Living and Working in Roman and Later London

Excavations at 60–63 Fenchurch Street

By Vaughan Birbeck and Jörn Schuster

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with contributions by
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Abstract

This report presents the results of an archaeological excavation undertaken from June to August 2002. The site at 60–63 Fenchurch Street, London (Museum of London site code FNE01), lies on the eastern slope of Cornhill in the eastern part of the modern City. Ten broad periods of activity were identified, ranging between the pre-Roman and post-medieval periods. Prehistoric activity (Period 1) on the site was represented by a very small assemblage of worked flint and later prehistoric pottery recovered from buried topsoil deposits.

The earliest Roman activity on the site (Period 2) comprised a number of substantial ditches defining the line of the road and dividing the area to the south into two plots. Three cremation burials, probably part of a nearby cemetery, and an unusual inhumation burial appear to have been severely disturbed or, perhaps, desecrated in the pre-Flavian period.

An important discovery is the course of the Roman road between Aldgate and the *Via Decumana* to the east of the Forum, which allows adjustment of the alignment of its route in the street plan of Roman London. A pre-Roman land surface and early Roman turfline were identified beneath the road deposits. Iron pipe collars provide evidence for water pipes running alongside the roadside ditches as well as the distribution of water in the rear of the plots from the early 2nd century onwards.

Seventeen Roman buildings and associated open areas, dating from the later 1st century to the early 3rd century, were identified. The earliest clay and timber buildings (Period 3) were probably constructed in the fourth quarter of the 1st century AD. These relatively short-lived buildings were replaced in the late 1st or early 2nd century (Periods 4–5) by a series of seven small industrial buildings in the east of the site. These appear to have been largely associated with metalworking, both copper alloy and iron, although dumps of unused *tesserae* suggest additional industrial functions. In the western side of the site, a larger timber framed building, a shop or storehouse, replaced the early buildings.

By the mid-2nd century (Period 6) the earlier houses were replaced by two large masonry town houses of comparatively higher status. In the late 2nd or early 3rd century (Period 7), the western masonry building was partly demolished and the remaining structure altered. A third masonry building was also built in the extreme western side of the site. A series of hearths within these buildings suggests a possible domestic function, although a very large tile hearth in the western building may indicate some industrial purpose.

There was an apparent hiatus in the stratigraphic sequence between the later 2nd century (Period 7) and the early medieval period (Period 8). Later Roman finds recovered from medieval and post-medieval pits indicate that activity almost certainly continued on the site during the late Roman period, but there is a genuine lack of Saxon finds. The final robbing of the masonry walls is dated as late as the 11th or 12th century (Period 8).

Although the modern basements had removed all traces of medieval and later structures (Periods 9 and 10), the distribution of pits and wells suggests that the site was divided into two properties, in almost the exact position of the modern buildings and on an only slightly different alignment to the earliest Roman boundary. The medieval finds assemblage includes fine pottery and glass vessels, indicating properties of some wealth or status in the vicinity.

A moderately-sized finds assemblage was recovered, ranging in date from the prehistoric to the post-medieval periods, with an emphasis on the early Roman period. Amongst the assemblage, the following components are of particular interest:

- evidence for metalworking (copper alloy and iron) during the Roman period;
- a foldable Roman foot rule;
- a group of waster material from early Roman pottery production;
- a substantial group of Roman glass (vessel, window and objects);
- a small group of roller-stamped daub from Roman structures.

The animal bone assemblage demonstrates changing patterns of animal husbandry through the Roman period, together with evidence for butchery and specialisation, and changes in the exploitation of different species and new breeds. The medieval assemblage reflects a different economy and/or use, consisting mainly of domestic waste and only a small number of possible craft by-products related to the skinning of animals rather than general tanning. The possibility of occult or magical practices is discussed with regard to a young pig, a cat, and other animals laid down in a peculiar arrangement in one of the medieval pits.

Evidence from charred plant remains, charcoal, pollen, soil chemistry, and micromorphology contributed to understanding a variety of questions regarding the nature and character of on-site activity,

including the pre-Roman and early Roman environments, the character of Roman occupation, activities within individual buildings, and the construction of the buildings.

The importance of the investigations at 60–63 Fenchurch Street lies in the addition of locally and regionally significant results advancing our understanding of the eastern part of Roman and later London. Of particular value is the possibility of comparison with the neighbouring site of Lloyd's Register, which demonstrates the considerable differences that can occur in the occupation history of two adjacent sites.

Zusammenfasung

In diesem Band werden die Ergebnisse einer zwischen Juni und August 2001 durchgeführten archäologischen Ausgrabung in der Fenchurch Street 60–63, London, vorgelegt. Die Fundstelle (Museum of London Fdst. Nr. FNE01) liegt auf dem östlichen Hang des Cornhill Hügels im Osten der modernen City of London. Es wurden zehn Aktivitätsperioden, von der Vorrömischen Eisenzeit bis in die Neuzeit, unterschieden. Eine kleine Anzahl nicht näher datierbaren, bearbeiteten Flints und vorgeschichtlicher Keramik (späte Vorrömische Eisenzeit) aus ehemaligen Oberbodenschichten lieferten Hinweise auf vorgeschichtliche Aktivitäten (Periode 1).

Die frühsten römischen Befunde (Periode 2) sind einige größere Gräben, die den Verlauf der Straße definieren und den Bereich südlich der Straße in zwei Parzellen teilen. Drei Brandbestattungen, die wahrscheinlich teil eines nahe gelegenen Gräberfelds sind, sowie eine ungewöhnliche Körperbestattung scheinen in vor-flavischer Zeit entweder stark gestört oder möglicherweise sogar absichtlich entweiht worden zu sein.

Ein wichtiger Fund ist die Trasse der römischen Straße zwischen Aldgate und der *Via Decumana* östlich des Forums, aufgrund dessen es nun möglich ist, den Verlauf dieser Straße im Stadtplan des römischen London zu präzisieren. Unterhalb der Straßenschichten fanden sich eine vorrömische Geländeoberfläche und eine frührömische Grasnarbe. Funde mehrerer eiserner Rohrmuffen belegen die Versorgung mit Frischwasser durch hölzerne Leitung entlang der Straßengräben und der rückwärtigen Bereiche der Parzellen ab dem frühen 2. Jh.

Es wurden insgesamt 17 römische Gebäude mit dazugehörigen Freiflächen aus dem Zeitraum zwischen dem späten 1. und dem frühen 3. Jh. identifiziert. Die frühsten lehmverputzten Fachwerkbauten wurden wahrscheinlich im letzten Viertel des 1. Jhs. n. Chr. errichtet (Periode 3). Diese relativ kurzlebigen Gebäude wurden im späten 1. oder frühen 2. Jh. (Perioden 4–5) durch eine Serie von sieben kleinen, gewerblich genutzten Bauten im Osten der Fundstelle ersetzt. Die Gebäude scheinen vor allem der Metallverarbeitung, sowohl Kupferlegierungen als auch Eisen, gedient zu haben, obwohl kleine Halden ungenutzter *tesserae* weitere gewerbliche Funktionen andeuten. In der westlichen Parzelle ersetzte ein größeres Fachwerkgebäude die früheren Bauten.

Um die Mitte des 2. Jhs. (Periode 6) wurden die früheren Bauten durch zwei große, steinerne Stadthäuser von vergleichsweise höherem Status ersetzt. Im späten 2. oder frühen 3. Jh. (Periode 7) wurde das westliche Gebäude teilweise abgebrochen und die verbliebenen Strukturen umgestaltet. Zudem wurde ein drittes Steingebäude am westlichen Rand der Fundstelle errichtet. Eine Serie von Herden in diesen Gebäuden legt hauswirtschaftliche Nutzung nahe, wohingegen ein sehr großer, gefliester Herd möglicherweise einem gewerblichen Zweck diente.

Die stratigraphische Abfolge wies einen offensichtlichen Hiatus zwischen den Schichten des späten 2. Jhs. (Periode 7) und der früh-mittelalterlichen Periode (Periode 8) auf. Spätrömische Funde, die aus mittelalterlichen und frühneuzeitlichen Gruben geborgen wurden, deuten an, daß die Besiedlung mit ziemlicher Sicherheit bis in die späte Römische Kaiserzeit andauerte, wohingegen tatsächlich keine angelsächsischen Gegenstände gefunden wurden. Die endgültige Beraubung der römischen Mauerfundamente erfolgte nicht vor dem 11. oder 12. Jh. (Periode 8).

Obwohl moderne Gebäudefundamente jegliche Spuren mittelalterlicher und späterer Strukturen beseitigt hatten, legt die Verbreitung von Gruben und Brunnen nahe, daß die Grabungsfläche in zwei Parzellen geteilt war, und zwar entlang fast der gleichen Grenzen wie die modernen Gebäude und nur unwesentlich versetzt im Vergleich zur frühsten

römischen Parzellengrenze. Unter den mittelalterlichen Funden befinden sich feine Keramik- und Glasgefäße anhand derer geschlossen werden kann, daß sich in unmittelbarer Nachbarschaft Grundstücke mit einem gewissen Grad an Wohlstand oder Status befanden.

Das nicht allzu große Fundaufkommen datiert von der Vorrömischen Eisenzeit bis in die frühe Neuzeit, wobei die meisten Funde aus der frühen Römischen Kaiserzeit stammen. Unter den Funden sind folgende Komponenten von besonderem Interesse:

- Hinweise auf Metallverarbeitung (Kupferlegierungen und Eisen) während der Römischen Kaiserzeit;
- ein römischer Fußmaßstab;
- eine Sammlung von Fehlbränden früh-kaiserzeitlicher Keramikproduktion;
- eine umfangreiche Sammlung römischen Glases (Gefäße, Fenster und Kleinfunde);
- eine kleine Anzahl Rollrädchen verzierter Fragmente von Wandverputz aus kaiserzeitlichen Befunden.

Anhand der Tierknochenfunde lassen sich Veränderungen in der Tierhaltung während der Römischen Kaiserzeit ebenso aufzeigen wie Hinweise auf Schlachtung und Spezialisierung sowie Änderungen in der Nutzung verschiedener Tierarten und neuer Rassen. Die mittelalterlichen Tierknochenfunde belegen eine andere Wirtschaft und/oder Nutzung; bei den Funden handelt es sich hauptsächlich um Hausabfall und nur eine geringe Anzahl möglicherweise handwerklicher Abfälle, die eher vom Häuten von Tieren stammen, als daß sie Gerberei anzeigen. Im Zusammenhang mit der eigenartigen Deponierung eines Ferkels, einer Katze und anderer Tiere in einer der mittelalterlichen Gruben wird auch die Möglichkeit okkulter oder magischer Handlungen diskutiert.

Die Ergebnisse der Analysen von verkohlten Pflanzenresten, Holzkohle, Pollen, Bodenchemie und Mikromorphologie haben zur Klärung einer Reihe von Fragestellungen zur Art und Weise der Siedlungsaktivität auf dem Fundplatz beigetragen. So konnten u. a. Fragen zur vorrömischen und frühkaiserzeitlichen naturräumlichen Umgebung, zum Charakter der kaiserzeitlichen Besiedlung, zur Nutzung einzelner Gebäude sowie der Konstruktion der Gebäude behandelt werden.

Der Wert der Untersuchungen in der Fenchurch Street 60–63 liegt darin, daß hier aufgrund von lokal und regional bedeutenden Ergebnissen ein Beitrag zum besseren Verständnis der Entwicklung des östlichen Teils von London während der Römischen Kaiserzeit und nachfolgender Perioden geleistet wurde. Von besonderem Wert ist die Möglichkeit des Vergleichs der Grabungsergebnisse mit jenen der unmittelbar benachbarten Fundstelle Lloyd's Register, wodurch sich zeigen läßt, welch deutliche Unterschiede in der Besiedlungsgeschichte zweier nebeneinander liegender Fundplätze auftreten können.

Übersetzung: Jörn Schuster

Resumé

Ce compte rendu présente les résultats d'excavations archéologiques entreprises de juin à août 2002. Le site, situé aux 60–63 Fenchurch Street, Londres (site du Musée de Londres code FNE 01), se trouve sur la pente est de Cornhill dans la partie est de ce qui est maintenant la Cité. On a identifié dix périodes globales d'activité, elles s'étalent de la période pré-romaine à la post-médiévale. L'industrie préhistorique du site (Période 1) était représentée par un très petit assemblage de silex travaillé, et par de la poterie préhistorique plus tardive recouvrée de dépôts de sols enterrés.

L'activité romaine la plus ancienne sur le site (Période 2) comprenait un certain nombre d'importants fossés qui bordaient le tracé de la route et divisaient la zone au sud en deux parcelles. Trois sépultures à incinération, qui faisaient probablement partie d'un cimetière proche, et une exceptionnelle sépulture à inhumation, semblent avoir été gravement perturbées, ou peut-être profanées, à la période pré-flavienne.

La découverte du tracé de la route romaine entre Aldgate et la *Via Decumana* à l'est du Forum est très importante, elle nous permet d'ajuster l'alignement du tracé sur le plan du Londres romain. On a identifié une surface de sol pré-romain et une ancienne ligne de turf sous les dépôts de la route. Des colliers de tuyaux en fer apportent la preuve de la présence de

canalisations d'eau passant le long des fossés du bord de route ainsi que la distribution d'eau à l'arrière des parcelles à partir du début du 2ème siècle. On a identifié dix-sept bâtiments romains et leurs zones ouvertes associées, ils datent de la fin du 1er siècle au début du 3ème. Les bâtiments les plus anciens en bois et argile, (Période 3) avaient probablement été construits dans le dernier quart du 1er siècle après J.-C. Ces bâtiments, de durée relativement courte, furent remplacés à la fin du 1er ou au début du 2ème siécle (Périodes 4–5) par une série de sept petits bâtiments industriels à l'est du site. Il semble que ceux-ci aient été essentiellement associés à la métallurgie, aussi bien l'alliage de cuivre que le fer, bien que des tas de *tesserae* non utilisés donnent à penser qu'il existait d'autres formes d'industries. Du côté ouest du site, un bâtiment plus grand à ossature de bois, une boutique ou un entrepôt, a remplacé les bâtiments précédents.

D'ici le milieu du 2ème siècle (Période 6) les maisons les plus anciennes avaient été remplacées par deux grandes maisons de ville en maçonnerie de standing relativement plus élevé. A la fin du 2ème ou au début du 3ème siècle (Période 7), le bâtiment en maçonnerie à l'ouest a été en partie démoli et la structure restante modifiée. Un troisième bâtiment en maçonnerie a également été construit à l'extrémité la plus à l'ouest du site. Une série de foyers à l'intérieur de ces bâtiments donne à penser qu'ils avaient peut-être un rôle domestique, bien qu'un très grand foyer en tuile dans le bâtiment à l'ouest pourrait indiquer un usage industriel quelconque.

Il y a eu apparemment un hiatus dans la séquence stratigraphique entre la fin du 2ème siècle (Période 7) et le début de la période médiévale (Période 8). Des vestiges de la période romaine plus tardive recouvrés dans les fosses médiévales et post-médiévales indiquent que l'activité s'est presque certainement prolongée sur le site au cours de la période romaine finale, mais il y a une réelle pénurie de vestiges saxons. Le dépouillage final des murs en maçonnerie remonte à une date aussi tardive que le 11ème ou 12ème siècle (Période 8).

Bien que les sous-sols modernes aient fait disparaître toute trace des structures médiévales et postérieures (Périodes 9 et 10) la répartition des fosses et des puits donne à penser que le site était divisé en deux propriétés, presque exactement au même endroit que les bâtiments modernes sur un alignement qui diffère très peu des limites romaines antérieures. L'assemblage de trouvailles médiévales comprend de beaux récipients en poterie et en verre, ce qui atteste de la présence à proximité de propriétés de luxe ou de standing.

On a recouvré un assemblage de trouvailles, de taille modérée, s'échelonnant en date entre les périodes préhistorique et post-médiévale, avec accent sur le début de la période romaine. Parmi l'assemblage, les composants suivants sont particulièrement intéressants:

- des témoignages de métallurgie (alliage de cuivre et fer) au cours de la période romain;
- une mesure pliante du pied romaine;
- un groupe de pièces de rebut provenant de la fabrication de poterie romaine ancienne;
- un groupe important de verre romain (récipient, fenêtre et objets);
- un petit groupe de torchis tamponné au rouleau provenant de structures romaines.

L'assemblage d'ossements d'animaux indique une évolution dans les méthodes d'élevage des animaux au cours de la période romaine, ainsi que des témoignages de boucherie et de spécialisation, et des changements dans l'exploitation des différentes espèces et de nouvelles races. L'assemblage médiéval reflète une économie et/ou des usages différents, consistant essentiellement en déchets domestiques et seulement un petit nombre de possibles sous-produits de l'artisanat en rapport avec le dépeçage d'animaux plutôt qu'avec le tannage en général. On discute de la possibilité de pratiques occultes ou magiques en lien avec un jeune porc, un chat et d'autres animaux allongés dans une disposition particulière dans une des fosses médiévales.

Des témoignages provenant de vestiges de plantes calcinées, de charbon de bois, de pollen, de chimie des sols et de micro-morphologie ont contribué à la compréhension de diverses questions concernant la nature et le caractère de l'industrie sur le site, y compris l'environnement pré-romain et romain ancien, le caractère de l'occupation romaine, les industries à l'intérieur de bâtiments particuliers, et la construction de ces bâtiments.

L'importance des investigations aux 60–63 Fenchurch Street repose sur leur apport de résultats d'importance locale et régionale qui ont fait avancer notre compréhension de la partie est du Londres romain et postérieur. Particuliérement riche en enseignement est la possibilité de comparer avec le site voisin de Lloyd's Register, ce qui met en évidence les considérables différences qui peuvent se produire dans l'histoire de l'occupation de deux sites adjacents.

Traduction: Annie Pritchard

Introduction

This volume presents the results of archaeological investigations at 60–63 Fenchurch Street in the east of the City of London (Fig. 1). The site (centred on NGR 53336 18098. Museum of London site code FNE01) covers approximately 530 m^2 and was formerly occupied by two multi-storey office buildings dating to the earlier part of the 20th century. Wessex Archaeology was commissioned by Frogmore Developments Limited to undertake this work prior to the construction of a new building as part of a development including a public plaza to the south, which fronts directly onto Fenchurch Street railway station, and is bounded to the east by Fenchurch Place (previously Railway Place) and to the west by London Street (Figs 2 and 3).

Structure of the Volume

After an introduction to the geology and topography of the site, further sections deal with the local and regional archaeological background as well as previous archaeological investigations on the site and its immediate vicinity. The results of the archaeological evaluation and subsequent excavation are presented in four consecutive sections dealing, respectively, with the prehistoric, Roman, medieval and post-medieval development of 60–63 Fenchurch Street. The section on the post-medieval development includes a summary of the sequence of occupation documented by successive maps dating from as early as the mid-16th century and augmenting the rather poor archaeological evidence pertaining to that period, which has been severely affected by truncation through successive redevelopment of the site. A conclusion draws together the results. The second part of the volume presents the results of the analyses of the finds and environmental assemblages retrieved in the course of the excavation.

Post-excavation Analysis Methods and Presentation of Results

On the basis of stratigraphic relationships and dating of finds recovered, primarily coins and samian pottery, the archaeological features and deposits have been divided into ten identifiable periods, ranging in date from the prehistoric to post-medieval periods, with a focus on early- to mid-Roman periods (Periods 2–7).

Within this framework, the site-wide sequence of events and activities has been described in terms of land-use blocks. These blocks explain the history of the land-use on the site in terms of buildings, open areas, and roads. Any particular land-use block may have been in use for more than one phase; for example, successive floors within a building or intercutting pits in an open area. The numbers ascribed to buildings change when the stratigraphic evidence suggests a major reconstruction; an open area changes when its function or limits appear to change. The development and interaction of the different land-uses is illustrated schematically on the Land Use Diagram (Fig. 4). This also summarises the phasing, but for the sake of clarity the sub-phases, distinguished in the Roman periods, and used for the presentation of the phase plans, have been omitted from the diagram; however, the sub-divisions of the land-use blocks allow the reader to follow the sub-phases as used in the phase plans.

The various site plans present an interpretative selection of features for each period or its sub-phases; the complete all-feature site plan has been entered onto a GIS and is available in the archive. The complete site archive is held at LAARC under the site code FNE01.

The Site: Geology and Topography

The City of London lies on a terrace of fluvially deposited glacial outwash gravels, typically capped by fine-grained, possibly loessic brickearth. Underlying solid geology comprises Tertiary London Clay beds (British Geological Survey 1993).

The site is mapped (*ibid.*) as being on or near to the boundary between an in-lier of Pleistocene 'Langley Silt' brickearth and underlying Taplow Gravels of slightly earlier date. The upper interface of brickearths and gravels has been encountered locally at approximate heights between 11.58 m (FNS 72) and 11.10 m (FSP 80) above Ordnance Datum (aOD). During the excavation, the surface of the brickearth was located in two test-pits at *c.* 10.65 m and 10.45 m aOD.

Modern ground level at the Fenchurch Street frontage is mapped at *c.* 15.50 m aOD (centre of

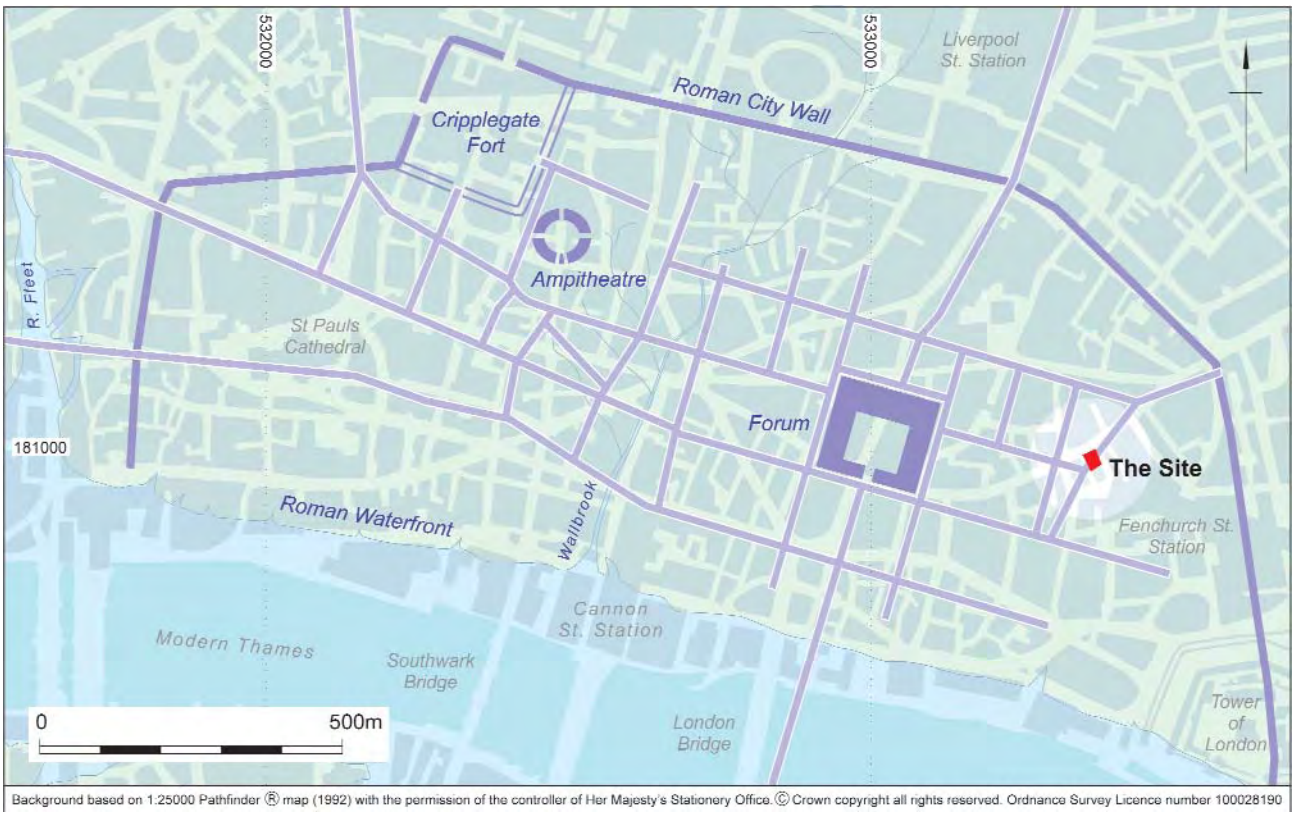

Figure 1 Simplified map of Roman London showing the site at 60–63 Fenchurch Street in relation to the known network of Roman roads and other major sites. The alignment of Roman Fenchurch Street takes into account the results of the excavation (after Perring 1991, fig. 15; Milne 1995, fig. 1; Bluer and Brigham 2006, fig. 2)

Fenchurch St). Overall ground levels in the immediate vicinity slope gently from north to south, dropping from 16.40 m aOD at the junction of Billiter Street and Leadenhall Street to 14.70 m aOD at the junction of Mark Lane and London Street, and to 14.00 m aOD at the junction of Mark Lane and Hart Street.

No watercourses are known within the site. However, an ancient valley retaining a subterranean watercourse, named in medieval records as the Lorteburn, has been identified at Lloyds Registry some 30 m to the east (FCC95. Bluer *et al.* 2006, 8 f.) and near French Ordinary Court/Fenchurch Street Railway Station (FSS 84) 100 m to the south-east (Schofield and Maloney 1998, 201).

Archaeological Background

Prehistoric (to AD 43)

Relatively few finds of prehistoric material have been made within the City of London (MoLAS 2000, maps 4–6). No coherent pattern has emerged to suggest significant settlement or land-use patterns prior to the establishment of the early Roman settlement. Late Neolithic and Early and Late Bronze Age settlement evidence and Early Bronze Age ploughmarks have been recorded in Southwark (Thompson *et al.* 1998, 213–4; Lewis 2000, 67; Brown and Cotton 2000, 86, 89), and possible traces of Iron Age farmsteads have been identified in Westminster (Wacher 1995, 88; Wait and Cotton 2000, 105; MoLAS 2000, map 6) but, in general, the area appears to have formed part of the wider rural landscape of the lower Thames Valley.

Later development may have denuded many traces of prehistoric activity within the City where it is commonly observed that early Roman deposits rest directly upon naturally deposited brickearth, rather than on any *in situ* buried soil. Excavations at Leadenhall Street demonstrated comprehensive deturfing and levelling of the landscape prior to construction within the Roman period (Milne *et al.* 1992, 10), and other excavations more local to the site (for example FCS 87) have consistently corroborated this (Schofield and Maloney 1998, 247).

Excavations at FCC 95 (Fig. 2) immediately to the north-east of the site produced small amounts of residual prehistoric struck flint (GLSMR 085051). Also north-east of the site, small quantities of Mesolithic (*c.* 8500–4000 BC) and Neolithic (*c.* 4000–2400 BC) flint were found during excavations at FST 85 (Schofield and Maloney 1998, 212).

Excavation to the north of Fenchurch Street in 1872 (later re-excavated as GM 60) produced an 'Early Iron Age sword' with a bronze handle in the

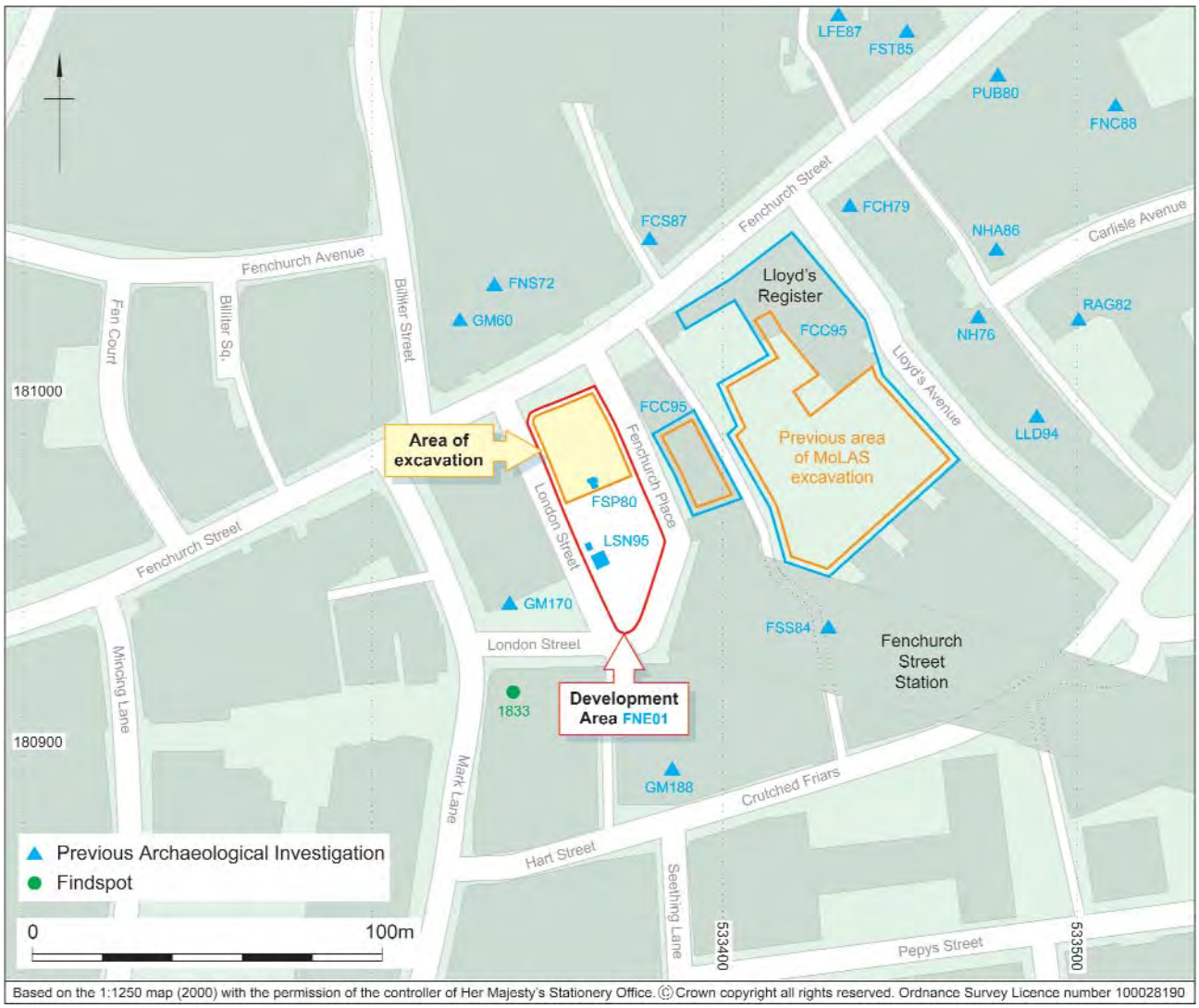

Figure 2 Location of 60–63 Fenchurch Street in relation to Lloyd's Register and other Roman sites in the vicinity

form of a stag's horn (GLSMR 040149, Schofield and Maloney 1998, 51). However, as is sometimes the case with antiquarian material, this dating must remain open to question.

Romano-British (AD 43–410)

The initial, probably informal growth of Roman settlement at London appears to have taken place within a few years of the Conquest of Britain in AD 43. Development seems initially to have nucleated around a crossing of the Thames close to modern London Bridge, utilising two low gravel hills, separated and drained by the Walbrook (Milne *et al.* 1992, 9; Perring with Brigham 2000, 125). There are now dendrochronological data for a number of buildings and other structures providing precise dates, the earliest being a timber drain at 1 Poultry of the winter of AD 47/48 and spring AD 48 (Perring with Brigham 2000, 123; Bluer *et al.* 2006, 4; Tyers 2008, 73). It is at about this time that the initial elements of the road system were laid down. It can be assumed that the road between London and Colchester is among the earliest, given the importance of the two settlements (Bluer *et al.* 2006, 4), and Roman Fenchurch Street joined the Colchester road by continuing to a junction with an east–west road to the north of Fenchurch Street whence it turned north-east towards Aldgate (*ibid.*, 65; 67 fig. 54).

Evidence from four sites to the east of 60–63 Fenchurch Street (RAG 82, FST 85, LFE 87, and FNC 88; see Fig. 2) suggests land enclosure of potentially Claudian date (AD 43–50). However, there is no excavated evidence of associated buildings at this time. Evidence from FCS 87 suggests that the Roman street from Aldgate to the Forum (broadly following the modern line of eastern Fenchurch Street) was constructed during the 1st century AD.

Figure 3 Excavation in progress in the rear of the plot, with Fenchurch Street Station in the background. The lighter coloured gravel layers of the Roman roads are visible in the foreground

The presence of an early Roman fort in the Fenchurch Street/Aldgate area has been discussed on account of a number of V-shaped ditches, but no such installation has been identified, and interpretation as roadside and/or enclosure ditches running alongside the road to Colchester now appears a more likely explanation (Perring 1991, 9–10; Perring with Brigham 2000, 126). A military fort has been identified in the north-west of the City at Cripplegate, but this was built early in the 2nd century AD and appears not to have been preceded by any earlier military installation (Lobel 1989; Perring with Brigham 2000, 126).

Excavations in 1925–26 at GM 60, north of Fenchurch Street, produced much 1st–3rd century Roman pottery and an unspecified number of undated 'cinerary urn' burials. The latter were found within oak plank-lined cists, sometimes with iron clamps, cut into the natural gravel. The GLSMR records these cremation burials as Roman, although they may be of earlier (possibly Late Iron Age) date.

Excavations adjacent to the site at FCC 95 found evidence of substantial Roman masonry buildings, including cellars and possible hypocausts, overlying earlier 1st century structural remains of more ephemeral character. Much wall-robbing is believed to have taken place in the later Roman and medieval periods. Extensive early Roman dumping, probably for the purpose of levelling marshy ground, was also encountered (Bluer *et al.* 2006).

Early Roman occupation surfaces, structural remains including an *opus signinum* (concrete) floor, 1st century fire debris and 2nd century gravel surfaces were identified at FNS 72 (Schofield and Maloney 1998, 128) to the north of the site. To the south-west of the site, rubbish pits, possibly of 1st century date, were found at GM 170 (*ibid.*, 92).

Anglo-Saxon (AD 410–1066)

Middle Saxon development of London comprised two elements: the port of *Lundenwic* was centred on the Covent Garden and Strand area to the west of the Roman walled city (Vince 1990, 13; Milne and Goodburn 1990, 628; Cowie with Harding 2000, 173, 175) and the former Roman city, although evidence from there is still scarce (Cowie with Harding 2000, 183). Excavations at FCC 95, immediately east of the site, have produced evidence of late Saxon and early medieval pits (10th–12th centuries; Bluer *et al.* 2006, 73 ff) although no structural remains were found. Pottery of possible 5th century date was also recovered from GM 60 to the north of the site. By the 11th century, London was a thriving town, and much of the former Roman city had been re-occupied (Vince 1990, 30; Cowie with Harding 2000, 191).

Within the walls of the Roman city, excavations frequently encounter a layer of relatively homogeneous dark soil up to (but often much less than) a metre in thickness, commonly referred to as 'dark earth', which seals late Roman deposits. This dark earth appears primarily to be a phenomenon of the very late Roman/sub-Roman, Early, and possibly Middle, Saxon periods (Yule 1990, Cowie with Harding 2000, 177), during which time the City was substantially abandoned as a settlement and only gradually recolonised. The formation processes behind the dark earth are the subject of continuing debate, but it is likely that the deposits reflect natural biological processes following the abandonment of the city, followed by agricultural land-use within the City walls in the Saxon period (Yule 1990 and R. Macphail, cited *ibid.*). Dark earth deposits in the vicinity of the site have been observed at FNS 72, at FCC 95 (Bluer *et al.* 2006, 61) and at RAG 82, where they were cut by a possible pagan Saxon double-inhumation burial radiocarbon dated to between the 7th and 10th centuries (Schofield and Maloney 1998, 128, 187; Cowie with Harding 2000, 190).

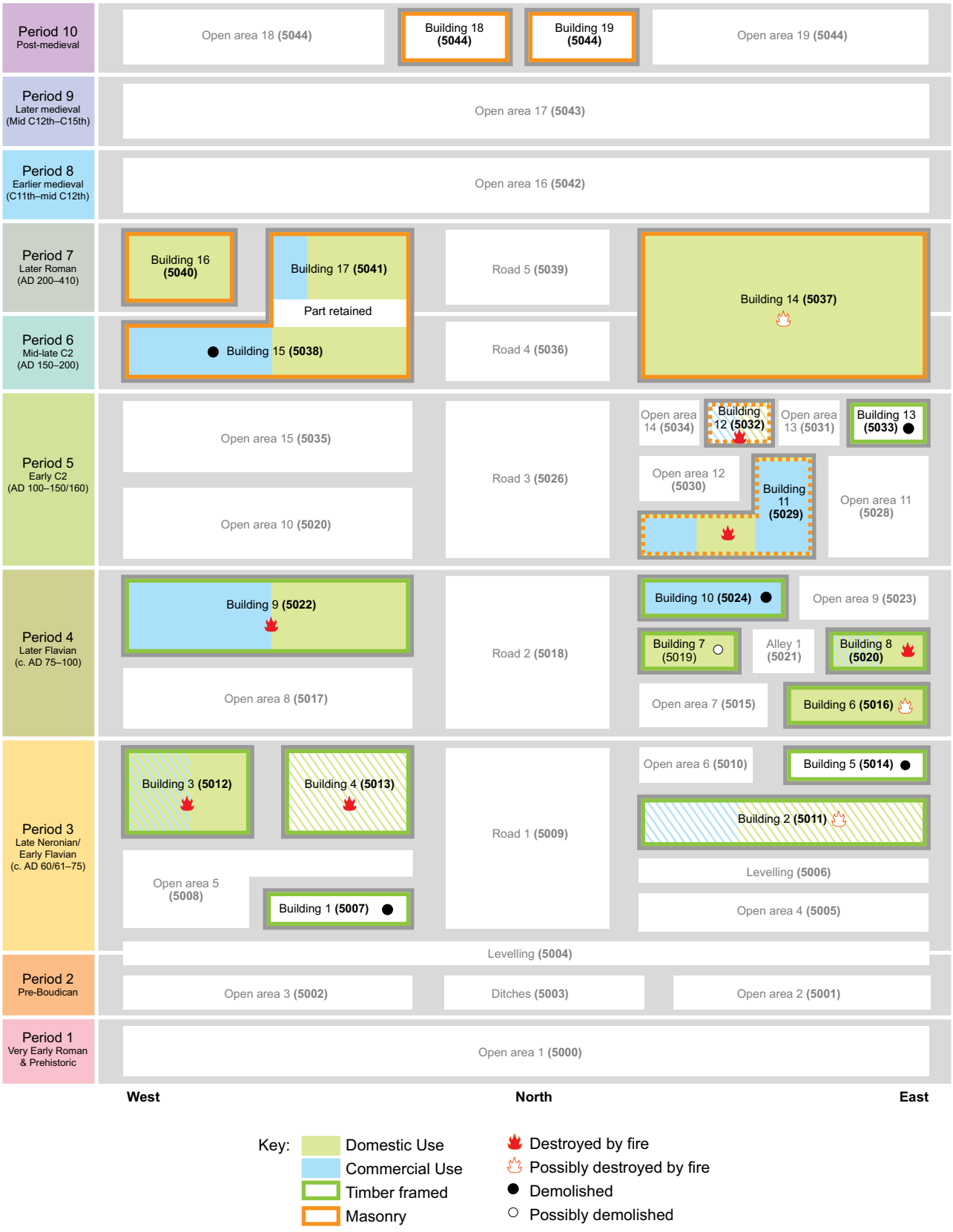

Figure 4 Land-use diagram and phasing summary of 60–63 Fenchurch Street

Medieval (AD 1066–1499)

The emergence of a recognisable street layout in the medieval (and probably Late Saxon) period can be seen in the Copperplate map of 1553–9 (Fig. 39, 1) and Lobel's reconstructed map of the City of London *c.* 1270 (Lobel 1989).

Many of the street names and ecclesiastical establishments encountered in the post-medieval historic map sequence are evident in Lobel's reconstruction. The southward bow of modern Fenchurch Street from Aldgate is clear, identified as *Alegatestrete* to the east and *Fancherchestrete* further to the west. The staggered crossroads with Mark Lane (*Marthe Lane*) and Billiter Street (*Belthotherslan*) is also in evidence.

It is likely that the Fenchurch Street and Mark Lane frontages were developed in the medieval period, in a manner broadly similar to that illustrated in the Copperplate map. Although many of these buildings are likely to have been of timber construction, at least some may have possessed underground vaults or cellars.

Relatively small amounts of medieval material have been recovered from the vicinity of the site, probably reflecting the relatively ephemeral nature of the timber-framed buildings, and the intrusion of basements and foundations from more modern re-building. Most archaeological remains of medieval date excavated within the vicinity of the site have comprised cellars, wells, rubbish pits and cess-pits. A stone-lined well containing jug fragments dating to the 13th and 14th centuries was identified at GM 60 (Schofield and Maloney 1998, 51). At FNS 72, a chalk-lined cellar and well were located, possibly associated with cess-pits dated to the mid-12th–14th/15th centuries (*ibid.*, 128). A chalk-lined well and pits, some re-cut five or six times and producing pottery from the 10th–11th centuries onward were discovered at FCS 87 (*ibid.*, 247).

Excavations at FCC 95 produced evidence of medieval rubbish pit digging and of further robbing of building materials from Roman structures at this time. Additionally, a medieval wall of St Katherine Coleman Church and part of its cemetery were identified.

Post-medieval and Modern (AD 1500–Present Day)

The post-medieval and modern development of the site and immediate environs is well documented through a sequence of historic and recent Ordnance Survey maps (see Trevarthen, this volume). The only post-medieval archaeological feature found in the excavations at FSP 80 within the site was a truncated brick-lined cess pit, dated to the 18th century.

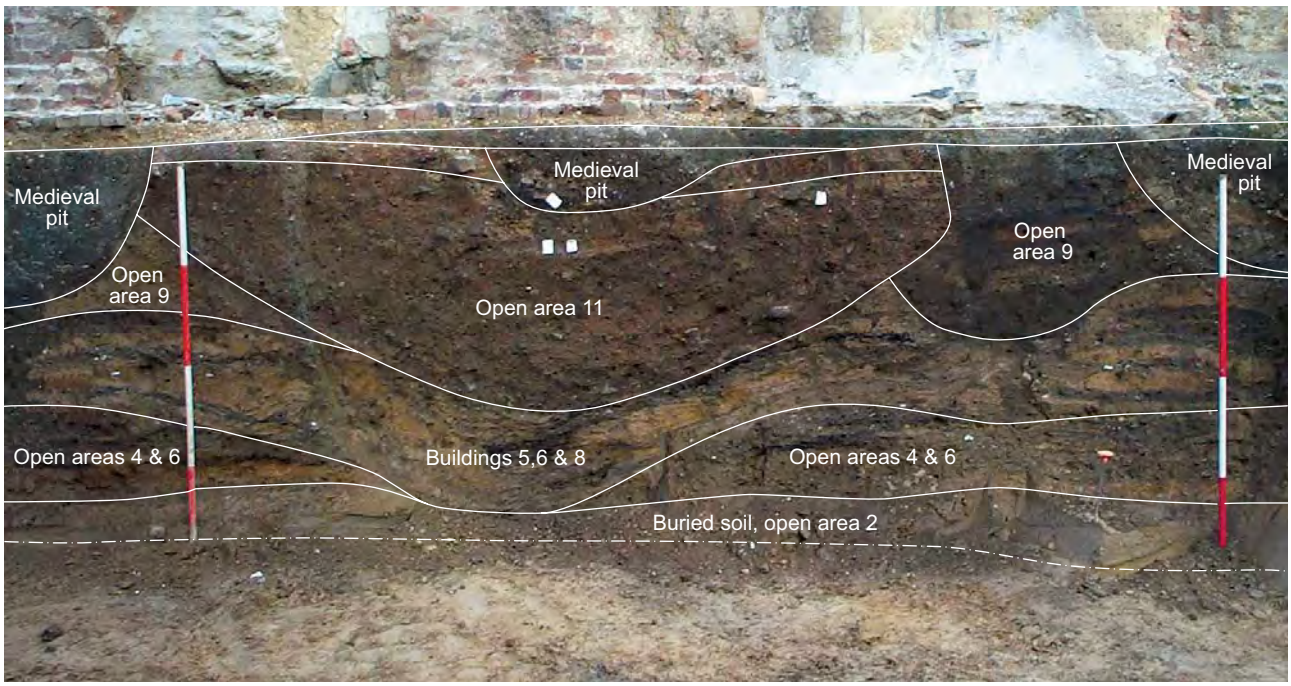

Figure 5 South-west facing section through stratified deposits in the eastern plot showing, from bottom to top, deposits relating to Open Areas 2, 4, and 6, Buildings 5, 6, and 8, Open Area 9 and 11, Buildings 13 and 14 and Open Area 17 (Period 9: medieval pits). Note the series of brickearth floors in Buildings 5, 6, and 8 (0.5–1.0 m above base of section) and other deposits slumped into the early ditches

Archaeological Investigations on the Site

Archaeological Evaluation

The earliest development within the site itself was a possible later 1st century (Flavian) building (FSP 80, Fig. 2), recorded in 1980. This was probably timber-framed and subsequently destroyed by fire, after which it was replaced by a similar wooden structure. A possible masonry structure, robbed of stone in the mid-2nd century post-dated an early 2nd century burning horizon, believed to represent the 'Hadrianic Fire' of similar date. Later Roman pits were also discovered (Schofield and Maloney 1998, 164).

In addition to these investigations an archaeological evaluation comprising the excavation of six test pits in the basements of 60–63 Fenchurch Street was undertaken in August 2001 (Wessex Archaeology 2001). This confirmed that Roman stratigraphy survived over the whole site beneath the existing basement slab, to a depth of at least 1.5 m and at a height of up to 12.4 m aOD. Although truncated by basements and services, the Roman deposits included *in situ* floor surfaces and occupation horizons, fire-reddened and overlain in places by possible destruction layers, and associated building foundations. Painted wall plaster and decorated daub suggested buildings of some sophistication in the vicinity. The finds were consistent with settlement debris and dated predominantly to the 2nd–3rd centuries, with some early and later material. A compact gravel deposit thought to represent part of the Roman Street was encountered close to the Fenchurch Street frontage.

Stratified medieval deposits were found not to have survived the excavation of the modern basements. Medieval and post-medieval activity on the site was represented by substantial cut features, assumed to be rubbish pits similar to those found on adjacent sites, cut into the Roman deposits.

Excavation

The excavation was undertaken between June and August 2002 (Wessex Archaeology 2003; 2004). Archaeological deposits up to 2 m deep survived across much of the site to a height of 12.4 m aOD (Fig. 5). Seventeen Roman buildings and associated open areas, dating from the later 1st to the late 2nd or early 3rd century were identified, together with the course of the Roman road towards Aldgate and Colchester. A series of medieval and post-medieval rubbish and/or cess pits and wells was cut into the Roman deposits. Substantial 19th and 20th century brick and concrete building footings across the site had in many cases cut through the archaeological sequence and were founded on natural gravel; the basements of these buildings had severely truncated the sequence of deposits.

PART 1

THE ARCHAEOLOGY OF 60–63 FENCHURCH STREET

Period 1: Prehistoric and very Early Roman

The only deposits of pre-Roman date were remnants of the former land surfaces and topsoil that were sealed beneath later features and deposits. No features of undoubted prehistoric date were identified. The entire area of the site was considered part of a single, large open area (Open Area 1). The natural topography of the site comprised a gentle south–south-east facing slope. The surface of the brickearth substrata was encountered at approximately 10.65 m OD in the north-west of the site falling to 10.45 m OD in the south-east. This was overlain in places by a thin deposit of argillic brown earth subsoil, evidence of a Holocene woodland environment, sealed below a buried topsoil deposit.

The earliest indications of human activity on the site comprised a very small quantity of prehistoric worked flint that was recovered from the buried topsoil deposit and as residual finds from later features and deposits. The small flint assemblage consists entirely of flake and core material, with no tools or other utilised pieces. Most pieces show signs of edge damage and/or rolling. Of the 30 pieces recovered, 15 derived from Period 1 contexts; the remainder occurred residually in later contexts. In the absence of diagnostic pieces none of this material is closely datable within the prehistoric period. Mesolithic, Neolithic, and Bronze Age flintwork has been recovered from several sites in the vicinity (Holder and Jamieson 2003, 32–8) and together these assemblages may represent transitory or ephemeral occupation of the area.

The buried topsoil deposit, identified below the earliest structural deposits, extended across much of the site, albeit often in a very truncated form. Hand excavation of this deposit identified a localised concentration of Late Iron Age pottery comprising at least two, possibly three, vessels: a flat-topped rim from a large high-shouldered, vertical necked jar in a coarse flint and organic/shell-tempered fabric and a necked, carinated bowl in a fine sandy ware; the other plain body sherds were in a similar but thicker-walled fine sandy fabric. The buried topsoil had clearly been affected by human activity, with inclusions of burnt flint, charcoal, and pottery. Possible plough marks were noted in the soil during microscopic analysis of a monolith sample and it is suggested that these were possibly made by mouldboard ploughing (see Macphail and Crowther, below), indicating that this cultivation may have taken place in the very early Romano-British period.

In the south-west of the site, where the topsoil sequence survived relatively intact, possible upturned turves, presumably the result of upcast from the construction of the boundary ditches that mark the start of Period 2, sealed the sequence. A soil micromorphology sample recovered dung/stabling waste on the inverted buried turfline, along with a spread of trampled anthropogenic waste comprising ashes and possible Dressel 20 amphora fragments. This could represent very early Romano-British activity, possibly animal husbandry, in the immediate post-Conquest period.

Pollen analysis of both the buried soil and the buried turfline indicate that the local environment in the later prehistoric and/or the immediately post-Conquest period was dominated by open grassland or pasture, with no immediately local woodland. Abundant bracken pollen in the buried soil indicates the probable presence of waste ground nearby, while sparse cereal pollen may imply either some arable cultivation in the area, or threshing and winnowing (see Scaife, below).

Charred plant remains from the buried soil contained several glumes of hulled wheats, either emmer or spelt (*Triticum dicoccum/spelta*). Little other material was present, apart from an occasional seed of buttercup (*Ranunculus acris/repens/bulbosus*), vetch/wild pea (*Vicia/Lathyrus* sp.), clover (*Trifolium* sp.), and sedge (*Carex* sp.).

Small quantities of charcoal were obtained from the buried soil and buried turfline. Although several woody taxa were identified in the charcoal, the origin of which is unknown, these may have been relatively sparse in the region. Both deposits included field maple (*Acer campestre*), alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*), holly (*Ilex aquifolium*), oak (*Quercus* sp.), and purging buckthorn (*Rhamnus cathartica*). Evidence from the pollen record suggests that the contemporaneous environment was mainly open grassland, with few trees or shrubs. Interestingly, field maple, holly, and purging buckthorn were not present in charcoal samples examined from later contexts, which could suggest that they were, in fact, relatively uncommon in the immediate vicinity.

Two unurned and undated probable cremation graves, or small pits containing redeposited pyre debris, were identified (3291 and 3312; Fig. 6). These appeared to cut the buried topsoil and the underlying natural deposit; both had suffered some damage from ploughing. No datable finds were recovered from

either feature, and it is uncertain whether they represent prehistoric or very early Romano-British activity. Their close proximity to the Period 2 ditches suggests that they pre-date the construction of the ditches, and the plough damage they had suffered indicates that they pre-date the traces of ploughing observed in microscopic analysis of a monolith sample, although this is uncertain. The nature of the deposits represented by these features is inconclusive; only relatively small quantities of cremated human bone were recovered from either, although whether this was due to the truncation and disturbance of the burials by ploughing or the fact that they originally only contained a very small proportion of the cremated remains is uncertain. Analysis of charcoal recovered from the fills of these features identified the use of birch (*Betula* sp.) in both, with alder also identified in the more westerly grave, 3312.

Discussion of the Prehistoric and Early Roman Environment

The survival of an argillic brown earth sealed by a buried topsoil and turfline below the earliest Roman deposits is rare in the City of London. Although no finds were recovered from the argillic brown earth this would have formed over a long period of time in a Holocene woodland environment, probably in the Mesolithic and later prehistoric periods. The pollen data recovered from the site pertains only to the on- and near-site vegetation/environment (Dimbleby 1985) and generally not to the broader region as a whole; examination of wetland (peat) sites is more suited to the latter, and published data are available for central London (Greig 1992; Sidell *et al.* 2000; Scaife 1982; 1988; Scaife in Wilkinson *et al.* 2000; Scaife in Sidell *et al.* 2000; Scaife in Crockett *et al.* 2002; Thomas and Rackham 1996). Nevertheless, the picture of the local vegetation obtained from Fenchurch Street fits within the general framework established for London's changing environment. It is clear that by the late prehistoric period (Middle–Late Bronze Age) most (lime) woodland had been cleared for agriculture (Sidell 2008, 64).

A small assemblage of Late Iron Age pottery was recovered from the buried topsoil. The pollen assemblage from this soil clearly suggests that the local environment had been dominated by grassland possibly for a substantial time, with no immediate local woodland. Although several woody taxa were identified from the charcoal assemblage, these trees may have been relatively sparse in the region. If the soil profile was of late prehistoric date (as opposed to Iron Age/Romano-British) some residual robust pollen (esp. *Tilia*) might be expected in the lower levels of the profile. As this is not the case it is suggested that there had been a long-term accretion of pollen into this soil under a grassland/pasture regime. Occasional cereal pollen grains may imply some arable cultivation within the local region, and abundant bracken pollen indicates the probable presence of waste ground nearby. The tree assemblages are typical of the period in showing a background of oak and hazel, with alder from wetter habitats. The buried topsoil had clearly been affected by human activity, with inclusions of burnt flint, charcoal, and pottery. The presence of possible dung/stabling waste on the inverted buried turfline and the possible plough marks within the buried topsoil are evidence, albeit slight, for both arable and pastoral agriculture on the site in the early post-Conquest period

It is reasonably certain that there were no major settlements in or around London in the Late Iron Age (Perring 1991, 1; Milne 1995, 41; Wait and Cotton 2000, 113). Indeed, London's location at the boundary between different *civitates* may have been the deciding factor in the choice of location as it could have provided a politically neutral space outside the control of tribal elites and was thus conducive to the establishment of a 'Port-of-Trade' (Millett 1990, 89). Limited pre-Roman occupation, however, has been recorded in Southwark and Westminster, where islands of dry ground beside the Thames were used for settlement (Merriman 1987, 324; see also above). The Late Iron Age pottery recovered from the buried topsoil at 60–63 Fenchurch Street indicates some form of activity in the immediate vicinity of the site. No features or deposits apart from the buried topsoil can be definitely assigned to this period, and the nature of the activity represented is unknown.

The probable cremation burials are presumably part of a larger cemetery. If the undated 'cinerary urn' burials excavated at 112–114 Fenchurch Street, only 30 m to the north of the site (see above), were early Roman in date, they would provide a useful indicator for the location of the eastern boundary of the developing settlement on Cornhill, as it can be assumed that Roman burials should not be located within the official boundary or *pomerium* of a town (according to the Roman *Laws of the Twelve Tables* dead bodies should neither be buried nor cremated in the city (Table X, Law III; www.constitution.org/sps/sps01_1.htm, accessed 21 May 2009)).

Period 2: Pre-Boudican (*c.* AD 50–60)

The earliest Roman features were represented by a series of ditches that were cut through the Period 1 buried soil horizon and were sealed below the levelling or terracing deposit on which the earliest road surface and buildings of Period 3 were built (Fig. 6). These ditches defined two open areas and are assumed to be land divisions. Although these ditches pre-date the earliest road surfaces, the alignment of the north-east to south-west ditches is mirrored in the alignment of the later road. A few scrappy patches of gravel above the Period 1 topsoil and below the later Period 3 levelling and road deposits may represent an early trackway on the same route as the later road; although this has to remain uncertain, this trackway probably represents the earliest evidence for the later London to Colchester road to the south-west of Aldgate (the course of this road between Aldgate and Harold Hill has recently been the subject of an article by Brown (2008)).

Dating

The date of the ditches' construction is unknown; however, a date of around AD 50–55 is assumed, in line with the present understanding of the foundation of London (Perring 1991, 6; Rowsome 2008, 25). The vast majority of the pottery recovered from deposits associated with the gradual silting up and final backfilling of the ditches was not closely datable. However, the very small quantities of samian pottery, including a stamped piece dated to AD 45–65, that were recovered from the overlying levelling deposits suggest an early date. A single coin, only broadly datable as 1st or 2nd century, was recovered from the Period 2 deposits and the small assemblage of coins recovered from Period 3 deposits were all pre-Flavian, including a coin of Nero minted in AD 66. A pre-Boudican date is therefore suggested for Period 2.

Ditches

A series of ditches cut into the buried topsoil of Period 1 and sealed below later deposits defined the north-west boundary of Open Areas 2 and 3. Two ditches (5003) were aligned north-east to south-west, the southern one of which was probably timber lined. Another smaller ditch, which had been recut at least twice, divided the area to the south east into Open Areas 2 and 3. Disregarding minor variations, this division can be traced throughout the Roman period. Following a period of silting, all of the ditches appear to have been deliberately filled with levelling deposits that mark the end of Period 2 and the start of Period 3.

Inhumation burial in a ditch

by Jacqueline I. McKinley

The northern north-east to south-west ditch contained an unusual burial (Sk 3038). Partly above and partly covered by the silting deposits in the base of the ditch was the skeleton of a mature adult male with the skull of a 12–14 year old female placed above the pelvis (Fig. 7). The upper half – from mid-chest height upwards – of the articulated skeleton had been removed by a modern truncation and there were no traces of any elements of the upper limbs. The latter observation suggests either that the arms were flexed up and away from the body at the shoulder – since,

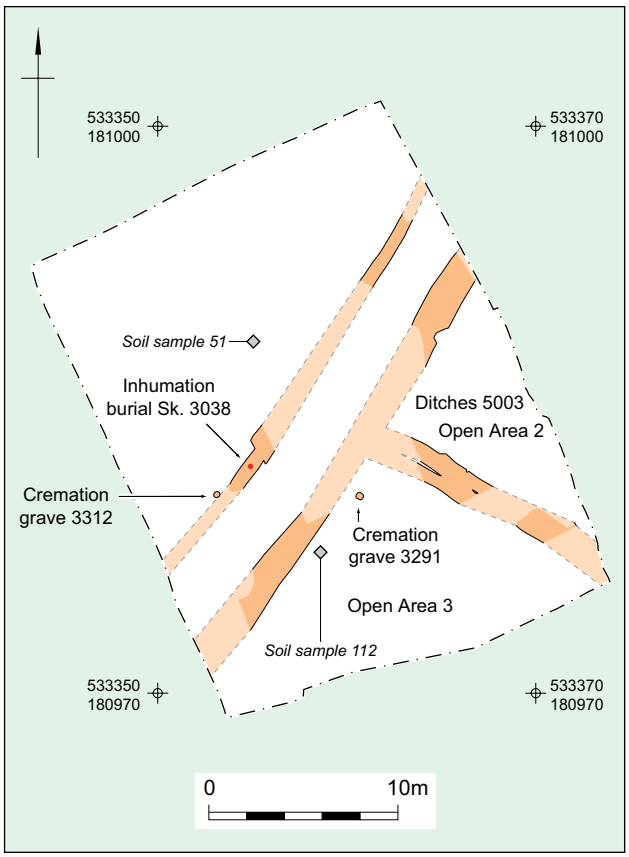

Figure 6 Period 2: plan of principal archaeological features

Figure 7 Period 2: ditch 3039, skeleton of a mature adult male (3038) with the skull of a 12–14 year old female placed above the pelvis

Figure 8 Period 2: Open Area 2, the earlier of the two possible clamp kilns

given the level of modern disturbance, one would otherwise have expected to recover at least part of the humeri – or there was some other disturbance to the remains which removed the upper limb bones. The lower limb bones, from the distal end of the femora downwards, were also missing. The body had been deposited in the base of a ditch, overlying a thin layer of silting which apparently continued, eventually partly covering the body; there was no indication that the body itself had been covered with soil and no sign of any recutting which may have led to loss of the upper or lower limbs. Whilst the loss of the upper limbs could be explained by the modern disturbance – albeit with unconventional positioning of the arms above the head – the loss of the lower limbs is more difficult to explain. The broken distal ends of the femora have the appearance of abraded old dry-bone breaks with no surviving evidence for ancient modification either due to human manipulation (eg, amputation) or animals (eg, gnawing). The skeleton was clearly articulated at the time of deposition; the placing of the skull (from another individual and probably already skeletalised; see McKinley, below) between the thighs suggests deliberate placement, ie, burial, rather than a corpse simply being rolled into the ditch, possibly already in a partly decomposed state. This suggests that any disturbance must have occurred fairly shortly after deposition and before much silting occurred; but such implied deliberate mutilation would leave marks on what would still have been green bone. Had the upper end of the body been intact it may have helped resolve this contradictory evidence, which must remain open to speculation: disturbance for which stratigraphic evidence was not seen in excavation, or ancient manipulation for which no osteological evidence survives.

The redeposited bone from elsewhere on the site is in good condition. The *in situ* bone from this skeleton is all moderately eroded and of a dried, weathered appearance, the left femur having much longitudinal splitting. This appearance is consistent with a level of exposure to weathering (Buikstra and Ubelaker 1994, fig. 68, after Behrensmeyer 1978), reinforcing the stratigraphic evidence. The bone is also coated with some form of precipitate presumably derived from other material deposited within the ditch.

Open Area 2

The northern boundary of Open Area 2, in the south of the site, is defined by the north-east to south-west boundary ditches. The area was divided into two by a small ditch or channel which had been recut at least twice on slightly differing alignments. A group of post-holes within and beside the ditch in the extreme south-east of the site may represent some sort of structure either above or within the ditch. The area also contained a number of stake-/post-holes and two shallow gullies that may represent a structure; however, no clear ground plan was discerned. Two hearths or possible clamp kilns and two superimposed brickearth surfaces were also recorded in this area and were sealed below a series of levelling deposits that

mark the end of Period 2. To the west of the dividing ditch were the remains of turves, presumably upcast from the construction of the ditches, and the remains of scorched grass on the surface of the buried topsoil and upturned turves.

The two successive hearths recorded in this area were both partly truncated; however, it is possible that these features represent small clamp kilns in which the pottery wasters were produced, but this is uncertain. The larger of the two possible sub-rectangular kilns was 1.00 m long, 0.80 m wide and 0.15 m deep, with steep sides and a flat base (Fig. 8). A 100% environmental sample of the fill of the larger of these features produced thousands of seeds of probable bent-grass (*Agrostis* sp.) and rush (*Juncus* sp.) but almost no cereal remains and only a small quantity of charcoal.

Pottery from Open Area 2

by Rachael Seager Smith

The pottery from Open Area 2 mostly consists of pottery production waste (Fig. 42). The fabric of these sherds is relatively fine-grained, orange, often with a thick grey core, containing abundant quartz and white mica with occasional large limestone or flint inclusions protruding through the surface. The assemblage includes very overfired, warped, and cracked waster sherds, some slightly bloated, as well as softer, underfired examples indicative of ceramic production in the close vicinity. The fabric is broadly, but not directly, comparable with the group of inter-related fabrics recorded by the Museum of London as LOXI (Davies *et al.* 1994, 34–6) and shares some similarities with the Sugar Loaf Court wares (*ibid.* 29–34). Traces of a white slip are relatively common, however, and none of the Fenchurch Street sherds has the string-cut bases or variegated fabrics characteristic of the Museum of London LOXI wares.

Flagon forms predominate, the most characteristic being a straight-necked type with a collared rim and a smaller, often rather angular, cordon or moulding beneath on the neck. Although these vessels exhibit considerable variability in wall thickness and coarseness, and are often rather roughly made with clay residue left in the cleft of the rim or adhering to the vessel walls, two distinct sizes are apparent with external rim diameters of between 65 mm and 70 mm and 94–100 mm. Other flagon forms comprised vessels with Hofheim (London type IA) or pulley-wheel rims, ring-necked (London type IB) forms (including one from a Period 3 levelling deposit with a pinched-mouth), and a single example of a cup-mouthed (London type ID) form. Bases show little variability; most are wedge-shaped with a low foot-ring although one or two flat examples were noted, perhaps derived from jars. Other forms include the profile of a slightly lop-sided, round-shouldered necked jar with a beaded rim, a round-shouldered jar/bowl (London type IIN), a Cam 24 platter rim, a carinated bowl (London type IVA), lids, a small carinated beaker, and a base from a thick-walled closed form with a low carination, rather like a large, heavy unguent jar.

