A Roman Town House and Market Hall at Blue Boar Lane, Leicester: Excavations by J. S. Wacher, 1958

by
Nicholas J. Cooper and John S. Wacher

With contributions from

Robert Abbott, Kathy Ashley, Justine Bayley, Richard Buckley, M.D. Card, Hilary Cool, Leslie Cram, Brenda M. Dickinson, John Evans, Alex Gibson, John Gower, Brian R. Hartley, Kay .F. Hartley, Martin Henig, Janet Huskinson, Roger Kipling, Irena Lentowicz, Roger Ling, Donald Mackreth, Elizabeth MacRobert, Graham C. Morgan, David S. Neal, Jennifer Price, Paul Sealey, Georgina Shaw, Richard P. Wright

Editors: Roger Kipling and Richard Buckley

Editorial Note: the following report text was written and edited by Nicholas J. Cooper in 1989 and so the specialist texts do not therefore incorporate research underaken since. The original paper files were digitised and re-compiled by Roger Kipling in 2007. The account of the site itself has benefitted from the addition of a revised introduction and enhanced discussion sections written by Richard Buckley in 2007, and improvements to the site plans and matrices. For the latest interpretation of the site please refer to published synthetic volume accompanying the overarching Highcross Leicester project: *Life in Roman and medieval Leicester* (Buckley, Cooper and Morris 2021).
NJC May 2021

Excavations at Blue Boar Lane, Leicester 1958

Nicholas J. Cooper and John S. Wacher

CONTENTS

FIGURES

1: Introduction

Circumstances of the project

The 1958 Blue Boar Lane excavation was one of a series of rescue investigations undertaken during the late 1950s and early 1960s by Leicester Museums in advance of the proposed construction of the inner city ring road. Funding was provided by the City and the Ministry of Works, and the three-month excavation was directed by John Wacher (1959, 113, n. 57). Excavation methodology consisted of the opening of a series of small trenches laid out on the box-grid system devised by Mortimer Wheeler and excavated using a voluntary labour force.

Site location, geology and topography (Figure 2)

The site is located between Vaughan Way (Southgates Underpass) and Highcross Street, approximately 100m to the north of St Nicholas Place at a level of about 63.1m OD. The geology comprises drift deposits of Soar river terrace gravels over the solid Mercia Mudstone. A substantial depth (*c.* 3.5-4.0m) of made ground of both archaeological and more recent origin lie over these natural deposits in this part of the city.

Archaeological and historical background

Initial urban occupation in Leicester can be dated to the late 1st century BC, consisting of Iron Age settlement occupying an area of *c.*10ha on the east bank of the river Soar. After the Conquest, there is limited evidence to suggest that a small fortlet was established to control the crossing point of the river near the present West Bridge (Clay and Pollard 1994, 46). Evidence for timber buildings of the pre-Flavian period has been encountered, with the suggestion, on the basis of uniformity of alignment, that they have more in common with buildings within a fort than with a native settlement or *vicus*. Timber buildings later in the 1st century are on a different alignment, and are considered to represent the first Roman town, expanding to the east from the river, with the presence of wall plaster and *opus signinum* suggesting the gradual adoption of Roman tastes. Ditches from the Little Lane excavation (Lucas and Buckley 2007) perhaps point to field systems beyond the settled area.

In the early 2nd century, the street grid appears to have been formalised, if not entirely laid out, and at the same time, Ratae was probably established as a civitas capital. Timber buildings of this period are aligned on the street grid, and have been found beneath the northern and eastern defences, pointing to the rapid expansion of settlement (Buckley and Lucas 1987). In the middle and later years of the 2nd century, a major programme of public and private building was undertaken. This included the construction of the forum and basilica complex, the Jewry Wall public baths, at least one temple and a variety of domestic, commercial and industrial premises (Clay and Mellor 1985; Clay and Pollard 1994). On most Roman sites in the town, masonry buildings begin to appear in this period, some perhaps commercial and domestic properties whilst others might be described as palatial town houses.

To the south of the site under consideration was the forum, constructed *c*. AD 120-130 (Hebditch and Mellor 1973). This was essentially a large open square, enclosed on three sides by shops with internal and external colonnaded porticoes and on the north side by the basilica, a large aisled building with external porticoes on the north, west and east sides. Although its prime function was as a market place, the forum would also been used as a central place for public assembly whilst the basilica served as the administrative centre of Roman Leicester, where the town council met and justice was dispensed. As finally constructed, the Forum measured some 131.98m x 90.83m. The large columns used in the structure were made of millstone grit, spaced *c.*3.3m apart and resting on large stylobate blocks. Many millstone grit columns have been found in the vicinity, which may have originated from the forum and basilica. Immediately opposite the site under consideration here, was the northern portico of the east end of the basilica.

In the late 2nd or early 3rd century, the town was defended with a rampart and ditch, a wall perhaps being added later in the 3rd century (Buckley and Lucas 1987). There is some evidence for suburban occupation outside the walls, to the north (Northgates: Buckley 1987; Sanvey Gate: Finn 1993) and south (Bonners Lane: Finn 1994), comprising both timber and substantial masonry buildings. To the west, across the river, excavations at Great Holme Street have suggested the existence of an industrial suburb, with evidence of pottery kilns and an abattoir (Lucas forthcoming). Further still to the west, was the Norfolk Street Roman Villa of the 2nd – 4th centuries, overlooking the town from an elevated position about a quarter of a mile away. Cemeteries surrounded the town, as indicated by a number of excavations, the most recent of which include Newarke Street (Cooper 1996 and Derrick 2009) and Clarence Street (Gardner 2005).

The Blue Boar Lane excavation 1958

The excavation was undertaken over a period of approximately three months in 1958 under the direction of John Wacher, using voluntary labour, with funding provided by the Ministry of Public Buildings and Works and Leicester Corporation. Although an interim report of the results of the excavations appeared in the late 1950s in the *Journal of Roman Studies* (Wacher 1959, 113-115), followed by a summary in *The Towns of Roman Britain* (Wacher 1975), full post-excavation analysis did not commence until the early 1980s, with funding from English Heritage. The initial detailed stratigraphical phasing was undertaken in 1983 by Elizabeth MacRobert (1983), and involved the construction of matrices from the section drawings. Subsequently, the author (NJC) wrote a draft report using these matrices in combination with the original site notebooks, plans, sections and photographic record. At this time, the specialist reports were also completed, but due to a lack of funding, it did not prove possible to compile the final archive report. In 2007, in response to a request from University of Leicester Archaeological Services, English Heritage agreed to provide limited funding in order to scan existing typescripts and to compile a basic excavation report in order that the results could be made more widely available to feed into the forthcoming Highcross Leicester volume – a report on major excavations in the city by ULAS 2003-2006. In order to bring this phase of work to fruition, additional funding was also forthcoming from ULAS.

Methods

The excavation was undertaken using the Wheeler box-grid method, in which areas were divided into a series of square or rectangular blocks separated by narrow baulks which remained in position for the duration of the work. In terms of recording, it was normal at this time to prepare detailed drawings of the baulk sections, with plans mostly limited to the major structural features. Each excavation block was allocated the area letter and trench number in Roman numerals, with the layer sequence commencing at 1. Hence layer numbers are quoted with the area/trench number prefix to provide a unique identifier.

Summary of results

The principal excavation phase sequence was as follows. A timber building was initially constructed during the Flavian period in association with a metalled surface, possibly representing the same early pre-forum surface observed on several other excavations within the centre of the Roman town. The structure was subsequently demolished and replaced during the early second century AD with a more substantial courtyard structure consisting of an unfired clay brick superstructure constructed on low masonry foundations. The building subsequently underwent structural alteration involving the insertion of tessellated floors in all its constituent rooms and the application of painted wall plaster to the inner wall of the corridor surrounding the courtyard. After a short period the building fell into decay and, by AD 180, the site had been cleared in preparation for construction of the south range of what is thought to be the macellum (market hall) during the late second or early third century. The macellum was finally abandoned and demolished in the fourth century.

Figure 1 Site location showing trenches overlaid on 1955 edition Ordnance Survey map

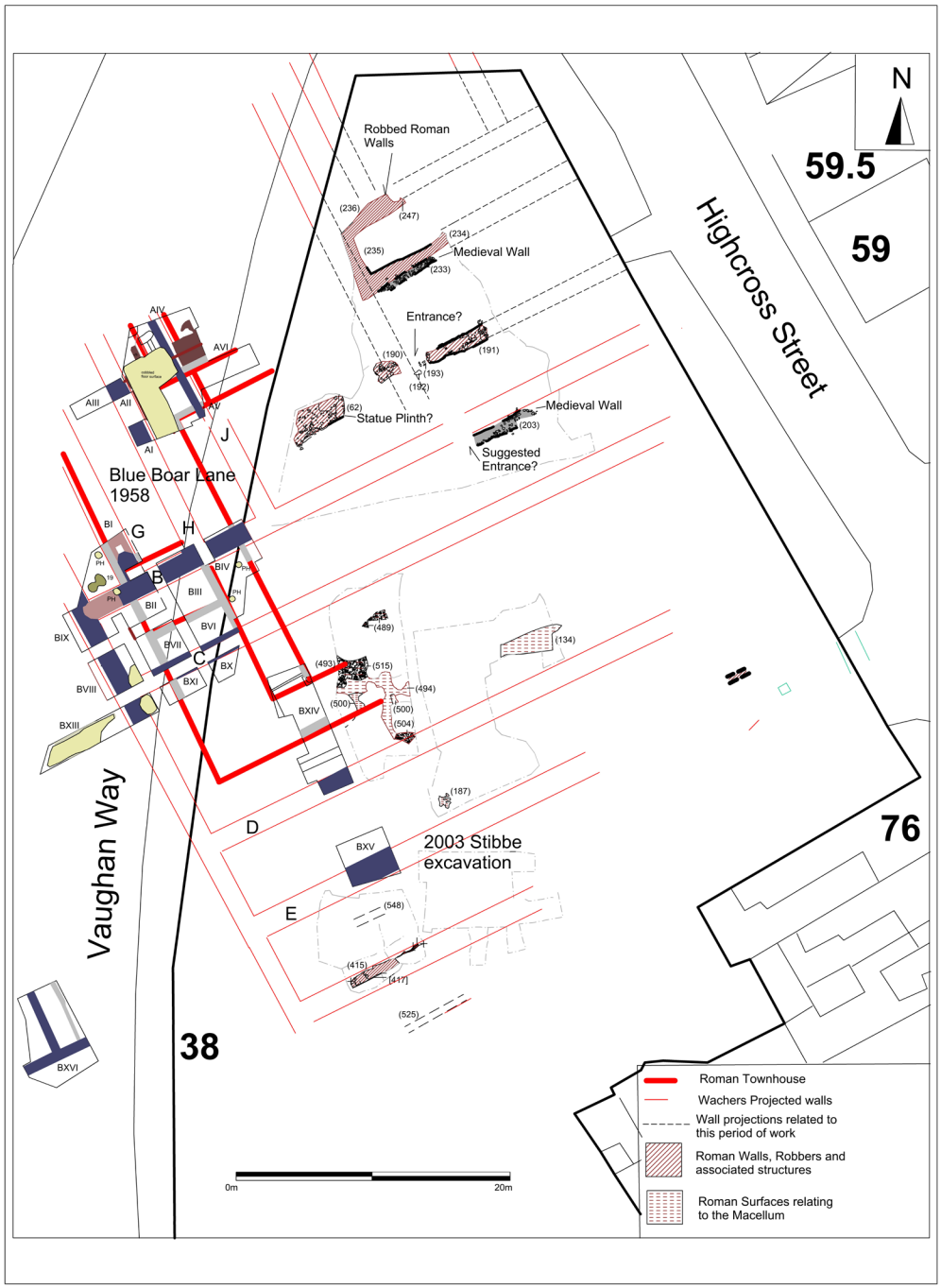


Figure 2 Site location showing 1958 excavations and areas investigated in 2003.
Additional key: thick blue lines denote medieval robber trenches of macellum walls 1958. 2003 evaluation on the site of the Travelodge (to the south and east, and wrongly labelled here as Stibbe). Thinner blue lines in BXVI denote masonry building (both robbed and extant) in Insula XV.

