc.* (forthcoming).
- HUNTER (1980), J. Hunter 'The glass' in P. Holdsworth *Excavations at Melbourne Street, Southampton, 1971-76* CBA Research Report 33 (1980) 59-72.
- HURST (1959), J. G. Hurst 'Middle Saxon Pottery' in G. C. Dunning, J. G. Hurst, J. N. L. Myres and F. Tischler 'Anglo-Saxon Pottery: a Symposium' *Medieval Archaeology* 3 (1959) 13-31.
- HURST (1961), J. G. Hurst 'The Kitchen Area at Northolt Manor' *Medieval Archaeology* 5 (1961) 211-299.
- HURST (1969), J. G. Hurst 'Red-painted and glazed pottery in Western Europe from the eighth to the twelfth century' *Medieval Archaeology* 13 (1969) 93-147.
- HURST (1976a), 'The Pottery' in D. Wilson (ed.) *The Archaeology of Anglo-Saxon England* (Cambridge: 1976) 283-348.
- HURST (1976b), J. G. Hurst 'Anglo-Saxon and Medieval' in *The Archaeology of the London Area* Trans. London and Middlesex Archaeol. Soc. Special Paper 1 (1976) 60-67.
- ISINGS (1980), C. Isings 'Glass finds from Dorestad, Hoogstraat 1' in W. A. van Es and W. J. H. Verwers *Excavations at Dorestad 1, The Harbour, Hoogstraat 1* (Nederlandse Oudheden 9, Krommerrijn Projekt 1: 1980) 225-237.
- JONES (1983a), A. K. G. Jones 'A coprolite from 6-8 Pavement' in A. R. Hall, H. K. Kenward, D. Williams and J. R. A. Greig (eds.) *Environment and Living Conditions at two Anglo-Scandinavian sites. The Archaeology of York 14/4* (CBA: 1983) 225-229.
- JONES (1983b), A. K. G. Jones 'A comparison of two on-site methods of wet-sieving large archaeological samples' *Science and Archaeology* 25 (1983) 9-12.
- JONES (1984), A. K. G. Jones 'Some effects of the mammalian digestive system on fish bones' in N. Dese-Berset (ed.) 2nd fish osteoarchaeology meeting, CNRS. *Notes et Monographies Techniques* 16 (1984) 61-5.
- JONES (1984), G. E. M. Jones 'Interpretation of archaeological plant remains: ethnographic models from Greece' in W. Van Zeist & W. A. Casparie (eds.) *Plants and Ancient Man* (Rotterdam, Balkema: 1984).
- JONES (1982), P. Jones 'Saxon and Early Medieval Staines' *Trans. London and Middlesex Archaeol. Soc.* 33 (1982) 186-213.
- JONES & DIMBLEBY (1981), M. Jones and G. W. D. Dimbleby (eds) *The Environment of Man: the Iron Age to the Anglo-Saxon period* B.A.R. British series 87 (1981).
- JONES & JONES (1975), M. U. Jones and T. W. Jones 'The crop-mark site at Mucking, Essex' in R. Bruce-Mitford (ed.) *Recent Archaeological Excavations in Europe* (Routledge and Kegan Paul: 1975) 133-87.
- JONES & SHANKS (1976), P. Jones and S. Shanks 'Saxon and Medieval Pottery', in K. Crouch 'The archaeology of Staines and the excavation at Elmsleigh House' *Trans. London and Middlesex Archaeol. Soc.* 27 (1976) 101-113.
- JONES *et al.* (in press), G. Jones, V. Straker & A. Davis 'Early medieval plant use and ecology in the City of London' in A. Vince (ed.) *Aspects of Saxon and Norman London: II Finds and Environmental Studies* London and Middlesex Archaeol. Soc. Special Paper 12.
- KARS (1980), H. Kars 'Early-Medieval Dorestad, an archaeo-petrological study' *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 30 (1980) 393-422.
- KEELEY & MACPHAIL (1981), A. C. M. Keeley and R. I. MacPhail 'A soil handbook for archaeologists' *Institute of Archaeology Bulletin* 18 (1981) 225-41.
- KING (1978), A. King 'A comparative survey of bone assemblages from Roman sites in Britain' *Bulletin of the Institute of Archaeology*. 15 (1978) 207-232.
- KOCH (1987), U. Koch *Der Runde Berg bei Urach VI. Die Glas- und Edelsteinfunde aus den Plangrabungen 1967-1983*, 1 (Heidelberger Akademie der Wissenschaften, Kommission für Alamannische Altetmskunde Schriften Band 12, 1987).
- LOCKER (1986), A. Locker 'Pudding Lane, City of London: the fishbones', DUA archive report (unpublished).
- MACGREGOR (1985), A. MacGregor *Bone, Antler, Ivory and Horn: the Technology of Skeletal Materials since the Roman Period* (London, Croom Helm: 1985).
- MACGREGOR (1989), A. MacGregor 'Bone, antler and horn industries in the urban context' in D. Serjeantson and T. Waldron (eds.) *Diet and Crafts in Towns* B.A.R. British series 199 (1989) 107-128.
- MACPHAIL (1981), R. I. Macphail 'Soil and botanical studies of the "Dark Earth"' in M. Jones and G. W. D. Dimbleby (eds) *The Environment of Man: the Iron Age to the Anglo-Saxon period* B.A.R. 87 (1981) 309-331.
- MACPHAIL (1983), R. I. Macphail 'The micromorphology of "Dark Earth" from Gloucester, London, and Norwich: an analysis of urban anthropogenic deposits from the Late Roman and Early Medieval Periods in England' in P. Bullock and C. P. Murphy (eds) *Soil Micromorphology* (Berkhampstead: 1983) 245-252.
- MACPHAIL (1986), R. I. Macphail 'Site report on a post-Bouddica deposit (L.1814) at Culver Street, Colchester' Ancient Monuments Laboratory Report 21 (unpublished).
- MACPHAIL (1987), R. I. Macphail 'Soil report on the Late Bronze Age midden at Potterne, near Devizes, Wiltshire' Ancient Monuments Laboratory Report 144 (unpublished).
- MACPHAIL & COURTY (1985), R. I. Macphail and M. A. Courty 'Interpretation and significance of urban deposits' in T. Edgren and H. Jørgen (eds.) *Proc. 3rd Nordic conference on the application of scientific methods in archaeology*, Finnish Arch. Soc. *I SKOS* 5 (1985) 71-84.
- MERRIMAN (1987), N. Merriman 'A prehistory for central London' *The London Archaeologist* 5 no.12 (1987) 318-26.
- METCALF (1984), M. Metcalf 'Monetary circulation in southern England in the first half of the eighth century' in D. Hill and M. Metcalf (eds.) *Scettas in England and on the Continent* B.A.R. British Series 128 (1984) 27-69.
- METCALF (1984a), M. Metcalf 'A note on the scettas as a measure of continental trade, and on the earliest Danish coinage' in D. Hill and M. Metcalf (eds.) *Scettas in England and on the Continent* B.A.R. British Series 128 (1984) 159-164.
- METCALF (1986), D. M. Metcalf 'Some finds of Thrymsas and Scettas in England' *Brit Num. Jnl.* 56 (1986) 1-15.
- METCALF (1988), M. Metcalf 'The Coins' in P. Andrews *Southampton Finds Vol. 1; The Coins and Pottery from Hamwic*, Southampton Archaeological Monographs 4 (Southampton City Museums: 1988).
- MILLETT & JAMES (1983), M. Millett with S. James 'Excavation at Cowdery's Down, Basingstoke, Hampshire, 1978-81' *Archaeological Journal* 140 (1983) 151-279.
- MILNE (1981), G. Milne 'Excavations at Pudding Lane 1981, 118-127 Lower Thames Street EC 3, DUA archive report (unpublished).
- MOORE (1983), D. T. Moore 'Petrological aspects of some sharpening stones, touchstones and milling stones' in D. R. C. Kempe and A. P. Harvey (eds.) *The Petrology of Archaeological Artefacts* (Oxford: 1983) 277-300.
- MORELAND (1985), J. Moreland 'A monastic workshop and glass production at San Vincenzo al Volturno, Molise, Italy', in R. Hodges and Mitchell (eds.) *San Vincenzo al Volturno* B.A.R. International Series 252.
- MUNCH *et al.* (1986), G. S. Munch *et al.* 'A chieftain's farm at Borg, Lofoten, N. Norway' *Medieval Archaeology* 30 (1986).
- MYRES (1937), J. N. L. Myres 'Three styles of decoration on Anglo-Saxon pottery' *Ant. Jnl.* 17 (1937) 424-37.
- MYRES (1977), J. N. L. Myres *A Corpus of Anglo-Saxon Pottery* Vols. 1 and 2 (Cambridge University Press: 1977)
- NASMAN (1986), U. Nasman 'Vendel period glass from Eketorp-II, Oland, Sweden' *Acta Archaeologica* 55 (1986).
- NODDLE (1975), B. Noddle 'A comparison of the animal bones from 8 medieval sites in southern Britain' in A. T. Clason (ed.) *Archaeozoological Studies*. (Amsterdam, North Holland Publishing Company: 1975) 248-260.
- NORTH (1980), J. North *English Hammered Coinage*, vol 1 (London, Spink & Son: 1980).
- O'CONNOR (1991), T. P. O'Connor *Bones from 46-54 Fishergate, The Archaeology of York 15/4* (Council for British Archaeology/York Archaeological Trust: 1991).
- OP DEN VELDE, DE BOONE & POL (1984), Op den Velde, De Boone and A. Pol 'A survey of scettas finds from the Low Countries' in D. Hill and M. Metcalf (eds.) *Scettas in England and on the Continent* B.A.R. British Series 128 (1984) 117-145.
- OWEN-CROCKER (1986), G. R. Owen-Crocker *Dress in Anglo-Saxon England* (Manchester University press: 1986).
- PAGAN (1965), H. E. Pagan 'Coinage in the age of Burgred' *Brit. Num. Jnl.* 34 (1965) 11-27.
- PAGAN (1986), H. E. Pagan 'Coinage in southern England AD 796-874' in M. A. S. Blackburn (ed.) *Anglo-Saxon Monetary History* (Leicester University Press) 45-66.
- PARKHOUSE (1976), J. Parkhouse 'The Dorestad Quernstones' *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 26 (1976) 181-188.

- PAY (1987), S. Pay *Hamwic: Southampton's Saxon Town* (Southampton City Museums: 1987).
- PEACOCK (1980), D. P. S. Peacock 'The Roman millstone trade: a petrological sketch' *World Archaeology* 12 (1980) 43–53.
- PEERS & RADFORD (1943), C. Peers and C. A. R. Radford 'The Saxon Monastery of Whitby' *Archaeologia* 89 27–88.
- PENN & ROLLS (1981), J. S. Penn and J. D. Rolls 'Problems in the quaternary development of the Thames Valley around Kingston, a framework for archaeology' *Trans. London and Middlesex Archaeol. Soc.* 32 (1981) 1–12.
- PERRING & ROSKAMS (forthcoming), D. Perring and S. P. Roskams *The Development of Roman London West of the Walbrook* CBA Research Report (forthcoming).
- PETERSEN (1951), J. Petersen *Vikingetidens Redskaper* (Oslo: 1951).
- PRITCHARD (1984), F. A. Pritchard 'Late Saxon textiles from the City of London' *Medieval Archaeology* 28 (1984) 46–76.
- PRUMMEL (1983), W. Prummel Excavations at Dorestad 2: Early Medieval Dorestad, An Archaeozoological Study *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* (1983).
- REICHSTEIN & TIESSEN (1974), H. Reichstein and M. Tiessen 'Ergebnisse neuerer Untersuchungen an Haustierknochen aus Haithabu (Ausgrabung 1963–1964)' in H. Reichstein and M. Tiessen (eds.) *Berichte über die Ausgrabungen*. 7 (Neumünster: 1974) 9–101.
- RESNICK & NIWAYAMA (1981), D. Resnick and Gen. Niwayama *Diagnosis of Bone and Joint Disorders* (Philadelphia: 1981).
- RHODES (1986), M. Rhodes 'Stone objects' in Dyson (ed) *The Roman Ousey at St. Magnus House*. London London and Middlesex Archaeol. Soc. Special Paper 8 (1986) 240–245.
- RIDDLER (forthcoming), I. Ridder 'Ein Stielkamm aus Haithabu' in Schietzel (ed.) *Berichte über die Ausgrabungen in Haithabu* (Neumünster: forthcoming).
- RIGOLD & METCALF (1984), S. E. Rigold and D. M. Metcalf 'A revised check-list' in Hill and Metcalf (eds.) *Seattas in England and on the Continent* B.A.R. British Series 128 (1984) 245–268.
- ROES (1963), A. Roes *Bone and Antler Objects from the Frisian Terp Mounds* (Haarlem: 1963).
- ROES (1965), A. Roes 'Vondsten van Dorestad' *Archaeologica Traiectina* 7 (Groningen: 1965).
- ROGERS (1987), C. M. Rogers *Charred plant remains from the middle Saxon site at 21–22 Maiden Lane*, London WC 2 MSc thesis, Institute of Archaeology, University College London: unpublished.
- DE ROUFFIGNAC (1985a), C. de Rouffignac 'Parasite egg survival and identification from Hibernia Wharf, Southwark' *London Archaeologist* 5 no. 4 (1985) 103–105.
- DE ROUFFIGNAC (1985b), C. de Rouffignac *Parasite eggs survival and identification: A survey of samples from various archaeological sites in Southwark* BSc. Dissertation, Digby Stuart College of Higher Education, Roehampton (unpublished).
- RYDER (1956), M. L. Ryder 'Report on the animal bones' in D. E. Owen *Kirkstall Abbey Excavations: 7th Report*. (Leeds: 1956) 41–53.
- SAYRE (1963), E. V. Sayre 'The Intentional Use of Antimony and Manganese in Ancient Glasses' *Advances in Glass Technology* Part 2 (1963) 263–282.
- SILVER (1969), I. A. Silver 'The ageing of domestic animals' In D. R. Brothwell and E. S. Higgs (eds.) *Science in Archaeology* 2nd ed. (Thames and Hudson: 1969) 283–302.
- SMART *et al.* (1966), J. G. O. Smart, G. Bisson, and D. W. Worssam *Geology of the Country around Canterbury and Folkstone* (London: 1966).
- SMEDLEY & OWLES (1963), N. Smedley and E. J. Owles 'Some Suffolk kilns: IV-Saxon kilns in Cox Lane, Ipswich, 1961' *Proceedings of the Suffolk Institute of Archaeology* 29 (1963) 304–35.
- STEWART (1986), I. Stewart 'The London Mint and the coinage of Offa' in M. Blackburn (ed.) *Anglo-Saxon Monetary History* (Leicester Univ. Press: 1986) 27–43.
- STOTT (1991), P. Stott 'Saxon and Norman Coins from London' in A. Vince (ed.) *Aspects of Saxo-Norman London: II, Finds and Environmental Evidence* London and Middlesex Archaeological Society, Special Paper 12 (1991) 279–325.
- STUIVER & PEARSON (1986), M. Stuiver and G. W. Pearson 'High-precision calibration of the radiocarbon timescale, AD 1950–500 BC, *Radiocarbon* 28 (2B): 805–38.
- SUTHERLAND (1948), C. V. Sutherland *Anglo-Saxon Gold Coinage in the light of the Crondall Hoard* (London, Oxford Univ. Press: 1948).
- TATTON-BROWN & MACPHERSON-GRANT (1985), T. Tatton-Brown and N. MacPherson-Grant 'Anglo-Saxon Canterbury: topography and pottery' *Current Archaeology* IX (1985) 89–93.
- TILKIN-PETERS (1986), C. Tilkin-Peters 'Traits particuliers et evolution de la ceramique Merovingienne des regions Mosanes', in J. Willems and M. Otte (eds.) *La Civilisation Merovingienne dans le Bassin Mosan* (Liege: 1986) 225–40.
- TIMBY (1988), J. R. Timby 'The Middle Saxon Pottery' in P. Andrews (ed.) *The Coins and Pottery from Hamwic* (Southampton City Museums: 1988) 73–122.
- TISCHLER (1952), F. Tischler 'Zur Datierung der fruhmittelaltdlichen Tonwaren von Badorf' *Germania* 30 (1952) 194–200.
- VAN ES & VERWERS (1980), W. A. van Es and W. J. H. Verwers 'Excavations in Dorestad I-the Harbour: Hoogstraat I' *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek*. (Amersfoort: 1980).
- VAN ES *et al.* (1984), W. A. van Es, A. C. Bardet and W. J. H. Verwers 'Three aspects of the Wheel-turned pottery of Dorestad: a Synopsis' *Medieval Ceramics* 8 (1984) 3–10.
- V. C. H. *Victoria County History of Middlesex*, Vol. 1 (London, 1969).
- VINCE (1983), A. Vince 'In Search of Saxon London' *Popular Archaeology* (October, 1983) 33–7.
- VINCE (1984a), A. Vince 'The Aldwych: mid-Saxon London discovered?' *Current Archaeology* 8 no. 4 (1984) 310–12.
- VINCE (1984b), A. Vince 'New light on Saxon pottery from the London area' *The London Archaeologist* 4 no. 16 (1984) 431–439.
- VINCE (1985), A. Vince 'The use of petrology in the study of medieval ceramics: case studies from Southern England' *Medieval Ceramics* 8 (1985) 31–4.
- VINCE (1990), A. Vince *Saxon London: An Archaeological Investigation* (London, Seaby: 1990).
- WADE (1988), K. Wade 'Ipswich' in R. Hodges and B. Hobley (eds.) *The rebirth of towns in the west AD 700–1050* CBA Research Report No. 68 (1988) 93–100.
- WATSON-JONES (1946), R. Watson-Jones *Fractures and Joint Injuries* (Edinburgh: 1946).
- WEST & RACKHAM (in press), B. West and D. J. Rackham 'Birds and mammals' in D. J. Rackham (ed.) *Environment and economy in Saxon London*.
- WEST (1963), S. E. West 'Excavations at Cox Lane (1958) and at the town defences, Shire Hall Yard, Ipswich (1959)' *The Proceedings of the Suffolk Institute of Archaeology* 29 part 3 (1963) 233–303.
- WEST (1985), S. E. West *West Stow. The Anglo-Saxon Village*. East Anglian Archaeology 24, Vols. 1 and 2 (Suffolk County Planning Department: 1985).
- WHEELER (1979), A. Wheeler *The tidal Thames: the History of a river and its fishes* (London, Routledge & Kegan Paul: 1979).
- WHEELER (1927), R. E. M. Wheeler *London and the Vikings* London Museum Catalogues no. 1 (London, London Museum: 1927).
- WHEELER (1935), R. E. M. Wheeler *London and the Saxons* London Museum Catalogues no. 6 (London, London Museum: 1935).
- WHITELOCK (1955), D. Whitlock *English Historical Documents*, c 500–1042 vol. 1 (London, Eyre & Spottiswoode: 1955).
- WHYTEHEAD (1988), R. Whytehead 'Jubilee Hall Site Report', DGLA archive report (unpublished).
- WHYTEHEAD (forthcoming), R. L. Whytehead 'The Peabody site' in R. L. Whytehead and R. Cowie 'Excavations at the Peabody site, Chandos Place, and the National Gallery' *Trans. London and Middlesex Archaeol. Soc.* (forthcoming).
- WHYTEHEAD & BLACKMORE (1983), R. Whytehead and L. Blackmore 'Excavations at Tottenham Court, 250 Euston Road, NW 1' *Trans. London and Middlesex Archaeol. Soc.* 34 (1983): 73–92.
- WILLEMS (1986), J. Willems 'La production de poterie à l'époque Merovingienne dans la région Hutoise' in J. Willems and M. Otte (eds.) *La Civilisation Merovingienne dans le Bassin Mosan* (Liege: 1986) 241–60.
- WILLIAMS (forthcoming), C. Williams 'The loomweights' in R. L. Whytehead and R. Cowie 'Excavations at the Peabody site, Chandos Place, and the National gallery' *Trans. London and Middlesex Archaeol. Soc.* (forthcoming).
- WILLIAMS (1989), D. Williams 'A note on the petrology of some Saxon daub from three sites in London: Maiden Lane, Jubilee Hall and Bedfordbury'. Ancient Monuments Laboratory Report 97/89 (unpublished).
- WILLIAMS-ELLIS *et al.* (1947), C. Williams-Ellis, J. Eastwick-Field, and E. Eastwick-Field 'Building in cob, pise and stabilized earth' *Country Life* (London: 1947).
- WILSON (1976), D. M. Wilson 'Craft and industry' in D. M. Wilson (ed.) *The Archaeology of Anglo-Saxon England* (London, 1976) 253–281.
- WILSON (1983), M. Wilson 'The pottery' in S. S. Frere and S. Stow Excavations in the St Georges Street and Burgate areas' *The Archaeology of Canterbury* vol. 7 (1984) 192–309.
- WILSON & RACKHAM (1976), R. A. Wilson and D. J. Rackham 'Parasite eggs' in P. C. Buckland (ed) 'The environmental evidence from the Church St sewer system' *The Archaeology of York* 14/1 (1976) 32–33.
- YPEY (1962–3), J. Ypey 'Die Funde aus dem fruhmittelalterliche Graberfeld Huineveld bei Putten im Museum Nairac in Barneveld' *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 12–13 (1962–3) 99–152.
- YPEY (N. D.), J. Ypey 'Vroeg-middelceuw glas' *Antiek* 2e jaargang, nr. 8.
- ZABERN (1986), P. von Zabern *Romer und Franken in Krefeld-Gellep* (Mainz: 1986).

