

Fig. 1: Main roads in the London area during the Roman period.

# Excavations at Arcadia Buildings, Southwark

MARTIN DEAN

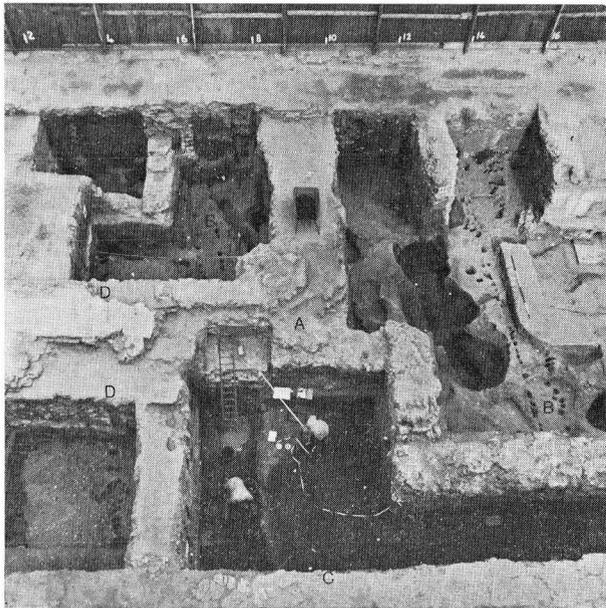
A 12m x 26m (38ft x 85ft) area was excavated at the S.W. end of the site previously occupied by Arcadia Buildings, a late 19th century tenement block that ran the length of Silvester Street, between Tabard Street and Great Dover Street. (Fig. 3). A small team from S.L.A.E.C. spent almost two years on the site, finishing in September 1979. There are no plans to excavate the rest of the available area as it is not threatened by redevelopment in the immediate future. Massive concrete foundations for the building (Fig. 2) and other post-medieval features, such as cellars and pits, destroyed much of the archaeological stratigraphy. This made interpretation of the surviving evidence difficult at times but important archaeological information was retrieved from the surviving layers.

## Natural Topography

The original pre-Roman ground surface, at +1.6m (5ft) above Ordnance Datum, was 3m (10ft) below modern pavement level. Analysis of the sandy soil showed it to have been subjected to periodic water-logging<sup>1</sup>, and it is likely that the water table at that time was close to the ground surface. Cutting across the site was a flat-bottomed channel 5.5m (18ft) wide and 0.9m (3ft) deep running at an angle of 40°W of grid north. It was probably a natural waterway, part of the complex of channels which dissected the low-lying part of north Southwark in the prehistoric and early Roman periods<sup>2</sup>. Although a number of indeterminate flint flakes were recovered from later contexts, there was no obvious prehistoric presence on the site.

1 Analysis kindly undertaken by Peter Fisher of Kingston Polytechnic.

2 A. H. Graham in *Southwark Excavations 1972-1974* (1978) 509.



**Fig. 2: Overhead photograph of the S.W. end of excavation.**

- A: massive Victorian concrete foundations.**
- B: partly excavated parallel gullies with post holes.**
- C: large dark-earth filled pit.**
- D: post hole alignment of a timber-framed building.**

(Photo: John Earp)

### The Roman Road

The first man-made feature on the site was a 12m (38ft) wide Roman road running 35°W of N. This was probably Watling Street, connecting the City of London with Canterbury and the Kent coast. There is a possibility, however, that it was a northern detour to the City from an earlier Watling Street alignment which crossed the Thames at Westminster. Evidence for this relies on the projection to the Thames of Watling Street from the north, under the Edgware Road, and from the southeast on the line of the Old Kent Road. (Fig. 1).

When faced with an awkward crossing of a small waterway, caused by the very oblique angle of channel and road (Fig 4) the Roman engineers relied on a causeway rather than a bridge to carry the road. As no waterlaid deposits survived in the channel we cannot be sure if they ever existed or were removed during road construction. Contemporary channel fills found on other Southwark excavations<sup>3</sup> show they were frequently of a peaty nature which, if present,

could have caused problems with differential subsidence of the road.