Figure 3 General view of Site B viewed west

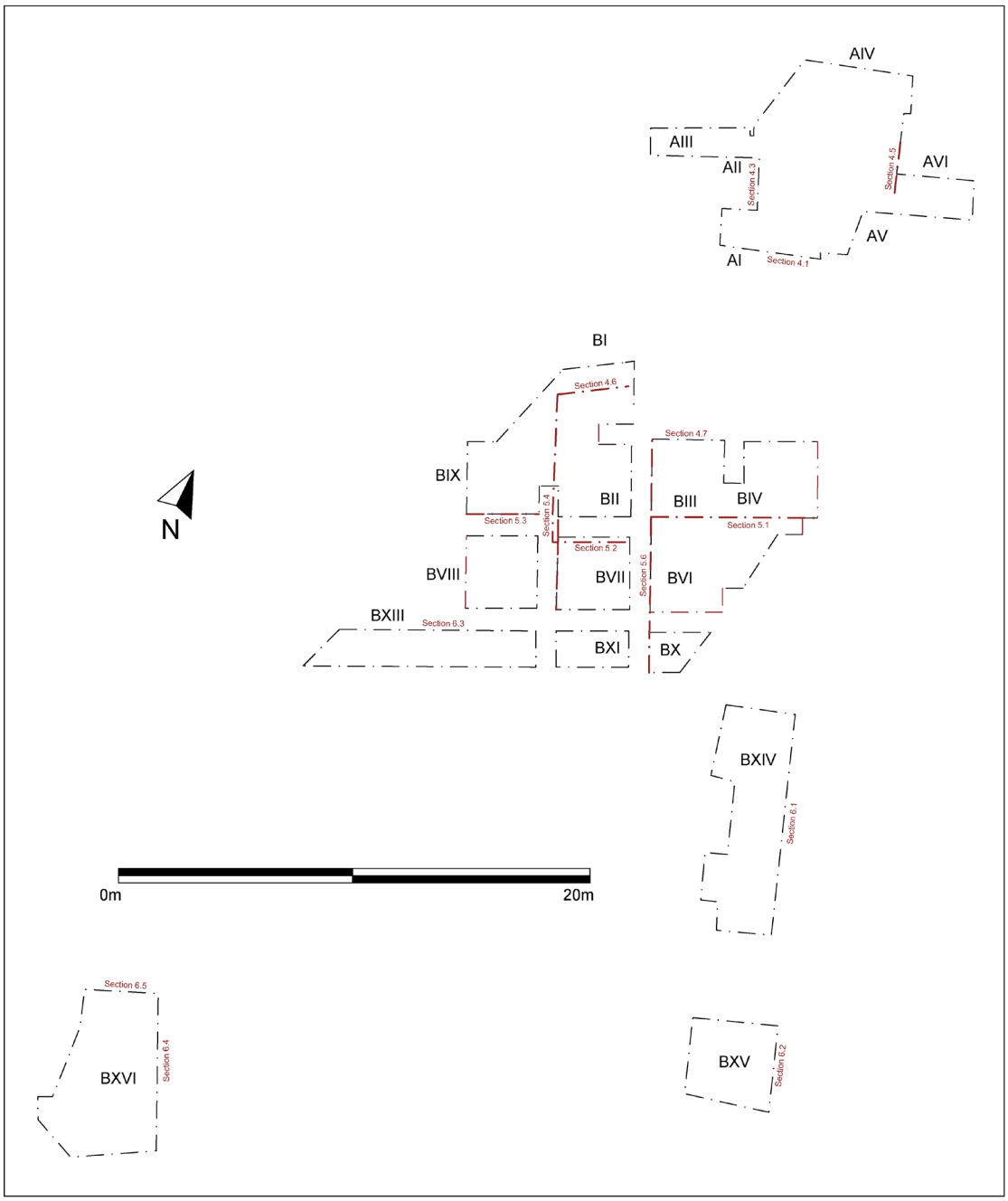


Figure 4: General site plan showing trench locations and section lines

Figure 5.1

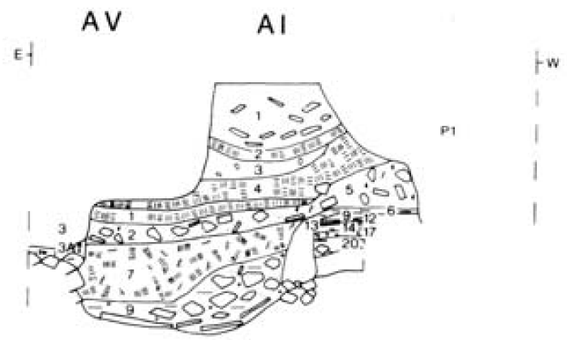


Figure 5.2

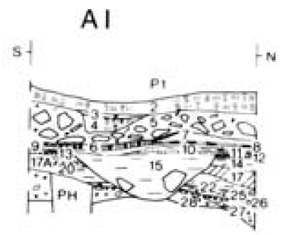


Figure 5.3

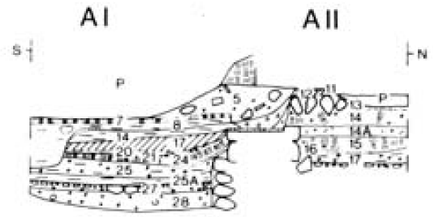
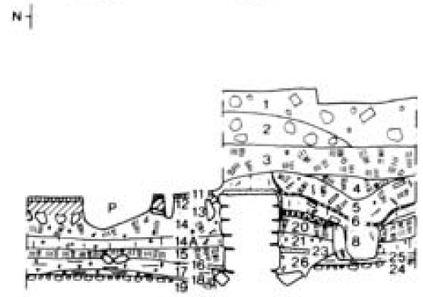


Figure 5.4



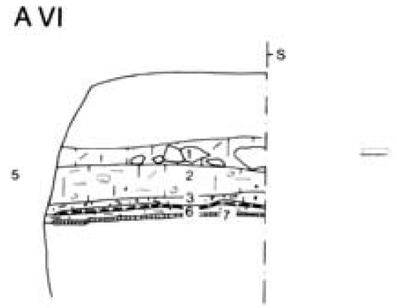


Figure 5.5

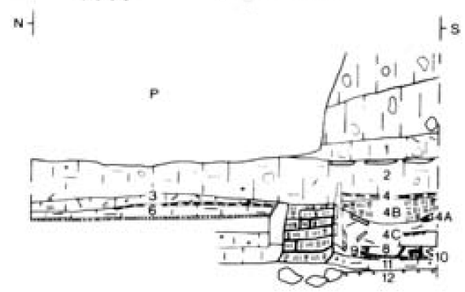


Figure 5.6

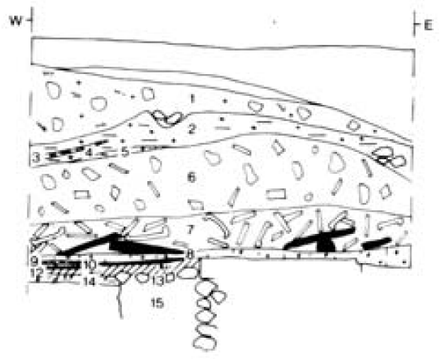


Figure 5.7

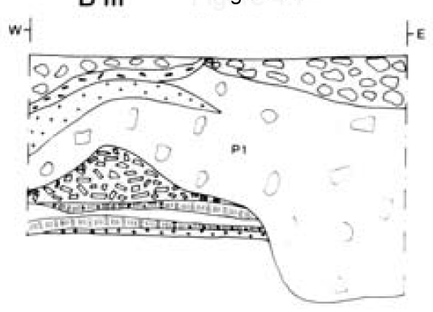


Figure 5 : Sections, Trenches AI – BIII

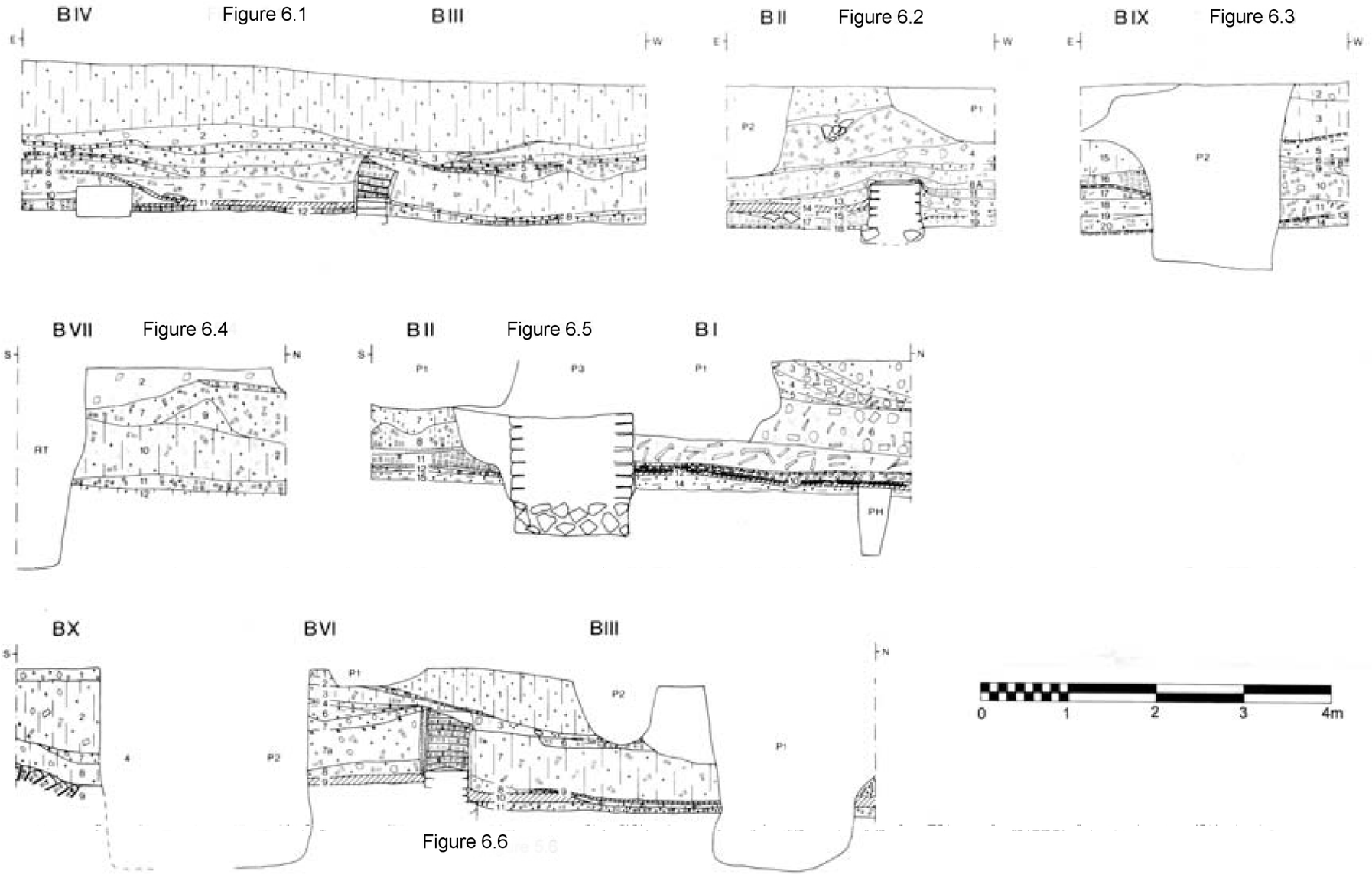


Figure 6.6

Figure 6 Sections, Trenches BI – BX

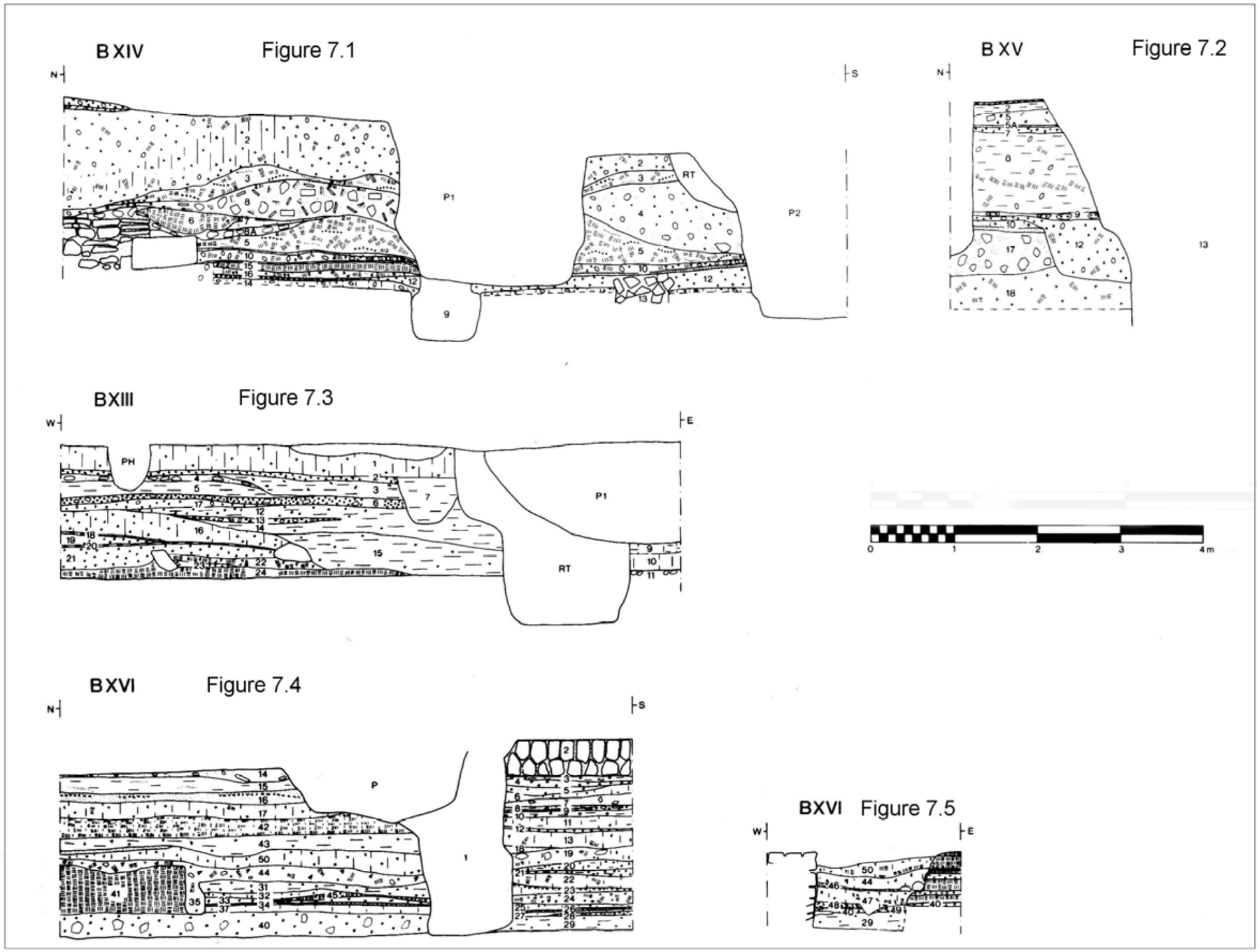


Figure 7 Sections, Trenches BIX – BXVI

THE EXCAVATIONS

Phase 1: The timber building and metalled surface (Figure 8; Figure 9; Figure 10)

The contexts associated with this phase appear to represent the earliest activity on the site, but since natural was only reached in a few areas, may best be viewed as pertaining to activity preceding the construction of the stone-founded courtyard house in the Hadrianic Period.