Open Area 3 and area to the north-west

Open Area 3 in the south west of the site and the area to the north, below the later road, are defined by the early boundary ditches. Pollen analysis of two monolith samples through the Period 1 deposits noted that both pollen sequences have scorched or charred plant material in the upper part of the soil. This appears to derive from monocotyledonous plants and probably represents the on-site grassland which caught fire or was burnt. Whether this event is linked with the Boudican sacking of London is conjectural. However, that the grass did not regenerate before the deposition of the overlying levelling deposits that mark the transition between Periods 2 and 3, indicates that the burning of the grass in this area probably took place at the very end of the period, immediately prior to the deposition of the levelling deposits.

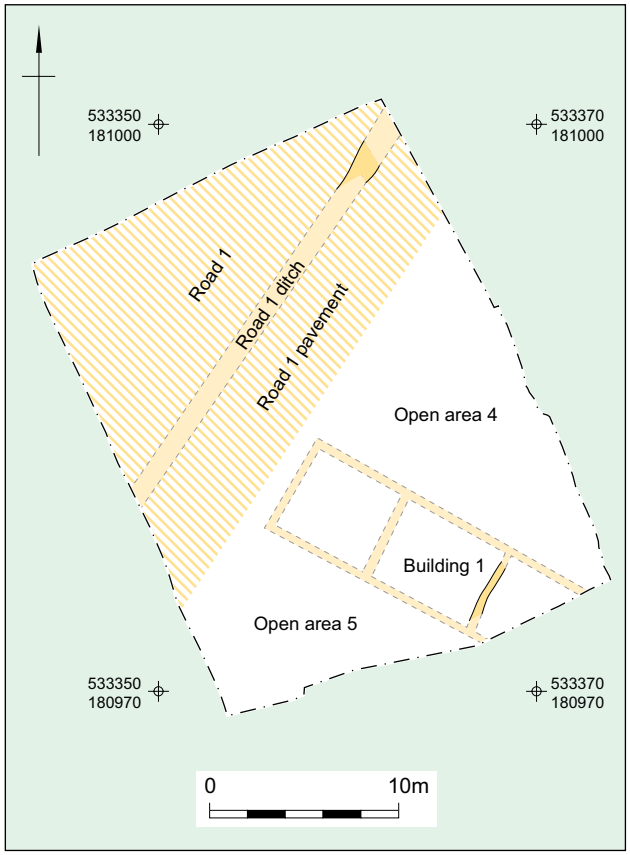

Figure 9 Period 3a: plan of principal archaeological features

Period 3: Late Neronian and Early Flavian (*c.* AD 60–75)

Extensive levelling deposits, generally comprising redeposited brickearth with common charcoal, stone and small ceramic building material (CBM) inclusions, up to 0.30 m deep, sealed all of the Period 2 features and deposits and completely backfilled the partly silted up ditches of Period 2. It is assumed that these deposits represent an episode of levelling to create a reasonably flat surface on which to construct the earliest road and the first of the Period 3 buildings (Fig. 9).

Dating

The pottery assemblage recovered from the levelling deposits was still dominated by the locally-made oxidised-ware kiln waste, which displayed widely varying firing conditions. Additionally, small quantities of amphora, including Dressel 20, Cadiz, and some sherds of less common types, a samian stamp dated to AD 45–65 (OF.LICIN) and one stamped mortaria rim (LUGD.F), dated to *c.* AD 55–80, were also recovered. It is tempting to see these deposits as representing a general levelling of the entire area of the site following the Boudican fire of AD 60/61, but this cannot be proven.

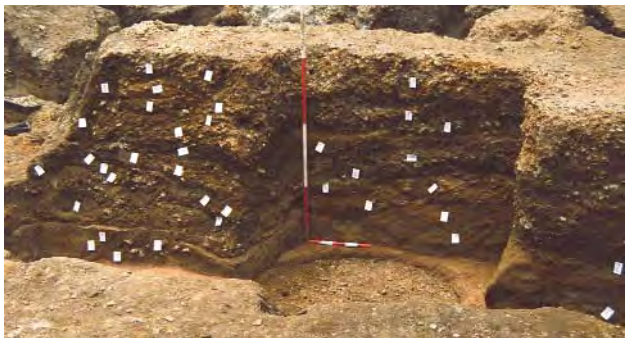

Figure 10 North-east facing section through road sequence

Figure 11 Period 3a: Open Area 4, one of the clay-lined pits (3701) in the eastern plot with evidence of in situ *burning*

Five of the eight coins from Period 3 could be identified, of which four are of Claudius or are Claudian copies. One of these Claudian coins comes from the top of the levelling deposits directly below Road 1 and one from an occupation deposit in Open Area 4, both within the earliest activity in this period. A third was recovered from the levelling deposit above Open Area 4, laid down prior to the construction of Building 2. The fourth was recovered from a dump associated with Building 5 and the latest coin from this period – a coin of Nero minted in AD 66 – was recovered from construction deposits associated with Building 4. Throughout the samian assemblage burnt sherds were noted, but of especial note were some heavily burnt vessels recovered from Period 3 deposits and some equally heavily burnt sherds residual in later contexts. These were of a Neronian date, suggesting that there may be evidence of Boudican burning on the site.

All five of the dated coins in this Period suggest a pre-Flavian date. However, two pieces of stamped samian, dated to AD 65–85 (CA[RILLFE]) and AD 65–75 ([PRI]MI.PAT[ER]) were recovered from deposits associated with the earliest phase of floors in buildings 4 and 3 respectively, and a third samian stamp, dated to AD 50–70 (FELICISO) was recovered from destruction deposits associated with building 3. These along with the other samian pottery recovered from this period appear to suggest a slightly later date than the coin assemblage, possibly as late as AD 80. Three stamped mortaria fragments were also recovered from deposits in this period and have been dated to AD 60–90 (F.LVGVDV) and AD 55–90 (SEX[tus] VAL[erius] – two examples). Consequently an end date for this period in the early Flavian period, perhaps around AD 75, is suggested.

Road 1

The earliest phase of the road comprised three distinct layers of well-compacted gravels forming a cambered road surface that showed some signs of repairs (Fig. 10). A large timber-revetted ditch flanked the southern side of the road, but the northern ditch presumably lay beyond the northern limit of excavation. To the south of the ditch, a few traces of a gravelled pavement also survived.

Open Area 4

Open Area 4, in the south-east of the site, appears to have been a working area which contained several hearths, a clay lined pit, stake- or post-holes that may represent temporary structures, and several possible occupation surfaces with overlying occupation deposits and spreads of charcoal (not illustrated). The

majority of the area was covered with a substantial levelling deposit before the first building in this area of the site was erected (Building 2). The pottery recovered from this area still comprised a relatively high proportion of the locally made oxidised ware sherds but also a wider range of other coarseware types – *Verulamium* region white wares and other oxidised wares, Highgate Wood B (bead rim jars), sandy grey wares, and Rhône Valley mortaria.

Several hearths and a clay-lined pit with evidence of *in situ* burning were identified (Fig. 11), together with spreads of charcoal. Charcoal deposits associated with the hearths were fragmented but indicated the use of fuel including oak, both sap- and heartwood, beech (*Fagus* sp.), hazel (*Corylus avellana*), and *Viburnum*. Charred cereal grain, possibly from food preparation, also occurred in these contexts, which could imply that the charcoal derived from domestic activities.

Charred plant remains from one of the hearths within this area comprised numerous hazelnut shell fragments, as well as several stones of sloe (*Prunus spinosa*). This same sample contained numerous seeds of grassland and wetland species: buttercup (*Ranunculus* sp.), clover (*Trifolium* sp.), dock (*Rumex* sp.), ribwort plantain (*Plantago lanceolata*), self-heal (*Prunella vulgaris*), grasses, spikerush (*Eleocharis palustris*) and sedge (*Carex* sp.). This may be indicative of hay, perhaps gathered for animals kept in the area. A copper alloy bell (Fig. 56, 589) was found in the levelling deposits above Open Area 4.

Building 1

Building 1 is represented by a short length of beamslot and a small area of possible clay floor, all other traces having been completely removed by later features. The building itself was probably quite short-lived. A military cuirass hinge was found in the debris of the building (Fig. 56, 591). After it was demolished the area was levelled and the surfaces associated with Open Area 5 were extended across it.

Open Area 5

Contemporary with Open Area 4, this area comprised a rough gravelled surface to the south-west of Building 1 that was cut by a few stake-holes (not illustrated). Following the demolition of Building 1, the whole area was levelled with a substantial layer of brickearth, over which a layer of clay and sand containing pottery, charcoal, oyster shell, and animal bone was deposited. The whole area was then resurfaced with a sandy bedding layer and a roughly cobbled surface. A large hearth was constructed on this cobbled surface in the extreme south of the area.

The pottery recovered from the Open Area 5 deposits mostly comprised reduced wares of sandy and Highgate Wood B type as well as a small group of *Verulamium* region greywares (pre-Boudican to Hadrianic) not previously seen in the layers and deposits of Periods 1 and 2. Other sherds comprised a single ring-and-dot decorated beaker (*c.* AD 60/70–early 2nd century), one Highgate Wood B ware base from an open form with an 'X' graffiti incised post-firing on the underside, and a Dressel 20 amphora handle with an owners' or tally mark ('II'), incised post-firing just beneath its crest.

Building 2

This building comprised the first identifiable structure in the eastern plot (Fig. 12). A series of foundation trenches or beam slots represents a large (at least 14.5 x 7.3 m) strip building with internal partitions, typically represented by small beamslots or lines of post-holes, that fronted on to the road *c.* 4 m to the north. Two phases of rammed brickearth floors were each overlain by occupation debris. These occupation layers contained large quantities of burnt material, including metalworking debris, that could be associated with either the industrial use of the building or its destruction by fire.

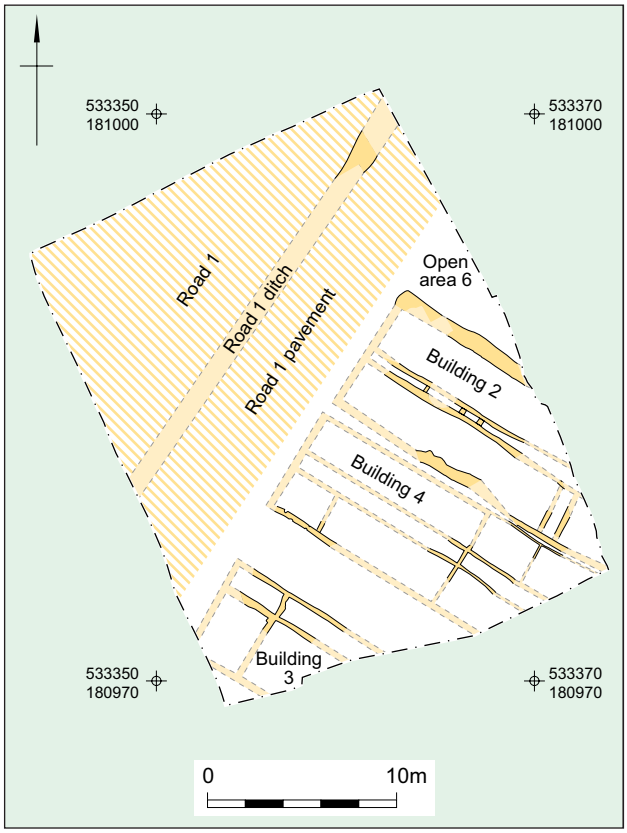

Figure 12 Period 3b: plan of principal archaeological features

The small but significant quantity of copper alloy working debris, in the form of eight pieces of slag (87g), a bar, and a triangular offcut (14 g) was recovered from Building 2 deposits. There were also a few fragments of hearth lining. The pottery from Building 2 was again numerically dominated by the locally-produced oxidised wares, with a small range of other fabrics more typical of a domestic assemblage, although with very few diagnostic sherds (one bead rim jar from Highgate Wood (B) kilns).

Figure 13 Destruction deposits overlying Building 3, seen from north-west

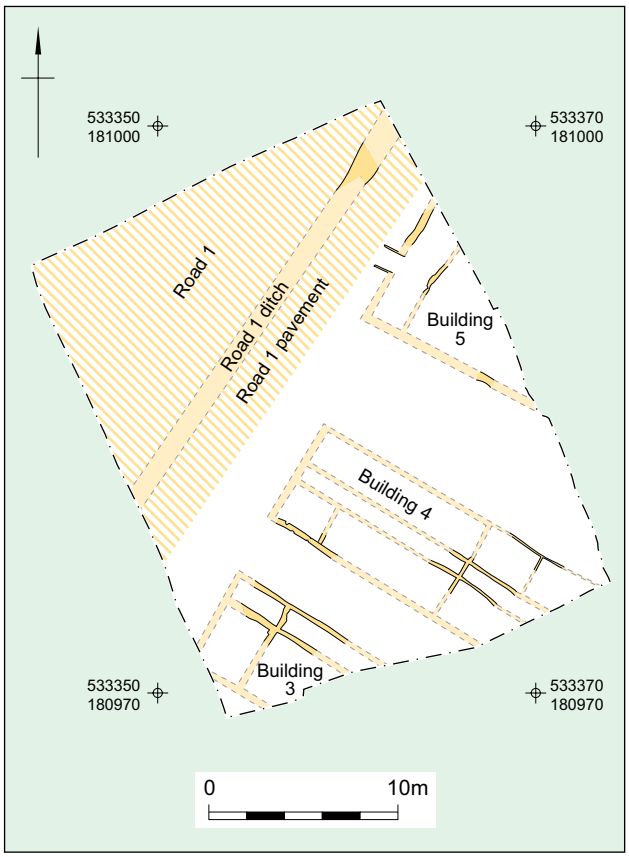

Figure 14 Period 3c: plan of principal archaeological features

Building 3

South-west of Building 2 and parallel to it, this building was another narrow 'strip' building, over 6 m long and 3 m wide. The walls were probably of wattle and daub construction on a sill-beam and faced with painted plaster, large quantities of which were recovered from destruction deposits (Fig. 13). A cluster of stake-holes to the north of the building may represent scaffolding associated with construction activity

Four very narrow rooms were identified, again with two distinct phases of brickearth flooring and associated occupation layers. This short sequence suggests a brief life for the building that ended with its apparent destruction by fire, the collapsed plastered walls overlaying the destroyed internal fixtures and fittings. The accumulation of debris in the foundation trenches suggests that the sill-beams were salvaged subsequently. Charcoal recovered from the burnt occupation layer between the collapsed walls and the final phase of brickearth floor consisted entirely of oak and included heartwood and sapwood. The nature of the charcoal might suggest an industrial function for the early phase of the building, but the remains of iron nails in this context may be rather more indicative of structural origins for the charcoal. Later occupation seems to have been entirely domestic.

A relatively small collection of pottery was recovered from the remains of this building. A few sherds of the locally-made oxidised ware were noted, but in lesser quantities than in earlier phases. The assemblage – dated to *c.* AD 70–120 – is more typically 'domestic', comprising coarseware cooking vessels, oxidised wares (flagons), amphorae, London ware, and Highgate Wood C 'poppy-head' beaker sherds.

Building 4

This building was similar to Building 3 in its use of small beamslots supporting internal walls. The building was over 10.5 m long, probably about 6 m wide and also had two phases of brickearth floors, associated internal features, and occupation deposits. It, too, appears to have been destroyed by fire, with collapsed walls with painted plaster lying over the burnt remains of internal fixtures and fittings. A large deposit of oak charcoal recovered from below a layer of collapsed wall plaster probably represented the burnt remains of panelling or furniture.

Pottery recovered from Building 4 included a stamped *Verulamium* region mortarium (F.LVGVDV), which have been found at *Verulamium* in contexts dated to *c.* AD 60–150 (Hartley 1972, 371, fig 145.6) and the rim of another, unstamped

example, Dressel 20 amphora fragments, London 555 amphorae, and body sherds of Italian 'black sand' amphorae (probably Dressel 2–4 form), as well as Highgate Wood B wares and sandy greyware bead rim jars with cordoned shoulders. Also of note are fragments of one, or possibly two, Dressel 20 amphora(e) that appears to have been deliberately altered to serve a secondary purpose; its handles, neck, and rim were removed and the larger opening roughly chipped. At some stage a scratched graffito was put on the shoulder of this vessel; now incomplete, it reads:]MAV[.

Open Area 6

This area, to the north-east of Building 2, contained a working surface that was strewn with charcoal and small quantities of metalworking debris and showed evidence for *in situ* burning. It fell out of use at, or shortly after, the demolition of Building 2.

Building 5

The function and form of this building (Fig. 14) is uncertain but it is thought to have been very short-lived. Erected after the destruction of Building 2, it is represented by several truncated beamslots and post-holes. The remains were overlain by levelling deposits which extended across most of the eastern plot and marked the end of Period 3.

Plant Remains from Period 3 Contexts
by Chris J. Stevens

Charred plant remains from Period 3 came from a variety of different contexts, including building destruction levels. While the range of cereals was similar to the preceding period, grains of hulled barley were more abundant than hulled wheat. The destruction deposits associated with Building 2 in particular had high quantities of hulled barley (*Hordeum vulgare* sl.) and some grains of hulled wheat (emmer or spelt), although only a single glume was recovered. The seeds from this sample included a similar array of species to that of the previous phase. Most are fairly typical of the range of species thought to be Roman weeds growing with the crop in the field.

A further sample from Building 2 and another one from a possible metalworking feature in Open Area 4 produced little or no remains. Some of the remaining features from this period, however, produced rich assemblages of material similar to those from Period 2. A sample from one of the Open Area 4 hearths had numerous quantities of hazelnut shell fragments as well as several stones of sloe. This same sample contained numerous seeds of grassland and wetland species, buttercup, clover, dock, ribwort plantain, self-heal, grasses, spikerush, and sedge.

Although less rich, the other two samples from the levelling or construction deposits below Building 2 were still of some interest. Many of the species seen in the other samples from Period 3 were present, albeit represented by single seeds, including similar numbers of barley grains. Also present in both samples were seeds of lentil (*Lens culinaris*). Lentil is of some interest as, although it has been recovered from at least two other London sites (Davis 2000; Straker 1984), it is believed to represent an imported food.

Period 4: Later Flavian (*c.* AD 75–100)

The end of Period 3 and the beginning of Period 4 was marked by a series of levelling deposits that extended over most of the eastern plot and part of the western plot and overlay the remains of the Period 3 buildings (Fig. 15). At about this time the first major resurfacing of the road took place, and the surfaces of the two plots to the south of it were raised to match the new road level.

Three phases of activity were recognised within Period 4 in the eastern plot and two in the western

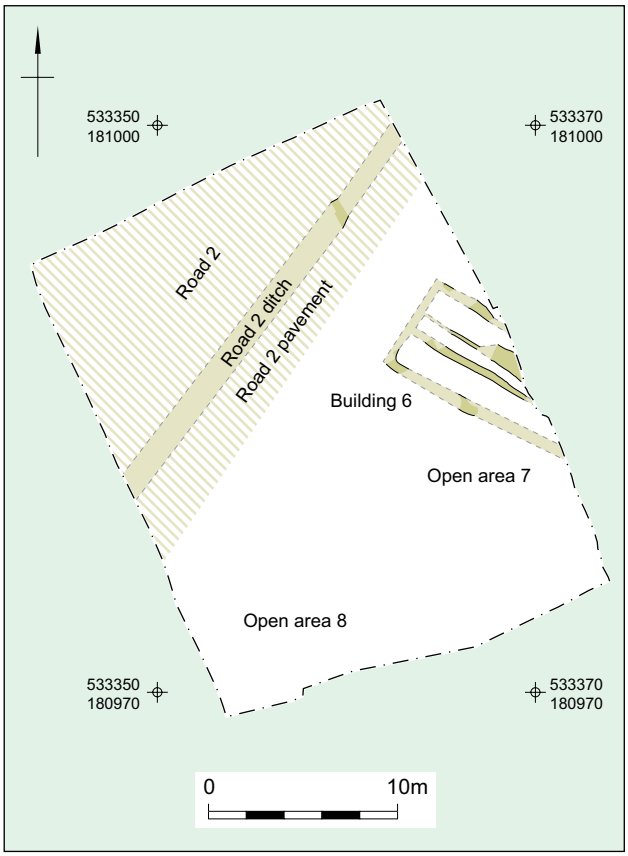

Figure 15 Period 4a: plan of principal archaeological features

plot. The four small buildings in the eastern plot are thought to have been industrial, but the single large building in the western plot is interpreted as a shop or storehouse, probably with domestic accommodation or storage areas to the side and rear.

Dating

The greatest number of coins from a single period was recovered from deposits associated with this period, some 37 coins in all. All of these date to the Flavian period or earlier. They comprised a Claudian coin from Building 6, a second from Open Area 7, and single coins of Claudius, Nero, and Vespasian from Open Area 8 (with two undated). The single coin from the ditch beside Road 2 disintegrated on cleaning but, on the x-ray, resembles a Claudian copy. Building 7 contained no coins later than AD 79, with two of Vespasian, one of Domitian (as Caesar), one of Vitellius, and a residual Claudian coin (along with two unidentified). Building 8 (Fig. 16), however, contained nothing later than AD 68, with two coins of Claudius, one of Nero, and two illegible. Building 9 contained two residual coins of Claudius and one of Agrippa alongside a coin of Domitian minted AD 85–6 and two illegible coins. Building 10 (Fig. 21) contained a single coin of Vespasian, whilst Open Area 9 contained two coins of Vespasian and one of Nero.

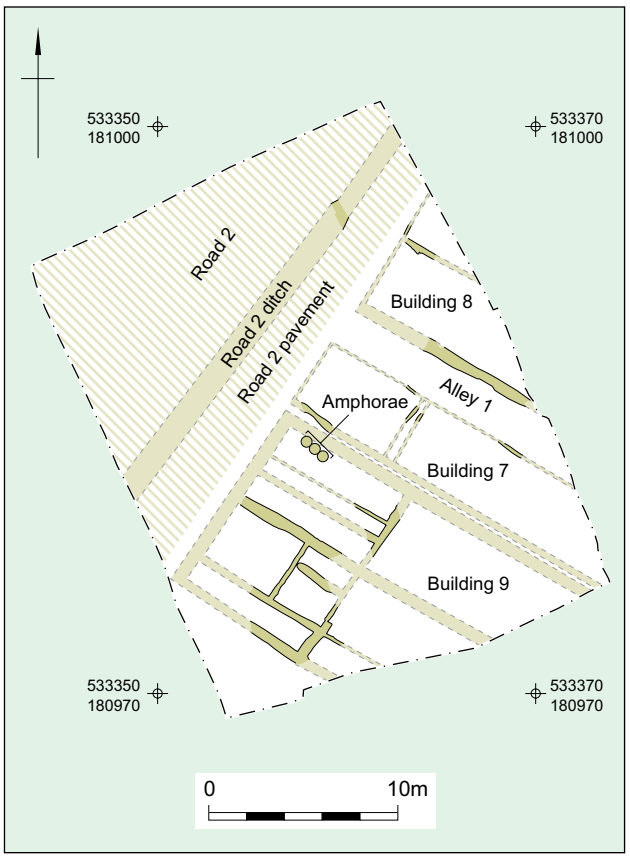

Figure 16 Period 4b: plan of principal archaeological features

The abundant samian ware (a total of 26 stamped pieces, the latest of which (MERCAT[O]) is dated to AD 85–110), was recovered from deposits associated with the destruction of Building 9. Two datable mortaria stamps were also recovered from Building 9 – (LVGD[) and (MAR[ ]S), dated to AD 55–80 and AD 70–110 respectively – and two were recovered from Building 7 (one partial and one complete stamp of ALBINVS), dated AD 60–90.

No coin from this period was minted later than AD 86, suggesting an entirely Flavian date, however, the pottery could date the end of the period to as late as AD 110–120. An end date of around AD 100 is therefore suggested for the end of Period 4.

Road 2

The first major resurfacing of the road marks the beginning of Period 4 (Fig. 15). Deposits were laid over the Period 3 pavement and two successive gravelled surfaces formed the Period 4 pavement to the south of the southern flanking ditch. The road surface was raised with three layers of well-compacted gravel forming a cambered surface.

Open Area 7

This open area, to the west and north-west of Building 6 in the eastern plot, is represented by two phases of gravelled surface between the building and the road. In the area to the west of the building, a number of small hearths and stake-holes (not illustrated) and associated occupation deposits were partly sealed below a series of dumped deposits, which was in turn overlain by a second phase of gravelled surface. The second surface was cut by a small number of stake-holes and small, irregular features of uncertain function and was overlain by patchy, charcoal-rich deposits that appear to have been trampled into the surface. Although charcoal and fire reddened clay was common within these deposits, no *in situ* burning was noted and the origin of these deposits is uncertain.

Although abundant, the charcoal was very fragmented. The species identified included hazel, oak, ash (*Fraxinus excelsior*), birch (*Betula* sp.), beech, willow (*Salix* sp.) and/or poplar (*Populus* sp.), blackthorn and the hawthorn/*Sorbus* group (Pomoideae). Such a diverse range of taxa could infer the use of firewood and is most likely to have a domestic origin.

Building 6

This building, represented by the truncated remains of small beamslots and several stake-/post-holes, stood in the east of the eastern plot fronting on to the second phase of road and was over 10 m long and 5 m wide. Two superimposed clay floors and associated occupation deposits within the building were separated by a thin sandy deposit that provided the bedding for a second phase of floors. The destruction deposits that overlay the building contained a great deal of burnt material, suggesting that a building had burnt down; however, no *in situ* burning was observed.

Finds recovered from within Building 6 appear to be almost exclusively domestic and included a complete copper alloy toilet spoon (Fig. 53, 554), a folded belt- or strap plate (Fig. 53, 380) and two brooches – one of Dèchelette's 'pseudo-La Tenè II' type, a 1st century AD form (Hull and Hawkes 1987, 179) and a late '*Knickfibel*' type brooch (Fig. 53, 3925). British finds of *Knickfibeln* are few; however, three examples are illustrated from Richborough (Bayley and Butcher 2004, fig. 41.36–8) and these are predominately of Claudian to Flavian date. The pottery included one sherd of Central Gaulish glazed ware, Highgate Wood B ware, and a Gallo-Belgic imitation platter, along with large quantities of coarseware pottery, amphorae and mortaria.

Open Area 8

The function of the western plot in the early part of Period 4 is uncertain. The area was open and the only deposits recorded comprised two phases of dumping and/or levelling with a patchy gravelled surface between. Possible wheel ruts were noted in the surface, however, no other features or deposits were located that could indicate the function of this area.

The dump or levelling deposits produced a range of metalwork, including a foldable ruler of copper alloy, which measured approximately one Roman foot when the two halves were unfolded (Fig 54, 3347), and a Colchester-type brooch (second half of the 1st century AD) with a piece of iron corroded onto the foot. Other finds include fragments of a pillar-moulded glass bowl of probable Flavian date (Fig. 51, 3289).

Building 7

This building (Fig. 16), represented by a few small beamslots and several stake- or post-holes, was approximately 16.3 m long and 5 m wide and stood in the west of the eastern plot facing the road. The earliest floors in the north of the building were overlain by a thin, ashy deposit, probably representing rake-out from the two hearths in this part of the building (not illustrated). The second phase occupation comprised a single small hearth, again in the north of the building, and associated occupation deposits. During the third phase of occupation a small hearth was again located in the north of the building with a second, larger hearth in the south of the building. The entire structure was eventually sealed below demolition or destruction deposits.

A fairly large pottery assemblage was recovered from this building, including two stamped *Verulamium* region mortaria (see above), but typical 'domestic' coarsewares – jars and bowls for food preparation and storage, etc – appear to be under-represented. Domestic finds from Building 7 include the base of a copper alloy seal-box (Fig. 54, 3479), a copper alloy needle with spatula head, a copper alloy heart/trefoil-shaped flagon lid with possible dolphin attached (Fig. 54, 468), and part of a probable copper alloy bracelet (Fig. 53, 3349). Small quantities of copper alloy slag were also recovered from this building, but were insufficient to indicate metalworking associated within this structure; a domestic function is therefore suggested.

Figure 17 Period 4b Building 9: under excavation, showing earliest phase of clay floors and occupation deposits

Figure 18 Period 4b Building 9: three almost complete Dressel 20 amphorae set into the gravelled floor of the north-eastern room

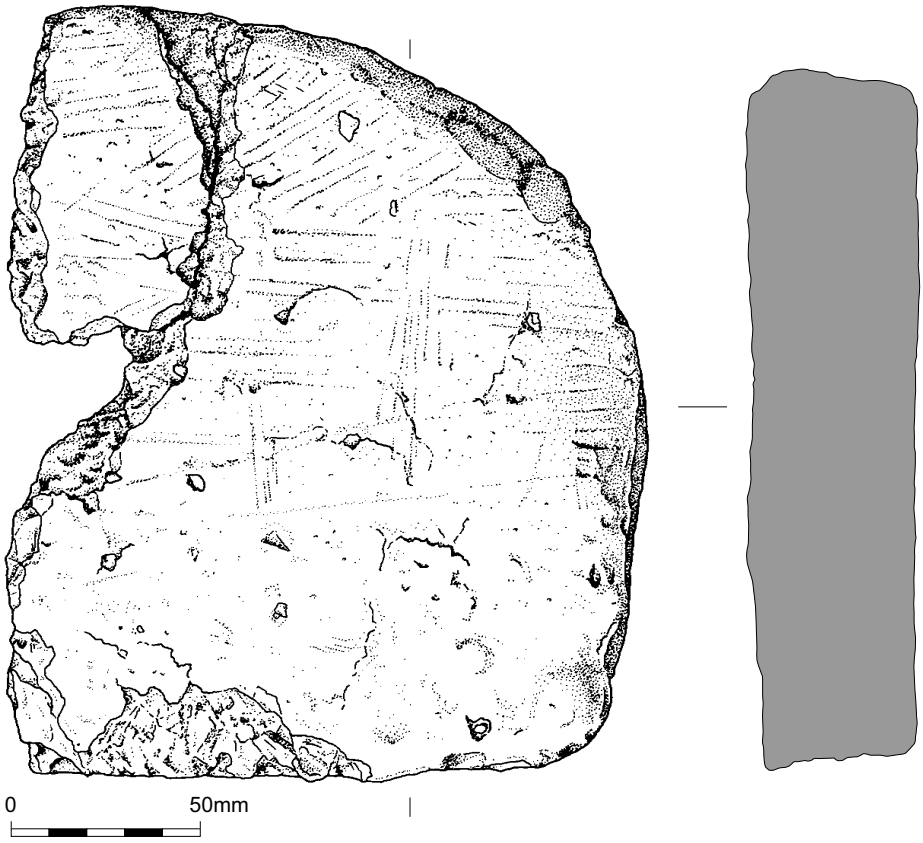

Figure 19 Fired clay slab from Period 4, Building 9

Building 8

This building (Fig. 16), over 10 m long and about 6 m wide, was represented by beamslots and post-holes. It was separated from Building 7 by a narrow alleyway (Alley 1). Only one phase of occupation, represented by rammed brickearth floors and associated occupation debris, was recorded in this building. Pottery found within the building included Highgate Wood B and C wares and mica-dusted London wares, dated to AD 70–100.

Occupation deposits within the building produced two pottery sherds with metalworking residue (?copper alloy) adhering – one from a flagon, the other unidentified. It appears that the vessels had been deliberately utilised for metalworking, probably as crucibles; other metalworking debris included a piece of iron slag and a folded and twisted lead strip, suggesting a possible industrial function for at least part of the building. Domestic finds from this building included a copper alloy ferrule with ribbed decoration, a pair of copper alloy tweezers and a possible nail cleaner. Analysis of charcoal recovered from what appeared to be the remains of a post, burned *in situ*, showed that the timber frame of the building was probably constructed of oak largewood.

Alley 1

Between Buildings 7 and 8 was a *c.* 2 m wide alleyway, comprised of a redeposited brickearth bedding layer and a metalled surface of gravel and fragments of amphora and ceramic building material. An iron punch or chisel was also found (Fig. 55, 3543). This surface was cut by a few stake- and/or post-holes, although no coherent structure was discernable. All the alleyway deposits were sealed below the levelling/demolition layers that mark the start of the next phase of construction.

Building 9

This large building (Fig. 16) was over 12 m long, probably more than 12 m wide and occupied almost the whole of the western plot in the latter phases of Period 4. The building was represented by several substantial beamslots with timber pilings below the main load-bearing walls (Fig. 17). It had several rooms, including one that appeared to open onto the pavement alongside the road. A row of three almost complete Dressel 20 amphorae, the necks of which had been removed to create wide-mouthed storage vessels, were set into the gravelled floor of this room (Fig. 18). Although some of the rooms within

Building 9 had up to six consecutive floors it is noteworthy that the surface within this room was never replaced but probably repaired several times during the life of the building. The demolition deposits that immediately overlay the floor surface in this room produced several big sherds of pottery from very large vessels – one represented by plain body sherds only, the other by joining pieces from a vessel with a wide, inturned rim, 450 mm in diameter, decorated with incised wavy lines and external strapping (Fig. 41, 1–2). The form is known from, but rare in, London (see Seager Smith, below), and may represent *seria*, a class of vessel mentioned by classical authors, consisting of large but movable vessels primarily used in viticulture but also for the storage of grain, preserved meats/fish/fruit, as boundary markers, or as containers in shops. The presence of these, along with the three modified amphorae, indicates that there were originally at least five storage vessels associated with this room. Additionally, just under half of a thick, fired clay slab with a flat base and a curved top side (Fig. 19) was found in this room. Its use remains uncertain, but it may originally have been used to cover the opening into an oven or other heating structure; here, in its secondary usage, it may have served simply as floor metalling. A similar cover was recently used on an experimental glass furnace to block the gathering hole (Taylor and Hill 2008). It is likely that this room functioned either as a storeroom or, given its position immediately adjacent to the pavement, perhaps a shop.

The other rooms in Building 9 appear to have served a domestic function. The severely truncated remains of *in situ* wattle and daub walls faced with painted plaster were found towards the rear of the building (Fig. 20) while a relatively large assemblage of painted wall plaster was recovered from the overlying demolition or destruction deposits, suggesting that several of the rooms in this building were decorated.

Up to six phases of floors and associated occupation deposits were recorded in various rooms, although not all rooms contained six phases of flooring. At the end of Period 4, Building 9 appears to have burnt down and remains of the collapsed walls with wall plaster overlay what may be the remains of burnt wooden fixtures and fittings. The destruction of this building marks the end of Period 4 in the western plot. An unusual sherd with what may be a stylised face was found in the deposits associated with Building 9 (Fig. 43, 20, see Seager Smith, below).

Open Area 9

Following the destruction/demolition of Buildings 7 and 8, the whole of the eastern plot was levelled (Fig. 21). Building 10 was then built on the western side of the plot and a bedding layer with an overlying gravel surface was laid on the eastern side, probably used for a variety of small-scale industrial/craft activities. The pottery assemblage included a large number of amphora sherds, mostly consisting of rim/neck/handle fragments, which may suggest that amphorae were being processed for re-use in this area. Two smithing hearth bottoms and a little other ironworking debris were found, perhaps enough to indicate some small scale, contemporary iron and copper alloy working in the vicinity, possibly within the adjacent Building 10.

Figure 20 Period 4b–c Building 9: remnant brickearth walls with painted wall plaster in the south-eastern room, seen from south-west

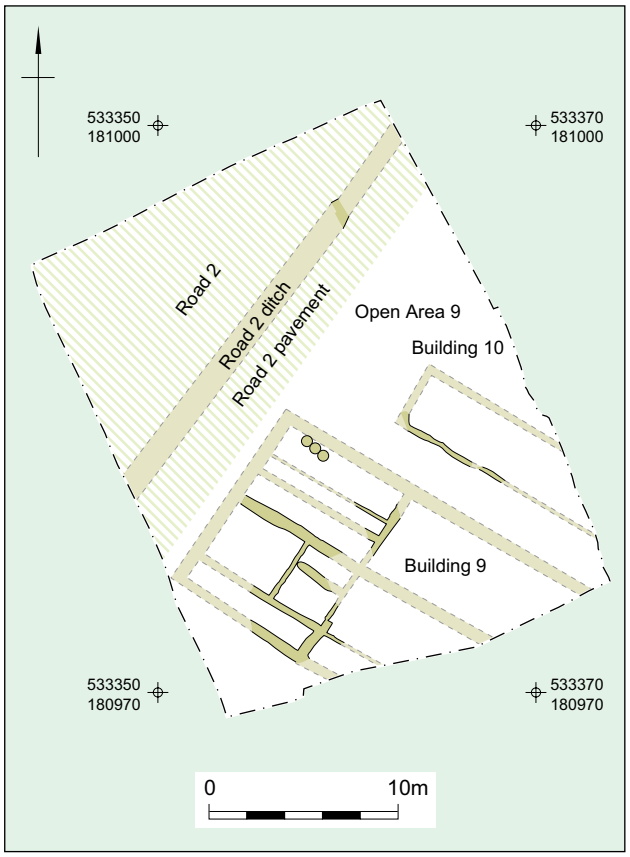

Figure 21 Period 4c: plan of principal archaeological features

A symmetrical plate brooch was also found in the levelling deposits (Fig. 53, 407), supporting the date of around AD 100 for the end of Period 4.

Building 10

Building 10, represented by a single beamslot and a rammed brickearth floor, was built in the western side of the eastern plot following the demolition of Buildings 7 and 8 and the subsequent levelling. It was approx. 8.5 m long and 3.5 m wide. A sequence of three large tile-based hearths (not illustrated) and associated deposits, all situated in the northern end of the building, suggest that the building may have had an industrial function. Finds from the associated occupation deposits include a tapering, square-section iron tool, possibly a smith's tool, and a pot sherd with adhering metalworking residue, probably a fragment of a crucible (see Andrews, below). The substantial quantity of pottery included two Dressel 20 amphora handles with stamps and rims from two Central Gaulish colour-coated ware beakers as well as sherds in London wares and the standard coarseware fabrics. Charcoal recovered from one of the hearths was identified as oak heartwood, again suggesting an industrial function. The demolition of this building marks the end of Period 4 in the eastern plot.

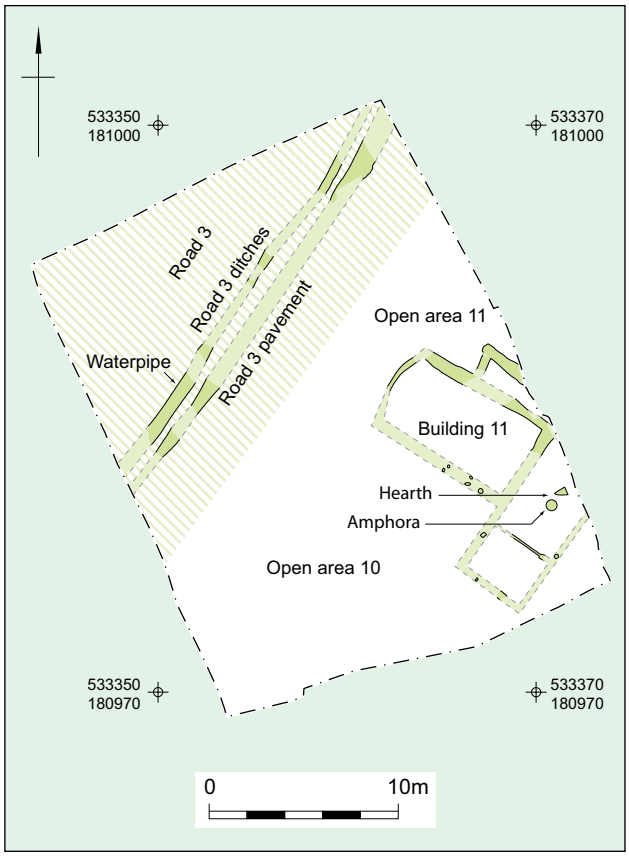

Figure 22 Period 5a: plan of principal archaeological features

Period 5: Early 2nd century (AD 100–150/160)

Following the next resurfacing of the road (Road 3), extensive levelling deposits sealed virtually all the Period 4 features and deposits across the eastern and western plots (Fig. 22). This levelling appears to represent a clearance of the two plots, the levels of which were raised to match the new height of the road surface. These deposits and the resurfacing of the road therefore mark the end of Period 4 and the beginning of Period 5.

Three phases of activity were recognised in the eastern plot and two in the western plot. The eastern plot again appears to have been an industrial area and the western plot was left open for the whole of Period 5. Although the function of the western area in the earlier part of Period 5 is uncertain, it is clear that it was used as a midden area in the latter part of the period. A series of demolition and levelling deposits across most of the eastern and western plots represents the end of Period 5 and the beginning of Period 6.

Dating

Only nine coins were recovered from Period 5 deposits, and many of these were residual. An *as* of Hadrian was recovered from the fill of the roadside ditch, along with residual coins of Claudius and Nero, whilst Building 11 contained a coin of Domitian and one of Nerva, placing it early in the 2nd century. The coins recovered from this period are consistent with a date in the first half of the 2nd century, perhaps between AD 100 and AD 140. This dating is broadly in line with that inferred from the pottery assemblage. However, a stamped samian sherd (CAMBVS.F), dated to AD 150–180, was recovered from levelling deposits that mark the end of Period 5 and the beginning of Period 6, sealed below the remains of an *opus signinum* floor associated with building 14. It is therefore suggested that Period 5 probably ended around AD 150.

Road 3

The level of the southern side of the road was raised with dump deposits, a new cambered gravel surface laid and a new flanking ditch dug; a pavement was also laid to the south of the ditch (Fig. 22). A wooden box pipe, evidenced by fragments of iron pipe collars, was installed immediately to the north of the ditch along the southern edge of the road at some time within the period. Fragments of wall plaster from the roadside ditch have pale yellow-green swirls and stripes on a white background, but the small size of the fragments prevents identification of the pattern.

Open Area 10

For the early part of Period 5, the whole of the western plot was empty. Three pits and a roughly metalled surface represent the only discernible activity. These were overlain by a series of dumped deposits and a small pit or large post-hole. The finds recovered from this area include both industrial (470 g of smithing slag) and domestic (copper alloy tweezers, coarseware pottery) material, consequently the function of this area is uncertain, although the small amount of slag could be associated with activities within or around Building 11.

Open Area 11

The eastern side of the eastern plot appears to have been used for industrial activity during the early part of Period 5 (Fig. 23) This activity is represented by a number of intercutting pits and a metalled surface and probably relates to Building 11, which is thought to have been a workshop mostly involved with copper alloy working but possibly also small-scale iron and stoneworking. However, the pottery assemblage from this area appeared domestic. Substantial parts of single vessels (*Verulamium* whiteware flagons and a Highgate Wood C ware jar) were recovered from the pit fills. One sherd is of intrinsic interest: a Highgate Wood C ware shoulder sherd with a scratched phallic symbol graffitto. The small assemblage of animal bone from the pits was mainly from cattle, pig and fragments of animals of similar sizes and also appears to represent domestic waste. When Building 11 was demolished, Open Area 11 was levelled prior to the next phase of construction.

Building 11

This building stood on the western side of the eastern plot and comprised a rectangular structure, approximately 9.5 m long and 5 m wide, represented by substantial robber cuts, which still contained small quantities of masonry rubble, suggesting that masonry filled trenches were utilised, perhaps as dwarf walls on which to support the sill-beams. There were traces of a small lean-to structure, represented by a single small beamslot, on the eastern side. An ancillary structure to the south was represented by a few post-holes and a small beamslot, though several phases of internal floors and hearths suggest that it was relatively long-lived.

The earliest brickearth floors and associated occupation deposits were overlain by a sandy bedding deposit, above which the second phase of floors was constructed. The eastern lean-to structure was also rebuilt at this time. These deposits were overlain by a third phase of floors and associated occupation deposits. The southern ancillary structure was then demolished and the surfaces of Open Area 12 were constructed in this area, marking the transition between Period 5a and b. The fourth and final phase of floors was then constructed and associated occupation deposits built up in the main building and eastern lean-to. Building 11 probably burnt down; the burnt remains of an *in situ* sill-beam were tentatively identified below the remains of the collapsed or deliberately demolished walls. The whole of the eastern plot was then levelled prior to the second phase of construction in Period 5 (Phase c).

A small but significant assemblage of copper alloy working debris recovered from this building provides evidence for the melting and casting of copper alloy. Along with relatively large quantities of copper alloy slag and a possible metalworking tool, probably a small chisel (paring or firmer) or possibly a punch, parts of nine copper alloy bars/ingots, weighing a total of 628 g, were also recovered. Additionally, relatively large quantities of other metal items were recovered from this building; the copper alloy included an incomplete set of weighing scales (Fig. 54, 608), a spoon (Fig. 53, 307), an end-looped bovine-headed mortar from a cosmetic set (Fig. 53, 3569), a bell, a strap union (Fig. 55, 262), a boss (Fig. 55, 292), and numerous fragments of sheet and strips. Whilst it is

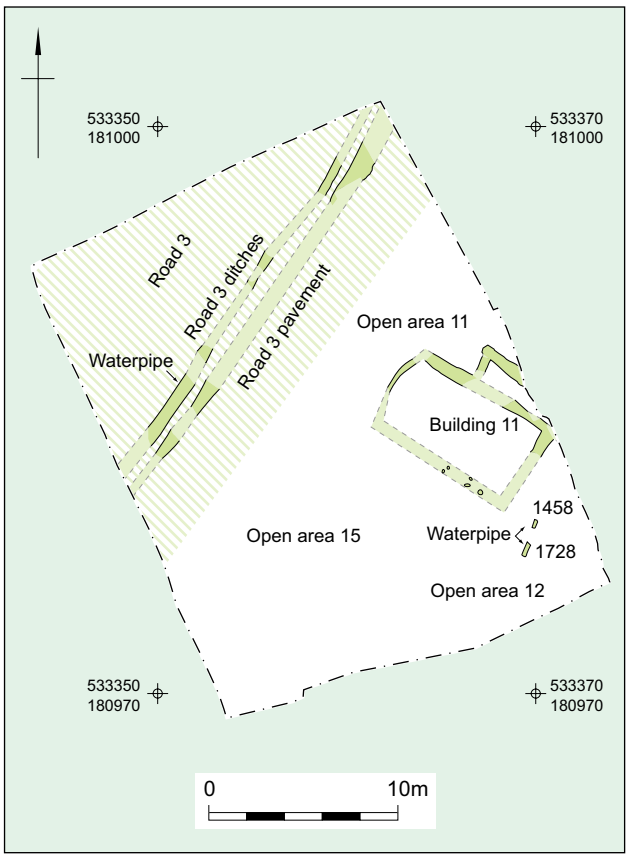

Figure 23 Period 5b: plan of principal archaeological features

possible that these items functioned in a domestic context, it is equally feasible that this was scrap intended for recycling, or perhaps even some of the products or tools – in the case of the scales – of the workshop itself. The small quantity of iron slag may be inconclusive on its own, but together with hammerscale found in a pit in the eastern lean-to structure and a layer in the southern ancillary building, it provides evidence for iron smithing in Building 11.

In the southern part of the building a near complete Dressel 20 amphora, with the neck and handles removed, was set into the brickearth floor. This was immediately adjacent to the remains of a tile-based hearth and it is possible that this vessel may have contained water for quenching or tempering hot metal. Callender (1965, 35) gives examples for the use of amphorae as water-butts or buckets at a villa at Norton Disney, Lincolnshire, and the forts at Bar Hill, Dumbartonshire, and Saalburg and Zugmantel, both in Germany. Charcoal recovered from the probable rake-out deposits associated with this hearth almost certainly represents fuel debris. The charcoal was fairly abundant and demonstrated the use of oak as fuel, mostly heartwood which included a mixture of slow- and fast-grown wood.

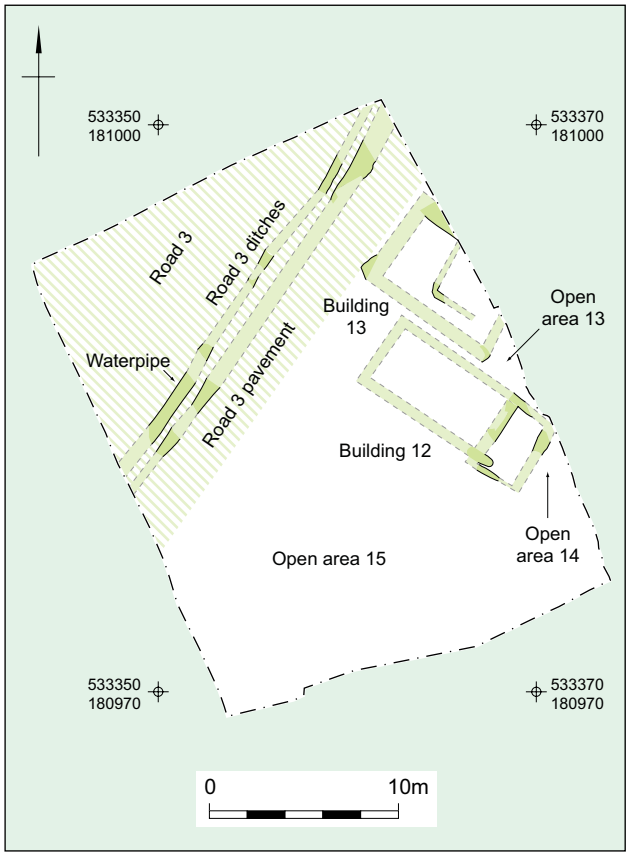

Figure 24 Period 5c: plan of principal archaeological features

A dump of 1326 apparently unused stone *tesserae* found in a deposit below the second phase of floors within Building 11, suggesting that at least some small-scale stoneworking was also undertaken in this building.

Open Area 12

Following the demolition of the southern part of Building 11, a cobbled yard surface was laid on a sandy bedding layer in this area. A pipe trench with vertical sides and a flat base was constructed within the yard area, oriented south-west to north-east and truncated by a later wall foundation trench related to the construction of Building 14. Both trench segments contained the remnants of rough stone/clay packing which would have surrounded the wooden pipe. A badly corroded iron water-pipe junction collar was found *in situ* in the south-western end of the western trench segment. With an external diameter of up to 110 mm it falls within the larger of the two groups of junction collars identified by Manning (1985, 129). No evidence for the associated wooden pipe was recovered, and it is likely that the pipe was removed when it fell into disuse. It is not clear whence the water running through the pipe was sourced from, perhaps from a well to the rear of Building 11 or one of the adjacent plots further east.

The yard surface was cut by a few small pits, or large post-holes, although it is unclear what activities are associated with these features. Among the finds from the area was a lock pin (Fig. 55, 137). Several dumps of what appeared to be mainly ash and charcoal mixed with domestic waste were deposited over the surface. Analysis of charcoal recovered from these deposits identified it as predominantly oak, but ash was also included. As the origin of this material is unknown – it could include both domestic and industrial waste – the function of this area remains uncertain. After Building 11 was completely demolished, the area was levelled prior to the next phase of construction.

Building 12

This building stood in the western side of the eastern plot (Fig. 24) and was represented by a small room with masonry foundations, probably a foundation for a sill-beam, about 5 m long and 2.6 m wide with a well-made pale grey mortar floor. A few post-holes and possible brickearth floors to the north probably represent part of the same building. Above the mortar floor, and extending into the northern part of the building, was an accumulation of burnt debris, overlain in the north by occupation deposits, which

were in turn overlain by further burnt deposits. Relatively large areas of *in situ* burning were recorded within and around this building; however, whether its function was industrial, domestic, or a combination of both is uncertain. The remains of the building were overlain by burnt deposits that probably represent the destruction of the building by fire. Charcoal recovered from what appeared to be a layer of burnt wood, probably from a collapsed wall or partition, consisted entirely of fast-grown oak and included heartwood.

Building 13

The few beamslots and post-holes that represent this possible building were not well preserved, but appeared to define a small (approximately 6 x 6 m) timber structure to the east of Building 12. As no floors or occupation deposits were associated with this structure its function is uncertain. The life span of this building is also uncertain. All of the remains were sealed below a demolition/levelling deposit which marks the end of Period 5.

Open Area 13

This area lay to the east of Building 12 and to the south of possible Building 13 and was almost completely occupied by a very large irregular pit (4.65 m long, over 2 m wide, and 1.30 m deep; not illustrated) that contained large quantities of what appeared to be demolition debris in its base. Later fills comprised redeposited brickearth and general domestic rubbish. The upper fills of the pit were overlain by dump/levelling deposits that mark the end of Period 5. The basal fill of the pit contained the foot of a metal vessel (Fig. 53, 3611).

Open Area 14

This area lay to the south of Building 12 and is represented by a cobbled surface and associated occupation deposits. These were overlain by a second cobbled surface, a small hearth, and associated deposits which was in turn overlain by three further cobbled surfaces and related deposits. It is assumed that this area was associated with Building 12, although the functions of both area and building remain unclear.

Open Area 15

In the latter part of Period 5, the western plot was probably used as a dumping ground for waste from adjacent plots. A spread of dark deposits containing large quantities of finds extended across the whole area, suggesting that it probably served as a midden, possibly for quite some time. As the buildings in the eastern plot were demolished and the ground consolidated for rebuilding, the midden was capped by a series of levelling layers.

The animal bone from this area was mainly of cattle and pig, but there are also several minor species including dog (including the partial carcass of a pup), birds, and the only two fragments of horse from Roman deposits on site. The cattle butchery is distinctive with several scapulae showing hook damage (Fig. 59). The pottery from Open Area 15 included two stamped Spanish amphora handles, at least one trimmed sherd indicating the secondary use of these vessels, *Verulamium* region whiteware tazza sherds and possible greyware 'waster' jar sherds, a fine colander/strainer sherd, and the base of a small unguent jar. Other finds included a copper alloy stylus (Manning 1985, type 3), an iron stylus (Manning type 1; Fig. 54, 3748), an incomplete copper alloy dolphin brooch and quite large quantities of metalworking debris, presumably deposited from the industrial area to the east, represented by Building 11.

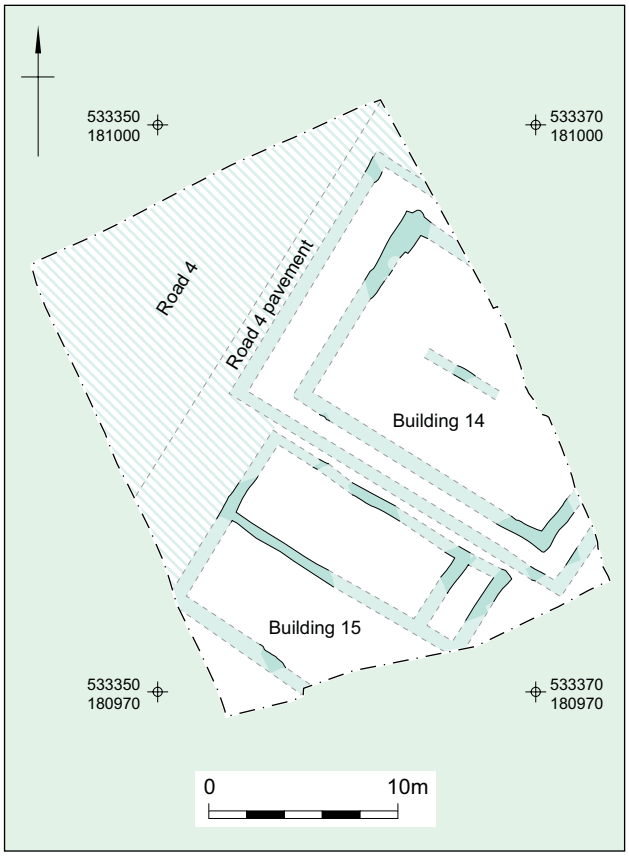

Figure 25 Period 6: plan of principal archaeological features

Figure 26 Period 6 Building 14: construction detail of the north-west wall showing roughly hewn ragstone blocks bonded with pale grey mortar above the remains of wooden piles

Figure 27 Period 6 Building 14: remains of tessellated flooring within the possible corridor on the south-western side

Period 6: Mid–Late 2nd Century (AD 150–200)

A series of demolition and levelling deposits across most of the eastern and western plots represents the end of Period 5 and the beginning of Period 6 (Fig. 25). The third major resurfacing of the road appears to have occurred at this time, and two large masonry-founded buildings were built, occupying the majority of the two plots.

Dating

Later truncations, principally caused by the construction of the 20th century and earlier basements, had removed the majority of stratified deposits associated with this and later periods. Consequently the finds assemblages recovered were much smaller than for most of the earlier periods. Only five coins were recovered from features and deposits from this period. They comprised a worn *sestertius* of Antoninus Pius from occupation deposits above the Road 4 pavement and four coins from Building 15, the latest of which is an *as* of Trajan from the robber trench, whilst the other coins comprise two coins of Domitian and one unidentified *as*. None of these would be incompatible with a date in the second half of the 2nd century. Very little samian ware was recovered from this period and the small assemblage was mostly residual. This fits in with the small amount of 2nd century samian recovered from the site as a whole, the majority of which appears to date to the Hadrianic or early Antonine periods, suggesting a very real decline in the use of samian after about AD 150. Other pottery recovered from Period 6 features and deposits included Colchester colour-coated ware sherds, a fabric that only became significant in London during the early Antonine period, found below *in situ* masonry foundations of Building 14; an overfired short-expanding ring-necked flagon with almost horizontal rim (type IB.10), dated to the later 2nd to mid-3rd century, also from a foundation of Building 14; a large *Verulamium* region white ware flagon or amphora with a double handle and a moulded rim, datable to the 2nd century, from Building 15; and a Nene Valley colour-coated ware beaker from occupation deposits within Building 15, datable to AD 150 or later. Based on this, a date range of approximately AD 150–200 is suggested for this period.

Road 4

The third major resurfacing of the road and pavement marks the beginning of Period 6. Several layers of well-compacted gravel were used to construct the cambered surface, and dump deposits were used to build up the levels beside the road before the gravelled surface of the pavement was laid. No flanking ditches

or drains were associated with this phase of road, but it is possible that the later Period 7 roadside ditches had truncated these.

Building 14

This very large masonry founded building occupied the whole of the eastern plot during Periods 6 and 7; the masonry foundations were not completely robbed out until the 11th or 12th centuries. Due to later truncations this building is represented by the large foundation trenches, a few cut features that probably represent internal divisions and a few patches of *opus signinum* and tessellated floor. As very few finds were recovered from the small areas of surviving stratified deposits, it has not been possible to date securely the three phases of activity within this building. While it is probable that this building continued in use during Period 7, all three phases of flooring and associated activity are considered in the description of Period 6.

The building was approximately 16 m long and 10 m wide, with a possible external corridor. It had deep foundation trenches, in some places still containing *in situ* masonry, comprising roughly hewn ragstone blocks bonded with pale grey mortar above the remains of wooden piles (Fig. 26). Within the possible corridor all that survived of the flooring was a small area of tessellated floor along the south-western side (Fig. 27). No clear internal divisions were recognised in the building, but a substantial possible column base, constructed of large quernstone fragments mortared together in two courses within a large rectangular cut, along with the very truncated remains of possible foundation trenches for timber beams, suggest that the building had more than just a single large room with a flanking corridor.

The very small surviving area of tessellated floor within the possible corridor comprised small sub-rectangular ceramic *tesserae*, including some cut from Dressel 20 amphora sherds, set in a pinkish sandy mortar; another example of the re-use of these vessels after their initial purpose as transportation containers for olive oil. The earliest floors within Building 14 were of *opus signinum* (Fig. 28); these and associated occupation deposits were overlain by destruction deposits, including a possible *in situ* burnt sill-beam and deposits of burnt clay/daub. These possible fire deposits were overlain by a second phase of *opus signinum* and rammed chalk floors with associated occupation deposits and a small hearth. A third phase of *opus signinum* and chalk floors were cut by a possible beamslot, perhaps representing an alteration of the internal divisions. Large quantities of painted wall plaster in the occupation/demolition deposits, which overlay all of the surviving floors, together with the tessellated pavement and well made *opus signinum* floors, suggest that this building was probably domestic and of relatively high status compared to the earlier buildings on the site.

Figure 28 Period 6 Building 14: distorted opus signinum *floor under excavation*

Figure 29 Period 6 Building 15: masonry footings of central wall

A large deposit of charcoal in the base of the early phase of the beamslot, originally thought to be the *in situ* remains of the burnt beam mentioned above, contained several pieces of narrow roundwood from oak, hazel, willow and/or poplar and bramble (*Rubus* sp.) or briar (*Rosa* sp.) stems. An oak stem (diameter 20 mm, five growth rings) bore an oblique tool-mark at one end, indicating the use of a slashing implement. Although none of this material would have originated

from the beam, the sample also contained oak largewood – a more likely candidate for the sill- beam. The origin of the roundwood, especially the bramble/briar stems, is more uncertain. It is feasible, particularly if the building had become derelict or unkempt and the adjacent land overgrown, that brambles in close proximity to the walls were caught up in a conflagration. Possible sources for the remaining roundwood include wattlework or fuel debris from a domestic hearth. If this interpretation is correct, it implies a period of abandonment and dereliction before the second phase of *opus signinum* floors were laid and the building was reoccupied.

Building 15

Following the levelling that marks the end of Period 5 in the western plot, the whole of the plot was occupied by a large (at least 15 m long and 11 m wide) masonry founded structure. A group of stake or post-holes cutting the levelling deposits appears to represent some sort of construction activity, possibly scaffolding or the marking out of the building. The walls were then built, including a central north-south partition (Fig. 29) and a 2 m wide corridor to the south-east. The earliest floors were of rammed brickearth; in the main (eastern) room a complete amphora appears to have been set into a small pit in the floor, suggesting a possible storage function. However, a small hearth immediately adjacent to the amphora, from which only oak largewood charcoal was recovered, possibly indicates an industrial function. Various occupation deposits overlay these early floors, including what appeared to be a dump of animal bone. This was dominated by cattle and cattle-size fragments, with just four (out of 504) other bones. The occupation deposits lay below a second phase of brickearth floors, which produced a Nene Valley colour-coated ware beaker base, dated to *c.* AD 150 or later, and a fine greyware tazza rim, as well as associated occupation deposits. A potential alteration to the internal partitions within the building is represented by a possible beamslot and a few post-holes. Following this alteration, a third phase of brickearth floors was laid, a small oven or kiln was constructed in the eastern room and a few small pits and/or post-holes of uncertain function were dug in the western room. The animal bone assemblage from deposits associated with these phases comprised mostly cattle and cattle-size fragments along with some bird bones and a red deer humerus. The cattle bones, in particular the scapulae, show evidence of a distinct butchery style: the distal articular area is usually trimmed down, the lateral spine is often sliced off, and sometimes there is a hole punched through the blade which may derive from the hanging of the meat on a hook (Fig. 59). This would probably have been waste from a purveyor of preserved meat and not from the end-user household waste, suggesting that this building may have been associated with meat preparation.