The road agger was built up from silty sand, probably quarried from a ditch found 10m (33ft) to the N.W. This sub-base material filled the channel and also lay directly on the ground surfaces to the side. (Fig. 5). On the bottom of the channel there were two layers of timbers at roughly 90° to each other. They were mostly alder, with some willow and oak, and were probably locally grown as they reflect a tree assemblage<sup>4</sup> possible in the damp habitat likely in north Southwark at that time. Some of the timbers were split from mature wood as wedges and half rounds, and others were branches or small immature trunks.

It is difficult to be sure what function the timbers performed. If they were laid as a stable road foundation, as found under the London Bridge approach road 150m (164 yds) to the north<sup>5</sup>, why were they only in the bottom of the channel and not on the surrounding ground surface? If they were meant to act as a land drain to allow small amounts of water to pass under the road, why were the lower timbers lying across the channel? It would have been more effective for both layers to have lain along the line of the channel.

The construction of the road would have effectively dammed the flow of any volume of water along the channel, unless the channel had ceased to be a waterway before the road was built. If there was a build-up of water it would probably have been diverted in some way. Evidence for canalisation has been found on other sites in north Southwark<sup>6</sup>.

The 12m (38ft) wide, 0.4m (1ft 4in) high, road agger was covered by a 8cm (3in) thick primary road surface made of very compacted gravel, probably of local origin. Only 29 square metres (35 square yards) of this surface survived because of removal by post-Roman features. The later road surfaces, twelve of which survived, fared even less well. Only 2 square metres (2.4 square yards) survived to any significant thickness, the maximum being 0.9m (3ft) next to the S.W. edge of the road at the N.W. limit of excavation.

By the mid-second century, when Roman settlement on the site seems to have finished, roadside occupation deposits had accumulated to between 0.5-0.7m (1ft 6in-2ft 4in). Later phases of the road were no wider than the first so this suggests that roadside deposits could have accumulated at more or less the same rate as the road<sup>7</sup>. Unfortunately

3 Ferretti and Graham, *ibid.* 57.

4 O. N. Bishop, *Natural Communities* (1973) 61.

5 Ferretti and Graham, *op. cit.* 59.

6 H. Sheldon, *ibid.* 429.

7 Similar evidence was found by Steve Roskams on the Milk Street Excavations, *London Archaeol* 3 No. 8 205.

later intrusions removed all traces of roadside evidence next to the thickest part of road gravels; interpretation was further complicated by subsidence at the point where the road was thickest and it could be that additional road metalling was applied to compensate for subsidence as the timbers under the road decomposed.

An alternative explanation for the thickness of gravels close to the road edge is that they formed part of a road junction. In the past it was generally thought that a major intersection of the Roman road from Chichester, Stane Street, together with Watling Street and the bridge approach road, took place in the immediate vicinity of St George's church 100m (110 yds) to the north<sup>8</sup>. Recent excavations in Borough High Street and on Arcadia Buildings put the likely intersection of the bridge approach road and Watling Street close to a point only 14m (46ft) away, just outside the site, under Silvester Street. It is at least possible that the third component of the junction, Stane Street, would intersect at this same point.