# THE HIDATION OF MIDDLESEX

KEITH BAILEY

## SUMMARY

*The paper is concerned with the development of the hide as a measure of liability to renders and taxation in various forms during the Anglo-Saxon period, from its first appearance in the records in the late seventh century until Domesday Book in 1086. The latter provides the only complete details of hidation in the whole county, and there is a discussion on the relationship between the hide, the ploughland, the ploughteam and the details of tenants' holdings which are, uniquely, provided in the Middlesex folios. The evidence for regular assessments, based on a five-hide module, is also discussed. There is an analysis of the information on hides contained in the surviving Anglo-Saxon charters for Middlesex, and of the evidence which they afford for the groups which went to make up the provincia of the Middle Saxons within the East Saxon and Mercian Kingdoms.*

## I

'What was the hide?' F. W. Maitland, in posing 'this dreary old question' in his seminal study of Domesday Book (1897, 416), was right in saying that it is in fact central to many of the great questions of early English history, be they economic, social or administrative. He was echoed by Baring a few years later, who wrote, 'the hide is grown somewhat tiresome, but we cannot well neglect it, for on no other Saxon institution have we so many details, if we can but decipher them' (1899, 290). Subsequently other scholars have directed their attention to this subject, directly or indirectly. Montague Sharpe in his various studies of Roman, Anglo-Saxon and Medieval Middlesex drew on Domesday Book as a source of evidence about hidation and the grouping of estates as part of an attempt to demonstrate continuity of land measurements between Roman and Norman times (1916; 1937). Eila Campbell discussed not only hidation but also many other economic and geographical aspects of late-eleventh century Middlesex in her essay in Darby's pioneering *Domesday Geography* (1962). Most recently, the introduction to the Alecto edition of

Domesday Book discusses Middlesex hides and hundreds, including evidence for the existence or otherwise of an assessment based on the five-hide unit and multiples thereof (Alecto, 1989–90).

Dreary and tiresome it may be, but clearly the answer to the question of the hide remains of interest to a wide variety of historians and historical geographers, and the very range of purposes for which the question must be asked shows just how difficult it is to reach a consensus. It is almost, one might say, a Holy Grail, and subject to as many interpretations designed to fit this or that theory about Anglo-Saxon society, its origins and its structures.

The aim of the present paper is to analyse the evidence for the hidation of Middlesex from various sources and in particular to set out the Domesday material in tabular form to see what, if any, patterns and groupings emerge. Some readers will perceive that the inspiration for this particular approach comes from the work of Cyril Hart on the hidation of the counties making up the southern Danelaw (1970; 1974). As with his work on Anglo-Saxon charters, Hart

adopted some pioneering methods in these studies, and although not free from controversy, his basically retrospective approach, starting with Domesday and working backwards into progressively more obscure times, seems to offer the best chance for understanding the principles underlying the system of assessment which was already well-established by the end of the seventh century and was central to the governance of England until 1100.

Middlesex is not so fortunate as some counties in its surviving records of hidation. Only the Domesday folios contain anything like a full record, in this case relating to the time of the survey in the first half of 1086, with no reference to the situation on the day King Edward (the Confessor) died (ie 5th January 1066). In shorthand, the Middlesex entries are T.R.W.—*tempore regis Willelmi*, rather than T.R.E.—*tempore regis Edwardi*. Middlesex has no almost-contemporary geld roll such as that of Northamptonshire to illuminate the dynamics of change which appear to characterise hidation in the late eleventh century. It does, however, have unusually detailed information about the holdings of various classes of tenants, expressed in hides, virgates and acres, and which may be compared with the overall geld assessment for each vill, even if the relationship between them remains complex and defiant of explanation (Campbell 1962, 107–9).

Equally, Middlesex does not feature in the so-called County Hidage, which gives total assessments for certain shires, probably earlier in the eleventh century (Maitland 1897, 524–9). The Burghal Hidage, dated to the period 910–920 and listing the *burhs* or fortified places of Wessex together with the number of hides required for the maintenance of their fortifications (Hill 1969), omits London (as does Domesday Book, although there is a blank folio (125c–126c) on which it is

usually assumed that London would have been entered (Campbell, 1962, 106)), and it is only possible to infer from the length of the medieval wall the hidage of the area which was allocated to maintain its defences. This is potentially far larger than the 880 or so hides allocated to Middlesex, but it should be remembered that London itself, probably the largest centre of population, even in the early tenth century, must have had an assessment for geld purposes expressed in hides like any other settlement. This idea will be discussed in more detail below.

Fortunately, Middlesex has a reasonable coverage of Anglo-Saxon charters which are useful in illuminating the nature of hidation in the centuries before 1066. Most show, however, that where a comparable estate can be identified in Domesday Book, there has been little or no change in its hidage assessment. In this respect, the county seems to belong with Buckinghamshire and Oxfordshire, which display the same phenomenon, in contrast to Surrey, Berkshire, Northamptonshire and Cambridgeshire, which experienced reductions of 50–60% in their hidation between the early tenth century and 1066 (Hart 1970, 38; 1974, 37).

## II

For most counties, even the starting point for such an investigation, its hidage total in Domesday Book, is beset with difficulties of definition, and there seem to be as many answers as there are historians performing the count. This is fortunately not the case in Middlesex, where the nominal total of hides for the shire is clearly 880. Table 1 summarises the results from a selection of writers. Unlike many counties, Middlesex in 1086 had no detached parts lying in other shires, nor did it include such detached portions within its boundaries, which means that prior to the

Table 1. Estimates of Middlesex Hidation

Source	Total
Maitland 1897	868
Baring 1899	885
Corbett 1900	880
Davies 1901	880
Baring 1909	880
Sharpe 1916	880
Campbell 1962	879½ + 21½ ac.
Bailey 1990	880½ + 21½ ac.

annexation of the south-east of the county by London in 1889 the modern and the Domesday shires are identical. The boundary with Hertfordshire in the Barnet area may not have been fixed in 1086, although details of any settlements in this heavily-wooded area are subsumed in those of larger estates in each county.

Apart from Maitland's figure, which seems too low, all the rest are within a range of five hides, the more recent counts excluding any 'rounding'. There will always remain areas of ambiguity in some entries where it is not apparent whether the hidage is included elsewhere, or is a duplication.

Domesday Book of course, re-arranges the information collected on a geographical basis by the Commissioners under fiefs, starting with the king and proceeding via ecclesiastical tenants-in-chief to laymen great and small. This means that data on a location may be widely spread through the folios, concealing associations and regularities. In the Appendix, therefore, details are given for each separate estate listed on the Middlesex folios in Domesday Book arranged by hundreds in the order which the rubrics generally follow. Within each hundred, there is an indication of those which form part of the same parish. In 1086, however, that concept is perhaps anachronistic, and it is likely in certain cases that the parishes we know represent

an amalgamation of two or more Domesday vills. Also shown in the Appendix are the numbers of ploughlands on each estate. This is seen by many scholars as a measure of the arable potential of the land, as distinct from the artificial geld hidage assessments. As such, it may be argued that ploughlands were a more readily variable assessment than hidation.

The Middlesex Domesday is unique in providing details of the holdings of various classes of tenants which went to make up the non-demense land of each estate. These data, however, rarely agree with the number of hides, ploughlands, or teams actually employed in 1086. The variations moreover are not systematic, and cannot be accounted for by any simple hypothesis. The totals for hides, ploughlands, tenants holdings, demesne and plough teams are summarised for each hundred below.

Table 2 says as much about the complexities of Domesday data as it does about the realities which one might have encountered on the ground in the landscape of Middlesex in 1086. For example, in Hounslow Hundred, which is the closest approximation in geld terms in the county to an exact 100 hides, there was estimated to be potential for 80 ploughs. There were only 54 at work at the time of the Commissioners' visit to collect statistics, and the sum total of 'hides' on the demesnes and amongst the tenants was only just over 60. The fact that the number of teams was almost exactly two-thirds of the potential might be taken as a hint at the presence of open fields in which that portion of the land was under the plough at any given time, although this is unusually early for the operation of a regular three-field system. In any case, this system does not seem to have been characteristic of Middlesex when evidence becomes more abundant in the later

Table 2. Middlesex Hundreds in 1086: Hidation and Other Features

Hundred	Hides	Ploughlands	Demesne		Tenants	
			Hides	Teams	Hides	Teams
Ossulston	219 $\frac{3}{4}$ + 21 $\frac{1}{2}$ ac.	188 $\frac{1}{2}$	58 $\frac{1}{4}$	59	84 $\frac{1}{4}$ + 218 $\frac{1}{2}$ ac.	97
Spelthorne	112	89 $\frac{1}{2}$	38 $\frac{3}{8}$	26 $\frac{1}{2}$	49 $\frac{3}{8}$ + 212 ac.	60
Hounslow	105	80	24 $\frac{1}{2}$	9	35 $\frac{3}{8}$	45
Edmonton	70	60	25 + 2c.	10	32 + 142 ac.	50
Elthorne	224 $\frac{1}{2}$	148 $\frac{1}{2}$	64 $\frac{3}{4}$	27	84 $\frac{3}{4}$ + 233 ac.	86
Gore	149	109	50 $\frac{1}{2}$	13	43 $\frac{3}{8}$ + 64 ac.	63 $\frac{1}{2}$
Total	880 $\frac{1}{4}$ + 21 $\frac{1}{2}$ ac.	675 $\frac{1}{2}$	261 $\frac{1}{8}$ + 2c.	144 $\frac{1}{2}$	306 $\frac{3}{8}$ + 869 $\frac{1}{2}$ ac.	401 $\frac{1}{2}$

Table 3. Middlesex 1086: Relationship between Hides, Ploughlands and Teams

Hundred	Dem./Ten. Hides as % Geld Hides	Dem./Ten. Teams as % Ploughlands	Ratio
Ossulston	66	83	1.26
Spelthorne	80	97	1.21
Hounslow	57	67.5	1.18
Edmonton	84	100	1.19
Elthorne	67	76	1.13
Gore	63	70	1.11
Total	65	81	1.25

medieval period, and none of the other Domesday Hundreds reveals such a relationship (Gray 1915, 381–7; Avery 1965). Be that as it may, it is even more difficult to hypothesise why the hides allocated to the demesne and tenant lands are only 57% of the geld assessment. In the case of Edmonton Hundred, there is no shortfall in the number of plough-teams, but at about 59 hides, the ‘particulars’ fell short of the geld hidation by 16%.

There is a general correlation between high and low shortfalls, although overall there was a much more dramatic reduction between theoretical and actual hidages than between ploughlands and the teams in use at the time of the survey. For Middlesex as a whole, the ‘particulars’ show a reduction of 35% on the nominal geld hidation, whereas the number of teams at work is only 19% less

than the notional capacity expressed in ploughlands.

### III

We turn now to the question of the ‘five-hide unit’ and its relevance to the situation in Middlesex in 1086. While it is true that throughout the period from the late seventh century, when Anglo-Saxon land charters first appear, until the time of Domesday Book four centuries later many estates have their hidage assessment expressed in multiples of five hides, it is not clear what basis underlies this seeming regularity. Among the qualifications for a peasant farmer to graduate to the ranks of the thegns was the possession of five hides of land and a hall (Stenton 1947, 480). This might be taken to imply a situation in which the land was divided into discrete blocks, with neither the nucleated village settlement nor the

open field system prevalent, although it could equally reflect a complex, mixed system. Possibly this was considered to be the minimum threshold for which the solemn procedures of granting land by charter was appropriate, and although there are many examples of smaller grants, and of small estates in Domesday, this may reflect a continuing tendency to fragmentation.

Be that as it may, there is an observable tendency for the size of grant to decrease over time. The early charters tend in the main to refer to the endowment of religious houses by kings, and the grants cover large tracts of land assessed at 50, 100 or even more hides. The land thus disposed clearly includes many settlements and their fields, and the lands of many thegns and peasants. We have no way of knowing, however, whether a grant such as that of 50 hides to St Paul's minster in 704-9 really means that it was then considered to be the land of 50 families or of 10 thegns. Neither is it apparent whether these assessments were built up from small units or merely broad approximations by royal officials as to the taxable capacity of a tract of land, including not only arable and pasture, but also woodland and waste. What is clear is that the hundred was not an original administrative concept and did not arise until the early tenth century during the period when kings such as Edward the Elder and Aethelstan were welding the former disparate kingdoms of the Anglo-Saxons and the reconquered Danelaw into a unitary state, divided into shires and hundreds with an associated hierarchy of courts and geld obligations (Stenton 1947, 289-90).

It is possible, therefore, that the five-hide unit and multiples thereof which is so notable a feature of the Domesday folios for Middlesex and for many other counties dates not from some primæval

period of Anglo-Saxon administrative development, but from the reforms of the tenth century. It is possible, of course, that there are elements of both in an area such as Middlesex, which lay outside the Danelaw, since there are clearly cases such as the Fulham estate of the Bishop of London and the Harrow estate of the Archbishop of Canterbury which maintained their assessments from the period before the Danish wars of the late ninth century up to 1086. Charters relating to grants after *c.* 900 tend to cover much more limited areas, and no doubt represent the breaking-up of older, larger entities. Without a complete surviving corpus of charters, however, it is impossible to estimate when this process began and how it might relate to changes in settlement and agrarian patterns.

Of the 65 estates listed in the Middlesex Domesday, grouping together those with the same place-name, 31 (47.7%) are exact five-hide units (including 2½, 7½ hides, etc.) and a further 14 (21.5%) fall within 10% of such a value (see Table 4). Between them these categories account for 69.2% of Middlesex estates in 1086. This may be compared with 51% in Hertfordshire, 74% in Buckinghamshire, 69% in Oxfordshire, and 66% in Surrey, placing Middlesex at the centre of the range. If the very small estates at Nomansland and Bishopgate in Ossulston Hundred

Table 4. Domesday Middlesex: Five Hide Units

Hundred	Five-Hide Units		Within 10%		Others	
	No.	%	No.	%	No.	%
Ossulston	11	45.8	2	8.3	11	45.8
Spelthorne	5	33.3	6	40.0	4	26.7
Hounslow	2	100.0				
Edmonton	3	100.0				
Elthorne	7	41.2	5	29.4	5	29.4
Gore	3	75.0	1	25.0		
Total	31	47.7	14	21.5	20	30.8

Table 5. Middlesex 1086: Distribution of Five-Hide Units by Hundred

Size	Ossulston	Spelthorne	Hounslow	Edmonton	Elthorne	Gore	Total
5	7	3		1	2		13
7½		3			2		5
10	2	1			2	1	6
12½		2					2
15	2	1			3		6
20		1				2	3
30				1	2		3
35			1	1			2
50	1						1
60	1				1		2
70			1				1
100						1	1
Total	13	11	2	3	12	4	45

containing only 21½ ac. between them are excluded, then the proportion of Middlesex Domesday estates within 10% of a five-hide unit increases to 71.4%. Unfortunately, the small number of estates in most Middlesex hundreds makes any generalisation about the distribution of regular assessments very hazardous.

It is worth examining in more detail the nature of those estates whose assessments seem to reflect an underlying regularity in the basis of hidation. Allowing for a limited amount of rounding, the distribution of five-hide units in Domesday Middlesex is shown in Table 5. It might be argued that some units which are apparently based on the five-hide principle should not in fact be included here. For example, Stepney, which has no less than 11 entries totalling 59¾ hides, includes not only a large tract of territory in the area known as Tower Hamlets, but also the adjacent parish of Hackney, and the detached area of Hornsey. It has also been shown that the five hides held from the Bishop of London by Hugh de Bernieres in fact lay in Islington, later becoming the manor of Barnsbury (VCH, viii, 1986, 51–2). Equally, Harlesden,

assessed at five hides, lies in the parish of Willesden, itself assessed at 15 hides, and it could be said that they should be treated as one 20-hide unit. The method adopted for the purpose of this analysis is that where a group of estates with essentially the same name—such as Stepney—form a unit based upon the five-hide principle, they are taken in aggregate, even if the territory concerned is not discrete, whereas separate units of this type with different names are treated separately, even if they lie with the same later parish, an area hardly likely to have been closely defined at the end of the eleventh century. For example, the three Bedfont estates fall in two present parishes—East Bedfont and Stanwell—while the two small Hatton estates also lie in the former.

More than half of these regular units fall in the 5–10 hide range, and they account for 29% of all estates in the county. Eleven more estates fall in the 12½–20 hide range, and only 10 exceed this level. The latter, however, have a total assessment of no less than 500 hides—57% of the Middlesex total.

Since it is unusual for early charter grants and sources such as Bede to mention any area with less than 50 hides, it

would appear that the smaller entities recorded in the Domesday folios represent the break-up of larger units. This probably occurred during the period after 900, when great estates were no longer being granted away to religious houses. Instead, smaller grants, often of five or 10 hides were being made by kings to laymen, presumably as a reward for services rendered, and also as a way of enlarging the thegnly class. This process has been seen as the beginnings of a native feudalism, in which land was given in exchange for military service (Stenton, 1947, 672-4; Brown, 1973). It was indeed most unusual for any Anglo-Saxon land grant to exclude the obligations for the three basic services—the defence of *burhs* and bridges and the provision of men for the *fyrð*.

The 'single' five-hide units in Middlesex are listed in Table 6, along with the sum total of the 'particulars' of demesne and tenant hidages and an indication of their agricultural potential in the form of ploughlands and of the actual number of ploughs at work in 1086.

The 'particulars' column highlights the

great differences between the 'geld' hidage and that allocated to the demesnes and tenants in each case. Overall, they total only three-quarters of the hidage. Only at Kempton and Charlton (both in Sunbury parish), and at Lisson (Marylebone) do the two figures equate, although they are not too removed at Hampstead, Harlesden and Harefield. Ploughlands also fall short of the theoretical norm of one hide = one ploughland in most cases, with only Islington, Kempton and Harefield achieving parity. The number of teams at work in 1086 in total is identical to the notional capacity on these estates, although only Harefield actually had five, and Islington four and a half teams. In many cases, the agricultural activity in these places appears to have been out of line with the taxation base as expressed in geldable hides.