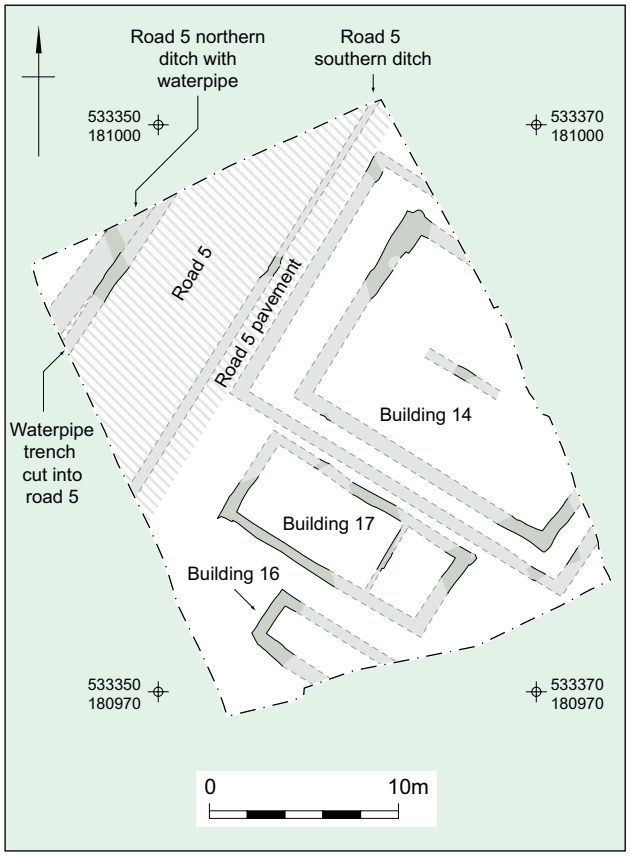

Figure 30 Period 7: plan of principal archaeological features

The final phase of activity within the building is represented by repairs to floors, the accumulation of occupation deposits and a small hearth. The western side of this structure was demolished and much of the masonry foundations robbed after it fell out of use at the end of Period 6. However, the central partition wall and eastern wall appear to have been at least partially retained and incorporated into the structure of Building 17. Small quantities of copper alloy working debris and probable scrap material were recovered from various deposits associated with Building 15, but these are thought to be residual (see, for instance, probable bucket foot: Fig. 53, 381 and iron tool: Fig. 55, 3513). Although an industrial function for the small hearth and amphora associated with the first phase of floors is possible, as is the dump of cattle bones that appears to be butchery waste, the main function of the building appears to have been domestic. The hearths and associated deposits of the later phases produced a wide range of woods, including oak, alder, birch, hazel, willow and/ or poplar, and the hawthorn/*Sorbus* group, all of which are likely to have been used on domestic hearths.

Period 7: Later Roman (*c.* AD 200–410)

Period 7 represents the latest stratified Roman deposits surviving on the site (Fig. 30). The beginning of Period 7 is marked by the fourth resurfacing of the road. In the eastern plot Building 14 appears to have continued in use throughout Periods 6 and 7, although it may have been derelict for a time. In the western plot Building 15 was partly demolished and rebuilt, with the remaining walls incorporated into Building 17 and a small masonry building, Building 16, built to its west. The remains of a later Roman water pipe cut into the surface of the latest surviving road deposits, together with later Roman finds recovered from medieval and post-medieval pits, indicate that stratified Roman deposits later than Period 7 have been truncated by the modern basements.

Figure 31 The light-coloured gravel layers of Period 7 Road 5 visible in the far left corner of the site with modern Fenchurch Street beyond the fence above

Dating

Due to severe truncation of the deposits, only a quite small finds assemblage was recovered from this period. Three coins were recovered from Road 5: two coins of Vespasian, one from within the indurated gravel deposits of the road and one from the fill of the southern roadside ditch, were clearly residual; however, a radiate of Allectus, datable to the late 3rd century, was also recovered from the southern roadside ditch, suggesting that this may belong with a later resurfacing of the road. A later wooden water pipe cut into the truncated road surface, but not deeply enough to be contemporary with this phase of road, suggests that a fifth resurfacing of the road had probably been removed by truncation, and it is possible the roadside ditch may have been at least partially recut at this time. The only other coin found in features and deposits of this period, a *denarius* of Septimius Severus (AD 193–211), was recovered from the latest surviving phase of Building 16. Very little samian was recovered from this period, and the small assemblage was mostly residual. However, a stamped piece of samian ([S]ERV[IM]), dated to AD 160–200, was recovered from the second phase of floors within Building 16. Very little of the other pottery from this period was closely datable, but a Cam 306 bowl rim, a 3rd century form, was found in the occupation deposits above the third phase of floors in Building 16. A copper alloy ring-key from a small box or casket (Fig. 53, 215; Crummy 1983, 84) was recovered from the final phase of occupation deposits within Building 16. This is similar in form to an example of early to mid-3rd century date from the Roman quay at St Magnus House, London (Chapman 1986, 236, fig. 14.6) and also from a 4th century context at *Verulamium* (Frere 1984, fig. 18.163–4). Whilst it is probable that Period 7 began around AD 200, the dating of the structures and features of this period is problematic; this period therefore covers the whole of the Romano-British period after AD 200.

Road 5

The last surviving resurfacing of the road marks the beginning of Period 7 (Fig. 31). More well-compacted layers of gravel were used to raise the level of the road, presumably to form a cambered surface, although later truncations had completely removed all traces of the road surface. The road was flanked by substantial ditches to the north and south, set *c.* 7.2 m apart. These ditches were originally timber-revetted, but appear to have been converted subsequently into box pipes, represented by an iron pipe collar set on a clay deposit in the northern ditch. Similar clay deposits were found in the southern ditch, although no pipe collars were found. The truncated remains of a later box pipe on the northern side of the road, too shallow to have been associated with this phase of road construction, suggest that the modern basements have removed at least one, if not more, later road surfaces.

A large assemblage of animal bone was recovered from the roadside ditches, consisting almost exclusively of cattle and cattle-size fragments. This is a common finding, in part because ditches are a convenient place to dump large waste, but these contexts often also contain less well preserved material and therefore less of the smaller bones. This was not noted here, implying that the bias towards larger bones is not the result of post-depositional processes.

Figure 32 Period 7 Building 16: detail of masonry wall before excavation

Figure 33 Period 7 Building 16: possible oven furnace door or strong box lid found in secondary use set into the base of a hearth

Building 16

A small masonry building, approximately 3 m wide and over 3 m long, was built in the area previously occupied by the western side of Building 15. It was constructed of ragstone, tile, and brick with pale grey mortar within a shallow foundation trench, and it survived to a height of 0.25 m above the contemporary ground surface (Fig. 32).

Within this building, layers of trampled and dumped material probably represent the construction process itself and/or bedding for the first phase of flooring. The earliest floor was made of a pale grey mortar, very similar to that used in the walls, and overlain by a thin layer of occupation debris that contained much food waste, including bone, eggshell, and mollusc shell. Following this, there appears to have been a probably fairly short period of abandonment, represented by cess deposits and the biological reworking of the occupation deposits (see below).

The second phase of floor is represented by a layer of redeposited brickearth, with tile fragments set flat into it to form a rough floor. The occupation deposits immediately above this floor contained large quantities of oyster and mussel shells. The third phase of flooring comprised a thin layer of mortar with tile fragments set into it; this and the associated occupation deposits were overlain by a further three *opus signinum* floors and their associated occupation deposits. A large hearth was constructed above the last of these floors in the centre of the room. These deposits appear to have been weathered and showed signs of burrowing by small creatures such as worms and beetles, suggesting a second phase of abandonment. The seventh phase of floor, also of *opus signinum*, was constructed over this hearth with a second hearth built above that. This incorporated a large iron object of uncertain original function – perhaps an oven door, a hypocaust *praefurnium* cover or the lid of a strong box – which may have served as a gridiron or grate (Fig. 33). It was constructed of broad strips of iron, with two handles projecting from one side which were set into the base of the hearth (Fig. 34). This was the latest surviving deposit within Building 16 and appears to have been followed by a second period of abandonment. The occupation deposits within this building were all domestic in character, and arose from hearth rake out, spreads/dumps of kitchen, and general 'latrine' waste with only very few indications of dung being trampled into the structure (Rowesome 2000; Hill and Rowsome in prep.; Macphail and Linderholm in press).

The animal bone from building 16, in comparison with most groups from the site, had a very small amount of cattle and a high level of bird and pig. Roe deer, hare, and fish were also present. Unlike the large dumps of cattle bone, these concentrations of bird and pig could be domestic waste disposed of at or near the point of use.

Building 17

This building stood in the eastern side of the western plot and re-used the eastern and central walls of the otherwise demolished Building 15. A ragstone and tile partition wall was constructed between the two re-used walls; assuming that the northern wall of Building 15 was also re-used, this would have formed a building approximately 8 m long and 5 m wide. The earliest mortar floor and associated hearths and occupation debris were overlain by a large hearth of mortared tiles, built against the partition wall. A second phase of flooring was laid around this hearth and associated occupation deposits accumulated. These were, in turn, overlain by a third phase of floor. This showed signs of *in situ* burning, as did the associated occupation deposits. The final phase of flooring comprised fragmentary tiles laid in a silty sand matrix and was overlain by occupation deposits, again showing signs of *in situ* burning. It is uncertain

if the building fell out of use at this point or if later deposits have been truncated during construction of the modern basement.

The majority of the floors and many of the occupation deposits associated with this building appeared to have been affected by intense heat, and much of the surviving floor space was taken up with a large hearth, probably larger than required for a domestic hearth. It is therefore assumed that this building had possibly served some sort of industrial function, although finds recovered from the occupation deposits, comprising oyster shell, charcoal, pottery, and animal bone appear to represent domestic waste.

Roman Fenchurch Street: Discussion

The information derived from the structural evidence and the finds and environmental assemblages of the Roman sequence excavated at 60–63 Fenchurch Street allows the examination of three themes identified at the assessment stage (Wessex Archaeology 2004). These thematic aspects, which provide valuable data for future research of urban development (eg, Burnham *et al.* 2001, 73 esp. (d)), were aimed at examining the character of the Roman occupation, identifying periods of disuse of buildings and individual plots and examining evidence for the possible nature of late Roman activity. The attempt to distinguish between domestic and industrial functions of the buildings should only be considered as indicating a trend rather than a rigid distinction in space and use, a distinction which is typically blurred in Roman towns (M. Millett, pers. comm.; see also Niblett and Thompson 2005, 117).

The Character of the Roman Occupation at 60–63 Fenchurch Street

In the pre-Boudican period, the site appears to have been on the periphery of a settlement which is generally thought to have centred around a planned nucleus with a rectangular street pattern on the southern side of Cornhill (Perring 1991, 6; Rowsome 2008, 25; 28 fig. 1.3.3). No buildings were present during this period; structural evidence is confined to two north-east to south-west ditches and two consecutive north-west to south-east ditches subdividing the south-eastern part of the site into two plots. The subsequent development of the plots throughout the Roman period can be interpreted as following the division laid down by the Period 2 ditches between Open Areas 2 and 3.

The presence of the early burials, which admittedly cannot be dated more closely within the

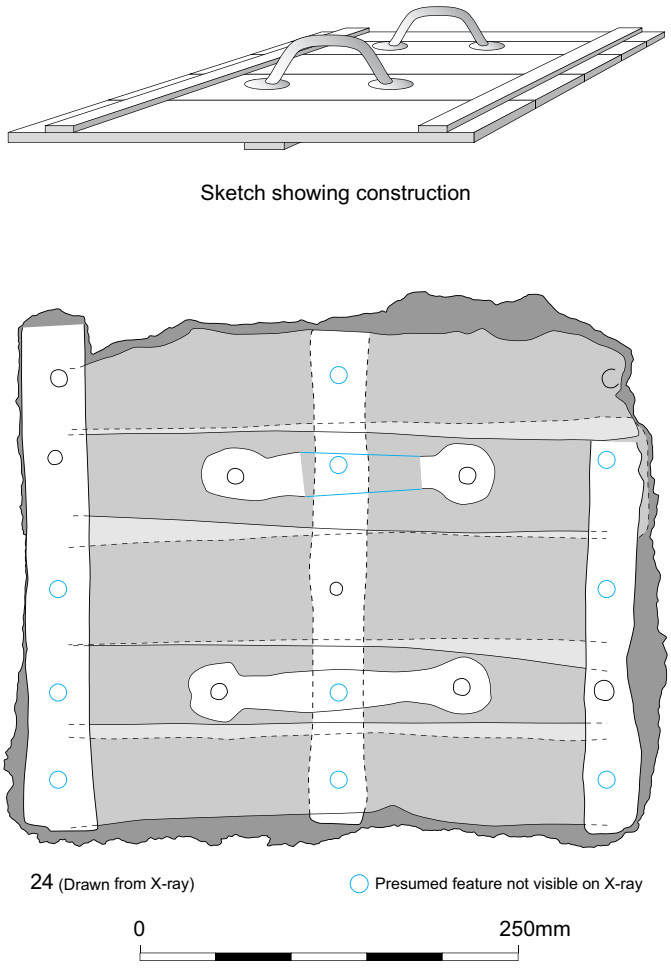

Figure 34 Possible oven/furnace door or strong box lid (Obj. 611) found in a hearth in Period 7 Building 16

Late Iron Age and the very early Roman period, would, if a Roman date is assumed, provide evidence for the location of the eastern boundary of the pre-Boudican settlement on Cornhill not too far away to the west of site.

Considering their alignment, it is probably not unreasonable to interpret the two north-east to south-west ditches as taking their orientation from a trackway which developed into the inner City extension of the London to Colchester road, whose course from Aldgate to Harold Hill has recently been summarised by Brown (2008).

The earliest activity following the construction of the ditches appears to have been related to pottery production, indicated by wasters and two successive hearths which may represent small clamp kilns. The pottery being produced here, or at least in the near vicinity, has not previously been recognised although it is very similar to the London oxidised wares, suggesting that this industry was very short-lived or unsuccessful.

The evidence for burnt grass found in the northern part of the site, and the fact that the grass did not have time to regenerate prior to the extensive levelling of the area that occurred at the transition between Periods 2 and 3, suggest that reconstruction took place fairly rapidly after a conflagration which may have occurred during the Boudican revolt. Following the levelling, the earliest recognisable Roman buildings were constructed on the site in the late Neronian period. The layout of the Roman buildings, and the plots in which they stood, was clearly influenced by the alignment of the north-east to south-west road which was itself aligned along the side of the main north-east to south-west Period 2 ditches. The buildings appear to have been strip buildings constructed of either mud bricks or wattle and daub with a timber frame and sill-beams, a very common, all-purpose building type in early Roman towns. At Fenchurch Street this type of construction remained in use until the early 2nd century. The nature of occupation in the late Neronian and early Flavian period was predominantly domestic but some industrial activity is suggested by copper alloy working debris and hearth lining from Building 2.

The first major resurfacing of the road occured at the beginning of Period 4 in the late Flavian period. At around the same time Building 6 was constructed in the eastern plot. Its finds assemblage suggests a domestic use. The western plot remains devoid of any identifiable features, but two levelling deposits covered the area.

After the destruction of Building 6, possibly by fire, the eastern plot was occupied by two buildings separated by an alleyway with a metalled surface. Although small amounts of copper alloy slag found in Building 7 may hint at an industrial use, its main function seems to have been domestic. More convincing evidence for metalworking was found in Building 8, on the eastern side of the alleyway. This combination of industrial activity with domestic occupation in the buildings recorded in the eastern plot continued well into the first half of the 2nd century.

In the later part of Period 4 the western plot was occupied by Building 9. Its exact function is uncertain; however, the evidence for the use of several large containers (three modified amphorae and at least two large storage jars) within a single room that may have opened onto the pavement indicates a storage function, possibly a shop or warehouse. The other rooms in the building are more likely to have served a domestic function. It is possible that the empty space between Buildings 9 and 10 served as an alleyway like Alley 1 in the previous phase, but it was not metalled as before. At the end of Period 4 Building 9 burned down, Building 10 appears to have been demolished around the same time and most features were covered by levelling deposits matching the height of the resurfaced road.

Again, there was a marked difference in the development of the two plots in the following Period 5. No building was constructed in the western plot throughout the first half of the 2nd century. The eastern plot, in contrast, saw a continuation of small workshops with evidence of metalworking of both copper alloy and iron and possibly also small scale stoneworking, again with evidence of domestic activity. For the first time at 60–63 Fenchurch Street masonry was used in the construction of consecutive Buildings 11 and 12; but whether for the entire walls or just for dwarf walls supporting the sill-beams remains uncertain. Another innovation that occurred in the first half of the 2nd century is the installation of box pipes just north of the roadside ditch and in Open Area 12.

In Period 6, starting around AD 150, the road was again resurfaced, but evidence for box pipes and roadside ditches was probably completely obliterated by later Roman development in Period 7. Two stone-founded buildings were constructed, each completely covering their respective plot. Building 14 in the eastern plot had tessellated and *opus signinum* floors and possibly a colonnade, indicating a higher status than other buildings previously occupying either plot. It probably continued in use into the later Roman period, but the three phases of occupation still discernible may have been interrupted by periods of dereliction (see below). Both buildings appear to have been largely domestic, although the dumps of meat processing waste found in Building 15 suggest at least a partially commercial function as a butcher's.

Around AD 200, and coinciding with the last resurfacing of the road, whose northern ditch could for the first time be distinguished *c.* 7.2 m north of the southern ditch, the stone-founded Building 15 in

the western plot was partially demolished and replaced by two smaller buildings. As the masonry footings of these buildings were not completely robbed until the early medieval period, it is assumed that they represent the last Roman buildings to be constructed on the site. Again these buildings appear to have served a domestic function, although a large hearth in Building 17 may be indicative of an unknown industrial function.

The evidence for craft activities involving the use of fire, for which evidence has been found in most of the Roman period occupation on site, would be consistent with a more peripheral location within the *pomerium* of the City, and there is so far no reason to assume this would have changed with the expansion of Roman London (see, for instance, Rowsome 2008, 31 fig. 1.3.7; Swain and Williams 2008, 36 and fig. 1.4.3).

Evidence for the Disuse of Roman Buildings

by Richard I. Macphail and John Crowther with Vaughan Birbeck

It is clear that at least half of the 17 Roman buildings recorded on the site were destroyed by fire, as indicated by *in situ* burnt structural timbers and burnt daub deposits representing collapsed walls. Several others were deliberately demolished. However, environmental analyses, principally soil micromorphology and charcoal analysis, suggest that some of the buildings may have been abandoned for periods of time.

A monolith sample and three bulk samples were employed to investigate a complex sequence of deposits within Period 5 Building 11 in the early 2nd century. What was thought to have been the remains of an *in situ* burned oak sill-beam was found overlain by burnt deposits with abundant daub inclusions, thought to represent a collapsed wall. The sill-beam was resting on a compact ash-rich brickearth deposit containing numerous charcoal and burnt flint inclusions: the levelling layer overlying the remains of Period 4 Building 10. The exact original nature of this layer, which contained (now charred) monocotyledonous plant material and possible inclusions of pig-like dung, is difficult to determine, but it may have become stained/weathered by *in situ* rotting of the sill-beam. It can also be noted that ash resting on the surface of the burned beam, and the charred and ashed beam itself, underwent some decalcification and working by small soil fauna. This short episode pre-dated the deposit thought to represent the collapse or demolition of the daub walls, suggesting a period of abandonment between the burning of the building and the final demolition or collapse. This overlying layer contained very abundant, very coarse burned and rubefied or blackened daub. The daub is mainly made from brickearth subsoils and features thin planar voids that are relicts of plant temper. The deposit also showed very strong evidence of heating/burning, and it can be clearly suggested that this is debris from the destruction of the building by fire. As some minor weathering took place, it seems likely that this debris layer did not immediately follow the fire but was the result of later collapse or levelling. At No 1 Poultry a probable Boudican building fire led to similar deposition of rubefied daub made from brickearth (Macphail and Linderholm in press). At both sites, the fragmented nature of the burned brickearth daub suggests levelling.

Possible evidence of abandonment or dereliction was also recovered from Period 6 Building 14 (mid–late 2nd century). Burnt destruction levels were thought to include the *in situ* remains of a sill-beam in the centre of the building. A charcoal layer at the base of the beam slot included several pieces of narrow roundwood from oak, hazel, willow and/or poplar, and bramble or briar stems. The oak may have originated from a burnt sill-beam and the hazel and willow from wattlework or fuel debris from a domestic hearth. The origin of the bramble/brier is less certain, but a period of abandonment, possibly not much more than a small number of years, is suggested, prior to the reoccupation of the building; however, the date of this possible abandonment or dereliction is unknown.

Soil micromorphology samples recovered from the sequence of floors in Period 7 Building 16 also produced evidence for periods of abandonment or dereliction during the life of the building in the late Roman period. The earliest mortar/*opus signinum* floor seems typical, with poorly sorted gravel to coarse sand-size brick/tile flint, burned flint, and quartz, set in a matrix of yellowish-grey micritic material, with many fine organic inclusions, also tempered with medium rounded sand grains (Macphail 2003a; 2003b). It can be noted that the floor layers include a thin (1 mm) soil layer (trample), a possible thin (2–4 mm) brickearth 'clay' surface below another 4 mm of (non-coarse tempered) mortar/plaster. This sequence suggests possible resurfacing rather than simple tracking-in of calcareous building debris, before a period of abandonment suggested by the weathering of the uppermost mortar layer, with depletion of the mortar (ie decalcification) and some burrowing by small soil animals. The overlying layer comprised a very charcoal rich deposit containing much food waste, including bone, eggshell, and mollusc shell, probably reflecting the use of the abandoned building/room for waste disposal. There were also some iron-stained bone fragments, possibly deriving from meat preparation (uncooked); or it may

have a cess origin. Cess was also indicated by amorphous yellow-stained materials and nodules. Additionally, this layer underwent probably short-lived biological working and weathering. It was sealed below a series of beaten floor surfaces (Macphail *et al.* 2004), which include more ash and were less charcoal-rich, though they again contain much charred food waste and possible burned stabling waste. Although burned debris/hearth rake out was present, only small amounts of burned mineral material occurred. There was also evidence of probable liquid latrine waste spillage/inputs into this space. The overlying occupation deposits (probably formed from general waste disposal from hearth rakeout deposits/associated beaten floor sweepings, food and latrine waste, possible fine butchery waste, and ubiquitous building debris – some possibly from *in situ* building decay (mortar)) also appear to have been biologically worked at the same time. The latter suggests that the occupied space changed into a midden-like area that underwent intermittent biological activity and weathering, indicative of a second period of abandonment. The overlying deposits, related to the construction and use of the latest surviving hearth within the building, both displayed very strong evidence of heating/burning and contained shell, charred wood, bone and fine burned bone. These deposits appear to be a little more compact than the underlying occupation/midden deposits, possibly indicating greater human use of this space.

Evidence for the Possible Nature of Late Roman Activity

The truncation of stratified deposits by the modern basements means that the date at which the Period 7 buildings were finally abandoned is uncertain. Finds of glass, datable to the late 2nd or 3rd century, were recovered from the latest surviving stratified deposits within Building 16, as was the ring-key (Fig. 53, 215), probably from a box or casket. A short-expanding ring-necked flagon, datable to the later 2nd–mid-3rd century, was found in the Building 14 foundations, but no other closely datable material was recovered from any Period 7 buildings, suggesting that they may have fallen out of use at sometime in the early–mid-3rd century. The truncated remains of a box pipe found cutting the latest surviving road deposits and assumed to have been associated with a later resurfacing, suggests that even if the main area of the site was abandoned, as seems to be the case, the road continued in use.

Many Roman coins were recovered from the later, medieval Period 8 and 9, features. Although these include some coins of the 3rd and 4th centuries, along with similar numbers of earlier coins, they are not found in sufficient numbers to suggest that the area was intensively occupied during this time, and no coins later than the Valentinianic period (AD 364–378) were recovered. Of the seventeen 3rd or 4th century coins from medieval features it is perhaps significant that nine were recovered from features cut into the road or the flanking pavement, a further six from features located within 5 m of the road, and only two were recovered in the south of the site, whereas the earlier coins recovered from these features were more evenly distributed. It is notable that a similar distribution was noted with the Period 7 coins: three coins were recovered from the road or associated features and only one from the south of the road. It appears, therefore, that the majority of 3rd and 4th century coin losses on the site were probably associated with the continuing use of the road and that the dearth of identifiable activity to the south of the road during the later Roman period probably indicates that the area was no longer in use, or was only sporadically used. This appears to be supported by the pottery assemblage as only very small quantities of late Roman pottery were recovered from the site, and these were also from medieval features.

There is thus evidence, albeit poorly dated, for the abandonment and dereliction of all of the final phase of buildings in the later Roman period. This suggests a decline in activity during the later Roman period.

Water Supply

No well was found in either of the plots at 60–63 Fenchurch Street. It is likely that this is because the area exposed in the excavation revealed only those parts of the plots near the street frontage, rather than to the rear of the buildings as was the case at Lloyd's Register further to the east. There, wells or soakaways were found in period 2 and period 5, phases 1 and 2 (Bluer *et al.* 2006, 11 fig. 7, S1 and S17; 47 fig. 44, S24; 50 fig. 46, S23. room E.OA31). However, it should be noted that wells are generally rare on the top and eastern slopes of Cornhill. The distance to the water table below the brickearth capping of the hill meant that the digging of wells would have required a considerable effort (Williams 2003, 245).

There is, however, evidence for the piping of water by the early 2nd century AD. Although it cannot be dated more closely to one of the three sub-phases of Period 5, a water pipe was installed just north of the southern roadside ditch of Road 3. A water pipe was also installed in Open Area 12 following the demolition of the lean-to structure south-east of Building 11, which marks the transition from Period 5a to 5b. In both cases evidence for the original water pipes is provided by iron junction

collars. It is not clear where the water was coming from, but it may be either from a conjectured well to the south-east of Building 11 or one of the adjacent plots to the east, or possibly even a pipe branching off from the main water pipe along the road further up-slope. No such pipe was found branching off from the water pipe running along the Road 3 roadside ditch or any of the later pipes revealed in the excavation.

Later Roman evidence for water pipes was uncovered in the ditches of Road 5. Originally revetted, the Road 5 ditches appear to have had a wooden box pipe inserted, represented by an iron pipe collar set on a clay deposit in the northern ditch, and similar clay deposits were also found in the southern ditch. A later water pipe trench, containing fragments of an iron junction collar, was found cutting the surface of Road 5 but clearly belonged to a now truncated later road surface.

Evidence for water pipes has also been forthcoming elsewhere in London (Williams 2003, 243 fig. 24.1), for instance near the Bank of England (Wheeler 1930, pl. 12; Merrifield 1965, 148, 239 no. 170, pl. 109; Wacher 1995, 101), near the Temple of Mithras (Wacher 1995, 90, 101) or the Wallbrook area where a substantial length of joint wooden pipes with fragments of lead piling have recently been found in the upper reaches of the valley at Drapers Garden (Butler 2008). Among the earliest is the pipe collar from pre-Boudican levels at the Roman Forum site at 168–170 Fenchurch Street (Philp 1977, 10 fig. 5; 15; Perring 1991, 10); the difference in the route of Roman Fenchurch Street means (see Fig. 1), however, that this will not have run on the same alignment as the water pipe found just north of the southern ditch of Period 5 Road 3. By the early 2nd century wooden water pipes were installed along the road north of the Forum Basilica (Milne *et al.* 1992, 25 pl. 13) and south of the Thames at Borough High Street (BGH95) in Southwark (Drummond-Murray *et al.* 2002, 115). It remains to be seen whether these pipes were merely redistributing water from the many wells in Roman London or whether some were fed by aqueducts bringing clean water from outside the city as discussed by Wacher (1995, 101). They are though a clear testimony to the importance placed upon the supply of fresh water throughout the Roman Empire. Furthermore, it is arguable that at 60–63 Fenchurch Street those pipes running along the road were installed under the auspices of the communal administration (Williams 2003, 248), while those found in the rear of the properties are indicative of private investment.

The Development of 60–63 Fenchurch Street in the Context of Roman London

There were no buildings present at 60–63 Fenchurch Street prior to or at the time of the Boudican revolt, similar to the recently excavated site at nearby Lloyd's Register (Bluer *et al.* 2006), only 30 m to the east. There is evidence for earlier enclosures and possibly small-scale pottery production on the site, while Roman activity at Lloyd's Register is thought not to have started before *c.* AD 70. However, one of the earliest structures at Lloyd's Register, an enclosure ditch of open area 2 (*ibid.*, 10 fig. 7), may well belong to the same phase of activity as the ditches of Period 2 at 60–63 Fenchurch Street with which it shares a common alignment. A circular structure or enclosure (S6), possibly a round-house, found towards the south-eastern end of the Lloyd's Register site, is mentioned alongside other period 2 features there, but no closer dating is provided (*ibid.*, 15–6).

Should the burnt samian sherds and the levelling deposits covering all Period 2 features at 60–63 Fenchurch Street really relate to the clearing of the site following the Boudican revolt, they would fit well within the picture presented from other sites in London, which are found concentrated further west (*cf.* Merrifield 1965, 90 fig. 9; Drummond-Murray *et al.* 2002, 46 f fig. 40). Levelling and clearance deposits associated with this episode were for example found at the Forum site at 168 Fenchurch Street (FEH95; Dunwoodie 2004, 24), to the north-east at 94–97 Fenchurch Street (FST85), and also at 110–114 Fenchurch Street (FNS72) just across the road from the site. Bluer *et al.* (2006, 64) suggest that this provides support for the existence of a ribbon settlement along Roman Fenchurch Street (the inner-City extension of the London to Colchester road), but the results presented here seem to indicate that buildings in the pre-Boudican period may have been confined to the northern side of the road while animal enclosures or possible working areas were located on the southern side.

Once the development of buildings started on the site, after the Boudican fire, it took the form of a ribbon development of timber frame strip buildings aligned perpendicular to the alignment of the road. This pattern is common in many parts of Roman London (Drummond-Murray *et al.* 2002, 25; Perring with Brigham 2000, 139) and can be compared to early Flavian to Antonine levels at Newgate Street (Perring *et al.* 1991, 11–20). North of the Forum, at Leadenhall, building development in an area previously outside the settlement boundary started around AD 70, and by *c.* AD 75 an *insula* was laid out with strip buildings and one larger house fronting a road to their west. This basic layout continued, with

some alterations, until the clearance for and the construction of the Forum Basilica at the beginning of the 2nd century (Milne *et al.* 1992, 9–25).

On the other side of the Thames, at Southwark, a similar layout was excavated at Borough High Street (BGH95) along the eastern side of the road leading to the bridgehead. There was clear evidence of a pre-Boudican settlement with the first buildings thought to have been constructed around AD 50 or shortly after, and quarry pits and ditches predating these (Drummond-Murray *et al.* 2002, 24). Although similar in layout, the buildings appear to have been spaced less densely than those at 60–63 Fenchurch Street where evidence for an alleyway was only found in the middle phase of Period 4. At the 60 m long BGH95 site there was an alleyway approximately every 14 m (*ibid.*, 68–9 fig. 56) in the Flavian period. In the 2nd century a masonry-built market hall was extended, but the buildings to the south of it were still of timber frame construction. Similar to 60–63 Fenchurch Street, later Roman levels were disturbed by truncation, but the nature or style of the buildings does not seem to have changed significantly (*ibid.*, 123).

Of interest in relation to 60–63 Fenchurch Street is the identification of smithies at BGH95. The earliest evidence – in the form of large quantities of hammerscale, some slag and other metalworking waste – was found in pre-Boudican building 3 and adjoining open area 4 (*ibid.*, 28–9). In the reconstruction of the area that took place in the Flavian period, a smithy was located on the south wall of a large masonry structure interpreted as a market hall (*ibid.*, 61–2). Two hearths surrounded by a build-up of ash and hammerscale were located in this smithy, but little other evidence of ironworking was found. Initially probably nothing more than a lean-to, the structure was made more substantial in the 2nd century (*ibid.*, 83). The best structural evidence for the smithy was found in the mid 2nd-century layers, still located in the plot to the south of the market hall. They included a number of hearths, fire pits and hammerscale concentrations indicating the precise location of the anvil (*ibid.*, 96–101 figs 76–8). The earliest hearth of this period is described as having depressions in its centre which were interpreted as crucible settings, but these are more likely to be the traces left after the removal of smithing hearth bottoms, the plano- or concavo-convex slag agglomerations that form in the hottest part of the hearth (Bayley *et al.* 2001, 14–5 fig. 21; de Rijk 2007, 133–5, 149).

The buildings at 60–63 Fenchurch Street and the neighbouring Lloyd's Register site had a common alignment during the first two centuries AD, but comparison of the two sites is complicated by the fact that the two investigations targeted different areas of their respective plots. In the case of 60–63 Fenchurch Street it was the part fronting onto the road, while at Lloyd's Register the road lay beyond the north-western limits of the site, and excavations revealed the development of the rear of buildings fronting that road as well as other buildings and open areas accessed by secondary alleys and paths.

At Lloyd's Register, masonry structures were erected from the beginning of building construction on site in the early Flavian period (building 30; Bluer *et al.* 2006, 17). The poor quality of associated painted plaster recovered from overlying early 2nd century fire horizons suggests that initially they were not of the highest status (building 6–9; *ibid.*, 14). There were some timber frame buildings but they were interpreted as outhouses. In the early 2nd century a masonry townhouse (building 16) was constructed in the north-western part of the site, probably after the Hadrianic fire. Evidence for other early 2nd century buildings was for the most part restricted to short stretches of wall footings or surfaces with large open areas to the south and east. The later 2nd and early 3rd centuries saw the insertion of an arched tile-lined drain into one of the rooms of building 16 which was further extended. Further development of masonry buildings include a large aisled building with pier bases probably of pillars supporting a vaulted ceiling (*ibid.*, 69), a building with a sunken floor and a sequence of larger buildings in the south-eastern area, one of which may have incorporated a central courtyard. After the buildings and structures previously occupying the site were cleared, indicating a mid-3rd century hiatus, the subsequent later Roman development at Lloyd's Register was laid out on a slightly different alignment forming new properties. The site was now dominated by two masonry buildings with hypocausts, which may have formed part of a single complex including living quarters, a kitchen, and a bath suite. Other late Roman structures comprise a truncated masonry structure near the street frontage to the north and the fragmentary remains of clay and timber buildings which were probably all fronting the slightly curved path along the masonry buildings. By the late 4th century the formation of a 'dark earth' deposit began, which may have originally covered the whole site but was subsequently truncated in many areas (*ibid.*, 58–9).

Compared to 60–63 Fenchurch Street the development at Lloyd's Register seems to have been more domestic and frequently of a higher status, as indicated by the often more elaborate wall plasters and the installation of hypocausts in the later periods.

The possible mid-3rd century hiatus at Lloyd's Register may have coincided with the final abandonment of the plots demonstrated at 60–63 Fenchurch Street. It would be tempting to see this in

the light of the character of development of Roman towns, such as Verulamium or Silchester, during the later Roman period. These have been described as 'transformed from crowded agglomerations of timber buildings into garden cities dotted with handsome town houses … owing little to the merchants and traders who may previously have dominated urban life' (Perring 1991, 103–4; *cf.* Millett 1990, 134; Niblett and Thompson 2005, 158). Even if the number of timber buildings in later Roman towns may have been greater than previously assumed, for which Lloyd's Register provides evidence (Bluer *et al.* 2006, 69–70), it is interesting that occupation continued or resumed not at the more commercial and industrial site at 60–63 Fenchurch Street but at Lloyd's Register. Perhaps the apparent change in the organisation of the properties was the manifestation of a change in social relations and dependencies. While the occupants of the buildings at 60–63 Fenchurch Street may have carried out their crafts and trades in a more independent manner, possibly even as owners of the plot they occupied, the later development visible at Lloyd's Register, interpreted as a 'pattern of one or two substantial dwellings surrounded by workshops, sheds and servants' quarters …, on a more compact scale than is apparent on villa sites', has been suggested to represent central ownership and self-sufficiency (Bluer *et al.* 2006, 70).

Stones for Buildings Elsewhere – Period 8: 11th–mid-12th Centuries

Truncation by the 20th century basements had removed all later Roman and younger occupation deposits, and the archaeological remains of Periods 8, 9, and 10 were represented by cut features only. Period 8 (Fig. 35) is represented by the final robbing of the remaining masonry foundations of the Period 7 Buildings 14, 16, and 17, and a small number of pits. Later truncations have removed all traces of any buildings that may have occupied the site during this period. The site is therefore assumed to have been a single open space (Open Area 16). The only activity presently identified from Period 8 (11th or 12th century) is the final, comprehensive robbing of the masonry from Buildings 14 and 17. There is some evidence that an attempt was also made to remove the northern wall of Building 16, but this appears to have been abandoned. The only other features dated to this period were a few small pits, probably mainly for the disposal of domestic waste, although some rather irregular possible pits may represent tree boles/roots. The pottery assemblage recovered from the Period 8 features was dominated by residual Romano-British pottery (76.8%) but also contained quantities of cooking pots or jars in early medieval shell and sand tempered wares, along with very small quantities of early Surrey wares as well as imports of Pingsdorf types and blue-grey ware.

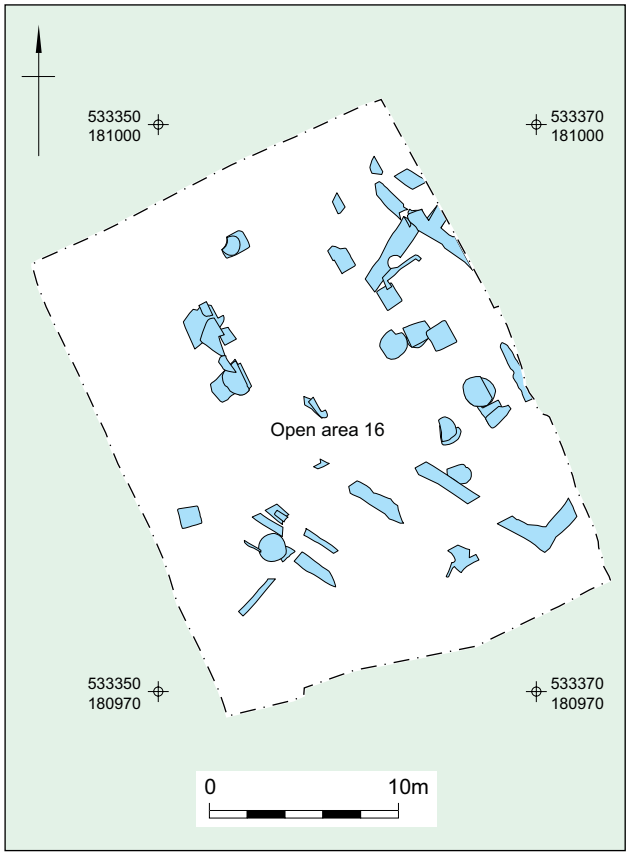

Figure 35 Period 8: plan of principal archaeological features

Open Spaces – Period 9: mid-12th–15th Centuries

The later medieval period is represented by approximately 65 intercutting pits (Fig. 36). It is clear from the intercutting of many of the pits that several phases of pit digging are represented. The distribution of the pits may relate to medieval property divisions, for instance, an apparent line of intercutting pits aligned east–west across the eastern side of the site (Fig. 37) and a second similar alignment north–south in the north-west of the site, although later truncations make these assumptions uncertain. In the absence of any structural features, the area of the site during this period is assumed to have been an open area (Open Area 17), probably representing the back-plots of properties fronting onto Fenchurch Street, which was aligned to the north of the earlier Roman road.

While the great depth (3.5 m+) of two of the Period 9 features suggests that they may have been wells, the majority appear to be either rubbish or cess pits. However, a few others may also have had different functions. Of particular interest was a small pit (1229) in the south-east of the site that contained the complete articulated skeleton of a subadult pig, seemingly with the partial skeleton of a juvenile cat (missing the head, neck, and left scapula and also some of the toes and other very small bones) placed in its jaws (Fig. 38). Although this apparent positioning may have been coincidental, the inclusion of two, at least partially articulated, animal skeletons in a single deposit within a medieval pit is unusual. The same pit also contained the partial skeleton of a fowl poult and some lambs' feet, in addition to a more usual assemblage of animal bones that probably represent kitchen and table waste, and an unusually large assemblage of burnt flint (234 pieces weighing 351 g). The partial skeletons of two further cats were

recovered from pits of this period, one of which had a cut mark across the distal part of the proximal tibia. This would have been made either during skinning or in removal of the foot. When skinning an animal of this size for fur one can cut the skin round the ankle, cut off the foot entirely, or cut off the foot but leaving the paw inside the pelt. In this instance the metatarsi are also in the fill so it seems likely that the pelt was cut off just above the ankle. The pelt is at its best in most mammals at the just sub-adult stage and there are several examples of the use of cats for pelts in the medieval period (eg, Tingey 1910).

The High- and Later Medieval Pottery and Vessel Glass

by Lorraine Mepham

The pottery assemblage recovered from the Period 9 pits included much residual Romano-British material (57.4%). The bulk of the medieval assemblage dates to a period after the mid-12th century, with a focus on the period between mid 12th–late 13th century. To this period can be attributed most of the London-type wares (including a high proportion of jugs decorated in the North French and Rouen styles), the earlier Surrey wares (Kingston-type wares, again in decorated jug forms but also including coarseware jars), and the greywares, which seem to have been supplying the bulk of the coarseware assemblage (jars and bowls). Later medieval wares (14th/15th century) are represented by the later Surrey whitewares and later London types, but there is a distinct decline in quantities during this period.

A total of 64 fragments of glass were recovered from the pits of this period, including a jug in greenish-colourless glass with horizontal trailed decoration in the same coloured glass (Tyson 2000, type D5.1). Jugs of this form, with or without trailing, are known from five other sites in the City of London (GPO site, Newgate Street; New Change, Bank of England; Lombard Street; Swan Lane, Upper Thames Street; Baynard's Castle, Queen Victoria Street; *ibid.*, figs 20–1; Keys 1998, fig. 179, 653.656). A close parallel, although with red trailing, came from Southampton (Charleston 1975, fig. 221, 1489). Jugs such as these were certainly in use by the early 14th century, possibly earlier, and they may have been made in England; Continental examples tend to be smaller. Potash glass tableware jugs are known from English furnace sites (for example in the Surrey/Sussex Weald), but not certainly dated there prior to *c.* 1500. Other glass vessels recovered include parts of at least two goblets (stemmed drinking vessels) in greenish glass, possibly imported from southern France or northern Italy, a beaker in colourless glass and parts of two flasks. This small sample of glass vessels reflects the general character of medieval glass vessels found on other sites in London (eg, Keys 1998), with a date range of 13th–15th century. Keys highlights the 'relatively small amount of glass recovered from excavations in London'. While this is probably at least in part due to the inherently unstable nature of the glass in use, and the frequency of recycling, rather than the actual quantities in

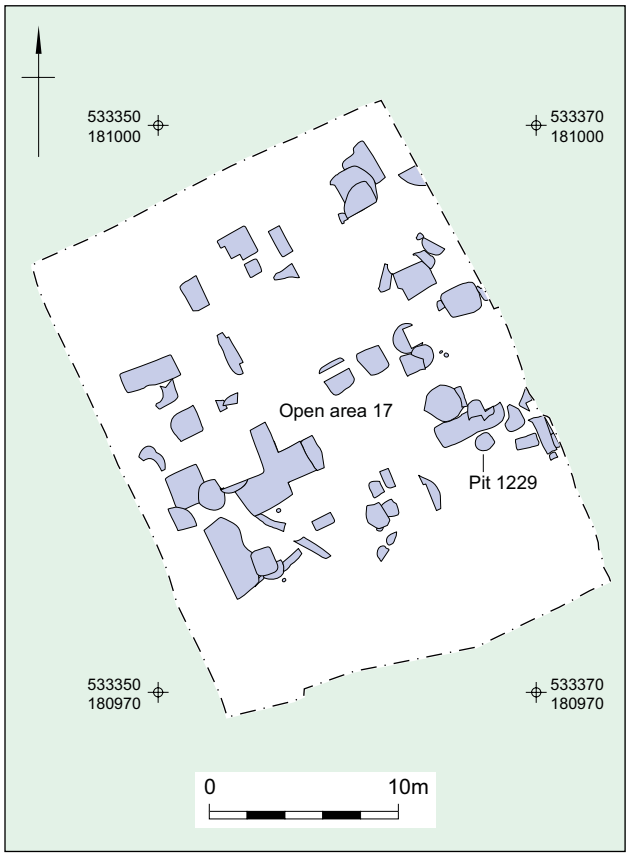

Figure 36 Period 9: plan of principal archaeological features

Figure 37 Period 9: medieval pit 1084 near the central eastern boundary of the site

Figure 38 Period 9: pit 1229, burial of a subadult pig with the partial skeleton of a juvenile cat placed in its jaws

circulation, it seems that the inhabitants of London may have been using less vessel glass than their Continental counterparts (*ibid.*, 219).

The glass suggests a high status element to the medieval occupation, although it may be noted that the corresponding mid-12th–15th century pottery assemblage contained only seven sherds of imported pottery, from a minimum of two vessels, and there are no other 'exotica' amongst the medieval finds assemblage. None of these vessel types would normally be found on a 'low status' site. However, without knowing the precise origin of the refuse discarded into the pits within Open Area 17, no conclusions can be drawn as to the location(s) of the high status occupation.

Animal Bones from Period 9 Features
by Sheila Hamilton-Dyer

The animal bone recovered from the Period 9 features includes cattle, pig, sheep, birds, cats, and fish and is probably from mixed sources, mostly domestic but with some possible craft waste. The carcasses which are prominent in this group indicate raising and keeping of animals on site, or at least close by, and tolerance of noxious waste disposal. Bird bones are rather rare from the medieval deposits, and are mainly of domestic fowl with a few bones of geese, ducks, and one of swan. The goose bones are probably mostly from domestic birds but two are small and may represent the wild ancestral greylag. The two duck bones are large enough to be probably from domestic birds. The bone remains in these pits probably result, therefore, from the waste disposal of several different activities; household waste from kitchen preparation and table leftovers, the disposal of dead household and backyard animals and some possible craft by-products, although this appears to have been on a small scale. A cat skin for example might be used directly or sold to a local furrier. The lamb foot bones could indicate waste from production of lambskin, a fine leather used for, among others, vellum, book covers, aprons, or gloves (Hamilton-Dyer, below).

Discussion of the Nature of the Medieval Activity on Site

The area of the site lies beyond the planned core of the Saxon city that was established in the late 9th or early 10th century and gradually expanded over the subsequent two or three centuries (Milne 1990, 206–7). Immediately to the west of the site there is evidence of an extensive orchard between Fenchurch Street and Hart Lane, represented by the 12th century place name *Blanch Appleton* (Ekwall 1954, 38, cited in Milne 2001, 122). The 11th or 12th century robbing of the masonry foundations of the Period 7 building could perhaps be seen as representing the expansion of the city into this area and the chance procurement of building materials.

The more intensive activity represented by the Period 9 features and deposits appears to have been primarily domestic, with evidence for small scale animal husbandry, mostly of pigs, sheep, and chickens, although a small number of bones from a neonatal calf recovered from one pit also implies cattle husbandry.

By contrast, it is difficult to interpret the unusual deposit of a complete subadult pig skeleton, apparently with a partial cat skeleton placed in its jaws and in association with a partial fowl poult skeleton and lambs feet from the same context. It could simply be a young pig that died of a disease which leaves no trace in the skeleton but would prevent its use for meat. Still-born piglets or other young animals dying of natural causes are commonly discarded in backyard pits. Had the pig been acquired and killed in accordance with numerous regulations mentioned in the medieval letter-books of the City of London (eg, *Calendar of letter-books* 1275–1298, Folio 129b, fn 29–30), whereby pigs roaming the streets could be killed '… and the killer shall have them without challenge or redemption for 4 pence from the owner', one would assume that its meat would have been used for consumption. From the recurrent entries in the letter-books it is evident that roaming pigs were regarded as a nuisance in medieval London, but it seems unlikely that a roaming pig would fall into a pit and die with a partial cat skeleton in its mouth. The latter detail is equally unlikely if the pig had died of

some disease and was simply discarded in the pit. Therefore, the possibility of some form of ritual deposition shall be explored in the following.

The apotropaic qualities of the use of 'dried' chickens and cats found under floors or in walls of post-medieval buildings is a well-known phenomenon (eg, Merrifield 1987, 129–31). Deposits of deliberately arranged animal bones, suggestive of a ritualistic or magic background, are also known from Continental cities, for instance from Burgstraße 16 in Hanover, Germany, where four cattle bones, comprising a skull, mandible, and two femurs where found arranged in a cruciform deposition in a 13th or 14th/15th century pit (Gärtner 2005, 197–8 Abb. 3). While there are no comparisons for the combination of pig, cat, and fowl poult from high medieval contexts in Europe (A. Pluskowski, pers. comm.), individual aspects of the deposit find comparisons in magic or ritualistic practices.

Magic or Ritualistic Practices as Possible Explanations for Aspects of the Deposit in Pit 1229

by Sophie Page

Juvenile animals are sometimes specified in astral magic and necromantic experiments. For example, the *Picatrix*, an important ritual magic text of Arabic origin, has instructions for sacrificing a calf to Saturn (Pingree 1986, III, ix, ii, 142). The *Experimentum Messahala* or *De secretis spirituum planetis*, a Solomonic text on the magic rings of the planets, recommends the use of a puppy skin (Lidaka 1998, 46–9). After doves, cats and cocks are the most common sacrificial animals in all genres of medieval magic. References to both these animals can be found in the *Picatrix*, Hermetic magic texts, Solomonic magic texts, and necromantic experiments. The *Picatrix* (Pingree 1986, III vii 19, 120) recommends sacrificing a white lamb to Jupiter, and the *Liber de ieiuniis et sacrificiis et suffumigationibus septem stellarum* (MS Florence Biblioteca Nazionale Centrale II II 214, ff. 23v–24v), a Hermetic magic text, records that black lambs are appropriate sacrifices to Mars.

Although perhaps less likely in this instance, the beheading of a cat may have had a ritual element; this was a common sacrificial technique used in ritual magic, especially in necromantic experiments. There are many references to *decollare* and *decollatus* in Pingree's (1986) *Picatrix* index (on beheading in the hermetic tradition, see the *Liber Mercurii* in MS Florence Biblioteca Nazionale Centrale II II 214, ff. 24v–26r and the discussion of the rings of Saturn and Venus in *De imaginibus sive annulis septem planetarum* in MS London, British Library, Royal 12. C. XVIII, f.14v).

Animal parts were commonly used in natural magic. In ritual magic, parts that were difficult to burn were sometimes removed before the sacrifice, and internal organs, especially the liver and heart, might be consumed by the practitioner on the removal and consumption of animal parts as part of the sacrificial ritual, (see Pingree 1986, III, vii: 17, 31, 33, 35; ix: 13; IV, ii, 4–5, 180–1; *Liber de ieiuniis et sacrificiis*… ff. 23v–24v; *Liber Mercurii* ff. 24v–26r; *De imaginibus* …, sec. XIV, f.14r–14v).

The pig is the more unusual feature of this deposit. An 8th century list of superstitious and pagan activities refers to swine being sacrificed for a festival in February (McNeill and Gamer 1990, 419–21), but pigs are not common in late medieval magic rituals. Nor am I aware of any parallels to the cat being placed in the pig's jaws, although the *Experimentum Messahala* (Lidaka 1998, 46–9) recommends that some sacrificial animals are wrapped in the skins of other animals, for example, a river eel sacrificed to the moon should be wrapped in puppy and eel skin showing that a combination of animal parts was used to intensify the effect of the sacrifice. Both the pig and cat are animals of Saturn according to the *Picatrix* (Pingree 1986, III i 3, p. 91).

While the practices described (above) may provide arguments for a magic or sacrificial explanation of the deposition in pit 1229, the lack of a closely comparable combination of all these aspects should caution against a definite interpretation of the context as 'obscure' until further, similar deposits have been recorded elsewhere.

The two possible alignments of intercutting pits in the centre of the eastern side of the site and in the north-west of the site may reflect the position of property boundaries, but later truncations make this uncertain. It is perhaps noteworthy, however, that these possible alignments appear broadly to reflect the position of later garden plot boundaries shown on Ogilby and Morgan's *Large and Accurate Map of the City of London*, produced in 1676 (Fig. 39, 3) and perhaps also those depicted on the Copperplate Map of 1553–9 and the Agas Map of *c.* 1562 (Fig. 39, 1–2).

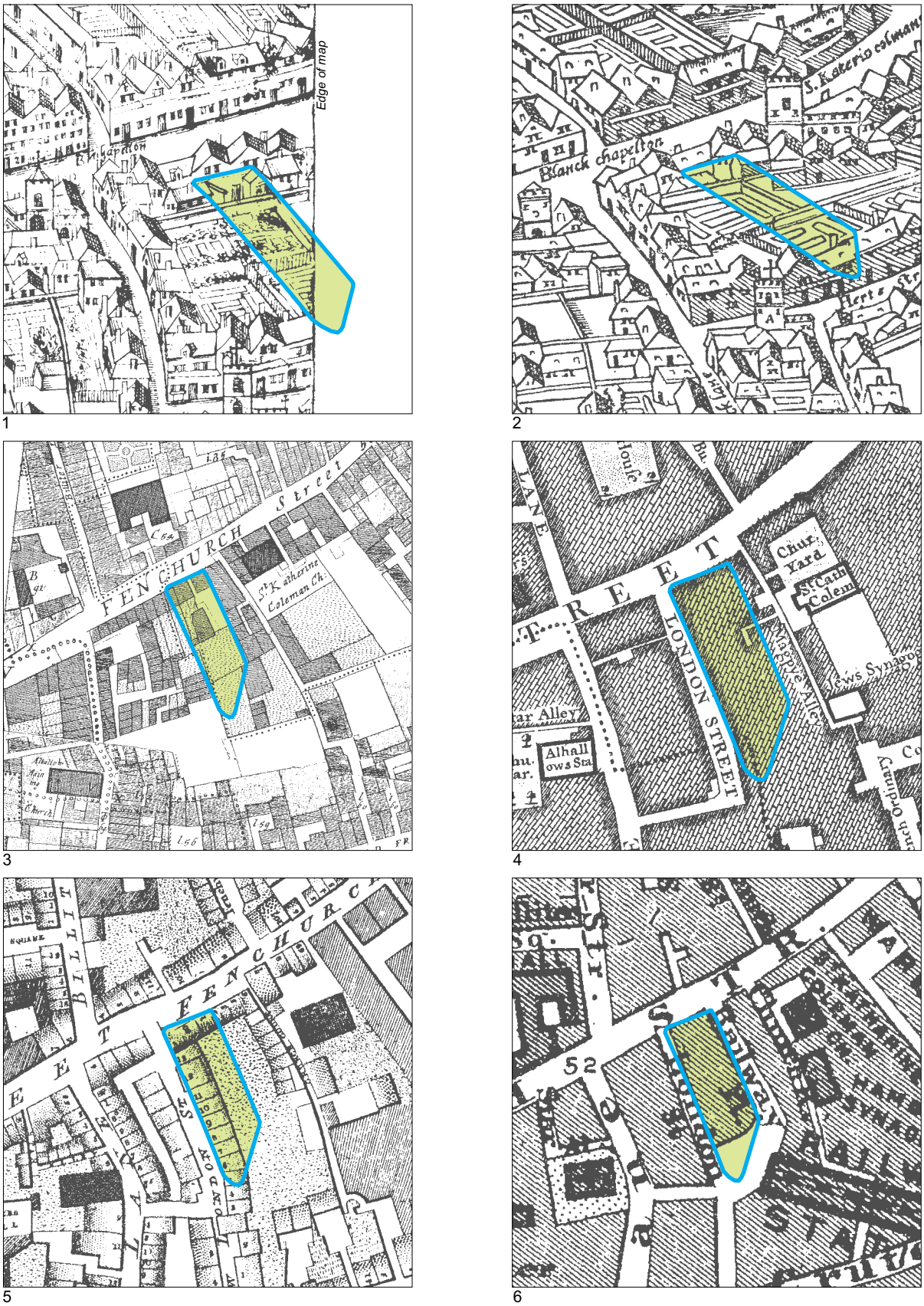

Figure 39 Historical map regression showing the outline of the modern development in relation to the historic surroundings. 1) 'Copperplate map' c. 1553–59; 2) 'Agas map' c. 1562; 3) John Ogilby and William Morgan c. 1676; 4) John Rocque 1746; 5) Richard Horwood's Map 1799; 6) Stanford's Library Map of London and its suburbs 1862. Maps reproduced with kind permission of H. Margary (1, 2 and 6), H. Margary and Phillimore & Co. (4), and Guildhall Library, City of London (3 and 5)

Post-Medieval Fenchurch Street

Period 10: Post-Medieval

Due to the truncation by modern development, the archaeological evidence only contributes to a minor extent towards the history of the post-medieval and modern development of the site and its neighbourhood (Fig. 40). This development is, however, well documented by a sequence of historic maps and Ordnance Survey maps of the 19th and 20th centuries. From this it can be shown that, by the middle of the 19th century, the open area behind the houses fronting onto Fenchurch Street had been built over and the streets were basically laid out in a way that resembles the present-day arrangement. Again, as during the Romano-British period, the character of the occupation is of a different and slightly lower status than at the Lloyd's Register site where occupation includes St Katherine Coleman church and churchyard, a synagogue, as well as warehouses of the East India Company (Bluer *et al.* 2006, 81–95).

A list of all maps consulted is included in the bibliography, and a synthesis of the site's historical development is presented below, followed by a brief account of the archaeological evidence.

Documented Development of the Site

by Mike Trevarthen

16th century

The earliest detailed maps of the City of London date from the second half of the 16th century. These are all 'perspective' maps, showing buildings, particularly churches, in partial elevation, rather than plan view.

The Copperplate Map of 1553–9 (Fig. 39, 1) shows a continuous built-up street frontage on the south side of Fenchurch Street, from the junction of Mark Lane to St Katherine Coleman Church. Amongst these buildings is presumably the *Kings Head* (later the *London Tavern*), wherein, it is alleged, Princess (later Queen) Elizabeth enjoyed a meal after her release from the Tower of London in May 1554 (Shelley 1909, 42; Popham 1937, 189). The map also indicates that behind these properties lay an area of open ground, illustrated as garden plots. It is pure chance that the area of 60–63 Fenchurch Street is included in the Copperplate Map; the surviving parts of the map end immediately to the east of the site.

The Agas Map of 1562 (Fig. 39, 2) adds little information, and appears merely to copy and simplify the buildings, rooflines, and garden layout of the Copperplate Map. The basic road layout of Fenchurch Street, Mark Lane, and Hart Street is apparent on both maps, as is St Katherine Coleman Church to the east. Immediately to the west of Mark Lane, Blanch Appleton (*blanck chapelton*) is indicated as a church, most likely associated with the manor of the same name.

The Braun and Hogenberg map of 1572 is at too small a scale to produce meaningful detail, but confirms both the general street layout and the nature of the site, with a developed Fenchurch Street frontage, backed by garden plots.

17th century

Faithhorne and Newcourt's map of 1658 is in perspective rendering and is highly stylised in its representation of structural detail. Two very small-scale maps of the City of London, both by Wenceslaus Hollar, dated 1666, and probably reworkings of the same base-survey, show the extent and limits of

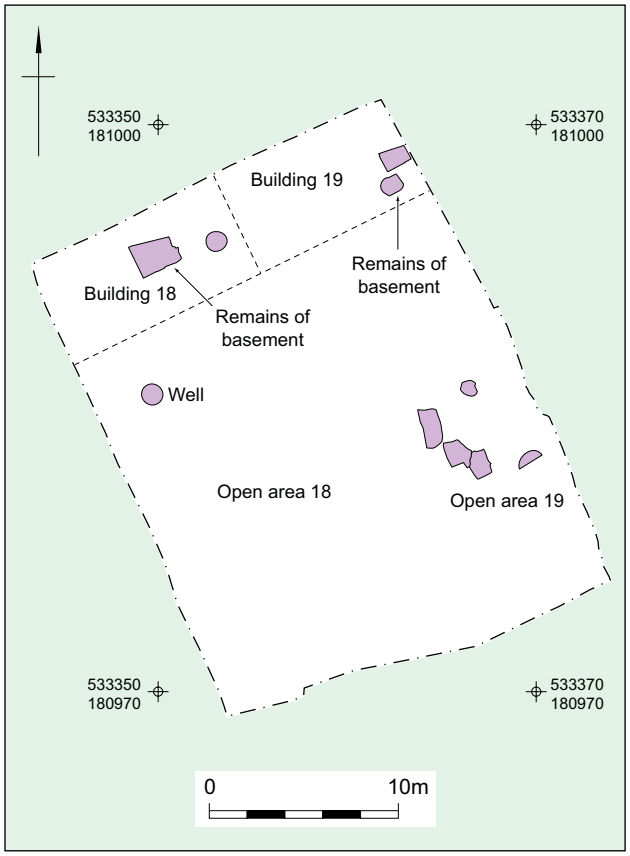

Figure 40 Period 10: plan of principal archaeological features

destruction of the City centre during the Great Fire of that year. These are probably amongst the earliest maps of the City to be executed in plan view. However, they show little detail of the site, other than that it lay just outside the area of destruction, the fire having been checked just west of Mark Lane, perhaps 100 m west of 60–63 Fenchurch Street.

The Leake Map of 1667 shows in more detail the extent of damage sustained during the fire of 1666, but also places the edge of destruction just west of Mark Lane. Leake confirms the layout of the area seen through earlier maps, and also shows a continuous Fenchurch Street frontage from Mark Lane to St Katherine Coleman Church, and beyond. Although land to the rear of this street frontage is indicated as generally open, there is the suggestion that some partial infilling had taken place.

Ogilby and Morgan's *Large and Accurate Map of the City of London*, produced in 1676 (Fig. 39, 3) represents the first detailed plan-view map of the City and confirms some of the infilling of former garden areas behind the Fenchurch Street and Mark Lane frontages. Within the site, gardens or yards seem to have been retained behind the properties, with the exception of a building in the south-eastern quadrant of the site. The Ogilby and Morgan Map also begins to show some of the structural features fossilised in later land-use, notably St Katherine's Row, and the area of buildings immediately east of modern Fenchurch Place.

18th century

Two small-scale Ward maps illustrate Aldgate in the early 18th century. A map of 1720, by Richard Blome, shows little detail, except to note a north–south alley from Fenchurch Street to the rear of the properties, possibly in the vicinity of modern Railway/Fenchurch Place. However, this alley is not indicated on Jacob Ilive's Aldgate Ward map of 1739. The Ilive map does, however, clearly indicate that the L-shaped London Street was established more-or-less on its modern alignment at some time between 1720 and 1739. Ilive additionally shows a continuity of building frontage from Fenchurch Street on to the north–south aligned row of buildings west of St Katherine's Row.

The publication of John Rocque's *Plan of the Cities of London and Westminster, and Borough of Southwark with the Contiguous Buildings* at a scale of 25 inches/mile (1:2500) in 1746 (Fig. 39, 4) allows the first direct comparisons with modern mapping. London Street is clearly illustrated, and, to the east of the site, 'Magpye Alley' may correlate with modern St Katherine's Row on the grounds of its link to French Ordinary Court. Rocque's map suggests the block defined by Fenchurch Street, London Street, and Magpye Alley is fully developed. However, this is probably a result of drawing convention rather than observation, and two subsequent Aldgate Ward Maps (1756 and 1784, and both very closely derived in much of their detail from the earlier Ward maps by Blome or Ilive) show garden plots within this block.

Richard Horwood's Map of 1799 (Fig. 39, 5) seems to confirm the presence of these garden plots and also continues to show a continuous Fenchurch Street frontage from London Street to Magpye Alley (now shown as 'Church Court'). Horwood also illustrates a terrace of properties (Nos 3–13) fronting the eastern side of London Street. These more or less cover the western half of the site.

19th and 20th centuries

An anonymous map of Aldgate Ward, produced in 1838 (not illustrated), showing the plan of the projected London and Blackwall Railway extension to Fenchurch Street, gives the last view of the site prior to the construction of Fenchurch Street railway station, opened in 1841 (Course 1962, 117–8). Although it is absent in 1838, the Cross *New Plan of London*, printed in 1847 shows an un-named road carved through from Fenchurch Street to provide access to the new Fenchurch Street railway terminal. At this time the site and its associated block are fully defined in their modern outline. By the publication of Stanford's Library Map of 1862 (Fig. 39, 6) this road is named 'Railway Place'.

The 1875 Ordnance Survey 5 ft to 1 mile sheet VII.66 shows the site and its associated block as fully built-up, and the Goad Insurance map of 1887 gives further detail of the development. Goad indicates that 60 Fenchurch Street is, by this time, a wine merchant's premises (rather than the *London Tavern*), with a basement below and offices on the upper floors. No 62–63 is listed as a grocer's shop, also with offices above. There is no indication of a basement here at this time, although the later 1969 Goad plan does indicate a basement. Behind these properties are offices, an optician with basement, and an un-named public house at the southern extent of the block.

Neither the 1896 edition Ordnance Survey 5 ft to 1 mile map (VII.66) nor the anonymous Aldgate Ward Map of 1910 show any significant alteration to the area. The Post Office at 60 Fenchurch Street is believed to have been built *c.* 1907, replacing the existing structures.