Activity was recorded in the following trenches:
A I, II, and VI
B I, XIII, XIV, XV and XVI

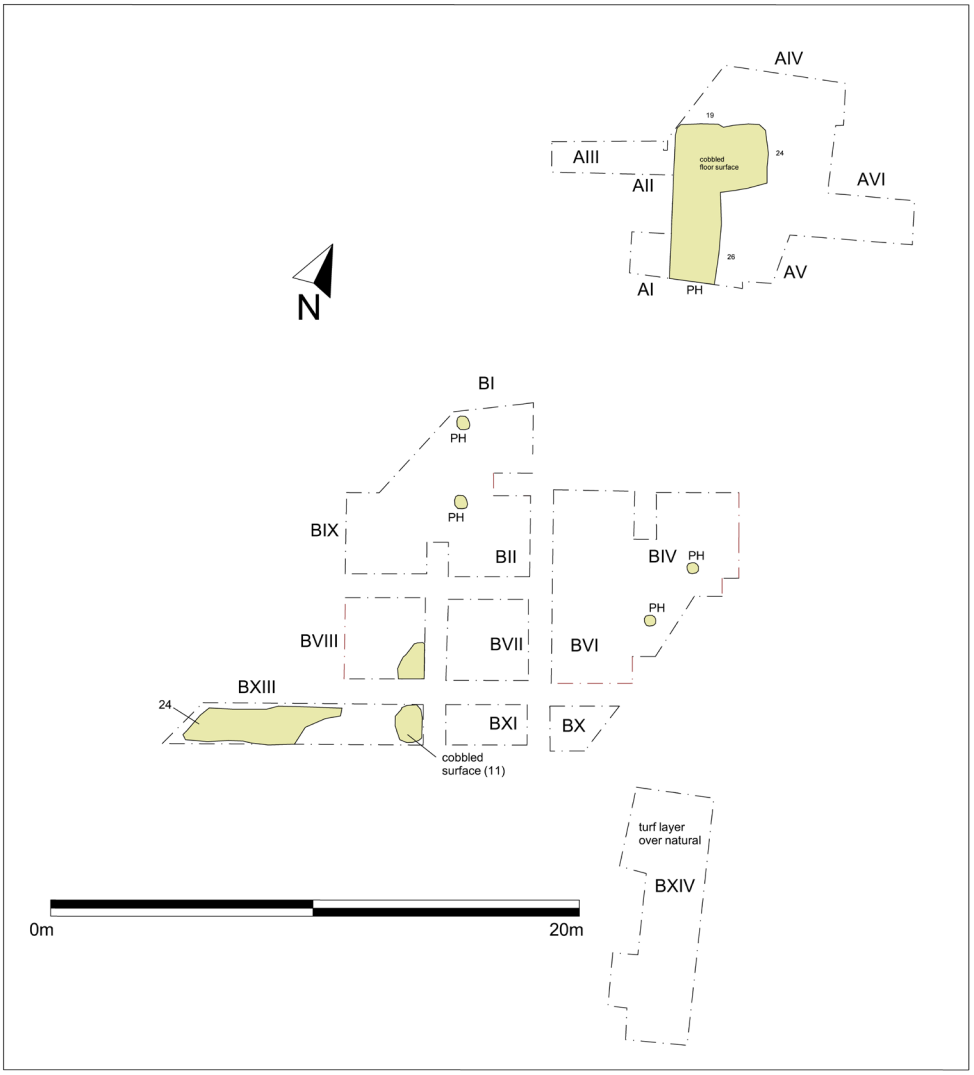


Figure 8 Phase 1

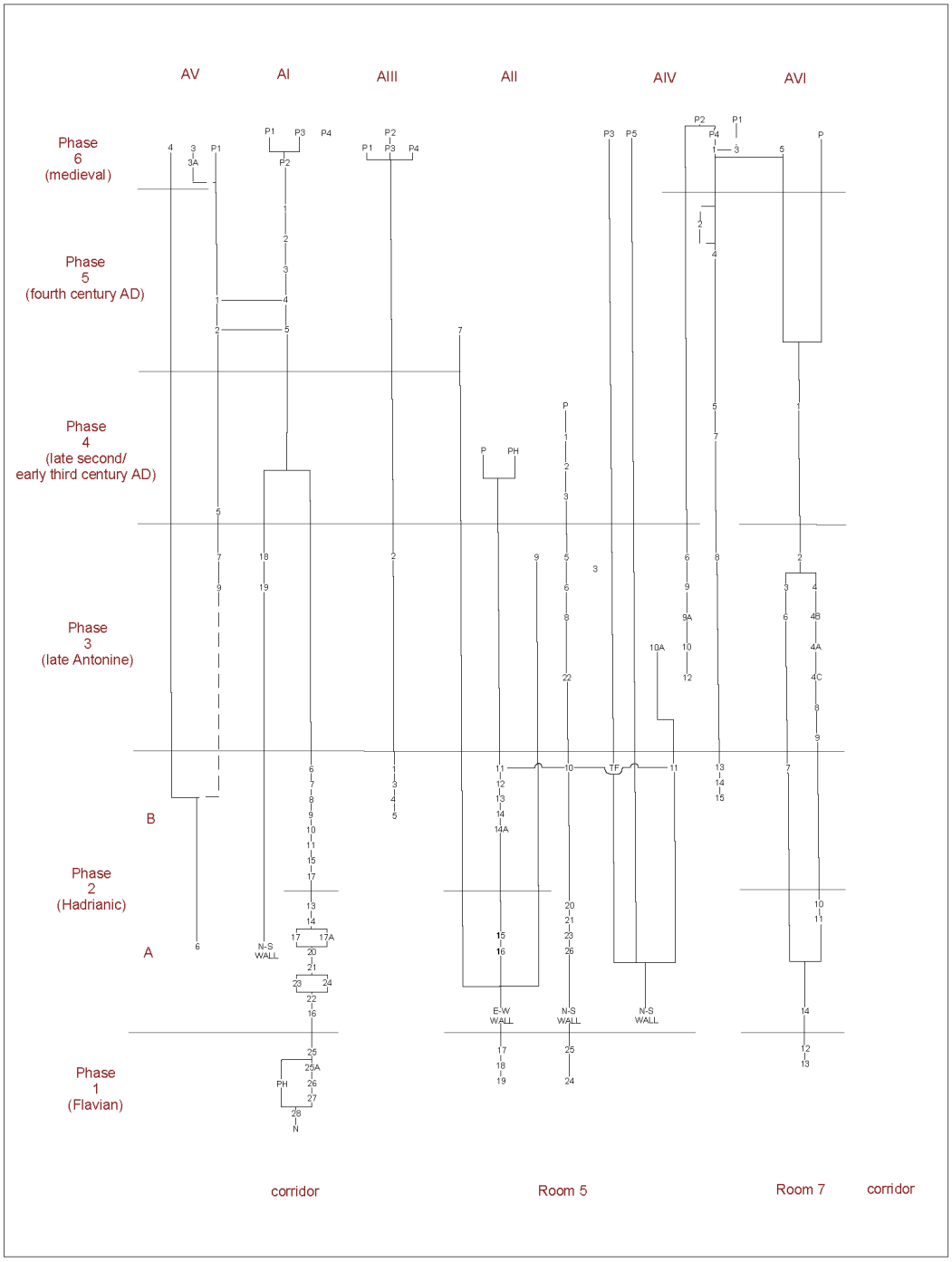


Figure 9 Area A Phase matrix

Whilst the sequences cannot be strictly correlated between trenches, the nature of the layers involved suggests that they were contemporary, and the phase is tentatively divided into two subphases, A and B.

Phase 1A (*Figure 8*; *Figure 11*)

Contexts: A I(28), (27), (26) (PH) A II (19), (24), B XIII (11) (road surface)

The earliest activity overlying the natural was represented by a sandy, pebbly layer (28), containing charcoal and other signs of burning. The layer was an average of 0.15m thick, and contained Form 18 samian pottery, suggesting a TPQ of the Neronian (54-67) or early Flavian (69-96) period. In certain areas this was overlain by a thin spread of silty sand (27) containing much occupational rubbish including charcoal, animal bone, oysters, nails, and samian and other pottery of Neronian or early Flavian date. This material may not have resulted from direct on-site activity.

These layers may be interpreted as make-up for the overlying metalled surface (26), described by the excavators as being firm and well trampled, and containing a brooch of Hod Hill type, providing a date of *c.*AD 60-80/5. The same cobbled surface was detected elsewhere on the site and was represented by A II (19) and (24), B XIII (11). Its existence was inferred in various section drawings as having underlain the earliest recorded layer, for example in B I below (14), unless it represented natural gravel. There was a similar occurrence in B IX below layer (20). It is possible that this represents the same metalled surface observed on a number of excavations within the core Roman urban area (Mellor 1976, 14), most recently at Freeschool Lane (Coward and Speed 2006) and 9 St. Nicholas Place (Kipling 2009).

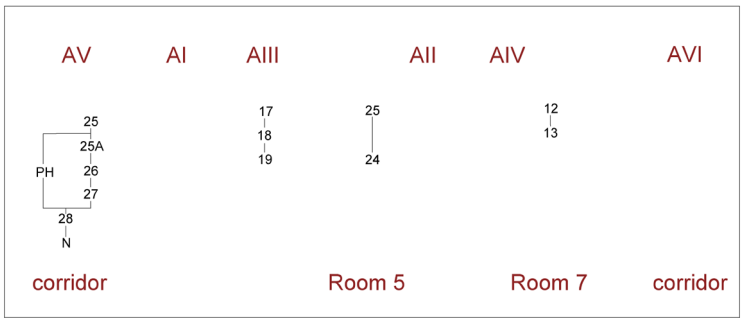


Figure 10 Area A Phase 1 matrix

Figure 11 BI: Phase 1 post hole and Phase 2 wall trench viewed north-west

The existence of a timber structure associated with this surface was inferred from a post hole in A I with a diameter of 0.35m and steep-tapering sides which cut the cobbled surface and continued to cut into natural to a depth of 0.1m, giving an overall depth of 0.4m. There was no evidence of a stone post setting, and the true depth of the post hole was not established; the top of the feature may also have been truncated. The cobbled surface in B1 was also cut by a post hole of similar dimensions (0.35m diameter, tapering to 0.15m and 0.75m depth). Two further post holes with stone settings (PH 1 and PH 2) observed in Trench BIV may have related to a Phase 1 structure, both of which appeared in plan but not in section drawings. However, photographic evidence suggests that PH1 underlay the peristyle floor of the Phase 2 house and that PH2 underlay the Phase 2 wall.

Two post holes may have belonged to this phase, both of which appear in plan but only one of which appeared in section, and appeared to cut the silty occupation layer (14) which overlay the supposed cobbled surface. The second posthole on the plan must have been severely truncated by the east-west Phase 6 robber trench at Phase K Wall B. The true western extent of the cobbled area was uncertain, as in B XIII it was truncated by the north-south aligned robber trench (Phase 6). It did, however, continue further west of this point. A continuous layer of stiff grey clay, packed with boulders (24) began 1m to the west of the robber trench, and appeared to represent the earliest north-south road surface. The exposed width measured 4.2m.

The southern extent of the cobbled area was inferred from excavations in A VI, where the earliest deposit overlying the natural was a pebbly loam (14), possibly representing the old turf surface. The eastern extent of the cobbled area is inferred from excavations in A VI where the earliest deposits comprised a sandy loam (13) containing charcoal flecks, overlain by a layer of pure white granular sand (12), suggesting that it lay outside the structure. The northern extent appeared to extend at a minimum as far as the

northern extent of the excavated area.

Phase 1B (Figures 4.2-4.4, 5.3 & 6.1-6.4)

Contexts: A I (25), (25)
A 1I (l7), (18), (25)
B 1 (14)
B X (20)

Rubbish deposits overlying the cobbled surface suggest that they derived either from activity inside the structure prior to its abandonment, or else from the deliberate dumping of rubbish on an abandoned site prior to redevelopment.

In the northern part of A I, the cobbled surface became covered in a dark gritty silt containing considerable amounts of occupational debris (25 & 25A). The samian ware was of Neronian or early Flavian date, possibly inferring a short functional life for the structure. Other finewares included a cornice rim beaker with roughcast decoration (No. 206), possibly dating to around AD 80-150, which conjoined with a sherd from A VI (11) from Phase 2. However, discussion of this occurrence (Pollard in Clamp 1985, 46), suggests that this material was intrusive.

In A II the cobbled surface was overlain by a yellowish-green sandy silt (18) and (25), and a darker grey sandy silt (17), containing charcoal and pottery, including a sherd of Flavian samian. In B I, a similar accumulation was represented by (14), a greenish sandy silt containing much charcoal and pot, including a reeded rim bowl of probable Trajanic date. The latest samian from the context was also Trajanic in date. B IX (20) was a silt containing animal bone, charcoal and Flavian samian.