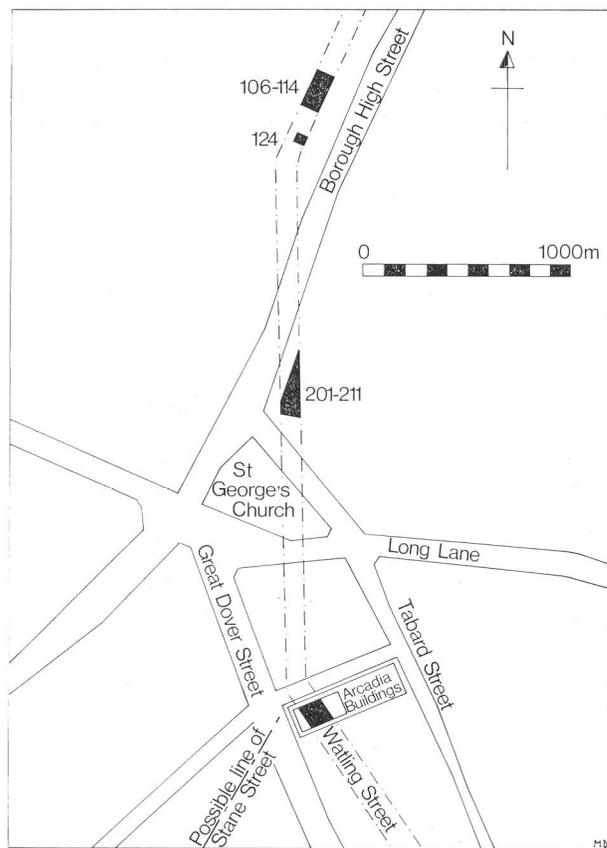


Fig. 3: Junction of the bridge approach road and Watling Street — based on excavations in Borough High Street and at Arcadia Buildings—with the proposed line of Stane Street.

(Fig. 3).

Pressed into the ground surface just off the edge of the road was a bronze buckle from a legionary type *lorica segmentata* body armour. (Fig. 6). It would be tempting to deduce that it was lost during the construction of the road by military engineers. Unfortunately the deposits overlying the buckle seem to date to the end of the pre-Flavian period (A.D. 54-69) which means it could have been lost at any time between the conquest and the late 60's A.D.

### Roadside Buildings

Superimposed gravel floors between the road and roadside quarry ditch indicated the presence of buildings, but their plans were difficult to determine because the walls appear to have been built using posts set on ground beams and not let into post-holes. The earliest identified building of pre-Flavian date, was on the north side of the road but not parallel to it. (Fig. 4). All that could be detected were the traces of two walls at 90° to each other, a gravel floor into which was set the remains of a simple bowl furnace, and a spread of charcoal alongside. The adjacent ditch contained pre-Flavian pottery similar in date to that found on the floor, and fragments of metalworking crucibles. One has been reconstructed and falls into Tylecote's type A1, (Fig. 7) which is thought to be more in the Iron Age tradition than the Roman<sup>9</sup>, and suggests native craftsmen. Analysis of pieces of slag and material adhering to the crucibles showed the presence of both bronze and brass alloys<sup>10</sup> and, judging from the small capacity of the crucible, 54ml (3.3 cubic inches), was probably used in the manufacture of small cast objects. Unfortunately no recognisable bronze or brass objects were found, but several pieces of clay with a rouletted decoration were recovered, and they could be part of a mould for a bracelet.

By about A.D. 70 the quarry was levelled and the second phase of buildings were constructed. These seem to have lasted until about the mid second century. The reconstruction may have been in the form of a small winged building with a courtyard open to the road, but again it was difficult to trace the walls on the ground. (Fig. 8). In the eastern 'wing' there were three overlying gravel floors and the remains of two superimposed ovens, probably domestic, made of clay with tiled flues. On the latest floor, which overlay the ovens, was an area of localised burning with a scatter of iron-working slag and iron nails, which perhaps indicates the position of a blacksmith's forge. On the other

8 H. Sheldon, *op. cit.* 20.

9 R. F. Tylecote, *Metallurgy in Archaeology* (1962) 132.

10 Analysis kindly undertaken by Rod Clough of the Institute of Archaeology, University of London.

side of the road, in the small area that was available for excavation, there was a similar and contemporary series of floors also with a spread of iron slag on the latest.