It is a commonplace that the hide in 1086 had a very variable extent on the ground. The old concept that it contained a long hundred (120 acres) of land cannot be sustained in practice. Thus, Middlesex with its 180,000 acres and only 880 hides

Table 6. Five-Hide Estates/Groups in Middlesex, 1086

<i>Estate</i>	<i>'Particulars'</i>	<i>Ploughlands</i>	<i>Teams</i>
Hampstead (2)	4	3½	2½
Harlesden	4½	4	2½
Islington (4)	4	5	4½
Lisson	5 + 2ac.	3	3
St Pancras (2)	0	3	2
Tottenham Court	0	4	3½
Tyburn	2½ + 10ac.	3	3
Charlton	5 + 7ac.	4	4
Hanworth	2½	3	4
Kempton	2½ + 2¼	5	4
Tottenham	11¼ + 60ac.	10	14
Cranford	2¼ + 2ac.	3	3
Harefield	4½ + 38ac.	5	5
Total	46½ + 119ac.	55½	55
Average	3.66	4.27	4.23

Note: Figures in brackets indicate the number of component estates of that name.

had an average of 204.5 acres/hide. The further the data are disaggregated, the wider the departures from an average become. Of those five-hide units which can reasonably be equated with later parochial areas, the number of acres to the hide ranges from no less than 924 at Harefield and 450 at Hampstead to 275 at Hanworth and 147 at Cranford. If it were not already apparent that the hide had originated as a measure of the *total* taxable capacity of a tract of countryside, including all its woodland, pasture and other appurtenances as well as the all-important arable land, these data should soon disabuse the reader. It would appear, however, that with the exception of Tottenham, none of these estates was the subject of so-called 'beneficial hidation', that is where the geld assessment is far lower than the potential and actual agricultural activity of the land. In Harefield, for example, large tracts must have been taken up with the woodland required to feed the 1,200 swine recorded in 1086. Although swine totals were probably as much a theoretical measure of capacity as ploughlands, it has been suggested that the equation of one pig = one and a half acres might be applicable, in which case some 1,800 acres of Harefield would have been wooded, 39% of the total area (Rackham 1976, 60).

## IV

Six Middlesex estates were assessed at 10 hides in 1086.

The 'particulars' once more fell short of the nominal hidage, in this case by one-third. Laleham, where the 'particulars' and the geld hidage are virtually identical, appears to have been taken out of the larger estate of Staines in the recent past (DB, i, f. 129b, 130c). This may imply that when a new estate was created some attempt was made to relate the assessment to the capacity to pay, a relationship which became blurred through time. Only at Kensington and Kingsbury is the exploitation of the land close to the level suggested by the geld assessment. Other 10-hide units, especially West Drayton and Harlington, adjacent places in Elthorne Hundred, seem to have been taxed at a higher level than one might expect, especially as neither are recorded as having significant resources apart from their arable land. Kingsbury in contrast not only had nine teams at work, but also woodland for 1,200 swine, which is potentially equivalent to the entire area of the later parish. This suggests that some lay in a detached wood-pasture area, possibly in Edgware (Baylis, 1952).

There were six '15-hide' units in Middlesex in 1086, all in the west of the county, with three of them forming a sub-

*Table 7. Ten-Hide Estates/Groups in Middlesex, 1086*

<i>Estate</i>	<i>Particulars</i>	<i>Ploughlands</i>	<i>Teams</i>
Ebury	8½	8	7
Kensington	4	10	9
West Drayton	7 + 39ac.	6	6
Harlington	4 + 11ac.	6	5
Kingsbury (2)	3¾ + 25ac.	9	9
Laleham (2)	10¼	6½	6½
Total	37¾ + 75ac.	45½	42½
Average	6.38	7.58	7.08

Table 8. Fifteen-Hide Estates / Groups in Middlesex, 1086

Estate	'Particulars'	Ploughlands	Teams
Westminster	13½ + 5ac.	13	12
Willesden	n/a	15	8
Stanwell	14 + 28ac.	10	13
Greenford (4)	12	9½	7½
Ickenham (3)	3½ + 20ac.	9	6
Northolt	15	10	8
Total	n/a	66½	54½
Average	n/a	11.08	9.08

stantial block of territory in Elthorne Hundred.

These estates also show a tendency for the 'geld' hidage to exceed the 'particulars', in this case by a quarter. If the suggestion made above that where there is a high correlation in this respect the estate concerned had only recently been separately assessed for geld is correct, then Westminster, Stanwell and Northolt in 1086 might be relatively 'new' units. Stanwell may have been part of the great Staines estate which seems to have been disintegrating at the time of Domesday, with areas such as Laleham having already become separate estates, whereas others, such as Ashford, were still part of Staines (DB, i, f. 128c). If this is the case, the original Staines estate probably covered most, if not all, of Spelthorne Hundred. As such, it has all the hallmarks of an early grant of a block of territory to support a minster church (Blair, 1989). This is unlikely to have been Chertsey, just across the Thames, for this never had any recorded connexion with the Staines area. There is a reference in Domesday Book to a link between East Burnham (Bucks.) and a minster at Staines about which nothing else is on record (DB, i. f.145d). This church was probably not an otherwise unknown foundation of the monastic reform period after 960. More likely, Domesday Book contains an echo

of an old foundation which had been reduced in status by the incursions of the Danes into this area in 1009 (Whitelock, 1979, 243), albeit retaining many of its *berewicks* in south-west Middlesex two centuries later. Even in 1291 the *Taxatio Ecclesiastica* of Pope Nicholas shows that Staines church (with Laleham) was the highest valued in Middlesex, a possible indicator of erstwhile minster status. It has been suggested that the Staines area might be the *Norð ge* or 'northern district', counterbalancing 'Surrey', an area in the north-west of the later county granted to Chertsey Minster in 666–674 (Bailey, 1989, 114; Blair 1989).

The case of Northolt is not so easy to unravel, although its name, from Old English (*æt*) *norð healum* ('the northern angles [of land]') (Gover et al. 1942, 44),<sup>1</sup> implies that it was not originally a free-standing estate, but merely one part of a larger entity. Southall, 4kms to the south, seems to have been the southern extremity of this territory, whose focus would have been either Hayes or Yeading, both of which appear in Anglo-Saxon charters and are discussed below.

There were three 20-hide units in Domesday Middlesex.

Only in the case of Staines (including Ashford, Littleton and Teddington), does the total of the 'particulars' equate to the geld hidage. The two Stanmore estates (probably including some at least of Edgware (Baylis, 1952)) have only half the

Table 9. Twenty-Hide Estates / Groups in Middlesex, 1086

Estate	Particulars	Ploughlands	Teams
Staines	18 + 119ac.	24	24
Hendon	16	16	11
Stanmore (2)	13½ + 26ac.	14	7½
Total	47½ + 145ac.	54	42½
Average	16.24	18.00	14.17

potential number of ploughs at work, although in this case there was a substantial woodland area, capable of sustaining no fewer than 1,600 swine. Nearby Hendon was also well endowed in this respect, with wood for 1,000 swine. Northern Middlesex on the heavy London Clay was apparently still well-forested in 1086. About 79% of the notional number of ploughs on these estates was at work in 1086. This compares with 99%, 93% and 82% respectively in the case of five-, 10-, and 15-hide estates, and points to a relative over-assessment of the larger units. It also appears that the intensity of agricultural activity decreased with increasing estate size, further evidence that most Middlesex estates in 1086 were not under great pressure to extend their arable at the expense of woodland, pasture and 'waste'.

## V

Above 20 hides, there are too few regular units of any given size to enable any detailed analysis. There are, nevertheless,

some interesting features in respect of these estates, not least their large assessments and size which appear to take us back to a much earlier stage in the process of subdividing the landscape of Anglo-Saxon England. For the sake of completeness and comparability, the relevant details of these estates are set out in Table 10. The use of a single name, usually that of the estate *caput* (e.g. Fulham, Stepney) does not necessarily mean that the land concerned lay in a discrete block, nor that settlements not named in Domesday Book did not exist at the time. The Domesday Commissioners were concerned to identify the resources and value of each tract of territory under a common lordship, and places such as Hackney, Chiswick and Ealing were glossed over.

These estates account for 56.8% of the geld hidage of Domesday Middlesex, 51.6% of the 'particulars' of individual holdings and demesnes, 55.5% of ploughlands and for 52.1% of teams at work. This is not, however, out of line with

Table 10. Estates/Groups of 25+ Hides, Middlesex, 1086

<i>Estate</i>	<i>Hides</i>	<i>Particulars</i>	<i>Ploughlands</i>	<i>Teams</i>
Enfield	30	26 $\frac{3}{4}$ + 30ac.	24	20
Harmondsworth (2)	31	17 $\frac{1}{4}$ + 30ac.	21	13 $\frac{1}{2}$
Ruislip	30	21 $\frac{1}{4}$ + 28ac.	20	15
Average		21.99	21.67	16.17
Hampton	35	28 $\frac{1}{2}$	25	20
Edmonton	35	28 $\frac{1}{2}$ + 52ac.	26	26
Average		28.72	25.5	23
Fulham (3)	50	55 $\frac{3}{8}$ + 43ac.	48	36
Stepney (11)	59 $\frac{3}{4}$	40 $\frac{3}{8}$ + 104 $\frac{1}{2}$ ac.	46	43 $\frac{1}{2}$
Hayes	59	39 $\frac{1}{2}$	40	28
Average		40.37	43	35 $\frac{3}{4}$
Isleworth	70	31 $\frac{3}{8}$	55	34
Harrow	100	60 $\frac{1}{2}$ + 13ac.	70	49
Total	499 $\frac{3}{4}$	349 $\frac{3}{8}$ + 300 $\frac{1}{2}$ ac.	375	285

their share of the county area—52.8%, or almost 95,000 acres.

Their ownership falls neatly into two groups. First are the estates in the hands of great religious houses—Hayes and Harrow (Archbishop of Canterbury), Fulham and Stepney (Bishop of London), assessed at 268 $\frac{3}{4}$  hides (30.5% of the county hidage; 28.9% of the ‘particulars’, 30.2% of ploughlands and 28.6% of teams). Second are the estates in lay hands. (Although the principal estate at Harmondsworth was held by the Abbey of the Holy Trinity of the Mount at Rouen in 1086, it had belonged to Harold in 1066). The whole of Hounslow Hundred (Hampton and Isleworth) was held by Walter of St Valery in 1086, both having been held by Earl Aelfgar before 1066. Geoffrey de Mandeville, founder of a noted dynasty, held Edmonton and Enfield, including the *berewic* of South Mimms, thereby disposing of more than 25,000 acres in the north-east of the county, which had been in the hands of Asgar ‘the Staller’ T.R.E., an important man in the region. Ruislip in 1086 was held by Arnulf of Hesdin, but was soon granted by him to the Norman Abbey of Bec (VCH, iv, 1971, 134). In 1066, it had been held by Wulfward Wight, a king’s thegn with holdings at Kempton, Ruislip and Kingsbury in Middlesex and also in Kent and Berkshire. Together, these great estates were assessed at 231 hides (26.25% of the Middlesex total, with 22.7% of the ‘particulars’, 25.3% of its ploughlands and 23.5% of the teams at work). These estates occupied almost 50,000 acres and accounted for 27.6% of the total for the county.

The presence of these great territorial units in a county so closely associated with London is perhaps surprising at first sight, especially given the almost complete absence of land still in royal hands. The 12 $\frac{1}{2}$  acres of ‘Nomansland’ and 32

cottagers are all that remains. The great blocs in the shire are held by four major churches (427 $\frac{3}{4}$  hides, 48.61% of the total) and seven laymen (380 $\frac{1}{2}$  hides, 43.25%). In the absence of charters it is impossible to say when this occurred, other than that most of the great grants to churches date from the period 670–825. There is virtually no evidence that the citizens of London were more than marginally involved in Middlesex property before 1086.

The lands held by St Paul’s and Canterbury were the result of the strategy for endowing great churches adopted by various rulers at a time when London was probably still at a low ebb commercially. The Fulham and Stepney estates in particular seem to reflect the policy of Eorcenweald, Bishop of London *c.* 675–693, whose aim was to make these lands independent of the various kings contending for control of London and its hinterland. The Canterbury estates of Hayes and Harrow seem to have been acquired by the archbishops in the period 760–830 (Brooks, 1984, 132, 137–42). The great estates held by laymen in Domesday Middlesex contrast strongly with the tendency towards their break-up which may be observed not only in this county but also in its neighbours. Given that London was a commercial rather than a governmental centre at this period, it may be that kings tended to reward their followers with grants of land closer to the traditional heartlands of their kingdoms. It may equally be a reflection of the fact that large tracts of Middlesex seem to have been relatively underdeveloped in the late eleventh century.

No charter records the granting of any of these estates to laymen, other than 20 hides at Harmondsworth to Aethelred *minister* by Offa of Mercia in 781 for 100 *mancuses* of gold in a bracelet (Sawyer 1968, no. 119; Gelling 1979, no. 203). The

political contexts of most of these grants cannot therefore be ascertained. They may have occurred during the troubled reign of Aethelred the Unready (978–1016), or earlier, during the Danish wars of Alfred and the ensuing reconquest of the Danelaw by his son Edward (870–925). Both Isleworth and Twickenham had originally been granted to minsters—Isleworth by Eorcenweald to Barking c. 677, and Twickenham by an East Saxon king to St Pauls in 704 (Sawyer 1968, nos 1246, 65; Gelling 1979, nos 310, 191). The latter grant seems to have lapsed, however, for in 795 Twickenham was granted by Offa to Canterbury, a grant restored or made anew in the 940s (Sawyer 1968, nos 132, 477, 515, 537; Gelling 1979, 205, 215–8). Unlike the other Canterbury estates in Middlesex, it had been lost before 1066. Whatever the reality behind this confusion, the Hundred of Hounslow was entirely in lay hands in 1066.

## VI

Before turning to consider the extensive body of data on hidation contained in the Anglo-Saxon charters of Middlesex, it is necessary to give some attention to the 'Burghal Hidage' (Maitland 1897, 577–81) This is a list of the *burhs* or fortified places (not all of them towns, and not all surviving even as settlements today) which was compiled during the reign of Edward the Elder, in the 910s. It covers all of those in the kingdom of Wessex, along with a few in Mercia. Southwark is included, but London, despite having been refortified by Alfred after its capture from the Danes in 886, does not appear. This is unfortunate, because the principle underlying the system of *burhs* is that they required a given number of men to guard their defences, using a formula based on hides in the area considered tributary to each place. This formula is that each

acre's breadth of wall was equivalent to 16 hides, and one hide = one man. Each pole (5½ yards, 16½ feet) of wall required four men for its defence, presumably on a kind of rota system.

Burghal Hidage gives the total number of hides allocated to each *burh*, and where it is possible to measure their perimeters, there is usually a very good 'fit' between the formula and the reality. The reverse should also apply where the line of the Anglo-Saxon defence is unknown. Southwark, for example, is given 1,800 hides, implying a defended perimeter of 2,475 yards, about 1.4 miles. Its territory is represented by the county of Surrey, excluding the area in the south west which centred on the *burh* at Eashing.

In the case of London, we may infer the hidage required to support the refurbished walls of the Roman city from their length, including the riverside wall. The total distance is some 5,555 yards. The Burghal Hidage formula requires no less than 4,040 hides to support *Lundenbyrig*. Although there is no information about any *burhs* in Essex, it is unlikely that any of this territory lay east of the Lea, since the latter was the boundary of the Danelaw agreed between Alfred and Guthrum in 886. Similarly, Surrey was tributary to Southwark and Eashing, while Hertfordshire seems to have been created as an administrative unit about this time to support the *burhs* on the Lea at Hertford. If the hidage of Middlesex c. 920 was the same as in 1066, this leaves 3,160 hides to find. The most likely explanation is that they are to be found in the *burh* itself. We have no way of knowing, of course, the population of London in the reign of Edward the Elder, and there is no yardstick provided by Domesday Book. The enumerated population of Middlesex in 1086, excluding serfs, was only 2,065 in a relatively underdeveloped area. A population of 6–8,000 in early tenth-

century London sounds large for the period, but may not be impossible in view of John Clark's suggestion of 10–20,000 people in the city in 1086 (Clark 1980, 20).

## VII

It has already been noted that Middlesex has no sources indicating the nature of its hidation apart from Domesday Book and a series of charters which starts in the last quarter of the seventh century and ends in the reign of Edward the Confessor. The charters are, however, relatively numerous and most are deemed by scholars who have studied them to be

authentic or nearly so. They provide a series of data on the hidage of many parts of Middlesex over several centuries.

It is not appropriate here to discuss the charters in detail. It should be noted that only four of these 29 grants were to laymen, and the great majority were to the three houses of St Paul's, Westminster and Canterbury, a pattern not necessarily typical of grants after 900. The propensity for religious houses in general, and particularly Westminster to produce forged charters is well known, and Domesday Book may in fact provide the earliest evidence for the hidages of some estates.

Chronologically, the Middlesex char-

Table 11. Middlesex Charters 675–1066

Date	Location	Quality	Donor	Grantee	Hides
c. 677	Isleworth	***	Eorcenweald	Barking	53
693 × 704	Ealing	*	Aethelred	St. Pauls	10
704	Twickenham	*	Sucabræd	St. Pauls	30
704 × 709	Fulham	*	Tyrhtil	St. Pauls	50
716 × 757	Yeading	*	Aethelbald	Wiltred	7
767	Harrow	†	Offa	Stithberht	30
781	Harmodsworth	**	Offa	Aethelred	20
793	Stanmore	***	Offa	St. Albans	10
795	Hayes	***	Offa	Canterbury	60
795	Twickenham	***	Offa	Canterbury	30
821	Harrow	†	Cenwulf	Canterbury	104
831	Botwell	†	Wiglaf	Canterbury	5
845	Roxeth	*	Werenberht	Werheard	2
925 × 939	West Drayton	****	Aethelstan	St. Pauls	10
925 × 939	Neasden	****	Aethelstan	St. Pauls	10
948	Twickenham	*	Eadred	Canterbury	30
957	Loceresleage	*	Eadwig	Lyfing	9
959	Codenhlæw	****	Edgar	Westminster	3
959	Hanwell	****	Edgar	Westminster	8
962	Sunbury	†	Edgar	Aelfheah	10
971?	Westminster	*	Edgar	Westminster	5
974?	Hampstead	*	Edgar	Westminster	5
963 × 975	Hendon	****	Dunstan	Westminster	20
972, 978	Loðeres Leage	*	Dunstan	Westminster	9
972	Bleccanham	****	Edgar	Westminster	5
1002	æt Berewican	*	Aethelred	Westminster	2
1062	Lalcham	***	Edward	Chertsey	2
1062	Ashford	***	Edward	Chertsey	1
1053 × 1066	Staines	***	Edward	Westminster	35

Note: The various categories of 'quality' are— † original charter; \* later copy, not in doubt; \*\* later copy with addenda to original; \*\*\* basically fabricated, but with some authentic material; \*\*\*\* complete fabrication.

ters fall into two groups. There are 13 from the period 675–850 and 16 dating from 925–1066, of which all but three date from before 1005. In broad terms, the first of these phases marks the endowment of original minsters with estates, usually in reasonably close proximity to the church in question. In this respect the grants to Canterbury are anomalous, and seem to be related to the fact that the priest Werhard, who was related to Archbishop Wulfred, held at least part of the area from his own patrimony before granting it to his community (Sawyer 1968, no. 1414; Brooks 1984, 132). Grants to laymen and of small estates (less than 20 hides) are unusual in this period. After 850, there was a hiatus, not only in Middlesex but across England, in which relatively few grants were made, marking the turmoil of the first Danish wars and the subsequent Danelaw period. Not until the reconquest and unification of England under the kings of Wessex does the trickle of grants increase under Aethelstan and his successors, reaching a flood under Eadwig and Edgar (955–975). The second half of the tenth century is marked by the monastic revival under Dunstan and Aethelwold, in which many of the minsters sacked or abandoned during the ninth century were endowed anew, albeit with smaller, more scattered lands, rather than with great blocks of territory.

Not only do the charters fall into two distinct phases, but the size of the grants changes dramatically. Before 850, the average size of the dozen separate grants in Middlesex is 31.75 hides (35.4 hides if the two grants to laymen are excluded). After 925, in contrast, the average for 15 grants is only 10.33 hides. The small units of five and 10 hides which are so characteristic of Domesday Middlesex had scarcely made their appearance before 850, and although there may have been other small grants such as that at Yeading

to Wihtrud and his wife Ansith by King Aethelbald whose charters have not survived, this would not distort the general impression.