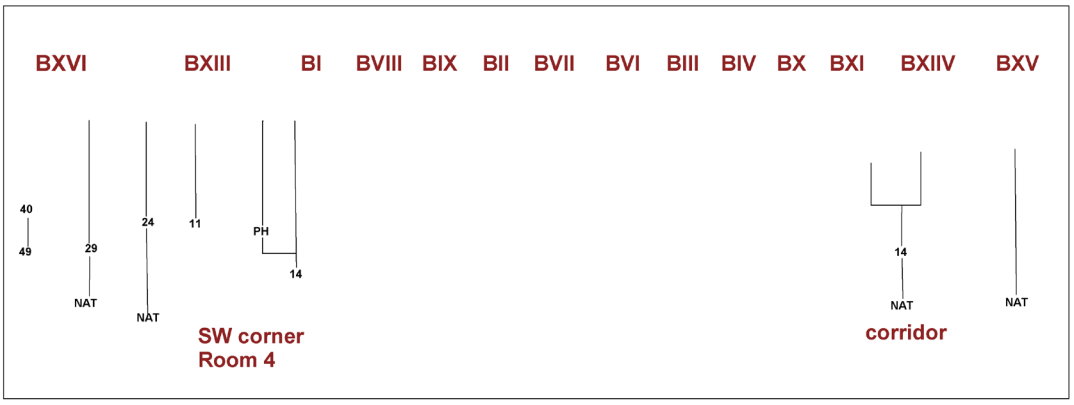


Figure 12 Area B Phase 1 matrix

Discussion of Phase 1

The interpretation of activity during this phase is clearly hindered by the limited nature of the excavation of these early levels, coupled with their disturbance by later activity. Nevertheless, a timber structure with an associated cobbled floor or yard surface is inferred, situated close to the first north-south street surface, with, perhaps, an area of turf lying along its southern edge separating it from the east-west street. Whilst the start date for the phase appears to lie around AD70, the close of the phase is likely to be

Trajanic, representing a possible time span of thirty to fifty years.

The observation of a comparable metalled surface at other archaeological interventions in the vicinity offers the possibility of this representing an early Roman market place or military parade ground and, potentially, the preliminary demarcation of land prior to the laying out of the forum in the late first century AD (Buckley 2000, 14). If this is the case, it would possibly represent the eastern known extent of Neronian period occupation in Leicester.

Phase 2: The town house; (**Figure 13**, **Figure 14**, **Figure 15**)

Phase 2 was dominated by the construction of a substantial town house which, until the discovery and excavation of the Vine Street example in 2005, represented the largest and finest such early Roman domestic structure found in Leicester.

The 1958 excavation revealed substantial remains of the northern and western wings, the walls of which were of unfired clay brick construction upon low masonry foundations. The building was situated some distance back from a street to the south and flanking a second street to the west. A minimum of seven rooms were identified, arranged around a central peristyled courtyard, to which rooms in the western range had direct access in addition to, possibly, a veranda on the western, street side (Wacher 1959, 113). Walls throughout were plastered and painted, with flooring consisting of clay or white concrete. Extensive renovation works undertaken in the mid 2nd century appear to have involved the replastering and painting of all walls throughout the structure, with the interior wall of the peristyle provided with a continuous decorative frieze. All rooms were newly equipped with tessellated flooring, and at least two also contained mosaics.

Substantial remains of this structure were found on both Sites A and B. An interim account of the structure appeared in the Journal of Roman Studies 1959, and a more detailed discussion in the *Towns of Roman Britain* volume (Wacher 1975, 350). In the latter text a system of room numbering was adopted (Fig.78) and to avoid confusion the same sequence has been adhered to in the following account. The rooms will be discussed in numerical order.

In Site A, the western portion of the north range was examined, including parts of Rooms 5, 6 and 7 running west to east, and part of the east wall of Room 4 in the west range. The north-west corner of the peristyle surrounding the courtyard was also revealed.

The central portion of the west range of the courtyard house was revealed on Site B, comprising Rooms 1, 2, 3 and 4 running south to north, and with the peristyle running along their eastern side. Trench B XIV revealed the south-western corner of the peristyle. The western part of the excavated area uncovered the outer (west) wall of the building in addition to a possible verandah construction facing onto the north-south street, assuming that the post holes did not, in fact, date to Phase 1.

The division into Phases 2A and 2B was only demonstrated in Site A, due to the lack of excavation below the tesselated floors in Site B, and does not appear relevant to the floor of the peristyle. The best demonstration of the Phase 2 wall construction and floor sequence appeared in the western section of A I/AII and the southern section of A II. The period of refurbishment, Phase 2B, involving a substantial reflooring episode, was evident in each room but was particularly well-attested in Room 5.

The constructional and occupational phases of the courtyard building are split into 3 subphases.

- Phase 2A: consists of those contexts associated with the initial construction of the building; namely, its walls and primary flooring.
- Phase 2B: comprises contexts associated with the refurbishment of the building, notably reflooring episodes (where they appear to occur).
- Phase 2C: consists of contexts associated with alterations to the building which took place after it lost its initial function as a dwelling, and had instead become a focus for industrial activity.

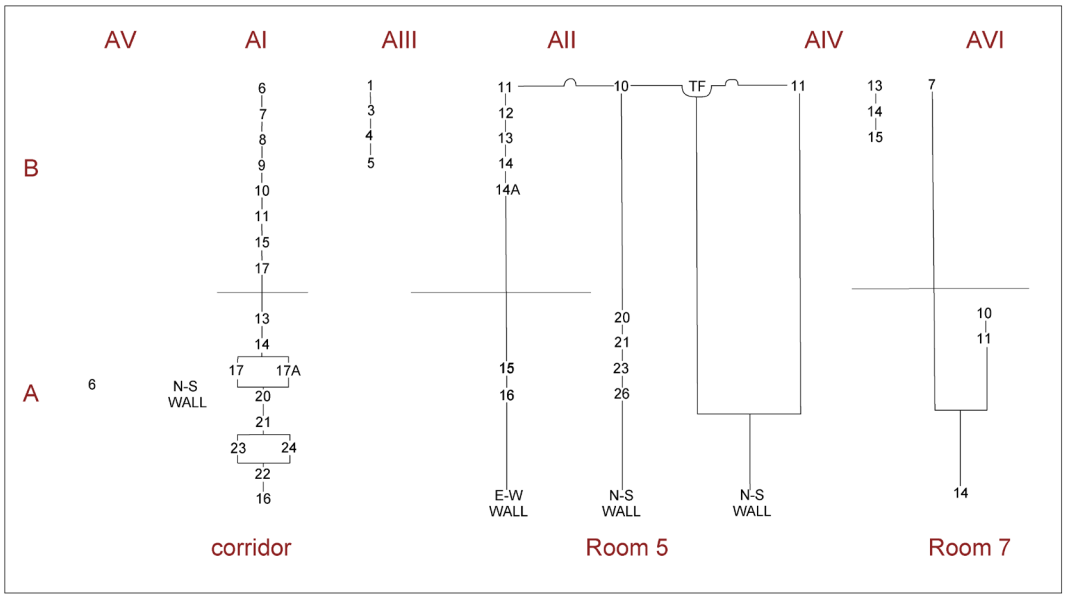


Figure 13: Area A Phase 2 matrix

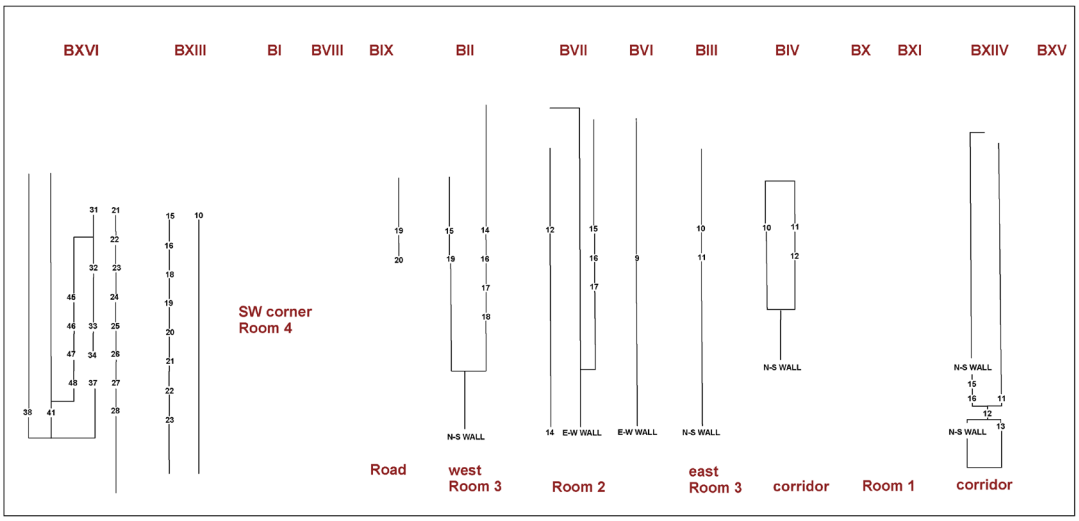


Figure 14: Area B Phase 2 matrix

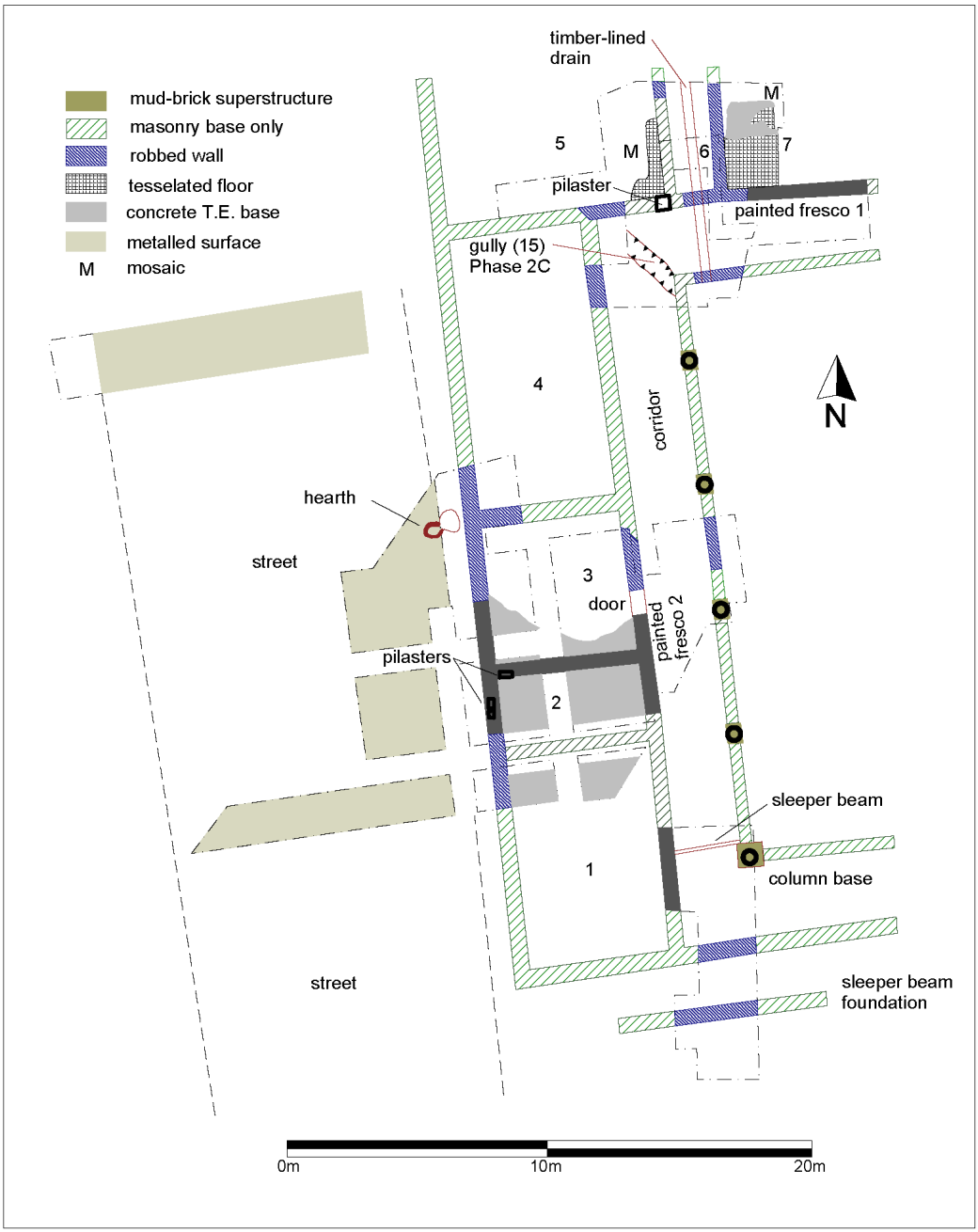


Figure 15 The town house, Phases 2A-C

Phase 2A Construction of the town house

Room 1 (*Figure 16*)

Contexts: B X (9)

Room 1 was the most southerly in the west range, with an east-west width of 5.4m and

a conjectured north-south length of 7.75m, assuming (as in the north range) that the line of the outer wall of the peristyle, represented by robber trench B XIV (9) continued westwards to form its southern wall.

Evidence for the east wall was found in B XIV, although only its east face was exposed. In B XI a 0.8m length of clay brick walling formed the west wall of the room and the outside wall of the building. The course of the north wall is assumed to have run along the northern edge of B X and XI, coinciding with the Phase 6 robber trench of the Phase 4 east-west wall, the construction of which would have entailed its demolition. Its existence was, however, inferred by a length of collapsed clay brick wall (B X (9)), visible in section (Figure 16). Comprising at least six courses, the wall had fallen on edge with the bricks tilting northwards. The existence of a tesselated floor on a concrete base is inferred on the plan, but unfortunately is not shown in section or described in the site book.

Figure 16 Phase 2, BX: collapsed wall (9)

Room 2 (Figure 17, Figure 18, Figure 19, Figure 20)

Contexts: B VI (9); B VII (14), (15), (16), (17)

Room 2 comprised a relatively small room measuring 5.4m east-west and 2.8m north-south. Virtually its entire layout and walls were investigated in B VI and VII, and provided the most detailed evidence of the walls of the Phase 2 structure.

The earliest feature excavated was the construction trench of the west wall B VII (14). The wall itself was well preserved with painted plaster surviving on the east face, comprising a pinkish buff ground, with yellow, red, and white marbling surmounted by a yellow band 0.57m above the floor, above which was a panel of red picked out in

white. The sequence of plastering was well preserved, and comprised a 2.5cm layer of sandy mortar facing on the clay bricks, a 2.5cm thickness of plaster backing, and a 2cm thickness of plaster facing, decorated with a painted face 1mm thick.