In a corner of the possible courtyard on the north-east side of the road, there was a wood-lined well backfilled in the mid second century. The well was dug to a depth of only 1.45m (4ft 8in) below the contemporary ground surface, presumably because the water table was relatively higher in the Roman period. The lining was made of oak planks 3cm (1in) thick, with simple tenon joints nailed from the outside, indicating that the structure was prefabricated before being lowered into position. 3m (10ft) to the southwest, and immediately adjacent to the road, was a rectangular cesspit of similar date, with a number of regular alignments of iron nails lying within it, suggesting some sort of collapsed wooden structure.

### Medieval Activity

Roman settlement seems to have declined on the site in the mid second century. Overlying all the surviving Roman levels, except where removed by later intrusive features, was a layer of dark earths 1-1.5m (3-5ft) thick. This layer, similar to those found on other sites in Southwark and elsewhere in Britain,

is difficult to date accurately. Recent work on the dark earths suggest that originally they had a high organic content, and were probably derived from organic-rich waste products accumulating in urban centres<sup>11</sup> which were collected and progressively dumped in suitable areas for agricultural or horticultural purposes<sup>12</sup>.

The dark earths on this site are definitely later than the mid second century and are probably post Roman because they seal the remains of Watling Street. A number of late medieval and Tudor pits, cut into the dark earth, were all overlain by extensive seventeenth-century urban deposits. This suggests mostly rural activity on the site for about a thousand years after the Roman occupation. Repositioning of the main London to Canterbury road sometime after the Roman period possibly accounts for this to some extent. The medieval road, Chaucer's pilgrims' route, almost certainly lies under modern Tabard Street 50m (55 yds.) N.E. of Roman Watling Street.

Three substantial features cut into the Roman road were filled with dark earth. (Fig. 2). There were two flat-bottomed gullies, 1m (3ft 4in) wide and 0.3m (1ft) deep, running parallel 7.5m (24ft) apart for the width of the excavation on a bearing 25°W. of N. Unevenly distributed along the sides were pairs of posts, 10-15cm (4-6in) in diameter, mostly slightly