The earliest surviving Middlesex grant is of 53 hides at Isleworth to the newly-founded minster at Barking (Sawyer 1968, no. 1246). It is one of a series of large estates around London, including 70 hides at Battersea. It may be that the 53 hides attributed to Isleworth is a scribal error for 70 (LIII instead of LXX), a rounded figure more likely at this period, and the same as the Domesday figure, confirmation of the longevity of Middlesex hidage assessments. The grant of 10 hides of *Gillingas* (Ealing) by king Aethelred of Mercia ‘for the increase of the monastery in the city of London’, (i.e. St Paul’s, founded by Aethelbert of Kent *c.* 604) seems small compared with others of this period. The charter itself does not survive, only a fragmentary reference in a compilation of much later date (Gibbs 1939, J7; Sawyer 1968, no. 1783).

This grant does, however, take us back to the days when the basic administrative unit within the Anglo-Saxon Kingdom was not the shire or the hundred, but the territory of a group owing allegiance to a leader, possibly in origin a group of related kin or families. These groups often bore names in *ingas*, and are a common feature of seventh-century Middlesex. The period between 675 and 700 not only saw the emergence of Mercia as the foremost of the kingdoms of the so-called ‘Heptarchy’ under two sons of the great warrior-king Penda—Wulfhere (657–674) and Aethelred (674–704)—but also an increasing sophistication in government, no doubt fostered by the consolidation of the Church with its literate leadership and knowledge of the administrative procedures of Rome and its predecessor the Roman Empire. This is evidenced by the important, if enigmatic,

tribute-taker's list known as the Tribal Hidage, generally agreed to have been compiled at this time (Hart, 1971; Davies and Vierck, 1974). The Tribal Hidage details the assessments of a wide variety of kingdoms and tribal groups in England from Mercia southwards, and is the first comprehensive indication of the system of hidation in operation. There is nothing to suggest that this was a novel method of assessing subject groups and others for the purposes of raising tribute or taxation, rather the innovation seems to have been the production of a comprehensive listing. The province of the Middle Saxons, first mentioned in the Twickenham charter of 704, was part of the East Saxon kingdom at this time, included in its 7,000 hides.

The interesting features of the Tribal Hidage for the present purpose is that it lists no group smaller than 300 hides, of which the nearest examples to Middlesex are the *Hicce*, centred on Hitchin in northern Hertfordshire, and the *Gifle*, who lay just to the north in the basin of the River Ivel in Bedfordshire. Below this level, it would seem that the various local folk groups or tribes were not considered to be self-governing in the late seventh century, although that is not to say that they had never been autonomous. The evidence for these groups in Middlesex has been discussed in detail in a recent paper (Bailey 1989), but it appears that they were declining in importance at the very time land grants by charter were coming into vogue.

Middlesex charters allude in a more or less oblique way to several of these groups. The territory of the *Gillingas* may be equated with the 50-hide estate acquired in 704 × 709 by Wealdhere, Bishop of London from Tyrhtil, Bishop of Hereford (Gibbs 1939, J6; Sawyer 1968, no. 1785). We learn also of the *regio* of the *Geddingas* which must have contained much more than the seven hides granted to Wihtred

in 716 × 757 to warrant this description (Sawyer 1968, no. 100; Gelling 1979, no. 198). It appears from the account of the dispute between Archbishop Wulfred and King Cenwulf of Mercia and his daughter Cwoenðryð, settled in 821, that part of the territory of the *Geddingas* lay in the later Harrow estate, along with Wembley (Sawyer 1968, no. 1436; Gelling 1979, no. 206). The *Gumeningas* whose *hearh* or heathen temple gave its name to the archbishop's Harrow estate may be presumed to have occupied at least the 100 hides mentioned in both 821 and 1086, and possibly the whole 150 hides of Gore Hundred, equivalent to half of one of the smallest groups recognised by Tribal Hidage (see below, however). The grant of 60 hides at Hayes in 795 describes that place in the problematic phrase *on lingas hæse* ('in the brushwood of the . . . *lingas*'), but the name appears from the boundaries of a small grant at nearby Botwell in 831 to have been *Lullingas* (Sawyer 1968, 132, 188; Bailey 1989, 118). If so, these 60 hides may represent another component of a larger administrative unit in north-west Middlesex, possibly one assessed at 300 hides.

The *Wixan* pose more of a problem in that they are a group inferred from a series of related place-names, rather than being documented in a charter. Their bridge, hill and clearing are located at Uxbridge, Uxendon (in Wembley) and Waxlow (in Southall), respectively (Gover et al., 1942, 49, 54, 45)<sup>2</sup>. Their territory, assuming that it was continuous, covers part of two later hundreds and also appears to include at least one of the *-ingas* groups discussed above. This suggests that the *Wixan* may have been a more substantial group, possibly one of the 300-hide 'tribes' which feature elsewhere as independent units in the Tribal Hidage, whose territory was actively breaking up into its component folk groups and ultimately the

Table 12. *The Hundreds of Middlesex in 1086*

<i>Hundred</i>	<i>Hides</i>	<i>Ploughlands</i>	<i>Teams</i>	<i>Acreage</i>	<i>Ac./Hide</i>
Ossulston	220	188½	157	49426	224.7
Spelthorne	112	89½	86½	20035	178.9
Hounslow	105	80	54	12744	121.4
Edmonton	70	60	60	31701	452.9
Elthorne	224½	148½	113	36298	161.7
Gore	149	109	76½	29175	195.8
Total	880½	675½	547	179379	203.7

sort of estates granted by charter after 670.

Although other group names are known elsewhere in Middlesex, such as the *Mimmas* whose territory also extends into Hertfordshire, there is unfortunately no indication of what their early hidages were, nor how they related to the estates of Domesday Book. Equally problematic is the relationship between the assessments of the Tribal Hidage and those of later charters and Domesday. For the kingdom of the East Saxons as a whole, the 7,000 hides of the late seventh century had become just under 4,000 in three counties in 1086. Applied pro rata to the territory of Middlesex, the 880 hides of Domesday would have been 1,568 four centuries earlier, giving an average remarkably close to the notional 120 acres per hide so often quoted in the literature. The problem with this seemingly straightforward exercise, however, is that there seems to have been no significant change in the assessment of those estates for which the charter evidence is comparable with that of Domesday.

## VIII

The hundreds of Middlesex, which probably emerged as administrative units during the tenth century, contained irregular assessments of hides by 1086, which further confuses any attempt to relate early and late hidation in the

county. The salient details are set out below (excluding the City of London).

With the exception of Hounslow and Spelthorne Hundreds, none of the six approximates to the notional 100 hides. Ossulston and Elthorne are examples of the so-called 'double' hundred. Gore is equal to one-and-a-half hundreds. Edmonton, on the other hand was also known as the Half-Hundred of Mimms, from its meeting place in South Mimms, which suggests that its original assessment was notionally 50 hides.

On this basis, the hidation of Middlesex in 1086 would be:

Table 13. *The Original Hundreds of Middlesex*

<i>Hundred</i>	<i>Hides</i>
Ossulston	200
Spelthorne	100
Hounslow	100
Edmonton	50
Elthorne	200
Gore	150
Total	800

It is not clear how this division of the area was arrived at, nor indeed at what period the Middlesex area was finally separated from Essex and those parts of Hertfordshire which once formed the kingdom

of the East Saxons. Although 800 hides is small for an English shire, Huntingdonshire (233,000 acres) had only 755 hides and Bedfordshire (298,000 acres) had 1,200 hides.

In Ossulston, we know that the great episcopal estates of Fulham and Stepney accounted for 110 hides between them, but the rest of the area is much subdivided in 1086. There is no obvious geographical division within the hundred to suggest that it may once have been two separate units. It is noteworthy, however, that the area to the west of Watling Street and the City and south of the Oxford Road was assessed at 117½ hides, the rest at 102½ (excluding the City). The hundredal meeting place, 'Oswulf's Stone', lay to the east of Park Lane, close to the boundary between these two areas.

Spelthorne Hundred has an assessment close to the notional 100 hides, and the predominance of Staines within the area makes it likely that this tract of fertile territory bordering the Thames was once wholly controlled from there. It was the site of a minster church, and might even represent the *territorium* of the Roman settlement of *Pontes*. Neighbouring Hounslow Hundred, lying roughly between the Thames and the London-Staines-Silchester Roman road, is the closest approximation in Middlesex to a 'hundred', albeit rather small in area. Its main centre seems to have been Isleworth, and it may represent an early Anglo-Saxon folk group territory, whose name went unrecorded in any charter.

Elthorne was also a double hundred, and again there is no clear internal division. The site of 'Ella's thorn tree' where the moot assembled is not known. Gore Hundred does fall into two distinct parts, the great estate of Harrow assessed at 100 hides and the rest, with 49 hides. In view of the fact that the latter forms a block of land on both sides of Watling

Street in the north of the county, it could once have been a separate territory, possibly centred on Kingsbury, 'the king's fortified place'. There is a reference in a charter of 972-8 to the *kinges mearce* or 'king's boundary' which is represented by the county boundary between Barnet Gate and the Dollis Brook, implying that this whole area had once been a royal estate (Gover et al. 1942, 220; Sawyer 1968, no. 1451). If there was indeed a different group here, their name has been lost. The hundred moot of Gore lay in a field on the Kingsbury/Harrow boundary (Braun, 1935), and this might echo a former division of the area between two groups. The question as to whether the area of Totteridge and Barnet, in Hertfordshire in all surviving records, but not mentioned by name in Domesday Book, lay at one time in Middlesex must remain unanswered for the present.

The Hundred of Edmonton also lies athwart a major Roman road, in this case Ermine Street, with its roadside settlement at Enfield, and probably another across the border at Cheshunt (Gillam 1973; Gover et al. 1938, 220)<sup>3</sup>. Its alternative name, the Half-Hundred of Mimms, gives a clue to its origin, since the *Mimmas* seem to have been a tribal group, whose territory is now divided between the two later counties. The low assessment of this area may reflect the fact that much of it was undeveloped for agriculture in 1086, becoming the hunting preserve of Enfield Chase (Pam, 1984), or that it was beneficially hidated having been royal demesne until granted away to an important layman. It is interesting to note that the area of Essex facing Edmonton Hundred across the River Lea was rubricated as the Half-Hundred of Waltham in Domesday Book. Its hidage was then 63, of which the former royal estate of Waltham Holy Cross accounted for 40. It is possible that these areas had once formed

a primitive administrative unit, predating the separation of Middlesex from Essex (Doree, 1986, 13–5). This unit may have been assessed at either 100 or 150 hides.

I do not propose here to discuss in any detail the apparently neat division of Middlesex into two blocks of 440 hides, each comprising two 220-hide units (Ossulston + [Gore + Edmonton], and Elthorne + [Spelthorne + Hounslow]), which has attracted the attention of earlier researchers (Sharpe, 1916; Campbell, 1962, 106). Whilst this may be true for the pattern of hides given in Domesday Book, it is not necessarily a reflection of the situation at an earlier time. For instance, if the original pattern of Middlesex hundreds was that outlined above, then the two main areas would consist of 400 hides each, with four blocks of 200 hides. Equally, if the area now called Middlesex was defined somewhat arbitrarily in the early tenth century, the original hidation may have included areas now lost to Hertfordshire. One could advance an equally valid argument that the middle-range administrative unit was earlier considered to be that of 300 hides (cf. Tribal Hidage), in which case Middlesex would divide into three areas: Spelthorne + Elthorne alone the western side, clearly bounded by the Colne Valley, Ossulston + Hounslow along the Thames, bounded in the east by the Lea, and Gore + Edmonton + ? the rest of the Mimms territory and/or the Half-Hundred of Waltham in Essex.

## IX

To conclude this survey of the hidation of Middlesex let us summarise what can be learnt from the disparate sources which have been used. The Middle Saxon province of the East Saxon kingdom emerges from the mists of antiquity at the end of the seventh century, just as Mercia had established its hegemony over most of

southern England and become the leading political power in the London region. The desire to control the re-emergent commercial centre outside the old Roman walls appears to have led to the annexation of Middlesex from its previous homeland, possibly in the reign of Aethelbald (716–757) (Dumville, 1989, 135). At the same time, the loose federation of tribal groups which characterised this part of the East Saxon kingdom seems to have been in the process of being transformed into territories, some of which were granted to newly-founded minsters by various kings.

Because they were not self-governing, the Middle Saxons are not mentioned in the Tribal Hidage, although it is likely that their province included all of the East Saxon realm outside Essex itself, and may have been equivalent to a 1,200 hide unit (cf. the *Unecung-ga* in Bedfordshire, or the East and West *Willa* in Cambridgeshire). The chance references to the various smaller groups in Middlesex charters are not precise enough to even hazard a guess at the hidage of such polities, although 50–75 hides seems to be a reasonable range, with four-six making up a typical 300-hide unit. In west Middlesex we know of the *Geddingas*, the *Lullingas*, the *Wixan* and the group centred on Staines. Further east are the *Gillingas*, the Isleworth group, and the *Waepingas* (Gover et al., 1942, 152). In the north of the county are the *Gumeningas* and the *Mimmas*. Apart from those names which were later attached to single settlements within a territory (eg Ealing, Yeading and Uxbridge), nothing further is recorded of these units.

They were replaced by the great ‘multiple’ estates of minsters and great laymen, with upwards of 30 hides, and mostly granted away before 850. After 900, the trend was for these great blocks to be broken up into smaller units, often assessed at a regular five to 10 hides.

These in their turn were often identical with the small parishes which were created out of the ancient minster *parochia* (Blair, 1988). The Middlesex of 1086 which is revealed in the Domesday folios is a mixture of these two types of estate. The coarse weave of the great units such as Fulham and Edmonton, including a number of settlements and field systems and stretching for miles across the landscape were interspersed with the fine weave of small units such as Twyford, Ashford and Cowley. Paradoxically, the

increased bureaucracy which produced the Domesday Book seems to have arrested the centrifugal tendency of the previous two centuries, for the great estates of Middlesex in 1086 remained more or less intact throughout the medieval period, despite the creation of many smaller parishes within them, and also large numbers of manors and pseudo-manors, which are described in detail in the volumes of the Middlesex Victoria County History.

APPENDIX

KEY TO TENANTS-IN-CHIEF

<i>No.</i>	<i>Name</i>	<i>Abbreviation</i>
(25b).	Aelfeva wife of Hwætmann of London	Aelfeva
10.	Arnulf of Hesdin	Hesdin
21.	Aubrey de Vere	Vere
6.	Barking Abbey	Barking
2.	Archbishop of Canterbury	Canterbury
23.	Derman [of London]	Derman
(25a).	Edeva	Edeva
20.	Edward of Salisbury	Salisbury
9.	Geoffrey de Mandeville	Mandeville
5.	Holy Trinity Abbey, Rouen	Rouen
24.	Countess Judith	Judith
3.	Bishop of London	Bishop
8.	Count of Mortain	Mortain
22.	Ranulf brother of Ilger	Ranulf
13.	Richard son of Count Gilbert	Richard
17.	Robert Blunt	Blunt
15.	Robert Fafiton	Fafiton
14.	Robert Gernon	Gernon
16.	Robert son of Rozelin	Rozelin
7.	Earl Roger	Roger
18.	Roger of Raismes	Raismes
3a.	Canons of St. Pauls	Canons
11.	Walter son of Othere	Othere
12.	Walter of St. Valery	St Valery
4.	Westminster Abbey	Westminster
1.	King William	King
19.	William son of Ansculf	Ansculf

Note: The numbers refer to the original order in Domesday Book

I: OSSULSTON HUNDRED

<i>Estate</i>	<i>Tenant-in-Chief</i>	<i>Hides</i>	<i>Ploughlands</i>
Bishopsgate	Canons	9ac.	—
Chelsea	Salisbury	2	5

## I: OSSULSTON HUNDRED continued

<i>Estate</i>	<i>Tenant-in-Chief</i>	<i>Hides</i>	<i>Ploughlands</i>
Fulham 1	Bishop	40	40
Fulham 2	Bishop	5	3
Fulham 3	Canons	5	5
Hampstead 1	Westminster	4	3
Hampstead 2	Westminster	1	$\frac{1}{2}$
Holborn	King	( )	( )
Islington 1	Canons	2	$1\frac{1}{2}$
Islington 2	Canons	2	$2\frac{1}{2}$
Islington 3	Mandeville	$\frac{1}{2}$	$\frac{1}{2}$
Islington 4	Derman	$\frac{1}{4}$	$\frac{1}{4}$
Stanestaple	Canons	4	2
Tollington	Ranulf	2	2
Kensington	Vere	10	10
Lisson	Edeva	5	3
Stoke Newington	Canons	2	$2\frac{1}{2}$
Nomansland	King	$12\frac{1}{2}$ ac.	—
St Pancras 1	Canons	4	2
St Pancras 2	Canons	1	1
Rug Moor	Canons	2	$1\frac{1}{2}$
Tottenham Court (Shoreditch)	Canons	5	4
Haggerston	Gernon	2	2
Hoxton 1	Canons	1	1
Hoxton 2	Canons	3	3
Stepney 1	Bishop	32	25
Stepney 2	Bishop	$5\frac{1}{4}$	4
Stepney 3	Bishop	5	$2\frac{1}{2}$
Stepney 4	Bishop	$3\frac{1}{2}$	5
Stepney 5	Bishop	1	1
Stepney 6	Bishop	$1\frac{1}{4}$	1
Stepney 7	Bishop	$1\frac{1}{4}$	1
Stepney 8	Bishop	$1\frac{1}{4}$	$1\frac{1}{2}$
Stepney 9	Bishop	1	1
Stepney 10	Fafiton	4	2
Stepney 11	Rozelin	$3\frac{1}{2}$	2
Twyford 2	Canons	2	$1\frac{1}{2}$
Westminster 1	Westminster	$13\frac{1}{2}$	11
Westminster 2	Westminster	3	2
Ebury	Mandeville	10	8
Tyburn	Barking	5	3
Willesden	Canons	15	15
Harlesden	Canons	5	4
Twyford 1	Canons	2	$1\frac{1}{2}$
n/a	Mandeville	$1\frac{1}{2}$	1
Total		$219\frac{3}{4} + 21\frac{1}{2}$ ac.	$188\frac{1}{2}$

## II: SPELTHORNE HUNDRED

<i>Estate</i>	<i>Tenant-in-Chief</i>	<i>Hides</i>	<i>Ploughlands</i>
Ashford	Mortain	1	1
East Bedfont 1	Mortain	2	1
East Bedfont 2	Othere	10	5
Hatton 1	Roger	$1\frac{1}{2}$	1
Hatton 2	Othere	$1.83$	1
Feltham	Mortain	12	10
Hanworth	Roger	5	3
Laleham 1	Mortain	2	$1\frac{1}{2}$
Laleham 2	Blunt	8	5
Shepperton	Westminster	8	7
Staines	Westminster	19	24

*The Hidation of Middlesex*

## II: SPELTHORNE HUNDRED continued

<i>Estate</i>	<i>Tenant-in-Chief</i>	<i>Hides</i>	<i>Ploughlands</i>
Stanwell	Othere	15	10
West Bedfont	Othere	8	4
Sunbury	Westminster	7	6
Charlton	Raismes	5	4
Kempton	Mortain	5	5
n/a	Rouen	1	$\frac{1}{2}$
n/a	Aelfeva	$\frac{2}{3}$	$\frac{1}{2}$
Total		112	89 $\frac{1}{2}$

## III: HOUNSLOW HUNDRED

<i>Estate</i>	<i>Tenant-in-Chief</i>	<i>Hides</i>	<i>Ploughlands</i>
Hampton	St Valery	35	25
Isleworth	St Valery	70	55
Total		105	80

## IV: EDMONTON HUNDRED

<i>Estate</i>	<i>Tenant-in-Chief</i>	<i>Hides</i>	<i>Ploughlands</i>
Edmonton	Mandeville	35	26
Enfield	Mandeville	30	24
Tottenham	Judith	5	10
Total		70	60

## V: ELTHORNE HUNDRED

<i>Estate</i>	<i>Tenant-in-Chief</i>	<i>Hides</i>	<i>Ploughlands</i>
Cowley	Westminster	2	1
Cranford	Ansculf	5	3
West Drayton	Canons	10	6
Greenford 1	Westminster	11 $\frac{1}{2}$	7
Greenford 2	Mandeville	3	1 $\frac{1}{2}$
Greenford 3	Mandeville	$\frac{1}{4}$	$\frac{1}{2}$
Greenford 4	Aelfeva	$\frac{1}{2}$	$\frac{1}{2}$
Hanwell	Westminster	8	5
Harefield	Richard	5	5
Harlington	Roger	10	6
Dawley	Roger	3	2
Harmondsworth 1	Rouen	30	20
Harmondsworth 2	Roger	1	1
Hayes	Canterbury	59	40
Hillingdon	Roger	4	2
Colham	Roger	8	7
Ickenham 1	Roger	9 $\frac{1}{2}$	6
Ickenham 2	Mandeville	3 $\frac{1}{2}$	2
Ickenham 3	Fafiton	2	1
Northolt	Mandeville	15	10
Ruislip	Hesdin	30	20
n/a	Canterbury	2	1
n/a	Gernon	2	1
Total		224 $\frac{1}{2}$	148 $\frac{1}{2}$

## VI: GORE HUNDRED

<i>Estate</i>	<i>Tenant-in-Chief</i>	<i>Hides</i>	<i>Ploughlands</i>
Harrow	Canterbury	100	70
Hendon	Westminster	20	16
Kingsbury 1	Westminster	2 $\frac{1}{2}$	2
Kingsbury 2	Hesdin	7 $\frac{1}{2}$	7
Stanmore 1	Mortain	9 $\frac{1}{2}$	7
Stanmore 2	Raismes	9 $\frac{1}{2}$	7
Total		149	109

## NOTES

1. This reference, however, cites Sawyer no. 1447, which is in fact the record of a dispute over land at Sunbury (Tapp and Draper 1951). This suggests that the Domesday reference to Northolt is the earliest.
2. A group called the Wixan are mentioned in the Tribal Hidage, located in the Fenland (Hart 1971, 143–4). It seems unlikely that they are the same as the Middlesex Wixan, although the latter may represent a migrant group (see Davies and Vierck 1974, 232–3).
3. The name Cheshunt derives from Old English *ceaster*, a loanword from Latin *castra*, 'camp, fort', combined with OE *fonta*, 'spring' (cf. Latin *fontana*). This strongly suggests close contact between Anglo-Saxon and Romano-British people, which is hardly likely to have occurred after the fifth century in this area (see Gelling 1978, 83–6).