A stone and mortar vertical pier was set into the clay brick wall superstructure to a depth of 0.22m on the external face of the west wall of the building outside Room 2 (Figure 17; Figure 18). Its face was recessed 7.6cm from the line of the sleeper wall below, presumably to allow for the thickness of the plaster. The feature was a minimum of 0.7m wide (truncated at its southern extent by a Phase 6 robber trench running east-west) and 0.7m high (the surviving height of the clay brick wall). Cut into the pier was a vertical slot measuring 6.35cm wide and 9cm deep, possibly to house a timber upright. If it is assumed that this slot was placed centrally, the original width of the pier is likely to have been *c*. 1.0m.

Figure 17 BVII pier on external face of west wall. View north.

Figure 18 BVII pier on external face of west wall, with timber slot. View east

The north wall was preserved to a maximum height of 0.8m. Towards its western end, where the plaster facing was not preserved, another vertical stone and mortar pier, 0.5m wide was inset into the clay brick superstructure to a depth of 0.25m. Prior to the plastering of the walls, a thick *opus signinum* floor B VI (9) and B VII (16) had been laid down in the room, overlying a loam make-up layer B VII (17), and abutting directly on to the top courses of the masonry wall foundation. The floor was constructed of a 50mm thickness of hard white concrete, over which was a 25mm thick fine pink concrete screed, which formed the bed for the Phase 2B tessellated floor (see below).

Figure 19 BVI: Phase 2 Room 2 north and east walls: remnants of tessellated floor along east wall

Figure 20: BVI: Phase 2 Room 2 north wall

Room 3 (Figure 21, Figure 22, Figure 23, Figure 24)

Contexts: B II (16), (17), (18); B III (11)

Positioned centrally within the west range, this room measured 5.4m square, and, significantly, was the only room to show evidence of access to the peristyle, via a doorway in the east wall. The southern half of the room in B II and III was best

preserved, with substantial evidence of clay brick superstructure in the south wall, and southern portions of the east and west walls. The northern half of the room was truncated by Phase 6 robber trenches (B III 1) of the Phase 4 walls, but sections of the north and west walls were indicated by earlier robber trenches of Phase 3 (B I (15)) in B I, where their presence interfered with Phase 4 construction.

The earliest feature was the construction trench for the west wall in B II, containing rubble stone footings 0.7m wide and capped by five courses of masonry foundations 0.6m wide. In comparison the east and south walls were less substantial. The east wall facing the peristyle was only 0.35m thick on a foundation wall of the same thickness, whilst the south wall was 0.5m thick.

Figure 21: BII: Phase 2 west wall and floor of Room 3 cut by the Phase 4 construction/robber trench, viewed south-east

Inside the room the wall footings were sealed by a thin spread of gravel and stone chippings B II (18), which provided the make up for the Phase 2A flooring of stiff grey clay B II (17) and B III (11).

Figure 22 BVI/BVII: Phase 2 general view across Room 3

Figure 23 BIII: north face of south wall of Room 3 viewed south

The south wall survived to a height of 0.8m (Figure 23), with eight courses of clay bricks preserved above masonry foundation walling. The lack of surviving wallplaster, probably due to its deliberate removal, allowed an investigation of the wall structure. The masonry foundation wall and rubble footings were of local Charnwood granite construction, roughly dressed and rendered with mortar. The clay bricks were of two sizes: 0.45m x 0.28m, and 0.3m x 0.3m.

The insertion of the doorway in the east wall leading from the peristyle necessitated a modification to the height of the foundation wall (Figure 24). The lower level of the floor in this room compared to that in Room 2 resulted in the foundation wall running 0.2m above it. However, 0.5m to the south of the doorway, the wall height dropped by 0.1m, and then at the doorway itself a drop of 0.2m occurred, taking it below the floor level. The cavity created would appear to have accommodated a timber threshold. The full width of the doorway could not be determined, as the room was truncated at this point by the Phase 6 east-west robber trench. The minimum doorway width was 1.3m, which may have been sufficient for double doors, but it is noteworthy that the central placement of the door in the range and the east wall of Room 3 would have required a 2.4m wide opening.

The floor in the room would appear to have been slightly higher than in the corridor, but it is difficult to ascertain which floors are contemporary. The room was not plastered prior to the laying down of the tesselated floor in Phase 2B, whilst the peristyle appears to have been plastered before either the clay or mortar floors were laid.

Figure 24 BIV: Doorway and corridor of Phase 2 Room 3 viewed east

Room 4

Little is understood of the northern sector of the west range, but it is postulated that it comprised a single rectangular room approximately l0m x 5m, equivalent to the area of Rooms 1 and 2 combined. In order to attain a symmetrical arrangement, a subdivision would be expected in order to produce a room of similar dimensions to Room 2 to the north of Room 3. The south-west corner of the room was represented by robber trenches. The robber trench of the west wall, B 1 (15), ran along the west side of the Phase 4 wall foundations, the construction of which necessitated the removal of the Phase 2A structure. The junction with the southern Phase 2A wall was thus truncated by the Phase 4 masonry. A short length of the otherwise robbed east wall of Room 4 was detected in A I, but this may well be conjectural, as it coincides with the line of the Phase 6 robber trench of a north-south Phase 4 wall, the construction of which would have removed all evidence of an earlier wall.

Room 5 (Figure 5)

Contexts: A I (16): southern edge A II (15), (16); western edge, (26); northern edge A III (3), (4), (5)

Room 5 formed the north-west corner of the building; excavation only produced evidence for the south-eastern part of this room, in Trenches A II and III. Although dimensions are uncertain, the east-west width is likely to have been *c.*8.2m, and the north-south length over 4m. The construction trench (A I (16) (south edge) contained samian dated AD 60-100. A II (26), (north edge) forming the southern wall of Room 5, cut through the Phase 1 deposits and accommodated a minimum of four courses of unmortared and undressed masonry footings 0.80m wide. These supported a further three courses of mortared and dressed masonry 0.55m wide. The masonry was capped by a thin layer of mortar rendering, but none of the clay brick superstructure survived above. The masonry structure of this wall thus barely rose above the height of the first flooring episode, and the later mortar bedding for the tesselated floor would have abutted the clay brick superstructure.

Along the eastern wall of the room, however, five courses of mortar-capped masonry survived above the footings. The masonry was level with the height of the mortar flooring, and no clay brick courses survived above this, suggesting that several courses of masonry from the south wall had been removed during demolition. The exposed footings on both the south and east walls were sealed by a thin mortar spread, A II (16), extending no more than 0.2m from the wall, and directly overlying Phase 1 deposits (A II 17) prior to the laying down of any flooring. It would appear, therefore, that no make-up layers were present.

The floor sequence was identified in both areas. In A II, a thick layer (0.1m-0.15m) of dark-grey clay appeared to directly overlie Phase 1 deposits, but not the mortar capping of the wall footings. However, in A III, successive layers of yellow loam (5) and (4), which may be interpreted as make-up, provided the bedding for the thick layer of stiff red clay (3). The clay had been interpreted as the original flooring throughout the house, including the peristyle, prior to a period of refurbishment.

Room 6 (Figure 5)

Contexts: A II (20), (21), (23), (26)

Room 6 was of slightly smaller dimensions than Room 2. The reconstructed width was 1.8m, and a minimum of 4.0m in length. The wall construction and floor sequence in this room was recorded in the north section of A II. The masonry base of the west wall and its junction with the south wall was preserved, but the eastern half of the room had been completely removed by the Phase 6 robber trench targeting the Phase 4 north-south wall. Only the eastern edge of the east wall (dividing it from Room 7) survived, as a robber trench. (See Room 7).

In the western half of the room, the insertion of a timber-lined drain during Phase 2C (A II (8)) had badly disturbed the floor sequence. The exposed wall footings of the west wall in construction trench (26), were sealed by a thin layer of mortar (23), as observed elsewhere. In contrast to Room 5, however, the greenish grey stiff clay flooring layer (20), did not directly overlie this, but instead was underlain by a sandy loam layer (21) forming a make-up layer above the Phase 1 deposits. As a result, the clay floor in Room 6 was raised 0.3m above that in Room 5.

Room 7

This was the most easterly room investigated in the building, with only its south-western corner being excavated (Areas A IV and A VI). The constructional sequence was recorded in the eastern section of Area A VI. Layer descriptions were recorded for A IV, but were not recorded in section.

The dimensions of the room are uncertain, but it would appear to have been relatively substantial, measuring a minimum of 5.2m east-west and 4m north-south. A 5.2m length of the south wall was exposed, of which the claybrick superstructure survived to a height of 0.5m above the masonry footings. Details of the footings were lacking, but it would appear from the section that the clay wall directly overlay the irregular unmortared footings, with no mortared dressed courses inbetween. This would suggest a somewhat different structure to the length of the same wall of Room 5. The clay walling comprised six courses of headers and stretchers laid in soft sandy mortar. The internal face was rendered with a thick layer of sandy mortar, against which the makeup layers for the mosaic pavement abutted. The absence of an earlier clay floor in this room is likely explained by the shallow depth of recorded excavation.

The north-south Phase 6 robber trench, which truncated the eastern half of Room 6, partly coincided with the line of the west wall of the room. It is unclear as to whether there was evidence for this wall *per se* in terms of a robber trench, since the medieval trench (or the construction trench for the Phase 4 wall), is likely to have removed all evidence. The line of the Phase 2 wall does diverge slightly, and should appear as a robber trench. The existence of the wall may alternatively have been conjectured from the position of the central panel of the Phase 2B mosaic in Room 7 (see original plan).

In A IV, there is a note relating to the sleeper wall of the Phase 2 structure, mentioning an east-west timber, measuring 6in by 4in by 5in wide. Unfortunately the entry in the notebook is not entirely clear, but it must refer to the wall between Rooms 6 and 7 (unless it refers to the drain).

The Possible South Range or Verandah (Figure 7)

Contexts: B XIV (11), (12), (13)

The only evidence for the possible existence of a south range of rooms came from B XIV, and is recorded in the eastern section of B XIV. A sandy yellow gravel layer (12) thinly covered the Phase 1 turf layer (14) over the entire trench, becoming thicker over the area south of the robber trench (9) of the south peristyle wall, which cut it. Layer (12) was also cut by the construction trench (13) of an apparent additional Phase 2A wall running east-west in parallel to the south wall of the peristyle, but 1.7m to the south. Although the actual depth of the trench was unrecorded, it did cut (14) and underlying natural sands and gravels, giving an excavated depth of 0.4m. The trench was seemingly filled with loose footings of randomly laid blocks of stone. It is possible that this represented the foundation for a subsequently dismantled wall, as suggested by the width and line of construction, sealed by a thin layer of mortary white plaster (11), which also sealed (12) in the area south of robber trench (9). The southern limit of the gravel layer (12) and the plaster spread (11) is unknown, as it was truncated by a Phase

6 robber trench targeting an east-west Phase 4 wall.

The position of the proposed wall and the lack of distinct Phase 2A flooring layers would suggest that the southern side of the building lacked a range of rooms, although structural activity of some form was indicated. Alternatively, the trench (13) may represent a hardcore-filled foundation feature functioning as the support for a porch structure or verandah.

The Courtyard and Peristyle (Figure 5, Figure 25)

Information on this part of the building was forthcoming from areas A I, II, V, VI, and B IV and XIV. Construction sequences are shown in sections A I (west), A I/II (west), A V/I (north), A VI (east), and B IV (south), B XIV (east).

(i) North peristyle(Area A)

Contexts: A I (22), (23), (24); A VI (10), (11)

The flooring sequence in this area of the peristyle appeared similar to those in the rooms of the North Range. A thin mortar layer A I (22) sealed the footings on the southern edge of the north wall (the south wall of Room 5), and was itself overlain by a thick layer of clay (24). Where (22) was not present, (24) directly overlay the Phase 1 deposits, as in the case of the adjacent Room 5.

The floor of the peristyle was also encountered in the eastern part of area A VI. A dark black silt (11) containing charcoal flecking sealed the wall footings, and abutted the clay wall structure. In the middle of this 0.1m thick layer, an intermittent upto 0.07m wide band of loose mortar ran alongside the wall, interpreted by the excavator as plaster droppings. A thin but hard and trampled red clay surface (10) appeared to represent the only episode of flooring in this area of the peristyle, and was evidently laid down after the wall had been (re)plastered. It had become worn, and the pockets were filled with dark earth, suggestive of a lack of repair at the time of removal of the roof.

(ii) West peristyle and courtyard (Figure 25; Figure 26; Figure 27)

B IV (10), (11), (12)

The central portion of the western peristyle and the edge of the courtyard were encountered in Area B IV and illustrated in Section B IV (south). As excavation was limited to the level of the Phase 2 floor surfaces, nothing is known of possible underlying Phase 1 deposits or Phase 2 make-up levels.

Figure 25 BIV: Phase 2 Fresco 2 on the peristyle wall external to Rooms 2/3, viewed south-west

An even, 0.1m thick red clay layer B IV (12) represented the earliest recorded floor level within the peristyle. It was, however, laid subsequent to plastering of the west wall, suggesting that, in common with the north peristyle, a working floor of earth existed beneath and was used during the construction phase. The red clay floor would appear to abut the courtyard wall, suggesting that it was part of the original construction. Floor (12) continued east of the courtyard wall, forming the primary floor of the courtyard itself, although at 0.15m-0.2m it was slightly thicker than in the peristyle.

Figure 26 BIV Phase 2, east wall of west peristyle with inset column base. View south-east

(iii) South peristyle (Fig. 6.1; Figures 27 & 28)

Contexts: B XIV (12), (15), (16)

The south-west corner of the peristyle was examined in Area B XIV, and the construction sequence is recorded in the east section (Fig. 6.1).