11 Dr. Richard Macphail, *pers. comm.*

12 H. Sheldon, *op. cit.* 40.

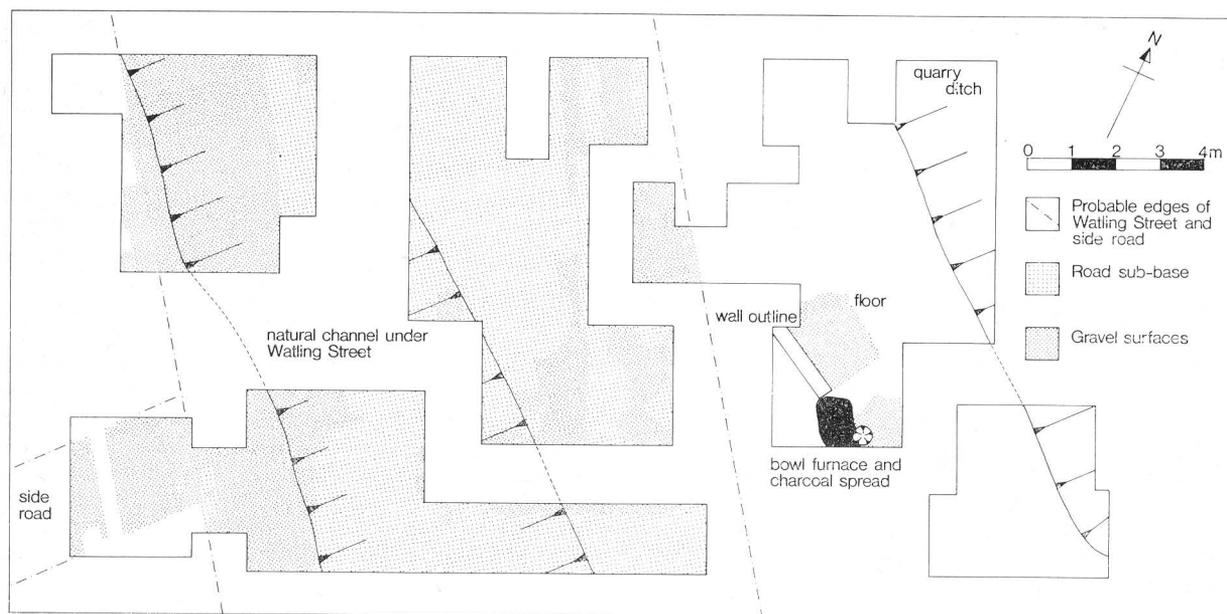


Fig. 4: Plan showing Watling Street overlying a natural channel, with a possible pre-Flavian building and a metalworking area between the road and a quarry ditch. A small gravel track joins the road from the SW.

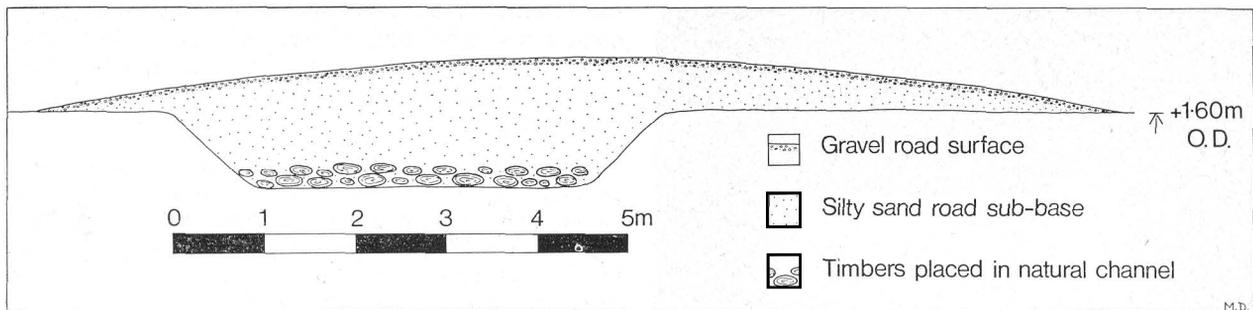


Fig. 5: Reconstructed section through Watling Street and underlying natural channel.

inclined toward each other. Between the gullies, but offset to the S.W., was a large flat-bottomed pit 0.6m (2ft) deep with parallel sides 2.6m (8ft 6in) apart. The northeast end was rounded and the other was outside the excavated area, but a length of at least 3.5m (11ft 6in) was indicated. 2.5m (8ft) to the S.W. of the gullies, and parallel to them, was a post-built structure, probably a building. There were no recognisable floor surfaces, either because we could not detect them within the dark earth or, more likely, because they were destroyed by post-medieval activity which had truncated much of the stratigraphy in that area. Sealed by the dark earth-filled pit, and cutting into the Roman road, was a straight-sided ditch 0.7m (2ft 5in) wide and 0.8m (2ft 9in) deep, backfilled with road gravels. It ran due N.-S. for at least 5m (16ft 6in).

It is difficult to assign either an accurate date or function to these features. One fragment of tenth century pottery, recovered from among all the Roman material in the pit, could be accounted for by contamination from animal burrowing, evident within the pit. All that can be said is that they were probably later than the date at which this stretch of Watling Street went out of use, the most likely date for that being after the end of the Roman period.

A possible explanation for the post alignments in the gullies is that they were the uprights of tenter frames, the structures on which cloth was stretched after the fulling process. There is evidence on maps for areas close to the site being tenter grounds in the eighteenth century<sup>13</sup> and some of the Tudor pits had cloth preserved in clay around their edges, which could suggest a use as fulling pits. Also a study of Southwark tradesmen's names mentioned in surviv-

ing documents suggest a considerable textile industry in the 14th and 15th centuries<sup>14</sup>.

