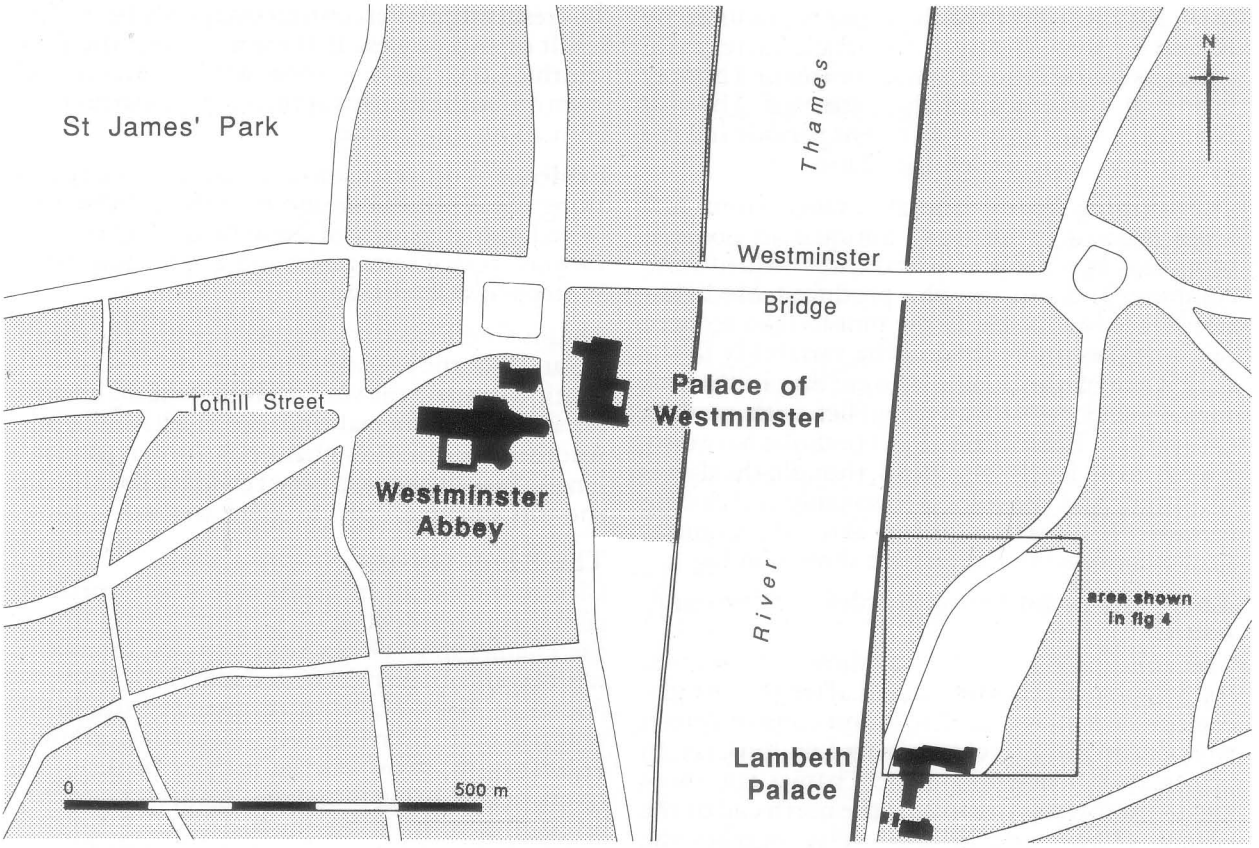

Fig. 1: plan of the study area showing principal modern roads and major medieval complexes.

The Roman Road and the River Regime

archaeological investigations in Westminster and Lambeth

Barney Sloane
Hedley Swain
Chris Thomas

THE AIM OF this article is to draw together recent work by the Museum of London Archaeology Service in the core of Westminster and on the opposite bank at Lambeth. It comprises three parts. The first discusses new evidence for the topography of Thorney Island and the Tyburn outfall, and its impact on the likely nature of surviving archaeological deposits in that vicinity. The second describes the investigations of the Time Team in Lambeth Palace Gardens. Finally, some tentative conclusions are offered concerning the early topography of the study area and in particular the light it sheds on the likelihood of the supposed Roman river crossing between Lambeth and Westminster.

Part 1: the topography of Thorney Island, Westminster

Chris Thomas

Introduction

The central area of the City of Westminster, around Westminster Abbey and the Palace of Westminster, lies on a gravel eyot or island called Thorney Island, on the western side of the Thames. This sand and gravel island was formed by the bifurcation of the River Tyburn where it met the Thames. The River Tyburn, originating in Regent's Park, flowed down present day Marylebone Lane crossing Oxford Street just to the east of Bond Street Underground Station from where it continued to the site of Buckingham Palace. Its course from

there has caused some debate and is discussed by Barton in some detail[1]. This article merely discusses its course in and around the area of Thorney Island. It also discusses the extent of Thorney Island, the river level at different periods and the extent of occupation on the island.

The contour survey (Fig. 2) is taken from data from modern excavations, antiquarian observations and boreholes. The data was loaded onto computer and a survey plot produced. Modifications have been made to the plot to take account of anomalies produced and the variability in the data: some of the boreholes were dug in the 19th century and occasionally conflict with modern excavations. In addition some boreholes have only approximate levels. In general, though, the data is consistent and provides a reasonably convincing reconstruction. The numbers after Westminster sites mentioned in the text are shown on Fig. 2.

The geology and topography of Thorney Island

The contour survey (Fig. 2) shows the natural topography of Thorney Island after the last glacial period *c* 10,000 BC. The island consists primarily of sand and gravel overlying London Clay. In places, particularly along the Thames foreshore and in the lower lying areas at the north end of the island, yellow sand or sandy clay overlies the gravel. At the deepest points of the Tyburn channel, at the mouth of the northern channel, all the gravel has been eroded and the alluvial river depositions overlie London Clay.

The highest point of the island lies in the vicinity of Westminster Abbey at above 2m OD, which explains its siting and the presence of earlier Roman buildings beneath it. To the south the ground slopes away to the southern stream of the Tyburn at about -2m OD with its mouth at about -3m to -4m OD. To the north of the Abbey lies a plateau at above +1m OD under Parliament Square. The ground fell away to the west into the Tyburn Stream to more than -2m OD. There is then a gradual fall into low-lying and probably marshy ground to the north of modern day Parliament Square to the northern channel of the Tyburn. This channel exited into the Thames at -6m OD. The width of both this and the southern channel may not be reflected in the plot as the streams may have migrated and eroded themselves new channels. The resulting gravel contours may only be the final result of this process. If these do reflect the actual width of the channels, then, with a water level of -0.5m OD, both channels at their mouths would have been about 250m wide.

Evidence of other streams or inlets have been found along the Thames foreshore. One has been interpreted in the vicinity of New Palace Yard (1)[2], and another, perhaps 15m across and 2 to 3m deep, under St Stephen's Chapel (2)[3].