A layer of reddish-yellow gravel (12) covered the entire trench, overlying the Phase 1 turf layer (14). It was spread very thinly in the area over which the peristyle was constructed, but thickened to the south over the area south of the peristyle wall. A shallow pit cutting into (12) near the corner of the courtyard (exact position unknown), is thought to have accommodated a hearth. An associated charcoal spread contained occupational debris including bone, oysters, mussels, white painted wallplaster, and a Hadrianic (AD 117-138) intaglio. The latter constitutes some of the firmest supporting evidence that the house was not constructed until the AD 120s at the earliest. The pit

itself was filled with fragments of brick, stone, and mortar, before being sealed beneath a well-trodden layer of dark grey charcoal-rich clay (16) containing mortar specks and varying from 0.05m-0.1m in thickness. In common with other areas of the peristyle, this might best be seen as a working surface at the time when the west wall was plastered. An even 0.1m thick red clay floor (15) was then laid down, abutting the plastered face of the wall. There was no evidence that the red clay flooring continued into the courtyard itself at this point.

At the south-west corner of the peristyle, the floor appeared to be cut by a square trench filled with mortar and stones. Although unexcavated, this was probably hard-standing for the large ashlar cornerstone which rested directly on it, the base of which was flush with the red clay floor surface. The floor (15) and the cornerstone were evidently contemporary, as demonstrated by signs of wear to the edge of the stone.

Figure 27 BXIV: Phase 2 west wall of peristyle with clay floor and wall plaster *in situ.* View west

Figure 28 BXIV: Phase 2 west peristyle, view north, showing plaster on west wall and ashlar column base on east wall.

External Areas

Investigation of those areas outside the townhouse was limited to the western side of the building, abutting the north-south street. The sequence of road surfaces was recorded in the north section of B XIII, although road surfaces were also detected in B IX, and B VIII (according to the plan in Wacher 1974). However, Section B XIII (Figure 7.3) does not suggest that the road lay as close to the house as the TRB plan implies.

Phase 2B Refurbishment of the town house

Room 2

BVII (15)

In this phase, the *opus signinum* floor of Phase 2A was replaced with a tessellated pavement B VII (15) laid over a 25mm thick pink concrete screed. The pavement was almost entirely robbed out save for small areas of 2cm square grey tesserae that remained in situ around the edge of the room. Interestingly, the corresponding floor in Room 3 had been set 0.15m lower than its companion.

Room 3

Contexts: B II (14)
B III (10)

Sealing the Phase 2A floor was a grey sandy loam B II (16), forming the make-up for an *opus signinum* floor B II (14) and B III (10), from which the tesselated covering had been almost entirely robbed. In common with Room 2, the concrete floor had been laid prior to plastering of the wall.

Room 5

Contexts
A II (11), (12), (13), (14), (15)

In area A II, the clay floor (15) was overlain by an even 10cm thick layer of yellow-sandy loam (14A) containing plaster, bringing the floor level up to the level of the existing masonry on the south wall. Above this, a very mixed and patchy layer containing red clay, yellow sand, charcoal and plaster (14), topped by a make up of stones and loose mortar (13) formed the bedding for the *opus signinum* (12) into which the tesselated pavement (11) was set.

Room 6

Contexts A II (10)

The character of the flooring above the original Phase 2A clay floor is uncertain. A thin layer of mortar and jumbled tesserae (10) lay directly on the latter, possibly representing the remnants of the Phase 2B refurbishment. This scenario would,

however, require an explanation as to the necessity of entirely removing a substantial *opus signinum* tesselated floor in order to insert a drain (see Phase 2C). An alternative explanation may be that this room functioned as an access corridor and remained in use with only clay flooring.

Room 7 (Figures 5.4 & 5.5)

Contexts: A IV (13), (14), (15); A VI (7)

The lowest identified layer, which contained samian dating to AD 80-110, was overlaid by yellow sandy loam, A IV (15), capped by the *opus signinum* base (14) for the pavement (13), and A VI (7).

West peristyle and courtyard

In the peristyle, the Phase 2A clay floor (12) was replaced by an *opus signinum* floor (11), whilst in the courtyard it was replaced by a mortar floor (10) level with the top of the courtyard wall. Although the dating of this reflooring episode is uncertain, subsequent activity may indicate that it belonged to the period during which the building was used for industrial purposes, involving as it did the removal of the colonnade.

Discussion of Phases 2A and 2B

(RB) The use of unfired clay brick for the walls of the Phase 2A townhouse is of particular interest and has only been definitely attested elsewhere in Leicester at the Norfolk Street Roman villa (Mellor and Lucas 1978-9, 70) where an internal wall collapsed into a cellar in antiquity, preserving the wall and its painted wall plaster. It is entirely possible that clay brick was common for the superstructure of many buildings in Roman Leicester, but the evidence is unlikely to survive, unless the walls were rapidly sealed after demolition, as in these two instances. Vitruvius tells us that the bricks were best made in the summer or autumn so that they might dry uniformly without cracking and that they should be made two years before using to give them time to dry thoroughly (*Vitruvius* III, 2). Hence, it is presumed that the walls were built of clay brick that were completely dry, otherwise a significant amount of settlement would have occurred due to shrinkage. In addition, the walls would need to have been plastered immediately to afford them some protection from the elements, given that this method of construction was used for both internal and external walls. Far from being a low-status construction method, it has been noted that 'earth walls were superior to timber ones for their greater durability and better resistance to fire' (Perring 2002, 98).

The clay bricks at Blue Boar Lane were of two sizes: about 0.3m (12 ins) square and 0.45m x 0.28m (18 ins by 11 ins); all about 0.05m (2 ins) thick. The latter approximates to Vitruvius' description of bricks called 'lydian' in Greek, 18ins by 12ins (*Vitruvius* III, 2). In most rooms, the bricks were laid in a simple stretcher bond and bound together with a weak sandy mortar; in Room 7, they were laid as stretchers and headers in alternating courses. The clay brick walls would need to be protected from the elements by rendering soon after construction, although only in the peristyle did evidence survive for a painted wall plaster finish that is earlier than, or contemporary

with, the original clay floors of the building. The design of the upper part of the west wall, reconstructed from fallen fragments, comprised the illusionist architectural representation of a shrine or *aedicula* on a black ground, flanked by large red fields, above which was a black frieze divided into rectangular panels containing various motifs. On the lower part of the wall, where superstructure survived, an area of *in situ* plaster was painted to show a projecting podium with recess. The decoration of the northern peristyle wall, again reconstructed from fragments, was similar with large red fields alternating with black-ground architectural vistas ('durchblicke'). In the red fields were traces of three figures which had apparently been mutilated in antiquity.

The floors of the first phase house were of clay, but were later replaced with concrete and tessellated floors in many of the rooms. In most houses, earth floors were probably the norm and were likely to have been covered with rushes and grasses (Perring 2002, 126). It is perhaps odd that one of the principal circulation spaces of the house – the peristyle – should be provided with lavish wall paintings from the outset, yet the contemporary floors appear to have been of clay. Perring has noted that the function of the atrium was in some respects replaced by the peristyle as a circulation and reception area (Perring 2002, 158-9) whilst it might also be used for other purposes such as cooking.

The floors of the Phase 2B refurbishment included the borders of a large mosaic consisting of a swastika meander in Room 5, and in Room 7, a large border fragment and three parts of an ornamental polychrome panel (see below, p.117). In the majority of rooms, only impressions of tesserae survived, whilst in the peristyle, there was no clear evidence for the later provision of tessellated floors, although the floor of the western peristyle had been replaced with *opus signinum*.

A number of additional architectural features were recognised during the excavations, for some of which no satisfactory explanation can be made. The site notes record two stone and mortar pilasters set into the clay-brick wall superstructure, one on the external east wall and one in the north-west corner of Room 2. The term 'pilaster' is rather misleading as these features were set into the wall and would not have been visible after plastering. It is possible that they represent structural piers or perhaps the infill of where upright timbers had been placed to support temporary covers during the construction of the clay brick walls. The feature on the west wall of the building also contained a vertical slot for a timber of comparatively slight scantling which it has been suggested may indicate the presence of an external verandah.

The survival of a doorway into the peristyle from Room 2 is also rare evidence from Roman Leicester, where it is more usual to have building plans represented by the lines of robbed walls only. The masonry sleeper wall dropped in height at the doorway position, where it is thought there would have been a timber sill. The door was a minimum width of 1.3m, but could have been as much as 2.4m wide, if symmetrically placed in the east wall of Room 2. Hence, the door could have been closed with two or more timber leaves. Broad doorways closed with four leaves arranged in pairs of two are known from the Roman world, used particularly when facing an enclosed peristyle garden, providing a good view for the occupants (Ulrich 2007, 192). The excavations did not, however, provide any clear evidence for whether the courtyard was laid out as a garden or was more utilitarian in nature.

Phase 2C Abandonment of the town house and industrial activity

Phase 2C appears to represent a period of abandonment of the courtyard house prior to its final demolition in the third century.

Room 2: evidence of bone working

Although the Phase 2B flooring was heavily robbed of its tesselated surface, the underlying *opus signinum* surface appeared to have been kept relatively clean, with the exception of a dump of cow skulls placed directly on the surface (see Cram, this volume). This was directly overlain by Phase 3 deposits of rubble B VI (8) and B VII (13). A layer of similar composition, B VII (11) sealed a rubbish deposit (12) directly outside the west wall of Room 2, comprising charcoal, bone, pottery, and oyster shells allocated to Phase 2C. This allows a break between Phase 2 and 3 deposits to be made outside the building.

Room 6: the timber-lined drain

The insertion of a timber-lined drain into the floor of Room 6 represents significant evidence for the modification of the Phase 2 structure during Phase 2C prior to its final abandonment and demolition during Phase 3. The square-sectioned and 0.4m-wide drain ran south down the centre of the room, through a gap in the south wall, across the peristyle, through a possible second gap in the courtyard wall, and emptied into a soakaway pit in the north-west corner of the courtyard. This also appeared to have been the destination of the irregular gully cut through the peristyle floor in its north-west corner. Construction of the drain may have involved the removal of the Phase 2B tesselated flooring in Room 6, the remnants of which are suggested by A II (10), as well as cutting through the Phase 2A clay floor and underlying Phase 1 deposits.

All rooms: modifications to and removal of Phase 2B flooring

With the possible exception of the Room 6 corridor, all identified rooms in the Phase 2 structure had been the subject of refurbishment involving the insertion of tesselated floors in Phase 2B. These were subsequently subjected to varying degrees of robbing activity during Phase 2C prior to final demolition and the eventual redevelopment of the site. Robbing appears to have involved the systematic removal of tesserae, working from the centre out to the edges, and leaving a few rows in situ around the edge. This systematic removal is most marked in the rooms of the west range, and in the case of Room 3 much of the *opus signinum* base of the floor (B II (14) and B II (10) was also robbed, exposing the clay floor, B III (11), below.

The evidence from the west range would suggest the deliberate harvesting of hardcore for a nearby development, or even the intended reuse of tesserae (JSW pers. comm. to DJ Smith), rather than the modification of the floors to facilitate industrial activities as suggested by the gully in the courtyard, and the drain insertion in Room 6.

The west range appeared to lack those occupation deposits normally indicative of industrial or other activity during a period of abandonment, with the exception of the

dump of cow skulls in Room 2. Deposits overlying the robbed floor of Room 3 appear to represent destruction layers belonging to Phase 3, (B II (13), B III (8) and (9)). This is noteworthy given that that this was the sole room providing evidence of access to the peristyle, and for which a ramp appears to have been constructed in order to facilitate access to the inner courtyard.

In the north range, the removal of Phase 2B flooring from Room 5 is evidenced in the north section of A II. A trench or gully with one rounded end and an assymetrical profile A II (P), 0.6m wide and up to 0.25m deep, was cut north to south along the east side of the room. Immediately south-east of this feature, a square hole 0.1m wide and 0.2m deep was cut into the floor. There was no direct evidence that these two features were associated or that they belong to this phase, since no detail is known of deposits overlying this part of the room through which these features might have been cut.

In Room 7, the remains of the tesselated floor A VI (7) were overlain by a variable thickness of silt (6) which presumably accumulated during Phase 2C prior to its being sealed by a complete layer of fallen plaster which appears to have fallen from the south wall prior to the demolition and removal of the wall itself.

Peristyle (Fig. 7.1)

South-west

Contexts: B XIV (5A), (10), (17A)

The fact that the red clay floor (15) appears to have been the only flooring in this area of the peristyle adds credence to the notion that the concrete flooring episode was restricted to the central part of the western peristyle, and associated with the suggested industrial use of the building following partial demolition.

The clay floor in the south-west corner of the peristyle was overlain by a sequence of layers suggestive of activity within the house during a phase of abandonment. A thin layer of dirty trampled material (17A), accumulated to a thickness of a few centimetres, sealed the mortar standing of the cornerstone, overlain by a 0.10m-0.15m deposit of dirty pebbly clay (10), with a trodden surface accumulated across the peristyle. This also occurred to the south of the south wall of the peristyle over what is assumed to have been the floor surface of the south range. Regrettably it was not possible to ascertain whether this layer was continuous, nor whether the south wall of the peristyle had been removed by this time, due to disturbance by a medieval pit (Pit. 1). Within the peristyle, a further thin trample of black silty mud (5A) had accumulated on the surface of (10). The removal of plaster from the west wall clearly postdated the accumulation of these deposits over the original clay floor, due to its preservation only at the point where (10) hid its face. The depth of accumulation of mud and the small quantities of roof tiles in the demolition material suggests that the roof of the building had been removed in this area prior to this episode.

During this phase the painted wallplaster around the peristyle appears to have been subject to vandalism, with the scratching of graffiti into wall surfaces at approximate head height. In addition, the three human figures depicted in the decorative scheme

were apparently subjected to deliberate defacement; this may be significant (see graffiti report).