## BIBLIOGRAPHY

- ALECTO (1989–90) Alecto Historical Editions, *The Middlesex and London Domesday*, 3 vols., (London, 1989–90)
- AVERY (1965) D. Avery, *The Irregular Common Field of Edmonton*, Edmonton Hund. Hist. Soc., Occ. Paper, n.s. 9 (1965)
- BAILEY (1989) K. A. Bailey, 'The Middle Saxons', in Bassett (1989), 108–22.
- BARING (1899) F. H. Baring, 'The Hidation of some Southern Counties', *Eng. Hist. Rev.*, xiv (1899), 290–9.
- BASSETT (1989) S. Bassett ed., *The Origins of Anglo-Saxon Kingdoms*, (Leicester, 1989).
- BAYLIS (1952) C. F. Baylis, 'The Omission of Edgware from Domesday', *Trans. London Middx. Arch. Soc.*, N.S. ix (1952), 62–6.
- BLAIR (1988) J. Blair ed., *Ministers and Parish Churches: The Local Church in Transition 950–1200* (Oxford 1988).
- BLAIR (1989) J. Blair, 'Frithuwold's Kingdom', in Bassett (1989), 97–107.
- BRAUN (1935) H. Braun, 'The Hundred of Gore and its Moot-Hedge', *Trans. L. & MAS N.S.* vii (1935), 218–28.
- BROOKS (1984) N. P. Brooks, *The Early History of the Church of Canterbury* (Leicester, 1984)
- BROWN (1973) R. A. Brown, *The Origins of English Feudalism* (London, 1973).
- CAMPBELL (1962) E. M. J. Campbell, 'Middlesex', in H. C. Darby & E. M. J. Campbell eds., *The Domesday Geography of South-East England* (Cambridge, 1962), 103–110.
- CLARK (1980) J. Clark, *Saxon and Norman London* (London, 1980).
- DARBY (1962) E. Darby, *Domesday Geography of South East England*.
- DAVIES & VIERCK (1974) W. Davies & H. Vierck, 'The Context of Tribal Hidage: Social Aggregates and Settlement Patterns', *Frimittelalterliche Studien* 8 (1974), 223–93.
- DB *Domesday Book: Middlesex*, ed. and trans. J. Morris, (Chichester 1975).
- DOREE (1986) S. Doree, *Domesday Book and the Origin of Edmonton Hundred* Edm. Hund. Hist. Soc., Occ. Paper 48 (1986).
- DUMVILLE (1989) D. Dumville, 'Essex, Middle Anglia, and the Expansion of Mercia in the South-East Midlands', in Bassett (1989), 123–40.
- GRAY (1915) H. L. Gray, *The English Field Systems* (Cambridge, Mass. 1915).
- GELLING (1978) M. Gelling, *Signposts to the Past* (1st. ed., 1978).
- GELLING (1979) M. Gelling, *The Early Charters of the Thames Valley* (Leicester, 1979).
- GIBBS (1939) J. Gibbs, *The Early Charters of St. Pauls Cathedral* Camden 3rd. ser. lviii (London, 1939).
- GILLAM (1973) G. R. Gillam, *Prehistoric and Roman Enfield* (1973).
- GOVER ET AL. (1938) Gover, Mawer & Stenton, *The Place-Names of Hertfordshire*, (Cambridge, 1938).
- GOVER ET AL. (1942) J. E. B. Gover, A. Mawer & F. M. Stenton, *The Place-Names of Middlesex*, (Cambridge, 1942).
- HART (1970) C. R. Hart, *The Hidation of Northamptonshire*, (Leicester, 1970).
- HART (1971) C. R. Hart, 'The Tribal Hidage', *Trans. Roy. Hist. Soc.*, 5th ser. xxi (1971), 133–57.
- HART (1974) C. R. Hart, *The Hidation of Cambridgeshire*, (Leicester, 1974).
- HILL (1969) D. Hill, 'The Burghal Hidage: The Establishment of a Text', *Med. Arch.*, 13 (1969), 84–92.
- MAITLAND (1897) G. W. Maitland, *Domesday Book and Beyond* (Cambridge, 1897), page references from 1960 ed.
- PAM (1984) D. O. Pam, *The Story of Enfield Chase* (1984).
- RACKHAM (1976) O. Rackham, *Trees and Woodland in the British Landscape*, (London, 1976).
- SAWYER (1968) P. H. Sawyer, *Anglo-Saxon Charters: An Annotated List and Bibliography* (London, 1968).
- SHARPE (1916) M. Sharpe, *The Middlesex District in Saxon Times* (1916).
- SHARPE (1937) M. Sharpe, 'Middlesex in Domesday Book', *Trans. London & Middx. Archaeol. Soc.*, n.s. vii (1937), 509–527.
- STENTON (1947) F. M. Stenton, *Anglo-Saxon England*, 2nd. ed. (Oxford, 1947).
- TAPP & DRAPER (1951) W. H. Tapp & F. W. M. Draper, 'The Saxon Charter of Sunbury-on-Thames', *Trans. L. & MAS*, n.s. x (1951), 302–6.
- VCH *The Victoria History of the County of Middlesex*.
- WHITELOCK (1979) D. Whitlock ed. & trans. *English Historical Documents, vol. 1 500–1042* (2nd. ed., London, 1979).

# NORTH-WEST LONDON FAMILIES AT THE ROYAL MINT

K. J. VALENTINE

For centuries the Company of the Moneyers at the Royal Mint was responsible for manufacturing the coin of the realm as required by the monarch. Appointments were made on the strength of personal recommendation; and, because of the high standards of probity required, membership of the Company developed a strong tendency to run in certain families. The present note attempts to describe the place held in the Company, during the 18th century and for half of the 19th century, by families in Middlesex to the north-west of London and especially by a group of inter-related families living in north Willesden on the high ridge which runs from Neasden through Dollis Hill to Oxgate. Much of the research for this note was done some years ago for the author's recently published book on Neasden (Valentine 1989).

During the first quarter of the 18th century John Braint of Hendon was the Provost (leader) of the company; his grandson Daniel Kemp, also of Hendon, later held the office for over forty years from about 1750, dying in 1797<sup>1</sup>. But in about 1718 Thomas Nicoll of Hendon married Susan Haley and moved across the Edgware Road turnpike to the largest farm in Neasden, taking into Willesden two Haley family traditions: innkeeping and moneying at the Mint. This migration was the chief reason why, at the end of the 18th century, half of the moneyers were from Willesden compared with none at all from Hendon.

One branch of the Haley family were Quakers who kept an inn at Guttershedge in south Hendon. Henry Haley of Guttershedge in 1679 married Hannah Symonds, daughter of a Quaker in Hammersmith. Their first child Henry, born at Hammersmith in 1680, was later apprenticed as a young man in the Company of Moneyers, rising to be Provost by 1742. When he died 'of a lethargy' in 1748 he was interred in the Quakers' burial ground at Hammersmith<sup>2</sup>. His younger brother John, born in 1698 at Guttershedge, also became a moneyer and was buried beside his brother when he 'died of a sore throte' in 1760<sup>3</sup>. The two brothers seem to have lived partly in Hammersmith and partly in Hendon, both of which were centres of Middlesex Quakerism.

Another branch of the Haley family included Richard Haley at Mill Hill (d. 1719), whose son John (b. 1699) became a moneyer, probably under the tutelage of Henry Haley his kinsman<sup>4</sup>. Undoubtedly it was this John Haley who sponsored his sister Susan's third son Joseph Nicoll, born at Neasden in 1729, for an apprenticeship at the Mint<sup>5</sup>. Joseph Nicoll continued as a moneyer until his death in 1773, by which time he had inherited the Nicoll interest (40 per cent) in the freehold of Neasden House, the remaining 60 percent being held by the Duke of Chandos. Joseph Nicoll was the first of three generations of Nicoll moneyers at Neasden House, his successors

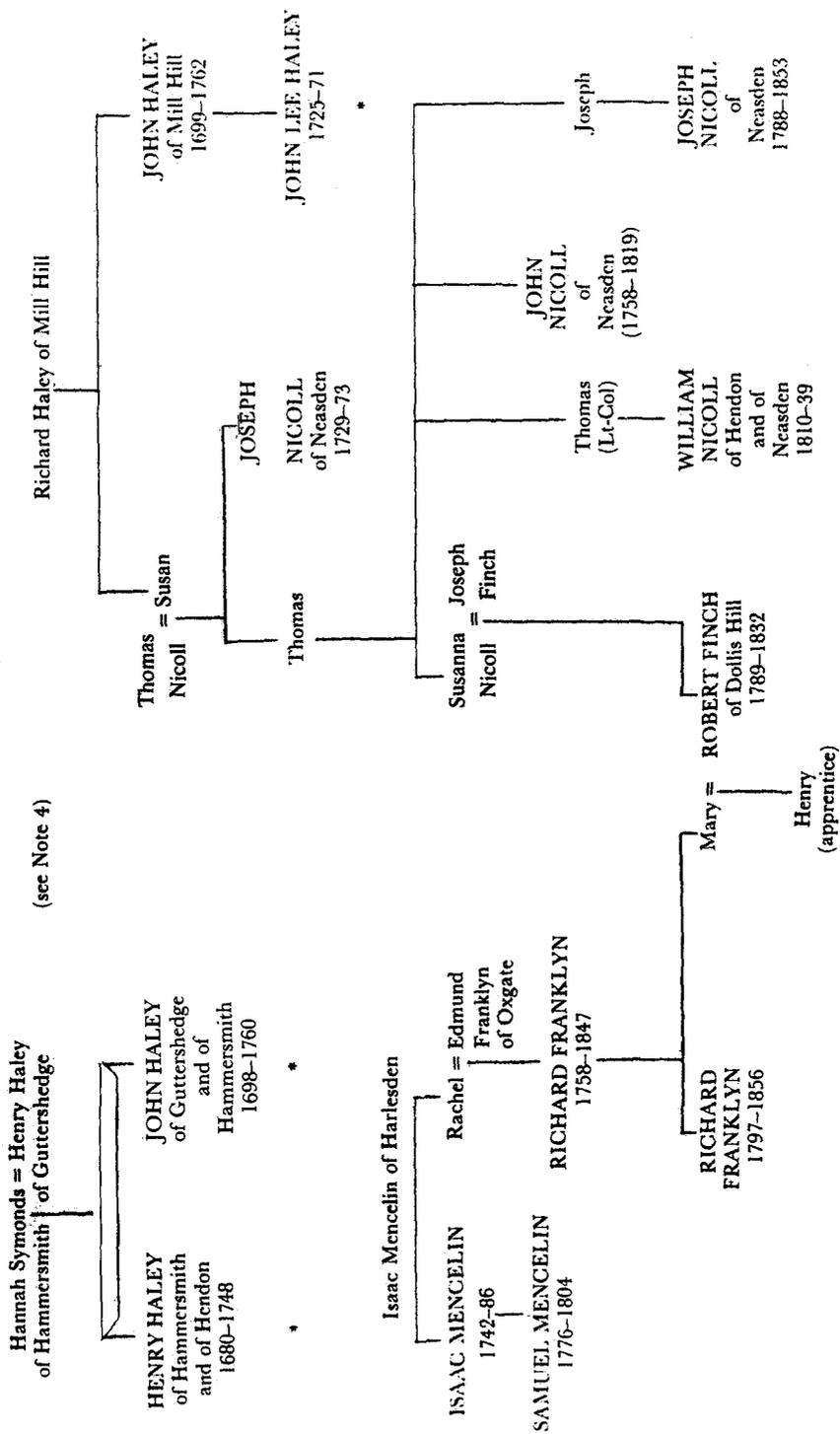


Fig. 1. A Network of Moneying Families at the Royal Mint, c. 1700-1850 (moneyers, names in capitals)

being his nephew John Nicoll (1758–1819) and later Joseph Nicoll (1788–1853), nephew of John. John Nicoll was the first of his family to own the Neasden House freehold outright.

Another line of Willesden moneyers was headed by Isaac Mencilin (1742–86, son of Isaac Mencilin of Harlesden), who took the oath of loyalty at the Mint in 1761, a year or two after his sister had married into the Braint family. His son Samuel (1776–1804) started an apprenticeship in 1791. Isaac's sister Rachel became the wife of Edmund Franklyn of Oxgate and the mother of Richard Franklyn of Cricklewood (1758–1847) whose career as a moneyer was crowned by his promotion to Provost at the age of 75, on the death of the octogenarian Atkinson in 1834. His son Richard Franklyn junior (1797–1856) was a senior moneyer when he gave evidence to the Royal Commission on the Mint set up in 1848.

John Nicoll of Neasden also sponsored at the Mint Robert Finch (1789–1832), son of John's sister Susanna, who had married Joseph Finch of Harlesden and settled at Dollis Hill. The Finch and Franklyn families had been together at the Mint for some fifteen years when Robert Finch, a moneyer since 1812, married Mary Franklyn, sister of Richard Franklyn junior, in 1820. Robert's son Henry Finch (1831–1913) had not completed his seven-year apprenticeship, begun in 1846, when the Company was dissolved in 1851.

Another nephew of John Nicoll was William Nicoll (1810–39), second son of Lt.-Col. Thomas Nicoll, a native of Neasden who had inherited Copt Hall, Hendon and had lived there since 1804. William was introduced into the Mint in 1827 not by his uncle John, who had died in 1819, but by his cousin Joseph, a moneyer since 1811 who made room for William and his wife in Neasden House, where William died in 1839.

To put these allied families into perspective we need to consider the total size of the Company to which they belonged. In the half-century to 1850 the average number of Fellows in the Company, including the Provost but excluding the apprentices, was seven; and slightly more than half of these were from Willesden families. In the forty years beginning 1819 no fewer than five moneyers were buried quite close together in vaults in Willesden churchyard: John and Joseph Nicoll, Robert Finch, and the two Richard Franklyns, the father being brought back for burial from Totteridge and the son from Gazeley near Newmarket. Earlier, both of the Mencilins had also been buried here.

Although this was by far the most extensive family network in the Company of the Moneyers between 1750 and 1850, several unconnected surnames persist from the start of the 18th century almost to its end; for instance, there were three generations of Collards from Walthamstow. But the only other notable complex of families was that to which the Atkinsons belonged. Henry William Atkinson, Provost from 1821 to 1834, was a nephew of the moneyer W. W. van der Esch, whose father Henry had been Deputy Master of the Mint for about 30 years before standing down for health reasons in 1762. Similarly William Gregory, who succeeded Van der Esch as Deputy Master, introduced his son William into the moneying business. Atkinson's son Jasper, knighted in 1842, was the last Provost of the Company. His nephew Robert Rintoul was apprenticed in 1839, following the death of William Nicoll; he became a moneyer in 1846.

Nepotism of this kind naturally caused people to ask whether it accorded with the public interest. On this question the Master of the Mint and his deputy, who contracted with the moneyers on the

Crown's behalf, evidently saw advantages in keeping the Company a closely-knit body where family traditions would help to maintain standards. It became normal for the Master, when approving the admission of a new recruit, to refer to his family's connexion with the Company, as when Charles (later Earl) Cadogan on 20 January 1774 approved the admission of 'John Nicoll . . . nephew of the late Joseph Nicoll, a Fellow of the said Company' and 'Richard Franklyn . . . nephew of Isaac Mencilin, one of the present Fellows of the said Company'.<sup>6</sup>

There is an interesting sequel to this story. When the Company was dissolved in 1851, its estate of houses in Hoxton known as The Moneyers Land, which included Provost Street, Moneyer Street and the Moneyers Arms, was sold by the Company under its common seal to the senior moneyer, Joseph Nicoll of Neasden, in whose family it remained until compulsorily purchased by the London County Council in 1934–5 for slum clearance and redevelopment. The vendors listed in the 1851 deed were simply the moneyers then existing, no mention being made of the moneyers existing more than a century earlier when the land originally came into the moneyers' hands<sup>7</sup>. This seems to demolish comprehensively the strange dictum of the numismatic historian Rogers Ruding that 'the moneyers never were a corporate body exclusive of the other officers of the mint; and therefore it is impossible that they should possess property as a company'.<sup>8</sup> It seems that Ruding in 1840 did not know of this estate with its Mint-based names, although these had been appearing in

London directories for over ten years—some still survive today. The land was known in the 1740s as Blood Field<sup>9</sup>. Shown on Chassereau's map of Shoreditch (1745) as belonging to 'Ingram Lee and moneyers', the field is unlikely to have been purchased deliberately by the Company; more likely it had been offered by a debtor as collateral for his debt and became the Company's property by default.

### ACKNOWLEDGEMENTS

Quotations from Crown copyright records appear by permission of the Controllor of H.M. Stationery Office. I gratefully acknowledge help received from the librarian of the Society of Friends, London.

### NOTES

1. The records of the Company of the Moneyers were never divulged and have not survived, the best source being the official MINT records at PRO, Kew. Also valuable are the printed reports (with evidence) of the Parliamentary Select Committee on the Royal Mint (1837) and of the Royal Commission of Inquiry (1849). The main secondary source is Craig (1953).
2. RG6 1512/91.
3. RG6 828/18.
4. Richard and Henry Haley junior were good friends (see Richard's will dated 1717 and Henry's attestation to Richard's handwriting) but the exact family link is obscure (see Fig. 1).
5. John Haley of Mill Hill died on 23 December 1762; on the large Haley monument in Hendon churchyard the year is wrongly shown as 1763.
6. MINT 1/12 218.
7. MDR 1851 12/74.
8. Ruding (1840) II 51.
9. LT lists.