The plot indicates two channels feeding the streams around Thorney Island. The one to the west is the continuation of the stream from Buckingham Palace and is the principal course of the River Tyburn. Another wide shallow channel is shown crossing St James' Park. There are very few data for this area and this stream is open to some doubt.

The River regime

Clearly the extent of the Island at any particular period is dependent upon the water level in both the Thames and Tyburn. Layers of peat interleaved with layers of river-deposited alluvium have been found in both branches of the Tyburn, which suggests that the rivers were migrating, allowing vegetation to grow on the marshy banks of the rivers, before being inundated again by rising river levels. Research on alluvium deposited by rivers and peat formed during periods of falling water level is still being carried out but some provisional conclusions can be drawn. The sites referred to are shown on Fig. 2.

The Tyburn in the prehistoric periods

A sequence of alluvial deposits and peats was recorded at the mouth of the northern branch of the River Tyburn at Richmond Terrace in 1980 (3)[4]. The peat layers have been radiocarbon dated to form a broad chronology for the sequence. The great depth of deposit in the northern channel, possibly 4m, with a peat at about -2m OD with a radiocarbon date of 6630 ± 110 bc (uncalibrated)[5] suggests that a large quantity of silt may have been deposited in the early post-glacial period. Another layer of peat at about -0.5m OD at the same site, radiocarbon dated to 2160 ± 80 bc (uncalibrated), and a timber structure radiocarbon dated to 590 ± 120 bc (uncalibrated), founded at -1.4m OD, suggest that the water in the northern stream lay between these two levels during the Bronze Age and into the early Iron Age.

1. N Barton *Lost Rivers of London* (1982).
2. V Horsman and B Davison 'New Palace Yard and its fountains: Excavations in the Palace of Westminster' *Antiq J* 69 part 2 (1976).
3. C Thomas 'An archaeological watching brief at St Stephen's Chapel in the Palace of Westminster' unpublished MOLAS report (1994) 25.
4. D Andrews and N Merriman 'A prehistoric timber structure at Richmond Terrace, Whitehall' *Trans London Middlesex Archaeol Soc* 37 (1986) 3.
5. *Ibid*, 19.

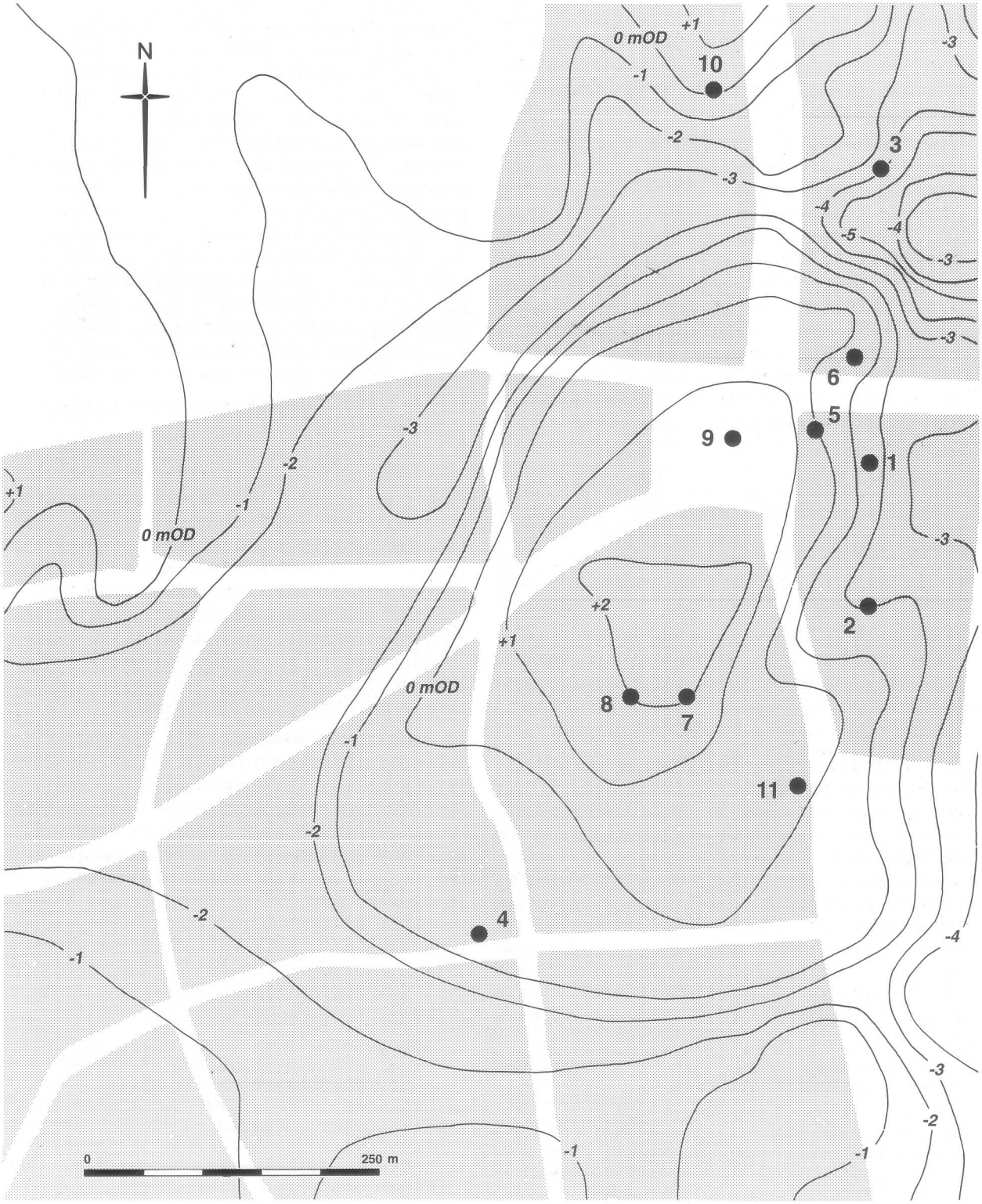

Fig. 2: suggested contour plan of Thorney Island and the River Tyburn. Contours at 1m intervals.

In the southern channel, a peat layer at Great Peter Street (4), sealing a layer of alluvium, lay at +0.29m OD and was radiocarbon dated to 810-515 BC. It sealed a layer of alluvium laying at OD and below. A gradual rise in water level with evidence of sporadic inundations has been interpreted from analysis of the sequence[6].