Both the 1916 (revised 1948, without war damage) and the 1938 editions of the Ordnance Survey 5 ft to 1 mile map (VII.66) show the block as fully developed. Some impression of the extent of damage sustained during bombing between 1940 and 1945 can be seen in the 1952 Ordnance Survey 1:2500 series. The structures separating 60–63 Fenchurch Street from the public house to the south (now identified as the *Blackwell Tavern*) are mapped

as absent, but whether this is through war damage or other demolition is not known. The *Blackwell Tavern* had also been demolished by the release of the 1969 Goad Fire Insurance map.

Archaeological Evidence

by Vaughan Birbeck with Lorraine Mepham

The excavated sequence of the post-medieval period (Fig. 40) is represented by two brick-built cellars, a number of pits, a possible well, and the only post-medieval archaeological feature found in the earlier excavations at FSP 80 in the centre of the present site, which was a truncated brick-lined cess pit, dated to the 18th century. All of the post-medieval structural remains on the site survive only as cut features. Buildings 18 and 19 survive as truncated brick cellars, but would originally have been the basements of brick built houses fronting onto Fenchurch Street. Open Areas 18 and 19 represent the back plots associated with these two buildings. The only feature within Open Area 18 was a well; a small rubbish pit was found within the area assumed to have been occupied by Building 18. A small pit was also found within the assumed footprint of Building 19 and a group of five small rubbish pits was excavated within Open Area 19.

Only a small quantity of post-medieval pottery was recovered, amounting to 167 sherds weighing 10.2 kg. As might be expected, the assemblage is dominated by coarse redwares (PMR), almost certainly including the products of more than one source. Only two slipwares are present, which may be products of the Essex-based Metropolitan slipware industry. Other wares are present in small quantities and include the common types that would be expected to be present in any assemblage of this date, such as Border Wares, German stonewares and tinglazed earthenwares.

Conclusion

by Jörn Schuster

The excavations at 60–63 Fenchurch Street have yielded results ranging in date from the prehistoric to the post-medieval periods. While the evidence for prehistoric periods amounts to nothing more than a small number of undiagnostic pieces of flint, the archaeological remains of later periods have added interesting new details to our understanding of the Roman and later development of the eastern part of Cornhill. It has been possible to address most of the research aims identified in the written scheme of investigation (Wessex Archaeology 2002; 2004) on the basis of prior investigations in the area and the results of the evaluation in 2001.

Not only has it been possible to elucidate the development of a confined area of east London since the Late Iron Age, but the many varied results of its analysis will also provide important contributions towards many of the research objectives identified in the *Research Framework for London Archaeology* (Nixon *et al.* 2002). This is especially true with regard to the results concerning the Romano-British period, eg, the chronology and character of the development of early *Londinium* (R3), the evolution of the street system and layout (R4), or the understanding of the functions of domestic and public buildings and changing patterns of property ownership (R5 and 6). Related to this are questions of the social meaning of artefacts and ecofacts and the evidence they can provide for our understanding of the exercise of social and political power in society (R7). The many results relating to industrial and commercial activities on the site provide important data for considerations concerning agricultural practice in the region as well as understanding how food was processed and prepared (R12). The value of the open area excavation on the site becomes immediately apparent by comparison with that at Lloyds's Register; considered together these sites show how different the development of neighbouring plots can be.

The environmental results corroborate the evidence from other sites in the area indicating that most woodland had been cleared, probably by the Middle–Late Bronze Age. By the Late Iron Age the local environment had been dominated by grassland for a long time, with no woodland in the vicinity.

The nature of activity at 60–63 Fenchurch Street in the period immediately after the Roman Conquest remains unclear, but it is likely to have included both arable and pastoral agriculture. An interesting result of the investigations is that evidence for buildings of the pre-Boudican period is so far confined to the northern side of Roman Fenchurch Street while animal enclosures and possible working areas (clamp kilns) were located on the southern side in plots demarcated by ditches. The persistence of the land division laid down by these ditches is reflected in the fact that the investigated area continued to be divided along broadly similar lines for most of the Romano-British period.

Evidence for the Boudican revolt may be present on the site in the form of burnt samian sherds and levelling deposits covering all Period 2 features; although no unequivocal proof, this fits in well with evidence from other London sites further to the west. Following the Boudican revolt, both the road and the strip buildings erected perpendicular to it clearly followed the alignment of the earlier ditches. This pattern of ribbon development of timber frame strip buildings can be found in many parts of Roman London and other early Roman towns.

A result of local importance is that the entire width of Roman Fenchurch Street, the inner-City extension of the London to Colchester road, has been revealed in an open area excavation, which allows adjusting the alignment of its route in the street plan of Roman London. Another aspect of interest with regard to the development of the built environment and infrastructure is the installation of wooden water pipes at the beginning of the 2nd century AD. As evidence for such pipes was found both along the road as well as in the rear of one of the plots, this can be interpreted as communal and private investment in the provision of an important amenity.

A difference in status between 60–63 Fenchurch Street and nearby Lloyd's Register is exemplified by the use of timber frame construction at the former for the period up to the beginning of the 2nd century when the first masonry walls were erected; at Lloyd's Register this was the case right from the beginning of development in the early Flavian period. In the later Roman period this dichotomy of status is perpetuated by the use of more elaborate wall plasters and installation of hypocausts at Lloyd's Register.

Linked to questions of status is a possible variation in ownership of the houses at the two adjacent sites. Based on the difference in material wealth and buildings as well as the fact that occupation at 60–63 Fenchurch Street appears to have ceased by the mid-3rd century whereas at Lloyd's Register occupation continued after a hiatus at about this time, it is

suggested that this may indicate different patterns of ownership: more independent traders and craftsmen at 60–63 Fenchurch Street, who may well have owned their individual plots, compared to central ownership and dependant tenants or slaves implied by the pattern of one or two larger houses surrounded by workshops, sheds and servant's quarters at Lloyd's Register. Thus the results of these two adjacent sites would support ideas about a tendency towards concentration of wealth in the later Roman period.

Among the finds, the foldable foot rule Obj. 3347 (Fig. 54) deserves special mention as it might indicate official control, or at least supervision, of one of the industrial activities carried out at 60–63 Fenchurch Street during the later half of the 1st century AD. The truncation by modern buildings of all layers younger than the late 2nd/beginning of the 3rd century makes it impossible to draw firm conclusions about the nature of the later occupation of the site. However, later Roman finds recovered from medieval and later pits indicate a continuity of activity during the later Roman period.

A real hiatus of occupation is suggested by the lack of Saxon finds, and the site appears to have been left an open space, with the final robbing of Roman masonry walls occurring as late as the 11th/12th century. The longevity and persistence of boundary lines is implied by the distribution of medieval pits, which suggests that the site was divided into two plots on an alignment only slightly different to the earlier Roman one and very similar to that of the more modern buildings erected subsequently. The discovery of a possibly occult practice in the deposition of animals in a pit provides an interesting insight into the beliefs of the occupants of one of the plots during the medieval period.

PART 2

SPECIALIST REPORTS

Roman Pottery

by Rachael H. Seager Smith

The Roman pottery assemblage amounts to a maximum of 32,315 sherds (858,497 g). This was derived from contexts from all stratigraphic periods, and also from a few unphased contexts. A significant proportion of the assemblage derived from post-Roman contexts – 3235 sherds (71,724 g, representing 8% of the total Roman assemblage by weight). This material was quantified by context and note made of the broad composition of this part of the assemblage, but it was not formally examined.

In general, the Roman pottery from this site survives in excellent condition, although naturally this varies according to the type of deposit, with material from the roads and surfaces within buildings, for example, tending to contain smaller, more abraded sherds than pits or dump layers. The mean sherd weight is relatively high, 29 g overall. However, relatively few vessel profiles were reconstructable and the vast majority of joining sherds were confined to fresh breaks.

Methods

Within each context, the sherds were divided into broad ware types (amphorae, mortaria, imported finewares, reduced wares, etc), within which easily recognisable fabrics were identified according to the Museum of London Specialist Services Pottery Codes (2000) and quantified by number and weight of sherds. More general codes were also used to describe the sandy reduced wares (sand), grog-tempered (grog), and miscellaneous oxidised wares (oxid), for example, which were not assigned to particular source areas. The range, with an estimate of the number of examples, of vessel forms within each fabric was recorded in a comments column, together with any other unusual features of the assemblage such as the presence of wasters, pre- or post- firing perforations, unusually small or large sherds, etc. Sherds of the different fabrics were then bagged separately within the overall context bag(s), for ease and speed of recognition at a later date. A quantified breakdown of the assemblage by ware type and period is provided in Table 1.

Composition of the assemblage

Overall, the range of fabrics and forms present in this assemblage compares well with the early Roman material recovered in other parts of the City of London (Davies *et al.* 1994). Naturally enough, it is the range of everyday cooking and kitchen vessels in a variety of reduced ware fabrics that predominates in all periods, representing 42% of the sherds overall. Within this group, sandy fabrics are the most common (78% by number), the vast majority from local sources such as Highgate Wood and Copthall Close, together with regional imports from Alice Holt, Surrey. The tempered wares (flint, grog, and shell tempered fabrics), however, represent only 6% of the sherds by number, a far lower proportion than expected in 1st and early 2nd century contexts in the City, although the reasons for this are not clear. These fabrics too are mainly from local centres, such as Highgate Wood, and those in north Kent and south Essex. Among these kitchen wares, vessel forms comprise a relatively restricted range of necked and cordoned jars (London types IIB–E), carinated, straight-sided, and round-bodied bowls and dishes (types IVA, IVF, IVG) some with tripod feet, and lids. Overall, bead rimmed jars (type IIA) are relatively poorly represented, although they occur more frequently in the tempered wares than the sandy

Table 1. Pottery: total number and weight (g) of sherds in each ware group by phase

Ware	*Period 1 Prehistoric*	*Period 2 Pre-Flavian*	*Period 3 late 1st century*	*Period 4 late 1st–early 2nd century*	*Period 5 early 2nd century*	*Period 6 mid-2nd century*	*Period 7 later Roman*	*Total*
Prehistoric	61/749	2/11	1/4	–	–	–	–	64/764
Amphora	109/895	113/18,776	138/18,700	1964/196,619	1171/102,560	296/33,190	57/3793	3848/374,533
Imported finewares	–	3/35	4/15	36/295	44/201	15/99	34/35	136/680
Mortaria	–	6/777	29/2743	115/14,276	93/10,403	12/1176	5/149	260/29,524
Oxidised wares	–	1410/27,501	1275/14,889	1784/32,916	1610/29,437	264/4886	184/2315	6527/111,944
Reduced wares	1/6	142/1821	456/6434	4372/57,002	4535/55,733	708/7393	665/5080	10879/133,469
RB finewares	–	9/119	24/96	280/3031	311/3906	62/558	66/570	752/8280
Tempered wares	10/89	114/2793	174/3421	818/24379	314/10,647	26/856	15/347	1471/42,532
Medieval	–	1/10	–	–	9/101	13/350	3/74	26/535
Post-medieval	–	–	–	–	1/4	–	–	1/4
Total	181/1739	1800/51843	2101/46,302	9369/328,518	8088/212,992	1396/48,508	1029/12,363	23964/702,265

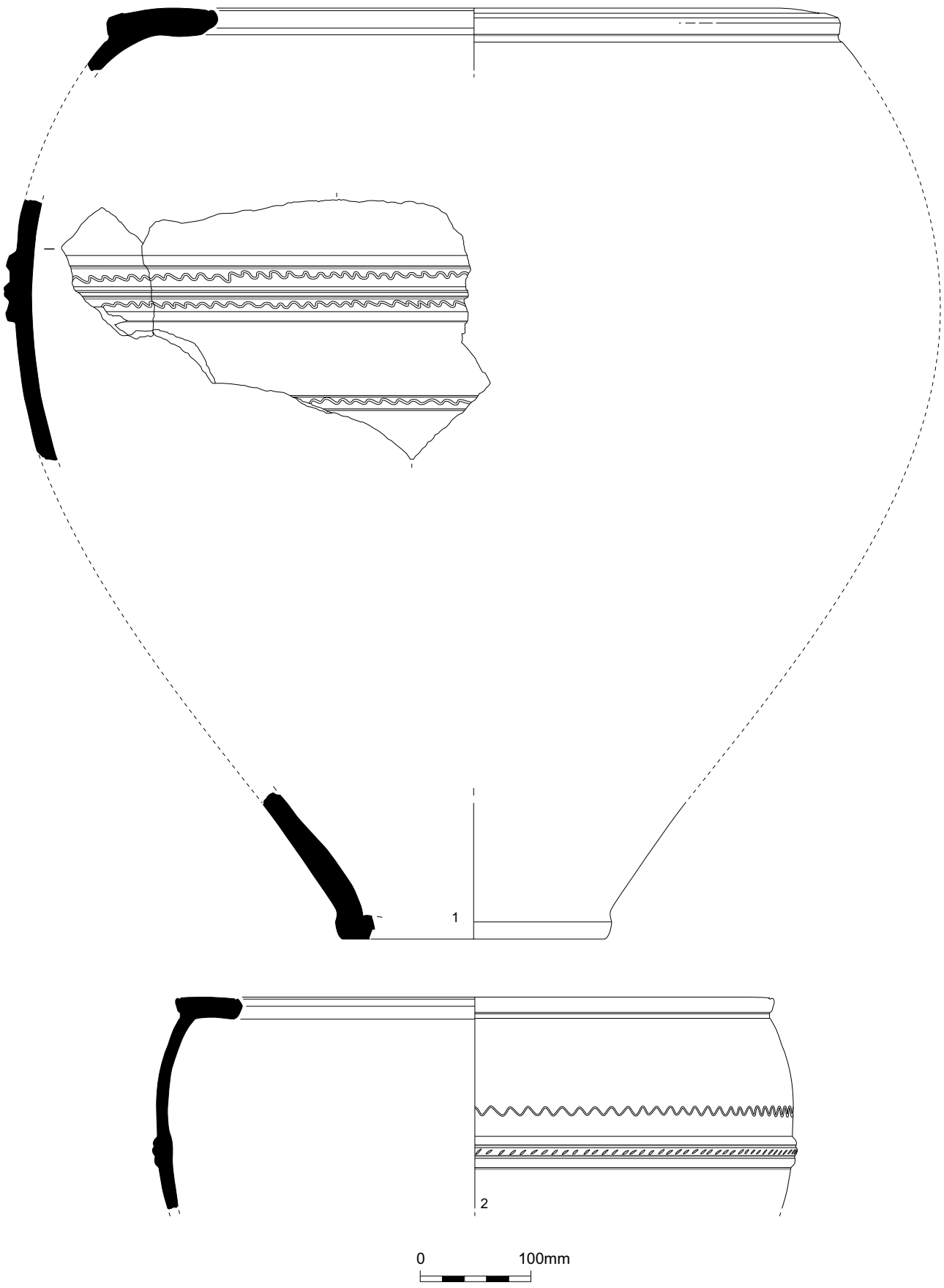

Figure 41 Large storage vessels in Local Coarse White Slipped ware from Period 4 Building 9

fabrics while large storage jar forms are almost exclusively confined to the tempered ware fabrics. Other, more unusual forms comprise platters, narrow-necked jars/flasks, beakers, a small *patera* handle from Period 4, Building 6, sherds from a fine colander or strainer and a small unguent jar from Period 5, Open Area 15, and a thin-walled tazza from Period 6, Building 15.

Of particular interest among the tempered ware group are sherds from two very large storage vessels – both with wide, inturned rims (450 mm + in diameter), decorated with incised wavy lines and external strapping (Fig. 41, 1–2). Both are in (different) coarse, oxidised, grog tempered fabrics identified by F. Seeley as Local Coarse White Slipped ware although neither have a slip of any colour. Both probably belong to a class of vessel mentioned by classical authors – *seria* – large, movable (just) vessels primarily used in viticulture but also for the storage of grain, preserved meats/fish/fruit, as boundary markers, or containers in shops (White 1975, 187). The form is known but is rare in London, usually only single sherds are found as at St Swithin's House (Wilmot 1991, 102, fig. 71, 252), Billingsgate Buildings (Green 1980, 60, fig. 33, 270–1), New Fresh Wharf (Green 1986, 106, fig.1.30), Salter's Hall, Walbrook (MoL Acc No 18683), and pieces from a minimum of five vessels from 1 Poultry and associated sites (Seeley pers. comm.). Dates range from mid-1st to 3rd centuries AD. The Fenchurch Street vessels were found in association with the row of three Dressel 20 amphorae in Period 4, Building 9, the possible shop, indicating that there were originally at least 5 storage vessels associated with this building. Isolated white-slipped sherds from these two vessels or similar pots were also found in Period 5 deposits associated with Road 3 and Open Areas 10 and 12 as well as in overlying post-Roman contexts.

The sandy white wares from the *Verulamium* region (fabric VRW) dominate the oxidised wares (42% of all the oxidised sherds). The popularity of these wares varies considerably by period however, representing only 3% of the Period 2 sherds, 6% in Period 3, rising to 17%, 12%, and 13% in Periods 4, 5, and 6 before falling back again to 9% in Period 7. Evidence from other areas of London (Davies *et al.* 1994, 168) and *Verulamium* itself (Frere 1972; 1984) indicate that the *Verulamium* region white wares were already common by AD 55/60, and the paucity of these wares in Period 2 probably reflects the nature of these deposits (concentrating on kiln waste – see below) rather than their date.

Ring-necked flagons (types IB2 and IB5) are the most common *Verulamium* region white ware form, with occasional examples of cup-mouthed, double handled (type IE), and disc-mouthed (type ID) forms, all of Flavian–Trajanic date. One or two earlier types with pulley-wheel or collared rims (types IA) were also noted as well as pinched-mouth jugs (type IC). Other vessel forms include the moulded rim type bowls (type IVA), honey pots (type IIK), necked (type NJ) and neckless jars (type IIH), and lids. One cup from a triple vase and three spout fragments probably from facepots were also recorded although one of these might just be from a spouted wine strainer form (*cf.* Marsh 1978, type 46). Sherds from at least three large, double-handled amphorae (type IJ; *cf.* Davies *et al.* 1994, 42, fig. 36, 168–70 and fig. 47, 261) were also found in deposits associated with Period 5 Buildings 11 and 12 and Period 6, Building 15.

Of particular significance is a group of oxidised ware wasters (recorded as 'loxi'), predominantly from 1st century AD contexts associated with the pre-Flavian boundary ditches, Open Areas 2 and 3, the Period 2/3 levelling, and Period 3, Road 1, Open Area 4 and overlying levelling deposits. The fabric of these sherds is relatively fine grained, orange, often with a thick grey core, containing abundant quartz and white mica with occasional large limestone or flint inclusions protruding through the surface. The assemblage includes very overfired, warped, and cracked waster sherds, some slightly bloated, as well as softer, underfired examples – indicative of ceramic production in the close vicinity – hearth 3768 may be of relevance here. The fabric itself is broadly, but not directly, comparable with the group of inter-related fabrics recorded by the Museum of London as LOXI (Davies *et al.* 1994, 34–6) and shares some similarities with the Sugar Loaf Court wares (*ibid.*, 29–34). Traces of a white slip are relatively common, however, and none of the loxi sherds has the string-cut bases or variegated fabrics characteristic of the LOXI wares.

Again, flagon forms dominate, the most characteristic being a straight-necked type with a collared rim and a smaller, often rather angular, cordon or moulding beneath on the neck. Although these vessels exhibited considerable variability in vessel wall thickness and coarseness, and were often rather roughly made with clay residue left in the cleft of the rim or adhering to the vessel walls, two distinct sizes were apparent with external rim diameters between 65–70 mm (Fig. 42, 3–4) and 94–100 mm (Fig. 42, 5–6). Other flagon forms comprised vessels with Hofheim (London type IA) or pulley-wheel rims (Fig. 42, 7–8), ring-necked (London type IB) forms (including one from a Period 3 levelling deposit with a pinched-mouth) (Fig. 42, 9–10) and a single example of a cup-mouthed (London type ID) form (Fig. 42, 11). Bases showed little variability, most were wedge-shaped (Fig. 42, 12) with a low foot-ring although one or two flat examples were also noted, perhaps derived from jars. Sherds forming the profile of a slightly lop-sided, high, round-shouldered necked

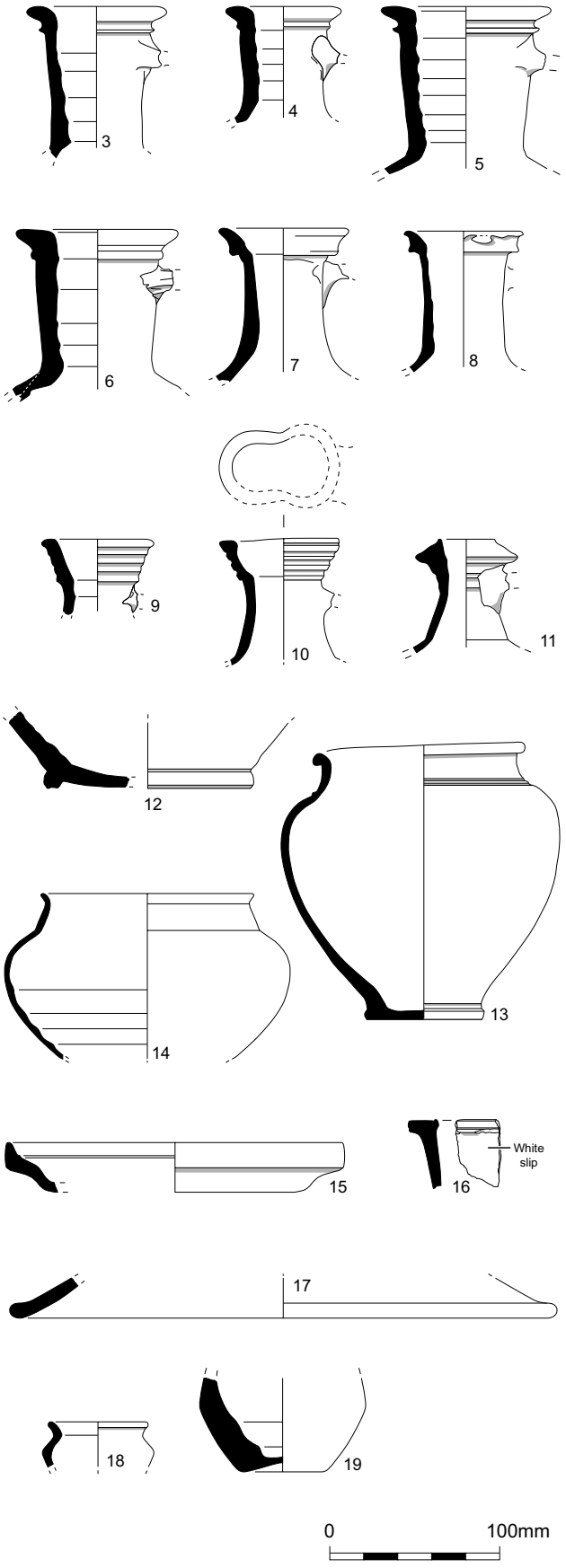

Figure 42 Group of oxidised ware wasters, predominantly from 1st century AD contexts

jar with a beaded rim (Fig. 42, 13) were found in Open Area 2 while a round-shouldered jar/bowl (London type IIN) was found in one of the Period 2 boundary ditches (Fig. 42, 14). Other forms included a Cam 24 platter rim (Fig. 42, 15), a carinated bowl (London type IVA) (Fig. 42, 16), lids (Fig. 42, 17), a small carinated beaker (Fig. 42, 18) and a base from a thick-walled closed form with a low carination, rather like a large, heavy unguent jar (Fig. 42, 19).

Other oxidised fabrics include a few residual sherds of the pre-Flavian Sugar Loaf Court ware, Eccles wares, Gallo-Belgic white wares, and white-slipped red wares, mostly unsourced but including some from Hoo in Kent. The only definite imports among this group derive from north-western France, from the same kilns as Hartley's Group I and II mortaria (Gillam 238 and Bushe-Fox 26–30; fabric NFSE) from *c.* AD 65–150. Flagon forms also dominate this group, although lids are relatively common.

Mortaria are not common in this assemblage, accounting for only 1% of the sherds overall and within each of the period assemblages. Products of the *Verulamium* industry dominate, with both hooked-flange (HOF) and bead-and-flange (BFE) types present. Imported types are comparatively rare; vessels from north-western France (Hartley's Group I and II mortaria; Gillam 238 and Bushe-Fox 26–30; fabric NFSE) which date from *c.* AD 65–150, being the most frequent with other vessels dated *c.* AD 50–85 from the Rhineland (fabric RVMO) and Rhone Valley (fabric RVMO). Other British sources include Brockerly Hill, Mancetter-Hertshill, Colchester, and the Oxfordshire region; the latter fabrics are probably intrusive in the contexts in which they occur. Twenty mortaria stamps were recognised (Table 2), 18 of them being on *Verulamium* region vessels.

Other than samian, imported finewares are very poorly represented, with only 136 sherds being recognised. The range, however, is comparable with that from other areas of the city (Davies *et al.* 1994, 122–61). In general, the finer, 'tableware' elements of the ceramic assemblage seem to have been supplied by the local industries; ovoid and poppy beakers from Highgate Wood and mica-dusted beakers and bowls/dishes and the various London ware types (*cf.* Marsh 1978). Sherds from ring-and-dot beakers were also recorded, mostly from Period 4 contexts onwards where they are already residual.

The high proportion of amphorae (15%) is due to the inclusion of five almost complete vessels that were reused in Buildings 9, 11, and 15, while the numerous badly laminated and possibly burnt fragments from Period 1 may also derive from a single vessel. Overall, sherds of the southern Spanish Baetician fabric dominate, the majority from Dressel 20 vessels that

carried olive oil, although it is possible that some finer, thinner-walled sherds may be from Haltern 70 (wine or *defrutum*) forms. No attempt was made to distinguish the various Baetician fabrics. All the deliberately deposited Dressel 20 vessels have probably been altered by the removal of their necks and handles and the creation of much wider, new rims at about the level of their lower handle attachments. Nine stamps were recorded (Table 2); at least three dies record the name *Saenianenses*, probably that of a *figlina*, exporting its own commodities as well as selling them to other exporting firms, situated in the Las Huertas del Rio region (Callender 1965, 238–40, no 1559) although none of the dies are exactly paralleled in Callender's catalogue

Other elements of the amphora assemblage include Cam. 186 (CADIZ), which contained fish sauces, and the Dressel 2–4 (fabrics CAMP1, CAT, ITFEL and KOAN), Rhodian (fabric RHOD), and Gallic wine amphorae. The content of the 'carrot' (fabric C189) and Richborough 527 types remains unknown, while the London 555 vessels, from the Rhone Valley or possibly Spain, probably carried olives.

A sherd (Fig. 43, 20) from a curious vessel, made in a gritty grog-tempered fabric, was found in the Period 4 destruction deposits associated with Building 9. The form is uncertain, but the top of the rim undulates; there is one complete and one potential perforation just beneath the rim and two cone-shaped lumps of clay applied, one between the two perforations, the other on top of the rim, perhaps forming a stylised face. No parallels have been found for this vessel but associated vessels suggest a late 1st or early 2nd century AD date.

Figure 43 Vessel in a gritty grog-tempered fabric with what may be a stylised face, found in the Period 4 destruction deposits associated with Building 9

Other aspects of the assemblage

Within the assemblage as a whole, tazza fragments were noted in 20 contexts. These small carinated bowls with pedestal bases and frilled decoration around the rim and carination have been variously interpreted as incense burners, libation cups, lamps, and even chaffing dishes; most are scorched internally. All but one, in a sandy greyware fabric from Period 6 Building 15, occur in *Verulamium* region white ware fabrics. The earliest examples occur in Period 4 Buildings 9 and 10, Open Area 7 (contexts 3406, 2624, and 1616 respectively), and a Period 4/5 levelling deposit (context 3183), while ten of the contexts containing tazza cluster around Period 5 Building 11, its associated Open Areas 13 and 14, and final levelling deposits on the eastern side of the site. Sherds from three other tazza, together with a small pedestal base from a fourth or, just possibly, a candlestick, were associated with Period 5 Open Area 15 while two were from Period 6 Building 15 on the west side of the site. Although the function of these vessels remains open to question, their distribution may suggest ceremonial activities (incense burners or libation cups) or at least activities requiring a certain degree of artificial light (lamps) in the vicinity of Building 11 – although the possibility that all these fragments were actually residual (two contexts formed part of the make-up layers deposited prior to laying the first floors in this structure – 2463 and 2651) and really relate to Period 4 Buildings 9 and 10 cannot be ruled out.

Other evidence for lighting, in the form of lamps, was also recovered. One, in a Central Gaulish colour-coated white fabric, from Period 6 Building 15 (context 2714) was from a closed lamp while open lamp fragments were found in Period 4 Buildings 6 and 8, Alley 1 (a complete example), and Open Area 9 deposits as well as Period 5 Open Areas 10 and 14. Two (from Open Areas 9 and 10) were made in an unsourced fine buff fabric; the others were all *Verulamium* region products.

Two local fineware vessels were stamped; one was illiterate, on the base of a fine, micaceous buff ware base from Period 4 Building 7, while the second was on a fine micaceous reduced ware base found in Period 5 Road 3. Owner's or tally marks (consisting of 2 or 3 parallel cut marks) were noted on Dressel 20 amphora handles from Period 2 Open Area 2 and Period 3 Open Area 5. Owner's marks, generally in the form of 'X's (although one example of an 'R' was recorded) scratched into the shoulder of jar forms or the underside of base sherds were also noted on four reduced and two tempered coarseware vessels. Four vessels had graffiti in cursive script but in each case, only a few letters survived and no attempts have yet been made to decipher these. In addition, a small Highgate C ware body sherd found in Period 4 Open Area 11, had a phallic symbol scratched into its external surface. Full details of the sherds can be found in Table 2.

Table 2 Pottery stamps (excluding samian): a) mortaria

Land-use block	*Context*	*Obj. No.*	*Fabric*	*No.*	*Wt (g)*	*Form*	*Additional comments*
Period 2/3							
Levelling	3448	4149	VRW(m)	1	221	HOF	**LUGD·F** (Hartley 1984, fig.118, 93). A *Lugduni fecit* counterstamp, laterally inverted D replacing G, used by Oastrius, *c.* AD 55–80
Period 3: Late 1st century							
Building 4	2792	3785	VRW(m)	4	211	HOF	**F·LVGVDV**. A *Lugduni fecit* counterstamp used by Albinus (Hartley 1972, 371, fig.145, 6) *c.* AD 60–90. Probably burnt
Building 4	2983	3872	VRW(m)	2	316	HOF	**SEX**[tus] **VAL**[erius] (*cf.* Davies *et al.* 1994, fig. 142, 249 &284); *c.* AD 55–90. S retrograde. Same die as Obj. 4150
Building 5	3457	3963	VRW(m)	2	42	flange	Deeply impressed into wet clay]**CVDE?**[in squared border. Same die as Obj. 3962?
Open area 5	3054	4150	BHWS(m)	3	390	HOF	Partial stamp **SEX**[tus Valerius] (*cf.* Davies *et al.* 1994, fig. 142, 249 & 284); *c.* AD 55–90. S retrograde. Same die as Obj. 3872
Period 4: Late 1st or early 2nd century							
Building 6	2679	3783	VRW(m)	1	351	HOF	Faintly impressed **SEX·AV·??** S retrograde, last 2 letters unclear but poss. IA or VI. Another die of Sextus Valerius?
Building 7	3060	3962	VRW(m)	5	675	HOF profile	Prob. **I** or **L** (stamp battered in this area) **VCDVE or F** with bottom bar like E. A *Lugduni fecit* counterstamp? Same die as Obj. 3963?
Building 7	3186	3965	VRW(m)	1	579	HOF	Partial stamp]**INVS** in plain border. Prob. Albinus, (Hartley 1984, 282), *c.* AD 60–90
Building 7	3288	4151	VRW(m)	1	169	HOF	**ALBINVS** (Hartley 1972, fig. 145, 11; 1984, 282), *c.* AD 60–90
Building 9	3445	3864	VRW(m)	1	164	HOF	**LVGD**[A *Lugduni fecit* counterstamp, laterally inverted D replacing G, used by Oastrius, (Hartley 1984, fig.118, 93), *c.* AD 55–80
Building 9	2430	399	VRW(m)	1	460	HOF	**MAR1**[N]**VS** prob. die of Marinus (Hartley 1972, fig. 145, 25–6; 1984, fig. 118, 81) *c.* AD 70–110
Open area 7	3161	3929	VRW(m)	1	114	HOF	Partial stamp in fringed border, illegible
Open area 9	2626	4152	VRW(m)	1	78	flange	Burnt; stamp incomplete, prob. **RN**[not clearly legible but in tendril border
Period 5: Early 2nd century							
Building 11	2303	3780	VRW(m)	2	553	HOF	**MORICA**] die of Moricamulus (Hartley 1972, fig.146, 30) *c.* AD 70–110
Building 11	3187	4153	VRW(m)	1	44	flange	**LVCVDV** a *Lugdunum* counterstamp of Albinus (Hartley 1972, fig.145, 10), *c.* AD 60–90
Open area 11	1243	4154	NFSE(m)	1	310	Gill 238	**CRACILLS;** L & S double stamped, *c.* AD 80–150
Open area 13	2623	3784	VRW(m)	1	50	flange	Incomplete stamp, poss. of Albinus (Hartley 1984, 282), *c.* AD 60–90
Open area 15	3083	4144	VRW(m)	1	233	HOF	**L·FECI**[t]. Prob. a *Lugduni fecit* counterstamp (Hartley 1972, fig.145, 23), *c.* AD 70–100
Period 8: 11th – mid 12th century							
Open area 16	1441	4143	VRW(m)	49	752		Retrograde stamp **AR||NT** followed by **X** as a space filler, probably Arentius, Arenus or Arentiacus (Hartley 1972a, fig.164, 4), *c.* AD 110–40

Table 2 Pottery stamps (excluding samian): b) amphorae

Land-use block	*Context*	*Obj. no.*	*Fabric*	*No.*	*Wt (g)*	*Additional comments*
Period 2: Pre-Boudican						
Open area 2	3658	3964	BAET	1	239	Handle: **L** or **I EPTFN** partially overlaid by 3 parallel scratched grooves | | |. T & F ligatured
Period 4: Later Flavian						
Building 9	2797	4141	BAET	2	512	Handle: **SAENI (**Callender 1965, no. 1559) *c.* AD 80/90–130/140
Building 9	2430	3773	BAET	1	505	Handle: clearly chipped & snapped from lower attachment. Long (or double??) stamp but not fully impressed & now abraded; illegible
Open area 9	2626	3781	BAET	1	264	Handle: **SAVRM**
Building 10	2624	3786	BAET	1	611	Stamped]**FFP**[immediately below lower handle attachment
Building 10	2624	3787	BAET	1	762	Handle: **ROM·LA**?[closest is ?Romani (Callender 1965, 1541; Rodriguez 1986, 190, 224), Flavian–Trajianic
Period 5: Early 2nd century						
Open area 10	2013	3776	BAET	1	743	Handle: **SA**?**AN**? v. lightly impressed, not fully legible (prob. Callender 1965, no 1559), *c.* AD 80/90–130/140
Open area 15	3083	3887	BAET	1	695	Handle: **SANANS (**Callender 1965, no 1559), *c.* AD 80/90–130/140
Open area 15	3083	4142	BAET	1	402	Handle: **PONTICI** Callender records this name on Italian amphorae (1965, no 1365) of 1st half 1st century AD; Rodriguez (1986, 211) dates Baetician version to Flavian–Trajianic period

Table 2 Pottery stamps (excluding samian): c) graffiti and other marks

Land-use block	*Context*	*Obj no.*	*Ware*	*Fabric*	*No.*	*Additional comments*
Period 2: Pre-Boudican						
Open Area 2	3658	3964	Amphora	BAET	1	Stamped handle; stamp partially overlaid by 3 parallel scratched grooves | | |. Tally or owner's mark
Period 2/3						
Levelling	3799		Oxidised	loxi	3	Low, wedge-shaped footring base with possible graffiti scratched into ext. surface after firing
Period 3: Late Neronian–early Flavian						
Building 4	2684		Amphora	BAET	37	Sherds from 1, or just poss., 2 vessels (variable vessel wall thickness) deliberately altered to serve a secondary purpose : handles, neck & rim removed, new, roughly chipped rim created. Scratched graffiti on shoulder:]MAV[
Open Area 5	3447	3893	Amphora	BAET	1	Upper handle attachment with 2 short, post-firing, parallel cuts || just beneath crest of handle; ?tally or owner's mark
Open Area 5	3447	3894	Tempered	HWB	1	Base sherd from open form with incised X (post-firing) on underside
Period 4: Later Flavian						
Building 7	2807	3788	Oxidised	oxid	1	Fine, micaceous buff ware base; illiterate stamp on int.
Building 9	2797	3863	Reduced	sand	1	Well-worn base with V or more prob. part of X scratched after firing; ?owner's mark
Period 5: Early 2nd century						
Building 11	2046	3777	Oxidised	VRW	1	Graffiti lightly scratched into ext. surface (more visible when wet) VNN|
Building 11	2223	4156	Reduced	HWC	34	Almost complete (mostly broken during excavation) upright-necked cordoned jar with X scratched into shoulder after firing; ?owner's mark
Building 12	1712	4155	Oxidised	oxid	1	Graffiti in ?cursive script on ext. surface
Open Area 11	2232	4157	Reduced	HWC	1	Small body sherd with phallic symbol scratched on ext. surface after firing
Open Area 15	2992	3901	Reduced	sand	1	X scratched on underside of base after firing
Open Area 15	3171	3961	Reduced	sand	1	Base frag. with faintly scratched R on underside; ?owner's mark
Road 3	2444	3779	Reduced	FMIC	2	Joining sherds from base stamped (centrally on int.) ·X·IE·
Period 7: Later Roman						
Road 5	2198	3778	Tempered	HWB	1	Base with pre-firing X on underside; a maker's mark

Dating

The pottery from Periods 2–5 broadly corresponds with material characteristic of Roman Ceramic Phases 2 and 3 (Flavian *c.* AD 75–100 and Trajanic *c.* AD 100–120) in other areas of the City of London (Davies *et al.* 1994, 192–205). Within these groups, smaller quantities of late Neronian or early Flavian (*c.* AD 60/61–75) material occurred residually. It has not been possible to provide more precise dating for Periods 1–5 due to the short chronological range represented and the complexities of ceramic residuality.

The Period 6 deposits show a small but apparent increase in the proportion of Black Burnished (BB) ware from the Wareham/Poole Harbour region of Dorset, as well as BB2 types from the Thameside industries. BB1 equalled less than 1% of the reduced ware sherds in Period 5 compared with 2.5% in Period 6 while BB2 equalled 2% in Period 5 and 3% in Period 6. Sandy fabrics remain dominant while the proportion of tempered wares fall to just 3.5% of all the reduced ware sherds, compared with 6.5% in Period 5. Fineware imports other than samian are scarce, while Romano-British fabrics continue to be dominated by mica-dusted wares, Highgate C poppy beakers and London ware types. The *Verulamium* region continued to dominate the flagon and mortaria assemblages. It is probable that this material is broadly comparable with Roman Ceramic Phase 4 (Hadrianic *c.* AD 120–40) in other areas of the City (Davies *et al.* 1994, 205–13).

Previous research in London (Richardson 1986; Symonds and Tomber 1992; Davies *et al.* 1994) has indicated that it is the Antonine period that marks the major break in the ceramic sequence of the Roman city. From this research it is clear that most of the fabric and form types present in groups dated to the early Antonine period (Roman Ceramic Phase 5; AD 140–160) also occur in the early Roman period, differing only in their quantities. Similarly, the pottery from Period 7 contexts is little different in its composition to that from the preceding phases, although the proportion of tempered wares dropped to just 2% of the reduced wares. A beaker rim in Central Gaulish black slipped ware (*c.* AD 150–250), four sherds of Nene Valley colour-coated ware (*c.* AD 150–400), and three pieces of Oxfordshire red slipped ware are the only sherds that need post-date AD 150. Few of the fabrics or forms which characterise the late 2nd–early 3rd century groups from New Fresh Wharf (*c.* AD 170–245; Richardson 1986) or Leadenhall Court (*c.* AD 180/200–230; Symonds and Tomber 1992, 66–71) were identified here. It is likely that the ceramic assemblage barely extends beyond the middle of the 2nd century, perhaps to *c.* AD 160 at the latest.

Catalogue of illustrated Roman pottery

Fig. 41

1. Large storage jar; local coarse white-slipped ware (2). Period 4 destruction deposits Building 9, context 2430; Period 9, Open Area 17, pit 1702, context 1701.
2. Large storage jar; local coarse white-slipped ware (1). Period 4 initial floors/occupation Building 9, contexts 2644 and 3076.

Fig. 42

3. Small flagon, collared rim and cordon or moulding beneath; traces of white slip; local oxidised ware. Period 2 destruction deposits Open Area 2, context 3520.
4. Small flagon, collared rim and cordon or moulding beneath; local oxidised ware. Period 2/3 levelling deposits, context 2709.
5. Large flagon, collared rim and cordon or moulding beneath; local oxidised ware. Period 2 boundary ditch, context 3119.
6. Large flagon, collared rim and cordon or moulding beneath; local oxidised ware. Period 2/3 levelling deposits, context 2709.
7. Flagon with pulley-wheel rim (London type IA); traces of white slip; local oxidised ware. Period 2 destruction deposits Open Area 2, context 3520.
8. Flagon with pulley-wheel rim (London type IA); local oxidised ware. Period 2 boundary ditch, context 3119.
9. Ring-necked flagon (London type IB); local oxidised ware. Period 2 boundary ditch, context 3119.
10. Pinched mouth ring-necked flagon (London type IC); local oxidised ware. Period 3 levelling deposit above Open Area 4, context 3416.
11. Disc-mouthed flagon (London type ID); local oxidised ware. Period 2 boundary ditch, context 3119.
12. Typical flagon base; local oxidised ware. Period 2 boundary ditch, context 3119.
13. High-shouldered necked jar; local oxidised ware. Period 2 Open Area 2, gully 3852, context 3851.
14. Round-shouldered, necked jar/bowl, traces of white-slip on ext.; local oxidised ware. Period 2 boundary ditch, context 3964.
15. Cam 24 platter rim; local oxidised ware. Period 4 levelling deposits, Open Area 8, context 3754.
16. Carinated bowl (London type IVA), white-slip all over; local oxidised ware. Period 5 Open Area 11, pit 2396.
17. Lid, white slip on upper edge rim; local oxidised ware. Period 2 boundary ditch, context 3883.
18. Small carinated beaker; local oxidised ware. Period 4 levelling deposits, Open Area 9, context 2549.
19. Base from thick-walled, closed form, possibly ‘unguent’ jar; local oxidised ware. Period 2/3 levelling deposits, context 2709.

Fig. 43

20. Unknown vessel form with stylised face; grog tempered ware. Period 4 destruction deposits associated with Building 9, context 2430.

The samian pottery

by J.M. Mills

This report is concerned only with the samian pottery from contexts assigned to Periods 1–7 inclusive. The whole assemblage of potters' stamps was submitted to B. Dickinson for identification and these are reported on below. The only other sherds from later contexts included here are those that join vessels from contexts within Periods 1–7 and a sherd from an unusual vessel from context 1532 which is of intrinsic interest. Each sherd was identified by form and fabric (production centre), and cross-joins were sought and recorded; inevitably the majority of cross-context and cross-phase joins were noted for the most easily identifiable vessels, usually decorated forms. The record also includes notes on presence of rivet holes, burning and evidence of re-use. The archive comprises sherd records including number and weight, a catalogue of decorated wares, and tables by form and fabric.

A total of 1833 samian sherds (21.987 kg) were recorded representing a maximum of 1251 vessels. The samian pottery from 60–63 Fenchurch Street comes from the main centres of production in Gaul, La Graufesenque and Montans in South Gaul, Les Martres-de-Veryre and Lezoux in Central Gaul, and Trier in East Gaul. The majority, *c.* 95%, is from the kilns at La Graufesenque (Table 3). Although it is usual for London sites to produce large quantities of samian from South Gaul this is an unusually high percentage. The start date for the assemblage was probably around AD 45–50, supply building rapidly in the Neronian period to a peak in the early Flavian period. Some heavily burnt Neronian sherds vessels suggest that there may be evidence for the Boudican Revolt of AD 60.

Supply continued to the end of the century when there was a considerable drop in samian production and fewer vessels reached this country. Late South Gaulish vessels (dated *c.* AD 90–110) and those from Les Martres-de-Veyre (*c.* AD 100–120/25) illustrate a continuity of supply. The majority of the Central Gaulish samian in the assemblage dates to the first half of the 2nd century, with only a handful of vessels, and the single East Gaulish pot, post-dating AD 150.

As a fine table ware samian is an obvious indicator of status but the presence of re-used vessels and graffiti, for example, give a more personal insight into the lives of early Londoners.

Table 3. Samian: forms by period and fabric

Form	*SG*	*1st cent. Lezoux*	*Montans*	*Les Martres*	*CG*	*EG*
Ritt 1	1	–	–	–	–	–
Ritt 8	4	–	–	–	–	–
Ritt 9	6	–	–	–	–	–
Ritt 12	29	–	–	–	–	–
Ritt 13	3	–	–	–	1	–
16	2	–	–	–	–	–
15/17	34	–	1	–	–	–
15/17 or 16	1	–	–	–	–	–
15/17 R	1	–	–	–	–	–
?18	2	–	–	–	–	–
18	224	1	–	–	–	–
15/17 or 18	43	–	–	–	–	–
18(R)	11	–	–	–	–	–
18R	15	–	–	–	–	–
15/17R or 18R	14	–	–	–	–	–
18 or 18R	4	–	–	–	–	–
23	2	–	–	–	–	–
24/25	9	–	–	–	–	–
27	191	1	–	3	6	–
27g	42	–	–	–	–	–
29	111	1	–	–	–	–
30	17	–	–	–	–	–
37	107	–	–	4	6	–
29 or 37	6	–	–	–	–	–
30 or 37	4	–	–	–	–	–
18/31	0	–	–	8	4	–
18/31R	2	–	–	–	1	–
18/31R or 31R	0	–	–	–	1	–
31R	0	–	–	–	1	–
33	27	–	–	2	3	–
33a	6	–	–	–	1	–
35	28	–	–	2	1	–
36	47	–	–	1	1	–
35/36	14	–	–	–	1	–
42	1	–	–	–	–	–
43 or 45	0	–	–	–	–	1
45	0	–	–	–	1	–
64	0	–	–	–	1	–
67	6	–	–	–	–	–
72	0	–	–	–	1	–
78	2	–	–	–	–	–
Ritt 12 or Curle 11	4	–	–	–	–	–
Curle 11	9	–	–	–	–	–
36 or Curle 11	1	–	–	–	–	–
Plain	153	2	1	–	5	–
Dec form	1	–	–	–	1	–
Unusual form	2	–	–	–	–	–
Closed form	1	–	–	–	–	–
Total *	1187	5	2	20	36	1

*(max.) no of vessels identified (+ 5 chips SG)
SG – South Gaulish (La Graufesenque) CG – Central Gaul (Lezoux)
EG – East Gaulish (Trier) Ritt – Ritterling

Condition

The majority of the samian is in very good condition with no surface erosion of the type that can be caused by aggressive soil conditions. Some sherds have a fairly stubborn accretion of a 'cessy' nature on one or both of the surfaces and a few have a lime-scale deposit on the internal surface, presumably from having lain filled with water for a considerable time. The average sherd size is 14 g; this is quite high for a samian assemblage and perhaps suggests little post-depositional movement. This suggestion is supported by the observation that there appears to be a high proportion of vessels of which a substantial portion survives, some almost 80% complete, and very few unidentifiable 'chips' of samian were noted. Throughout the assemblage burnt sherds were noted

but of especial note are some heavily burnt vessels within Period 3 and some equally heavily burnt sherds residual in later contexts. These are of Neronian date suggesting that there may be evidence of Boudican burning on the site. A few vessels appear to have been used very little, if at all, as indicated by grits still adhering to foot-rings. Conversely, several vessels are so heavily worn that the internal slip has been worn away. Although heavy use was noted, only three instances of vessels being drilled for riveted repair were recorded. All are South Gaulish wares.

Quantities

South Gaul: La Graufesenque

Much of this material is of Neronian and early Flavian date. The earliest vessels are two form Dr. 16 bowls of Claudian or early Neronian date. There are also five form Dr. 29 bowls dated AD 45–60. Pre-Flavian vessel forms include Ritterling forms 1, 8, 9, and 12, Dr. 22/23, and Dr. 24/25. Just two vessels of marbled samian were recorded, a form Ritterling 1 dish and one Dr. 18, the former Neronian in date, the latter *c.* AD 75–80.

The frequency of forms Dr. 29 and Dr. 37 is about equal (111:107) which suggests that the bulk of the assemblage is early–mid-Flavian in date. Form Dr. 37 is a Flavian form, emerging *c.* AD 70, which by *c.* AD 85 had replaced the earlier bowl form. Other samian forms characteristic of the Flavian period such as cups Dr. 35 and Dr. 33 and dishes Dr. 42 and Dr. 36, and closed form Déchellette 67, appear in Period 4 contexts. Form Dr. 37 bowls in the styles of Frontinus, Mercator; and Bassus ii, along with stamped bowls of Mercator and Secundus, illustrate that samian continued to be supplied from La Graufesenque until the end of the 1st century and into the early 2nd. The potters represented are commonly present in London assemblages. The earlier potters such as Ardacus, Niger ii, Maccarus, Modestus, Murranus, Felix i, and Labio Passienus; and Flavian and later potters such as Calvus i, Frontinus, Germanus iii, Iucundus, Mommo, M. Crestio, Mercator i, Memor Patricus, Pontus, and Vitalis ii are all present.

South Gaul: Montans

Only two vessels from Montans were recorded, a stamped form Dr. 15/17 and a cup. Both are of 1st century date, the stamped 15/17 is one of the earliest vessels from the site dated to the Claudio-Neronian period.

Central Gaul: 1st century micaceous Lezoux wares

This markedly micaceous fabric is usually dated to the 1st century AD, and pre-dates the main export period which commences around AD 125. A single form Dr. 29, one Dr. 18 and a cup were recorded from Period 4, and from Period 5 one form Dr. 27 and a substantial grooved footring probably from a bowl. Of the five vessels two had been burnt. The decorated bowl (Fig. 46) is rather crudely decorated; unfortunately no close parallels are known.

Central Gaul: Les Martres

A single form Dr. 18/31 and a form Dr. 37 bowl, with cross-joins in a Period 5 context, occur in Period 4. The bulk of these Martres pots (14 vessels) are in Period 5 contexts with a further three, presumably residual in their contexts, in Period 6. Potters include Drusus I, the Rosette Potter, and Biragillus.

Central Gaul: Lezoux

All the Central Gaulish samian appears to be from Lezoux, no fabrics from any of the lesser centres of Central Gaul were observed. Central Gaulish vessels appear first in contexts of Period 5 (24 examples), with the exception of a stamped form Dr. 33 of Cambus, dated AD 150–180, and a possible 31R from the same context, these vessels need be no later than AD 150/160. The latest vessel, a form Dr. 37 bowl of Servus ii (*c.* AD 160–190) with an advert stamp came from a Period 7 context. The range of vessels is limited, as would be expected with a maximum of only 36 vessels present. Equally there are few potters represented; Libertus ii, Quantilianus, Arcanus, Attianus, Cambus, and Servus iv are the only potters identified. The assessment scan did not suggest that there was very much more 2nd century material residual in the later layers. The paucity of 2nd century material may be explained by one of three suggestions. First it is well documented that there is a greater proportion of samian from South Gaul than from Central Gaul on most London excavation sites (Marsh 1981, 184–5) and it may be simply that there was very little 2nd century samian used, or deposited on this site. Samian relating to the 2nd century occupation of the site may have been removed from the site and dumped elsewhere during the 2nd century or that material was redeposited in 3rd century and later levels which have subsequently been removed during post-Roman developments of the site.

East Gaul

A single East Gaulish vessel was identified (Period 7), a form Dr. 43 or 45 mortarium, probably from Trier, it is of later 2nd or early 3rd century date.

Dating

Marsh states that samian alone is of little use in determining the development of London (*ibid.*, 186) as the pattern of samian supply to London is unrelated to the economic development of the city. Samian is however a valuable dating tool and it is

clear that, although there are inevitably large quantities of residual Neronian and Flavian vessels, the samian dating follows the site dating very closely. It may even be possible to suggest latest dates for some of the Periods based on the samian: Period 2 – pre-Flavian; Period 3 – early–mid-Flavian, up to about AD 80–85; Period 4 – Flavian–Trajanic, up to about AD 110/120; Period 5– early 2nd century up to *c.* AD 150/160.

The small proportion of 2nd century Samian in this assemblage is low even for London, and the majority in this assemblage appears to date to the Hadrianic–early Antonine periods. The Antonine material is very sparse with even the huge workshops of Cinammus and Paternus un-represented suggesting a very real decline in samian consumption after about AD 150.

Use and re-use

Wear patterns

Heavy wear was noted in the bases of one form Dr. 27g and three form Dr. 35 cups, in one case so extreme that not only was the slip worn away but a distinct ledge had formed between the extant slip and the worn central area. It seems likely that this was caused by grinding and what ever the substance was that was crushed or ground, presumably only small quantities were used/needed, hence the use of cups. One form Dr. 18 base was worn at the centre of the underside. How, or why, this occurred is unknown.

Re-use

One Ritterling 12 and a Curle 11 or Ritterling 12 bowl have had the flange broken or ground off almost flush with the wall of the pot. It is possible that bowls with a broken flange may have been trimmed and smoothed to extend the life of the pot. The trimming of base sherds in order to make small dishes or lids has been noted by Marsh (1981, 229). This seems likely on two unstamped form Dr. 33 (Obj. 494, Obj. 3793) and two unstamped form Dr. 27g (Obj. 336, Obj. 3813) bases. The edges of the latter were worn very smooth. Additionally two stamped vessels, a form Dr. 27g cup (Obj. 3799) and a form Dr. 15/17 or 18 platter (Obj. 3862) also appear to have been trimmed. These also have a graffito letter or symbol under the base. A single Central Gaulish form Dr. 18/31 base fragment appears to have been used as some kind of

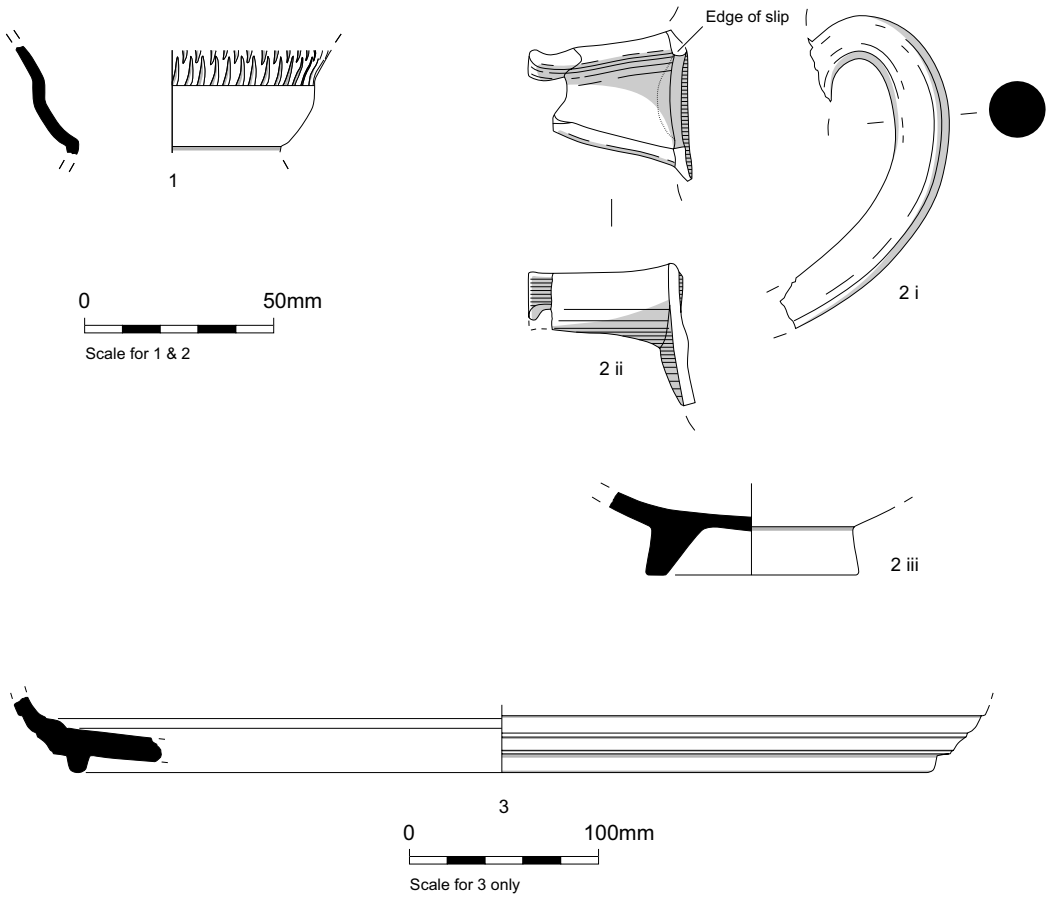

Figure 44 Southern (1–2) and Central Gaulish (3) samian vessels of unusual forms. 1) Period 5 Open Area 13, context 1723; 2i–ii) Period 3 Road 1, context 3287, 2iii) Period 5 Road 3, roadside ditch 1952; 3) Period 8 Open Area 16, context 1532

grinder or pestle. The interior slip is worn away as if by holding the sherd upside down using the footring as a handle. The wear continues across the break. A single, roughly squared sherd is very worn on one (external) surface and has mortar adhering, it may have been re-used as a *tessera*.

Graffiti

Several vessels were observed to have letters or words scratched on them after the vessels had been fired; additionally two vessels had had notches cut in the footring. Both types of mark are thought to be owners' marks; a high frequency of such marks is often observed on fort sites, the soldiers apparently marking their personal belongings. All of the vessels thus marked are plain forms. The usual place for scratching letters is the flat area within the footring (11 examples), but two are marked on the inner wall of the footring, and one on the under side of the base beyond the footring. The marks range from single letters or symbols to full or abbreviated names. The notched marks comprise one example with a single notch and one with a group of five notches. Of the 16 vessels nine are stamped; two of these appear to have been trimmed around the broken base (see above). The frequency of marked forms is as follows: Dr. 18 (7), Dr. 15/17 or Dr.18 (2), Dr. 27g (3), Dr. 35 (3), Dr. 33 (1). With the exception of the form Dr. 33 (5 notches in footring) from Lezoux, all other examples are from La Graufesenque.

Unusual forms

It is not surprising that a large assemblage from London should produce some unusual forms. Noteworthy, although not exceptional, are three form Dr. 35/36 vessels which appear to have deliberate dots of barbotine around their outer walls. This has not been observed before by the author. The three other vessels of unusual form are illustrated in Figure 44 and described briefly below:

1. South Gaul, probably La Graufesenque. Part of lower body of a closed vessel with cut glass decoration. (Period 5, context 1723).
2. South Gaul, La Graufesenque. This may be all one vessel, or fragments of three separate ones as there are no joins to prove that they are from the same vessel. It is possible that these three sherds come from a spouted flagon or *lagena*. Unfortunately no body sherds were found which might belong to this vessel. The first two sherds come from the same context in Period 3, the third from Period 5. i) Poorly finished handle, presumably from a jug or flagon, a change of internal angle is evident at the lower end of the handle. (Period 3 Road 1, context 3287). ii) Horizontal spout with slight lip, similar to, but not the same as, those occasionally seen on form Dr. 37 bowls. Stanfield illustrated a bowl from London, with a similar, although shorter spout in his second paper on unusual Samian forms (Stanfield 1937, fig. 6, 19). Our example seems to come from a closed vessel as the internal end of the spout and interior of the pot are unslipped. The size and curvature of the piece, and the lack of internal slip suggest it probably comes from a narrow-mouthed flagon or *lagena*, and was probably set somewhere up the side of the vessel. (Period 3 Road 1, context 3287). iii) Base with straight, parallel-sided footring, unslipped interior. (Period 5 Road 3, roadside ditch 1952).
3. Central Gaul, burnt. A large vessel *c.* 400 mm diameter. The wall and base angle are comparable to form Dr. 15/17 but the base resembles Bet's Form Dr. 67 (Bet *et al.* 1989, pl. 3, 67), with a half-round moulding instead of the usual footring. As the vessel is incomplete it is of course possible that there was a footing, but wear on the underside of the moulding indicates that the vessel rested on this. Antonine (Period 8 Open Area 16, context 1532)

The decorated wares

A range of decorated forms were recorded, the most numerous being forms Dr. 29 and Dr. 37, full details of number of forms by fabric can be seen in Table 4. Approximately 21% of the samian vessels identified were decorated forms of which 20% were from South Gaul, probably La Graufesenque.

All decorated sherds with identifiable decoration have been dated and are described in the catalogue (in archive). Where possible a potter or group of potters has been identified as potter or mould-maker for each vessel. Where this is not possible vessels have been dated on stylistic grounds. The catalogue is ordered by stratigraphic period, where sherds from a vessel come from more than one period the vessel is catalogued under the latest period.

A small selection of vessels have been illustrated, the criteria for selection are that a vessel should have unusual or unparalleled decorative elements, or be the product of a less well-known or well-documented potter.

Catalogue of the illustrated decorated wares

Abbreviations: O. – figure type in Oswald (1936–7); Rogers – figure type in Rogers (1974).

Fig. 45

1. Dr. 30, SG (Cat No. 16). Substantial amount of heavily burnt bowl. Ovolo single-bordered with plain tongue and separately applied rosette. Arcaded design has Abundance seated holding palm leaf and cornucopia (similar to O.804, although larger than illustrated there) alternating with Bacchic figure riding leopard above panel of leaf tips. Neronian Period 3, contexts 3283, 3462.