### Post-Medieval Settlement

In the seventeenth century settlement expanded over the site again. Two of the many small alleyways coming off Kent Street, the former name for Tabard Street, crossed the site<sup>15</sup>. The walls of a number of buildings of this date were found and attached to one were the remains of a small complex of kilns, for making clay tobacco pipes, provisionally dated to 1680. The kilns were set into pits cut into the dark earth and operated from a stoke hole 0.7m (2ft 6in) below the contemporary ground surface. They were of brick construction bonded with pipe clay which was still soft where not hardened by the heat of the kilns. The clay used to make the pipes has been identified as coming from the Poole area of Dorset<sup>16</sup>. Two wooden tubs, 0.65m (2ft 2in) in diameter and probably made from barrels, were found set into the ground for storage of clay. Next to the stoke hole was a pit that still contained some coal; this indicated that the kilns did not burn wood or charcoal, but were coal fired in accordance with a promise made by the Company of Pipemakers in 1663<sup>17</sup>.

Enough fragments were recovered to partially reconstruct the muffle<sup>18</sup>, a cylindrical container in which the pipes were fired. It was 0.8m (2ft 6in) in diameter and made of pipeclay reinforced with pipe stems. Varying lengths of projecting positioning lugs on the side of the muffle indicated that the kiln narrowed toward the top, which would have increased the chimney effect and made the kiln more efficient. This, coupled with specially shaped pieces fitted

13 J. Rocque, *Map of London* (1746).

14 D. J. Johnson, *Southwark and the City* (1969) 79.

15 Ogilby and Morgan, *Map of Southwark and Lambeth* (1682). Shown as White Horse and Red Bull Alleys.

16 Analysis kindly undertaken by Brian Young of the

Institute of Geological Sciences.

17 A. Oswald, *Clay Pipes for the Archaeologist* B.A.R. 14 (1975) 20.

18 Reconstruction of the muffle, together with a study of claypipes kilns by Alan Peacey in a forthcoming B.A.R. edited by Peter Davey.

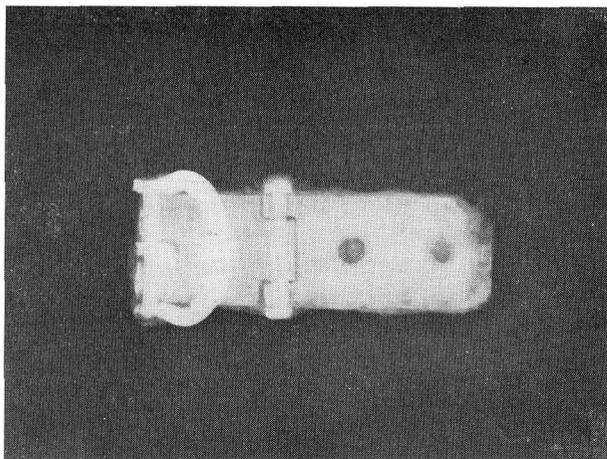


Fig. 6: Radiograph of a buckle from a *lorica segmentata*. (Actual size).

above the sandstone muffle supports to reduce eddying of hot gases, shows the high level of technology in this seventeenth century backyard cottage industry. A number of contemporary pipemakers are known in the area<sup>19</sup> and further historical research could well identify the owner of the kiln, even though the pipes do not carry a manufacturers mark. The most complete of the kilns has been preserved and is now on display in the Museum of London's Tudor and Stuart gallery.

During the late seventeenth and eighteenth centuries modifications and additions took place to the buildings on the site, and in 1814 the construction of Great Dover Street with terraced houses alongside destroyed the buildings in the area of the kilns. The remaining structures were demolished before 1879 to make way for further redevelopment which included the construction of Silvester Street and Arcadia Buildings.

### Conclusions

Before excavation began it was thought likely that Roman Watling Street passed somewhere close to the site. This supposition was based on little hard evidence, but that the area was probably the most northerly of useable land for a London to Canterbury road. The area close to the river, except in

19 A. Oswald *op. cit.* 130-149.

20 A.H. Graham *op. cit.* 504.

21 Date not available at time of going to press.

22 H. Sheldon, *op. cit.* 43.

23 I. Darlington, *Survey of London* Vol. XXV (1955) 121,

the vicinity of the settlement, was subjected to near-continuous deposition of waterlain clays up to the early post-medieval period<sup>20</sup>. This indicates the very marshy nature of much of North Southwark during the Roman period.