### BIBLIOGRAPHY

#### Unpublished Archives

- LT: Land Tax lists for Shoreditch (1744–50) at Hackney Borough Archives Department.  
 MDR: Middlesex Deeds Registry at Greater London Record Office.  
 MINT: Royal Mint records at Public Record Office, Kew.  
 RG6: Registrar General's records (Society of Friends) at Public Record Office, Chancery Lane.

#### Printed Works

- CRAIG(1953) Sir John Craig *The Mint* (Cambridge, 1953).  
 REP.(1837) Report of the Select Committee on the Royal Mint (Reports from Committees 1837 XVI).  
 REP.(1849) Report of the Royal Commission of Inquiry into the Royal Mint (Reports from Commissioners 1849 XXVIII)  
 RUDING(1840) Rev. Rogers Ruding *Annals of the Coinage of Britain and its dependencies* (third edition, London, 1840).  
 VALENTINE(1989) K. J. Valentine *Neasden: A Historical Study* (Haddington, 1989).

# EAST HAM: PROBLEMS OF LOCAL GOVERNMENT AND RELATIONS WITH THE LOCAL GOVERNMENT BOARD

S. C. W. MASON

## SUMMARY

*As the population of towns and cities grew during the nineteenth century, so central government gradually devolved more responsibility to local authorities to achieve a more efficient ordering of services and amenities within the locality. This paper illustrates two aspects of the process: the problems faced by councillors in East Ham as the powers of the local authority developed, together with the solutions they worked towards during the early years of the growth of local autonomy; and the relationship that existed between the civil servants in Whitehall and the locally elected councillors.*

## THE EARLY GROWTH OF EAST HAM

East Ham became a local government district in 1878 under a Local Board which held its first meeting in 1879, after complaints were made by the Woolwich Board in 1877 over the bad state of repair of the roads adjacent to their own parish<sup>1</sup>. The formation of the Local Board thus began as a response to the beginnings of the urbanising process.

There developed a constant demand for housing, local services such as sewerage, rubbish collection and street lighting, and a host of amenities taken so much for granted today (for example the provision of parks, swimming baths and libraries). As a result, improvements had to be made in administrative practices, finance and accountability, the provision of effective services, control of building and local trades and constant attention had to be given to the health of the community. The process was by no means a smooth one. Although the Local Board gradually spent more money as their period of tenure progressed, as illustrated in Fig. 1, they could not anticipate the boom of the latter part of the decade 1890–1900 and

the pressure that such expansion entailed, as shown in Fig. 2.

## GROWTH TO 1890

It was during what W. Ashworth (Glass 1964, 61)<sup>2</sup> describes as the first growth of the Essex suburb that the foundations of local government were laid. Mostly 'laid out as market-garden' in 1876, (Thorne 1876, 160) East Ham had already obtained a railway link to Fenchurch Street Station as far back as 1859; the line initially carrying Londoners to the pleasure gardens at Rosherville (Welch 1963, 1). Acting as a dormitory suburb once the industrial expansion of West Ham and Stratford had taken place, East Ham had no need of industry to encourage people to take up residence. The advantages of improved transport, shorter working hours and falling prices meant that large numbers of people could take a house in the suburbs and commute into the City (Powell 1973, Vol. VI, 14–16).

Land let on a yearly basis allowed landowners to take advantage of the increase in value as development took place, and this resulted in the expansion of resi-

Year	Estimated <sup>1</sup> Expenditure	Liabilities <sup>2</sup>	Poor Rate			General District Rate		Total rates in the £	
			Net Poor Rateable Value	Rate in the £		Net General District Assessable Value	Rate in the £	East Ham Parish	Little Ilford Parish
				East Ham Parish	Little Ilford Parish				
	£	£	£	s. d.	s. d.	£	s. d.	s. d.	s. d.
1879 <sup>3</sup> -80	3,153		33,661	2 6	1 9	18,451	3 0	5 6	—
1880-81	1,702 <sup>4</sup>		40,071	2 4	1 9	24,094	3 0	5 4	—
1881-82	4,126		49,401	2 6	3 3	28,262	3 0	5 6	—
1882-83	4,923		53,885	2 2	1 10	34,720	3 0	5 2	—
1883-84	5,578		58,170	2 6	1 8	37,964	3 0	5 6	—
1884-85	5,157		79,290	2 0	3 4	48,350	2 4	4 4	—
1885-86	4,893		83,176	2 6	2 0	50,335	2 0	4 6	—
1886-87	5,711		86,569	2 0	3 2	53,250	2 0	4 0	—
1887 <sup>5</sup> -88	6,907		101,592	2 10	2 5½	73,393	2 0	4 10	4 5½
1888-89	6,909		106,540	2 6	3 1	77,782	1 10	4 4	4 11
1889-90	6,110		108,862	2 10	2 10	82,425	1 8	4 6	4 6
1890-91	8,293		113,015	3 2	2 10	88,418	2 0	5 2	4 10
1891-92	8,884		127,721	3 2	3 0	98,478	2 0	5 2	5 0
1892-93	10,085		136,069	3 2	3 4	105,859	2 0	5 2	5 4
1893-94	15,320		155,030	3 4	3 6	120,296	2 4	5 8	5 10
1894-95	19,089		168,288	3 2	3 10	130,955	2 4	5 6	6 2
1895 <sup>6</sup> -96	25,181		183,499	3 7	4 0	143,788	3 1	6 8	7 1
1896-97	30,793		197,893	4 4	3 4	156,344	3 1	7 5	6 5
1897 <sup>7</sup> -98	36,895	11,772	233,238	3 10	3 5	205,627	3 3	7 1	6 8
1898-99	33,926	10,682	248,593	4 0	3 10	222,584	3 0	7 0	6 10
1899-00	41,487	15,881	281,363	4 0	3 10	255,636	3 0	7 0	6 10
1900 <sup>8</sup> -01	53,998	26,740	341,088		4 9	315,796	3 6	8 3	
1901-02	57,652	38,948	365,887		4 10	340,664	3 10	8 8	
1902-03	64,982	60,529	412,992		5 6	388,837	4 0	9 6	
1903-04	72,585	75,098	443,609		5 3	414,399	3 10	9 1	
1904-05	81,560	38,023	464,955		5 6	435,938	4 0	9 6	

1. Obtained from minute books and relevant year's Abstract of Accounts from 1899 when the estimated expenditure began to be notified in the yearly Abstract of Accounts. Until this time, estimated expenditure figures were only given in the minute books.

2. This column gives details of the liabilities at the end of the accounting period from the date they were first included. They were added to the estimated expenditure to determine the rate.

3. The East Ham Local Government District was constituted on the 6 December 1878.

4. The figure for this year is not complete because the estimates are not given in the minute book dated 12 October 1880, p. 153.

5. The Rural Sanitary District of Little Ilford was included in the East Ham Urban Sanitary District on the 29 September 1886.

6. The Urban District Council was constituted 31 December 1894.

7. The 20% allowance on the rateable value formerly made to owners in respect of the General District Rate was discontinued, and the occupiers rated direct, under the provisions of the Public Health Act (sec. 211).

8. The Parish of Little Ilford was amalgamated with the Parish of East Ham, by Order of the Local Government Board from 1 April 1900.

Table made up from: Urban District of East Ham, Abstract of Accounts, 1 April 1904-8 November 1904, p. 403.

Fig. 1 Statement of rates levied.

The following figures have been taken from the minute books of the Local Board and Urban District Council. The numbers are for permission given by the authority, hence they do not necessarily represent the number of buildings actually erected during the periods shown. Also, I have not distinguished between iron churches built on a site and then pulled down later to make way for a more permanent building.

Year	Houses	Shops	Shops and Houses	Churches	Schools	New Streets
1880	189	3	4	1		5
1881	912	5	12			6
1882	488	20	25	1		17
1883	267					1
1884	308	4	7			5
1885	217	3	14	2		2
1886	284	1	7	1		3
1887	385		35	2		6
1888	475		24	3		11
1889	329		26			8
1890	429		17	2		18
1891	529		72	2	2	
1892	546		26			10
1893	598		55		1	6
1894	1,036		39			13
1895	767	6	59	1		2
1896	1,151	4	77			6+
1897	1,880		70	2		26
1898	2,229	5	106			17
1899	1,609	8	98		1	13
1900 <sup>1</sup>	649	8	25	1		11

1. This figure is incomplete because one book of minutes is missing.

Fig. 2 Building figures 1800–1900

dential development on a large scale and at such a pace that industry and obnoxious trades had little chance to establish themselves in East Ham. The social make-up of East Ham and the entrepreneurs attracted to the area may have had some impact on this development; John Bethell was one notable entrepreneur. A surveyor and auctioneer whose grandfather lived in Didsbury, Lancashire and whose father moved to South Woodford (Burke 1980, 254) he lived locally and acted as land agent, surveyor and auctioneer on behalf of the British Land Company<sup>3</sup>. Influencing the local politics of both West and East Ham, he became a knight in 1906, baronet in 1911 and, after supporting the National

Government as a Member of Parliament for East Ham, retired from politics by moving to Bushey in Hertfordshire.

The expansion of East Ham can be further divided into two within the second phase suggested by Ashworth (Glass 1964, 65): from 1870–90, during which urban development had begun on a small scale when growth was not exceptional, enabling the Local Board to gain experience in local government; and the decade 1890–1900, when expansion grew dramatically, as did the number of problems facing local government. Development was to continue to such an extent that ‘Apart from the road pattern hardly anything remains in East Ham that is older than the 19th century, except the

ancient parish church' (Powell, 1973 Vol. VI, 3(b)).

### THE LOCAL BOARD

The period up to the formation of the Urban District Council has been divided by Powell (1973, Vol. VI, 20) into two. Between 1879–86 street levelling, paving and drainage were carried out; and between 1886–94 the system of main drainage was constructed and Plashet Recreation Ground purchased. Throughout this period the main burden fell upon W. H. Savage, the Board's Surveyor, who carried out all public works and inspected new private buildings to ensure they conformed to the by-laws.

The main preoccupation of the Board centred around the enforcement of the building by-laws, which at times proved to be an onerous task. Houses were erected without notice, or without plans having first been deposited, or before drains were constructed<sup>4</sup>. The problems culminated in a physical assault on the Surveyor in 1891<sup>5</sup>. It would appear that this assault brought the clash between builders and Board to a conclusion, for opposition subsided to such an extent that minor problems were solved by refusing planning permission after the 1890s.

As a result of the Local Board's work, the basic infrastructure was in place for an expansion that was to be one of the most dramatic in England during the last decade of the 19th century.

### FACTORS AFFECTING DECISION MAKING

Population: with the formation of the Urban District Council in 1895, a turning point was reached in the affairs of local government in East Ham. It was the growth of population that caused these changes—noted by Humphreys (Price-Williams 1885, 437) in 1885, which

1801	1,250
1811	1,386
1821	1,511
1831	1,658
1841	1,650
1851	1,737
1861	2,858
1871	5,009
1881	10,706
1891	32,718
1901	96,018
1905	121,428
1911	133,487
1919	131,008
1921	143,246

The population figure for 1921 was not exceeded. By 1939 it had dropped to an estimated 127,600 and fell during the Second World War to a low of 75,230 in 1941. By 1949 it reached 122,000 and fell gradually to 104,070 in 1964.

Figures obtained from Parliamentary Papers.

Fig. 3 The population of East Ham

increased dramatically during the last decade of the century, as Fig. 3 illustrates.

The combined increase in the population in West and East Ham gave Essex the largest increase in population between 1881–91 of any other county at 36.3% (Low 1891, 546).

Consequently, by 1897 East Ham was one of the six District Councils to have a population exceeding 50,000, a fact that local people were fully aware of (*East Ham Echo*, 15 October 1897, 4(a)), and a factor that the Council was to continue to use as a justification for increased expenditure as the decade wore on.

Property values: accompanying the increase in the population was a commensurate increase in land values: 'Happy they who own the land of East Ham! They have but to sit still and be made rich without any exertion' reported the *East Ham Express* (24 February 1894, 4(h)) when plans were submitted for 148 houses to be built. The high cost of land was a further factor the Council constantly referred to in their dealings with the Local Government Board, and which

was commented upon by the *East Ham Echo* (27 November 1896, 5(a-b)):

The continued demand for building land in the neighbourhood and the firm prices readily offered to acquire it must astonish even many who are closely associated with landed property, and who have watched the rapid development of the district during the past few years. I believe I am right in stating that there is scarcely a single square inch of land not acquired for building purposes in the whole parish of Little Ilford, in which a decade ago market gardens flourished abundantly. It is noteworthy, too, that the land, though undeveloped, appreciates in value to the extent of five per cent per annum—that is to say, to purchase a plot of land here and leave it untouched is a better investment than consols.

With such a lucrative property market it was not surprising that at least nine councillors were involved in speculation, several of whom held office as chairmen of the Works Committee at various times (Powell, 1973 Vol. VI, 21).

#### URBAN DISTRICT COUNCIL

A marked change is clearly indicated when looking at the first page of the Council's minute book. A formality that had not been evident before pervades the new minutes to such an extent that the reader immediately registers a new body at work in the old meeting chamber.

#### PROBLEMS AND SOLUTIONS

Electoral practice: surviving documentary evidence suggests that it was common practice for officers of the Board to act as proxy for voters, thus ensuring the return of Board members favourable to those already elected, until John Bethell raised the issue after the 1892 elections. Political manoeuvring ensured that the issue was successfully evaded for almost a year, although the practice was finally discontinued in 1893<sup>6</sup>.

However, immediately the Urban District Council had been elected, the issue of improper electoral practice was again

raised by John Bethell over the conduct of the returning officer, C. E. Wilson the Town Clerk. The issue concerned the successful return of Mr Langham, an old standing member of the Local Board, over Mr Carte, an architect, by six votes and a suggestion that the impropriety of the past had returned. No record of this incident clouds the minutes of the Council's meeting, although it was given coverage by the *Echo* (11 January 1895, 3(c)). Also, no further mention was made until elections were due to be held in 1896 when Mr Wilson refused to act as returning officer, having performed the task throughout the life of the Local Board,

It is interesting to note that Mr Wilson never acted as returning officer again and Mr Carte was voted in at this election.

Council officials: the practice of council officials retaining several positions simultaneously was also raised when the new Council was elected. This issue was taken up by the *Echo* in January 1895 with reference to Mr Wilson who was also Clerk to Barking Council. However, it was not until the following year, when the whole question of whether the time had arrived for the Council to have a permanent staff was referred to the Finance Committee, that an attempt was made to regulate the system of control and accountability between officials and councillors.

Having had the matter passed on to them, the Finance Committee instructed the Clerk to prepare a report giving details of the duties and wages of the office staff, for it was usual for officials to control their own staff and retain a number of positions because professional salaries were not sufficient to ensure a man could earn enough in relation to his status. As the business of the Council expanded, Mr Wilson registered his willingness to pass the burden on in return for an adequate salary. In November 1896 he received £200 per annum, which was increased by 1898 to

£300 per annum<sup>7</sup> and the Council finally succeeded in taking the Clerk's department under its own wing later that year.

In such a way the practice of electioneering and control of public affairs, entrusted to one or two officials, gave way as rural East Ham retreated against the rapidly growing suburban environment and the ramifications of such changes.

Finance and accountability: concern centred around the fact that the Council was rarely in credit with the bank. Bank balances had been recorded in the minutes from June 1895 and the records show that the Council was frequently overdrawn. There were two reasons for this state of affairs: the General District Rate and Private Street Improvements took longer to collect than was necessary, and bank loans were contracted before they were authorised. The former was solved by employing more collectors and monitoring their collection rates but the latter problem proved more intractable because the cause was related to the need for speed of action during a period of high growth.

An accountant was appointed in April 1896, and lost no time in suggesting changes. During the course of the next four years control of expenditure was tightened considerably. At first, the four main officers—Surveyor, Accountant, Clerk and Medical Officer of Health had to present to their respective committees a list of goods required from time to time, but a change in 1897 required that each committee should consider its own expenditure in future, submitting their estimates to the Accountant at six-monthly intervals. Further refinements took place by which the Accountant furnished each committee with a statement of expenditure in comparison to what was estimated, and by 1899 a storekeeper and timekeeper had been appointed.

Tinkering with the control mechanism and remodelling the accounts did not,

however, alter the large overdrafts at the bank. Although the Finance Committee recommended that plans and estimates in respect of loans applied for were to be completed and sent to the Local Government Board without delay<sup>8</sup>, the problem continued to be one of obtaining finance for projects before the subsequent public inquiry would allow the expenditure anticipated. This is illustrated in the District Auditor's report for the year ending 31 March 1897. He disallowed £2,665 10s 11d against the Treasurer for the massive deficit the Council had accumulated: a total of £18,163 14s 8d<sup>9</sup>. To a large extent, this debt resulted from the Council executing private street works in advance of obtaining Local Government Board sanctions for loans. In the words of Mr G. T. Goodringe, the Council Treasurer and general manager of the London and South Western Bank, overdrafts in anticipation of loans being approved had 'been adopted for some years past and until recently it was not questioned and it has been impossible in one year to work off a deficit and obtain a balance'<sup>10</sup>. John Pease, who carried out the audit the following year, acknowledged:

That bearing in mind the rapid development of the Urban District of East Ham, the General District Rate made by the Council should be of sufficient amount, not only to meet the estimated liabilities, but to provide an ample margin for possible contingencies, involving extraordinary expenditure<sup>11</sup>.

This aspect of the Council's work brought its members into frequent conflict with the Local Government Board during the latter part of the 1890s, and is dealt with more fully below.

Furthermore, as time progressed and expenditure increased, the Council had to employ more people to maintain control over increased services and work, as the auditor's report for 1900 pointed out<sup>12</sup>. So the new Council had to cope with a faster

rate of population increase, leading to the need for more Council spending, which in turn led to the discovery of faults within their system of accountability and control, faults that were only gradually rectified as time and experience wore on.

#### RELATIONS WITH THE LOCAL GOVERNMENT BOARD

Problems with administrative jurisdiction, lack of administrative uniformity, irregular inspection by the Central authority and the ineffectual response to the Public Health Acts led to the formation of the Royal Sanitary Commission in 1868 to report on the problems facing local government (Redlich and Hirst 1970, 158). The legislature reacted to the uncompromising conclusions of the Commission by bringing together the various bodies involved in controlling Local Authorities into one centralised authority in the form of the Local Government Board in 1871 (Smellie 1950, 67).

However, the executive control thus established with a minister at the head of the Local Government Board was, in the opinion of Keith-Lucas (1977, 19), 'only a hesitant and somewhat ineffective step towards establishing a central authority and national standards of services'. This first step in creating an effective central authority faltered because of financial meanness and reaction against the tactless pressure for centralisation espoused by Edwin Chadwick which aroused a great deal of hostility and resentment (Keith-Lucas 1977, 20). In consequence, local authorities were to struggle for some time before clear lines of authority were defined between the various local agencies, as discussed briefly in Part IV.

In the absence of the ability to control by withholding central funding, the concept of an independent form of local government as described by Edward Jenks (1919) illustrates the nature of the

early relationship between the Local Government Board and local authorities. Although established by statute, the distinguishing feature of local government lay in its independence from the centre rather than being subject to the centre as part of a hierarchical form. In such a way, in the words of Edward Jenks (1919, 15) 'each organ is free to act as it pleases within its authority', and control was exercised in a critical or censorial way which in turn was by no means absolute, and the relationship was described by Josef Redlich (1903, 246) as 'not one between a superior, who deals in uncircumscribed imperatives, and inferiors, who yielded unconditional administrative obedience. It would be far more true to say that for bureaucratic subjection and centralised omnipotence Parliament has substituted the principle of inspectability'.