The Thames in the prehistoric periods

Further north at New Palace Yard (1) a layer of peat on the Thames frontage with its surface at a level of between +0.45 and +0.73m OD was radiocarbon dated to between the 3rd century BC and the early 5th century AD. The base of this layer lay at about OD which suggests that the river level fell during the Roman period to between OD and +0.5m OD. The peat sealed a layer of alluvium and was sealed by another layer of alluvium[7]. Elsewhere in New Palace Yard (5) a tree bole cutting the natural sand and sealed by a waterlaid sand containing flints, some of them neolithic, was radiocarbon dated to 1745-1510 BC. The waterlaid sand has also been found to the north under Westminster Underground Station (6), where it too contained worked flints, some neolithic in date, and pottery, probably of late Bronze Age or early Iron Age date. This sand has been found up to a maximum level of +0.80m OD and indicates that the river reached a level of above OD by the early Iron Age.

Evidence of possibly three phases of timber revetment (although undated) has been found in a channel or inlet beneath St Stephen's Chapel in the Palace of Westminster (2) at a level of between -0.46m OD and -0.66m OD sealed by alluvium.

River levels during the Roman period

Thus it would seem that the level of the Tyburn began to rise during the Iron Age from between -0.5m OD and OD. Analysis of prehistoric features and finds spots (excluding those dredged from the Thames) indicates occupation from the Neolithic onwards at or above a level of -0.5m OD. By the beginning of the Roman period the level of the Thames was probably at about +1m OD but may have subsequently fallen to between OD and +0.5m OD. It is generally assumed that the river was not tidal at Westminster until the Saxon period, but it is hoped that current work on the Westminster river sediments will clarify this.

Analysis of Roman features and finds spots indicates that Roman occupation was confined to areas of the island above +1m OD. This suggests a substantial rise in the Thames, possibly associated with the rise in sea level and the Thames further downstream during the Iron Age known as the Thames IV transgression[8]. Earlier rises (transgressions) and falls (regressions) in sea level recorded by Devoy, principally at Tilbury, are unlikely to have greatly affected areas further upstream such as Westminster. It should be noted that Roman structures were recorded as sealing a peat layer at +1.22m OD to +1.68m OD to the south of Westminster Abbey suggesting that the water level may have reached an even greater height[9] but it is not clear whether these structures were *in situ* or redeposited.

River levels in the Saxon and medieval period

By the 11th century river silts were deposited to a level of 2.55m OD to the south of Westminster Abbey under the dormitory undercroft (7) and misericorde (8)[10]. To the north of the Abbey, under Parliament Square (9), alluvium was deposited to a level of +1.70m OD[11]. Further evidence of alluvial deposition from the 9th to 12th centuries has been recorded at Treasury Green (10)[12]. Evidence from Abingdon Street (11) to the south of the Palace of Westminster and east of Westminster Abbey suggests that the low tide mark during the medieval period lay between 0.50 and 0.85m OD[13].

Documentary evidence for Thorney Island and the Tyburn

It is known that Thorney Island still existed as an island during the medieval period and that vestiges of it were still extant until the 18th century. Streams are shown on Braun and Hogenburg's map of 1572[14] (Fig. 3) and are still visible on Faithorne and Newcourt's map of 1658[15]; they are not however visible on Rocque's map of 1746[16]. In the medieval period the principal stream ran to the south of Westminster Abbey along the current line of Great Peter Street before turning north along the line of present day Great Smith Street. By the 14th century

6. J Giorgi and J Sidell 'An environmental assessment' in G Malcolm 'An archaeological assessment of 18 Great Peter Street' unpublished MOLAS report (1994).
7. Horsman and Davison, *op cit*, 286.
8. G Milne *The Port of Roman London* (1985) 80-81; R J N Devoy 'Flandrian sea level changes and vegetational history of the lower Thames estuary' *Phil Trans Royal Soc London* B **285** (1979) 355-406.
9. F C J Spurrell 'Early sites and embankments on the margins of the Thames estuary' *Archaeol J* **42** (1885) 274.
10. P Mills 'Excavations in Westminster Abbey undercroft' forthcoming; G Black 'Excavations in the sub-vault of the misericorde of Westminster Abbey, February to May, 1975' *Trans London Middlesex Archaeol Soc* **27** (1976) 141.
11. C Thomas 'An archaeological excavation in Parliament Square, Westminster, SW1' unpublished MOLAS report (1993) 15.
12. H J M Green and S J Thurley 'Excavations on the west side of Whitehall 1960-2 Part II', in prep.
13. H J M Green 'Excavations of the Palace defences and Abbey precinct walls at Abingdon St, Westminster, 1963' *J Brit*

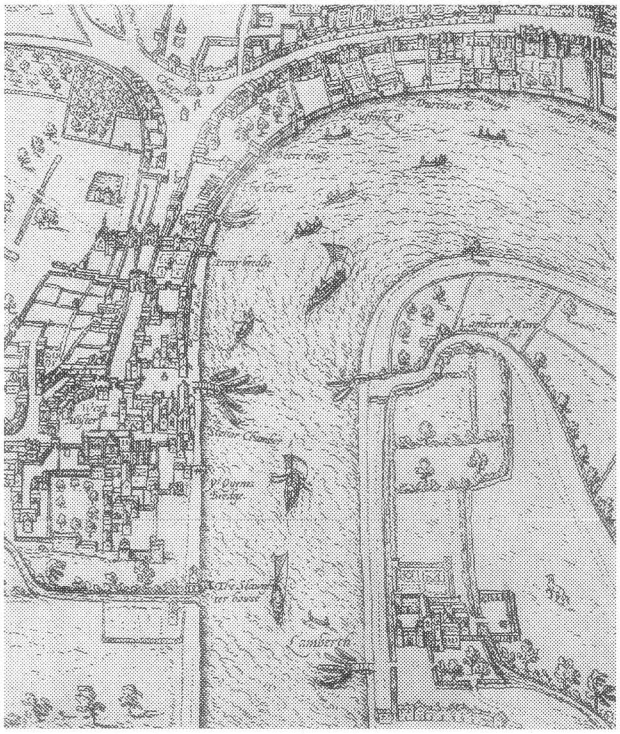

Fig. 3: detail from Braun and Hogenburg's map of London in 1572.

the monks of Westminster Abbey had dug a second stream known as the 'mill ditch' to the north along the line of Great College Street. This powered the Abbey mill which was built on an island between the two streams. A bridge over the 'mill stream' has been uncovered on two occasions: once in 1910[17] and once in the 1930s when it was recorded by Frank Cottrill. The stream forming the west side of the island, known as the 'long ditch', flowed under modern day Storey's Gate before turning eastwards, where it was known as the 'Clowson stream', entering the Thames between Derby Gate and Richmond Terrace.

Conclusions

The topographic reconstruction of the sand and gravel island of Thorney proposed here is a preliminary attempt and will be subject to much revision in the future. The spread of the data shows the strength of the current model and its weaknesses. The north-eastern part of the island, the Thames foreshore, and the northern channel of the Tyburn are well covered. There is, however, a lack of information in areas to the south and to the west of the island although part of the south-western corner is well covered. More data are essential to refine the model and further excavations (although confined to the north-western areas) are likely to be forthcoming.