The finding and excavation of the Roman road provided interesting information on Roman road engineering. Unfortunately a precise date for the construction of the road was not obtained but there pre-Flavian deposits just overlapping the edge of the primary surface which indicated that the road was built sometime between the conquest and A.D. 69. The timbers from under the road are at present being radiocarbon dated at the British Museum's Research Laboratory<sup>21</sup>.

Interesting information about the size and character of the Roman settlement was recovered. This excavation has increased the estimated built-up area from 13ha (32 acres)<sup>22</sup> to close to 15ha (37 acres). The nature of at least part of the peripheral area of Southwark during the later first and earlier second centuries was suggested by the wooden roadside buildings in which metalworkers, possibly of native origin, operated. Presumably they offered their skills to people passing along Watling Street as well as to the urban community stretching to the north.

The dark earths, as on many sites, posed a serious archaeological problem. It was not possible to determine over how long a period they were deposited, all that can be said is that on this site the dark earths seem to have accumulated at some time after the Roman occupation and before the beginning of the sixteenth century. At some time during that 1100 year period farming and earthworm act-

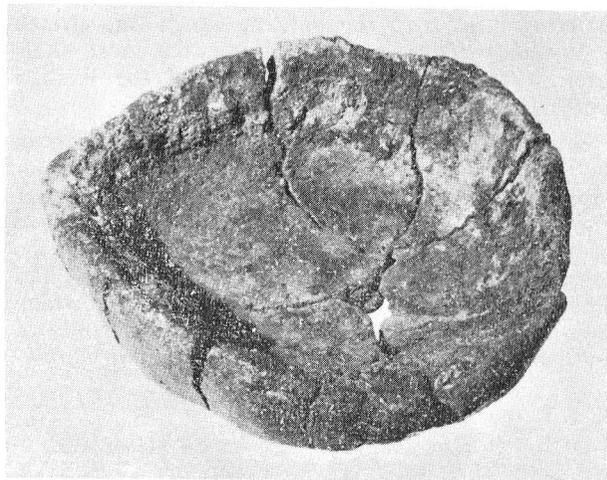


Fig. 7: Crucible for casting bronze (x $\frac{1}{2}$ ).

(Martin Dean)