In consequence the Local Government Board functioned as a controlling agency in relation to the Poor Law, public health and over local government in general. Those powers concerning local authorities covered a range of areas, including the following: regulating the territorial organisation within a local authority; providing orders to regulate procedure at elections; requiring local authorities to furnish statistics; controlling, where necessary, the appointment and dismissal of those officials whose salaries were partly paid by the Treasury and generally ensuring that the business of the local authorities was restricted to the purposes and within the limits prescribed by Parliament (Redlich 1903, 283-288). Furthermore, the Local Government Board exercised statutory rights of confirmation or refusal in respect of those powers that local authorities were empowered to provide, such as local loans or by-laws (Redlich 1903, 247). Control over the quasi-legislative regulations conferred

upon Councils, such as connecting private drains with public sewers, regulating the width of streets or the height of new buildings, to name but a few (Redlich 1903, 290), was exercised by means of the financial authority vested in the Local Government Board. This financial supervision took two forms: the central audit, which was an exercise that necessarily took place after the event, and of greater importance, the need for local authorities to have loans sanctioned by the Local Government Board (Redlich 1903, 293). As a result, it was primarily when the Local Government Board exercised these financial controls that the relationship between it and the local authority were effectively illustrated.

The particular relationship between East Ham and the Local Government Board centred on the pace of change witnessed by the increase in population and the local authorities response to that increase. It was complicated by the perceived need for speed by the councillors of East Ham, which in itself was not helped by the lack of administrative support, the development of which progressed as the pangs of growth continued throughout the decade.

The composition of elected councillors of East Ham show that a good many businessmen were involved in running the district. Led by John Bethell, a progressive, the tenor of the work they undertook proved to be an extension of his own business methods. In his book on East Ham, Alfred Stokes (1933, 187) emphasised John Bethell's qualities and their impact on East Ham:

His business acumen and ability, his foresight have helped in the forming of our borough, and had he had his way it would have been better than it is today in many ways.

Also, the *Stratford Express*, in their obituary on 1 June 1945, described him as 'not

patient with inefficiency or unbusinesslike ways'. It was this attitude, combined with the need to act swiftly in a property market that was rising quickly, that helped cause some of the problems the Council experienced with the District Auditor at the end of each year. At the same time, the Council was attempting to provide amenities and services for an expanding population in a district which was shedding its rural character for a suburban one, while trying to keep rates down to a level affordable by all living within the district. It would appear that councillors and their staff were able to cope, but the Local Government Board did not always agree with the methods adopted.

One of the stumbling blocks between local and central government lay in the perception each had over the need for land. In their anxiety to have the work completed, the Council continually tripped over themselves in their haste, for plans and estimates were rarely sent automatically by the Clerk with requests for loans until August 1898. As a result time was wasted with Local Government Board requests for the necessary details as each loan was applied for.

This sense of frustration was illustrated by the Board's seeming lack of speed when it came to initiating public inquiries, which were often followed by a period of waiting prior to the loan being sanctioned. To a certain extent this was also due to the Council's impatience, although the men at the Local Government Board did not fully appreciate the intentions of the Council, however well meaning the councillors may have been. For instance, the purchase of Rancliffe House actually took place on 22 May 1895 with an agreement of sale between Colonel Ynyr Burges and the Council, which included the payment of interest if not complete within six months<sup>13</sup>, but the Clerk did not write to the Board until the following day to set

the inquiry process into motion. As time passed the Council became quite desperate, finally obtaining the Board's sanction after writing and explaining the need for urgency because a third extension to purchase had been refused.

The cost of land encouraged speed on the Council's part as the decade drew to a close, and it became apparent by 1897 that the Board had resigned itself to making requests as to whether the Council had already purchased the land in question. It is possible that the Board accepted this situation because a certain amount of sympathy may have existed for East Ham among the Board's officers. Colonel Smith in his report on the need to make up 80 private streets at one time in 1897 stated 'I drove round and visited nearly all the above roads; the whole district shows signs of marvellously rapid growth and streets have sprung up evidently quite recently'<sup>14</sup>.

However, a clash occurred between the Local Government Board and East Ham Council in relation to the motivation that led men to the area, namely the cost of land and its inexorable increase in value. It occurred over the purchase of a site for the proposed isolation hospital. The Council's Surveyor, who had put his resignation to the Council in February 1899 had also, by the 25th of the month, successfully negotiated with the Council to sell land for the erection of the hospital. A few days after the public inquiry, in a letter from Mr Wilson with respect to the suggestion that an independent valuer ought to value the site, the Clerk stated:

Two surveyors, namely, Mr J. H. Bethell and Mr J. H. Carte who have the largest practice in the neighbourhood, are both of them Members of the Council, and both have advised the Council to accept the terms . . . Messrs Bethell and Carte have in their hands several estates in this district, and, although knowing the wants of the Council, have never suggested that they could advise any of their clients to sell land for this

purpose at the price of this, or indeed at any price . . . In the opinion of the Council there is no valuer in the district whose valuation they would take in preference to that of Messrs Bethall and Carte<sup>15</sup>.

This deal provided the Surveyor with two lump sums: £9,500 from the sale of the land and a further £4,350 for land sold for dwellings to be built for the hospital<sup>16</sup>. This was probably the only method by which the Council could give a 'golden handshake' to a former loyal employee, and it is interesting to observe that the Board backed down, allowing sanction for the loan once the Council promised not to use the hospital for cases of smallpox<sup>17</sup>.

On the whole, relations between the Council and the Local Government Board were workmanlike. Rarely did the Board insist on a particular policy, but the records show that the East Ham Town Clerk regularly sent letters to the Board complaining of delays which the Council could have helped to avoid if the ground work had previously been effected, as Redlich and Hirst (1970, 298) pointed out:

Local authorities often complain of the round-about methods of the department, and its exasperating 'red-tapism' is constantly criticised in Parliament and the Press. It may be conceded that many of these complaints are not altogether ill-founded. The slow-paced bureaucratic walk of the Local Government Board, even when it is not merely in which a local authority, often comprised of business men in a hurry, likes to push through its business.

A further source of frustration to the Council was the way in which the Board carried on its business. This illustrates the disparity between the speed with which local businessmen wished to undertake solutions to problems and the pace at which Whitehall worked. It also indicated the differences between the methods that each adopted. This is shown via the nature of the course taken by the Council in sending deputations to discuss issues

face-to-face, rather than through a series of letters. Requests for such discussions were refused by the Board on the grounds that any problems ought to be put in writing<sup>18</sup>, but to men of action this was not enough. It was by the use of such deputations that action was attempted over the issue of trains for working men, showing how much effort the members of the Council were prepared to expend in helping with one of the many problems that faced them during these years. Thus the relationship between the two bodies was such that the District Council carried out policies very much as it pleased.

#### *CONTROL BY CENTRAL GOVERNMENT—THE OMNIBUS ISSUE*

There were times when the members of the Council felt aggrieved by petty rules which they did not consider fair. One such was the constant need for various committees to visit works being carried out in the district prior to Council meetings. For men working a full day, this aspect of their Council duties was not always a pleasant or easy one, and as the number of works and therefore visits increased, there developed an interest in obtaining transportation for Council use.

First mention of purchasing an omnibus was in 1895 during the first few months of the Council's life. The Council proceeded cautiously over this issue by asking the Local Government Board whether they were empowered to make such a purchase. After sending two letters, the Board refused to allow the expenditure and stated that they would not reconsider the position<sup>19</sup>. Not to be deterred, a committee of the entire Council decided to refer the matter to the Works Committee with powers to act.

The Works Committee reported to the following Council meeting that it had considered the Board's reply, but the minutes

give no indication as to whether any decision had been made. The account in the *Echo* on 8 October 1897 (6(c)) amplifies the official record, however: it was reported that Councillor Keys mentioned the cost of hiring an omnibus (16 shillings each time) and suggested that the Council could have purchased one over and over again by this time:

Councillor East: 'Will you sign the cheque?'

Councillor Keys: 'Oh! I don't mind! I know what these surcharges are. I move that the surveyor be instructed to procure one.'

Councillor Knight: 'It is agreed later on.'

This exchange illustrates that the central issue was the possible imposition of a surcharge on the individual councillors signing the authorisation. The comment made by Councillor Keys signified how such surcharges were treated by this time, because such disallowances were remitted in the past after a suitable letter of apology and explanation. Hence the reason for the lethargic response by the Works Committee and their decision to refer the question back to the full Council.

East Ham Council were not the only authority to face such problems. Willesden Urban District Council wrote to East Ham Council with a view to sending a deputation to wait upon the President of the Local Government Board over this very issue, a suggestion that met with agreement, but apparently no further action<sup>20</sup>. Finally, a full meeting of the Council in committee decided to purchase an omnibus in December 1897<sup>21</sup>.

This disregard of the Board's directive was duly observed by the District Auditor and a surcharge was consequently levied against the Council. The Clerk was requested to send a routine application of remission to the Board<sup>22</sup>, but feeling obviously ran very high over this issue because the Clerk wrote a long letter to the Board. The tone of this letter contained the culmination of several years of

constant adverse criticism levied against the Council. It contained indignation over the lack of appreciation for the difficulties overcome and it contained frustration over the lack of sympathy shown by the Board for a seemingly trivial payment which would help the councillors in the performance of their duties. It was a typed, eight-page resumé of the work carried out by both Local Board and District Council since 1878. The Clerk spared nothing. The information he gave was comprehensive and clearly illustrated that the growth of the district had been catered for in a responsible way<sup>23</sup>.

Despite an attempt made by a handful of local objectors, the Board eventually allowed the expenditure, emphasising disagreement with the purchase<sup>24</sup>.

The Council may have succeeded in obtaining an omnibus without incurring a surcharge, but the Local Government Board would not tolerate any further expenditure relating to it after they finally decided to remit the disallowance. Consequently, the audit of 1900 disallowed £18 12s 6d in respect to the repair and painting of the omnibus<sup>25</sup>, known locally since 10 September 1897 as the 'Black Maria', according to the *Echo*.

In this case the Council was seen to be unsure of the ground it was treading. Before opposing the Board, it felt a need to sound out the possibility of obtaining the use of an omnibus with due permission, but when it was not forthcoming, councillors decided to go ahead and purchase one with the knowledge that all previous disallowances were eventually remitted. Their mistake, having convinced the Board not to surcharge them for the omnibus, was that they appeared to have too little regard for the minority of ratepayers who later complained with more effect, thereby reinforcing the previous policy decision of the Board.

### *RESPONSE TO CENTRAL GOVERNMENT—DIRECT EMPLOYMENT*

On Saturday 21 October 1893 (4(h)) the *East Ham Express* noted that the Local Board, backed by the East Ham Owners and Ratepayers Association 'resolved on Tuesday evening to add to the ranks of the unemployed', a change which the writer put down to Mr Savage, whose 'pronouncement on the question caused several members, who meant to vote against the proposal, to alter their minds and vote for it, and led others to abstain from opposition'. But this change in policy was no doubt a response to the receipt of a circular letter from the Local Government Board requesting authorities to direct their efforts in finding work for the unemployed<sup>26</sup>, a request the Surveyor no doubt used in evidence to encourage such a move. By the following February Mr Savage reported that the Local Board had spent £483 extra on 'useful labour during the past few weeks'<sup>27</sup> and made such a favourable report in July, that it was resolved to carry out all future works without contractors. The main advantage for the Surveyor rested on the supervision he gained—a point not lost on the members of the Local Board<sup>28</sup>.

Contradicting earlier remarks about creating unemployment in the district, by 1896 the *Express* (18 April 1896, 5(c)) was reporting on the success achieved in carrying out the Council's work with direct labour. It was estimated that £1,000 had been saved in one year and an unfavourable comparison was made with West Ham: 'In West Ham the Works Department has been a costly failure; in East Ham it appears a complete success'.

The basis of this achievement was founded on fair wages. In 1891 the Local Board had agreed to pay workmen on the roads a minimum rate of 18 shillings per week<sup>29</sup>, the Outdoor Committee rec-

ommending an increase in a workman's wage from 5d to 6d per hour in the following year<sup>30</sup>. This policy was followed up in 1895 when the Council decided to ensure that contractors paid the specified union rates of pay for any work they contracted for<sup>31</sup>, a policy enforced against one contractor in 1896<sup>32</sup>.

Further improvements were introduced with an eight-hour day, 48-hour week for all men engaged in the Council's employ in 1895<sup>33</sup>, and a letter from the Secretary of the East Ham branch of the Gasworkers and General Labourers Union over the question of employing men at trade union rates was treated seriously enough to request the Secretary to attend the next meeting of the Works Committee to discuss the issue<sup>34</sup>. As a result of this meeting, the hours and rates of all Council employees were reviewed and the necessary adjustments were made<sup>35</sup>, an exercise the Council conducted throughout the decade at regular intervals.

This success was also reported in the 26th November 1896 edition (Vol. V, No. 200, 1127(a)) of *London*:

All the municipal work of the District Council is undertaken by the Department, which works on the eight hours system, and pays trade union wages . . . they have 200 men continually at work, much larger in proportion to population than the L.C.C. employs.

The reasoning behind the increase in rates for workmen and reduction in hours was based on the principle that they worked long enough already. In March 1895 when proposing to increase wages, John Bethell emphasised that the workers' call to work longer hours was essentially a request for money because that was the only method by which they could achieve a rise in pay.

In such a way the Council demonstrated that they could employ direct labour with higher wages and a shorter working week at a lower cost and more

efficiently than contractors. Whether due to central government pressure in wishing to provide unemployment relief, which the Council readily responded to during 1895, or in the quest for economy in combination with the need for adequate control over the quality of work, the employment of direct labour proved to be profitable. In the short-term, relief was provided to the unemployed; in the long-term, ratepayers achieved value for money and the Surveyor was able to ensure quality of workmanship.

### RESPONSIBILITY AND POWER

The growth from Rural Sanitary District to Local Board and further to Urban District Council was not always a smooth path whereby powers were transferred from one authority to another together with the responsibilities acquired. Anomalies existed by which the District Council, for instance, could be checked in a policy by the Parish Council, and officers appointed under older statutes could not be removed. Further, in this period of the continuing *ad hoc* development of local authorities, there were many unanswered questions in respect of the duties and limitations of the decision-making process not laid down by Parliament.

Some local authorities sought increased powers through charters of incorporation as their size increased, but every power gained was conceded only after a great amount of effort in time and expensive paperwork. The first time a discussion over the need for extra powers took place was at a meeting between Leyton, Walthamstow, Wanstead, Barking and East Ham over the question of whether to ask Parliament for the extra powers that West Ham Local Board had obtained by the West Ham Local Board Extension of Powers Act 1884. This discussion did not lead to any action, however, and thereafter, East Ham attempted to come to

terms with the problems it faced in isolation.

In essence a change in attitude had occurred by which elected councillors considered they were the representatives of an expanding electorate, and demanded control of local affairs accordingly. One of the problems was reflected in the method by which officers were appointed. The office of Collector of the Poor Law Rates was an appointment for life made before the formation of the Local Government Board in 1879 to John Dennison. The Local Government Board confirmed the appointment in July 1895<sup>36</sup> after previously stating that the Board was not in a position to reverse it<sup>37</sup>. As a result of being rebuffed in their request for powers to appoint overseers, such appointments came to be regarded as irritating irregularities that the Council continued to attempt to bring within their own sphere of influence. Hence the Council made several attempts before succeeding in their aim of making both new and old functions more accountable to the elected body.

Although opposed by John Dennison, new collectors of the rates were appointed, and bowing to local pressure, he eventually agreed to amend his original contract. When appointed on 4th July 1867<sup>38</sup>, he took a poundage on the collection of the rates as was usual, and in a letter to the Council he gave the poundage he received since 1890<sup>39</sup>:

end March 1890	£160	16s	8d
1891	£199	19s	7d
1892	£228	13s	11d
1893	£204	8s	5d
1894	£421	13s	0d
	<hr/>		
	£1,215	11s	7d
	<hr/>		

The *Echo* reported on 8 February 1895 (3(e)) that Councillor Murty pointed out

that these sums of money would satisfy two or three people whose needs were greater than Mr Dennison's, for he was also an architect, surveyor and agent to Colonel Burges. By April he accepted a salary of £300 per annum in lieu of commission<sup>40</sup>, and had also offered to let the Council appoint two officers to collect the General District Rate<sup>41</sup>. The Council thereby achieved a greater degree of control over the rate collection, but they continued to dislike the fact that he remained in office for life. This was an annoyance to which the Council addressed two clauses of the Improvement Bill it promoted in 1898.

Many of the problems East Ham faced over the question of the Council's authority were codified in the Bill, and in a final attempt to remove John Dennison, a compromise was reached by which future appointments were to be made by the Council. This led to his resignation in September 1898, and he left the area six months later with a pension, granted by the Council under the terms of the Act, of £460 per year<sup>42</sup>.

The Bill also covered the following: the reinforcement of building regulations, the provision of powers to allow for the running of tramways, the supply of electricity and provision of water. Of more importance was the authority to consolidate the rates. Overcoming an attempt by the Local Government Board to slow the Council down in implementing the scheme<sup>43</sup>, agreement was reached with the overseers concerned and an initial saving of £403 was reported within the first six months<sup>44</sup>.

With the passage of the Improvement Bill, the Council consolidated the experience of a number of years' building supervision into statute and aided the further expansion of local government from District Council to Municipal Borough in 1904 and County Borough in 1915. The

District Council was responsible for breaking with the old system of life appointments and introducing a greater sense of local accountability based on the voters, rather than the paternal view by which local notables knew what was best and acted accordingly.

## CONCLUSION

The acceleration in pace and expenditure as time progressed ensured complaints from past members of the Local Board, even though they were responsible for one of the problems later authorities inherited—overdrafts to cover the purchase of land before such an expenditure was sanctioned by the Local Government Board<sup>45</sup>. Furthermore, they did not appreciate the removal of the prerequisite they voted themselves in 1882 by allowing cottage-owners who let their properties to be rated at a reduced estimate of four fifths of the annual rateable value<sup>46</sup>, a decision which brought in an extra £66,000 per year according to the *Echo* (9 April 1897, 7(b)).

Owen A. Hartley (1971, 440) observed that 'There had never been any settlement about which tradition, which model, is the preferred one' in the relationship between central and local government relations. The case of East Ham during the last decade of the nineteenth century provides evidence to suggest that the Council was, however, in the words of E. P. Hennock, (1982, 39) 'largely independent of central government'. Certainly some of the letters sent to the Local Government Board by the Clerk would indicate an intolerance bordering on insolence which the editor of the *Echo* applauded on 3 November 1899 (6(d)), when he discussed the remittance of the disallowance over the purchase of the omnibus, in which he described the Board's 'pompous' letter as 'an amusing epistle'. This illustrates the historical change which Hennock refers

to (1982, 38) by which the classes recently incorporated into the constitution were no longer prepared to allow the traditional ruling elite to hold sway over local affairs.

The climate of nineteenth-century local government in East Ham illustrates the point that Hennock (in Dyos, 1968, 319) made on the financial position most found themselves in:

before the introduction of massive Treasury grants the precarious financial basis of English local government meant that in the growing towns successful administration required among other things a marked flair for business, and that it was essential in order to achieve anything to be able to think adventurously about finance.

It was through careful planning that the purchase of a central site for the town hall, for instance, was achieved despite the added cost due to the slow process followed by the Local Government Board in allowing the sanction of the loan, although it was never taken up due to the short repayment period specified. Eventually the finance for both the purchase of the land and the cost of building the town hall was provided for by clauses in the Improvement Bill.

Councillors were occasionally frustrated by the slower pace adopted by the men at the Local Government Board, but were also checked in their actions before committing themselves to projects which would have led to future complications. Civic pride in the form of an omnibus with the Council's coat of arms decorating the panels represented the beginnings of a change 'from the comfortable, exclusive ease of the dining-club into the chill, impersonal world of the ruled-feint ledger; the buildings themselves say so'; (Martin in Dyos 1968, 158) a move highlighted by the building of the Town Hall.

Thus, despite the private interests of the members of both the Local Board and the District Council—or perhaps because of such interests, they succeeded in estab-

lishing and consolidating local government within a tightly controlled financial framework which proved to be largely independent of central government.