However, the value of this model is already clear: not only is this a useful research tool, but it has important ramifications for the prediction of archaeological survival and deposit type. As has been demonstrated in north Southwark, prehistoric occupation sites can be sealed by river-laid alluvial deposits which are subsequently reclaimed and built upon during the medieval and post-medieval periods. Without a detailed understanding of the topography and river regime, it is not possible to predict satisfactorily the likely archaeological survival and interpret its significance.

Part 2: a Roman river crossing at Lambeth? The Time Team investigations in Lambeth Palace Gardens

Barney Sloane
Hedley Swain

Introduction

The format of the *Time Team* television programme will be familiar to most readers: a broad range of archaeological techniques (geophysical surveying, documentary research, aerial photography etc.); but despite the presence of boundless enthusiasm, only three days to carry out the work, and thus the need for an accessible topic that can be explained, tackled and hopefully solved in a short period of time. Under these circumstances work to try and locate the presumed river crossing between Lambeth and Westminster seemed an obvious subject: an excellent location (a large undeveloped space near Lambeth Palace, Westminster and the Thames) and a very real archaeological puzzle of quite major significance.

The possibility that a Roman road, and indeed a pre-Roman route, crossed the area of Lambeth Palace Gardens has been a recurring debate in 20th-

Archaeol Assoc **129** (1976).

14. Braun and Hogenburg's map of London, 1572.
15. Faithorne and Newcourt's map of 1658 "An exact delineation of the Cities of London, Southwark and Westminster and the suburbs".
16. Rocque's map of London, 1746.
17. H Westlake *Westminster Abbey* I (1923) fig 11.
18. Victoria County History, London 1 (1909) 29-30 and Plans A and B; R A Smith 'Roman Roads and the Distribution of Saxon Churches in London' *Archaeologia* **68** (1917) 231-232; R E M Wheeler in RCHM(E) *Inventory of Historical Monuments 3 Roman London* (1928) 49-51; R Merrifield *The Roman City of London* (1965) fig 2; I Margary *Roman Roads in Britain* (1967) 47; H Sheldon *Southwark Excavations 1972-1974* (1978) 25-27; S A Esmonde-Cleary *Extra-Mural Areas of Romano-British Towns* BAR **169** (1987) 117; D Perring *Roman London* (1991) 5; B Sole 'Metropolis in Mayfair?' *London Archaeol* 7 no 5 (1993) 122-125; D Bird 'The Origins of Roman London' *London Archaeol* 7 no 10 (1994) 268-270; (et al).

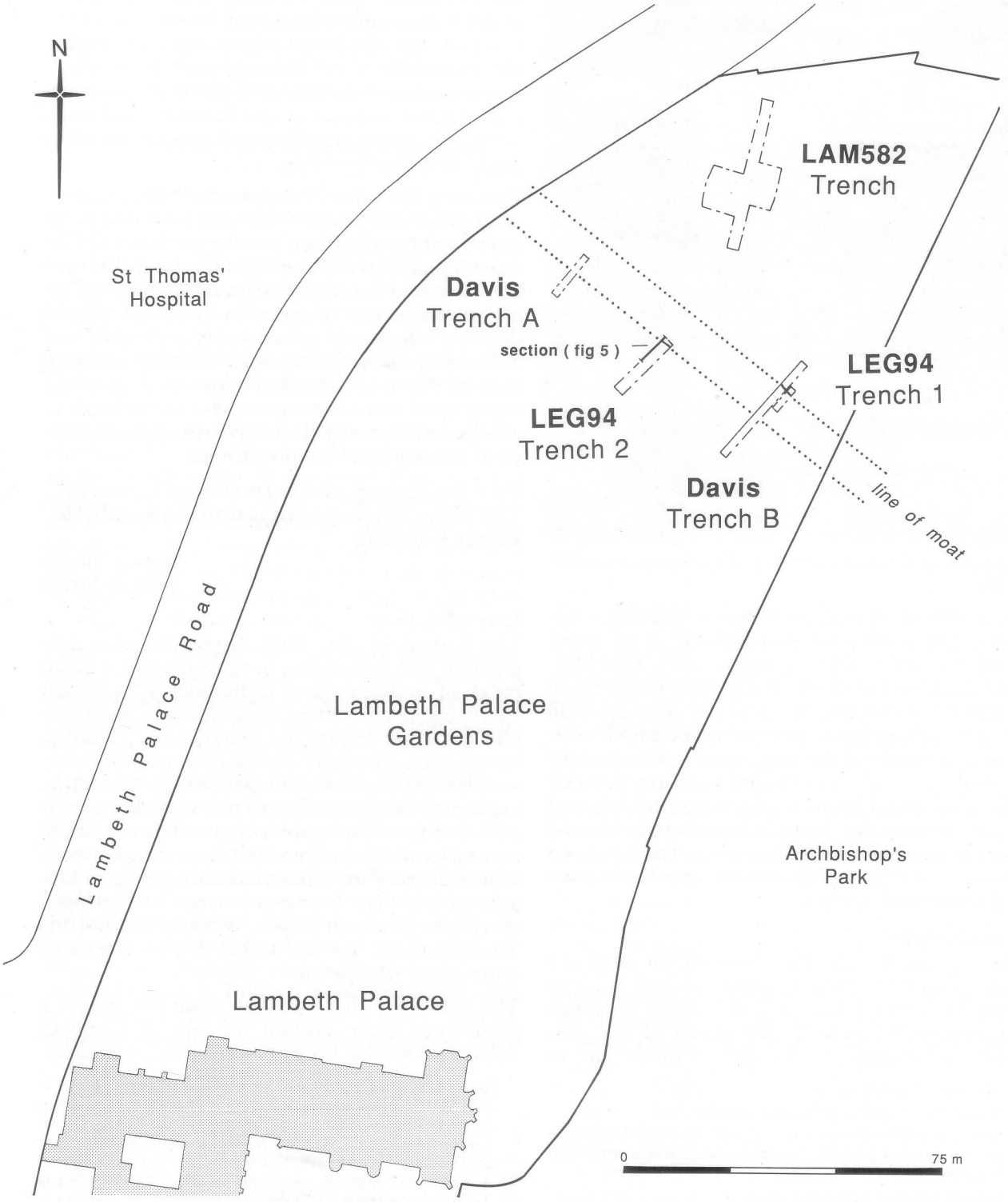

Fig. 4: location plan of the Time Team excavations (LEG94), Davis' 1935 trenches, the LAM582 site, and the line of the medieval Palace moat.