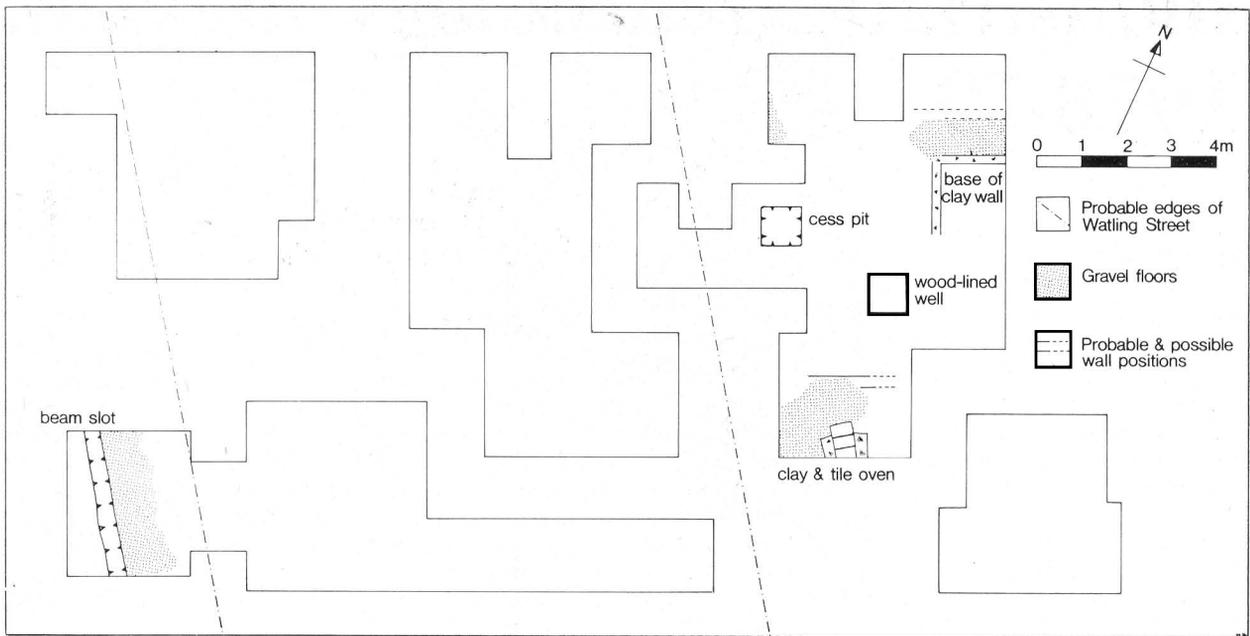


Fig. 8: Late 1st-early 2nd century A.D. buildings alongside the road, with a small oven, a cesspit and a well.

ivity<sup>11</sup> probably disturbed the deposits, destroying any evidence there may have been for internal stratification.

When urbanisation spread over the site again in the seventeenth century, it was apparently with the construction of brick buildings as there was no evidence for wooden structures immediately preceding them. Other cottage industries besides pipe making were indicated over the following 200 year period by their waste products. The archaeological evidence for the manufacture of brushes and pins agrees with the historical evidence<sup>23</sup> for such industries in this area prior to the reorganisation of the roads and houses in the nineteenth century.

#### Acknowledgements

I would like to thank all my colleagues at S.L.A.E.C. who worked on the site, particularly George Dennis, Robin Densem, Mike Hammerson and Brian Yule during the earlier part of the excavation, and Sonia Jeffrey, Jill Fisher, Amy Dubois and Stuart Scott during the last year on site. I am also grateful to all the volunteers and students who helped, especially Harold Clyne, Richard Lock, Rose Baillie, Geoff Norton, Christine Whatrup, Anne Pink, John Clements and Michael Hurst. The excavation could not have taken place without the co-operation of the site owners, County and District Properties Ltd., and their architect Robert Crapnell of Robert Crapnell Associates.

## Local Societies - amendments

OUR recent publication of a revised list of local societies (Vol. 3, No. 12, 318-9) has provoked the following list of corrections. The editor would like to hear of any more.

**Billericay Archaeological & Historical Society;** Sec. Mrs. E. Benians, 305 Mountnessing Road, Billericay, Essex CM12 0ER.

**Council for Kentish Archaeology;** Sec. K. Gulvin, 15 King William Street, Gillingham, Kent.

**Domestic Buildings Research Group (Surrey);** Sec. I. J. West, 29 Cox Lane, West Ewell, Epsom, Surrey.

**East Herts Archaeological Society;** Sec. C. L. Lee, 107 Queens Road, Hertford.

**Enfield Archaeological Society;** Acting Sec. G. R. Gillam, 23 Merton Road, Enfield, Middx.

**Hornchurch Historical Society;** Publicity Officer Miss M. Parker, 59 Waverley Mount, Brentwood, Essex CM14 5EP.

**Lewisham Local History Society;** Sec. C. W. Harrison, Archives and Local History Department, The Manor House, Old Road, Lee, SE13 5SY.

**Richmond Society, Archaeology Section;** Sec. Rene Manning, 13 Dynevor Road, Richmond.

**St. Marylebone Society;** Sec. Mrs. S. W. Addis-Smith, 28 Homersham Road, Kingston-upon-Thames.

**Southall Local History Society;** Sec. c/o Public Library, Osterley Park Road, Southall.