## NOTES

1. PRO, WHUC No 137 October 1877 to April 1878, Woolwich Local Board of Health to LGB 6 December 1877 (779/78).
2. see also Powell, 1973, volume V, 1–92.
3. The British Land Company plc only have a few plans from this period left to indicate John Bethell's activities.
4. EHLBM, 13 July 1880, 123; 10 January 1882, 308.
5. EHLBM, 17 November 1891, 56 and 66–67.
6. EHLBM, 21 February 1893, 394–5.
7. EHUDCM, 20 October 1896, 110–111 and 3 November 1896, 145; Abstract of Accounts 1898–99, 222. See Powell, vol VI, 20–1, for a systematic account.
8. EHUDCM, 1 December 1896, 239.
9. PRO, WHUC No 137 SPEHU 1897, Extract of Report by C. L. Hockin, District Auditor, 114991/1897 (121453/97).
10. PRO WHUC No 137 SPEHU 1897, letter from G. T. Goodring, 2 October 1897 (139482/97).
11. PRO WHUC No 137 SPEHU, assistant district auditor's report, 20 August 1898 (107475/98).
12. PRO WHUC No 135 SPEHU, auditor's report for the year ending March 1900 (129540 5 November 1900), 5.
13. PRO WHUC No 137 SPEHU 1893–1896, copy of sale of agreement, 3800/96.
14. PRO WHUC No 137 SPEHU 1897, report of Lt Col A. C. Smith, RE 17 June 1897, 7 (54479/97).
15. PRO WHUC No 137 SPEHU 1897, EHUDC to LGB, 27 October 1899 (136360/28 Oct 99).
16. EHUDCM, 6 February 1900, 234.
17. PRO WHUC No 137 SPEHU 1899, EHUDC to LGB, 6 December 1899 (136360 M 1899).
18. EHUDCM, 4 February 1896, 412.
19. EHUDCM, 21 September 1897, 123.
20. EHUDCM, 7 December 1897, 383.
21. EHUDCM, 21 December 1897, 1.
22. EHUDCM, 6 July 1898, 183, and as reported in the *Echo*, 8 July 1898, 7(c).
23. PRO WHUC No 137 SPEHU 1898, EHUDC to LGB, 21 July 1898 (100834/98).
24. PRO WHUC No 137 SPEHU 1899, LGB to EHUDC, 20 October 1899 (157965 F 1898).
25. EHUDCM, 1 February 1900, 216.
26. EHLBM, 17 October 1893, 120.
27. EHLBM, 20 February 1894, 192.
28. EHLBM, 17 July 1894, 291.
29. EHLBM, 15 September 1891, 20–21.
30. EHLBM, 21 June 1892, 217–8.
31. EHUDCM, 5 March 1895, 110–11.
32. EHUDCM, 23 June 1896, 139.
33. EHUDCM, 19 March 1895, 166.
34. EHUDCM, 3 December 1895, 273.
35. EHUDCM, 17 December 1895, 319–320.
36. PRO WHUC No 137 SPEHU 1893–1896, LGB to EHUDC, 27 July 1895 (80632 B 1895).
37. *ibid*, LGB to EHUDC 24 May 1895 (61653 C 1895).
38. PRO WHUC No 137 SPEHU 1893–1896, EHUDC to LGB, 21 June 1895 (80632/95).
39. EHUDCM, 19 February 1895, 89–92.
40. EHUDCM, 23 April 1895, 211.
41. EHUDCM, 7 May 1895, 259.
42. EHUDCM, 6 June 1899, 395.
43. EHUDCM, 7 February 1899, 395 and 21 February 1899, 26.
44. EHUDCM, 7 November 1899, 368–376.
45. EHLBM, 11 October 1887, 5.
46. EHUDCM, 6 April 1897, 116.

## BIBLIOGRAPHY

## Unpublished documents

EHLBM	East Ham Local Board Minutes
EHUDC	East Ham Urban District Council
EHUDCM	East Ham Urban District Council Minutes
LGB	Local Government Board
PRO, WHUC No 137	Public Record Office, West Ham Union Correspondence No 137
PRO, WHUC No 137 SPEHU	Public Record Office, West Ham Union Correspondence No 137 Sanitary Papers East Ham Union

## Secondary sources

- ASHWORTH (1964) 'Types of Social and Economic Development in Suburban Essex' in R. Glass *Aspects of Change* (London 1964).
- BURKE (1980) *Burke's Peerage, Baronetage and Knightage* (London 1980).
- DYOS (1968) H. J. Dyos (ed.) *The Study of Urban History* (London 1968).
- HARTLEY (1971) Owen A. Hartley 'The Relationship between Central and Local Authorities' *Public Administration* Volume 49 Winter 1971 439–456.
- HENNOCK (1982) E. P. Hennock 'Central/Local Government relations in England: an outline 1800–1950' *Urban History Yearbook* (Leicester 1982).
- JENKS (1919) Edward Jenks *An Outline of English Local Government* (London 1919).
- KEITH-LUCAS (1977) B. Keith-Lucas *English Local Government in the Nineteenth and Twentieth Centuries* (London 1977).
- LOW (1891) Sidney J. Low 'The Rise of the Suburbs' *The Contemporary Review* Volume LX July–December 1891 October 545–558.
- POWELL (1973) W. R. Powell (ed.) *The Victoria History of the County of Essex* Volumes V and VI (London 1973).
- PRICE-WILLIAMS (1885) R. Price-Williams 'The population of London, 1802–81' *Journal of the Statistical Society* Volume XLVIII 1885 349–432.
- REDLICH (1903) Josef Redlich edited with additions by Francis W. Hirst *Local Government in England* (London 1903).
- REDLICH & HIRST (1970) J. Redlich and F. W. Hirst *The History of Local Government in England* (London 1970).
- SMELLIE (1950) K. B. Smellie *A Hundred years of Government* (London 1950).
- STOKES (1933) Alfred Stokes *East Ham—From Village to County Borough* (Stratford 1933).
- THORNE (1876) James Thorne *Handbook to the environs of London* (London 1876).
- WELCH (1963) H. D. Welch *The London Tilbury and Southend Railway* (1963).

## REVIEWS

*The Hon. Editor (Transactions) will be pleased to receive volumes on the history and archaeology of London and Middlesex and related topics for review in this section of Transactions.*

I. ARCHER, C. BARRON & V. HARDING (Eds.) *Hugh Alley's Caveat: The Markets of London in 1598: Folger MS V. a. 318*, (London Topographical Society Publication No. 137, London 1988), 105 pages, £16.00.

Hugh Alley and his *Caveat* were nothing if not unusual. Alley was first a clerk of the royal buildings, employed mainly at Westminster, his birthplace, where he was later apparently an assayer of trading weights. From about 1590 he was an Exchequer informer, living precariously on his share of the forfeitures resulting from convictions, secured on his evidence, for various trading offences in the London area, particularly on the part of brewers. His editors characterise him as 'bumptious and meddlesome': his father's appointment as sexton of St. Margaret's Westminster was conditional upon the son not being allowed to interfere with the duties of the office. These upwardly-mobile qualities are amply evident in his *Caveat for the City of London, or a forewarninge of offences against penall Lawes*, a pen and wash or colour-illustrated booklet of 23 folios addressed to the lord mayor, Sir Richard Saltonstall, and datable to March or April, 1598. Its ostensible purpose was to draw attention to abuses of the City's food markets, notably the hucksters' practice of reselling at higher prices victuals which they had themselves bought there. No specific remedies were proposed in the introductory 'Epistle Dedicatorie' or in the note 'To the Curteous Reader', and indeed notably more words were devoted to the author's own perspicacity and public spirit in exposing the malpractices than were spared for the problem itself. The remaining 16 folios contain a series of illustrations of each market in turn, opposite which are shown the alderman and deputy alderman of the appropriate ward. Albeit of undeniable charm and interest, these pictures appear to have little more than the most general relevance to the particular business of the introductory text. They might be meant simply to please, though the editors suggest that the juxtaposition of aldermen and markets

could have been intended as a subtle hint that the former ought to play a more positive role in the proper regulation of the latter. There is also the rather awkward question of the series of large, classical columns, inscribed with the names of counties adjacent to London, which are shown as a prominent and central feature of most of the market scenes. The existence of these imposing structures is wholly uncorroborated elsewhere: presumably they were imaginary, symbolising some innovation in market practice which Alley forebore to specify in words, and whose significance is now entirely obscure.

Uncertainties on this score invite doubts about Alley's purpose. Perhaps Lord Mayor Saltonstall shared these uncertainties, and may not have taken either the book or its author too seriously. The abuses that Alley condemned were after all commonplace, endemic even, and had been so for centuries, and his known character may not have helped his case. At any rate the *Caveat* appears, evidently within a couple of years of its production, to have come into the hands of Richard Wilbraham, then Common Serjeant of the City, at whose family seat in Cheshire it remained, almost unknown, until 1928. This does not suggest that it had made any very deep impression on its dedicatee, whether as policy or as art. Quite likely the real purpose of the book was, and was seen to be, to obtain its author a job in market supervision; a more becoming and secure form of employment than his informing work (for which he was beaten up on one recorded occasion). If so, he was not wholly unsuccessful. The following year the Court of Aldermen considered further, presumably more specific, proposals from Alley, and eventually authorised him to supervise the markets and to suppress illicit huckstering. In February, 1600 an act of Common Council, formally providing for the appointment of four market overseers, diagnosed the abuses in much the same indignant terms as had the *Caveat*, and also set out—as the *Caveat* omitted to do—the procedures to be followed by the new officials. These included the punctual closure of the markets at the scheduled hour and the prompt dispersal of traders and customers, the

keeping of a register of trading offences and the imposition of harsh penalties on the hucksters and the stallholders who colluded with them. But the limited value of Alley's measures, in so far as they were embodied in the act of 1600, is all too clearly shown by the abandonment of the four new offices within two years of their introduction.

If Hugh Alley and his book were of no great or lasting significance, his strange career nevertheless touched upon several areas of undoubted importance and interest. His editors have certainly made the most of the opportunities presented to them in this way, and the results are both highly serviceable and highly attractive. Vanessa Harding provides a most valuable survey of the London food markets in the 14th to 16th centuries, and Ian Archer contributes a fascinating essay on the workings of the Tudor informing system and on the general enforcement of market regulations. Caroline Barron concentrates on what remains the most distinctive aspect of the *Caveat*, supplying copious notes on the illustrations and an evaluation of them and of the work as a whole. Of the drawings of the markets, Dr Barron comments that the features portrayed are often selective, schematic and, particularly towards the end of the series, perfunctory. An important question here is the reliability of Alley's depiction of buildings for which no other representation is available. Where comparisons do exist, he sometimes emerges from the test with high marks (as for Billingsgate dock, Newgate market house and Smithfield), but in other instances the issue is less certain. A positive verdict on his uncorroborated efforts may need to be qualified, not least in view of the dubious status of the ubiquitous colonnades. And it might be questioned whether a modern reconstruction drawing of the Stocks Market which is itself so obviously reliant upon Alley is really admissible as independent testimony to his accuracy. But then it also has to be conceded that, being unique, the *Caveat's* treatment of the building is in a special sense beyond criticism.

Tony Dyson

*Good and Proper Materials: The Fabric of London since the Great Fire.* (The Royal Commission on the Historical Monuments of England in association with the London Topographical Society, Publication No. 140, London 1989), 78 pages, £5.95.

This book consists of a collection of papers given at a conference organised by the Survey of London

at the Society of Antiquaries in October 1988. It deals with the materials used in London buildings, the bricks, stucco, terracotta, wood, iron and some of the interior mechanical services. Only stone as a building material is omitted, having been dealt with elsewhere.

For those who attended the conference the publication of these papers is particularly welcome. It was so full of important information and further sources that it will be equally useful to the historian of London and the South-East. It is well illustrated, has a foreword by Michael Robbins and an introduction by Hermione Hobhouse of the Survey of London.

The first section deals with the making of London bricks. Whilst it may be general knowledge that many of the bricks for London buildings were made on the spot from the local brick-earth and clay of the Thames valley, we are not as knowledgeable about the methods used in making them, how many could be made in a day from a particular area of brick-earth, or what equipment was needed. Alan Cox explains the composition of bricks in a way that even the non-scientific reader may understand. The experienced brickmakers, for example, used to place a piece of clay in their mouths when taste and feel would tell them if the clay was suitable. The London stock brick is then described; it contained some self-combustible material which left small holes in the bricks after firing and proved not only hard-wearing but porous and therefore resilient to frost. The addition of chalk and ashes from London fires, called 'Spanish', to the brick-earth saved on fuel and improved its consistency. Alan Cox goes on to describe the tools used in brick making and gives a step by step account through the firing in clamps to the finished brick. For the local historian this is a useful and informative account which should help the interpretation of the very sparse records relating to brickmaking as well as the recognition of London made stock bricks.

Frank Kelsall in the second contribution writes of the development of stucco and of its uses and limitations. The Adam brothers, who used stucco extensively, had it mixed in the vaults under the Adelphi and sent in barrels to building sites all over London. Stucco continued to be used by Nash and other architects, and for the mid-Victorian terrace houses, until it went out of fashion because it was regarded as imitative.

Michael Stratton draws our attention to the wide use of terracotta and faience in Victorian times as a means not only of resisting smog and pollution but for its decorative qualities. Important buildings like St Pancras Church and the Natural History Museum as well as music halls and, later, cinemas,

display a great deal of terracotta. Many of the later Victorian houses familiar to us in the suburbs have small decorative features let into their walls or have pillars and capitals by the doorways, of terracotta.

Internal construction is examined next. David Yeomans deals with the carpentry of buildings, the sort of wood used for joists, its length and how it was assembled, particularly for the terrace house. James Sutherland writes about the introduction of iron into building when it was often used to resemble traditional materials. Illustrations include some of the Victorian Gothic St Pancras hotel where iron girders and pillars were much in use on staircases and in the entrances, all made to resemble stone and wood. More important for our interpretation of buildings was the structural iron of beams used in some of the large 19th-century buildings like the Public Record Office and the British Museum, which had the additional advantage of being fire-resistant. Perhaps because these beams were hidden, drawings were often not signed and consequently it is difficult to know who designed them. The details given by David Yeomans and James Sutherland will be of great value to the observer.

Ian Grant's chapter on some services and finishings in the Victorian house reminds us of the limitations of the water and gas supplies of that time. Illustrations given in the book show, for example, various bell-fittings, a 'self heating gas-bath' and the elaborately decorated water-slide gasoliers from the 1862 International Exhibition.

The most unusual contribution to the conference and to the book is that by Charles Brooking who has built up an extensive and detailed collection of such items as sash-window pulleys from demolished buildings, of rain-water heads and fire grates as well as a library of wooden mouldings from doors, skirtings and architraves. This collection which covers the period from 1660 to 1960 will soon be going to Wapping and will provide an important research centre.

These essays will be a useful addition to the library of the local historian, particularly of the London region, in his understanding of both the buildings and their records and it will be a valuable source for post-medieval archaeologists and others concerned with the interpretation of buildings and architects dealing with restoration and reconstruction.

*Averil Harper Smith*

T. F. T. BAKER (ed.) *The Victoria History of the County of Middlesex* Volume IX: Hampstead and Paddington Parishes. (Oxford University Press for the University of London Institute of Historical Research, Oxford 1989) 302 pages, 54 illustrations plus 15 maps, £60 (cased).

In the summer of 1989 an exhibition entitled *Particular Places: English Local History and the Victoria County History* was mounted in the British Library. Twenty-four varied showcases illustrated aspects of the source material used in writing an aspect of history for a particular place. Alongside each case was the relevant volume of the *V.C.H.*, superglued down but otherwise open to view. Publication and sources were thus linked in a most telling manner, but it did not attract as much attention as it deserved, despite a galaxy of supporting local history events. Perhaps local historians were put off by the august settings of Senate House and the B.M.?

It was a Carnegie librarian in East London who introduced me to the red folios of *V.C.H.* half a century ago, as the educational answer to a simple enquiry. Since then I have often plundered the volumes for facts (particularly the detailed plans and architectural descriptions of the older ones), but the volume under review is the first I have read from cover to cover. I have to confess that I have never lived in either parish, nor have a close interest in their history.

The two parishes make an interesting contrast despite their juxtaposition. The medieval manorial settlement and its waste developing into the self-protected Heath and large adjoining houses, a popular area of resort for the wells and spa of the late seventeenth and early eighteenth centuries, gradually expanding to meet the roadside settlement down at Kilburn, was Hampstead's early history. The four Paddington satellite settlements (including Westbourne and Bayswater) reached inwards, but found themselves limited by the road, canal and later railway cutting the parish in two. The consequent separate development after about 1800 resulted in everything from fashionable houses facing permanent parkland to some of the worst slums in London for a time. The central parish stories are well told, but some area treatments I found hard to follow: more illustrations of streets would have helped, difficult though they are to photograph sensitively. The accounts of the Heath and of Whiteley's early department store and its influences are particularly well done.

Generally the story is well organised, but the

account of the important effect of Sir Thomas Maryon Wilson's entail on the history of Hampstead should have been told earlier, and not mentioned several times without explanation. The plates are nicely varied, but a few 'Then and Now' pairs might have been added, if only for those of us who, for example, do not know what North End looks like today. The new maps are well drawn and informative, but the reproductions of old One-Inch Ordnance Survey maps should have been improved.

The *V.C.H.* publicity makes much of its referencing system to sources. It is certainly better than it once was: I tracked down the original sources for one volume, only to find that it consisted entirely of copies of extracts from other histories. But it still leaves much to be desired. 'Below' is not a sufficient reference and further investigation would have refined recent dates like 'c. 1960'. Likewise it should have been possible in 1989 to state categorically whether a building was designed by Quinlan Terry or not, and 'Inf. from V.' is unconvincing. Many 'quotes' are unattributed and, whilst many of the estate descriptions are well done, others are either the idiosyncratic opinion of Pevsner or of a recent occupier. There are several references to the *General Introductory Volume of the V.C.H.* which few libraries seem to possess.

To remark 'by the late eighties property was expensive, residents included many people prominent in the arts and popular entertainment' is pointless without expansion. How expensive? Which prominent people? Equally, it is hardly objective to state that an area is (not was) one of organised vice, or to describe another as having a large coloured population and a third as formerly 'suitable for elderly Jews'. On topographical features, the statement that 'part of the (Hampstead) boundary and hedge (of c. 970) were visible in 1986' needs to be justified. Where was it visible, and what is the evidence for its date? Similarly, do any of the 1824 boundary stones survive and, if so, where?

At £60, this is a library reference book. A paperback of either parish could be issued for a fraction of this price, like the original fascicles of the early years of *V.C.H.* It might face competition from the publications of the flourishing local societies, but there is a public able and willing to pay for information. Other county committees have been enterprising enough to publish popular versions of at least their 'general' volumes—*The Farmer feeds us all* is a model condensation of *V.C.H. Shropshire IV: Agriculture*. What about it, Library Services?

Derek Renn

# CONTENTS

Officers .....	iv
132nd Annual Report of Council and Accounts, 1986–87 .....	vi
Rules of the Society .....	xi
W. F. Grimes (1905–1988). <i>Jenny Hall and Jean Macdonald</i> .....	xvii
The Roman Occupation in the Area of Paternoster Square, City of London. <i>John D. Shepherd</i> .....	1
A Roman Seal-box Lid. <i>Martin Henig and Christine Jones</i> .....	31
A Roman Pipe from London. <i>Graeme Lawson and Angela Wardle</i> .....	35
A Gazetteer of Middle Saxon Sites and Finds in the Strand/Westminster Area. <i>Robert Cowie</i> .....	37
Two Middle Saxon Occupation Sites: Excavations at Jubilee Hall and 21–22 Maiden Lane. <i>Robert Cowie and Robert Layard Whytehead with Lyn Blackmore</i> .....	47
The Hidation of Middlesex. <i>Keith A. Bailey</i> .....	165
North-west London Families at the Royal Mint. <i>K. J. Valentine</i> .....	187
East Ham: Problems of Local Government and Relations with the Local Government Board. <i>S. C. W. Mason</i> .....	191
REVIEWS	
<i>Hugh Alley's Caveat: The Markets of London in 1598</i> by I. Archer, C. Barron and V. Harding (Eds) (Tony Dyson) .....	207
<i>Good and Proper Materials: the Fabric of London since the Great Fire</i> by RCHME and London Topographical Society (Averil Harper Smith) .....	208
<i>The Victoria County History of the County of Middlesex Vol. IX</i> by T. F. T. Baker (Ed.) (Derek Renn) ...	209