Table 4. Samian: frequencies of forms and fabrics of decorated wares

Form / *Fabric*	*29*	*30*	*37*	*29 or 37, 30 or 37*	*64*	*67*	*72*	*78*	*Total no. decorated forms*
SG	111	17	107	11	0	6	0	2	254
1st cent. Lezoux	1	–		–	–	–	–	–	1
Les Martres	–	–	4	–	–	–	–	–	4
CG	–	–	6	–	1	–	1	–	8

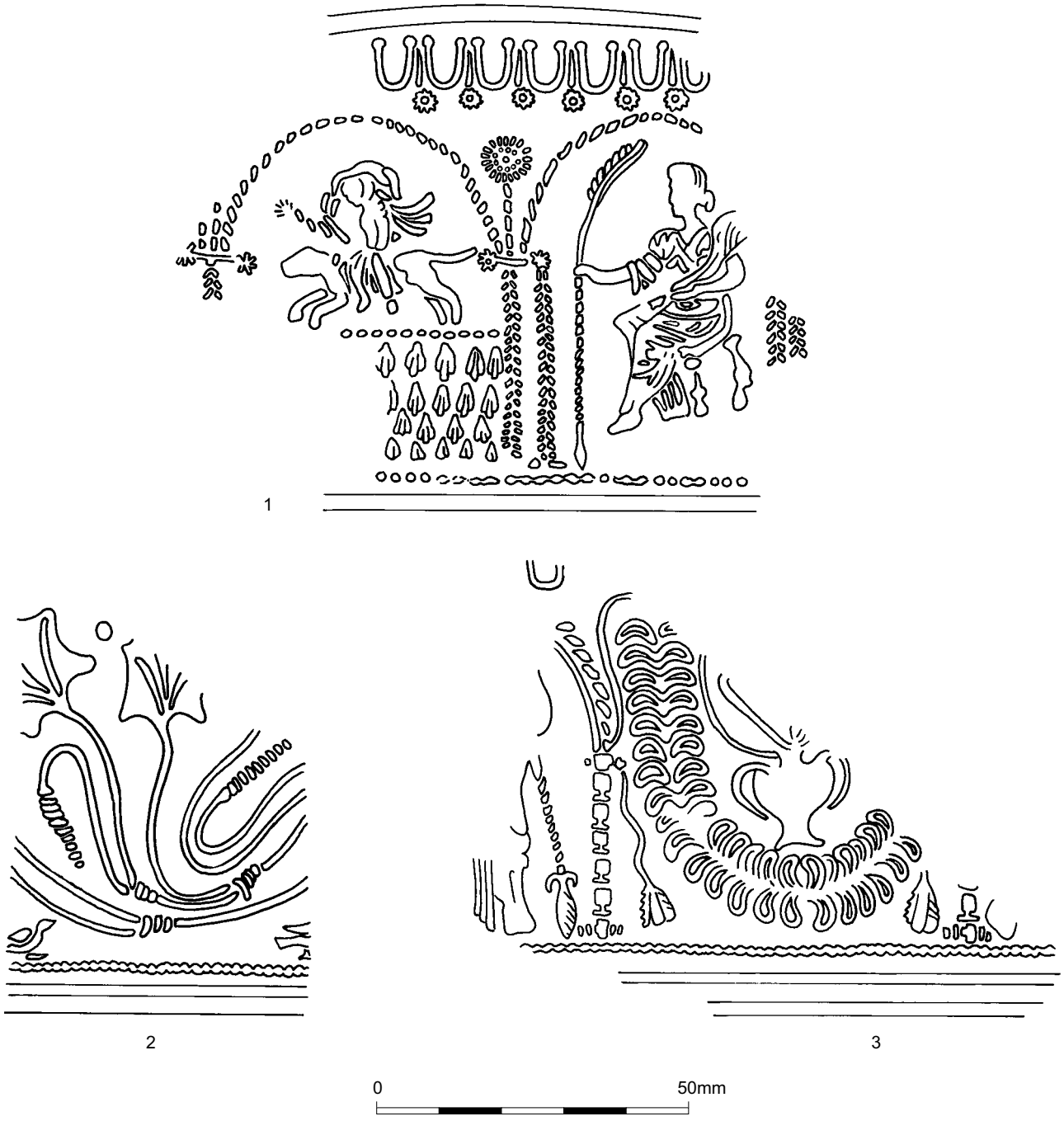

Figure 45 Decorated samian 1) context 3283, 2) context 2709, 3) context 2719

2. Dr. 30, SG (Cat. No. 5). Fragment, foliate scroll, bifid scroll bindings and small birds below scroll. Lower limit of decorative zone delineated with zig-zag line. Links with Lupus and Masclus in design but leaves not those usually used. *c.* AD 50–70. Period 2, context 2709.
3. Dr. 30, SG (Cat. No. 17). Base and body sherds (6) of bowl in style of Sabinus. Design comprises alternating arcades and leafy festoons. Figure in arcade is Minerva O.130 (= D.79) but with large bud at base of staff (Stanfield 1937, fig.11, type 16). Arcade and figure on signed bowl from Narbonne (Mees 1995, Taf. 168, 2). Leafy festoon on signed bowl from Narbonne (*ibid.*, Taf. 168, 6). Vase within festoon similar to Hermet (1934) pl.17, 71 and 72, but not same, may be a new type for Sabinus. *c.* AD 50–70. Period 3, context 2719

Fig. 46

4. Dr. 29, SG (Cat. No. 27). Upper zone of panels between bead rows and divided by vertical wavy lines. Main panel contains eagle O.2174 flanked by pairs of geese O.2244 and O.2286 either side of which is panel containing small corded medallion containing, on left, goose O.2286, on right, goose O.2244. Eagle flanked by facing birds, one of which is small goose, on stamped bowl of Felix from London (Knorr 1952, Taf. 23, 2). One panel survives of lattice formed from wavy lines with simple raised dot in centre of each diaper. Similar lattice, corded medallions, and eagle on bowl stamped by Matugenus from London (Dannell *et al.* 2003, Taf. D1, 2256). Fragment of looped leaf and bud are all that remains of lower zone scroll. *c.* AD 50–65. Period 3, context 2719, Period 4, context 2797.

Fig. 47

5. Dr.29, micaceous Lezoux (Cat. No. 18). Almost half vessel survives. Design is freestyle scene of running hares with rosettes above and below in upper zone, dogs and/or lions running right and left in lower zone with row of large rosette below plain cordon and occasional half rosettes, representing grass, below figures. One animal in lower zone similar to one on micaceous form Dr. 29 bowl from London (Stanfield 1929, fig. 2, 4). *c.* AD 50–75. Period 4, context 3258.

Fig. 48

6. Dr.37, SG (Cat. No. 70). Two joining sherds from bottom of decorated zone. Part of design comprising foliate scroll with large, leaves in upper lobe, leopardess with vine O.1573 in lower. Basal wreath simple chevron wreath below wavy line. Third sherd also has part of large leaf. Leopardess used by Masclus and later by Calvus. Large leaves unparalleled. *c.* AD 70–85. Period 4, context 2563
7. Dr. 27, SG (Cat. No. 31). Complete base, no internal stamp. Plain area below decoration has very faint, probably incomplete, mould signature, very difficult to read, might be MOMO or possibly MURRANUS. Surviving decoration of lower zone comprises alternating panels containing dog chasing hare (2 different dogs evident) with rosettes in field and blocks of vertical wavy lines. Wavy line separates

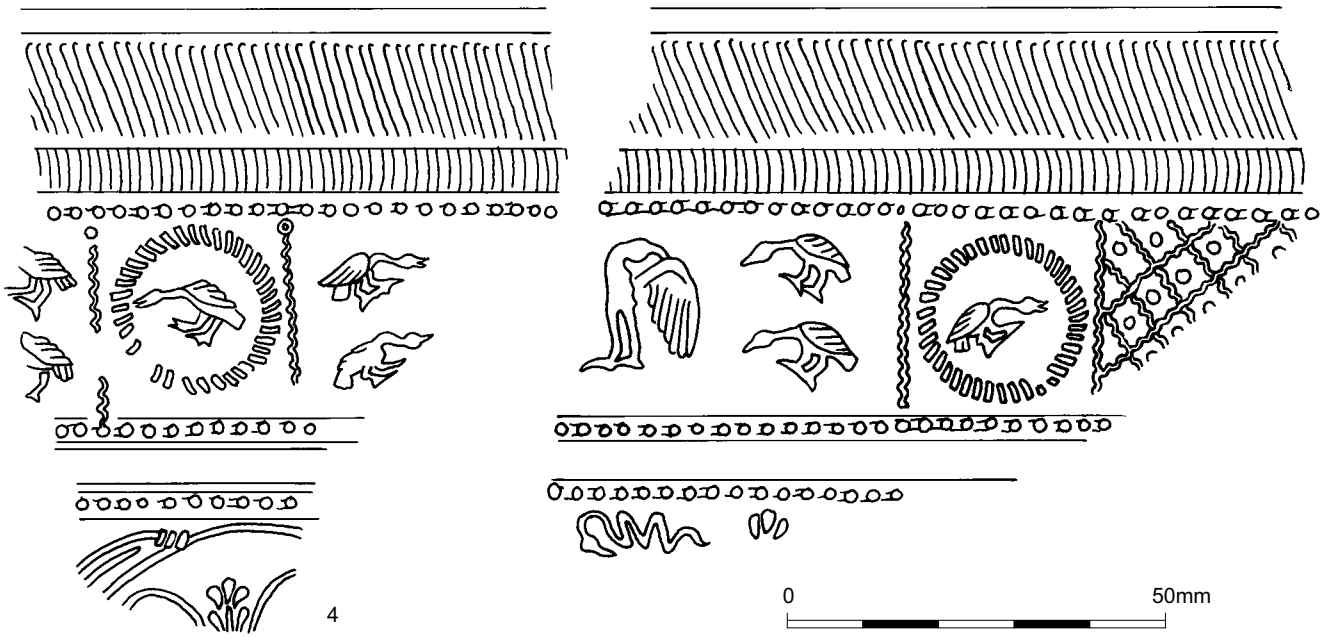

Figure 46 Decorated samian 4) contexts 2719 & 2797

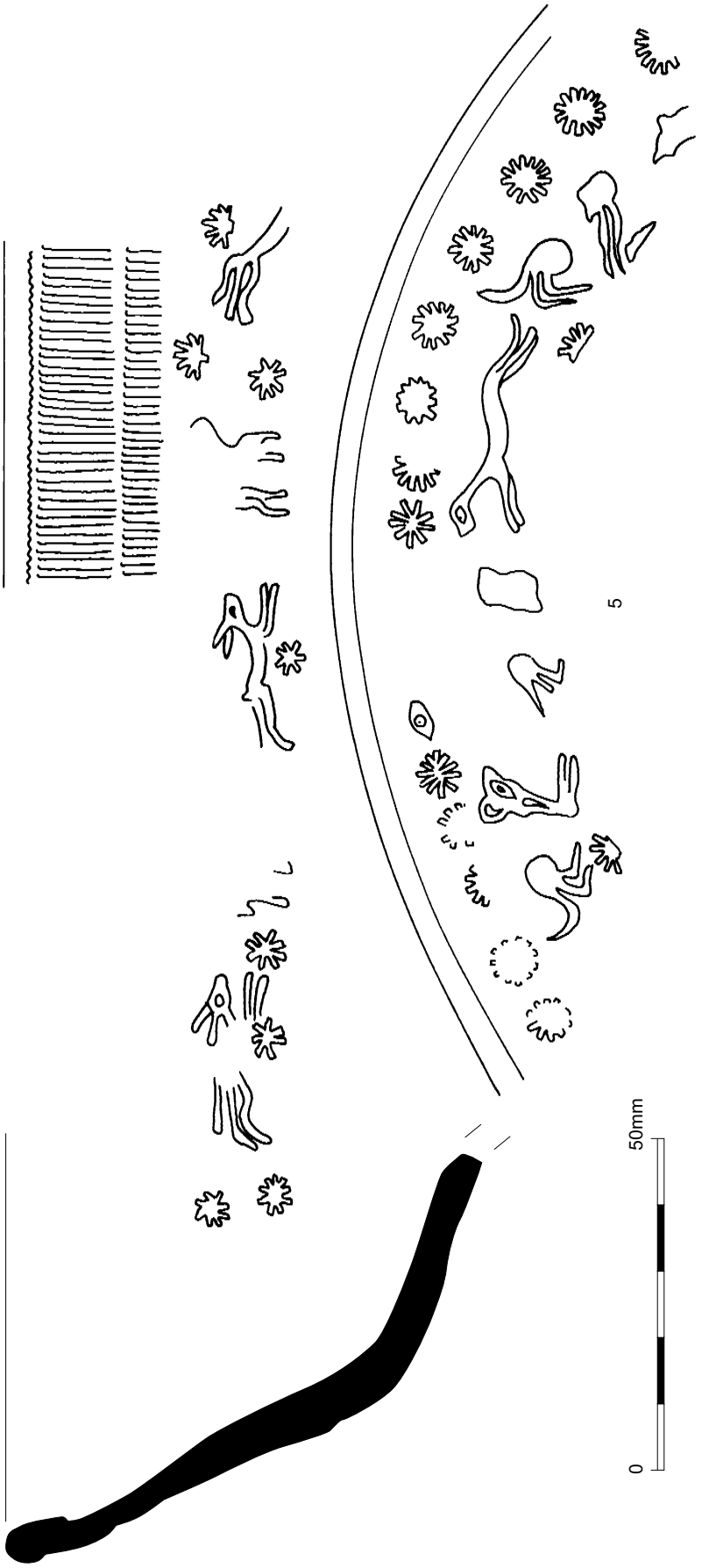

Figure 47 Decorated samian 5) context 3258

these from straight gadroons above. In both panels hare is O.2078, in left-hand panel running dog incomplete. Dog in right-hand panel is crouching with tail raised, similar to O.1968; this dog can be seen on form 29 bowl from Pompeii signed OFMOM and on bowl stamped in decoration by Murranus. In latter example dog appears in panel with hare and rosettes although in upper zone of bowl. *c.* AD 70–85. Period 4, context 2679

Fig. 49

8. Dr. 37, SG (Cat. No.102). Three joining sherds with double-bordered ovolo with trident tongue used by the M. Crestio group. Panelled decoration includes fishing scene. Human figure not identified, but has been adapted with addition of rod and line drawn into mould. Fish, one of which has been caught, are O.2416. Wavy lines with large rosettes at junctions divide panels. Smaller panels include running hare and infill of wavy lines and leaf tips. Leaf tips same as those used in fishing scene as grass and scenery. Basal wreath of reflexed chevrons. Second sherd, probably from same mould but not part of same vessel, recovered from context 3080 (Cat. No. 107). Only identifiable motif, running dog O.1925, replaces hare on Cat. No. 102. *c.* AD 75–95. Period 5, contexts 2992, 3083.

9. Dr. 37, SG (Cat. No.118). Seven sherds from bowl with trident tongued ovolo, possibly Frontinus' (Mees 1995, Taf. 66, 8). Scrolled design includes distinctive, toothed, triangular leaf (also on unpublished sherd from Guildhall, London;

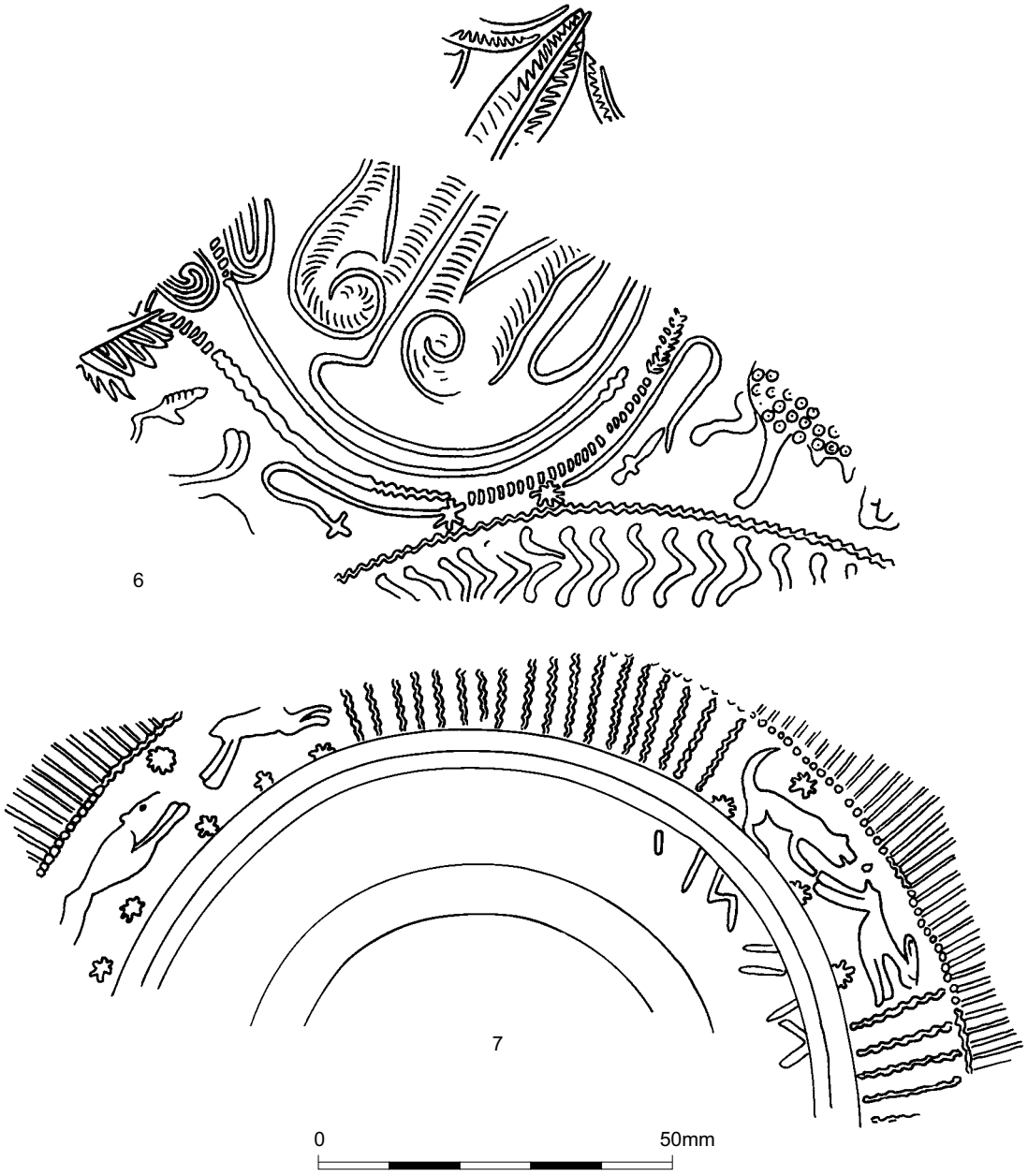

Figure 48 Decorated samian 6) context 2563, 7) context 2679

GYE92, 15076). Scroll inhabited by small birds, singly amongst leaves and as pair pulling worm (Knorr 1919, Taf. 85A) in lower lobe below small medallion containing large rosette and flanked by two more. Wreath with four leaflets to each leaf on an unattributed bowl from Colchester (Dannell 1999, fig. 2.6, 64). *c.* AD 75–95. Periods 6 and 8, contexts 2923, 2864.

Fig. 50

10. Dr. 37, SG (Cat. No. 94). At least nine sherds from same vessel. Ovolo has narrow core and no tongue; had long life and occurs on bowl at La Graufesenque stamped by Bassus ii (G.73, 78,1). Decoration is panelled design with lion O.1401 and large striated spindle in upper panel. Lower infilled with leaf tips and wavy lines above chevron wreath. Large rosettes at panel corners. *c.* AD 90–115. Periods 5 and 8, contexts 2398, 1991, 2033, 2398, 2361, 1085.

11. Dr. 37, Les Martres-de-Veyre (Cat. No. 110). Two joining body sherds from bowl in style of Drusus i. Panels contain, from left, prancing goat; pile of ornaments including Rogers G.395 and Q.91; infilled panel of diagonal bead rows and pile of leaf tips (Rogers U.194) above lioness (O.1520) with basal wreath of leaves (G.366). Rosette (Rogers C.280) occurs at junctions of panels and in ground of animal panels. Lioness is fairly common motif, occurs with rosettes on bowl from London (Stanfield and Simpson 1990, fig. 16, 202). Goat not illustrated by Déchelette, Oswald, or Rogers and seems to be new figure type as differs from that used

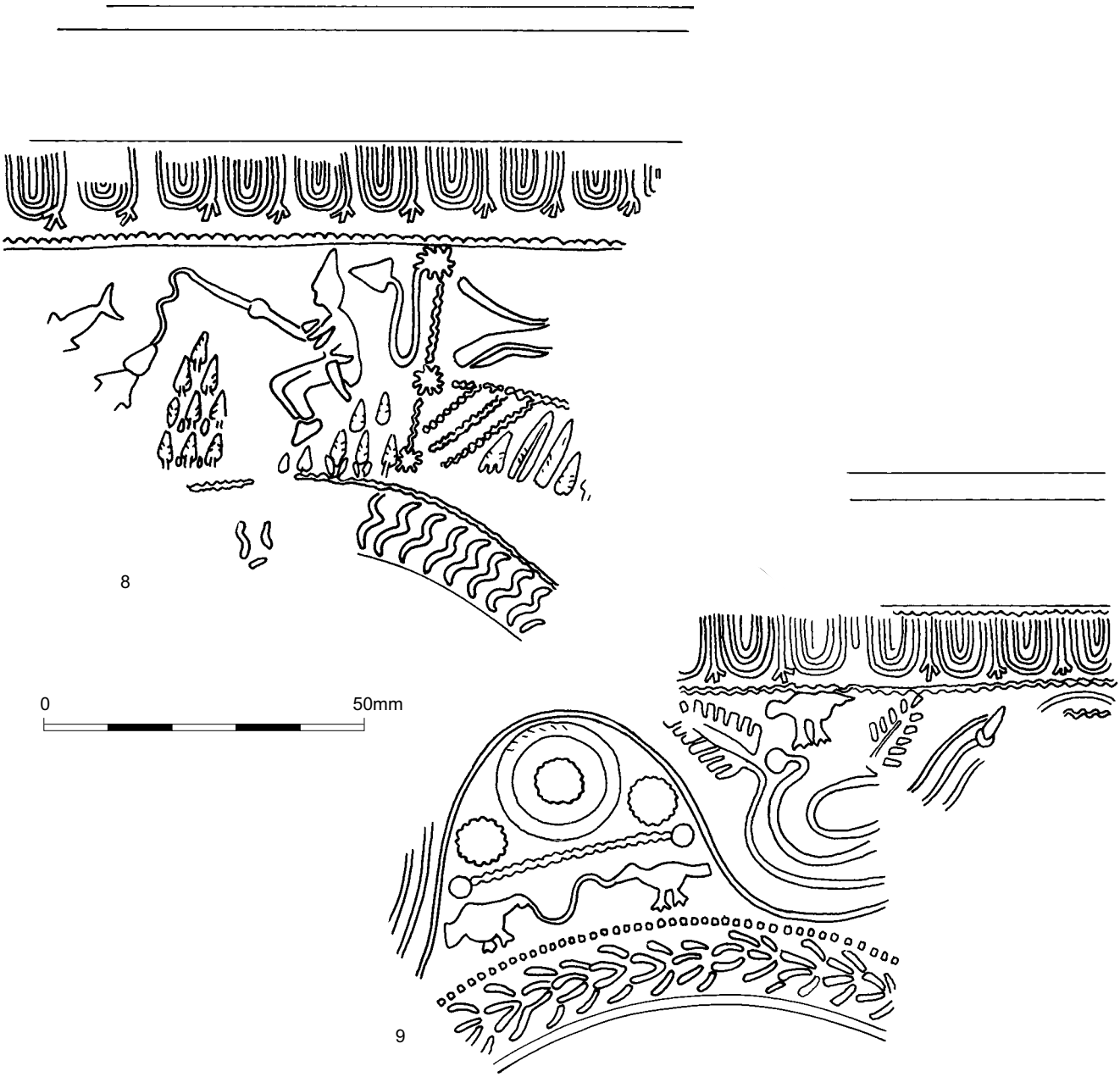

Figure 49 Decorated samian 8) contexts 2992 & 3083, 9) contexts 2864 & 2923

by Potter X-2. *c.* AD 100–120. Periods 4 and 5, contexts 1195, 1188.

12. Dr. 37, CG (Cat. No. 111). Body sherd from panelled bowl in style of Arcanus. Figure in right-hand panel is Apollo (O.83). Seated figure on left not in Déchelette or Oswald, but is on signed bowl from Stanwick, Northamptonshire (unpublished), with beaded ring (Rogers C.293) and plain rings, wavy-line border (Rogers A.24) and six-beaded rosette (Rogers C.278). Figure also on bowl in Arcanus' style from Zwammerdam (Morren 1957–8). *c.* AD 120–140. Period 5, context 3084.

Conclusions

Vessels from South Gaul dominate this large assemblage of samian pottery, almost all of which is from the kilns at La Graufesenque. The range of forms and potters represented are comparable with most assemblages from London excavations (J. Bird pers. comm.). Small quantities of samian from Central Gaul and a single mortarium from East Gaul illustrate continued, but greatly reduced, use of samian until the end of the 2nd century. It is possible that the samian can provide end dates for the earlier periods of activity on the site (see above). The presence of some heavily burnt Neronian vessels suggests that there may be evidence for the Boudican Revolt of AD 60.

The samian itself, fine, imported tableware, is an indicator of status. There is little evidence of repair in the form of rivet holes, which may indicate a level of wealth and easy access to samian, or equivalent high status table wares, which rendered such economies unnecessary. Some vessels carry the names and other marks of their owners in the form of graffiti or deliberate notching. Many of the vessels survived in quite large pieces suggesting little post-depositional disturbance.

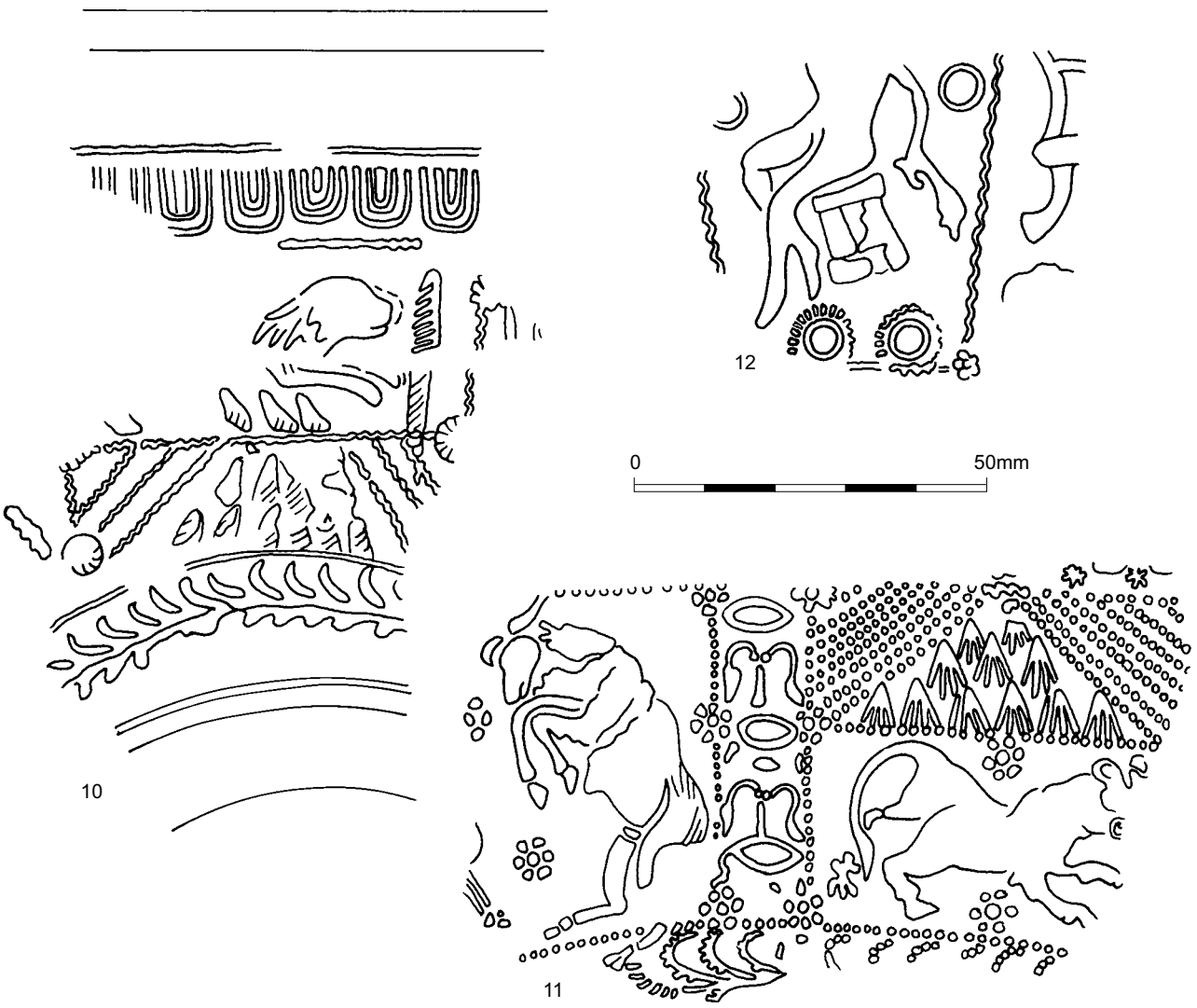

Figure 50 Decorated samian 10) contexts 2053, 2361, 2398, 1991, 2033, 1085, 11) contexts 1188 & 1195, 12) context 3084

Samian potters' stamps

by Brenda Dickinson

Each entry gives: excavation number, potter (i, ii etc., where homonyms are involved), die, form, reading, published example (if any), pottery of origin, date, phase. Superscript indicates:

a A stamp attested at the pottery in question;
b Not attested at the pottery, but other stamps of the same potter used there;
c Assigned to the pottery on the evidence of fabric, distribution, etc.

Ligatured letters are underlined.

1. 3062, Obj. 3833, Aucius 1a' 27g ΛVCI(La Graufesenque[c] . *c.* AD 60–75. Period 4.
2. 3317, Obj. 559, Bassus ii Incomplete – 27g)FBA[La Graufesenque[b]. *c.* AD 45–70. Period 4.
3. 2261, Obj. 3804, Biragillus ii 1a 18/31 BIR[AGIⱮVSF] Les Martres–de–Veyre[b]. *c.* AD 100–125/130. Period 5.
4. 1901, Obj. 251, Calvus i 5l 18 OFCALVI (ORL B26, 33, 3) La Graufesenque[a]. *c.* AD 70–90. Period 7.
5. 2013, Obj. 3799, Calvus i 5dd 27g OFCALVI (Polak 2000, pl. 5, C38) La Graufesenque[a]. *c.* AD 70–90. Period 5.
6. 1742, Obj. 3791, Cambus i 2b 33 CAMBVS•F Lezoux[b]. *c.* AD 150–180. Period 5.
7. 2905, Obj. 3860, Carillus iii 4a 18 CA[RILLFE] (Polak 2000, pl. 6, C68) La Graufesenque[a]. *c.* AD 65–85. Period 3.
8. 2339, Obj. 3806, Celer ii 1a 15/17 OFCELEIⱮ (Polak 2000, pl. 6 C93. La Graufesenque[b]. *c.* AD 55–75. Period 5.

9a. 3083, Obj. 4147, Crestio 5b' 18R)F]CR[ESTIC] (Polak 2000, pl. 7, C158) La Graufesenque[a]. *c.* AD 50–65. Period 5.

9b. 2644, Obj. 423, Crestio 5b' 18[)FCR]ESTIC (Polak 2000, pl. 7, C158) La Graufesenque[a]. *c.* AD 50–65. Period 4.

10. 2613, Obj. 373, Felicio i 4a 18 FELICIONS (Polak 2000, pl. 9, F6) La Graufesenque[b]. With graffito]\Λ⚡VIITΛ inscribed under the base, after firing. *c.* AD 65–85. Period 4.
11. 3755, Obj. 3985, Felix i 14a 15/17 or 18 FELICISO (Polak 2000, pl. 9, F12) La Graufesenque[b]. *c.* AD 50–70. Period 3.
12. 2447, Obj. 3812, Felix i 35a 15/17 or 18 [FEL]ICIS (Polak 2000, pl. 9, F24) La Graufesenque[a]. *c.* AD 50–70. Period 5.
13. 3077, Obj. 3987, Felix i–Sev— 1a 27g FELIXSEV (Polak 2000, pl. 9, F26) La Graufesenque[a]. *c.* AD 50–75. Period 4.

14–15. 2776, Obj. 3862, 2651, Obj. 3824, Frontinus 16c 15/17 or 18, 18 OFRONTI (Polak 2000, pl. 9, F48) La Graufesenque[a]. *c.* AD 70–90. Period 5, Period 5.

16. 2611, Obj. 3979, Iucundus iii 5b" 15/17 or 18)F.IVCVƆN (Polak 2000, pl. 11, I14) La Graufesenque[a]. *c.* AD 70–85. Period 4.
17. 1559, Obj. 3975, Iucundus iii 6c 27g OF.IVCV La Graufesenque[b]. *c.* AD 70–90. Period 8.
18. 2520, Obj. 3815, Iucundus iii 13c 27 IVCV[NDI] (Polak 2000, pl. 11 I19) La Graufesenque[a]. *c.* AD 70–90. Period 4
19. 2412, Obj. 3810, Iullinus i 3b 15/17 or 18 [IVⱮ]ⱮИI (Polak 2000, pl. 11, I32) La Graufesenque[a]. *c.* AD 70–85. Period 4.
20. 3448, Obj. 592, Licinus 23a 27g OF.LICIN (Hull 1958, fig.99, 8) La Graufesenque[a]. *c.* AD 45–65. Period 2.
21. 2679, Obj. 3825, Maccarus i 13a 27g OFW•MACCAR (Polak 2000, pl. 13, M5) La Graufesenque[a]. *c.* AD 50–65. Period 4.
22. 2430, Obj. 338, Mercator i 7b 18R MERCΛT[0] (Polak 2000, pl. 14, M69) La Graufesenque[b]. *c.* AD 85–110. Period 4.

23–5. 2430, Obj. 336, 3221, Obj. 3994, 3080, Obj. 494, Mommo 11b 24, 27, 33)F.MO (Polak 2000, pl. 14, M97) La Graufesenque[a]. *c.* AD 65–85. Period 4, Period 4, Period 5.

26. 1906, Obj. 3794, Niger ii 3a 27g OFNG[RI] (Hartley and Dickinson 1993, Fig. 104) La Graufesenque[a]. *c.* AD 55–70. Period 9.

27–8. 2563, Obj. 4146, 2784, Obj. 3828, Pass(i)enus 33a' 15/17 or 18 (2) PASSEИ,]ASSEИ (Polak 2000, pl. 16, P19). La Graufesenque[a]. *c.* AD 60–75. Period 4, Period 4.

29. 3754, Obj. 3996, Pass(i)enus 50a 18 OPΛSSIEИ La Graufesenque[a]. *c.* AD 50–65. Period 4.
30. 3062, Obj. 3831, Pass(i)enus 53b 27g OPΛSIE La Graufesenque[b]. *c.* AD 50–65. Period 4.
31. 2261, Obj. 3803, Pass(i)enus 61a 27g PASSIEꟻ La Graufesenque[a]. *c.* AD 65–80. Period 5.
32. 3077, Obj. 3986, Patricius i 3h 15/17 or 18 OFPATRICI (Polak 2000, pl. 16, P25) *c.* AD 65–85. Period 4.
33. 3083, Obj. 3875, Patricius i 5b 27g OFPATRC (Polak 2000, pl. 16, P29) La Graufesenque[b]. *c.* AD 60–80. Period 5.
34. 2448, Obj. 3813, Patricius i 6c 27g OF•PATRI (Hartley 1972, fig. 82, 146) La Graufesenque[a]. *c.* AD 70–85. Period 5.
35. 407, Obj. 3972, Patricius i 13b 18 PΛTRICI (Polak 2000, pl. 16, P31) La Graufesenque[a]. *c.* AD 65–85. Unphased.
36. 2624, Obj. 3821, Patricius i 13e 15/17 or 18 PATRICI (Polak 2000, pl. 16, P32) La Graufesenque[a]. *c.* AD 70–90. Period 4.
37. 2562, Obj. 3817, Ponteius 1a 15/17 or 18 [OFPOИ]TEI (Polak 2000, pl. 17, P70) La Graufesenque[a]. *c.* AD 70–90. Period 5.

38–9. 740, Obj. 3973, 3062, Obj. 3832, Ponteius 1a' 15/17 or 18 (2) [Ↄ]FP]OИTEI, ↃFPO[ИTEI] (Polak 2000, pl. 17, P70*) La Graufesenque[a]. *c.* AD 75–90. Unphased, Period 4.

40. 1642, Obj. 187, Pontus 8d 15/17 or 18 OF•PONTI (Polak 2000, pl. 17, P72) La Graufesenque[a]. *c.* AD 70–85. Period 9.

41. 3258, Obj. 3873, Primulus i 4j 18 PRITMVLI (sic: May 1930, 238, 50) La Graufesenque[b]. *c.* AD 60–80. Period 9.

42. 1739, Obj. 3790, Primulus i–Pater 1a 15/17R or 18R PRIMVL•PATER (Polak 2000, pl. 17, P90) La Graufesenque[a]. This is a modified version of No. 43, below, presumably after the die was taken over by Primulus. *c.* AD 70–85? Period 6.

43. 3959, Obj. 3998, Primus iii–Pater 1a 15/17R or 18R [PRI]MI•PAT[ER] (Polak 2000, pl. 17, P90, but without the diagonal stroke between M and I) La Graufesenque[a]. *c.* AD 65–75. Period 3.

44. 3754, Obj. 3997, Primus iii 18b 27g OFPRI[M] (Hull 1958, fig. 76, 13) La Graufesenque[a]. *c.* AD 55–70. Period 4.

45. 2339, Obj. 3807, Pudens 6a 27g OFPVDE (Polak 2000, pl. 18, P142) La Graufesenque[a]. *c.* AD 65–85. Period 5.

46. 3317, Obj. 557, Rufinus iii 4c 27g OFRVFIN La Graufesenque[a]. *c.* AD 65–85. Period 4.

47. 2430, Obj. 337, Secundinus i 5a 18R SECV[NDINI] (Polak 2000, pl. 21, S64) La Graufesenque[a]. *c.* AD 80–110. Period 4.

48. 2102, Obj. 3801, Servus iv 1b 37 (mould-stamp in the decoration) [S]ERV[IM] retr. (Stanfield and Simpson 1958, pl. 169) Lezoux[a]. *c.* AD 160–200. Period 7.

49. 2563, Obj. 3818, Severus iii 9j 27g OF.SEVER La Graufesenque[b]. *c.* AD 70–95. Period 4.

50. 3184, Obj. 3992, C. Silvius Patricius 18e 27g CSILVI (Polak 2000, pl. 16, P42) La Graufesenque[a]. *c.* AD 65–90. Period 4.

51. 1734, Obj. 3789, Virilis ii 6c 15/17 or 18 OF.V[IRILI] (Polak 2000, pl. 24, V28) La Graufesenque[a]. *c.* AD 70–100. Period 5.

52. 1794, Obj. 3792, Virtus i 8b 18 VIR[TVTIS] (Polak 2000, pl. 25, V52) La Graufesenque[b]. *c.* AD 70–90. Period 5.

53. 1912, Obj. 3795, Vitalis ii 8g 18 OF.VITA (Polak 2000, pl. 25, V68) La Graufesenque[b]. *c.* AD 75–95. Period 5.

54. 2643, Obj. 3822, Vitalis ii 8h 15/17 or 18 OF.VIT[A˙] (Polak 2000, pl. 25, V69) La Graufesenque[b]. *c.* AD 75–95. Period 5.

55. 2520, Obj. 3814, Vitalis ii 23b" 27g VITALIS (Polak 2000, pl. 25, V79) La Graufesenque[b]. The die first gave VITALISFE, then VITALISF and, finally VITALIS, through successive breakages. *c.* AD 75–85. Period 4.

Unidentified

56. 3190, Obj. 3984, M[on form 15/17(?), South Gaulish, probably from Montans. Claudio–Neronian. Period 7.

57. 2784, Obj. 3829,]S..IS[on form Ritt. 8, South Gaulish. Neronian. Period 4.

58. 3629, Obj. 3834, OFAIS[?on form Ritt. 8, South Gaulish. Neronian. Period 2.

59. 3258, Obj. 3874, .P(?) on form 15/17 or 18, South Gaulish. Neronian. Period 4.

60. 2926, Obj. 3861, OF•[on form 24, South Gaulish. Neronian. Period 3.

61. 3185, Obj. 3993, OF[retr. on form 18, South Gaulish. Flavian or Flavian-Trajanic. Period 2.

62. 3103, Obj. 3983,]A or]R on form 27g, South Gaulish. Neronian or early–Flavian. Unphased.

63. 1653, Obj. 3978, I[or]I on form 29, South Gaulish. Early–Flavian. Period 9.

64. 2563, Obj. 3819, ΛXN[or]NXV on form 15/17 or 18, South Gaulish. Flavian Overfired. Period 4.

65. 3083, Obj. 3990, CER[or GER[on form 33a, South Gaulish. Flavian. Period 4.

66. 1248, Obj. 3974 CCV? on form 27, South Gaulish. Flavian or Flavian–Trajanic. Period 8.

67. 1810, Obj. 3793, CRIISI? on form 33, South Gaulish. Flavian or Flavian–Trajanic. Period 5.

68. 2553, Obj. 3816, S[or]S on form 27, South Gaulish. Flavian or Flavian–Trajanic. Period 6.

69. 1653, Obj. 3977, A[on form 31, Central Gaulish. Antonine. Period 9.

Illiterate

70. 2784, Obj. 3980, ΛIMI on form 27g, South Gaulish. Neronian. Period 4.

71. 1575, Obj. 3976, \\\\\\/I on form 27g, South Gaulish. Neronian or early–Flavian. Period 5.

72. 2973, Obj. 3981,]II•II on form 27g, South Gaulish. Neronian or early–Flavian. Period 4.

73. 2706, Obj. 3827, LИ/IO\/III on form 18, South Gaulish. Early–Flavian. Period 4.

74. 2362, Obj. 3809, C….I/I on form 27g, South Gaulish. Flavian Slightly burnt. Period 5.

75. 3221, Obj. 3995, IИI on form 27g, South Gaulish. Flavian. Period 4.

76. 2866, Obj. 3830, IICII on form 27g, South Gaulish. Flavian. Period 4.

77. 1991, Obj. 3798, + 2360, Obj. 3808, IIΛΛΛIII on form 33a, South Gaulish. Flavian or Flavian–Trajanic. Period 5.

78. 3083, Obj. 3988, IIIIII on form 27, South Gaulish, Flavian –Trajanic. Period 5.

Comments

Of the 79 potters' stamps listed above, 95% come from South Gaul and 5% from Central Gaul. The South Gaulish stamps are almost entirely products of La Graufesenque. The one exception, unfortunately

unidentified and residual, is on a vessel which seems, on the evidence of fabric and glaze, to have been made at Montans in the Claudio–Neronian period; it carries the earliest stamp in the assemblage (Cat. No. 55, above). First century Montans ware is very scarce in Britain, though not unknown in London, which was presumably a distribution point. The stamped samian offers no clear evidence of pre-Boudican activity on, or near, the site, but there are a number of vessels that could have been in use before AD 60, or so.

The 2nd century stamped vessels comprise one Trajanic piece from Les Martres-de-Veyre (Cat. No. 31) and three Antonine examples from Lezoux (Cat. Nos 6, 48, 63). The last, and latest, stamp will not have arrived on the site before *c.* AD 160.

Roman Glass

by Rachael Seager Smith

The assemblage of 759 fragments largely consists of vessel glass, with a small number of objects, and small quantities of window and other glass (unidentified vessel/window fragments). There was nothing to suggest that the assemblage was anything other than domestic in nature (no cullet dumps, collections of more or less complete vessels, or concentrations of particular forms that may suggest that they were being sold or used for specific purposes, for instance). The vessel glass included containers for liquids (flasks/flagons/jugs/bottles) and dry storage (jars) as well as drinking vessels (cups and beakers) and tablewares (bowls and plates). Less than a handful of pieces showed any signs of burning.

Quantification of the Roman glass by period is shown in Table 5. Overall the assemblage is in very fragmentary condition with very few conjoining fragments, or even instances where more than one fragment can be confidently assigned to the same vessel.

Table 5. Quantification of Roman glass by period

Period	*No.*	*Wt (g)*
2: pre-Boudican	6	19
3: late Neronian–early Flavian	31	95
4: later Flavian	408	1350
5: early 2nd century	182	604
6: mid–late 2nd century	43	97
7: later Roman	15	22
8–10: medieval–post-medieval	74	258

Objects

These comprise 12 beads and four counters. Ten of the beads are turquoise frit melon beads, a type largely restricted to the 1st and 2nd centuries AD. One fragmentary bead of cylindrical form is made from strong blue, translucent glass. The 12th (from Period 4 Building 7, layer 2844), also made from strong blue glass (now oxidising) is an unusual form, a loop pendant shape (Lankton 2003, 65), with two holes asymmetrically set on the pendant part, presumably marking the former presence of contrasting coloured 'eyes' (Fig. 51, 424). The beads were scattered through contexts from Periods 3–6, associated with Buildings 5, 7, 9, and 15, Roads 1, 3, and 4, and Open Area 15, with no significant concentrations – all are likely to represent casual losses.

The counters are all of the standard plano-convex form, from four separate Period 4 and 5 contexts. Three (from Buildings 8 and 11 and Open Area 9), all 13–15 mm in diameter, were made of opaque glass of an indeterminate dark colour and *may* have originally been part of the same gaming set, while the fourth was oval, slightly larger and made from translucent blue/green glass (Building 7).

Vessel glass

The vessel glass, although present in significant quantities, is largely undiagnostic, comprising featureless body fragments, mostly in colours ranging from blue/green to colourless. The diagnostic pieces that are present indicate a date range focusing on the later 1st and early 2nd centuries AD, with only a few demonstrably later pieces.

The earliest identifiable vessels are pre-Flavian (AD 43–70). These comprise two joining fragments from the base of shallow bowl or plate with wheel-cut lines on the exterior, made from translucent green glass with opaque white and yellow floral motifs (Period 4 Building 8, context 2489; Fig. 51, 3299), the stepped rim from a cup (*cantharus*) in strong blue glass (Period 5 Road 3, context 1526, Fig. 51, 167; Price and Cottam 1998, fig. 19), and fragments from two hemispherical ribbed bowls (*ibid.*, fig. 14) one in blue/green glass from Period 4 Open Area 9, context 2706 (Fig. 51, 3771), the other pale green from Period 4 Alley 1. Cracked-off and ground smooth rim fragments from convex (Hofheim) cups with narrow bands of abrasion or wheel-cut decoration, dated from *c.* AD 43–75 (Price and Cottam 1998, 72; Cool and Price 1995, 65) occurred in the Period 2 boundary ditches and trackway, context 3119, Period 4, Alleyway 1, context 2784 (Fig. 51, 3544) and Period 9 Open Area 17, context 1906. An example of a more cylindrical cup form, also dated to the middle of the 1st century AD in Colchester (Cool and Price 1995, 68) came from Period 4 Building 7, context 2931 (Fig. 51, 440).

Another characteristic 1st century AD form is a circus cup (Rütti A1 type beaker) in strong cobalt blue glass (Period 5 Road 3, context 2455; Fig. 51, 343). The surviving rim fragment carries the letters … VA PYR … above a chariot-race panel featuring triple turning posts (the central one incorporated into the vertical mould-seam) separating two *quadrigae* facing right. The name Pyramus occurs on other circus cups found in Britain and on the continent (*ibid.*, 45) while the letters VA after a name were often used to denote *vade* – go or *vale* – farewell. These vessels date from the 3rd quarter of the 1st century AD (*c.* AD 50/55–75/80) and possibly represent a tourist souvenir of the time. It is possible that this vessel was imported from Cologne.

Pillar-moulded bowls are the most common tableware form, with definite or probable pieces from 23 different contexts (the eight rim fragments provide some indication of the minimum number of vessels). Only one (Period 4 Open Area 8, context 3754) is sufficiently complete to indicate that it comes from a relatively shallow, open form (Fig. 51, 3289). One example, from Period 4 Open Area 7, context 1581, is strong brown in colour, another, from Period 4 Building 7, context 2878 is pale green while all the others are in blue/green glass. These vessels first occurred during the late Republic or early Augustan period in both polychrome and monochrome glass (*ibid.*, 16). The polychrome examples mostly date to the 1st half of the 1st century AD; the strongly coloured monochrome examples continued after the brightly coloured ones but were also in decline from the middle of the 1st century onwards. Production of blue green examples, which had been around from the Augustan period, probably ceased during the Flavian period; the predominance of blue/green examples at this site strongly suggests that they are of Flavian date.

Most of the remaining diagnostic forms fall within the broader date range of later 1st–2nd century. The most common forms identified here are prismatic and cylindrical bottles in blue/green glass (19 examples). This may be misleading, as these forms can be identified from quite small body fragments but it is certainly the case that they often dominate assemblages of this period. Two (one with concentric circles, the other too fragmentary to determine) vessels have molded relief decoration on the underside of the base. There are also nine definite or probable pieces from tubular or conical unguent bottles (*cf.* Price and Cottam 1998, 169–74, figs 75 and 77) from Period 3–5 contexts – these vessels date from the mid-1st–2nd century AD. Three other cracked-off and ground rims from indented beaker forms (*ibid.*, 85–6, fig. 28) dated from AD 65/70 into the early 2nd century were recorded in Period 4, Building 6, context 2679 and Building 7, context 3057 as well as Period 5 Open Area 10, context 3178. Also represented are globular or conical jugs (at least five examples), which are the commonest forms of glass jugs found on sites of this period.

High-status glass included one deeply wheel-cut (leaving a raised boss with a central depression) fragment in colourless metal, with some evidence for wheel-cutting on the interior too (Period 4 Alley 1, context 2784) and another four colourless pieces with facet-cut decoration, probably derived from beaker forms (*cf.* Price and Cottam 1998, 80–3, fig. 26b, Harden 1987, 195–5, nos 104 and 105). There were also two pieces with mould-blown decoration – one from an almond-knobbed beaker (an unusually thick piece, probably indicative of a large vessel; M. Taylor and D. Hill pers. comm.) with the almonds arranged in parallel rows, and one (Period 4 Building 7, context 3055) from a large mould-blown bowl or possibly a large beaker with vine tendrils, bunches of grapes and a 'victory' palm hiding the mould seam, both in pale green glass.

Other fragments of plain strongly coloured glass (seven blue, five brown, and two green) are broadly dated to the 1st–early 2nd century AD. Most were undiagnostic body fragments, the cobalt blue ones often very thin-walled but the brown pieces included two probably from the same vessel with folded or pinched decoration (Period 4 Building 9 and a Period 4/5 leveling deposit) as well as a slightly flared, fire-rounded rim from a cup or bowl form (Period 4 Building 8, context 2520). Miscellaneous ribbed fragments also fall within this period; this type of decoration is most likely to have been found on tubular-rimmed bowls, collared rim jars, or globular or conical jugs (Cool and Price 1995, 175).

The archaeological record for the late 2nd–3rd century supply of glass to London is generally poor (Barber and Bowsher 2000, 128), and the nature of the deposits at Fenchurch Street make this site no exception. The only demonstrably later (late 2nd/3rd century) pieces comprise:

- four body fragments with snake-thread decoration, all from one context (a dump layer, 2404, in Period 8 Open Area 16; Fig. 51, 311 and 3681), in opaque, colourless glass with self-coloured trails. Associated with these decorated pieces were parts of a fire-rounded rim, a solid base ring, and a handle base, all in similar glass. Apart from the handle, these fragments would support the identification of the vessel as a cylindrical cup (eg, Cool and Price 1995, fig. 5.12); the handle may be from a second, plain vessel. The snake-thread trails are diagonally slashed, but one trail terminates in a leaf-shaped 'pad' impressed with a 'waffle-iron' or honeycomb pattern. This type of impressed decoration is less common on snake-thread vessels and may have originated from a single workshop in the eastern Empire (*ibid.*,

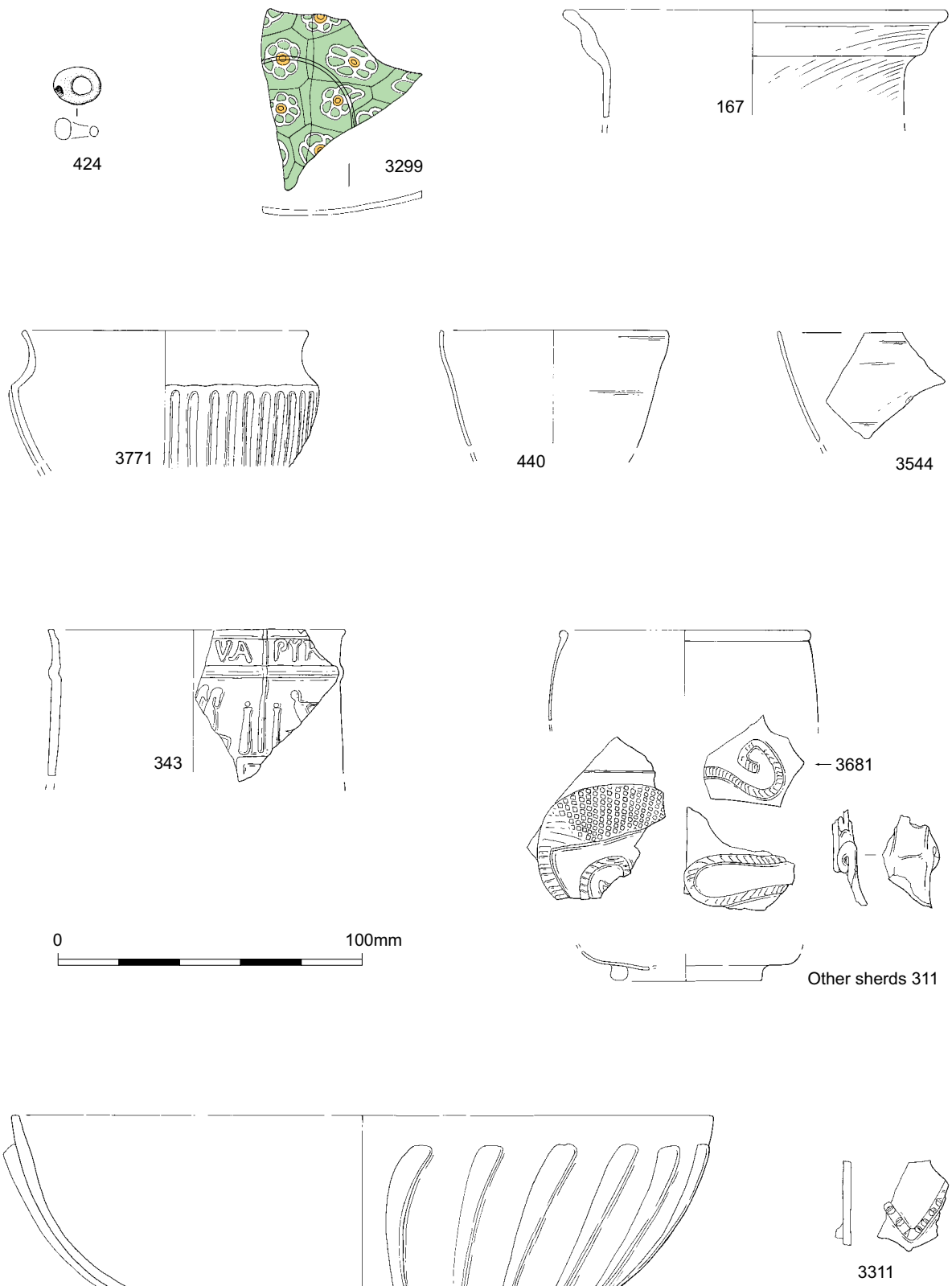

Figure 51 Roman glass

61), although western examples are known. One other colourless clear body sherd with horizontally and diagonally notched trailed decoration (Period 5 Building 11, context 2429; Fig. 51, 3311) may also derive from a snake-thread decorated vessel, although it was not of such fine workmanship;

- a pale green base and body fragments probably from an indented unguent bottle, a form in use during the late 2nd–3rd centuries (Price and Cottam 1998, 177–9, fig. 80), from Period 4 Building 7, context 3057;
- rims from two shallow bowls or plates, both in colourless glass, with flared fire-rounded rims and wheel-cut lines around interior. One, from Period 4 Open Area 8, context 3221, together with its two joining body sherds, has abraded decoration on the exterior. Examples of broadly similar vessels from Colchester (Cool and Price 1995, 103, fig. 6.7) have been tentatively dated to the 2nd–3rd centuries. The second example came from Period 4 Building 7, context 2870;
- a slightly inturned, fire-rounded rim probably from a cylindrical cup (Price and Cottam 1998, 99–101, fig. 37) also dated to this period (Period 7 Building 16, context 2001);
- a pale green; narrow neck from an almost horizontal shoulder (no constriction at base of neck); from a flask (possibly a mercury flask in use during the second half of the 2nd century; *ibid.*, 179–81, fig. 81. Mercury flasks, while not common in Roman Britain, are known in these East London cemeteries (Barber and Bowsher 2000, 129)) or bottle form (Period 8 Open Area 16, context 1060);
- a pale green, very high kicked base probably from an ovoid flask (eg, Price and Cottam 1998, 185–6, fig. 85; Cool and Price 1995, 150) in use in 2nd–3rd centuries. This is not a common form but this may be due to the fact that it is difficult to identify from fragments (Period 9 Open Area 17, context 1349).

Window glass

Eleven fragments of matt–glossy, blue/green Roman window glass were also recovered from a variety of contexts from Periods 3–9. Unfortunately, this assemblage was too small for any concentrations or associations with particular structures to be apparent.

Catalogue of illustrated glass

Fig. 51

Obj. 424. Strong blue pendant-shaped bead. Period 4 Building 7, context 2844.

Obj. 3299. Mosaic glass fragments from base of shallow bowl/plate. Period 4 Building 8, context 2489.

Obj. 167. Stepped rim from cobalt blue cup (*cantharus*). Period 5 Road 3, context 1526.

Obj. 3771. Hemispherical blue/green ribbed bowl. Period 4 Open Area 9, context 2706.

Obj. 440. Cylindrical cup, pale blue/green, abraded band decoration below rim and on body. Period 4 Building 7, context 2931.

Obj. 3544. Convex cup, pale green, abraded band decoration below rim and on body, glass. Period 4 Alley 1, context 2784.

Obj. 343. Circus cup (Rütti A1 type), cobalt blue; letters]VA PYR[above chariot-race panel featuring triple turning posts (central one incorporated into vertical mould-seam) separating two *quadrigae* facing right. Period 5 Road 3, context 2455.

Obj. 311 and 3681. Body frags with snake-thread decoration, associated with fire-rounded rim, solid base ring, and other frags (not illustrated) probably from cylindrical cup in opaque, colourless glass with self-coloured trails. Period 8 Open Area 16, context 2404.

Obj. 3289. pillar-moulded, pale blue/green bowl. Period 4 Open Area 8, context 3754.

Obj. 3311. colourless clear body sherd with horizontally and diagonally notched trailed decoration, possibly from snake-thread decorated vessel. Period 5 Building 11, context 2429.

Coins

by Nicholas Cooke

A total of 100 coins was recovered. All except two date to the Roman period. The first of these is a jeton struck in Tournai during the 15th century (Obj. 108, context 1123). Jetons were used as reckoning counters in medieval accounting, usually in conjunction with a checkerboard or cloth. Tournai was the main centre for the manufacture of jetons during the 14th and 15th centuries, before losing ground to Nuremberg. The second is a half penny of George III found during the earlier evaluation in a modern disturbance (Obj. 2032, context 106).

The Roman coins are dominated by coins of the 1st century AD (see Table 6). In general, their condition is very poor, with many coins heavily corroded. As a result of this corrosion, 34 could not be identified to emperor or period and have been identified only to general periods, often on the basis of their size and weight alone. It is likely that many of these date to the 1st century AD, reflecting the pattern established by the identifiable coins.

The dominance of coins of the 1st century AD is also evident in the coin histogram for the site

Table 6. All coins from 60–63 Fenchurch Street

Obj.	*Context*	*Type*	*Issuer / type*	*Issue Date*	*Identification*
590	3609	AE As	Agrippa – Neptune, holding trident & Dolphin	22–41	As RIC I, Gaius, 58
169	1470	AE As	Claudius – Minerva r with spear & shield. S C either side	41–54	As RIC I, Claudius, 100
435	2787	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
449	2787	AE As	Claudius – Minerva r with shield & spear	41–54	?Copy as RIC I, Claudius, 100
451	2996	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
457	2957	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
466	1867	AE As	Claudius – Minerva r with shield & spear	41–54	?Copy as RIC I, Claudius, 100
498	3091	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	?Copy as RIC I, Claudius, 100
535	3288	AE As	Claudius – Minerva r, with shield & spear	41–54	?Copy as RIC I, Claudius, 100
553	3306	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
560	3318	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	?Copy as RIC I, Claudius, 100
594	3596	AE As	Claudius – Ceres reverse	41–54	?Copy as RIC I, Claudius, 94
595	3654	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
606	3754	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
3526	3391	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
3016	1784	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
3054	2719	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
3330	2319	AE As	Claudius – Minerva r with shield & spear. S C either side	41–54	Copy as RIC I, Claudius, 100
260	2130	AE As	Nero – uncertain rev.	64–68	
372	2568	AE As	Nero – uncertain rev.	64–68	
436	2787	AE As	Nero – uncertain rev.	64–68	
462	2959	AE As	Nero – Victory l with shield. S C either side.	64–68	As RIC I, Nero, 312
483	2369	AE As	Nero – Victory l with shield. S C either side	64–68	As RIC I, Nero, 312
492	1000	AE As	Nero – uncertain rev.	64–68	
510	3158	AE Dupondius	Nero – Securitas Augusti. SC below	66	RIC I, Nero, 518
539	3299	AE As	Nero – Victory l with shield. S C on either side	64–68	As RIC I, Nero, 312
600	3753	AE As	Nero – uncertain reverse	64–68	
3528	1952	AE As	Nero – Victory l with shield. S C on either side	64–68	As RIC I, Nero, 312
3088	3062	AG Denarius	Vitellius – Pont Max reverse. ?Copy	69	RIC I, Vitellius, 107
161	1492	AE As	Vespasian – Victory l, holding wreath & palm. Victoria Augusti type S C either side	69–79	As RIC II, Vespasian, 502
295	2324	AE As/ dupondius	Vespasian – uncertain rev.	69–79	
404	2648	AE As	Vespasian – ?Judea Capta	69–79	
406	2648	AE As	Vespasian – Altar SC either side.	69–79	As RIC II, Vespasian 494
445	2867	AE As	Domitian – Spes l, holding flower S C either side	77–78	RIC II, Vespasian, 724
473	3057	AE As	Vespasian – uncertain rev.	69–79	
477	3057	AE As	Vespasian – Eagle on globe. S C either side.	69–79	As RIC II, Vespasian, 497
528	3221	AE As	Vespasian – uncertain rev.	69–79	
531	3294	AE As	Vespasian – uncertain rev.	69–79	
533	3183	AE As	Vespasian – uncertain rev.	69–79	
2049	1869	AE As	Vespasian – Eagle on globe	69–79	As RIC II, Vespasian, 497
121	1259	AE As	Domitian – uncertain rev.	81–96	
279	2266	AE As	Domitian – uncertain rev.	81–96	
280	2018	AE As	Domitian – Moneta l holding scales & cornucopia. S C either side.	81–96	As RIC II, Domitian, 242a
297	2367	AE As	Domitian – uncertain rev.	81–96	
325	2490	AE As	Domitian – uncertain rev.	81–96	
346	2542	AE As	Domitian – uncertain rev.	81–96	
577	3406	AE As	Domitian – Moneta l holding scales & cornucopia. Moneta August. S C either side.	85–86	RIC II, Domitian, 301a
106	1188	AE As	Nerva – Libertas l with sceptre S C either side. Libertas Publica	96–98	As RIC II, Nerva, 64
190	1474	AE As	Trajan – uncertain rev.	98–117	
208	1763	AE As	Trajan – SPQR Optimo Principi type (kneeling Dacian)	103–111	RIC II, Trajan, 486
3025	1952	AE As	Hadrian – uncertain rev.	117–119	
125	1290	AE Sestertius	Antoninus Pius – Juno Sispita advancing r, with snake, shield, & spear. S C either side.	140–144	RIC III, Antoninus Pius, 608
165	1462	AE Dupondius	Antoninus Pius – uncertain rev.	138–161	
452	3002	AE Sestertius	Antoninus Pius – ?Salus rev.	138–161	
233	1830	AG Denarius	Septimus Severus – uncertain rev.	193–211	
273	2190	AE Quinarius	Allectus – Virtu Aug, Galley	293–296	As RIC, VII, Allectus, 55
2045	1029	AE Follis	Urbs Roma – Wolf & Twins	330–345	?Copy as LRBC I, 51
413	1000	AE Follis	Theodora – Pietas facing with 2 infants. Pietas Romana type	337–341	As LRBC I, 105
100	1014	AE Follis	Gratian – Gloria Romanorum type	375	LRBC II, 531
114	1207	AE Follis	Emperor of the House of Valentinian – Securitas Reipublicae type	364–378	As LRBC II, 82
140	1375	AE Follis	Emperor of the House of Valentinian – Gloria Romanorum type	364–378	As LRBC II, 78
152	1414	AE Follis	Emperor of the House of Valentinian – Securitas Reipublicae type	364–378	As LRBC II, 82
163	1513	AE Follis	Emperor of the House of Valentinian – Securitas Reipublicae type	364–378	As LRBC II, 82
168	1507	AE Follis	Emperor of the House of Valentinian – Gloria Romanorum type	364–378	As LRBC II, 78
3268	1559	AE Sestertius	Illegible	C1	
334	2572	AE As	Illegible	C1–C2	
378	2661	AE As	Illegible	C1–C2	
389	2683	AE As	Illegible	C1–C2	
434	2787	AE As	Illegible	C1–C2	
450	2911	AE As	Illegible	C1–C2	
508	2958	AE As	Illegible	C1–C2	
534	3183	AE As	Illegible	C1–C2	
567	3369	AE As/dupondius	Illegible	C1–C2	
572	3382	AE As	Illegible	C1–C2	
585	3567	AE As	Illegible	C1–C2	
588	3521	AE As	Illegible	C1–C2	
607	3956	AE As/Dupondius	Illegible	C1–C2	
2052	1724	AE As	Illegible	C1–C2	
3061	3057	AE Sestertius	Illegible	C1–C2	
3183	532	AE As	Illegible	C1–C2	
3527	1200	AG Denarius	Uncertain obverse, Reverse – Victory l	C1–C2	
418	1842	AE As/dupondius	Illegible	C1–C3	
107	1186	AE coin	Illegible	C1–C4	
156	1404	AE Follis	Illegible	C3–C4	
398	2623	AE coin	Illegible	C1–C4	
502	2708	AE coin	Illegible	C1–C4	
529	3221	AE coin	Illegible	C1–C4	
3345	3754	AE ? Coin	Illegible	C1–C4	
3536	1029	AE coin	Illegible	C1–C4	
157	1375	AE Antoninianus/follis	Illegible	C3–C4	
160	1404	AE Follis	Illegible	C3–C4	
3537	1001	AE Antoninianus/follis	Illegible	C3–C4	
148	1410	AE Follis	Illegible	C4	
159	1405	AE Follis Follis	Illegible	C4	
193	1651	AE Follis	Illegible	C4	
2090	1074	AE Follis	Illegible	C4	
3024	2395	AE Follis	Illegble	C4	
3217	1435	AE Follis	Illegible	C4	
108	1123	AE Jeton	Tournai – 4 fleurs-de-lys within ring of pellets/Triple stranded straight cross	1415–1497	
2032	106	AE Half Penny	George III - Britannia seated l, shield & spear. BRITANNIA.	1807	

(Fig. 52), using the periods proposed by Reece (1991). It is clear from the number of coins of Claudius and the issue of Agrippa that activity on the site began early in the post-Conquest period. The majority of the Claudian coins recovered are copies or probable copies (in many cases the coins are too corroded to be certain). Included within this group are both 'good' and 'inferior' copies, with the former probably representing earlier phases of copying (Hammerson 1988, 420). Unfortunately, in most cases corrosion also impeded assessment of the wear so we cannot be certain how long these coins remained in circulation. Their presence in some quantities in Flavian layers, however, suggests that they were in use virtually throughout the century.