The southern end of the superstructure of the colonnade wall of the western peristyle was picked up in the northern part of B XIV. It comprised four mortared courses of roughly dressed, rounded and flattened masonry, standing approximately 0.7m above the height of the original Phase 2A red clay floor, abutting the ashlar block which acted as a base for a column at the corner of the peristyle. The wall and ashlar block were not initially bonded, and a gap of 0.15m was intentionally left between the two in order to accommodate a timber slot which ran east-west across the south end of the west peristyle. This apparently cut through the accumulation of dirty pebbly clay (10), and the eastern end of the timber probably rested on the sleeper wall for the colonnade. Once the timber sill was in place, the remaining space between the cornerstone and the wall superstructure was filled with mortar, and capped with three tiles up to the height of the wall. Although the Phase 2A peristyle may have had a continuous foundation or sleeper wall to support the columns and their bases, the areas of superstructure next to the southern and central ashlar blocks are considered more likely to represent later infill of the open portico, rather than being contemporary (i.e. dwarf walls). This interpretation may be supported by the beamslot, perhaps indicative of the insertion of a wooden frame, probably for a doorway – such a feature would clearly be superfluous in an open portico (with or without a dwarf wall between columns).

Hence, It is entirely possible (if not supported by direct evidence), that parts of the open peristyle were converted into closed corridors, providing a rationale for its subdivision through the insertion of a timber doorframe.

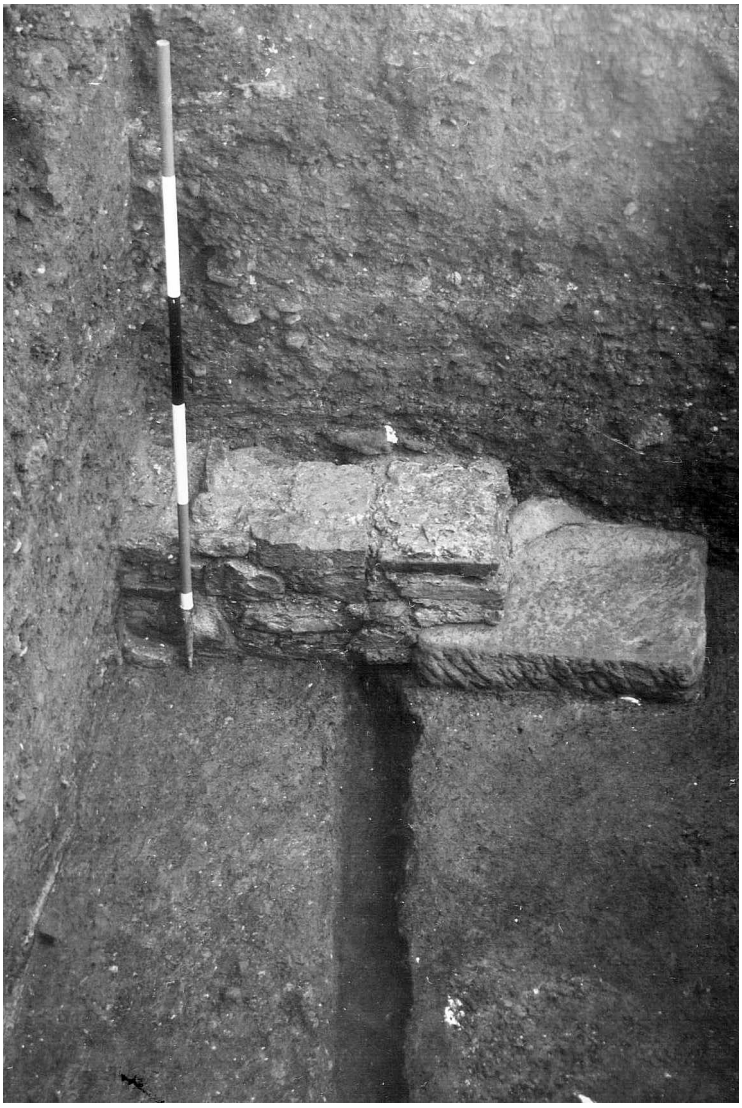


Figure 29 BXIV South west corner of peristyle showing stone base for column, peristyle wall and timber slot

North-west (Figures 5.1 & 5.2)

Contexts: A I (6), (8), (9), (10), (11), (12), (13), (14), (15), (17), (17A), (20), (21)

The character of the possible flooring sequence above the clay floor is problematic. There was no evidence elsewhere in the peristyle for the laying of a tesselated pavement, and the deposits in the north-west corner are, perhaps, better interpreted as a dump of flooring material removed from one of the rooms rather than the remnants of a final floor surface.

The clay floor (24) was overlain by a thin spread of sand and pebbles (21), and then an irregular dirty silt layer (20) which appeared to have accumulated in a very shallow depression in the floor prior to curving upwards slightly to abut with the mortared masonry base of the north wall. It is possible that this sequence represented an accumulation of demolition deposits. (20) was sealed by a yellow sandy layer (17) between the north wall and the point where a gully (15), cut the floor deposits (see

below). (17) abutted the north wall flush with the top of the existing masonry, and therefore, may have been deposited following demolition. To the south of the gully, however, (20) was sealed by a white concrete floor (17A).

(17) was covered by a variable thickness of dark silty soil (14), containing samian of form Drag. 27 of Trajanic date, and a form Drag. 37 sherd dating from AD 100-120, the latest samian attributed to Phase 2. However, (14) overlapped the top of the masonry walling, and thus by implication must postdate the demolition of the house, or, at least, the wall, and may best be placed in Phase 2C. Between the wall and the gully (15), (14) was sealed by a thin layer of silt (12), and a thin streak of mortary soil (11) whilst to the south of the gully, (14) was sealed by a thin layer of red clay (13) which petered out rapidly to the south down the peristyle, which could be interpreted as patching material.

At this point in the sequence, the Phase 1 and 2 deposits and natural deposits were cut by a gully (15) with a semicircular profile (approx. 1.0m wide and 0.4m deep) which cut an irregular path diagonally across the peristyle from its north-west corner, southeastwards to the northwest corner of the courtyard, where it fed into a pit. The gully was traced for a length of 2.5 m., but its exact function is unclear. It would appear to have originated in the northeast corner of Room 4, but this was not demonstrated by excavation, as the gully was truncated by the Phase 6 robber trench targeting the Phase 4 north-south wall. The irregularity of its path and profile suggest this to have been a drainage feature leading to a soakaway, and associated with some form of industrial activity in the room at a time when the house was in the process of decay. The gully fill (15) comprised a brown silty soil, mortar rubble some large stones, and contained three sherds of residual Flavian samian. It was sealed by a sequence of thin layers: a dark silty soil (10) containing a fragment of wallplaster with a graffito, a very thin mortary layer (9), and very firm grey silt (8), capped by a 0.07m thick layer of loose mortary rubble containing jumbled granite tesserae. This appears very flat and even from the wall, where it does appear (in section) to have a definite edge, hitting the line of the wall just above the line of the existing masonry (overlying (14)). However, over the gully fill the layer became irregular and petered out, being replaced by a thin layer of stiff grey clay (6).

Courtyard

Contexts: B IV (8), (9)

A mixed red clay (9), containing mortar and plaster was packed against and over the courtyard wall and ashlar column base, as if to form a sloping ramp. This was covered with an *opus signinum* floor (8), which bonded with (11) *c.*0.6m across the floor of the peristyle. This does not, however explain why this 'ramp' rises so high above the wall. There is no evidence to suggest that this overriding of the courtyard wall occurred elsewhere along its length, but it may be significant that it occurs directly opposite the doorway into Room 3. Interestingly, if the transverse timber sill in the southern part of the peristyle is in fact of this phase rather than 2A, and represents a subdivision of the peristyle, this could create a need to bridge the low colonnade wall with a ramp for the movement of materials in and out of parts of the building.

Phase 2C: Dating Evidence

The contents of context (10) provide dating for the changing function of the courtyard building. A Central Gaulish samian Drag.37, made at Lezoux, and dated to AD 140-70, is the latest dated piece from 2nd century deposits, and thus pushes the activity well into the second half of the 2nd century AD. The robber trench of the south wall of the peristyle also contained samian dated to AD 140-70 (see Fig. 32, 11).

Phase 2C?/3

The construction trench for the south wall of the peristyle cut the old turf line layer (14) attributed to Phase 1. The levelling up or construction phase of the *macellum* (Phase 3/4) − or possibly during the demolition of Phase 2 − subsequently necessitated the removal of this wall. The precise reason for its removal is, however, unclear, since the Phase 6 pit (Pit 1) which directly overlay the fill of the robber trench (9), does not appear to represent a robber trench for a Phase 4 wall of the macellum.

Discussion of Phase 2C

Phase 2C was initially characterised by robbing activity involving the removal of tessellated flooring across the entire building and the probable removal of its roof. Robbing was particularly noticeable in the rooms in the west range, where the *opus signinum* flooring in Room 3 was also targeted. The decorated wallplaster on the west wall of the room was subject to vandalism during this phase, being partially removed and graffitied. The scale and widespread nature of robbing activity to which the building was subjected during this period suggests concerted effort, possibly for the purpose of acquiring building materials for a specific construction project.

This period does not, however, appear to have been solely characterised by inactivity, with strong indications of part of the west range having briefly been given over to industrial use following its partial demolition. There were indications of the accumulation of trampled material within the peristyle of Room 2, and the dump of cattle skull fragments discovered overlying its floor suggest this area of the house having been utilised as a horn preparation workshop. Broadly contemporary, comparable evidence of industrial production has been forthcoming from elsewhere in Leicester. Specifically, excavations at Causeway Lane revealed significant quantities of horn cores in a mid-2nd – early 3rd century ditch backfill, suggesting the proximity of a tannery (Connor & Buckley 1999, 29). The insertion of a drain or gully in Room 5 and the installation of a timber-lined drain across Room 6, both in the north range also point to (albeit limited and short-lived) adaptation to and continued use of the building prior to its demolition.

Phase 3: Demolition of the courtyard building and levelling for the Macellum (Figures 3,43 & 14-16)

Introduction

A distinction may be drawn between deposits accumulating within the walls of the upstanding structure, and those deep deposits which overlay the remaining wall structures once the building had been demolished. The nature of the latter suggests that they represent a levelling-up process conducted over a short period of time. It is likely that this leveling activity and redevelopment of the site for the Phase 4 structure were contemporary. Indeed, it has been suggested by the excavator that the material excavated for the construction trenches would have provided much of this levelling material. However, construction of the building alone has been attributed to Phase 4, and the levelling up activity is thus treated as a separate event.