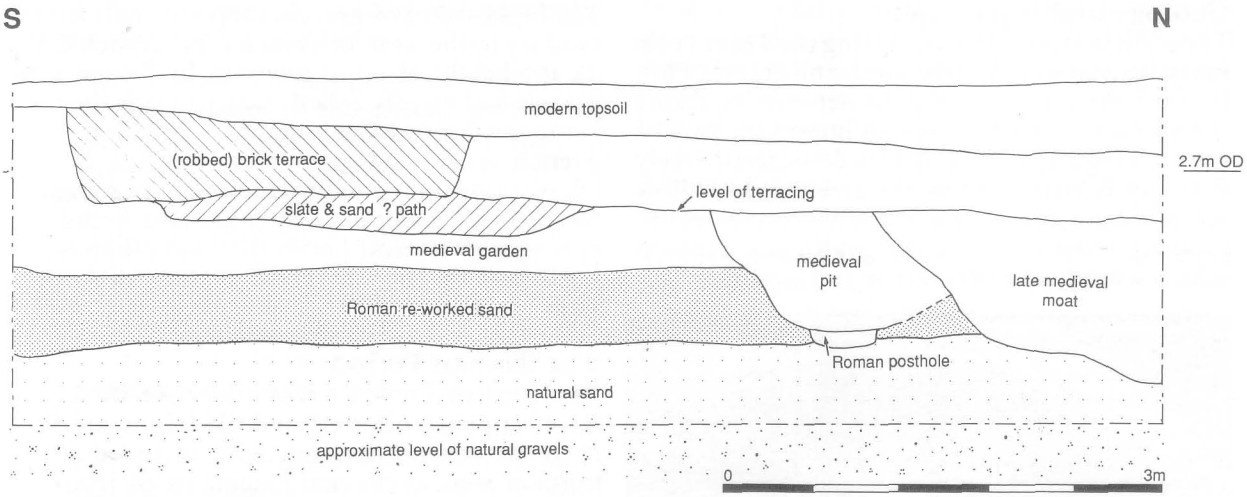

Fig. 5: reconstructed SW-facing section of Trench 2, incorporating evidence from Davis' trench A.

century studies of Roman London[18]. The standard theory follows these lines: the Romans built roads in more-or-less straight lines, and when approaching the Thames in AD 43 would have wished to cross it at the point where it was both at its narrowest and shallowest. These two facts when combined would suggest that the first crossing would have been at Westminster not London Bridge, and indeed the observed road pattern for London would appear superficially to support this theory. The theory may have been in existence since the 14th century: Higden, a medieval monk from Chester, described a road line which "...begins at Dover, passing through the middle of Kent, across the Thames at London, to the West of Westminster, thence it proceeds to St Albans..."[19]. Antiquarian and modern authors have postulated a straight line connecting the known alignments of Watling Street to the south-east and north-west. This line crosses the Thames to the north of Lambeth Palace and then passes through the Palace of Westminster and the former Westminster Abbey precinct.

The counter argument is that there has never been any firm evidence for a Roman road in the Westminster area and that a whole series of other theories can be advanced to explain the vague documentary and archaeological evidence. Although Roman remains have been located in Westminster and Lambeth, there has only been one apparent sighting of the road itself. Bernard Davis' observations of two machine-excavated trenches within Lambeth Palace Gardens were published in Surrey Archaeological Collections in 1935[20]. He asserted the presence of hard gravelly strata in conjunction with Samian ware and other Roman finds, and concluded that he had located the line of the road. However, the section drawings he published did not show an 'ideal' sequence for a major road such as has been excavated in Southwark.

The Time Team's investigations formed four main strands: detailed resistivity surveying of Lambeth Palace Gardens in the hope of locating anomalies; two trenches located within the Palace Garden with the aim of re-examining Davis' trench and findings, and, in the event of the road being located, recording elements in plan and retrieving dating evidence for it; a third trench near the riverside to retrieve environmental evidence that might shed light on the tidal limits of the Thames across time; and finally, the construction of a topographical map of the east bank of the Thames to locate areas of firm ground and marsh that might have affected the Roman route. Additional work included a documentary and cartographic study of the area for fossilized elements of Roman features in the later landscape.

Trenches 1 and 2 measured 6.8m x 1.4m and 16.7m x 2.6m respectively. The results of the archaeological evaluation are described below, including the recorded material from the post-Roman period. The comparable material from Davis' 1935 trenches is reassessed in the light of this work, and some conclusions about Roman Lambeth attempted. Trenches 1 and 2 refer to the 1994 excavations, Trenches A and B refer to Davis' trenches. Both are shown on Fig. 4.

19. Higden *Polychronicon*, Rolls Ser. 2 46-7, quoted in Wheeler *op cit.*

20. B Davis 'The Roman Road from West Wickham to London' *Surrey Archaeol Soc* 43 (1935) 72-83.

Geology and topography

The earliest deposits found during the Team Team investigation were natural sands and gravels. Plotting the slope and lie of these deposits, probably some 12,000 years old, was an important part of the investigation since it was considered likely that any Roman road in the area would follow zones of high, drier gravel 'islands' in preference to crossing extensive low-lying alluvial deposits which would have been prone to flooding.

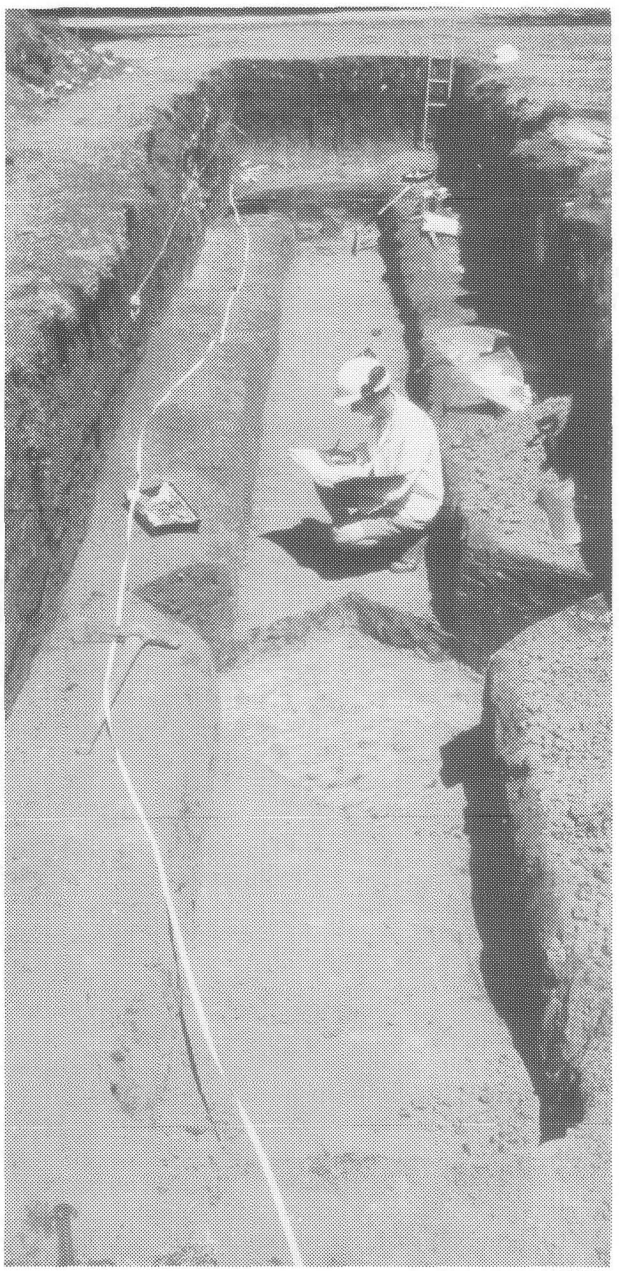

Fig. 6: recording a sample of the Roman sandy soils in Trench 2 of the Time Team excavations.