Although the assemblage from 60–63 Fenchurch Street is not large, it is possible to draw comparisons with other sites. Only two sites amongst those examined by Reece (1991) in his study of coins from 140 sites in Britain have a greater proportion of Claudian coins – Fishbourne and Southwark. The earliest phase of activity at Fishbourne appears to have been a military supply base, whilst Hammerson (2002, 235) suggests that settlement in Southwark dates to *c.* AD 50. On this basis, it seems clear that the first activity at Fenchurch Street dates to early in the post-Conquest period.

Peaks of Neronian (Period 3) and Flavian (Period 4) coin loss point to significant activity on the site in these periods. Indeed, none of the sites examined by Reece (*ibid.*) had higher levels of coin loss during these periods. After the Flavian period, coin loss drops off significantly, perhaps surprisingly given the continuation of settlement and construction on the site throughout the 2nd century. Most of these coins belong to the 1st half of the 2nd century, during which time much of the site was given over to industrial buildings. This may reflect a change in the nature of coin use, perhaps reflecting a shift from industrial to domestic occupation later in the 2nd century, with the construction of the townhouses in Period 6.

In the light of the unusual pattern of coin loss on the site, it is perhaps useful to look at this in more detail. Many of the coins were recovered from securely stratified Roman contexts, allowing some analysis of the coins lost in each stratigraphic phase. The breakdown of coins by period is shown in Table 7.

A single poorly-dated coin was recovered from Period 2, the first post-Conquest period on the site. It was recovered from a layer of dumping associated with the end of this period and the construction of the first buildings, possibly post-Boudican.

Five of the eight coins from Period 3 could be identified, of which four are of Claudius or Claudian copies. The latest coin from this period is of Nero minted in AD 66. All five suggest a pre-Flavian date

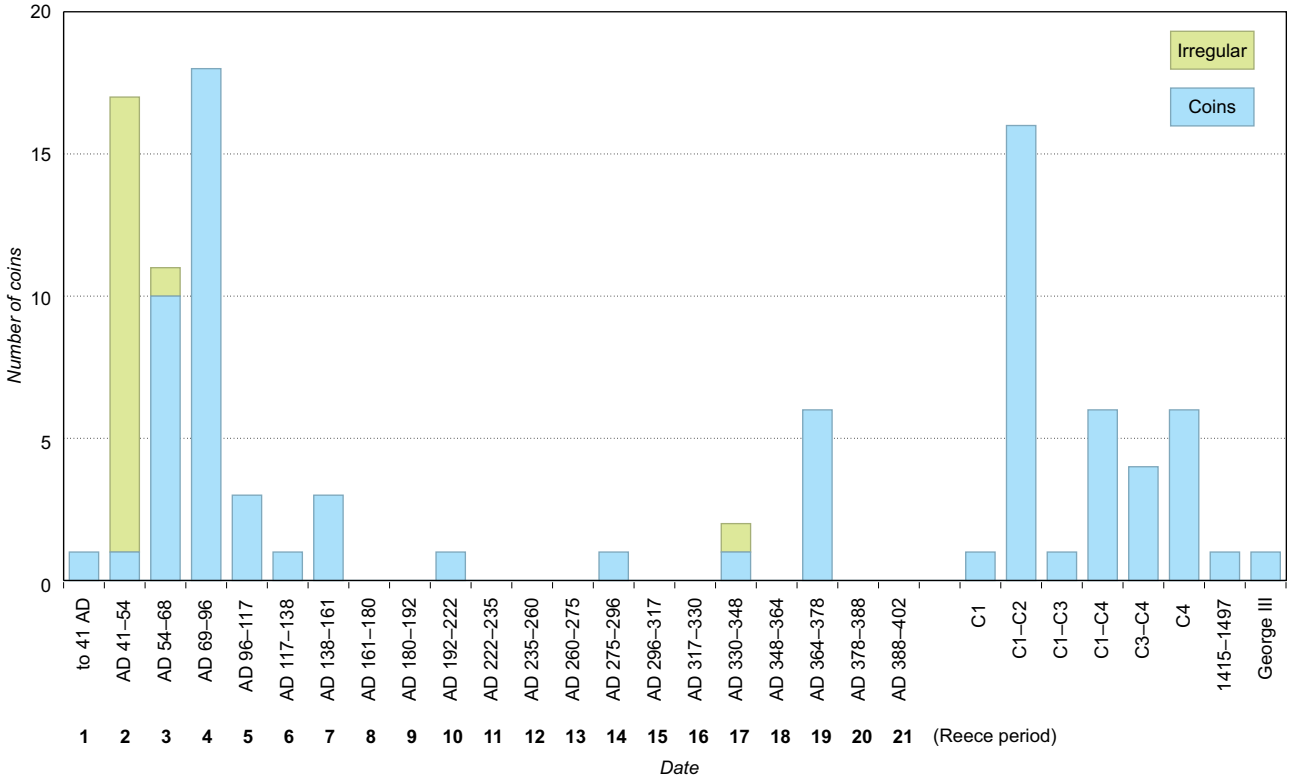

Figure 52 Number of coins by period from 60–63 Fenchurch Street

for this period, as does the absence of any Flavian coins. However, the dated pottery suggests that activity continued into the Flavian period (above).

The greatest number of coins from a single period was recovered from Period 4 – 38 in all. All except one of these dates to the Flavian period or earlier. The one exception – a follis of the House of Valentinian (Obj. 168, layer 1507) – is intrusive. Eight are Claudian or Claudian copies, suggesting that large numbers of these were still in circulation at this time.

Fewer coins were recovered from Period 5. Two of the 11 are Claudian; the third Neronian. It is not clear whether these were still in circulation, or had been disturbed from earlier deposits. The coins of Trajan and Domitian recovered from Period 6 deposits are, however, likely to be residual, judging from the worn *sestertius* of Antoninus Pius from Road 4, which suggests a date in the 2nd half of the 2nd century.

Two of the four coins from Period 7 are residual 1st century examples – one of Nero and the other of Vespasian. The third is a *quinarius* of Allectus from one of the ditches, dated to the late 3rd century, whilst the fourth, a *denarius* of Septimius Severus from Building 16, is unlikely to have been in circulation by the last 3rd of the 3rd century.

The remaining Roman coins were all found in later contexts. Although including some coins of the 4th century, these are not found in sufficient numbers to suggest that the area was intensively occupied during the 4th century, and no coins later than the Valentinianic period were recovered

This dearth of coins of the late 3rd and 4th centuries, which normally form a major part of the assemblage on any Roman site in Britain, is surprising, even given the levels of truncation of the late Roman levels by medieval and post-medieval features. It is telling that quantities of coins of the 1st and 2nd centuries in these deposits are similar to those of 3rd and 4th century issues. This might indicate that there were originally fairly few Roman coins of the latter centuries from the site, perhaps indicative of a decline in the fortunes of this area. This seems to be supported by the pottery in that only relatively small quantities of late Roman pottery were recovered (Seager Smith above).

Discussion

The coin assemblage closely reflects the history of the site itself. Intensive development during the 1st century AD, with episodes of levelling and the construction and alteration of numerous buildings, is reflected in a significant peak of coins. The large number of Claudian issues suggests that the origins of Roman activity began in the Claudian period and, although there are no well-dated coins from the

Table 7. Coins by stratigraphic period

Stratigraphic period	*Issue Date*	*No. coins*
Period 2: *c.* AD 43–60/1	C1–C2	1
Total		1
Period 3: *c.* AD 60/1–75	AD 41–54	4
	AD 66	1
	C1–C2	2
	C1–C4	1
Total		8
Period 4: *c.* AD 75–100/10	AD 14–37	1
	AD 41–54	8
	AD 64–69	6
	AD 69	1
	AD 69–79	8
	AD 77–78	1
	AD 85–6	1
	AD 364–78	1
	C1–C2	8
	C1–C3	1
	C1–C4	2
Total		38
Period 5: *c.* AD 110–150/60	AD 41–54	2
	AD 64–68	1
	AD 81–96	1
	AD 96–98	1
	AD 117–119	1
	C1–C2	1
	C1–C4	2
	C4	2
Total		11
Period 6: mid–late 2nd century	AD 81–96	2
	AD 98–117	1
	AD 138–161	1
	C1–C2	1
Total		5
Period 7: 3rd–4th century	AD 64–68	1
	AD 69–79	1
	AD 193–211	1
	AD 293–296	1
Total		4
Period 8: 11th or 12th century	AD 41–54	1
	AD 138–161	1
	AD 140–144	1
	AD 364–378	3
	C1	1
	C3–C4	3
	C4	1
Total		11
Period 9: 12th–15th century	AD 41–54	1
	AD 69–79	1
	AD 81–96	3
	AD 103–111	1
	AD 330–345	1
	AD 364–378	1
	AD 375	1
	C1–C2	1
	C1–C4	1
	C3–C4	1
	C4	3
Total		15
Period 10: post-medieval	AD 1415–	1
Total		1
Unstratified	AD 64–68	1
	AD 337–41	1

Claudio-Neronian period, there are early forms of samian to support this contention. The evidence from the stratified coins suggests that these Claudian issues and copies probably remained in circulation throughout the 1st century AD.

The large numbers of Neronian and Flavian coins relate to the development of the site in the last 3rd of the 1st century AD. These seem to be related to a series of phases of industrial activity which continued into the 1st half of the 2nd century, although there are fewer coins of that period. After this, there is a shift, with the construction of two large roadside townhouses in the mid–late 2nd century. Coins of the early 3rd century are not common as site finds on British sites but those of the late 2nd century are more common. Their absence from Fenchurch Street may be a reflection of the change of use, with fewer coins being used in a domestic complex.

The continued paucity of coins of the late 3rd and 4th centuries, however, is less easy to explain. Although the late Roman levels have undoubtedly suffered significant later truncation, the relatively small assemblages of pottery and coins of this period suggest that the site was not intensively occupied. There appears to have been no major phase of construction after the small scale alterations of Period 7, the walls of which were not subsequently completely robbed until the medieval period.

Small Finds

by Grace Perpetua Jones and Jörn Schuster with Matt Leivers

The small finds by functional category

The assemblage of small finds recovered from 60–63 Fenchurch Street comprises 1917 objects (if not mentioned the material is copper alloy). Table 8 shows the total number of finds sub-divided by period as well as the quantities of finds per functional category according to Crummy (1983, 5–6). Some of these categories are very closely defined as, for instance, 'personal adornment' or even more so 'objects associated with written communication', while others are very wide-ranging like 'fasteners and fittings' which, on this site, is the largest category with 1212 objects, most of them nails or nail shafts. However, the categories provide a convenient tool to identify changes in the finds assemblage of a site through time as well as allowing inter-site comparison.

There are 92 objects which fall into the category of personal adornment, of which 25 are iron hobnails. There are 12 brooches, two of which are continental types. Seven belt fittings have been recovered, including buckle plates and a square buckle. Eight hairpins were found, three of copper alloy plus five made of bone. In addition, 12 copper alloy and five

Table 8. Total small finds per finds category and period

Period	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Total per category*
Functional category											
Personal adornment	–	1	5	28	37	7	3	6	4	–	91
Toilet equipment	–	–	–	2	3	–	–	1	–	–	6
Textile working	–	–	1	4	5	1	1	–	–	–	12
Household items	–	–	3	4	2	3	1	2	1	–	16 + 1u/s
Recreational items	–	–	–	5	2	–	1	–	–	1	9 + 1u/s
Weight and measure	–	–	1	1	1	–	–	–	–	–	3
Writing equipment	–	–	1	6	4	1	–	–	–	–	12
Transport	–	–	–	–	–	–	–	1	1	–	2
Buildings and services	–	–	–	–	5	1	2	–	–	1	9
Tools	–	–	–	8	9	1	1	3	10	1	33
Fasteners and fittings	–	20	98	172	495	81	92	118	124	12	1212
Iron	–	*20*	*98*	*162*	*479*	*80*	*92*	*111*	*120*	*11*	*1173*
Copper alloy	–	–	–	*10*	*16*	*1*	–	*7*	*4*	*1*	*39*
Agriculture	–	1	2	–	1	–	–	–	–	–	4
Military equipment	–	–	2	–	–	1	–	–	1	–	4
Metalworking	–	3	26	30	45	24	3	10	14	1	156
Uncertain	1	9	14	58	101	16	89	25	32	3	348
Copper alloy	–	*8*	*5*	*39*	*69*	*9*	*9*	*12*	*19*	*1*	*171*
Iron	*1*	*1*	*9*	*16*	*28*	*7*	*77*	*12*	*11*	*2*	*164*
Glass	–	–	–	–	–	–	–	*1*	–	–	*1*
Bone	–	–	–	*3*	*4*	–	*3*	–	*2*	–	*12*
Total per period	1	34	153	318	710	136	193	166	187	19	1917

bone shanks may belong to dress- or hair pins or needles, and their inclusion in this category is therefore conjectural. Other jewellery includes four possible finger ring fragments and five possible bracelet fragments, including one of shale, as well as one earring fragment. A short length of delicate, double-linked chain was possibly part of a necklace as would be 12 glass beads.

Six toiletry items associated with personal grooming add to the domestic character of the assemblage. Two mortars of cosmetic grinder sets were found, one of which (Obj. 3569), belongs to a distinctive sub-type of the end-looped variant with the loop below the end. A lead model for the manufacture of mortars of this sub-type was found at Skipton Street, London, from a context now dated to the 3rd century (Jackson 1985; 1993, 168 fig. 3; 2006 lecture and pers. comm.; this is now called Type A; Cowan *et al.* 2009, 110, <S99>, fig. 89, 237). The find from Fenchurch Street confirms the use in the 1st half of the 2nd century. The second mortar was a residual find in a Period 8 pit and, although one end is missing, it clearly belongs to the plain end-looped variety. Two tweezers and one toilet spoon (*ligula*) were also recovered. One badly corroded chatelaine may have held several implements, possibly including a nail cleaner, an ear-scoop, and tweezers.

Twelve objects indicate the working of textiles on site, including one possible clay loom weight, eight bone- and three copper alloy needles. As mentioned above, the bone- and copper alloy shaft fragments could not be identified with certainty but some may have belonged to needles.

The number of household items is small with only 17 objects ascribed to this category. These include two shale tray fragments, a stone quern fragment and two spoons with rounded shallow bowls, one of copper alloy, one of bone. Three items may be associated with a wooden box or casket: a bent fitting with rounded end and central rivet, a group of five sheet fragments, one with a large, raised dome or boss, and a ring-key (Obj. 215). One of the more interesting items is a trefoil-shaped flagon lid with a dolphin-shaped thumb-latch (Obj. 468). A handle fragment in the shape of a swan's head was found in the topsoil. It was probably part of a Roman vessel (*cf.* Crummy 1983, 72 fig. 76, 2035–7), although some types of Roman steelyards have hooks ending in similar heads (*cf.* Franken 1993, Abb. 2 and 4). Two objects, a hollow handle and a knob (Obj. 576) may be parts of furniture. Object 381 may be a pelta-shaped chape or scabbard fitting but it is more likely to be a foot from a bronze bucket (cf, Eggers 1951, 24–8). Object 3611 is another vessel foot.

Ten objects can be ascribed to the category 'recreational purposes'; all are counters: four are made of bone, four of glass, and one each of ceramic and stone.

Only three objects belong to the category 'weight and measure'; one is a disc-shaped lead weight and one a slightly unusual steelyard with only one fulcrum (Obj. 608). Among the most interesting finds from the excavation is a broken but complete folding foot-ruler (Obj. 3347). It is one of seven known from Britain (Feugère 1983, 41 fig. 2 for distribution map in north-western provinces; Viner 1998, 320 fig. 194, 57; Webster in Manning *et al.* 1995, 243 fig. 74, 3). It has been suggested that the uniformity of these metrological tools indicates a centralised production and their distribution an attempt by the Roman authorities to introduce and disseminate a new system of measurements in the provinces (Feugère 1983, 42; Gostenčnik 1998, 96). As such it can be suggested that one of the industrial activities carried out at 60–63 Fenchurch Street during the later half of the 1st century AD was practised under official control or at least supervision.

Written communication is represented by 12 finds, these include one copper alloy stylus, four positively identified iron styli, and a further four possible examples which were represented by stem fragments. Three seal-boxes were also recovered, all of which were round in shape. Objects associated with transport were not found in the Roman contexts but two horseshoes were recovered from medieval layers.

Nine objects can be associated with buildings and services, five of which are water pipe junction collars, and two are fragments of building stones. An unusual find is a hoard of 1326 stone *tesserae*, the majority of which are grey stone, some are hard chalk and one is a Purbeck marble fragment. A quantity of apparently unused *tesserae* were also found in a pre-Hadrianic fire phase in one of the Regis House warehouse bays, suggested to be the stock of a mosaic worker (Perring with Brigham 2000, 142).

With a total of 33 the number of tools is relatively high, but a number of possible chisels or punches could not be clearly identified. This category also includes six knives, four of which were from medieval layers. Four bone handles and nine whetstones were also recovered.

As usual, fasteners and fittings dominate the small finds assemblage with 1173 iron and 39 copper alloy objects included in this category. Most of the iron objects are nails or nail shaft fragments. Three large diamond-headed nails, a cleat, and two T-shaped clamps were also recorded. Other objects include a possible drop-hinge, joiner's dogs, a loop-headed spike, a split-spike loop, a slide key, three ferrules, and a post-medieval mounted lock. The copper alloy fittings were dominated by 11 studs and 15 tacks. Other copper alloy fittings include a ferrule with

ribbed decoration, a fragment of a chain with figure-of-eight links, two bosses (Obj. 292), a strap union (Obj. 262), a lock-pin (Obj. 137), and a tumbler lock bolt.

Four bells are the only objects associated with agriculture and animal husbandry. While this attribution is relatively certain for the larger bells like Obj. 589, smaller bells (tintinnabula) could also be worn as amulets, for instance, suspended from bracelets or chains, or be used as chimes. As all these uses, apart from a possible practical function, also have an apotropaic element (*cf.* Schuster 2006, 93–4), an attribution to the category 'religious beliefs and practices' is equally feasible.

For a site with no obvious military association, four items of military equipment is a relatively large assemblage. The objects include two halves of cuirass hinges from segmented armour (Obj. 591), a late Roman belt- or apron fitting, and a dolabra sheath fitting.

Metalworking is indicated by at least six crucibles or crucible fragments in addition to five fragments of bloated clay that might be part of crucibles or tuyères (see Andrews, below). One crucible, from a Period 9 context, is clearly a late medieval type while the others are most probably all Roman. A number of the chisels and/or punches mentioned under 'tools' are likely to have been used for metalworking but, generally, their condition precluded any more detailed identification.

With 348 objects the category 'uncertain function' is the second largest. More than 200 sheet and strip fragments of both copper alloy and iron dominate. A large part of these fragments are likely to be related to the metalworking activities but this can not be shown for the individual items. Although their exact function could not be determined, some items deserve special mention, among them the fragments of what may have been an iron cauldron chain, an iron spoon or spatula, and an iron latch or cover with two D-shaped handles, perhaps from an oven/furnace or a strong box (Fig. 34).

Catalogue of the illustrated metalwork

The non-illustrated objects are described in the archive catalogue. All are copper alloy unless otherwise indicated.

Fig. 53

Personal ornament and dress accessories

Obj. 3925. '*Knickfibel*' brooch, one-piece construction, type *Almgren* 19b (Völling 1994, 210). Period 4 Building 6, context 3306.

Obj. 407. Symmetrical plate brooch, equal-ended type, arched rectangular plate, 15 mm wide, with further raised central rectangular plate, set between two moulded projections. Brooch plate tinned and decorated with triangles of niello standing proud of tinning. Foot (15 mm long) terminates in rounded knob; upper projection broken but may have displayed same, creating symmetrical form. Catch plate and pin present. Period 4 Open Area 9, context 2648.

Obj. 380. Narrow (13 mm) folded belt-plate, buckle-bar *in situ* across slotted end; one circular perforation present 10 mm from bar. Period 4 Building 6, context 2613.

Obj. 3349. Penannular object with wire coiled around one terminal as if forming part of clasp. Appears to be item of jewellery, possibly very small bracelet (int. diam. 35 mm) or large earring. Period 4 Building 7, context 2870.

Toilet, surgical or pharmaceutical instruments

Obj. 3569. Cosmetic grinder, mortar, 72 mm long, bovine head forming one terminal, loop at other. U-shaped profile with hollow creating grinding area 50 mm long. Period 5 Builidng 11, context 1794.

Obj. 554. Toilet spoon, complete, 137 mm long. One end terminates in point, other in small (8 x 4 mm), oval-shaped, flat scoop. Period 4 Building 6, context 3306.

Household utensils and furniture

Obj. 215. Ring-key, Period 7 Building 16, context 1829.

Obj. 307. Spoon, rounded (20 mm diam.), shallow (7 mm deep) bowl, stem decorated with four incised bands, stem tip of handle missing. Bowl moulded and emphasised with lip. Handle extends to end of underside of bowl, emphasised by 2 flanking 'channels'. Cast as single piece. Crummy (1983) type 1. Period 5 Building 11, context 2360.

Obj. 381. Pelta-shaped object, 38 mm long, 29–37 mm wide, possibly foot from bucket (Eggers 1951, 24–8 (*cf.* Voß 1998, Taf. 19,13), bowl (*cf.* Crummy 1983, 72 fig. 76, 2051) or, less likely, part of chape (cf, Oldenstein 1976, Taf. 20,130 or 131). Period 6 Building 15, context 2659.

Obj. 3611. Vessel foot, 51 mm long, crescent-shaped, rising in central area to 22 mm; two rounded knobs on top to hold loop. Period 5 Open Area 13, context 1778.

Fig. 54

Obj. 468. Trefoil-shaped flagon lid incorporating zoomorphic dolphin motif thumb-latch, held by at least 1, possibly 2 rivets. Period 4 Building 7, context 2867.

Obj. 576. Cast rounded knob, 24 mm diam., flattened on top with small indentation, 3 mm diam., in centre. Shaping visible towards shank as object narrows to 'waist' then expands to thin disc 20 mm diam. Incised concentric lines emphasis shaping. Attached to iron shank, 10 mm long, rounded cross-section, 11 mm diam., probably fitting from household item, possibly handle. Period 3 Building 2, context 3377.

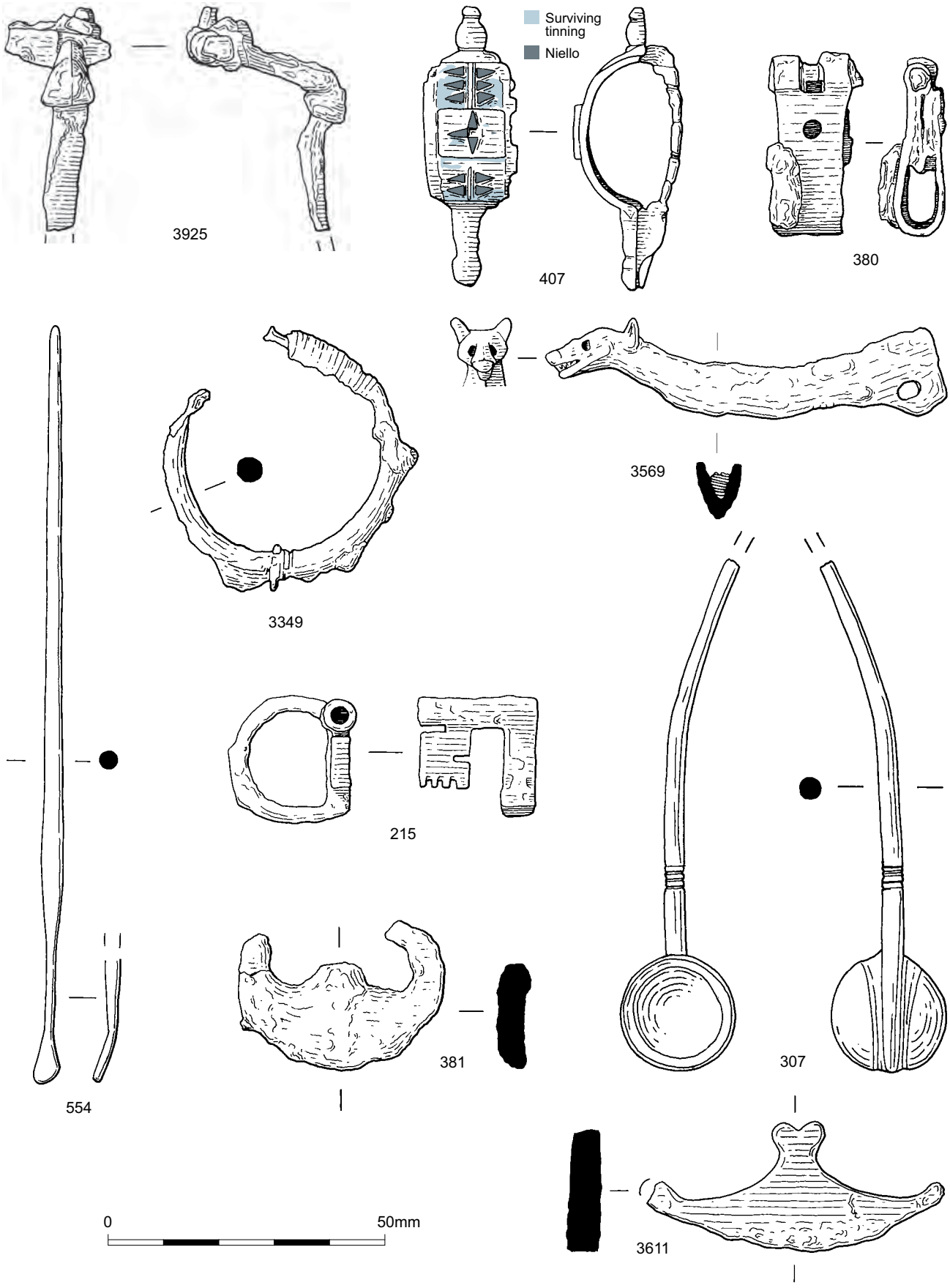

Figure 53 Objects of personal adornment, toiletry and household utensils. All copper alloy

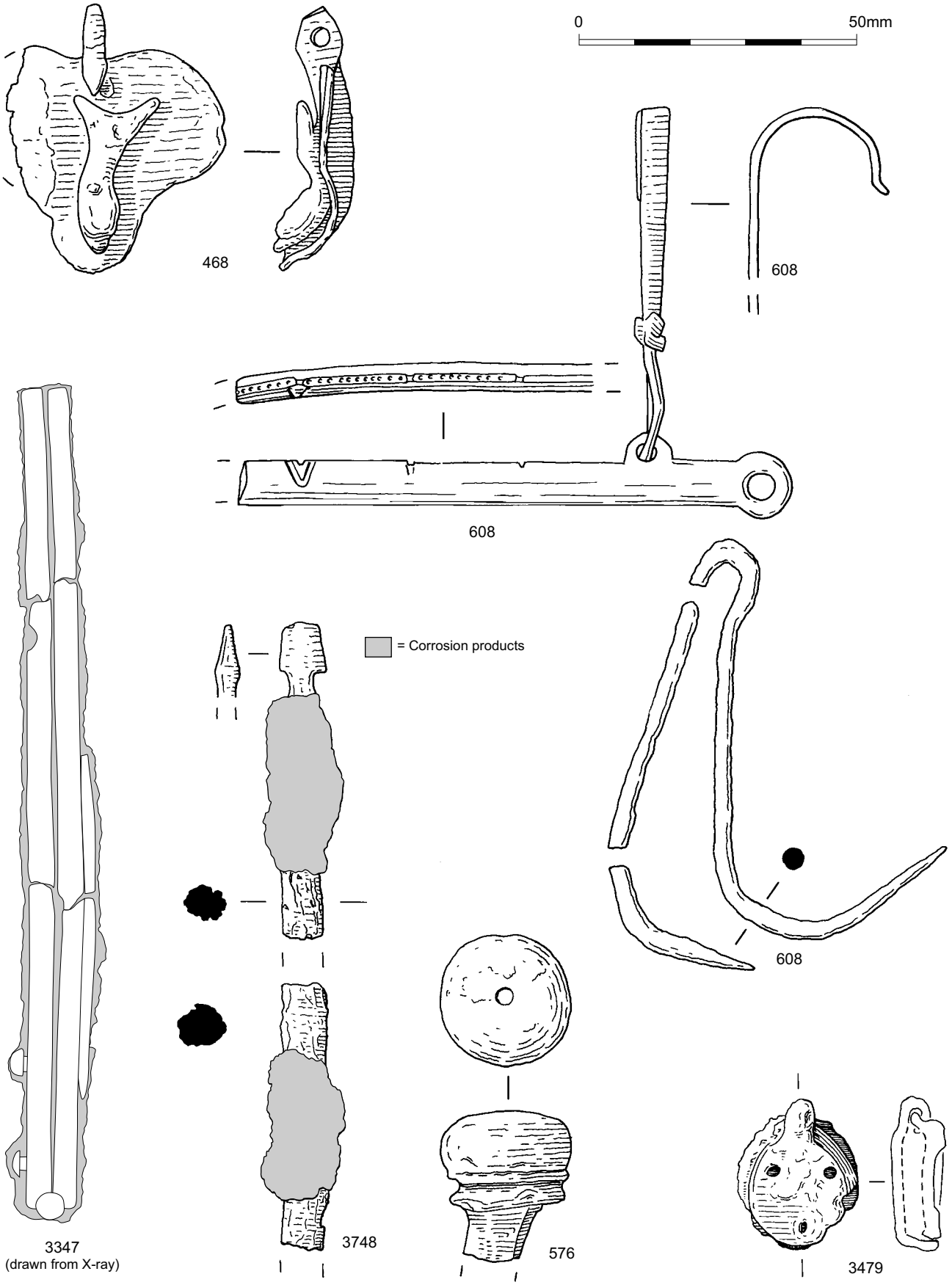

Figure 54 Household utensils, objects associated with weighing, measuring and written communication. All copper alloy

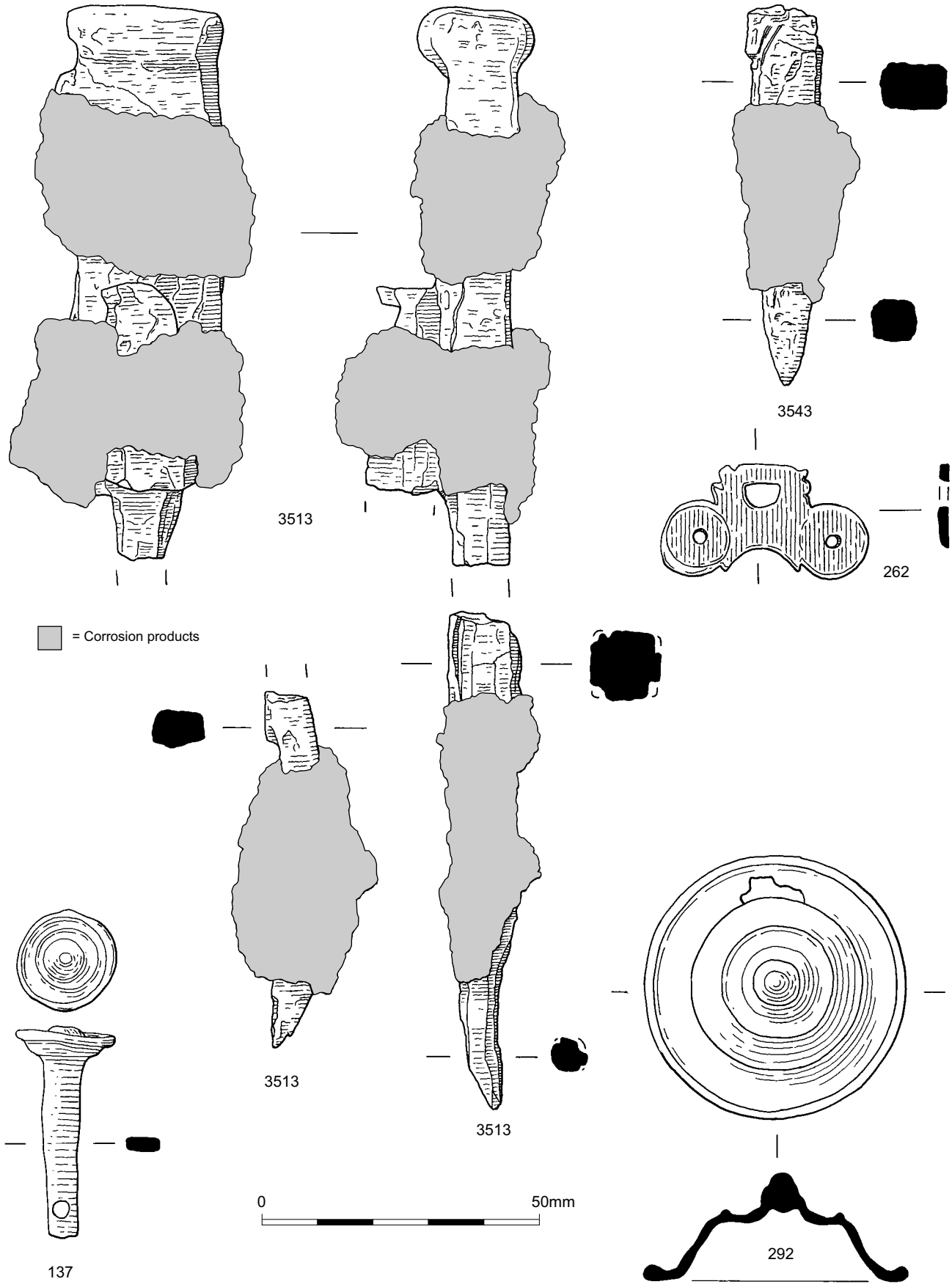

Figure 55 Tools and fittings. Iron and copper alloy

Objects associated with weighing and measuring

Obj. 608. Incomplete set steelyard scales; beam (109 mm long) with graduated scale, broken at one end, other end flat, circular, with 15 mm diam. loop. Split pin hooked through loop, creating 2 arms to hold scale pan (not recovered), probably with additional use of chain. Suspension hook attached to beam. Period 5 Building 11, context 3080.

Obj. 3347. Foldable ruler; 1 hinge, 2 arms of equal length, both tapering slightly towards blunt ends. On 1 side near hinge remains of 2 rivets and 1 metal latch for fixing ruler when open. No scale visible in radiograph. Broken into 4 pieces but complete. Period 4 Open Area 8, context 3754.

Objects associated with written communication

Obj. 3479. Seal box, 20 mm diam., round (Crummy 1983, type 2). Period 4 Open Area 7, context 1616.

Obj. 3748. Iron stylus, Manning (1985) type 1, >147 mm long, eraser 9 x 8 x 3 mm. Period 5 Open Area 15, context 2618.

Fig. 55

Tools

Obj. 3513. Unident. 2-pronged iron tool, 63 mm long, with rectangular-sectioned body 26 x 12 mm, rectangular head, 20 x 29 mm. Period 6 Building 15, context 2553.

Obj. 3543. Iron punch/chisel, 70 mm long, 12 mm wide. Period 4 Alley 1, context 2784.

Fasteners and fittings

Obj. 137. Lock-pin, perforated rectangular-sectioned shaft and round head with concentric mouldings. Period 5 Open Area 12, context 1172.

Obj.262. Strap union. D-shaped central hole. Similar object from Neuss, Germany with larger holes (Simpson 2000, 153 pl. 27, 1), has been grouped with strap fittings from bridle bits. Period 5 Building 11, context 2107

Obj. 292. Boss with concentric mouldings. Period 5 Building 11, context 2046.

Fig. 56

Objects associated with agriculture and animal husbandry

Obj. 589. Bell, 40 mm high. Quadrangular body, becoming more rounded towards pentagonal suspension loop. Four rounded knobs, 7 mm diam., evenly distributed around rim. Period 3 levelling above Open Area 4.

Military equipment

Obj. 591. Cuirass hinge, 34 x 34 mm. Complete hinge of same type found further down Fenchurch Street at Forum site in pre-Boudican context (Dunwoodie 2004, 14 fig 17, S31). Period 3 Building 1, context 3558

Fig. 34.

Objects of uncertain function

Obj. 611. Rectangular iron object, sides measuring 420 x 360 mm, *c.* 20 mm thick, weight: 13.4 kg. Constructed from 5 overlapping strips, with one strip running in central position underneath, perpendicular to other 5. 2nd and 4th strips (65 mm and 75 mm wide, 6 mm thick) sit over edges of remaining 3, two D-shaped handles attached to these. Handles 140 mm long, 100 mm high, *c.* 20 mm thick, traces of wood adhering. Reinforced along 2 parallel edges by 40 mm wide iron strip. Found in centre of hearth. Parallels unknown; possibly originally oven or furnace door or lid of strong box. Period 7 Builiding 16, context 1829.

Metalworking Debris

by Phil Andrews with Jörn Schuster

Copper alloy working

by Phil Andrews

There is a small but significant assemblage of copper alloy working debris that provides evidence for the melting and casting of this metal. Virtually all of this material can probably be assigned to the Romano-British period, but one crucible is of a medieval type and it is not certain, therefore, that all of the debris from medieval, post-medieval, and unstratified contexts is residual material derived from Roman activity.

In addition to the medieval example there are perhaps six or more crucibles represented, as well as some ten copper alloy offcuts and *c.* 140 small and usually amorphous lumps of copper alloy dross. However, no mould fragments have been identified amongst the fired clay.

All but two of the Roman crucibles are represented by individual sherds, but there are three joining sherds in a sandy fabric from a single, small, hand-made vessel (Fig. 57, 3632) of Bayley's type 6 (Bayley 1992). This type occurs in various forms, but the Fenchurch Street example is U-shaped with a near-flat base and the remains of a pouring lip. It is 60 mm high and has a maximum (external) diameter estimated at *c.* 50 mm, and would have had a volume in the order of 20 ml. The three sherds are all vitrified and have patches of red and green glaze resulting from copper alloy being melted in the vessel. They all came from a Period 8 pit in Open Area 16 (fill 1889) and are, therefore, residual in this context. A further two non-joining sherds are probably from a single vessel, both in a relatively thin-walled, wheel-thrown Roman fabric, one a sherd of a pedestal base. Both sherds have residues on the inside and one has extensive vitrification on the outside, possibly the

remains of an added layer. They came from a Period 5 destruction/levelling layer (1637) associated with Building 11.

Each of the other four Roman crucibles are represented by single, small body sherds and one possible rim sherd, three of which come from Roman contexts, with one residual in a Period 8 deposit (from contexts 1320, 2412, and 2787 (two sherds)). The forms (and volumes) of these are uncertain, but all are in relatively thin-walled, wheel-thrown Roman fabrics. Of these, two are *Verulamium*-region fabrics, the others unidentified. None of the sherds has surviving traces of an outer layer, which was commonly added. All have copper alloy residues on the inside, but there is little external evidence for their use, and none shows any trace of vitrification. Two (both from context 2787) came from a layer in Period 4 Building 8, another (from context 2412) from a floor in Period 4 Building 10, and the last was residual in a Period 8 pit (Fig. 57, 3202, context 1320, Open Area 16).

Although the general absence of added outer layers attached to the crucibles has been noted, there were several fragments of very bloated clay which may represent the remains of such layers. Alternatively, these may be fragments of tuyères, used to protect the nozzle of the bellows, and three have what might be the remains of the tuyère or blowing hole though the evidence is somewhat unclear from what survives. One fragment came from Period 3 (a floor in Building 4) and three from Period 6 (from Building 15), all on the other side of the street to the crucible sherds. Small quantities of fired clay/hearth lining were also recovered from Periods 3 (from Building 2), 4 (from a dump layer in Building 7), and 5 (a dump layer in Open Area 15). This material may have come from copper alloy working or iron smithing.

The raw material appears to comprise almost entirely fragments or offcuts of strip or rod (ten items, eg, Fig. 57, 291, 341, and 2078) with four more substantial pieces of copper alloy bar (eg, Fig. 57, 293 and 3007). The longest and most complete of these (Obj. 293; from context 2304 in Period 5 Building 11) weighs 315 g and is 70 mm wide, 8 mm thick, and has a surviving length of 80 mm where it has been cut from a longer bar. In contrast, the smallest fragment of rod is 5 mm square in cross-section and has a surviving length of 29 mm (Fig. 57, 291). No ingot fragments were present and it seems that the majority of the material was imported to the site in bar form. There is also a small amount of material (including fragments of sheet) that may represent scrap for recycling, and there are rather more runs, blobs, and casting debris (eg, Fig. 57, 155) including at least one possible sprue cup (formed in a mould in-gate during casting) which would have been recycled. Other, more vesicular debris represents dross – slaggy waste material formed during melting and casting.

A shallow, plano-convex piece of lead almost certainly represents a small ingot. It is 65 mm in diameter, a maximum of 5 mm thick and weighs 168 g. It came from a layer in Period 4 Building 8, the same building that produced two of the crucible sherds (see above).

Two conjoining fragments of a large, hand-made and heavily vitrified crucible were recovered from a Period 9 pit (context 1451) assigned to the 12th–15th century (Fig. 57, 3223). There is insufficient of this vessel to calculate accurately its size, but it was probably in the order of 130–150 mm in (external)

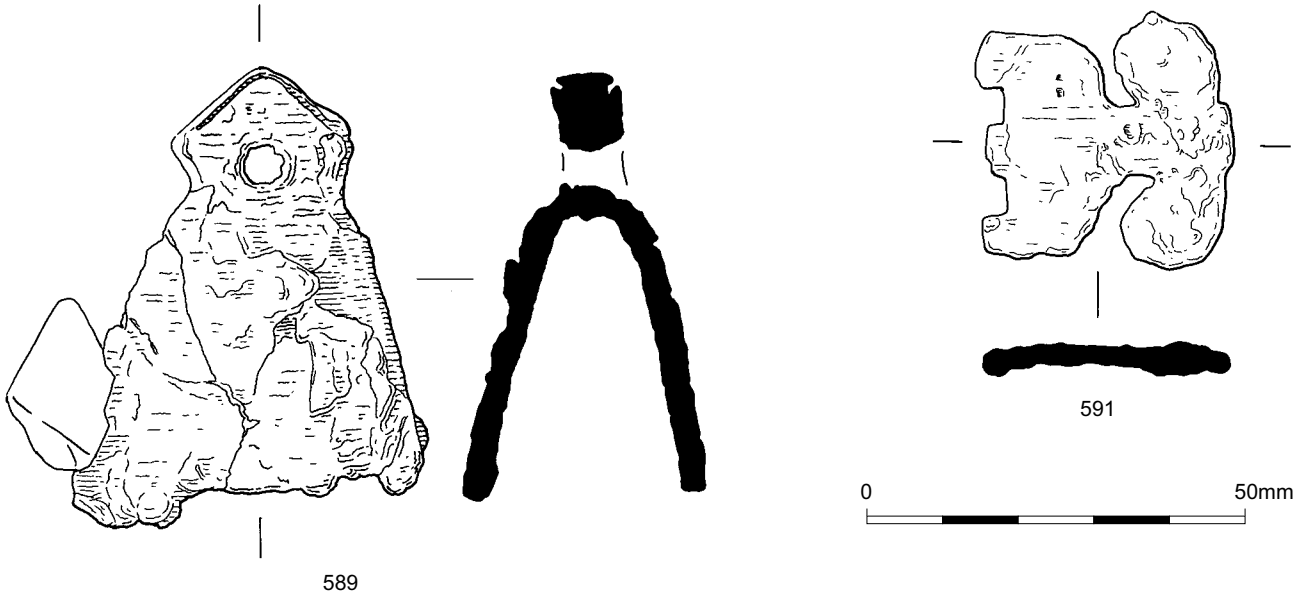

Figure 56 Bell and cuirass hinge

diameter and approximately 100 mm deep. It clearly comes from a hemispherical vessel with slightly splayed sides (Bayley type 8), and is likely to be of late medieval date. From the same pit as this crucible came three fragments of hearth lining.

Ironworking

by Phil Andrews

A small quantity of ironworking slag was recovered, all derived from iron smithing. Much occurred as single fragments in contexts of Roman, medieval, and post-medieval date, though most of the post-Roman material may be residual. Apart from the generally undiagnostic smithing slag there are also six smithing hearth bottoms, hemispherical agglomerations of slag which formed in the base of smithing hearths. These included whole and fragmentary examples, the largest measuring 130 x 115 x 65 mm and weighing 845 g. One was notably light, measuring 120 x 90 x 35 mm, but weighing only 235 g.

The earliest occurrence of smithing slag was in Period 3, but there was very little. Slightly more came from Period 4, including three smithing hearth bottoms, one from a pit in Open Area 7 and two from dump layers in Open Area 9. The greatest quantity of debris came from Period 5, including one smithing hearth bottom from Building 10 and two from Open Area 14, one from a floor level and one from an occupation layer. Some smithing slag also came from Open Area 10 assigned to Period 5.

Periods 4 and 5 also produced the greatest quantities of copper alloy working debris, generally from the same areas as the smithing debris and, therefore, suggesting the possibility that these activities were carried out concurrently, possibly in the same properties.

Hammerscale

by Jörn Schuster

Nineteen environmental samples were found to contain hammerscale, a waste product indicative of iron smithing, which forms when a heated iron surface oxidises to magnetite. This surface layer easily flakes off when the hot iron is plastically deformed during smithing (Dungworth and Wilkes 2009, 35–5). All but two samples contained flaky hammerscale, while the spherical variety, which is associated with welding (*ibid.*), was found in 13 samples. Hammerscale was mainly recorded from contexts associated with Period 3 Building 2; Period 4 Buildings 7 and 8; Period 5 Building 11; and Period 7 Building 16, and thus emphasising the likely use of parts of these buildings for metallurgical processes already indicated by finds of other metal waste/scrap and or/slag. Although the amount of hammerscale recovered was not quantified, it is clear that it was very much smaller than the more than 60 kg found at the Borough High Street site (BGH95) in Southwark (Keys in Drummond-Murray *et al.* 2002, 241 tab. 113).

Whetstones

by Jörn Schuster

Nine whetstones were found; all show signs of wear and are of a hard fine-grained micaceous stone type (possibly a phyllite). The five stones recovered from Roman layers all come from the eastern plot: from Period 4 one each from Open Areas 7 and 9 as well as Building 8 and two from Period 5 Building 11, one of which comes from the hearth in the smithy. Four stones were found in pits of medieval Period 9 in Open Area 17.

Catalogue of illustrated material

The non-illustrated objects are described in the archive catalogue.

Fig. 57

Obj. 155. Frag. small copper alloy 'cake' or spill; debris from casting. Period 9 Open Area 17, context 1450.

Obj. 291. Offcut copper alloy rod. Period 6 Road 4, context 1967.

Obj. 293. Offcut copper alloy bar. Period 5 Building 11, context 2304.

Obj. 341. Offcut copper alloy strip/rod. Period 5, Building 11, context 2361.

Obj. 2078. Offcut copper alloy strip/rod. Period 6 Buidling 15, context 2631.

Obj. 3007. Offcut copper alloy bar. Period 5 Building 11, context 2302.

Obj. 3202. Crucible, single ?rim sherd (Romano-British). Period 8 Open Area 16, context 1320.

Obj. 3223. Crucible, 2 conjoining sherds of large, medieval vessel. Period 9 Open Area 17, context 1451.

Obj. 3632. Crucible, 3 conjoining sherds (Romano-British). Period 8 Open Area 16, context 1889.

Fired Clay and Daub

by Matt Leivers with Rachael Seager Smith

An interesting assemblage of 111 pieces of roller-stamped or block-stamped daub was recovered, of which 72% (80 pieces) came from contexts associated with the levelling of the building on the eastern plot at the end of Period 5 (earlier 2nd century) after the second burning of Building 12. These included 29 pieces from a pit. A further 17 pieces came from contexts associated with the first burning, second occupation and second burning of this same building.

A single piece came from a context associated with the destruction of the Period 3b buildings in the eastern plot. Four pieces were associated with the

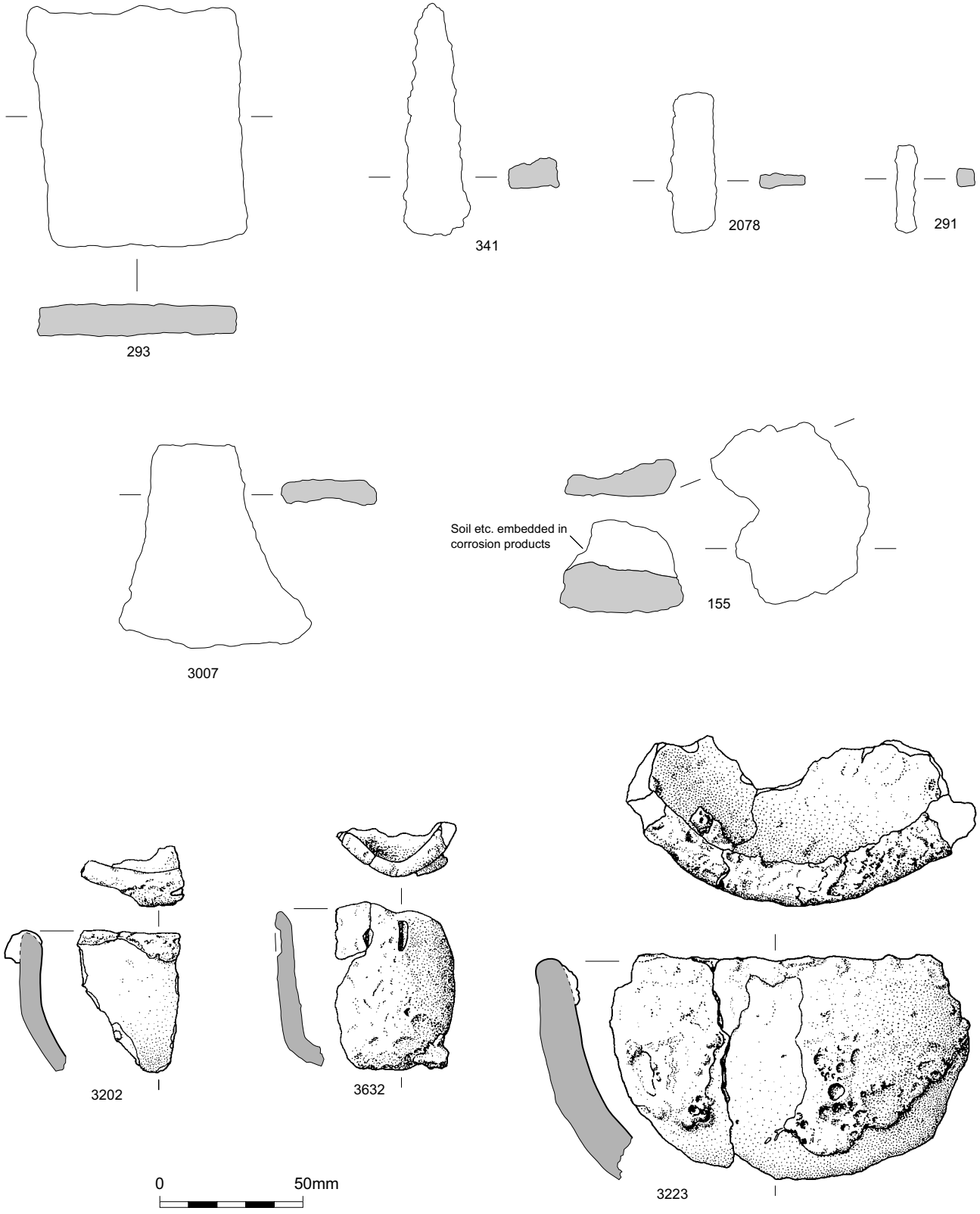

Figure 57 Copper alloy bars, etc, and crucibles. Obj. 3223 comes from medieval pit 1451, Period 9 Open Area 17

Figure 58 Stamped daub with complex design of circles flanked by diamonds and chevrons (left) Period 8 Open Area 16, context 1267 in robber trench 1446; (right) Period 9 Open Area 17, context 1238, Pit 1239

Period 6 'townhouse' Building 14, although these did not belong to the building itself, serving as packing in post-holes and beamslots and as foundations for masonry walls.

A further nine pieces were recovered as residual finds from the fills of medieval and post-medieval rubbish pits and robber trenches. Two pieces (both with circle-and-diamond decoration) have traces of plaster, the only such evidence recovered among the stamped mortaria.

The pieces are decorated with three design elements: chevron and/or herringbone; diamond lozenge; and a complex design with circles flanked by diamonds and chevrons (Fig. 58). Many small pieces could belong to any of the three types. Five fragments from 2623 have chevron panels separated by a narrow ladder-like impression. One large piece from 1712 and another from 2623 show junctions between applications of the stamp. Similar pieces with stamp junctions were recovered from a building destroyed in the early 3rd century at 30, Orchard Street, Chelmsford (Drury 1988, 85–6).

While most of the pieces are plain, some retain traces of a possible limewash. With the exceptions noted above, none of the pieces has any traces of plaster. This suggests that the designs were mostly intended as visible decoration, rather than keying for plasterwork. This interpretation is supported by the fact that three plastered fragments from 1908 and one from 2623 do not seem to be stamped. Drury suggests that impressed daub (possibly whitewashed) was a cheaper decorative alternative to painted wall plaster (Drury 1988, 86), while Perring considers the contexts of impressed daub from Newgate Street and Watling Court, London, to be indicative of a status for the style inferior to plaster (Perring *et al.* 1991, 85). Crummy suggests that keying may have been an interim decoration prior to walls being dry enough to plaster, subsequently becoming 'an inexpensive method of decorating walls [which] would explain discoveries in Colchester and elsewhere of keyed daub with no wall plaster' (Crummy 1977, 81 note 13). At Fenchurch Street, this may tally with the industrial function suggested for these buildings.

Impressed diamond lozenge and chevron/herringbone patterns have been found on daub from buildings J and K, Newgate Street, London, dating to the later 1st century AD (Perring *et al.* 1991, 75, 84–5), and diamond lozenge designs in buildings H and F, Watling Court (*ibid.*). Impressed chevron decoration was found in Orchard Street and Moulsham Street, Chelmsford (Drury 1988, 84–6). Diamond lozenge designs were found in building VII, Lion Walk, Colchester (Crummy 1977, 78–81). No

Table 9. Human bones, summary of analysis results

Feature	*Context*	*Deposit type*	*% skeletal recovery/ skeletal elements**	*Bone wt(g)***	*Age/sex*	*Pathology*	*Pyre goods*
Pit 1361	1360	redeposited	1 frag. a.		adult >30 yr.	degenerative disc disease – T	
Boundary Ditches 5003	3038	articulated skeleton	1) 15% s. 2) 20% a.l.		1) juvenile/subadult *c.* 12–14 yr, ??female 2) adult *c.* 40–50 yr, male	1) calculus; mv – retention deciduous teeth, incomplete development & eruption maxillary premolars 2) osteophytes – T, L; Schmorl's node – T	
Grave 3291	3292	?unurned burial + rpd/?rpd		43.2 g	adult >18 yr		
Grave 3312	3313	?unurned burial + rpd/?rpd		144.7 g	adult >18 yr ??female	gall/renal/bladder stone	2.7 g animal bone

* unburnt bone ** cremated bone rpd – redeposited pyre debris s. – skull a. – axial skeleton
l. – lower limb mv – morphological variation T – thoracic L – lumbar

close parallels for the circle-and-diamond/chevron design have been found although they are similar to die 27 (Betts *et al.* 1997, 98–100), examples of which have been recorded at six sites in London, among them Billingsgate Market and Newgate Street, as well as at Silchester, Colchester, Dover, and Lincoln.

Drury considered 'the presence of overlapping impressions … and the junctions between applications … [to] demonstrate most effectively the use of a roller stamp' (*ibid.*, 86) rather than the block stamps suggested by Waugh and Goodburn at *Verulamium* (Waugh and Goodburn 1972, 160). While junctions are present in the Fenchurch Street material, there are no convincing examples of overlapping designs. In terms of dating, Drury synthesises the available evidence to argue for a *floruit* for the style in the 1st and 2nd centuries (Drury 1988, 86).

Additionally, just over half of a thick fired clay slab with a flat base and a curved top side (Fig. 19) was found in the northern-most room of Building 9 which occupied the western plot in the later phases of Period 4. The slab's use remains unknown, but it might originally have been a cover for an oven hole. In a secondary use, it may simply have served as floor metalling. A similar cover was recently used on an experimental glass furnace to block the gathering hole (Taylor and Hill 2008, 258, figs 15–17).

Human Burials and the Treatment of the Dead

by Jacqueline I. McKinley

Human remains were recovered from four contexts. Two late Iron Age/early Romano-British deposits appeared to represent the remains of unurned cremation burials with redeposited pyre debris (graves 3291, 3312). The remains of an early Romano-British inhumation burial were found in the same area of the site as the cremation burials (skeleton 3038) (Fig. 6 and 7). A single redeposited bone was recovered from the fill of a medieval pit (1360) in the northern part of the site; the pit contained large quantities of residual Romano-British material and the bone is likely to have derived from a deposit of that period.

Methods

Recording and analysis of the cremated bone followed McKinley (1994a, 5–21; 2004a). The remains of the inhumation burial were insufficient for many measurements to be taken and it was not possible to estimate stature or calculate cranial index; other indices were calculated according with Bass (1987, 214). A standard suite of non-metric traits were recorded where possible (Berry and Berry 1967; Finnegan 1978). The degree of erosion to the bone was recorded following McKinley (2004b, fig. 6). Age (cremated and unburnt bone) was assessed from the stage of skeletal and tooth development (Beek 1983; Scheuer and Black 2000), and the patterns and degree of age-related changes to the bone (Buikstra and Ubelaker 1994). Sex was ascertained from the sexually dimorphic traits of the skeleton (Bass 1987; Buikstra and Ubelaker 1994). A summary of the results is presented in Table 9.

Disturbance and condition

Both features containing cremated bone had been truncated in antiquity, probably as a result of ploughing in the early Romano-British period (see

above). One deposit survived to a depth of only 0.08 m (grave 3291) and the other to the relatively substantial depth of 0.18 m (grave 3312); it is likely that some bone will have been lost from the former as a result of this disturbance.

The redeposited bone from pit 1361 is in good condition (grade 0–1). The cremated bone appears in good condition and includes fragments of tubercular as well as compact bone; that from grave 3291 is slightly charcoal stained.

The treatment and condition of the articulated skeleton 3038 found in the northern of the two north-east to south-west aligned ditches in Period 3 has been described above.

Demographic data

The remains of a minimum of five individuals were identified, two adults from amongst the cremated remains, and two adults and one immature individual from the unburnt bone. The articulated skeleton 3038 represents the remains of a mature/older adult male; the skull recovered from between the femora being that of a *c.* 12–14 yr old individual, probably female. The single thoracic vertebra recovered from the fill of a medieval pit (1361) in the northern part of the site derived from the remains of a third individual, indicating the presence of other inhumation burials within the vicinity. Given the known presence of Romano-British burials both at this site and to the north of Fenchurch Street (Schofield and Maloney 1998, 51) this un-located burial was probably of the same date. In this early part of the Romano-British period the area would have lain outside the town limits. The few burials from 112–114 Fenchurch Street (*ibid.*) were of urned cremated remains and there is currently no indication of a major cemetery such as developed later to the east of the Roman city (Barber and Bowsher 2000).

Metric and non-metric data

The only index it was possible to calculate was the platymeric index (degree of anterior-posterior flattening of the proximal femur) for 3038, which at 70.0 fell in the platymeric range; corresponding with the minority of individuals recorded from the Eastern cemetery (Coheeney 2000, table 82).

Observed non-metric traits are detailed in the archive but the immature skull from 3038 showed a number of dental variations including non-development of the maxillary left 2nd incisor, incomplete eruption of the right 2nd premolar, partial retention of the right deciduous 2nd molar roots and congenital absence of the 3rd molars.

Pathology

Few pathological lesions were observed, including slight calculus deposits (calcified plaque) on at least some maxillary teeth from 3038 (precipitate masked extent). Degenerative disc disease (resulting from the breakdown of the intervertebral disc largely related to age and reflecting 'wear-and-tear'; Rogers and Waldron 1995, 26–7) was observed in the redeposited thoracic vertebra (1:11). A small Schmorl's node (destructive lesions resulting from a rupture in the intervertebral disc; *ibid.* 27) was seen in one thoracic vertebra from 3038 (1:11) Slight osteophytes (irregular growths of new bone along joint margins; Rogers and Waldron 1995, 32–46) were observed on the margins of all surviving vertebrae (thoracic and lumbar).

A small, broken fragment (8 x 4 x 3.5 mm) of roughly ovoid osseous material with a smooth but uneven outer surface was recovered from grave 3312. The interior of the fragment was difficult to see (x-ray of no assistance due to small size of fragment) but it appeared to have a layered structure. This appearance is consistent with some types of bladder, renal, or gall stone (Steinbock 1989a; 1989b). Bladder stones predominantly affect young boys and are most common amongst the lower economic classes in agricultural regions (Steinbock 1989a, 45); renal stones are rare in impoverished regions and primitive societies being most common in more affluent industrialised societies; the prevalence of gall stones increases with advancing age and their occurrence is again more frequent in industrialised countries (Steinbock 1989b, 97–100). It seems most likely, therefore, that the osseous material from 3313 represents the remains of a bladder stone. The extreme pain and discomfort resulting from bladder stones was a problem familiar to the Romans and there are indications that their removal was the preserve of specialist surgeons (Jackson 1988, 125–6). Relatively few have been recorded in the archaeological literature (Steinbock 1989a, 51), possibly due to archaeological excavation techniques rather than genuine absence, the fragments being difficult to distinguish by eye in excavation, though several have been recovered from Romano-British cremation burials (McKinley 2000a, 275–6).

Pyre technology and cremation ritual

The type of deposits represented by 3292 and 3313 (graves 3291 and 3312) is inconclusive. Both comprised small quantities of bone mixed with fuel ash recorded as forming a homogeneous mix spread across relatively large fills (0.36 x 0.38 m, 0.08 m depth, and 0.36 m diameter, 0.18 m depth

respectively). Since each deposit was subject to whole-earth recovery as a single sample it is not possible to ascertain whether they represent the remains of unurned burials with redeposited pyre debris – where the bone would be concentrated in one part of the fill – or just redeposited pyre debris the burials associated with which were made elsewhere (McKinley 1998; 2000b).

The cremated bone was almost universally white in colour indicating a high level of oxidation of the bone (Holden *et al.* 1995a; 1995b); a few fragments of skull and femur shaft from 3313 were slightly grey but this does not suggest any significant problems with the cremation. The quantity of bone recovered from both deposits is small; that from context 3292 probably, at least in part, reflects some bone loss due to disturbance, but it is unlikely that much, if any, was lost from context 3313 (see above). The 144.7 g from the latter falls within the lower range of weights recovered from late Iron Age and Romano-British burials (McKinley 1997, 68–9; 2000a, 269–70; 2004c, table 6.6), and represents only *c.* 9% of the average bone weight remaining from an adult cremation (McKinley 1993a). The maximum recorded fragment sizes are small at 18 mm and 38 mm, the largest proportions of bone in each case being recovered from the 5 mm sieve fractions (52% and 46%). A number of factors may affect the degree of bone fragmentation (McKinley 1994b), including disturbance and the lack of a protective urn in burial; in this case, the nature of the deposits may also have been of significance.

Only a small proportion of the bone from each deposits was identifiable to skeletal element (11% and 26%). The remains from context 3292 will undoubtedly be biased by the very small amount of bone recovered but the lack of any of the easily identifiable skull fragments is noteworthy, perhaps indicating their deposition in the upper levels of the deposit rather than total absence. A range of elements from all skeletal areas were recovered from context 3313, with a bias towards the heavier lower limb elements. Both contained a relatively high proportion of small hand and foot bones (3292 – 5/22% identifiable fragments; 3313 – 7/11% identifiable fragments). Unfortunately, as no distinction can be made between the 'burial' and the redeposited pyre debris within either of these pits/graves (see above), it cannot be stated with any confidence where these elements derived from; if from the burial it may indicate that the bone was collected from the pyre site for burial via *en masse* recovery of the upper levels of debris with subsequent winnowing (by water or air) which would have facilitated easier recovery of small as well as large skeletal elements; conversely, if from the debris it may indicate hand collection of individual fragments directly off the pyre site, a process which would have produced a bias towards the larger fragments for burial leaving the smaller elements within the pyre debris.

Evidence for a least one pyre good was recovered in the form of a small amount of cremated animal bone. The tradition is common within the Romano-British period, 3.5–47% of burials from a range of cemeteries having been found to contain cremated animal remains (Bond and Worley 2004; McKinley 2004d).

Discussion

Burial 3038 was unconventional in several ways (see above) but far from unique, there being a well recognised tradition in the Romano-British period for decapitation – sometimes apparently *peri-mortem* and under coercion, and at others 'ritual' and probably *post mortem* – with subsequent placement of the head either in its normal anatomical position, between or to one side of the legs (Harman *et al.* 1981; Philpott 1991, 77–83; McKinley 1993b; Boylston 2000, 367–8). The removal of skulls from burials and placement within other graves has also been recorded (Philpott 1991, 77–83).

There is no osteological or conclusive archaeological evidence that either of the individuals within burial 3038 had been decapitated, though the possibility cannot be ruled out. The upper body of the adult is missing so it is unknown whether or not the skull was articulated. The immature skull had neither mandible nor upper cervical vertebrae attached and was probably included as dry or at least largely defleshed bone, but there is no way of knowing if it had been articulated prior to its final deposition. Six of the burials from London's eastern cemetery had 'displaced' skulls but, as at Fenchurch Street, there was no osteological evidence for decapitation and the mechanism of displacement was not always clear (Barber and Bowsher 2000, 89–90).

There are no obvious patterns on the basis of age or sex of the individuals subject to this ritual/treatment, and no suggestion that they represented societies' outcasts. Occasionally there may be associated mutilation, as in one intriguing possible parallel from Dunstable where in one burial the lower legs had been cut off and placed beside the trunk/head (Philpott 1991, 82; Boylston 2000, 368).

Animal Bones

by Sheila Hamilton-Dyer

Excavations at 60–63 Fenchurch Street produced a large assemblage of almost a ton of animal bones from activities ranging from prehistoric to post-medieval periods. Most of the bone relates to Roman activity from the late 1st to the late 2nd century and to 13th–15th century pits cut through the Roman levels. This analysis concentrates on a selection of the most significant groups of Roman (85 contexts) and late medieval material (17 fills from three intercutting pits and the overlying layer). In total the Roman material selected for detailed analysis represents just over 25% of the bone recovered while the bone from medieval pits comprises a further 9% (see Fig. 4 for an indication of period sub-divisions).

The Roman bone is dominated by bulk disposal of butchered cattle bone. The butchery style is distinctive and implies that beef was removed from the bone as a large-scale process, as has been found at other urban and military sites. Butchery styles on scapulae imply sales of meat 'off the bone' of two different types. The late medieval pit group offers a smaller group of bone of quite different character. Amongst bones of household waste are the remains of carcasses of several animals that might have been kept in the backyard. These include cat, pig and domestic fowl. Probable skinning marks are present on one of the cats. In addition a group of lamb foot bones may indicate a craft activity such as the making of vellum or gloves. There is little material from wild mammals, or birds and fish, from either assemblage, though the fish are more prominent in the medieval group.

Methods

Species identifications were made using the author's modern comparative collections. All fragments were identified to species and element with the following exceptions; ribs and vertebrae of the ungulates (other than axis, atlas, and sacrum) were identified only to the level of cattle/horse-sized and sheep/pig-sized. This restriction does not apply to burials and other associated bones where ribs and vertebrae were assigned to species. Unidentified shaft and other fragments were similarly divided. Any fragments that could not be assigned even to this level have been recorded as mammalian only. Where possible sheep and goat were separated using the methods of Boessneck (1969), Payne (1985), and Halstead and Collins (2002). Recently broken bones were joined where possible and have been counted as single fragments. Tooth eruption and wear stages of cattle, sheep, and pig mandibles were recorded following Grant (1982). Measurements mainly follow von den Driesch (1976) and are in millimetres unless otherwise stated. Withers height calculations of the domestic ungulates are based on factors recommended by von den Driesch and Boessneck (1974).

Animal bones from Roman contexts

The grand total of specimens recorded from the Roman period is 4468 (including 124 from sieved samples; Table 10). The majority of the bone (61%) proved to be of cattle (1190 specimens) and cattle-sized fragments (1537 specimens). As these also tended to be the largest pieces of bone the proportion by weight would have been even greater. Pig amount to just over 9% of the total fragments and ovicaprid bones 5%. Bones of other taxa are few; they include horse, deer, dog, cat, hare, birds, and fish.

The main domestic ungulates – cattle, sheep, and pig

As indicated above the majority of the bone is of cattle or cattle-sized (ribs, vertebrae, and shaft fragments). The distribution across the contexts and periods is, however, uneven. Many of the individual contexts are small and a few have no cattle or cattle-sized bone at all. Much of the cattle bone is from large dumps of material such as context 2679 in Period 4a Building 6 and 2670 in Period 6 Building 15. These two contexts alone account for 41% of the cattle and 30% of the cattle-sized bone. The other major contributors to the assemblage are the three contexts of the Period 5b/c midden, which account for a further 12.6% of cattle and cattle-sized bones. Much of the analysis therefore concentrates on these groups.

Cattle anatomical distribution

Overall the most frequent specimens (NISP) are of scapula and mandible, followed by skull, humerus, radius, femur, tibia, and pelvis. This is not a count of complete bones, however. When assessing the frequency by MNI, the picture is slightly different. Counting the number of pieces for each zone of each element gives a whole bone equivalent. After adjusting the results to account for single and doubled elements the proportions ought to be equal. It is noticeable that scapula are still the most frequent at 94, pelvis is next at 42. Most elements give a number between 29 and 36. Underrepresented elements include the astragalus, calcaneum, ulna and femur. The distribution is not uniform across the site and periods either; Period 4a has notably large numbers of mandible fragments, Period 5a and 7 have mostly fragments of the main limb bones, 4a 4b and 5b/c include many scapulae, other periods are too small to show significant bias. Although these distributions are

Table 10 Animal bones: Roman species overview

Period/ Sub-phase	*Species*	*Horse*	*Cattle*	*sheep/ goat*	*Pig*	*Red deer*	*Roe*	*Cattle size*	*Sheep/ pig size*	*Mammal*	*Dog*	*Cat*	*Hare*	*Hare/ cat*	*Bird*	*Fish*	*Total*
3a	Total	–	30	4	10	1	–	29	7	6	–	–	–	–	5	–	92
	%		32.6	4.3	10.9	1.1		31.5	7.6	6.5					5.4		
4a	Total	–	406	60	38	–	–	211	14	56	–	–	–	–	4	–	789
	%		51.5	7.6	4.8			26.7	1.8	7.1					0.5		
4b	Total	–	152	50	68	–	2	178	53	33	–	–	3	–	15	–	554
	%		27.4	9.0	12.3		0.4	32.1	9.6	6			0.5		2.7		
4c	Total	–	27	7	18	–	–	60	20	9	–	–	–	–	4	–	145
	%		18.6	4.8	12.4			41.4	13.8	6.2					2.8		
5a	Total	–	103	12	16	–	2	137	27	17	2	–	2	1	10	–	329
	%		31.3	3.6	4.9		0.6	41.6	8.2	5.2	0.6		0.6	0.3	3		
5a/b	Total	–	13	3	12	–	–	25	5	17	–	–	–	–	0	–	75
	%		17.3	4.0	16.0			33.3	6.7	22.7					0		
5b	Total	–	56	7	8	–	–	122	5	8	–	4	–	–	1	–	211
	%		26.5	3.3	3.8			57.8	2.4	3.8		1.9			0.5		
5b/c	Total	2	150	34	110	–	1	194	80	81	34	–	3	–	32	–	721
	%	0.3	20.8	4.7	15.3		0.1	26.9	11.1	11.2	4.7		0.4		4.4		
6	Total	–	153	13	17	1	–	322	17	15	–	–	1	–	7	–	546
	%		28	2.4	3.1	0.2		59.0	3.1	2.7			0.2		1.3		
7	Total	–	82	25	108	–	4	227	138	79	–	–	4	–	153	8	828
	%		9.9	3.0	13.0		0.5	27.4	16.7	9.5			0.5		18.5	1	
7+	Total	–	17	6	3	–	–	25	1	1	–	–	–	–	1	–	54
	%		31.5	11.1	5.6			46.3	1.9	1.9					1.9		
	TOTAL	*2*	*1189*	*221*	*408*	*2*	*9*	*1530*	*367*	*322*	*36*	*4*	*13*	*1*	*232*	*8*	*4344*
	%	>0.1	27.4	5.1	9.4	<0.1	0.2	35.2	8.4	7.4	0.8	0.1	0.3	<0.1	5.3	0.2	

Totals exclude sieved samples. Sheep/goat includes 50 sheep, 2 goat. Pig includes one possible wild in Period 5b/c.

Table 11. Animal bones: butchered taxa from Roman period contexts

Number of butchery marks												
Taxa / Period	*3A*	*4A*	*4B*	*4C*	*5A*	*5A/B*	*5B*	*5B/C*	*6*	*7*	*7+*	*Total*
Cattle	18	103	47	9	41	4	5	53	74	28	6	388
Sheep/goat	–	6	2	2	–	–	–	1	–	1	2	14
Pig	1	14	8	1	2	3	1	20	3	7	–	60
Roe deer	–	–	–	–	–	–	–	–	–	2	–	2
Cattle sized	4	70	37	10	12	4	3	40	25	15	1	221
Sheep/pig sized	2	3	7	2	1	–	–	–	1	31	–	47
Hare	–	–	–	–	–	–	–	1	–	–	–	1
Bird	–	1	1	–	–	–	–	2	1	5	–	10
Total	25	197	102	24	56	11	9	117	104	89	9	743

Butchery marks as a percentage of NISP												
Taxa / Period	*3A*	*4A*	*4B*	*4C*	*5A*	*5A/B*	*5B*	*5B/C*	*6*	*7*	*7+*	*Total*
Cattle	60.0	25.4	30.9	33.3	39.8	30.8	8.9	35.3	48.4	34.1	35.3	32.6
Sheep/goat	–	10.0	4.0	28.6	–	–	–	2.9	–	4.0	33.3	6.3
Pig	10.0	36.8	11.8	5.6	12.5	25.0	12.5	18.2	17.6	6.5	–	14.7
Cattle sized	13.8	33.2	20.8	16.7	8.8	16.0	2.5	20.6	7.8	6.6	4.0	14.4
Sheep/pig sized	28.6	21.4	13.2	10.0	3.7	–	–	–	5.9	22.5	–	12.8
Hare	–	–	–	–	–	–	–	33.3	–	–	–	7.1
Bird	–	25.0	6.7	–	–	–	–	6.3	14.3	3.3	–	4.3

by period the differences seem to be largely due to context type and disposal activity rather than actual chronic changes. The contexts include, for example, destruction dumps, occupation in buildings, midden spreads, and road ditches. All of which could be expected to show some differences in the faunal assemblage.

Cattle age

The implication of the ageing data from both the fusion and the mandibles is that the remains represent culling of some prime beef animals and, particularly, older animals. These would include, for example, culled cows and oxen that had been used for dairy, breeding and draught. There are pathologies in other bones that may also be associated with older and draught animals. These include a first phalanx from 3077 with eburnation and extensions round the distal articulation, another less severe one and from a different context a third phalanx with extra growth. A metatarsus from 2679 is slightly lopsided with some exostosis and eburnation of the medial trochlea, another one is less severe. There are two pelves with slight exostosis around the pubic edge and eburnation in the acetabulum. These are probably old females. The three broken and healed ribs, and one part healed, probably resulted from falls, which can happen at any age although perhaps more likely in older, less agile, animals.

Butchery

The most distinctive feature of the assemblages is the cattle butchery, in association with the anatomical distribution (Table 11). Definite butchery marks were recorded on 743 bones altogether including almost a third of the cattle bones (388) and with many of these showing multiple marks (527 marks in total). Cattle-sized fragments include the vertebrae, ribs, and shaft fragments and 14% of these bones (221 specimens) were also butchered. The marks are indicative of heavy metal blades such as cleavers. Knife marks are extremely rare; they are almost entirely found on foot bones and can be interpreted as resulting from skinning and/or removal of the foot. The only other occurrence of a knife mark is on the side of an axis; this would have been made when separating the axis and atlas, probably when removing the head. Three main categories of butchery can be identified: jointing, axial division, and filleting. The major limb bones frequently show that the carcase was divided up by chopping through the articulations, which results in small pieces of one bone being left in the meat joint that contains the other bone. Both the main part of the bone and the small pieces removed in this operation were found, with a slight bias against the smallest pieces. Many of the major bones were then axially chopped. The filleting marks are often very clear, even showing unevenness due to nicks in the blade used. The process would have been a swift and efficient of time and effort, but results in the removal

Figure 59 Period 5b–c, examples of a hole punched through cattle shoulder blades with only a small amount of trimming round the glenoid. This treatment may indicate a short-life hot smoked product

of protuberances leaving small pieces of bone in the meat, which does not occur with the slower removal of meat by knife. Some bones have been further chopped up into smaller pieces (and many have spiral fractures that may be a result of chopping). This seems to have occurred after filleting but it is not clear whether this was part of the meat usage, eg, soups or stews, or in order to extract fats for lubricants and other uses. Sometimes the mandibles have also been chopped or broken across the diastema; there are 20 specimens that are just the cranial part and some clearly show where they were chopped through. There are, however, no concentrations or burnt examples that would imply extraction on a large scale (Dobney 2001, 40).

Regardless of style, the butchery indicates that much of the meat was removed from the bone before consumption, ie, the meat was not cooked and eaten off the bone. A variation on this seems to have occurred with the shoulders where a distinctive group of butchery marks was observed. The scapulae are the most common individual elements and most have at least one and often several butchery marks. These can be interpreted as evidence for brining and/or smoking the shoulder joint and the meat then removed at point of sale. Several researchers have found this evidence at many urban and military sites in Britain (eg, York, O'Connor 1988, 84; Dorchester, Maltby 1993, 319; Hamilton-Dyer 1993b, 80; Lincoln, Dobney *et al.* 1996, 26–7; Staines, Hamilton-Dyer 2001) and also on the Continent (Lauwerier 1988, 61).

The trimming and stripping of scapulae at Fenchurch Street is variable in detail. One group of Period 5b/c have clear examples of a hole punched through the blade and only a small amount of trimming round the glenoid (Fig. 59). Most of the scapulae in other groups or sub-phases do not show a definite hole and are mostly quite heavily trimmed round the glenoid, including the partial removal of the coracoid. Many also have 'shave' marks all round the caudal and cranial edges that probably occurred when slicing the meat off the bone. The difference in the two types may indicate a short-life hot smoked product versus a longer keeping brined one, where the joint has been closer trimmed to allow the pickle to soak in (Dobney *et al.* 1996, 27).

The butchery, along with the anatomical distribution, is not evenly distributed. Although the distinctive styles occur throughout there are some discrete dumps, eg, 2670 in Period 6. The three metatarsi in 2679 were probably roughly chopped across to discard the remainder of the foot in an earlier stage of butchery. They were then thrown away together at a later point, possibly with the ankle although none of these elements were clearly associated. Chunks of vertebral column were also thrown away together. These have been axially split but are also laterally trimmed. Several other examples of this practice were recorded and it is assumed that the meat was sliced off the spinal column and the trimmed vertebrae thrown away still with the ligaments and meat remnants holding the bones together.

Cattle size

With the high level of butchery and a bias in anatomical representation there are relatively few measurable bones. Complete limb bones are rare and only two offer withers height estimates: a metacarpus from Period 3a gives a value of 1.103 m with a length/distal breadth index of 32.4 (ie, male) and a radius from Period 4a of 1.032 m. Other workers have found large (perhaps imported) individuals in some assemblages (see Dobney 2001, 38–9) but there is also the effect of sex and castration to be taken into account. The particularly large scapula in Period 7 could, therefore, simply be the only bull in this group.

Sheep/goat

Sheep/goat bones are a very minor component of the assemblage in comparison with cattle and are also less frequent than pig. Goat is rare; of the 222 ovicaprid bones just two are definitely of goat while 50 could be identified as sheep.

The age profile of the sheep flock cannot be analysed through time, as the samples are too small. It can be said in general, however, that a mixture of ages is represented by the epiphysial fusion data and the toothwear and eruption data. For both bones and mandibles there are some neonate and very young lambs, some under a year, with the majority probably over two years.

Butchery marks are infrequent compared to cattle; on only 6.3% of the bones. The marks include knife cuts round the proximal end of two metapodia, a chopped horn core base, chopping for disarticulation of the major joints and evidence for several axially divided heads. The sheep bones, although typically small in comparison with modern stock, are quite variable in size. Withers height estimates range from 0.508 m to 0.676 m.

Pig

Although pig bones are a minor component compared with cattle they are frequent compared with the minimal amount of sheep/goat. Overall pig bones are almost twice as frequent as those of sheep. The proportions of the three main ungulates do vary between periods and in Period 7 pig bones are numerically more frequent than cattle. Most contexts, however, offer only one or two fragments. Higher numbers are found in the major deposits; 2679, 2797, 2618, 3083, and 2285. Pig bones are much more frequent in assemblages from Roman or Romanised settlements than at native ones and seem particularly high in some urban centres (Maltby 1994).

Anatomical distribution appears to be slightly biased in favour of foot bones, but these are more numerous in pigs than in cattle and sheep. All parts of the carcase are well represented overall, a typical situation for most assemblages. Although some specialist consumer sites have indicated a supply of joints (Dobney *et al.* 1996) this is not typical and does not seem to be the case here. Analysis is tentative as there are several periods that offer less than 20 bones.

Butchery marks are frequent, on 15% of the bones, though not as common as on the cattle bones (Table 11). Similar to the style for cattle, jointing has been done by chopping right through the articulation with a heavy blade, rather than excision by knife, but there are some fine cut marks. Butchery includes the expected division of the head; the skin, fat and meat of the head and feet of the pig are more readily cooked and eaten than the haired ones of cattle and sheep.

The pig bones represent animals of a wide variety of ages. Several bones of neonates and very young piglets are present as well as some fused ones of adults. Most bones are of sub-adults over a year but under three. There are no mandibles of very young piglets nor of elderly animals, most fall into the subadult or adult categories (O'Connor 2003, 160). One partial maxilla has rather worn teeth and this and other bones of mature animals probably represent breeding stock. Loose canines and those in jaws are of both male and female type, with slightly more of the males. Pigs can be readily kept in yards, or even loose around a settlement, and are good scavengers. The abnormal growth on the lateral side of a second metatarsal could represent a pathological response to damage from tethering by the hind foot, although this is more likely to be seen on the tibia, and it seems highly likely that the Roman taste for pork, bacon and ham was satisfied by local, on-site, production. Measurable bones are typically few; butchery and the young age at which most pigs are slaughtered restrict the availability of data.

Minor domestic mammals

Just two horse bones were found in these assemblages, a small piece of skull and a peripheral metapodial – both from Period 5b/c (for the very few bones of goat see above). Both dog and cat bones are present but in very few contexts. Most of the dog bones come from four different individuals of two contexts in Period 5b/c. One of these would have been about the size and build of a Springer spaniel, another as small as a Jack Russell. The other two were pups, one a neonate. Dog is also in evidence from the presence of gnawed bones.

Wild resources, birds and fish

Both red and roe deer remains are present in small numbers with roe the more frequent. No remains are of antler. The two bones of red deer are a radius from 3269 Period 3a, probably butchered, and a partial humerus of a large animal from 4224 Period 6. Roe numbers nine specimens and includes foot bones as well as bones from prime meat areas. The finds from

Period 4b are two metapodia from different animals. From Period 5 there are three bones of the foreleg, all from separate contexts. From 2285 in Period 7 there are five bones; three foot bones and two scapulae of different animals. These last both have visible knife marks.

One of the pig bones from 2715 Period 5b/c could be from a wild or part-wild animal. This bone, a femur, is long yet slim, and it seems likely that this bone is from a wild animal and probably male. The repeated knife cuts at the front/lateral side of the proximal end show where the ham was cut through. Hare is represented by 13 bones from most of the sub-phases. All but one, a metatarsus, are meat bones not the waste remains of head or feet.

Birds

The 232 bird bones are dominated by domestic fowl (164; Table 12). These are spread across the sub-phases (except for the small Period 5a/b assemblage which had only bones of the common ungulates). All parts of the bird are represented, although there is the expected bias against small and/or fragile elements. One of the fowl femora is pathological; it seems to have been badly broken yet the bird lived for some time after the injury as the break has healed but with considerable displacement. A tibiotarsus from Period 7 is also pathological. The bone is bent and the fibula is fused to the distal end of the tibiotarsus; this could be a developmental problem or a partial fracture in a young bird, subsequently healed. The presence of medullary bone and spurred tarsometatarsi indicates that both females and males are present. Both of the spurred bones are from Period 3a and are notably larger than the seven unspurred ones from the other periods. While this might indicate a bias towards males in the early period, the total number of measurable bones is quite small and one of the femora from Period 6 is large, probably indicating a male bird. In addition there are several immature bones and, as most males will be killed before maturity, several of these may have been male. Some of the fowl bones show fine knife marks showing where the joints were separated. Of the other bird remains duck bones are quite frequent at 26 and include some of other species besides the mallard/domestic type. A bone of teal is present in 1831 along with three matching wigeon and ten of mallard/domestic. Another three from other deposits are also of wigeon/gadwall shape and size. One of the mallard/domestic ulnae has been chopped across at the distal end showing where the end of the wing was removed. Bones of geese are almost as frequent and are all of the greylag/domestic type. All of the goose bones are, however, from Period 7. Remains of at least four birds are present. Four of the bones are the carpometacarpus, the bone near the wing tip that has the longest of the flight feathers. There is no meat on this part and the feathers are tough to remove. This unit can be dried and used as a brush or duster but perhaps the presence of other, meat bearing, bones suggests that the remains are kitchen trimmings and plate waste. Other bird remains are rare but they do include woodcock, curlew and raven, species often found in Roman deposits all over England.

Fish

Environmental samples were taken from many contexts but few contained bone material, other than small undiagnostic fragments of large mammal bones. A few fish bones were recovered from some and bone from these samples has been analysed.

Fish remains from the Roman periods number just 17 specimens, nine from hand collection and eight from the samples, all from Periods 4b and 7. There are four taxa: eel, herring, cyprinid (such as dace), and flatfish (probably plaice or flounder). The flatfish remains are all from Period 7. All bones are from small fish; the eel and cyprinid are likely to have been caught in local freshwaters while the herring and flatfish are marine species. Fish remains are usually present in sieved Roman deposits in comparison with Iron Age and Romano-British native sites where they are often lacking. The fish remains are rarely numerous but usually there are a few more than here where most of the deposits seem to be dumps of cattle bone. Previous excavations in the London area have produced several other freshwater and marine species and even evidence of locally produced fish sauce (Bateman and Locker 1982). At Dorchester there is a clear difference between the limited amounts and restricted species list found in the suburbs in comparison with the relative wealth from the centre (Hamilton-Dyer 1993a; 1993b).

Discussion of the Roman animal bone assemblage

The animal bones from this site follow the general pattern from urban sites in England; there is a dominance of cattle and a relatively high level of pig. The butchery style is distinctive and implies bulk processing. Native/non-Romanised sites in England usually have high numbers of sheep and few pig as in the pre-Roman Iron Age while the most highly Romanised and military sites generally have high levels of cattle and pig (King 1984). A more detailed analysis of assemblages in Hampshire and Dorset has refined this broad synthesis (Maltby 1994). The practice of large-scale beef processing results in concentrations of cattle bones in some parts of urban sites such as Winchester and Dorchester (*Durnovaria*), and Fenchurch Street is similar in this respect. These dumps can mask diachronic changes, although the more assemblages that are analysed the more reliable the conclusions.

Table 12. Animal bones: Roman bird species overview

Period/ Sub-phase		*Goose*	*Duck*	*Teal*	*Other duck*	*Curlew*	*Woodcock*	*Fowl*	*Raven*	*Passerine*	*Other bird*	*Unid. bird*	*Totals*
3a	Total	–	1	–	–	–	–	4	–	–	–	–	5
	%		20.0					80.0					
4a	Total	–	–	–	1	–	–	3	–	–	–	–	4
	%				25.0			75.0					
4b	Total	–	2	–	2	–	–	10	1	–	–	–	15
	%		13.3		13.3			66.7	6.7				
4c	Total	–	–	–	–	–	–	4	–	–	–	–	4
	%							100					
5a	Total	–	1	–	–	–	–	9	–	–	–	–	10
	%		10.0					90.0					
5b	Total	–	–	–	–	–	–	1	–	–	–	–	1
	%							100					
5b/c	Total	–	1	–	–	–	–	25	1	–	–	5	32
	%		3.1					78.1	3.1			15.6	
6	Total	–	–	–	–	–	–	6	–	–	1	–	7
	%							85.7			14.3		
7	Total	15	14	1	3	2	6	101	–	1	–	10	153
	%	9.8	9.2	0.7	2.0	1.3	3.9	66.0	–	0.7	–	6.5	
7+	Total	–	–	–	–	–	–	1	–	–	–	–	1
	%							100					
	TOTAL	*15*	*19*	*1*	*6*	*2*	*6*	*164*	*2*	*1*	*1*	*15*	*232*
	%	6.5	8.2	0.4	2.6	0.9	2.6	70.7	0.9	0.4	0.4	6.5	

Table 13. Animal bones: medieval species overview

	Horse	*Cattle*	*Sheep/ goat*	*Pig*	*Red deer*	*Roe deer*	*Cattle size*	*Sheep/ pig size*	*Unid.*	*Dog*	*Cat*	*Hare*	*Rabbit*	*Rat*	*Bird*	*Fish*	*Total*
No.	17	276	222	112 (282)	1	2	236	148	95	1	6 (137)	2	1	2	35 (57)	9	1165 (1488)
%	1.5	23.7	19.1	9.6	0.1	0.2	20.3	12.7	8.2	0.1	0.5	0.2	0.1	0.2		0.8	

Totals exclude sieved samples. Sheep/goat includes 82 sheep and 1 goat. Numbers in brackets = actual number of bones present.

Pig bones are much more frequent in assemblages from Roman or Romanised settlements than at native ones and seem particularly high in some urban centres (Maltby 1994). At the County Hall site, in the suburbs of *Durnovaria* (Hamilton-Dyer 1993b), sheep bones are more common than cattle and pig forms only 11% of the sheep/pig total , although this is still higher than most of the more rural sites in the area. There was more pig at Greyhound Yard, Dorchester, than at Winchester, the former often having a third or more while Winchester contexts usually contained around a quarter – still a very high amount compared with the less Romanised sites (Maltby 1994, 91). The area at Fenchurch Street has, therefore, an unusually high proportion of pig, but it is still the cattle that dominates. The paucity of horse at Fenchurch Street is again more like Greyhound Yard, Dorchester than Winchester.

It is difficult to track any chronological changes in the Roman material as the amounts from several of the sub-phases are small and also because most of the bone appears to be related to land use (eg, roadside ditch, midden, butchery dump). The largest deposits of bone are dominated by dumps of butchered or stripped beef bones; these usually have very little other bone and are especially low in the minor species, birds and fish. Hunting of wild fauna was clearly not the major source of the bones at the site.

Although several of these deposits are clearly of a bulk or 'industrial' nature rather than domestic, they do not seem to relate directly to the metalworking activities in this area. Burnt bones are rare and there is no evidence from the bones of widespread fire damage as might have resulted from the Boudican and Hadrianic fires. Because there was other non-domestic activity in this location it may have been treated as a useful place to disposal of bulk waste from butchers and shops.

Animal bone from medieval contexts

The preservation of the material is more variable than from the Roman levels but is generally good. Around 8–9% are butchered, gnawed or eroded. Several have a clean, ivoried appearance. Very few, just four, are burnt.

The total of 2000 specimens comprises 1488 from hand recovery and a further 513 from sieving. All but one of these last are of fish. The majority of the hand-collected bone is of cattle, sheep and pig, as expected (Table 13). Pig bones are numerically more frequent than those of sheep but over half of these (170) are from a single skeleton. The number of cat bones is also high at 137 but, again, most of these are associated bones; in this case from three skeletons.

Cattle

Cattle anatomical distribution is spread across the body but with some bias towards skull, jaws, and feet. Loose teeth are rare. It seems probable that much of the meat was from prime animals of between 18 months and 3 years but that older culls are also included, for example old dairy cows and oxen. Just over 12% of the cattle bones have definite butchery marks; other bones may have been broken open but have no clear marks. Most of the marks were made by cleavers or similar heavy blades. The chop marks include those from dividing the carcase into joints and others mid-shaft, further reducing the size of the portions. The few knife marks are all from removal of, or skinning round, the foot. Cattle-sized ribs and vertebrae were also sometimes chopped.

Sheep/goat

Of the 222 ovicaprid bones 82 could be identified as sheep with just a single bone determined as being from goat. There is even a lack of goat horn cores, the usual evidence for goat in towns. Sheep bones are more evenly distributed than those of cattle, with the usual taphonomic bias against small and fragile elements. Almost all of these foot bones were found in the fills of pit 1229 and represent at least three animals aged about 3–4 months at death. The bones from pit 1705 are of older animals, mainly limb bones but also include several heads including one hornless animal and a horned ram. The data from toothwear and fusion indicates that all survived at least the first 6–10 months followed by a progressive fall until the 30–42 month fusion class where over 60% of the remains are from animals that died before this age class. This appears to be at variance with the supposition above that there were remains of 3–4 month old animals in pit 1229. However, the lamb

bones from this pit do not include any of the earliest fusing bones but only the metapodia and phalanges. About 13% of the sheep bones had butchery marks, a similar amount to cattle. Jointing by chopping accounts for many marks. There are also knife marks on some limb shafts from meat removal. Three skulls had been axially divided, probably to extract the brain. Several of the sheep/pig-sized ribs had been chopped into small sections and some vertebrae had been chopped across or sub-axially.

Pig

The pig skeleton mentioned above was recovered from pit 1229. Almost all elements are present of this subadult animal. There are no cut marks or any indications of disease on the bones (there are many causes of death that do not leave visible evidence on the bones). It seems likely that the animal was kept locally, died for some reason and was disposed of without risking use of the meat. There are also 11 associated bones in fill 1704 of pit 1705. In this case they represent at least two neonates, perhaps stillbirths from a sow kept on the property.

Sizes

There are relatively few measurable cattle bones but these and the general appearance of the bones is typical of the small animals from medieval assemblages. There are small numbers of complete metapodia. These offer withers height estimates ranging from just under 1 m to one just over 1.2 m. The index of length and distal breadth indicates that one of the metacarpi (withers height 1.139 m) is probably from a male.

Measurable sheep bones are not frequent either; many of the metapodia for example are unfused and many bones are incomplete. With 11 available, proximal radii are the most commonly measurable element. There are just two complete limb bones that offer withers height estimates of 0.552 m and 0.577 m. These are slightly smaller than the mean of the Roman ones but well within the range, not only of Roman sheep, but also of Saxon and medieval ones.

Minor domestic mammals

A small number of horse bones are present from the fills of pit 1705. These are mostly foot bones from at least two animals and include an astragalus from 1704 with a knife cut, presumably from removal of the foot. The single bone that could definitely be attributed to goat (82 are of sheep, 139 indeterminate) is an almost complete radius from 1704.

A single dog bone was recovered from the medieval pits; a femur of a small type similar to a fox-terrier. The estimated shoulder height of this animal is just 0.36 m (Harcourt 1974). In addition there are several bones from all three pits with evidence of gnawing.

Cat bones occurred in all three pits and the overlying layer. Four individuals are represented. In pit 1229 there are 51 bones of a juvenile cat missing the head, neck, left scapula, and also some of the toes and other very small bones. The overlayer 1489 offers 12 bones of an almost adult individual. In this cat the proximal tibia had just fused at the time of death. This particular bone is of interest as it has a cut mark across the distal part of the shaft. This would have been made either during skinning or in removal of the foot. When skinning an animal of this size for fur one can cut the skin round the ankle, cut off the foot entirely, or cut off the foot but leaving the paw inside the pelt. In this instance the metatarsi are also in the fill so it seems likely that the pelt was cut off just above the ankle. The pelt is at its best in most mammals at the just sub-adult stage and there are several examples of the use of cats for pelts in the medieval period (eg, Tingey 1910). It should also be noted that cat could be passed off as hare or rabbit meat; hence the requirement on the continent until relatively recently that hares and rabbits should be sold with the feet still on to avoid substitution by 'roof hare'.

Wild mammals

Deer bones are rare but present in two fills of pit 1705. These are of the native red and roe, no fallow remains are present. A rabbit femur and two bones of hare were also identified in this fill of pit 1705. The hare humerus shows a fine knife cut on the distal joint articulation, indicating where it was separated from the lower foreleg. Rat (presumed black) occurs as single bones from different animals in pit 1436 and the overlayer 1489.

Birds

The 57 bird remains are mainly of domestic fowl (40) but 23 of these are from the partial skeleton of a poult in pit 1229. Three of the other fowl bones have cut marks showing that they were utilised but it is unlikely that the poult had been. Some fowl bones may have been gnawed, in one case probably by cat rather than dog. The bones are of the typical small type of bird, but not as small as bantams, and the few measurements available are very similar to those from the Roman levels. One spurred metatarsus (probably male) measures 81.3 mm in length, this is almost the same as the smaller of the two Roman ones. In addition to domestic fowl there are a few bones of geese, ducks, and one of swan. The goose bones are probably mostly from domestic birds but two, from pit 1705, are small and may represent the wild ancestral greylag. The two duck bones are large enough to be probably from

domestic birds. One of these ulnae is cut, the other gnawed. The swan bone is a fibula, a small bone in the drumstick. This is a relatively small number of bird bones for a medieval assemblage and does not include any of the waders, pigeons, raptors or corvids that can be commonly encountered.

Fish

There are just nine hand collected fish bones. These are of cod, whiting, and turbot. The cod bones are of both head and body and are of large fish. Bone from an environmental sample was available and apart from one fragment of pig all the remains are of fish. The 512 specimens are of herring and eel with a few of flatfish. Most of these last are either plaice or flounder but could not be distinguished. Some dermal denticles could be positively identified as flounder. This is not a wide variety of fish for a medieval site but does include several of the most frequently identified species. The turbot would have been a large individual and could be classed as a high status fish. Apart from eels, which can be caught in local streams, the fish are marine species. The herrings and probably the cod would probably have been supplied preserved, the others are likely to have been local catches from in, or near, the Thames estuary.

Discussion of the medieval animal bone assemblage

Of the three pits 1705 offers by far the largest group of material and includes most of the minor species. The other two pits and the overlayer 1489 are broadly similar but with less variety. Pit 1229 has a high proportion of sheep due to the foot bones in fill 1230. Although 1489 is the overlayer of intercutting pits most of the bones do not appear to be associated with any of the distinctive groups of bones lower down. Indeed in some cases it is clear from age, size or handedness that different animals are represented.

Pigs, along with poultry, are easily kept as backyard animals, stillborn piglets and the occasional older mortality being discarded in pits and middens along with other dead animals and household refuse. In pit 1229 the animal part of the waste include a subadult pig, a fowl poult, a young cat, and some lambs feet in addition to bones from kitchen and table. In the smaller assemblage from pit 1436 the carcase of an almost adult cat had been discarded along with other material. Another partial cat was incorporated into the overlayer 1489; whether it died naturally or was deliberately culled it is likely that the pelt was taken before the carcase was disposed of. The neonatal calf in 1705 may represent a stillbirth from a house-cow.

The bone remains in these pits probably result, therefore, from the waste disposal of several different activities; household waste from kitchen preparation and table leftovers, the disposal of dead household and backyard animals and some possible craft by-products. A cat skin for example might be used directly or sold to a local furrier. The lamb foot bones could indicate waste from production of lambskin, a fine leather used for, among others, vellum, book covers, aprons, or gloves. Unless similar deposits occur in neighbouring pits, this must have been on a very small scale. Neither does it appear to be associated with more general tanning as there are relatively few adult sheep feet or feet and horns of cattle.

Although there is some variety in the animal species and body parts from each pit and layer overall they offer similar assemblages. Although the (very few) remains of deer, hare and turbot may indicate high status, there is little else from these properties to suggest special status. There are bones from the best cuts of beef and mutton but also remains from the lower value areas. There is only one bone of a wild (or managed) bird, although as this is swan it could represent Guild use but could also be an incidental find.

Charred Plant Remains

by Chris J. Stevens

Ninety-four samples were taken. The earliest were prehistoric, the latest 12th–15th century AD, although the majority came from the Roman occupation of the 1st–2nd centuries AD. Forty-six samples were chosen for analysis. Samples were processed using standard methods and the plant taxa identified are shown in Table 14 following the nomenclature of Stace (1997). In some samples the quantity of certain classes of material was very high and for these samples estimates (est.) were produced through the examination of 10% sub-samples from the 0.5 mm and 1 mm fractions.

Period 1 – Prehistoric and very early Roman

The prehistoric samples, probably dating from the Middle–Late Iron Age, contained relatively little material. Cereal remains include those of hulled wheats, probably both spelt (*Triticum spelta*) and emmer (*T. dicoccum*). Weeds are relatively scarce.

Table 14. Charred plant remains: overview

Period	*1*	*2*	*2*	*2*	*2*	*2*	*2*	*3*	*3*	*3*	*3*
Group	*OA1*	*BD*	*OA2*	*OA3*	*OA3*	*OA3*	*OA3*	*Blg 2*	*OA 4*		*OA 6*
Feature type/ no	*buried soil/turf*	*B'dry ditch*	*hearth*	*pit 2972*	*crem. burial*	*crem. burial*	*pit*	*layer*	*metalworking hearth*		*layer*
Context	*1979 3661*	*3884*	*3802*	*3965*	*3292*	*3313*	*3390*	*3415*	*3595*	*3759*	*3444*
size litres	*15*	*20*	*13*	*10*	*4*	*7*	*10*	*10*	*10*	*10*	*10*
flot size ml	*50*	*850*	*25*	*50*	*80*	*20*	*100*	*250*	*175*	*175*	*40*
CEREALS											.
Hordeum vulgare sl (hulled grain)	–	190	4	1	–	–	–	70	–	40	–
Secale cereale (grains)	–	–	–	–	–	–	–	–	–	–	–
Triticum sp. (grains)	2	–	–	–	–	–	1	–	–	1	2
T. dicoccum (spikelet forks)	–	1	–	–	–	–	–	–	–	cf.2	–
T. dicoccum (glume bases)	cf.1	–	–	–	–	–	–	cf.1	–	cf.1	cf.1
T. spelta (glume bases)	1	est.60	–	–	–	–	–	–	–	2	–
T. dicoccum/spelta (grains)	3	78	–	2	–	–	1	21	–	–	–
T. dicoccum/spelta (germinated grains)	–	12	–	–	–	–	–	–	–	–	–
T. dicoccum/spelta (glume bases)	27	est.225	5	1	–	–	–	–	–	5	–
T. dicoccum/spelta (spikelet fork)	4	est.11	–	–	–	–	–	–	–	1	–
T. aestivum sensu lato (grains)	1rf	–	–	–	–	–	–	–	–	–	–
Cereal indet. (grains)	10	100	–	–	1	–		–	–	–	–
Cereal indet. (est grains from frags)	2	20	–	–	–	–	–	10	–	–	2
Cereal indet (culm node)	–	1	–	–	–	–	1	–	–	–	–
SPECIES											
Ranunculus subg. *Ranunculus* arb.	2	est.20	17	–	–	–	–	3	–	15	1
Corylus avellana (frags)	–	est.750	6	1	–	–	–	1	–	52	4
Chenopodium sp.	–	est.30	–	–	–	5	–	–	–	75	5
Atriplex sp.	–	–	–	–	–	–	–	–	–	1	–
Cerastium sp.	–	–	3	–	–	–	–	–	–	–	–
Montia fontana ssp. *chondrosperma*	–	–	est.25	–	–	2	–	2	1	4	38
Raphanus raphanistrum (capsule)	–	–	–	–	–	–	–	1	–	–	–
Brassica sp.	–	–	–	1	–	–	–	–	–	–	–
Stellaria graminea/palustris	–	–	–	–	–	–	–	–	–	2	–
Malva sp.	–	–	–	–	–	–	–	–	–	1	–
Linum usitatissimum	–	–	–	–	–	6	–	–	–	1	–
Rumex sp.	–	est.66	est.20	2	–	–	–	3	–	35	1
Rumex acetosella	–	–	7	–	3	–	–	–	–	–	1
Fallopia convolvulus	–	3	–	–	–	–	–	–	–	3	–
Polygonum aviculare	–	–	2	–	–	–	–	–	–	12	12
Persicaria lapathifolia/maculosa	–	1	–	–	–	–	–	–	–	–	–
Persicaria hydropiper	–	–	–	–	–	–	–	–	–	–	–
Potentilla sp.	–	–	–	–	–	–	–	–	–	2	–
Prunus spinosa	–	–	–	–	–	–	–	–	–	9	–
Craetaegus monogyna stones/fruits	–	–	–	–	–	–	–	–	–	–	–
Sherardia arvensis	–	–	1	–	–	–	–	–	–	1	–
Trifolium/Medicago	–	est.61	–	–	–	–	–	1	1	–	1
Trifolium sp.	–	5	100	1	–	9	–	1	1	215	7
Vicia/Lathyrus sp.	1	13	17	cf.1	–	–	–	2	1	23	3
Vicia faba subsp. *faba*	–	–	–	–	–	–	–	–	–	–	1
Lens culinaris	–	–	–	–	–	–	cf.1	–	–	–	–
Stachyis sp.	–	–	–	–	–	–	–	–	1	–	–
Prunella vulgaris	–	est.30	21	–	–	–	–	1	–	15	–
Plantago lanceolata	–	est.67	4	–	–	–	–	–	1	28	–
Rhinathus minor	–	–	–	–	–	–	–	–	–	–	–
Lithospermum arvense	1	–	–	–	–	–	–	–	–	–	–

Table 14. Continued

Period	*1*	*2*	*2*	*2*	*2*	*2*	*2*	*3*	*3*	*3*	*3*
Group	*OA1*	*BD*	*OA2*	*OA3*	*OA3*	*OA3*	*OA3*	*Blg 2*	*OA 4*		*OA 6*
Feature type/ no	*buried soil/turf*	*B'dry ditch*	*hearth*	*pit 2972*	*crem. burial*	*crem. burial*	*pit*	*layer*	*metalworking hearth*		*layer*
Context	*1979 3661*	*3884*	*3802*	*3965*	*3292*	*3313*	*3390*	*3415*	*3595*	*3759*	*3444*
size litres	*15*	*20*	*13*	*10*	*4*	*7*	*10*	*10*	*10*	*10*	*10*
flot size ml	*50*	*850*	*25*	*50*	*80*	*20*	*100*	*250*	*175*	*175*	*40*
Viola sp.	–	–	–	–	–	–	–	–	–	–	–
Veronica sp. (small flat)	–	–	50	–	–	–	–	–	–	–	–
Valnerinella dentata	–	–	–	–	–	–	–	–	–	1	–
Galium aparine	–	3	1	–	–	–	–	–	–	4	–
Galium sp. (small)	–	20	6	–	–	–	–	–	–	4	–
Sambucus nigra	–	1m	–	–	–	–	–	–	–	–	–
Apiaceae indet.	–	–	–	–	–	–	–	–	–	–	–
Centaurea sp.	–	1	–	–	–	–	–	–	–	1	–
Anthemis cotula	–	–	–	–	–	–	–	–	–	–	–
Tripleurospermum inodorum	–	–	cf.1	–	–	–	–	–	–	1	–
Alisma plantago-aquatica	–	–	60	–	–	–	–	–	–	–	–
Juncus sp.	–	1cap	est.150	–	–	–	–	–	–	–	–
Eleocharis palustris	2	est.80	6	6	–	–	–	6	2	50	2
Schoneoplectrus lacustris	–	–	–	–	–	–	–	–	1	–	–
Carex sp.	1	est.38	est.13	–	–	–	–	1	–	23	6
Monocot interculms and basal roots	–	++	5	1	–	2	–	–	–	–	–
Poaceae large - (>3mm)	–	4	6	–	–	–	–	1	–	43	–
Poaceae small (<2mm)	–	–	est.550	–	–	–	–	–	–	20	–
Poaceae culm nodes	–	++	2	–	–	–	–	–	–	1	1
Agrostis sp.	–	–	est.1500	–	–	–	–	–	–	–	–
Avena sp.	–	54	2	–	–	–	–	2	–	7	–
Avena sp. (floret base)	–	2	–	–	–	–	–	–	–	–	–
Avena/Bromus sp.	1	6	–	2	–	–	–	–	–	–	–
Bromus sp.	–	15	1	–	–	–	–	–	–	1	–
Lolium sp.	–	est.220	est.30	–	–	–	–	cf.4	–	–	1
Poa/Phleum sp.	–	est.80	est.30	–	–	–	–	1	–	47	–
Sparganium erectum	–	1	1	–	–	–	–	–	–	–	–
Iris pseudacorus	–	–	–	–	–	–	–	–	–	–	–
Seed Indet. (unspecified)	1	7	40	–	–	–	–	2	–	19	cf.1

Table 14. Continued

Period	*3*	*4*	*4*	*4*	*4*	*5*	*5*	*5*	*5*	*6*	*6*	*6/7*
Group	*Lev'ling*	*Blg 7*	*Blg 8*	*Blg 9*	*OA 7*	*Blg 11*	*Blg 12*	*OA12*	*OA14*	*Blg 15*		*Blg 14*
Feature type/ no	*5006*	*layer*	*layer*	*layer 3408 amph 2828*	*layer hearth*	*layer amp metalwork 2164*	*layer*	*hearth*	*hearth 1402*	*metalworking hearth*		*beam/ layer*
Context	*3516 3648 3650 3652 3567*	*2870*	*2489*	*3379 3788 2829*	*3196 3121 3265*	*2163 1671 1858 1783 1840 2048*	*1335*	*1147*	*1401*	*1395*	*2659*	*1426 1574*
size litres	*59*	*8*	*10*	*32*	*16.5*	*34.5*	*8*	*10*	*4*	*5*	*10*	*12*
flot size ml	*1250*	*350*	*1000*	*580*	*1810*	*625*	*40*	*200*	*225*	*40*	*800*	*365*
CEREALS												
Hordeum vulgare sl (hulled grain)	41	-	1	5	35	1	1	-	1	-	c.15	-
Secale cereale (grains)	-	-	-	-	-	-	-	-	-	-	-	-
Triticum sp. (grains)	11	3	-	-	5	1	2	2	-	-	c.60	9
T. dicoccum (spikelet forks)	-	-	-	-	-	-	-	-	-	-	-	-
T. dicoccum (glume bases)	-	-	-	cf.2	1	-	-	-	-	-	-	1
T. spelta (glume bases)	3	-	4	8	-	3	2	-	-	-	2	-
T. dicoccum/spelta (grains)	1	2	1	7	2	6	2	1	3	-	c.41	46
T. dicoccum/spelta (germinated grains)	-	-	-	-	-	3	-	-	-	-	-	-
T. dicoccum/spelta (glume bases)	1	-	1	est.111	4	-	-	-	1	-	2	-
T. dicoccum/spelta (spikelet fork)	-	-	-	1	-	-	-	-	-	1	3	-
T. aestivum sensu lato (grains)	-	-	-	1	2	cf.2	2	1	-	-	c.20	2
Cereal indet. (grains)	7	-	-	4	6	1	-	2	9	-	-	-
Cereal indet. (est grains from frags)	3	-	-	-	8	4	-	-	8	1	c.40	-
Cereal indet (culm node)	-	-	-	-	-	-	-	-	-	-	3	-
SPECIES												
Ranunculus subg. *Ranunculus* arb.	est.32	-	-	16	1	5	2	-	-	-	2	-
Corylus avellana (frgs)	55	14	-	57	2	24	-	12	-	42	9	-
Chenopodium sp.	est.11	-	-	2	1	-	-	-	-	-	4	-
Atriplex sp.	-	-	-	-	-	-	-	-	-	-	-	-
Cerastium sp.	-	-	-	-	-	-	-	-	-	-	-	-
Montia fontana ssp. *chondrosperma*	-	-	-	-	-	-	-	-	-	-	-	-
Raphanus raphanistrum (capsule)	-	-	-	-	-	-	-	-	-	-	3	-
Brassica sp.	-	-	-	-	-	-	-	-	-	-	-	-
Stellaria graminea/palustris	1	-	-	-	-	-	-	-	-	-	-	-
Malva sp.	-	-	-	-	-	-	-	-	-	-	1	-
Linum usitatissimum	-	-	-	-	-	-	-	-	-	-	-	-
Rumex sp.	22	-	-	est.51	2	2	3	-	-	-	9	-
Rumex acetosella	-	-	-	est.32	-	-	-	-	-	-	7	-
Fallopia convolvulus	1	-	-	3	-	-	-	-	-	-	-	-
Polygonum aviculare	-	-	-	6	-	-	-	-	-	-	-	-
Persicaria lapathifolia/ maculosa	2	-	-	1	-	-	-	-	-	-	11	-
Persicaria hydropiper	-	-	-	-	cf.1	-	-	-	-	-	-	-
Potentilla sp.	-	-	-	1	-	-	-	-	-	-	1	-
Prunus spinosa	-	-	-	cf.1	-	-	-	-	-	-	-	-

Table 14. Continued

Period	*3*	*4*	*4*	*4*	*4*	*5*	*5*	*5*	*5*	*6*	*6*	*6/7*
Group	*Lev'ling*	*Blg 7*	*Blg 8*	*Blg 9*	*OA 7*	*Blg 11*	*Blg 12*	*OA12*	*OA14*	*Blg 15*		*Blg 14*
Feature type/ no	*5006*	*layer*	*layer*	*layer 3408 amph 2828*	*layer hearth*	*layer amp metalwork 2164*	*layer*	*hearth*	*hearth 1402*	*metalworking hearth*		*beam/ layer*
Context	*3516 3648 3650 3652 3567*	*2870*	*2489*	*3379 3788 2829*	*3196 3121 3265*	*2163 1671 1858 1783 1840 2048*	*1335*	*1147*	*1401*	*1395*	*2659*	*1426 1574*
size litres	*59*	*8*	*10*	*32*	*16.5*	*34.5*	*8*	*10*	*4*	*5*	*10*	*12*
flot size ml	*1250*	*350*	*1000*	*580*	*1810*	*625*	*40*	*200*	*225*	*40*	*800*	*365*
Craetaegus monogyna stones/fruits	-	-	-	-	-	-	-	-	-	-	-	-
Sherardia arvensis	-	-	-	-	-	-	-	-	-	-	-	-
Trifolium/Medicago	12	-	-	-	-	-	-	-	-	-	-	-
Trifolium sp.	est.53	-	-	est.54	4	-	-	-	-	1	-	-
Vicia/Lathyrus sp.	42	-	1	14	5	4	1	-	-	4	67	2
Vicia faba subsp. *faba*	cf.1	-	-	-	1	-	-	-	-	-	-	-
Lens culinaris	63	-	-	-	-	4	-	-	-	-	-	-
Stachyis sp.	-	-	-	-	-	-	-	-	-	-	-	-
Prunella vulgaris	est.11	-	-	c.146	1	-	-	-	-	-	-	-
Plantago lanceolata	est.18	-	-	est.11	2	-	-	-	-	-	-	-
Rhinathus minor	est.43	-	-	4	-	-	-	-	-	-	-	-
Lithospermum arvense	-	-	-	3	-	-	-	-	-	-	-	-
Viola sp.	-	-	-	3	-	-	-	-	-	-	-	-
Veronica sp. (small flat)	-	-	-	-	-	-	-	-	-	-	-	-
Valnerinella dentata	1	-	-	-	-	-	-	-	-	-	-	-
Galium aparine	-	-	-	1	-	-	-	-	-	-	4	-
Galium sp. (small)	1	-	-	est.33	-	-	-	-	-	-	-	-
Sambucus nigra	-	-	-	-	-	1	-	-	-	-	-	-
Apiaceae indet.	1	-	-	-	-	-	-	-	-	-	-	-
Centaurea sp.	8	-	-	-	-	-	-	-	-	-	-	-
Anthemis cotula	-	-	-	-	-	-	-	-	-	-	cf.1	-
Tripleurospermum inodorum	-	-	-	-	-	-	-	-	-	-	-	-
Alisma plantago-aquatica	-	-	-	-	-	-	-	-	-	-	-	-
Juncus sp.	-	-	-	-	-	1	-	-	-	-	-	-
Eleocharis palustris	est.81	-	-	est.86	6	-	-	-	-	2	1	-
Schoneoplectrus lacustris	est.13	-	-	-	-	-	-	-	-	-	-	-
Carex sp.	27	-	-	est.47	-	1	1	-	-	5	1	3
Monocot interculms and basal roots	+++	-	-	3	11	-	-	-	-	-	-	-
Poaceae large – (>3mm)	40	1	1	c.121	3	1	-	-	-	-	-	-
Poaceae small (<2mm)	est.53	-	-	est.40	-	-	-	-	-	-	-	-
Poaceae culm nodes	1	-	-	1	3	-	-	-	-	-	-	-
Agrostis sp.	-	-	-	-	-	-	-	-	-	-	-	-
Avena sp.	4	-	-	1	-	-	-	-	-	-	-	-
Avena sp. (floret base)	-	-	-	-	1	-	-	-	-	-	-	-
Avena/Bromus sp.	6	-	-	2	-	-	-	-	6	-	-	-
Bromus sp.	3	-	-	5	6	-	-	-	2	-	-	-
Lolium sp.	3	-	-	-	3	1	-	-	-	-	-	-
Poa/Phleum sp.	-	-	-	-	1	-	-	-	-	-	-	-
Sparganium erectum	1	-	-	-	-	-	-	-	-	-	-	-
Iris pseudacorus	1	-	-	-	-	-	-	-	-	-	-	-
Seed Indet. (unspecified)	10	-	-	est.60	-	-	-	-	-	-	1	-

Table 14. Continued

Period	*7*	*7*	*9*	*p-med*
Group	*Blg16*	*Rd 5*	*OA17*	*OA17*
Feature type/ no	*str 1940*	*ditch 1870*	*pit 1030 1791*	*pit*
Context	*2001 1830*	*1869*	*1029 1790*	*1003*
size litres	*19*	*8*	*18*	*10*
flot size ml	*525*	*60*	*450*	*100*
CEREALS				
Hordeum vulgare sl (hulled grain)	1	-	2	-
Secale cereale (grains)	-	-	2	-
Triticum sp. (grains)	20	1	7	2
T. dicoccum (spikelet forks)	-	-	-	-
T. dicoccum (glume bases)	-	-	-	-
T. spelta (glume bases)	-	-	-	-
T. dicoccum/spelta (grains)	11	-	2	2
T. dicoccum/spelta (germinated grains)	-	-	-	-
T. dicoccum/spelta (glume bases)	-	5	-	-
T. dicoccum/spelta (spikelet fork)	-	-	-	-
T. aestivum sensu lato (grains)	12	-	9	-
Cereal indet. (grains)	8	1	1	-
Cereal indet. (est grains from frgs)	-	-	-	-
Cereal indet (culm node)	-	-	-	-
SPECIES				
Ranunculus subg. *Ranunculus* arb.	-	-	-	-
Corylus avellana (frgs)	15	-	9	1
Chenopodium sp.	-	-	-	-
Atriplex sp.	-	-	-	-
Cerastium sp.	-	-	-	-
Montia fontana ssp. *chondrosperma*	-	-	-	-
Raphanus raphanistrum (capsule)	-	-	-	-
Brassica sp.	-	-	-	-
Stellaria graminea/ palustris	-	-	-	-
Malva sp.	-	-	-	-
Linum usitatissimum	-	-	-	-
Rumex sp.	-	-	1	-
Rumex acetosella	-	-	-	-
Fallopia convolvulus	-	-	-	-
Polygonum aviculare	-	-	-	-
Persicaria lapathifolia/ maculosa	-	-	-	-
Persicaria hydropiper	-	-	-	-
Potentilla sp.	-	-	-	-
Prunus spinosa	-	-	-	-
Craetaegus monogyna stones/fruits	1	-	-	-
Sherardia arvensis	-	-	-	-

Period	*7*	*7*	*9*	*p-med*
Group	*Blg16*	*Rd 5*	*OA17*	*OA17*
Feature type/ no	*str 1940*	*ditch 1870*	*pit 1030 1791*	*pit*
Context	*2001 1830*	*1869*	*1029 1790*	*1003*
size litres	*19*	*8*	*18*	*10*
flot size ml	*525*	*60*	*450*	*100*
Trifolium/Medicago	-	-	-	-
Trifolium sp.	-	-	-	-
Vicia/Lathyrus sp.	2	2	-	1
Vicia faba subsp. *faba*	-	-	1+3f	-
Lens culinaris	-	-	-	-
Stachyis sp.	-	-	-	-
Prunella vulgaris	-	-	-	-
Plantago lanceolata	-	-	-	-
Rhinathus minor	-	-	-	-
Lithospermum arvense	-	-	-	-
Viola sp.	-	-	-	-
Veronica sp. (small flat)	-	-	-	-
Valnerinella dentata	-	-	-	-
Galium aparine	1	-	1+1m	-
Galium sp. (small)	1	-	-	-
Sambucus nigra	-	-	-	8
Apiaceae indet.	-	-	-	-
Centaurea sp.	-	-	cf.1m	cf.1m
Anthemis cotula	-	-	1	-
Tripleurospermum inodorum	-	-	-	-
Alisma plantago-aquatica	-	-	-	-
Juncus sp.	-	-	-	-
Eleocharis palustris	-	-	-	-
Schoneoplectrus lacustris	-	-	-	-
Carex sp.	-	-	-	-
Monocot interculms and basal roots	-	-	-	-
Poaceae large – (>3mm)	-	-	-	5
Poaceae small (<2mm)	-	-	-	-
Poaceae culm nodes	-	-	-	-
Agrostis sp.	-	-	-	-
Avena sp.	-	1	7	-
Avena sp. (floret base)	-	-	-	-
Avena/Bromus sp.	-	-	1	-
Bromus sp.	-	-	-	-
Lolium sp.	-	-	1	-
Poa/Phleum sp.	-	-	-	-
Sparganium erectum	-	-	-	-
Iris pseudacorus	-	-	-	-
Seed Indet. (unspecified)	-	-	1	-

Period 2 – Pre-Boudican

One of the richest deposits came from layer 3884, in boundary ditches 5003, producing numerous finds of hulled barley (*Hordeum vulgare* sl), many still in their hulls. Glumes of spelt wheat are also abundant and some grains can be seen to have germinated, although cereal grains are less numerous than glumes. Fragments of hazelnut (*Corylus avellana*) shell are also abundant.

This sample is also rich in seeds and stems of monocots (in particular grasses and sedges) present in their hundreds. Grass seeds are well represented, including rye grass or fescue (*Lolium/Festuca*), catstail (*Phleum* sp.), and oats (*Avena* sp.), along with occasional oat floret bases and spikelets. From examination of the articulation scar (*cf.* Jessen and Helbaek 1944) one of these represents the wild variety (*Avena fatua*).

The remaining samples, from a pit and two cremation graves, produced few remains. Cremation grave 3312 had a few seeds of wet grassland species and a few stems and basal culm nodes of grasses. It is possible that such material may come from tinder and the creation of a firebreak if the pyre was built in grassland.

Period 3 – Later Neronian and early Flavian

While the range of cereals from this phase is similar to the preceding one, grains of hulled barley are more abundant than hulled wheat. Building 2 in particular has high quantities of hulled barley and some grains of hulled wheats, although only a single glume was recovered. Some of the remaining features produced rich assemblages similar to those seen for Period 2. Hearth 3759 contains numerous charred hazelnut shell fragments, as well as several stones of sloe (*Prunus spinosa*). This same sample also contains frequent seeds of grassland and wetland species although, unlike the sample described from Period 2, this sample contains few stems.

The contexts from levelling 5006 were of mixed richness. Context 3516 was rich in charred monocot stems, including grasses, but given the high number of spikerush seeds, some stems are likely to have been from this species. Pit 3651, contained many charred seeds, predominately of wet grassland species, but few charred stems. It did however contain amorphous fragments that appear to be derived from stems that had fused together. The species whose seeds were represented differ again from the other samples. In addition to many of the species already listed are seeds of yellow-rattle (*Rhinanthus minor*), brittle club-rush (*Schoenoplectrus lacustris*), and Iris (*Iris pseudacorus*). Two less rich samples from levelling 5006 are of interest as both contained seeds of lentil (*Lens culinaris*).

Period 4 – Later Flavian

Barley and hulled wheat grains and glumes are present in the samples from this phase, although generally in small quantities, along with fragments of hazelnut. Layer 3408 from Building 9 contains high quantities of glume bases, although most are poorly preserved. Three grains of free-threshing wheat (*Triticum aestivum* sl) are also present in two samples.

The samples contain a similar array of species to that already seen, with species of wet grassland well represented. While culms and stems are absent from layer 3408, several were recovered from a hearth (3194) in Open Area 7. This sample contains several grains of hulled barley, some of which can clearly be seen to be still in palea and lemma.

Period 5 – early 2nd century

These samples are less rich than in the preceding Periods. Most contain only a few cereal remains, again of hulled barley and hulled wheats, but only two glume bases were recovered and very few seeds of weeds. As with the previous periods free-threshing wheat grains and fragments of hazelnut are present and a single seed of elder (*Sambucus nigra*) and a few of lentil (*Lens culinaris*) were recovered from layer 1840.

Period 6–7 – mid-2nd century and late 2nd–early 4th century

These samples are more typical of those recovered from other Roman sites in London, for example Southwark (Gray 2002). Barley is present in only two samples and while hulled wheats are present in all seven samples, few remains of glumes were recovered. Unlike the previous periods grains of free-threshing wheat are well represented in several samples. Fragments of hazelnut shell again occur. Seeds of wild species are rare, except in the sample from hearth 2659 in Building 15, which contains the most cereal remains.

Period 9 – medieval (12th–15th century)

The medieval/post-medieval samples are generally less rich. Charred cereal grains of barley, free-threshing wheat, and (more unique and characteristic of medieval sites) rye (*Secale cereale*) were recovered from pit 1030. While grains resembling hulled wheats were identified, no glumes or chaff were recovered, and these may be residual or reworked. A single grain and a few fragments of broad bean (*Vicia faba*) were also recovered. Fragments of hazelnut are still present, along with occasional mineralised seeds of fig (*Ficus carica*), bramble (*Rubus* sp.), and elder.