The highest area of gravels, capped by pale natural sand lay to the west, in Trench 1 and Trench B (Fig. 4), at a height of up to 3.29m OD. In Trench 2, the gravels had rapidly fallen away towards the river, being encountered at 0.95m OD. However, Davis' Trench A showed gravels at 1.88m OD. In 1986, excavations for a pond within the Palace Gardens by the Department of Greater London Archaeology's Southwark and Lambeth section (50m north-north-east of the site) showed these deposits at 1.31m.

The Roman Period

Recorded in Trench 2 was a layer of dirty sand (visible in Fig. 6). Pottery and tile fragments dated it to AD 350-400 or later. Also included in the horizon were occasional fragments of iron nail, and a piece of Niedermendig quernstone. This horizon is throught to represent a 're-worked' soil horizon, subject to natural and probably human action. At its highest point this layer was at 2m OD, while its base was recorded at *c* 1.5m OD. In Trench A, Davis recorded a layer at an equivalent level and described as "hard earth with Roman pottery"[21], while the records made by MOLAS indicate that it was quite loose. It is not known why Davis' section should have been compacted.

A circular cut feature, substantially truncated from above by a medieval pit (Fig. 5), was probably cut from the surface of the soil horizon. Its relatively small size and regularity may indicate that it was a posthole. The fill contained very small pieces of pottery and tile or brick which could only be dated to AD 40-400. In neither trench was there seen any feature that resembled a Roman road.

The Post-Roman Period

A small portion of a sandy soil layer was seen in section in Trench 1, at a height of 3.25m OD. This post-dated the natural accumulation of sands and gravels, but pre-dated the medieval moat and ditch. It has therefore been interpreted as a reworked soil horizon whose latest date of accumulation appears to medieval.

Sealing the fill of the posthole in Trench 2 was an homogeneous, thick, sandy soil that extended over the whole area of the trench. It was recorded only in section (Fig. 5) and no dating evidence was found. It presumably began to form after the Roman period, and continued to accumulate until after the 18th century at the southern end of the trench, to a height of 3.12m OD. At the northern end, the cutting of a negative terrace (see below) re-

21. B Davis op cit, fig 4.

moved this later material, leaving the apparently earlier elements of it at 2.45m OD.

These two layers also appear in the sections drawn by Davis. They represent the natural levelling of the slope of the ground, and suggest that the area of the excavation was an open space for the whole of the post-Roman period.

Cutting this layer in Trench 2 was an irregular pit. Its top fill was dated by pottery to 1050-1150 (Fig. 5). It may have been dug as a sand quarry, a use to which Lambeth Marsh was put as late as the 16th century: in 1521 sand from the Marsh was used for the rebuilding of the church of St Mary at Lambeth[22].

One feature common to all the trenches excavated in this area was a moat or ditch. The cut descended as far as 1.05m OD in Trench A and the latest fills were recorded at 2.65m OD in the same section, giving the moat a depth of 1.60m. Its full width is not known, but a combination of documentary, archaeological and geophysical clues suggests that it may have been over 9m wide. Its suggested course is shown on Fig. 4.

The pottery from all the fills that were recorded in 1994 dated to after 1600. Davis too describes the pottery from the lowest fills as 17th-century. These lowest fills were described by him as clayey, containing stones and shells. Such a description suggests that they were waterlaid. The upper fills were much more like dumps, and presumably derive from the redundancy of the moat, probably before 1800. However, the map of London in the early 1560s by Ralph Agas shows the presence of a moat on or near the line of the excavated one; Davis himself mentions the existence of a moat around the palace in the 13th century[23]. On the Braun and Hogenburg map of 1572 (Fig. 3), the line is apparently missing but must have been eclipsed by the presence of a hedge. It is interpreted as a medieval feature that was probably recut and which silted up and was backfilled towards the end of the 18th century; it is clearly shown on John Rocque's map of 1746 as still running with water.

Geophysical survey revealed that the moat ran for at least 55m in a north-east/south-west direction, forming a very straight and regular line. Davis indicates an identical alignment to that of the geophysical survey, and conjectures the moat extending for a distance of at least 165m.

A little to the north of the moat and much smaller was a ditch. It only appeared in Trench 1 and Trench B. Stratigraphically, it could date to the same period as the moat. However, on neither the evidence of Davis nor that of the 1994 investigation was there any sign at all of waterlaid material or of a recut that may have subsequently removed such material, whilst the pottery from the fill was dated to between 1600 and 1800. It may therefore have been a garden feature.

To the south of the moat in Trench 2 and Trench B was located a shallow cut feature. In Trench 2 it was filled with frequent slates lying horizontally in a sandy matrix. Davis records the same (or perhaps a similar) feature as consisting of a shallow ditch filled with sand, and having a number of vertically placed red roof tiles on its northern side. Both features can be seen to align closely with the later brick feature (see below), but they are clearly of an earlier phase of activity. It is tentatively suggested that these features represent a boundary, possibly even a path, running along between the garden and the moat.

Detected in Trenches 2, A and B was a thick layer of accumulated soil. This continued to develop through to the 18th century and is in fact still in the process of formation below the turf-line.

In the vicinity of the moat, detected only in Trench 2, was a distinct garden soil layer that separated the 18th-century soils from the topsoil. This lay only to the north of (and was cut by) a robber cut for a linear brick feature that was located in Trenches 2, A and B, and was also visible in the geophysical scan of the area. The most likely formation process for the separate, higher soil level to the north of a former brick 'wall' is that there has been some negative terracing in the vicinity of the moat. It is suggested that a substantial quantity of soil (about 0.5m depth) was removed from this area, resulting in a truncation horizon that clipped the tops of the medieval pit and the moat (above). The southern 'edge' of the cut was then protected by a substantial brick retaining wall that may have doubled as a pathway.

This retaining terrace wall was later robbed out and is therefore somewhat conjectural. In Trench A, furthest to the west, Davis measured it at about 1.8m wide. In Trench 2, it was 2.8m, still with vertical sides, whilst in Trench B towards the east of the Palace Garden, it measured 2m. As has been remarked, the line of this wall feature followed closely the line of the earlier shallow sand and clay/slate feature. Its depth varied little, with an average of 0.7m being recorded in the three trenches.

22. Lambeth English Parish (ed C Drew) *Lambeth Churchwardens Accounts 1504-1645 and Vestry Book 1610* 1 and 2 (Surrey Record Society 18 and 20) (1940) 39.