Discussion

General Roman crop husbandry

The main crops represented, spelt, free-threshing wheats, and barley are those known from other Roman sites in London (Straker 1984; Davis 2000; Grey 2002). In general British sites are often richer in glumes than grains of hulled wheats (van der Veen 1992; Stevens 2003), many assemblages from London, including those from Period 5 here, prove exceptions to this general pattern.

Glume-rich samples are indicative of waste from the processing of cereals as they are taken 'piecemeal' from storage, and so of general domestic waste produced day by day (Stevens 2003). Glumes are present in high quantities from two 1st–2nd century contexts but are otherwise scarce in the Fenchurch Street assemblage and London sites in general.

It is possible that in larger urban centres the dehusking of hulled wheats was carried out in bulk, rather than being 'piecemeal', as seems to be typical for smaller rural sites. Such processing may have been conducted in select locales, perhaps associated with corndriers and possibly outside or on the edge of urban centres. Such an explanation may explain the occurrence of glume rich samples in some contexts while they are generally absent from others.

Crops may have been brought into the city from further afield, although the range of weed species present are generally typical of those recovered from Iron Age and Roman sites. The absence of stinking mayweed (*Anthemis cotula*), an indicator of heavy clay soils (Jones 1981; Greig 1991), may, however, indicate that the crops were not grown on such soils.

Several samples rich in grass species and stems present are more difficult to interpret. While certain elements can be related to cereal processing, that some samples have few cereal remains, suggests they may relate to the burning of local vegetation. Hearth 3802 in particular had few cereal remains but high numbers of small grass seeds and those of rush, suggesting a wet grassland, possibly even a poorly managed pasture existed in the area during the pre-Flavian period. This wet grassland element is also seen in the later periods, although it should be noted that several of the species, including self-heal, ribwort plantain, and yellow-rattle, are often associated with drier soils.

It is more probable that these assemblages are related, at least in part, to the burning and levelling events seen within each period. The samples are so distinct from each other that it would seem unlikely they relate to one specific activity and, given they come from different periods, their association with the mass burning events seems probable. It is always possible that the material came into the city with grassland material collected for fodder, animal bedding, or possibly building material, or flooring which was subsequently burned in destruction levels.

Other crops and exotics

The presence of lentil at Fenchurch Street, the Forum (Straker 1983), the waterfront (Straker 1984), Southwark (Wilcox 1978; Hinton 1988), and in many of the burials in east London (Davis 2000) testifies to the wide-scale use of this crop in Roman London. Lentils do not grow well in Britain and the crop has been considered to be imported (eg, Straker 1984). That lentil has been recovered from rural Saxon settlements in parts of England has led some to suggest that it may have been grown locally on a small scale (Greig 1991; Stevens 2004). However, its status in Roman Britain remains unclear and it may be noted that it is generally only found in or close to major Roman centres, for example Colchester (Murphy 1986), York (Hall and Kenwood 1990), and Caerleon, Gwent (Helbaek 1964).

The presence of a wide range of foodstuffs, including collected wild foods such as hazelnut and sloe, is in keeping with a general increased attention to food as an expression of identity and status, echoing suggestions that the composition of foodstuffs, as reflected in pottery, can help to distinguish the Romanised inhabitants of villas and towns from the less Romanised rural population (Meadows 1994; 1997).

Medieval crop husbandry

A comparison of the medieval samples reflects many of the changes known to occur from the Romano-British period into the Saxon period. So we see the introduction of rye as a commonly cultivated crop in Britain (Greig 1988) and the predominance of free-threshing wheat while hulled wheats are all but absent. The presence of seeds of stinking mayweed is also more commonly associated with this period when the cultivation of clay soils seems especially common (Greig 1991).

Charcoal

by Rowena Gale

Twenty-five samples were selected for full analysis from prehistoric and Roman contexts. Charcoal was examined from the same samples as described by Stevens (above), although some charcoal was collected by hand. Charcoal fragments measuring >2 mm in radial cross-section were considered for species identification, while larger samples were sub-sampled.

Standard methods were used for examination (Gale and Cutler 2000). The wood structure was examined using incident light on a compound microscope at magnifications up to x400 and matched to reference slides of modern wood. When possible, the maturity of the wood was assessed (ie, heartwood/sapwood) and stem diameters and the number of growth rings recorded. It should be noted that charred stems may be reduced in volume by up to 40%.

Results

The taxa identified are presented in Table 15. Classification follows that of *Flora Europaea* (Tutin, Heywood *et al.* 1964–80). Group names are given when anatomical differences between related genera are too slight to allow secure identification to genus level. These include members of the Pomoideae (*Crataegus*, *Malus*, *Pyrus*, and *Sorbus*), and Salicaceae (*Salix* and *Populus*). When a genus is represented by a single species in the British flora this is named as the most likely origin of the wood, given the provenance and period, but it should be noted that it is rarely possible to name individual species from wood features and exotic species have been introduced to Britain from an early period (Godwin 1956; Mitchell 1974).

Discussion

Overall, the charcoal analysis identified a wide range of trees and shrubs, but is undoubtedly biased in favour of economically useful species. In the early phases of occupation these species probably grew within easy reach of the site. However, the construction of timber and clay houses and the numerous industrial activities practised would have made serious inroads on extant woodland.

The management of local woodland appears to have been initiated early in the Roman occupation, as seen from the use of coppiced hazel in Period 3. The high ratio of 3–4 year old rods suggests that the trees were grown on a short rotation. It is likely that coppicing was applied to a range of appropriate species, with cycles of growth probably related to the application of the wood. Mature oak from wide roundwood or trunkwood was the most frequently used timber. In the early phases of occupation, oak timber may have been obtained from large trees growing in stands of local woodland – for example, the slow growth recorded in mature oak charcoal from Building 2 is indicative of competitive or closed woodland conditions. To maintain adequate supplies, oak would have been coppiced and grown on fairly long cycles to provide poles and posts, as suggested by a fast-grown oak post from Building 12, as well as for charcoal production. Other Roman sites in the London region indicate some oak coppice was grown on a short rotation of about 3 years (Goodburn pers. comm.). As the settlement prospered and enlarged, areas of woodland in close proximity to the site would have been felled and developed. Provisioning the expanding town with timber, wood and fuel would eventually depend on supplies imported from areas outside the city wall, either by road or via the Thames.

The procurement of fuel

Metal-working debris generally indicated the selected use of mature oak. Charcoal would have been essential for smelting and probably the preferred fuel for smithing. This would have been prepared close to the area of wood supply, ie, by charcoal-burners working on-site in possibly coppiced woodland. In addition to ironworking, charcoal recovered from hearths associated with workshops of unknown function also indicated a preference for oak heartwood, although residues from some hearths demonstrated a more catholic use of species.

Structural evidence

The earliest buildings on the site were of timber and clay, and the conflagration of these fortuitously preserved charred elements of their fabrics in the foundations. This included the remains of narrow roundwood, mainly from young hazel coppice from Period 3 Building 1, as well as mature oak, from this building and Buildings 3, 4, and Period 4 Building 9, relating to poles, post, beams, and larger oak timbers used probably in association with (predominantly) hazel wattle. Possible evidence for the structural use of oak was also obtained from context 1496, Period 5 Building 12.

Table 15. Charcoal: species overview

Feature	*Buried soil*	*Turf-line*	*Layer*	*Crem. burial 3291*	*Crem. burial 3312*	*Metalworking hearth 3594*	*Hearth*	*Levelling 5006*	*Burnt sill-beam/slot 3420*	*Layer 3408*	*Layer*	*Layer*	*Sill beam 2382*	*Burnt post 2632*
Context	*1979*	*3961*	*3884*	*3292*	*3313*	*3595*	*3759*	*3516*	*3355*	*3755*	*2505*	*3265*	*2381*	*2653*
Sample	*47*	*111*	*104*	*77*	*78*	*93*	*100*	*91*	*83*	*105*	*57*	*88*	*50*	*124*
Period	*1*	*1*	*2*	*2*	*2*	*3*	*3*	*3*	*3*	*3*	*3*	*4*	*4*	*4*
Origin	*OA1*	*OA1*	*B'dry ditch 5003*	*OA3*	*OA3*	*OA4*	*OA4*	*Road 1*	*Bldg2*	*Bldg3*	*Bldg4*	*OA7*	*Bldg8*	*Bldg 8*
Acer campestre (field maple)	-	1	-	-		-	-	-	-	-	-	-	-	-
Alnus glutinosa (alder)	1	-	-	1		-	-	-	-	-	-	-	-	-
Betula (birch)	-	-	-	20	*cf.* 2	-	-	-	2	-	-	5	-	-
Corylus avellana (hazel)	-	-	-	-		-	1	45r	35	-	-	34r	-	-
Fagus sylvatica (beech)	-	-	-	-		-	4	-	-	-	-	2	1	-
Fraxinus excelsior (ash)	2	1	-	-		-	-	-	1	-	-	2	-	-
Ilex aquifolium (holly)	-	4	-	-		-	-	-	-	-	-	-	-	-
Pomoideae (hawthorn, apple, etc)	-	-	1	-		-	-	-	1	-	-	11	-	41h, 1s
Prunus spinosa (sloe/blackthorn)	-	-	-	-		-	-	-	-	-	-	2	-	-
Quercus (oak)	2h	4h, 6s	21h, 2r, 48s	-		20h, 3s	4	3h	18h	13h, 29s	101h, 1s	25h, 2r, 1s	69h, 2s	-
Rhamnus cathartica (buckthorn)	-	1	-	-		-	-	-	-	-	-	-	-	-
Salicaceae (willow, poplar)	-	-	2	-		-	-	-	16r	-	-	7	1	
Viburnum	-	-	-	-		10	-	*cf.* 6r	-	-	-	-	-	

Feature	*Sill beam 2382*	*Burnt post 2632*	*Amphora 2828*	*Hand-picked charcoal*	*Hearth 2410*	*Metal-working*	*Hearth*	*Demolition*	*Wooden board*	*Beam slot 1427*	*Metal-working*	*Hearth*	*Hearth*
Context	*2381*	*2653*	*2829*	*2921*	*2372*	*1342*	*1147*	*2623*	*1496*	*1426*	*1395*	*2591*	*2659*
Sample	*50*	*124*	*64*	*125*	*52*	*7*	*5*	*123*	*14*	*13*	*11*	*56*	*59*
Period	*4*	*4*	*4*	*4*	*4*	*5*	*5*	*5*	*5*	*6-7*	*6*	*6*	*6*
Origin	*Bldg8*	*Bldg 8*	*Bldg 9*	*Bldg 9*	*Bldg10*	*Bldg11*	*OA12*	*OA13*	*Bldg12*	*Bldg14*	*Bldg15*	*Bldg15*	*Bldg15*
Acer	-	-	1	-	-	-	-	-	-	-	-	-	-
Alnus	-	-	-	-	-	-	-	-	-	-	-	-	2
Betula	-	-	-	-	-	-	-	-	-	-	2r	-	7
Corylus	-	-	2	-	-	-	-	-	-	1	-	-	4
Fraxinus	1	-	-	-	-	-	1	-	-	-	1	-	-
Pomiodeae	-	-	-	-	-	-	-	-	-	-	-	-	4
Prunus	-	-	2	-	-	-	-	-	-	-	-	-	-
Quercus	-	41h, 1s	24h, 1r, 3s	2h, 2s	4h	43h, 1s	33h	12h, 1r, 1s	24h, 26s	8h, 10r, 2s	1h	37h	31h, 2r, 1s
Rosa/Rubus	-	-	-	-	-	-	-	-	-	2r	-	-	-
Salicaceae	69h, 2s	-	-	-	-	-	-	-	-	22	-	-	10
Viburnum	-	-	-	-	-	-	-	-	-	-	*cf.* 1r	-	-

h – heartwood r – roundwood (diam. <20 mm) s – sapwood (diam. unknown)

Table 16. Soil micromorphology: characterisation of samples

Sample	*Context*	*Key characteristics of bulk samples*
M21		
20	1783 Period 5 Build. 11	V. low organic matter content (LOI, 0.875%); no clear evidence of phosphate enrichment (phosphate-P, 1.94 mg g^{-1}); & exceptionally strong evidence of heating/burning (χ, 706 x 10^{-8} SI; χ_{conv}, 64.2%). Low organic matter content may simply reflect minerogenic origin of material, but could also be partly related to burning (sample actually appeared reddened by burning). Evidence of burning consistent with area being associated with blacksmith's workshops, though should be noted that χ_{max} is relatively low – indicating low Fe content
29	1839 Period 5 Build. 11	Low organic matter content (LOI, 1.16%) which may, in part, be result of burning; possible evidence of phosphate-enrichment (phosphate-P, 2.52 mg g^{-1}); & v. strong evidence of heating/burning (χ, 317 x 10^{-8} SI; χ_{conv}, 25.2%) – sample appeared reddened by burning. Similar in character to context 1783, though evidence of burning, while v. strong, not quite so marked
30	1840 Period 5 Build. 11	V. dark colour, much charcoal & small frags bone. Quite organic rich (LOI, 12.9%); exceptionally strong evidence of phosphate enrichment (phosphate-P, 8.74 mg g^{-1}), majority of which is present in inorganic form (P_i:P, 90.8%); possible evidence of heating/burning (χ, 208 x 10^{-8} SI; χ_{conv}, 7.76%); & indications of relatively high Fe concentration (χ_{max}, 2680 x 10^{-8} SI). High LOI & dark colour probably reflect presence of combination of topsoil material & charcoal. Exceptionally high phosphate concentration could be largely attributable to presence of bone (as observed during sieving), possibly augmented by manure/cess-type inputs. Magnetic susceptibility data reveal only limited evidence of enhancement suggesting charcoal may not be associated with *in situ* heating/burning (ie, burning took place elsewhere)
M22		
35	1830 Period 7 Build. 16	V. dark colour, with mortar(?), brick/burnt clay(?) & shell frags. Quite organic rich (LOI, 10.7%); v. strong evidence of phosphate enrichment (phosphate-P, 6.80 mg g^{-1}); & very strong evidence of heating/burning (χ, 362 x 10^{-8} SI; χ_{conv}, 31.5%). Although no bone was observed in sample, it seems likely that at least part of phosphate is bone-derived. Less evidence of charcoal than context 1840, though much more evidence of magnetic susceptibility enhancement. Presence of brick/burnt clay may be significant contributory factor in observed enhancement
41	1831 Period 7 Build. 16	V. dark colour, with pottery, shell & bone frags. Quite organic (LOI, 5.73%), but much less so than contexts 1840 & 1830; exceptionally strong evidence of phosphate enrichment (phosphate-P, 8.28 mg g^{-1}), majority of which is present in inorganic form (P_i:P, 89.4%); & no clear evidence of burning (χ, 73.3 x 10^{-8} SI; χ_{conv}, 4.99%). Phosphate enrichment could be largely attributable to presence of bone, possibly augmented by manure/cess-type inputs
M103		
103	3803 Period 2 Open Area 2	Appeared to show some signs of iron panning, possibly associated with waterlogging. Low organic matter content (LOI, 1.34%); & no evidence of phosphate enrichment (phosphate-P, 1.41 mg g^{-1}) or magnetic susceptibility enhancement (χ, 12.8 x 10^{-8} SI; χ_{conv}, 0.889%). No indication of anthropogenic influence

Table 17. Soil micromorphology: chemical and magnetic susceptibility data

Sample	*LOI (%)*	*Phosphate-P_i (mg g^{-1})*	*Phosphate-P_o (mg g^{-1})*	*Phosphate-P (mg g^{-1})*	*Phosphate-P_i:P (%)*	*Phosphate-P_o:P (%)*	*χ (10^{-8} SI)*	*χ_{max} (10^{-8} SI)*	*χ_{conv} (%)*
M21									
20	0.875	1.690	0.245	1.94	87.3	12.7	706	1100	64.2
29	1.16	2.273	0.249	2.52	90.1	9.9	317	1260	25.2
30	12.9	7.932	0.805	8.74	90.8	9.2	208	2680	7.76
M22									
35	10.7	5.944	0.857	6.80	87.4	12.6	362	1150	31.5
41	5.73	7.403	0.876	8.28	89.4	10.6	73.3	1470	4.99
M103									
103	1.34	1.214	0.196	1.41	86.1	13.9	12.8	1440	0.889

Table 18. Soil micromorphology: microfacies types

Microfacies	*Sample Number*	*Sampling depth, Soil Micromorphology (SM)*	*Context, Phase, Interpretation & Comments*
Microfacies 3 (SMT 1a, 1b, 2)	M51A	250–325 mm SM: 250–280 mm: v. heterogeneous with variously Fe stained SMT 1a, 1b, and 2 – & anthropogenic material; *Structure*: massive with abundant burrows & channels; 25% voids, dominant coarse (1–2 mm) root channels, & chambers (max. 4 mm); *Coarse Mineral*: C:F as M51B, *Coarse Organic/Anthropogenic*: v. abundant coarse wood charcoal, associated with iron-stained charcoal, Fe nodules, many amorphous organic frags, humic stained articulated phytolith sheets (bran?), many phytoliths & in 1 location at least 4 nematode eggs (Cruise pers. comm.); *Pedofeatures*: *Amorphous*: v. abundant Fe-P? staining/ impregnations, and hypocoatings.	1978, Period 1 Open Area 1 Dumps of local brickearth soil – natural Eb, Bt & probable Eb-Ap topsoil, alongside often Fe(P?) stained charcoal-rich organic matter that can contain cess/nightsoil – (amorphous OM, phytoliths, articulated phytoliths, & probable nematode eggs); earthworm burrowed & stained by Fe from road above? *Iron stained local soil & cess dumps.*
Microfacies 2 (SMT 1b (and 2))		280–325 mm: heterogeneous with common burrowing & staining (from above); as SMT 1b generally (<abundant fine amorphous organic matter, with fine charcoal & phytoliths) with occasional fine (200 μm) root traces (now amorphous Fe/P? infilled) & rare examples embedded iron-stained charcoal & patches of now-iron stained amorphous organic matter; *Pedofeatures*: *Amorphous*: v. abundant iron & probable Fe-P staining, infills & pseudomorphic replacement of root traces; *Fabric*: v. abundant broad (3–4 mm) burrow mixing of overlying charcoal-rich (v. abundant coarse 10 mm eg, oak?) deposits	1979 OLS, Period 1 Open Area 1 Earthworm-burrowed, Fe & Fe-P (cess) stained compact but finely rooted relict? Eb-Ap/A1 horizon (as below), containing traces of manuring? (fine charcoal & iron-stained charcoal – night soil) *Contaminated & mixed remains of slightly truncated? Ap/A1?*
Microfacies 1 (SMT 1a, 1b and 2)	M51B	345–420 mm SM: moderately heterogeneous with variations of SMT 1 ('Eb') meeting coarse (12 mm) frags/fragmented junction with SMT 2 (Bt horizon); rare fine burrow fills; *Structure*: massive with curved, semi-horizontal layers, discontinuous layers, v. compact <10% voids, fine vughs, fine channels & medium sub-horizontal planar voids; *Coarse Mineral*: C:F (limit at 10 μm), 70:30, moderately well sorted with very dominant sub-angular to rounded, coarse silt-, fine to medium sand-size quartz, quartzite, feldspar, v. few mica, opaques & glauconite; *Coarse Organic/Anthropogenic*: rare coarse (max. 2 mm) wood charcoal, some iron stained; examples of burned large (30 mm) angular & gravel-size (2 mm) flints; example of sand-size rounded pot; rare traces of roots, 1–2 mm diam., often only 200 μm, & coated with amorphous iron – see below; *Fine fabric*: common SMT 1a (original Eb) (C:F, 90:10): fine speckled grey (PPL), v. low interference colours (close porphyric, speckled b-fabric, XPL), grey (OIL); trace amounts of amorphous organic matter & staining; frequent SMT1b (Eb/Ap) (C:F, 60-80:40-20); dusty and speckled brown (PPL), low to moderately low interference colours (XPL), pale orange brown with rare black & red specks (OIL); <abundant fine humic staining, many amorphous & occasional charred frags, with rare to occasional phytoliths; few SMT 2 (Bt) (C:F 60:40): finely dusty yellowish brown (PPL), moderate interference colours (close porphyric, speckled & grano-striate b-fabric, XPL); pale orange (OIL); traces of humic fine material; *Pedofeatures*: *Textural*: complex; SMT 2 – abundant grain & void coatings & infills (120 μm) of v. finely dusty, well oriented & microlaminated clay, with occasional ferri-argillans present; SMT 1 – rare (but concentrated) extremely dusty weakly formed, poorly birefringent infills & intercalations, eg, extensive (10 mm long) pan-like layers of 60 μm at junction of juxtaposed SMT 1a types; *Crystalline*: rare traces of poorly preserved (poorly birefringent) probable vivianite with radial structure within amorphous infill; *Fabric*: v. abundant coarse semi-horizontal discontinuous, curved layers (8 mm deep by 30 mm long in places); coarse mixing of SMT 1a, 1b, & 2 (<13 mm); rare traces of burrows containing amorphous stained plant frags & fine charcoal – see M51A; *Amorphous*: many impregnations, infills, & partial fan-like amorphous void infills, likely Fe-P features as associated with traces of birefringent probable vivianite; amorphous features pick out some fabric differences not above	1979 bB, Period 1 Open Area 1 Coarsely mixed, horizontally mixed relict Bt & Eb horizon soil with finely humic & phytolith rich 'Ap' containing burned flint, a fine piece of residual pot, & charcoal; textural features along base of curved sub-horizontal ?plough/ marks? *Base of lightly manured mouldboard? ploughed soil Ap.*

Table 18. Continued

Microfacies	*Sample Number*	*Sampling depth, Soil Micromorphology (SM)*	*Context, Phase, Interpretation & Comments*
	M112	0–40 mm	3969, Period 3 Building 4
Microfacies 5 (SMT 1a/1b, with 3)	M112 Upper	SM: heterogeneous, layered; *Structure*: massive: 0–20 mm: similar to M112 lower, with both ferruginised plant material & non-iron & charred stained plant remains; ashes crystals & 2 fish bones (600 μm).	Upper: compact brickearth Eb/A1 topsoil ('turf') with thin layer of charred dung/stabling waste, with ash traces & fish bone.
Microfacies 5 (SMT 1a/1b, with 3)	M112 Middle	20–30 mm: *Coarse Organic/Anthropogenic*: occasional coarse charcoal & pottery – some <14 mm (*c.* 14 pieces), example of bone (1 mm), with traces of shell & ash in matrix (see SMT 3), all concentrated in this layer; as SMT 1a/1b with few SMT 3: speckled & dotted darkish brown (PPL), moderate interference colours (close porphyric, crystallitic b-fabric, XPL), brownish grey with black specks (OIL); v. abundant fine charred organic matter with many phytoliths & ash crystals; *Amorphous*: v. abundant ferruginous impregnation of matrix.	Spread of local soil & trampled? anthropogenic waste – pottery, ashes etc. *Turf and thin occupation spreads.*
Microfacies 4 (SMT 1a/1b)	M112 Lower	30–40 mm: as SMT 1a/1b, with long (25 mm) thin (5 mm) layer of iron-replaced finely layered organic matter (also micritic pseudomorphs of parenchymatous cells, articulated monocotyledonous phytolith sheets/layered material; finely pellety organics (v. thin organic excrements); thin (200 μm) root channels appearing not to be way up; *Pedofeatures*: *Crystalline*: rare micritic plant pseudomorphs; *Amorphous*: rare ferruginous pseudomorphs of organic remains and excrements	Inverted 'turf' with dung/stabling waste layer, and associated mesofaunal activity. *Series of likely turves with thin spreads of anthropogenic debris from animal stocking?, cooking waste.*
Microfacies 6 (SMT 3)	M103	0–75 mm SM: homogeneous with pseudo-layering; *Structure*: massive, 15% voids, medium channels; *Coarse Mineral and Fine fabric*: as SMT 3, contains rare gravel size flint; *Pedofeatures*: probably all relict thin & thick layers of v. abundant grain & void coatings and infills (150 μm) of v. finely dusty, well oriented & microlaminated clay, with occasional ferri-argillans present – some seemingly not oriented to way-up; occasional finely dusty microlaminated clay infills; *Amorphous*: v. abundant ferruginous staining, picking out more clay-rich argillic layers. BD: 1.34% LOI, 1.41 mg g^{-1} phosphate-P, 12.8 x 10^{-8} SI χ, 0.889% χ_{conv}	3803, Period 2 Open Area 2 Compact layers of brickearth subsoil Bt/Ct with clay enriched argillic layers picking out relict fine stratigraphy of brickearth sediment, which is often in turn picked out by ferruginous impregnation. Subsequently rooted on site. (Consistent with bulk data) *Iron-stained pseudo-layered 'clean' brickearth probably used for ground-raising; likely affected by drainage water.*
Microfacies 9a (SMT 5, with 4)	M21A	0–20 mm SM: as below, but compacted (15–20% voids, vughs), with abundant rubefied 'soil' & burned flints, with compact burned fine mineral & charred organics (as SMT 4). BD: 0.875% LOI, 1.94 mg g^{-1} phosphate-P, 706 x 10^{-8} SI χ, 64.2% χ_{conv}	1838, Period 5a–b Building 11 Compact version of 1839 upper; possibly rubefied *in situ*. *Compacted surface formed in 'weathered' debris and dump; possibly burned/heated in situ.*
Microfacies 9a (SMT 5)		20–50 mm SM: heterogeneous; *Structure*: subangular blocky & burrowed; 40% voids, coarse poorly accommodated planar voids, chambers, packing voids & fine channels; *Coarse Organic/Anthropogenic*: v. abundant burned brickearth, brickearth-based daub, tile/brick, with rare shell & bone-burned bone, & rare traces of eggshell & wall? plaster showing layering; *Fine fabric*: SMT 5: speckled darkish brown (PPL), moderately high (close porphyric, crystallitic & speckled b-fabrics, XPL), greyish brown with specks (OIL), many charred & occasional amorphous organic matter, with general humic staining; inclusion of occasional to many ashes (& micritic material) & occasional phytoliths; *Pedofeatures*: *fabric*: v. abundant burrowing including v. broad (5 mm) burrows; *Excrements*: v. abundant v. thin (<50 μm organic) to thin & v. broad organo-mineral excrements	1839 upper Mixed burned building debris (brickearth wall 'clay', daub & layered wall? plaster), ashes, organic matter, & bone/burned bone/coprolitic bone; all biologically worked & burrowed. *Moderately weathered & biologically worked razed building debris & local middening.*

Table 18. Continued

Microfacies	*Sample Number*	*Sampling depth, Soil Micromorphology (SM)*	*Context, Phase, Interpretation & Comments*
Microfacies 8	M21B	50–90 mm SM: moderately heterogeneous; *Structure*: fragmented & burrowed; 40% voids, dominantly coarse chambers with complex & simple packing voids; *Coarse Organic/Anthropogenic*: v. abundant v. coarse (max. 13 mm) burned & rubefied or blackened daub (brickearth daub featuring thin planar voids relict of plant temper (<100 μm, with some charred traces occasionally), many flint & burned flint; trace amounts of bone & coprolitic bone (burrow fills of SMT 4 – from below); *Pedofeatures*: *Fabric*: v. abundant burrows including v. broad (6 mm) ones; *Excrements*: many v. thin (<50 μm) & thin (<100 μm) organo-mineral excrements. BD: 1.16% LOI, 2.52 mg g^{-1} phosphate-P, 317 x 10^{-8} SI χ (10^{-8} SI), 25.2% χ_{conv}	1839, Period 5a–b Building 11 *Collapse or dump of burned daub from razed building, which was subsequently burrowed by mesofauna*
Microfacies 7a		90–120 mm (sloping) Overall homogeneous (with extremely diverse mixed inclusions) becoming more heterogeneous upwards with 2 thin (2 & 4 mm) sloping layers at surface SM: Uppermost 4–6 mm: SMT 7a – marked by 11 mm long pot frag. & charcoal <3 mm long, with v. abundant fine charcoal mixed with inclusions of monocotyledonous charcoal, ashes & other micritic material set in enigmatic yellow amorphous (non-birefringent, but some with inclusion of calcium oxalates/druses & possible faecal spherulites) matrix (see above); ash patches with many phytoliths others with only rare phytoliths; some patches with articulated sheets of phytoliths & 1 example of fine bone cluster; layer can be open with 30–40% voids (mainly complex packing voids & small chambers); *Pedofeatures*: *Depletion*: area of fine ash accumulation on pot showing possible depletion; *Fabric*: occasional thin (<0.5 mm) & broad (4 mm) burrows; *Excrements*: v. abundant thin (30–200 μm) organo-mineral excrements.	1840, Period 5a–b Building 11 Uppermost layer: Layer of yellowish part-weathered & part-burned amorphous often calcitic ashy material, with some cess?/pig dung mixture merging with fine to coarse charcoal-rich layer (includes monocotyledonous charcoal), that shows burrowing & working by small mesofauna, with one ash layer showing possible $CaCO_3$ depletion. *In situ burning of sill beam & underlying now part (wood rot stained?) weathered/part ashed dung, the surface of which underwent a biological working & weathering episode before structure collapsed/burned daub 'fill'?*
Microfacies 7b (SMT 4)		SMT 7b – homogeneous (with extremely diverse mixed inclusions); *structure*: massive & compact, 15% voids, fine vughs mainly; *Coarse Mineral*: as M51, with dominance of *Coarse Organic/Anthropogenic*: v. abundant upper subsoil (Eb) & subsoil (Bt/Ct) horizon material, many showing rubefication; a coarse (5 mm) size fragment of textural feature-rich silty clay – from puddled brickearth ground; v. abundant part-weathered ash spreads & matrix material – with occasional phytoliths; many mainly fine wood charcoal with monocot./straw (lengths & sections) charcoal; coarse sand to gravel size flint, burned flint; occasional shell & burned shell; occasional enigmatic part ashed yellowish amorphous material containing some articulated phytolith sheets (could be burned pig dung or stabling waste)(also forms major component of ashy layer towards surface); occasional highly burned 'soil' with some vitrified fragments, burned fine bone & bone; rare mortar/plaster and burned mortar/plaster; traces of monocotyledonous charcoal, eggshell & burned eggshell; *Fine fabric*: SMT 4: very dotted dark greyish brown (PPL), moderate interference colours (close porphyric, crystallitic b-fabric, XPL), greyish with many black specks (OIL); v. abundant fine charcoal & charred organic matter; humic stained, with v. abundant fine ash crystals with few coarse ash & many patches of micritic 'ash', occasional phytoliths. BD: 12.9% LOI, 8.74 mg g^{-1} phosphate-P, 208 x 10^{-8} SI χ, 7.76% χ_{conv}	Compact ash-rich deposit containing numerous charcoal, burned flint & brickearth, frag. of puddled ground & many burned bone, mortar & instances of strongly burned soil; shell & burned eggshell, & enigmatic burned pig/other dung? present. *(Part weathered) hearth rake out & trample containing fine charred organics, including likely amorphous dung & burned food waste, that has become highly compacted by the sill beam.*

Table 18. Continued

Microfacies	*Sample Number*	*Sampling depth, Soil Micromorphology (SM)*	*Context, Phase, Interpretation & Comments*
Microfacies 11 (SMT 6)	M22A	0–20 mm SM: as below but with coarse (20 mm) shell, charred wood (8 mm) & fragmenting mortar, gravel & bone (10 mm) & fine burned bone. 20–50 mm SM: as below, with higher amounts of building debris – many coarse (9 mm) frags mortar with coarse temper of burned brick/tile; BD: 10.7% LOI, 6.80 mg g^{-1} phosphate-P, 362 x 10^{-8} SI χ, 31.5% χ_{conv}	1829, Period 7 Building 16 Similar to below, but less biologically worked. *Compacted dumps.* 1830 Moderately compact but moderately biologically worked fine charcoal-rich 'soil' & v. abundant often burned food waste, latrine waste/butchery waste, building debris (mortar, plaster, brickearth clay).
Microfacies 11-12		50–75 mm SM: heterogeneous as below, with v. abundant charcoal, bone (often stained), burned shell, shell, eggshell, burned eggshell, v. abundant patches & matrix of fine charcoal-rich SMT 6; many frags plaster/ mortar, Eb horizon (clay floor frags), & examples of pot & wood/bark; *Pedofeatures*: *Amorphous*: abundant iron staining & likely Fe-P; *Fabric*: partial homogenisation with abundant thin to moderately thin (200–500 μm) burrows; *Excrements*: occasional thin organo-mineral excrements	*Waste disposal from hearth rakeout/beaten floor deposits, food & latrine waste, possible fine butchery? waste, & included ubiquitous building debris – some possibly from* in situ *building decay. Midden-like area underwent semi-continual biological activity & weathering.*
Microfacies 12 (and 10)	M22B	75–120 mm SM: heterogeneous; *Structure*: massive with layer traces; traces of yellowish thin semi-continuous 3–4 mm thick ash & charcoal 'surfaces' at 80 mm & 90 mm; with humic & brickearth Eb soil & anthropogenic-rich debris material rich in stained bone; compact as SMT 9a; many thin iron & ?phosphate stained pans; occasional blue light probable autofluorescent Ca phosphate	1831 upper, Period 7 Building 16 *Series of beaten floors (containing much charred food waste, probable liquid latrine waste & burned debris/hearth rake out) & thin slightly weathered ash & charcoal spreads?/surfaces?.*
Microfacies 11 (SMT 6)	M22B	105–120 mm SM: heterogeneous; *Structure*: massive with poor layering upwards; 20–30% voids, channels and fine chambers: 100–120 mm: *Coarse Organic/Anthropogenic*: v. abundant bone (max. 10 mm), burned bone, much stained coprolitic? bone, charcoal & building debris, with rare to occasional shell, eggshell, cess?, fine charcoal-rich matrix SMT 6: v. dusty black (PPL), isotic with scatter of high interference colours (close porphyric, crystallitic b-fabric, XPL), black (OIL), v. abundant charred & amorphous organic matter, occasional phytoliths & articulated phytoliths & ash crystals present; many broad burrows & organo-mineral excrements. BD: 5.73% LOI, 8.28 mg g^{-1} phosphate-P, 73.3 x 10^{-8} SI χ, 4.99% χ_{conv}	1831 lower, Period 7 Building 16 *Dump of charcoal & food waste, including bone, eggshell, shell; with possibility of cess; biologically worked*
Microfacies 10	M22B	120–140 mm SM: heterogeneous; *Structure*: massive with layers (2–8 mm thick); *Coarse Organic/Anthropogenic*: mortar floor composed of poorly sorted gravel to coarse sand-size brick/tile flint, burned flint & quartz, set in matrix of (fragmented, channelled & cracked) yellowish grey micritic material, with many fine organic inclusions, also tempered with medium rounded sand grains (C:F ratio = 60:40); intercalated with a) 1 mm thick 'soil' layer featuring several long (10 mm) shell frags, humic micritic sandy loam soil (broadly as SMT 5), a 2–4 mm thick layer of brickearth (Eb horizon material), & a top layer of 4+ mm thick mortar/plaster – as below, but with once likely inclusion of gravel-size brick (max. 20 mm) & v. abundant *depletion* features & staining and moderately broad (1–2 mm) burrowing (patches of v. abundant thin organo-mineral excrements	1832, Period 7 Building 16 *Series of mortar floors, occupation trample, brickearth floor & mortar resurfacing; weathering effects increase upwards*

Soil Micromorphology, Chemistry and Magnetic Susceptibility

by Richard I. Macphail and John Crowther

Five locations and monolith samples were selected to aid the investigation of late prehistoric/pre-Flavian to late 2nd century/early 3rd century Roman Fenchurch Street. Eight thin sections and six bulk samples were analysed, using soil micromorphology, and chemistry and magnetic susceptibility, respectively (Tables 16–18). One major finding is that the Roman road occurs over a natural soil (Open Area 1) that seems to have been cultivated and possibly lightly manured. The soil was vegetated up until it was sealed by pre-Flavian dumping (that included cess) ahead of road construction (Fig. 60). This use and the putative ploughmarks noted in thin section, however, may date to the Iron Age – as suggested by local artefact recovery. Equally, turf deposits may also record a history of Iron Age stock management (Open Area 1). A Period 2 open area (Open Area 2) deposit seems simply to be the result of ground raising/surfacing using brickearth subsoil, with iron staining of relict sedimentary bedding. A complex sequence of deposits from Period 5 was elucidated from Building 11. Previous hearth debris deposits were compacted by a sillbeam that had been laid down on a layered ash (Figs 62–6). This sillbeam was burned *in situ* during the destruction of this building, but a short period of weathering ensued before the burned brickearth daub walls were demolished, presumably to level the site. The site developed into an open-air midden for a

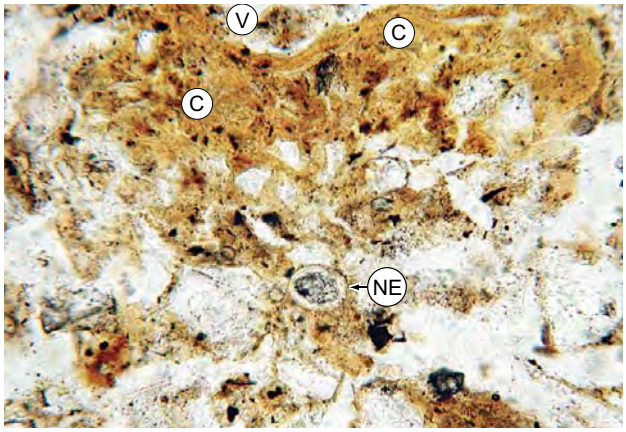

Figure 60 Photomicrograph; M51A; detail of junction between contexts 1978 and 1979, Period 1 Open Area 1; inwash down void (V) of cess (C) composed of amorphous organic matter and iron and phosphate, and including probable nematode eggs (NE). PPL, frame width is ~600 µm

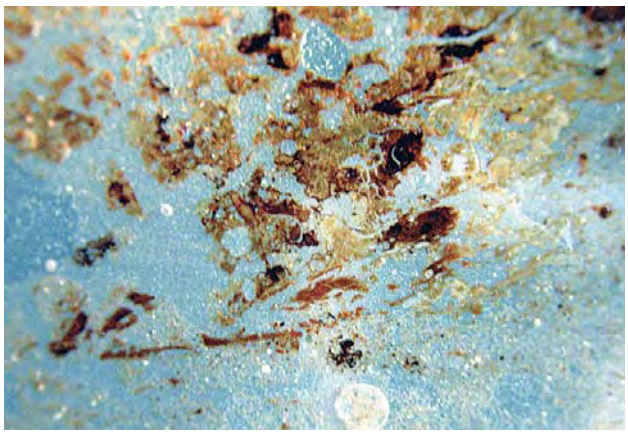

Figure 61 Photomicrograph; M112; thin layer of amorphous organic matter – plant fragments and dung traces? on the surface of Eb horizon soil (context 3969, Period 3 Building 4). OIL, frame width is ~4.2 mm

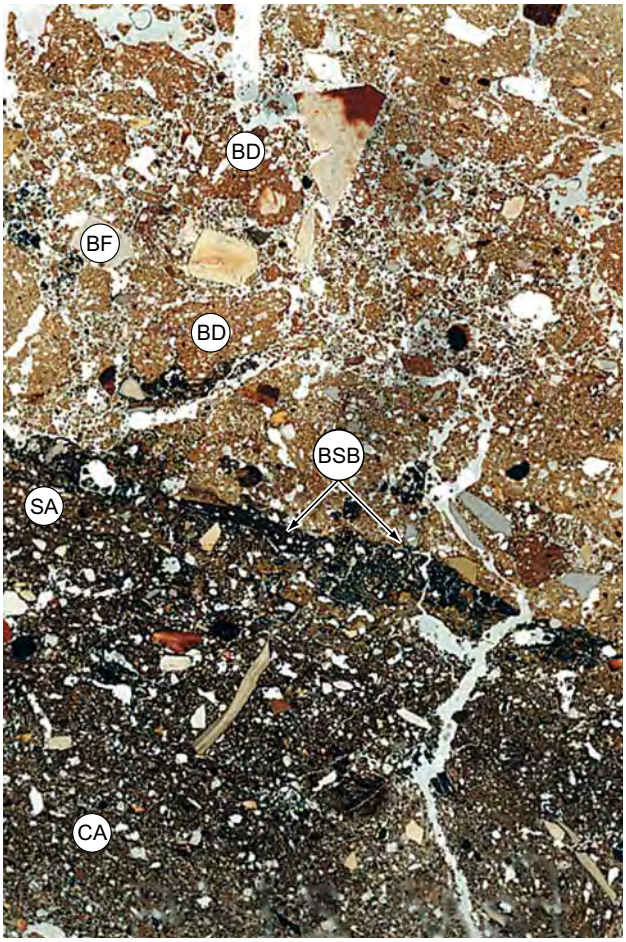

Figure 62 Scan of thin section M21B, showing compacted ashy (CA) context 1840, Period 5 Building 11, the stained ash (SA) below the burned sillbeam (BSB), and overlying 1839 that is characterised by burned daub (BD) and burned flint (BF). Width is ~50 mm

while before re-use of this space. During Period 7, Building 16 also had a complicated history of use and likely changing status. It appears that the mortar/opus signinum floor was probably renewed during the first phase of the building use (Figs 67–8), but then this space was abandoned to middening. Later this biologically worked deposit was apparently 'sealed' by a thin ash layer and a series of beaten floor deposits accumulated (Fig. 69). The building then again reverted to a site for waste disposal. The occupation deposits at both Buildings 11 and 16 are all domestic in character, and arise from hearth rake out and spread/dumps of kitchen and general 'latrine' waste. The full report is available in archive.

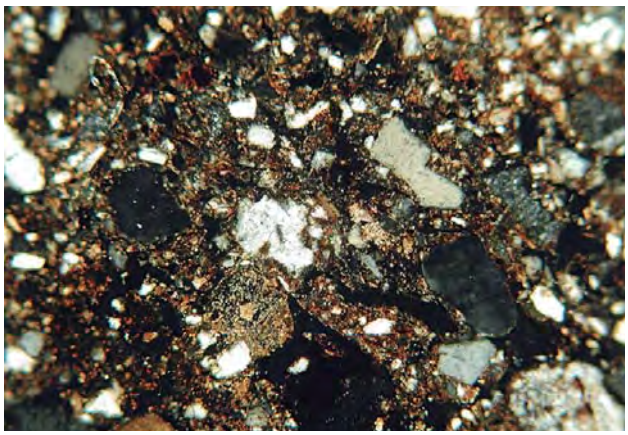

Figure 63 Photomicrograph; M21B; context 1840, Period 5 Building 11: detail of compacted ash deposits. XPL, frame width is ~1.5 mm

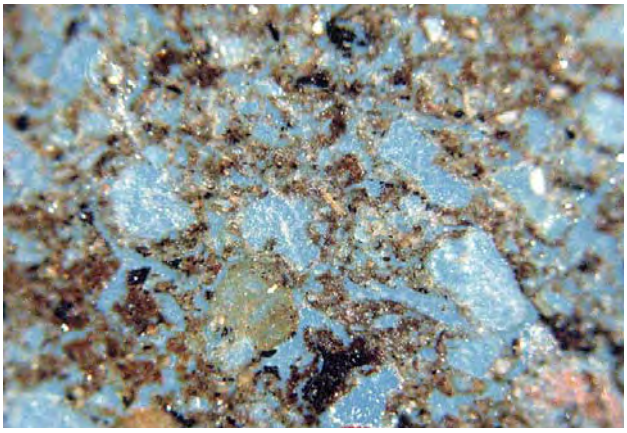

Figure 64 as Fig. 62, OIL, showing charcoal and fine charred organic matter and some rubefied (burned) mineral material

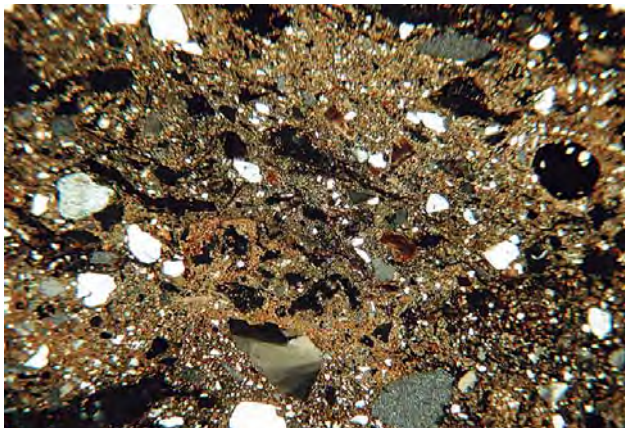

Figure 65 as Fig. 62, uppermost 1840, compacted and slightly (wood rot?) stained layered ash under burned sillbeam. XPL, frame width is ~5.5 mm

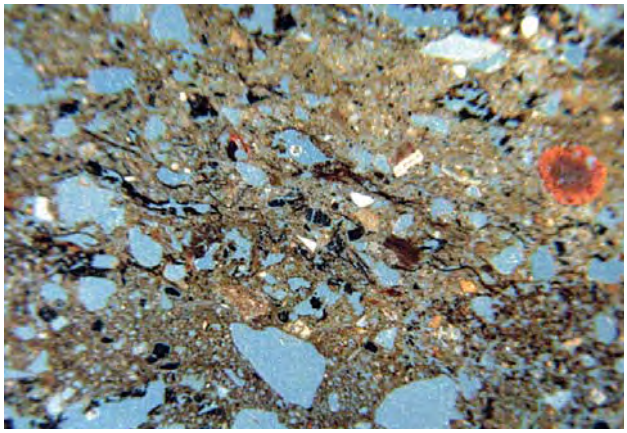

Figure 66 as Fig. 62, OIL, showing inclusion of charcoal and burned mineral material

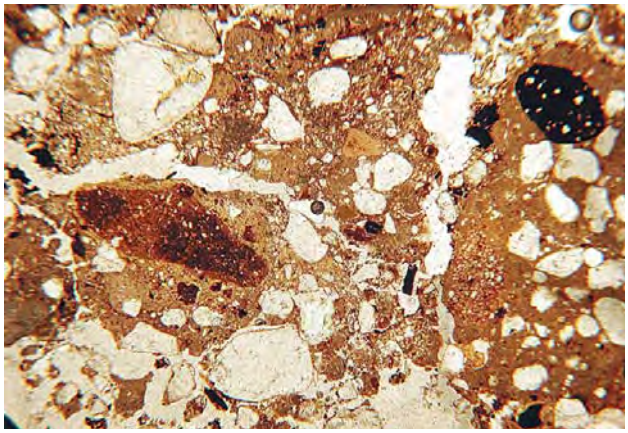

*Figure 67 Photomicrograph M22B, context 1832, Period 7 Building 16; lime-based mortar/*opus signinum *tempered with sand, and gravel-size quartz, flint and ironstone. PPL, frame width is ~5.5 mm*

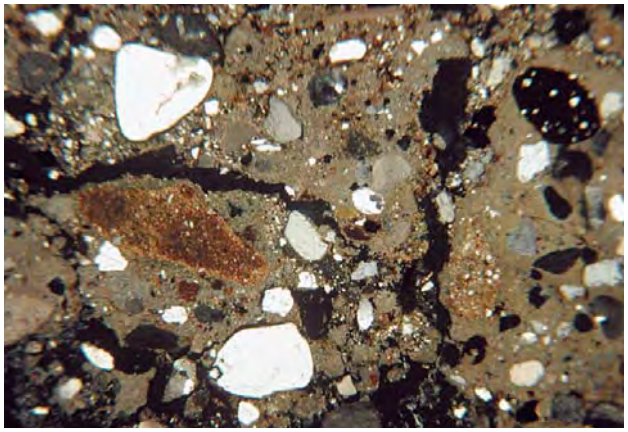

Figure 68 as Fig. 67, XPL, showing poorly sorted sands and gravel set in a micritic lime-based matrix

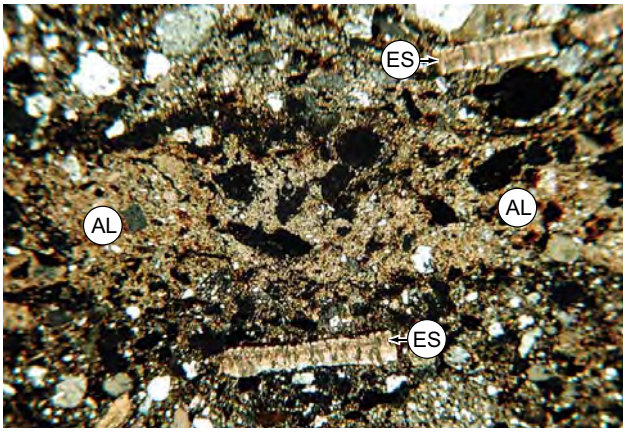

Figure 69 Photomicrograph M22B, context 1831, Period 7 Building 16; a series of trampled beaten floor surfaces including slightly weathered (yellowish) ash layers (AL) and evidence of food preparation – burned eggshells (ES). XPL, frame width is ~5.5 mm

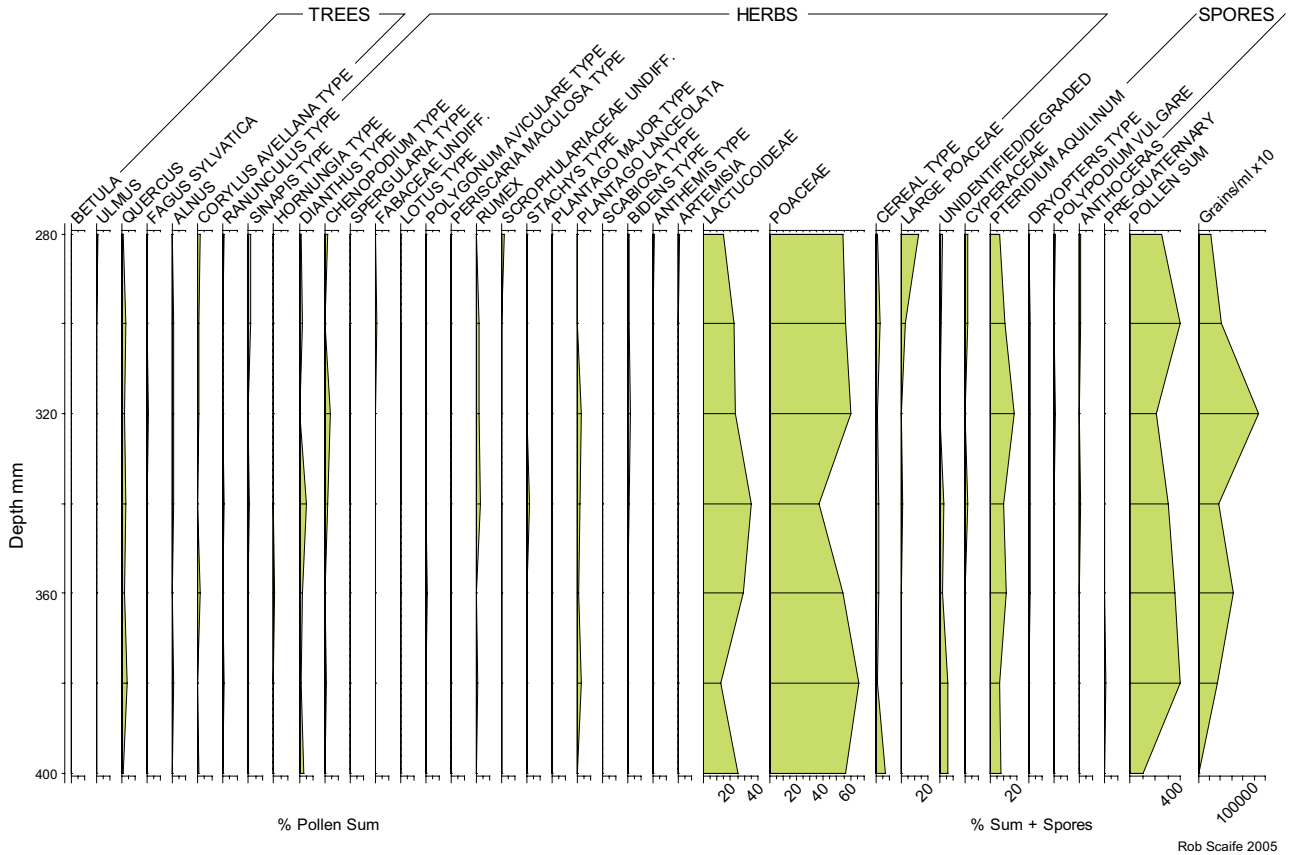

Figure 70 Pollen sequence spanning the upper levels of a truncated soil underlying the Road 1 dated to the late 1st century AD

Pollen Analysis

by Robert G. Scaife

An assessment of pollen content and potential for environmental reconstruction of this site was carried out in 2003. This demonstrated that sub-fossil pollen was present in two of the five stratigraphical sequences examined. These comprised profiles (monoliths) 112 and 51, both from soils which were sealed, and relate to the sub-road soil profile. The former was sealed by upcast from a Period 2 boundary bank and the latter exposed within a Roman pit cut through the earlier Roman Road (Fig. 6). Both soil profiles are developed in brickearth and have clear evidence of burning in their upper levels. Charred micro-plant debris is much evident in these horizons. Because of the pollen preservation, albeit poor, in these palaeosols it was anticipated that a fuller analysis would provide information on these Iron Age- or early Roman soils and the on- and near site environment which existed prior to Roman activities. Although there are now a substantial amount of pollen data pertaining to London's long term (Holocene) vegetation history, there are few period specific studies and especially to the important first major developments of the City during the Roman period.

Methods

Sub-samples of 2–5 ml volume were prepared using standard techniques for the extraction of the sub-fossil pollen and spores (Moore and Webb 1978; Moore *et al.* 1991). Absolute pollen frequencies were calculated using added exotics to known volumes of sample (Stockmarr 1971). Pollen was identified and counted using an Olympus biological research microscope fitted with Leitz optics. A pollen assessment sum of 400 grains per sample (where possible) was identified and counted. For the assessment a pollen sum of 100–150 grains per level plus extant spores was counted for each level. Pollen of trees, shrubs, and herbs have been calculated as a percentage of total pollen (the pollen sum). Pollen of marsh taxa (sedges) have been calculated as a percentage of the pollen sum + the marsh herb taxa. Spores of ferns have similarly been calculated in the same fashion with spores as a percentage of the pollen sum plus spores at each level. The diagram has been prepared using Tilia and Tilia Graph. Taxonomy in general follows that of Moore and Webb (1978), Moore *et al.* (1991) modified according to Bennett *et al.* (1994) for pollen types and Stace (1992) for plant descriptions. These procedures were carried out in the Palaeoecology Laboratory of the Department of Geography, University of Southampton.

The pollen data

The two soil pollen profiles, sections 51 and 112 (see Fig. 6), have been examined in detail and the results are characterised as follows.

Section 51

This pollen sequence spans the upper levels of a truncated soil underlying the road dated to the late 1st century AD. As with section 112 (see below), there is a distinct horizon in which burning or charring of the surface plant material has occurred. Absolute pollen numbers were small and preservation poor. This is also indicated by the differential preservation in favour of taxa with robust grains (especially Lactucoideae; dandelion types).

The pollen spectra (Fig. 70) are dominated by herbs with only very small numbers of trees and shrubs present. Where the latter occur these are sporadic occurrences of *Betula* (birch), *Ulmus* (elm), *Quercus* (oak), *Alnus* (alder), and *Corylus avellana* type (hazel). A single grain of *Fagus sylvatica* (beech) may have been the only local tree, with the other taxa probably of more regional origin (all being anemophilous and copious pollen producers). The herb assemblages are dominated by Poaceae (grasses to 65%) with Lactucoideae (dandelion types to 38%). In addition, however, there is also a moderately diverse range of other taxa which include weeds characteristic of waste ground and agriculture as well as grassland (?pasture elements). The former may include cereal pollen, Chenopodiaceae (goosefoots and oraches), *Sinapis* type (charlocks), *Spergula* type (spurrey), *Polygonum aviculare* (black bindweed), and *Plantago major* (greater plantain). Bracken (*Pteridium aquilinum*) is also present. Grass (Poaceae) is, however, dominant and along with *Plantago lanceolata* is diagnostic of local on-site grassland. It is interesting to note that the upper (burnt/charred) levels contain 'large' Poaceae (>45 μm) which may derive from a small number of wild taxa of which *Glyceria fluitans* is most likely. This is a wetland grass taxon, and presence of some Cyperaceae (sedges) may indicate on- or near site wet ground, possibly within the adjacent road ditch (see also Stevens, above).

The pollen assemblage clearly suggests that the local/on site environment at the time of this soil formation was one of open grassland. Occasional cereal pollen grains may imply some arable cultivation within the region, although an alternative possibility would be the dissemination of cereal pollen liberated during crop processing activities (threshing and winnowing). The high values of bracken spores may indicate some local waste ground. A small number of wetland types may indicate that the adjacent road ditch was wet. The very small numbers of tree pollen

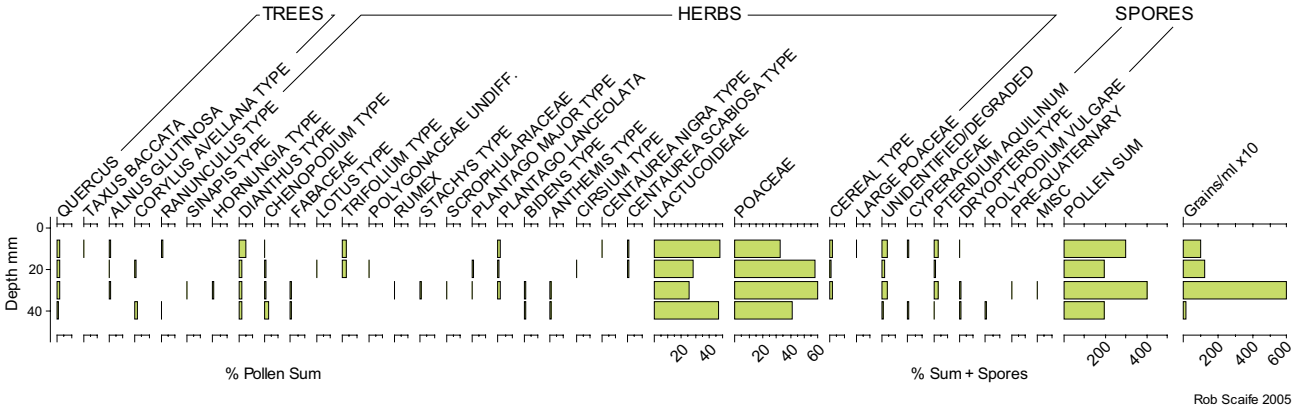

Figure 71 Pollen sequence of the uppermost levels of the palaeosol turfline which is sealed by spoil from construction of the Period 2 boundary ditch

suggest that the local habitat was devoid of woodland, although it is stressed that the pollen catchment of soils is generally restricted to the on-site and very local region (Dimbleby 1985). The tree assemblages are thus typical of the period in showing a background of oak and hazel with alder from wetter habitats.

Section 112

The four contiguous samples from this section span the uppermost levels of the palaeosol turfline which is sealed by spoil from construction of the Period 2 boundary ditch (Fig. 71). Absolute pollen frequencies were small and, as with section 51, contained charred monocotyledonous debris (probably grass). The pollen assemblages are broadly similar to section 51 (see above) being dominated by Poaceae (to 60%) also with substantial numbers of Lactucoideae (to 38%). There is a range of other herb taxa occurring in small numbers, including pasture and disturbed ground types. The former may include *Ranunculus* (buttercups), *Trifolium* (clover), *Lotus* (bird's-foot trefoil), ribwort plantain, *Dianthus* type (pinks), and *Centaurea* spp. (knapweeds). As with profile 51, some cereal pollen is present in small numbers. There are few trees and shrubs, and where they do occur they are sporadic or individual occurrences of oak, alder, and hazel. There is a possible record of *Taxus baccata* (yew). Small numbers of Cyperaceae are the only wet habitat plant present.

The habitat(s) suggested by profile 112 is largely similar to that for section 51. Grassland (pasture) was clearly the dominant on-site vegetation as indicated by the high values of Poaceae and Lactucoideae pollen. The latter is, however, over-represented due to the poor pollen preserving conditions and the robustness of this pollen type. Small numbers of cereal pollen indicate some local cultivation or possibly cereal crop processing. As with profile 51, trees and shrubs are few, with only a representation of the background woodland of this period consisting of oak and hazel and alder from wetter habitats such as the River Thames floodplain.

Discussion

Pollen analysis of these two soil profiles has produced some useful information on the environment which existed prior to construction of the road and other Roman activities. Importantly, because of the nature (taphonomy) of pollen, the data obtained pertains only to the on- and near site vegetation/environment (Dimbleby 1985) and generally not to the broader region as a whole. Examination of wetland (peat) sites is more suited to the latter, and published data are available for central London (Greig 1992; Sidell *et al.* 2000; Scaife 1982; 1988; Scaife in Wilkinson *et al.* 2000; Scaife in Sidell *et al.* 2000; Scaife in Crocket *et al.* 2002; Thomas and Rackham 1996). In spite of this local representation the picture of the vegetation obtained from 60–63 Fenchurch Street fits within the general framework established for London's changing environment. It is clear that by the late-prehistoric period (Middle–Late Bronze Age) most woodland (lime) had been cleared for agriculture. Remaining woodland existed on the wetter Thames floodplain and consisted of alder and willow. Comparable pollen data from the City of London come from No.1 Poultry (Scaife 2001; and in Rowsome 2008), Spitalfields (Scaife 2003), and from south of the Thames at Southwark (Scaife 1982; 1988). Here, more continuous and temporally longer pollen records from wetland areas have demonstrated that woodland had been removed by this period and only scrub remained in some areas. Tree and shrub pollen recorded at all sites of this period comprise small but continuous record of primarily oak and hazel with occasional birch and sporadic records of other trees,

including lime (*Tilia cordata*), ash (*Fraxinus excelsior*) and, in later periods, introduced walnut (*Juglans regia*; Scaife 2000). These data represent the background woodland of the region as a whole and are present by virtue of their wind-borne pollen and thus longer distance transport. The more sporadic types noted, and seen here with beech and possibly yew, may relate to single or smaller numbers of trees at the local level. The continuous but small numbers of oak, hazel and alder are thus comparable and are diagnostic/typical.

The pollen data from 60–63 Fenchurch Street clearly show a habitat which had been dominated by grassland for a possibly substantial time. If the soil profile was of the late prehistoric (as opposed to the Iron Age/Roman) period, some residual pollen of robust pollen (esp. *Tilia* (Lime)) might be expected in the lower levels (sub-soil) of profile 51. This is not the case, and it is suggested that there had been a long-term accretion of pollen into this soil under a grassland/pasture. It is this long term accretion of pollen that has resulted in the substantial content of differentially preserved dandelion type pollen. Although the site and its immediate vicinity were dominated by grassland, small quantities of cereal pollen may indicate some local arable activity. This is especially the case since representative taxa are much less represented in pollen spectra/assemblages, and it may be conjectured that there were arable fields within the proximity. It should, however, be considered that crop processing (especially threshing and winnowing) may liberate pollen and if this was taking place nearby, could easily contribute to the pollen spectra.

As noted, both pollen sequences have scorched or charred plant material in the upper part of the soil. This appears to be monocotyledonous and probably the on-site grassland which caught fire or was burnt. Whether this event is linked with the Boudican sacking is conjectural and must be correlated archaeologically (see above, Period 2 Open Area 3).

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Excavations in advance of redevelopment for a prestigious office building in the east of the City revealed 10 broad phases of activity, ranging between the pre-Roman and post-medieval periods, with a focus on the 1st and 2nd centuries AD.

Roman Fenchurch Street follows the line of earlier ditches. For the first time, the entire width of the Roman road has been exposed, permitting adjustment of its course in the street plan of *Londinium*. Iron pipe collars demonstrate water management along the street and to the rear of the 2 plots identified on site. The 17 Roman buildings (later 1st–3rd century AD) show mixed domestic and commercial/industrial uses, including metalworking and butchery.

Although disturbed by modern buildings, later Roman finds recovered from medieval and post-medieval pits indicate continuity of activity, but there is a genuine lack of Saxon occupation. A peculiar deposition of animal bone in a medieval pit may provide evidence for ritual/magic practices.

Comparison with the adjacent site of Lloyd's Register demonstrates the considerable differences that can occur in the occupation history of two adjacent sites. The volume includes reports on the finds and environmental assemblages.

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