23. B Davis *op cit*, 81.

With the possible exception of Faithorne and Newcourt (1658), no maps have been found that display a wall in this location, although its proximity to the moat line may have led to cartographers simply not bothering with minutiae when faced with the more imposing boundary structure of the watercourse.

The terrace wall was subsequently robbed out by which time the terrace itself had accumulated a thick deposit of garden soils effectively relevelling the ground surface. This material must have accumulated over the backfilled moat. Both the garden soil and the later robber cut were sealed by a small amount of modern topsoil, and are therefore thought to be relatively recent in date. The robbing may date to the time of the extensive rebuilding of the Palace by Edward Blore in the late 1820s.

The latest feature recorded during the excavations was found in the pit excavated towards the riverside. This revealed a depth of 2.5m of loose garden soils mixed with brick rubble, overlying the natural gravel subsoil. This deposit was associated with garden levelling and rubble clearance following bomb damage to the buildings of the Palace during World War II (Patrice Springett *pers comm*).

Discussion

Roman activity in Lambeth

The Roman evidence from the Time Team excavations was very limited. It seems likely that the area was subject to little human activity, possibly some farming. The single feature of Roman date appears to have been late Roman, and may represent an isolated post-hole perhaps derived from a boundary fence or some similar structure. Careful examination of Davis' sections indicates no further Roman features. The Roman soil horizon noted in trench 2 appears to be widespread on the western portion of the site, and absent over the higher gravel areas towards the east.

There is undoubtedly a Roman settlement near the site. The LAM582 site (Fig. 4) revealed the presence of a substantial ditch, a timber-braced well, various pits, and two human burials within the backfill of the ditch[24]. The level from which many of these features were cut is reasonably consistent with that recorded in Trenches A and 2 — about 1.60m OD. The lack of Roman deposits in the higher eastern part of the study area could be due simply to the reworking of the soil horizon in the medieval and later periods, and a function of the small sample so far examined.

If a road to Westminster exists in this area, it would appear to lie north of the Palace Gardens. Certain other topographical factors limit its location. The Roman vessel found in 1910 under County Hall[25], approximately 450m north of the LAM582 site, was at a depth of -2.00m OD, indicating the presence of a substantial channel or inlet extending towards the site of the later Lambeth Marsh. A number of boreholes just north of Westminster Bridge Road (about 360m-400m north of LAM582) indicate a gravel level rising from this inlet to a maximum of -0.80m OD, with silts and clays overlying this to a height of 1.90m. The date(s) of deposition of the latter is not known, but even assuming that all of it had been deposited by the beginning of the Roman period, this land remains significantly lower than the area of gravels revealed in trenches 1 and B within the Palace Gardens. This pattern of inlets, marshy deposits and gravel and sand eyots appears to be repeated throughout north Lambeth.

The suggestion made by the Time Team that any road would have thus passed north of Lambeth Palace Gardens may therefore be supported by the available archaeological evidence from the wider context. The Time Team and their guests favoured a link between the former existence of a Roman road and the location of Stangate Stairs, Stangate being drawn from the Old English for Stony Street. The former stairs acted as a landing stage for a Thames crossing; their site lies beneath St Thomas's Hospital some 280m north-west of the LAM582 site. In Part III, this information will be correlated with that of the Westminster evidence from Part I to determine just where such a road could and could not have lain.

The Post-Roman Period

The whole northern area of Lambeth Palace Gardens appears to have remained an open area from the Roman period through to the 20th-century. Nevertheless, useful data have been recovered during the investigations.

Late Saxon and Saxo-Norman settlement in the vicinity of Lambeth Palace, itself founded perhaps as early as the 1040s, is well attested both in the documentary[26] and the archaeological[27] records. A possible Saxo-Norman quarry pit is thus unsurprising. It should be noted here that a geophysical traverse during the Time Team investigations revealed strong indications of buildings directly to the north of the present Palace buildings[28]. Whilst some of these can be fairly certainly related to post-medieval development of the Pal-

24. Museum of London site archive LAM582 (unpub).

25. RCHM(E) *op cit*, 33.

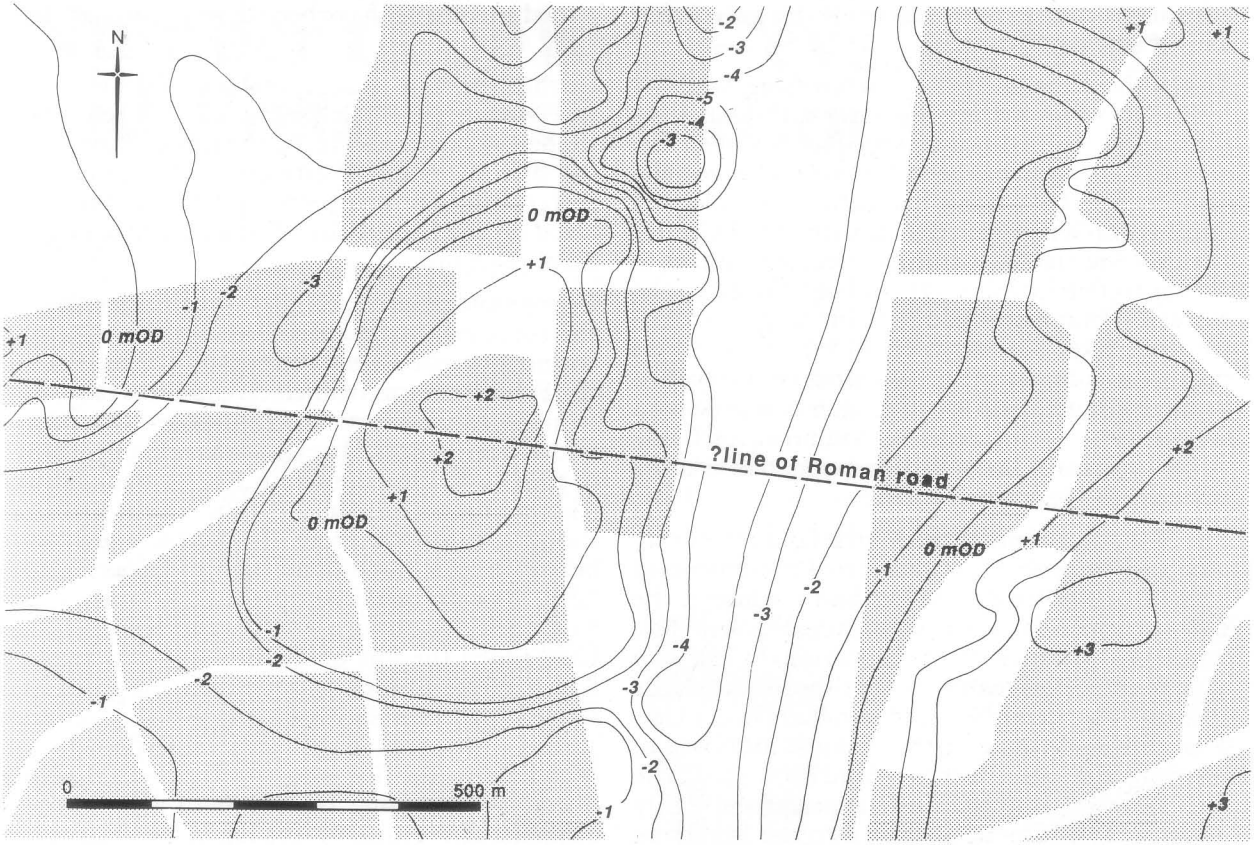

Fig. 7: a suggested contour map of Westminster and Lambeth showing natural topography above 1m OD, the previously suggested line of the Roman river crossing, and the possible Tothill Street –Westminster Abbey–Stangate Stairs route

ace, others may relate to the original medieval layout.

Bernard Davis' recording of the sections in Lambeth Palace Gardens have been confirmed as remarkably accurate by the 1994 excavations. His work, the geophysical survey, the earthwork survey, the Time Team dig, and study of cartographic evidence have allowed a very accurate fix of the medieval moat feature. It is unfortunate that depth restrictions in trench 1 did not allow a full examination of the 17th-century waterlaid deposits; environmental evidence is likely to be abundant judging by Davis' section descriptions.

Part III: some observations on the route of a Roman crossing

Barney Sloane
Chris Thomas

Thus far, no direct evidence has been found for a Roman road on either the Westminster or the Lambeth bank of the Thames. However, evidence of occupation has been found in both locations. It would seem reasonable to assume that such settlements were served by roads linking them into the wider provincial network. A link between the settlements also seems likely, but this might simply have been a ferry, a precursor perhaps of the Horseferry.

The assumptions that have been made about the river crossing are concerned not only with its geography but also with its date. It has been suggested from interpretation of Dio Cassius that the river may have been crossed in the vicinity of Lambeth and Westminster by the invading Roman armies in AD 43 (some have even speculated on a pre-Roman origin) and that this route would link the two elements of Watling Street together. So far we have been frustrated in locating any accurately dated early Roman features on either bank. The settlements could therefore be a function of an important river crossing, or alternatively a prelude to it, being sited instead for reasons of topographic

26. C N L Brooke 'Lambeth and London in the Eleventh and Twelfth Centuries' *Report of the Friends of Lambeth Palace Library for 1972* (1973) 11-14.

27. R Densem 'Excavations at Lambeth Palace 1980' *London Archaeol* 4 no 2 (1980) 39-43.

28. C Gaffney *Lambeth Palace Project Preliminary Report* (1994) (Geophysical Surveys of Bradford Ltd).

advantage, such as high, relatively dry gravel sites amidst an extensive marsh.

To test the plausibility of a road crossing, whether by bridge or by ford, a preliminary contour map of the underlying natural topography has been created. Information has been drawn from investigations by Southwark and Lambeth Archaeological Excavation Committee, the Department of Greater London Archaeology, and more recently, MOLAS, as well as to borehole logs. It has been linked to the work in Westminster, and prominence given to the apparent level below which Roman features do not appear—about +1m OD. This model is believed to be more detailed and specific than that produced for the Time Team screening. It is, however, likely to be constantly improved and updated as more information becomes available.

The first point to note is how little land apparently exceeded the probable water level of the Thames in Roman times. We do not yet know whether the Thames was tidal at Westminster. Nevertheless, the extent of a ford (or bridge) would be likely to have been no less than 550m, the shortest distance between Thorney Island and Lambeth Palace Gardens. Additionally, a further 425m would have to be spanned from Thorney Island westward. The route generally published now appears to be highly unlikely, extending as it does into the low-lying area of what is now St James' Park. Under these circumstances, it is no surprise that the Time Team geophysical survey team located no anomalies there.

The eastern line of the supposed route also seems highly unlikely. It was centred upon the findings by Bernard Davis in the 30s, and as such is no longer tenable. The focus of the Roman settlement revealed at LAM582 appears to lie north of Lambeth Palace Gardens; any road approaching the river in this area would most likely lie under St Thomas' Hospital. This increases the apparent distance across land highly liable to flooding from 550m to over 600m (Roman London Bridge had a span of 300m).

The numerous excavations and observations in Westminster focus the problem further. We now know that any road cannot have taken certain routes—if it had, we would have seen some evidence of it, its ditches, or possibly buildings along its sides. If we assume that the road would certainly have crossed Thorney Island, that Roman surveyors would have laid it out on the land above +1m OD out of choice, and that it was a significant part of the Watling Street spine, there are now only a few available corridors through which it may have passed and not yet have been detected archaeologically.

Of these, perhaps the only real contender is the line of Tothill Street (which seems to have been moved slightly northwards during the 19th century), passing directly under Westminster Abbey Church, and crossing the Thames to a point approximately fixed on the former site of Stangate Stairs on the Lambeth bank.

Topographically, the rough line of the street joins the three areas of high gravels shown on Fig. 7, forming one of the shortest spans available across the Tyburn stream channels. Archaeologically, such a line is very close to the findspots of buildings under Westminster Abbey, and the settlement north of the LAM582 site in Lambeth. Place-name evidence adds a further dimension: The name *Tothill* is thought to derive from the Saxon word for a beacon or look-out mound (*toot-* and *-hla w*)[29]. Similarly, *Stangate* could be translated as stony street, an apt description for a Roman road. Some scholars have added the line of Tothill Street to maps of Saxon Westminster[30], though on what grounds is unclear. All this serves to suggest a relict road partially preserved in the medieval settlement pattern. Finally, the line is comparable with that produced by extending the southern and northern elements of Watling Street to their logical meeting point.

In the final analysis, the case for any river crossing at Westminster appears to be a slight one. The case for the first crossing of the Thames after AD 43 is without any real substance at all. Discussions about the origins of *Londinium*, and possible settlements in the Mayfair area should be viewed in this light. The debate cannot really be taken further without the benefit of archaeological evidence, either positive or negative.

Acknowledgements

The authors would like to thank the following for their assistance and advice both on and off site: The Archbishop of Canterbury, Patrice Springett, Richard Scott, The Time Team and guests, Jubilee Line Extension Project, British Geological Survey, Geophysical Surveys of Bradford Ltd, Tarmac, Sue Cole of English Heritage, Dave Bentley, and the numerous MOLAS archaeologists who have worked on the sites. The computer data for Westminster was processed by Josephine Brown (MOLAS). Graphics were drawn by Kikar Singh and Hester White (MOLAS). Photographs were taken by Andy Chopping and Maggie Cox (MOLAS).

29. B Weinreb and C Hibbert *The London Encyclopaedia* (1983) 868; D Sullivan *The Westminster Corridor* (1994) 81.

30. G Rosser *Medieval Westminster 1200-1540* (1989) fig 2.