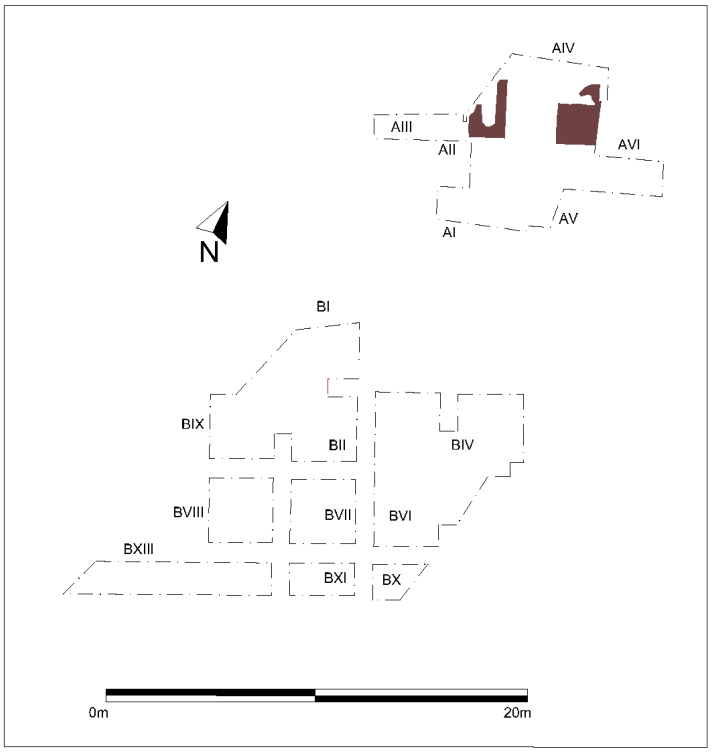


Figure 30 Phase Three

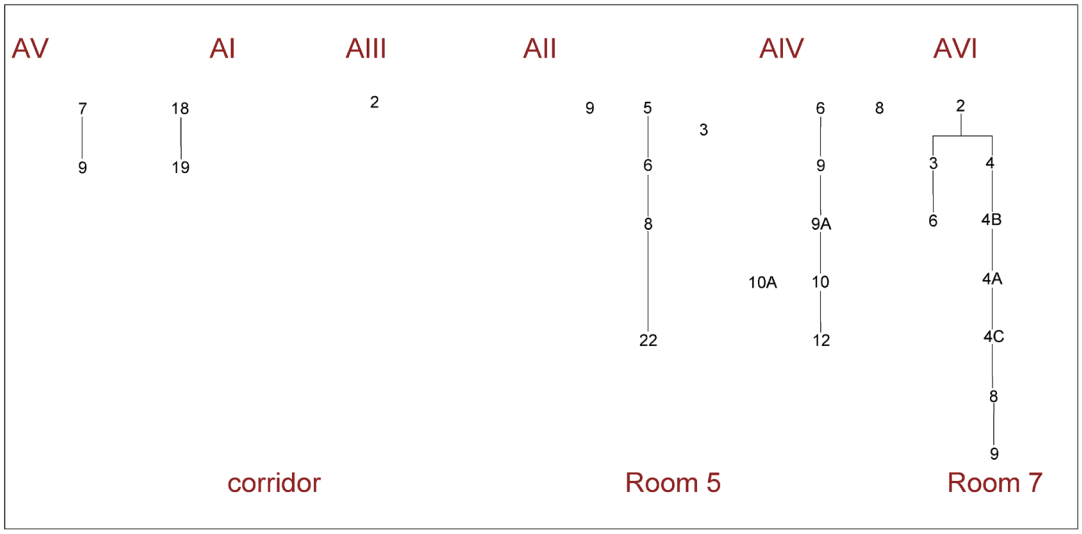


Figure 31 Area A Phase Three matrix

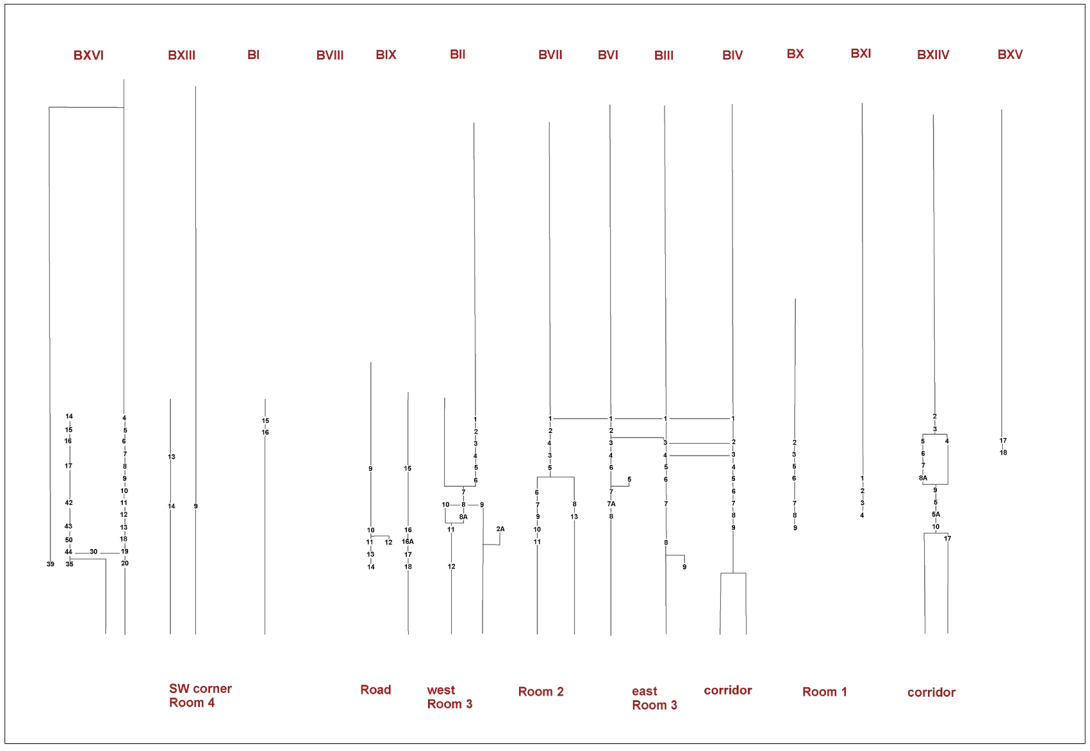


Figure 32 Area B Phase Three matrix

It is difficult to assess the precise state of the Phase 2 building during Phase 2C, and to determine to what degree it had already been demolished by the time that productive activity had ceased. Evidence from the south-west corner of the peristyle and Room 7 suggests that the plaster did not fall from the walls until after Phase 2C.

There is evidence to suggest that the roof of the building had been removed during Phase 2C or 3 and the materials salvaged for reuse, inferred by the lack of roofing

material in the destruction deposits of Phase 3. The roof may have been removed from the entire building, having become unsafe due to a lack of repair, but it is certain that at a minimum the roof of the peristyle was removed during Phase 2C, as the concrete ramp (B IV) ran over the ashlar block in the centre of the west peristyle, indicating that the colonnade supporting the roof had already been removed. The accumulation of silt and mud is more likely to have accumulated in those areas exposed to weather, as demonstrated in the south-west of the peristyle. There is, however, some contradictory evidence in the form of the soakaway pit in the north west corner of the peristyle, the fill of which (A V (9) and A I (19), contained substantial fragments of roof tile and stone. The deposit was capped by a thick layer of clay, A V(7). In the north peristyle, the flooring was overlain by a fall of wallplaster (A VI (4)), belonging to one of the frescoes

Levelling of the North Range

Contexts: A II (4), (5), (6), (8), (22), and (9). A IV (12) (Fig. 4.4)

The timber-lined drain appears to have been recut at an unknown date, with (22) representing the primary fill, and (8) and A IV (12) the secondary fill. Context (22) was a grey sticky deposit, suggesting that it accumulated during Phase 2C, whilst (8) contained rubble, suggesting that it derived from the destruction of the building, and was sealed by a thick layer of charcoal (6), containing tile, probably representing fallen roof material.

At this point, the existing superstructure of this part of the building was demolished and, it would appear, systematically removed. A clay deposit (5) containing rubble overlay the upstanding remains of the wall. The sheer weight of the deposit appears to have caused the collapse or compression of the drain fill, and the consequent slumping of the overlying deposits. The depression created was filled by (4). The fill of the drain comprised AIV (12) (not described) and (10), interpreted as remnants of collapsed clay wall and wall plaster.

In Room 7, a thin layer of rubble accumulated over the fallen plaster prior to the demolition and removal of the south wall. Subsequently the demolished area of the room and collapsed plaster in the adjoining north peristyle were overlain by a 0.5m thick make up layer (2).

Phase 4 and 5?

The series of levelling deposits overlying above those described above, occupying Room 7 and the north peristyle were of uncertain origin. A II (3) was an even, 0.25m thick layer of clay and pebbles overlain by two rubble layers (2) and (1). (3) may represent the floor of the Phase 4 structure, and (2) and (1) overlying destruction deposits. The latter contained coins of Constans (AD 337-50), and Tetricus (AD 271-273), which would indicate a destruction date in the second half of the 4th century.
A VI (1)

The Levelling of the West Range

The considerable (up to 1.5m) accumulation of Phase 3 deposits over this area of the Phase 2 structure is noteworthy.

(i) Room 1 (Fig. 6.6)

Contexts: B X 8,7,6,5,3,?
XI 4,3,2,1.

The collapsed clay north wall of Room 1 (B X(3)), was covered by 1.2m of make up deposits for the flooring of the Phase 4 building, comprising rubble dumps and rubbish spread.

(ii) Room 2 (Figures 6.1-6.3, 6.5 & 6.6)

Contexts: B VI 8,7A,7,6,5,4,3, and 2

Deposits of rubble, sand and clay, B VI (8) and (7A) filled the room interior to the height of the surviving walls. A similar layer (7), overlapped the top of the demolished north wall, and was overlain by a series of rubble layers (6), (5), (4), (3) and (2). Room 3, the west side of the house, the west peristyle, and courtyard edge. See south section of B II, III, IV and IX.

Contexts:
II 13,12,11,8A,8,7,4,3,2,1
III 7,6,5,4,3A,3.
IV 7,6,5A,5,4,3,2.
IX 18, 17, 16A,16,15. (14,13,11,10,9)

On the eastern side of the room, a 0.7m accumulation of clayey soil (7) overlay the floor to the height of the surviving walls, corresponding to the build up of layers. This was overlain by a series of thin building rubb1e spreads consisting of (6), an uneven layer of stiff red clay and plaster; (5), which contained rubble; (4), a dump of tesserae and *opus signinum*; a loamy soil (3A) and (3), a wedge of fine mortary rubble. These layers extended over the Phase 2 walls and into the area of the western peristyle. The floor of the central western peristyle was covered by a thick clayey deposit (B IV (7).

Robbing of the West Wall in B I (Phase 3 or 4?) (Fig. 5.6)

Contexts: B I 16,15

Construction of the Phase 4 north-south wall (G) entailed the removal of the Phase 2 wall, running parallel to it immediately on its west side. Pebbles and large rubble fragments (16) had collected in the bottom of the trench prior to its infilling with a mixture of clay, mortar, and plaster rubble, which was then sealed by the floor of the Phase 4 building.

The south-west corner of the peristyle, B XIV (Figures 6.1 & 7.1)

Contexts: B XIV 9, 5, 8A.7, 6, 8, 4, 3 (and 2?)

The interpretation of the process of demolition in this area of the building is problematic. Whilst the trodden surfaces of Phase 2C evidently indicate activity during the period of abandonment, it is unclear at what juncture the south wall of the peristyle, represented by robber trench (9), was robbed out, as the top of (9) had been cut by a medieval (Phase 6) pit (P1). The fact that (10) and (5), were matched either side of the pit may suggest that they were continuous, and originally sealed (9). This would place the robbing episode at the beginning of Phase 2C, at which time the colonnade may also have been removed. Whilst this remains the most likely scenario, there are alternative possibilities. The removal of the colonnade at this point may postdate the build up of (5), as the fragment of remaining column base was sealed by the layer of rubble (8A) that overlay (5). The nature of the layers, which increasingly deepened in the direction of the south wall and accumulated on both sides of it, may suggest that they had been deliberately built up against the wall, and hence that it may have been standing for some time. In such a scenario, however, its eventual removal would appear unnecessary.

Over the south-west corner of the courtyard wall a layer of black dirt (7) accumulated over rubble layer (8A), but this appears to have been largely removed and replaced by a thick wedge of clay (6). A substantial dump of loose mortar rubble (8) occupied the full width of the peristyle to a depth of 0.5m. South of the medieval pit P1, (5) was covered by a similarly thick rubble layer (4), and both (8) and (4) were overlain by a patchy clay layer (3).

The Phase 3 build resulted in an uneven surface at a 1m-1.5m height above the Phase 2 flooring, as over the rest of the west range. There may not have been a gap between the end of Phase 3 and the laying of make up material in preparation for the Phase 4 flooring. However, the latter process does appear to have constituted a single action, utilising imported orange gravel material which was visible over large areas of the site, rather than the piecemeal dumping and demolition which characterised Phase 3.

Phase 4: Construction of the Macellum

(Figures 1-3, 4.3-4.6, 5.3, 5.5, 5.6, 6.3, 6.3, 33-35)

This phase has been divided into Subphases A and B. Subphase A includes all constructional elements of the building, whilst Subphase B concerns all features relating to the use of the building which were inserted at a later stage.

Evidence for the Phase 4 structure predominately takes the form of a series of substantial medieval wall robber trenches belonging to Phase 6 and situated either parallel or at right angles to one another over the entire excavated area of Insula XVI. Sections of in situ masonry and associated floors were also detected. The walls have been allocated letters A to K in order to aid description in the text.

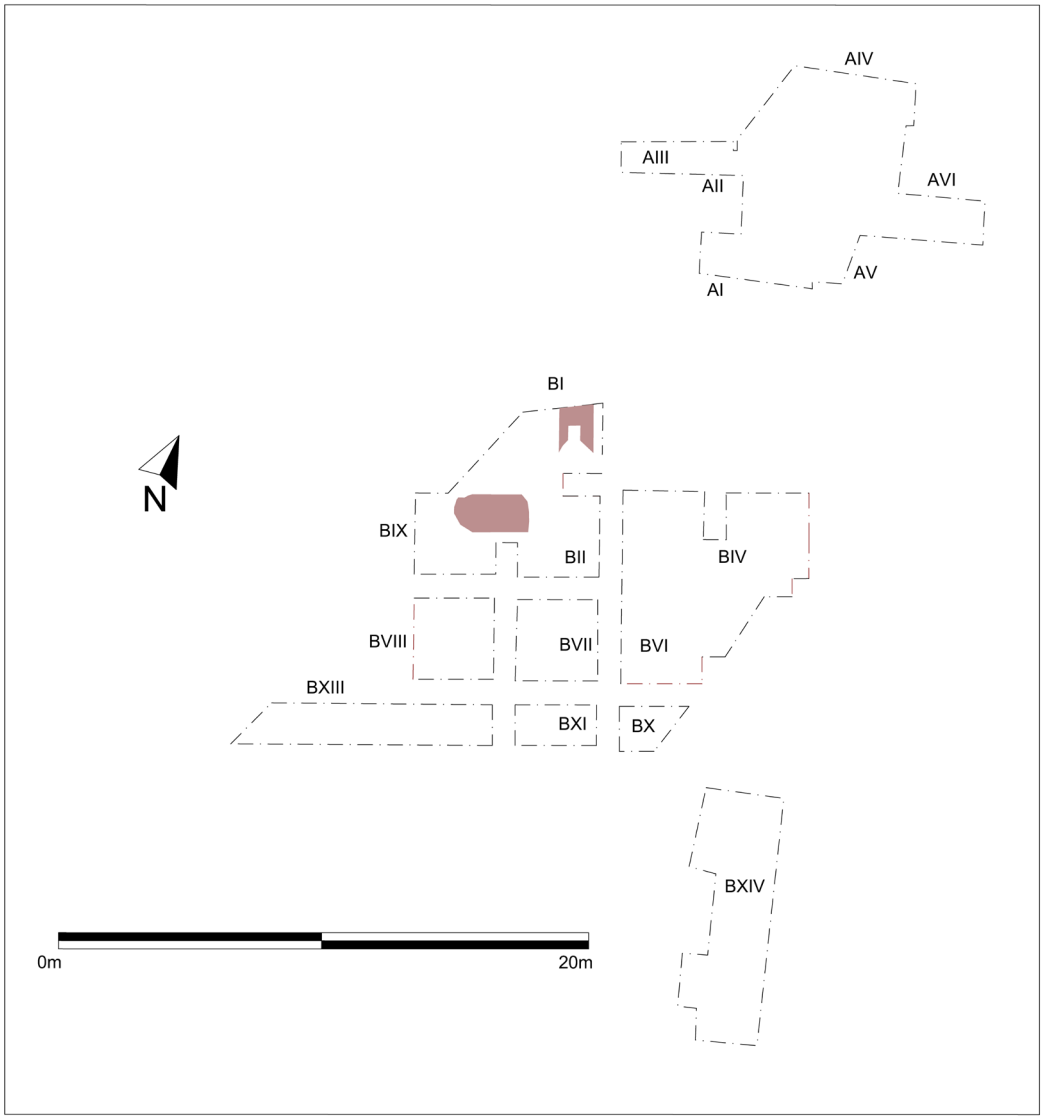


Figure 33 Phase 4

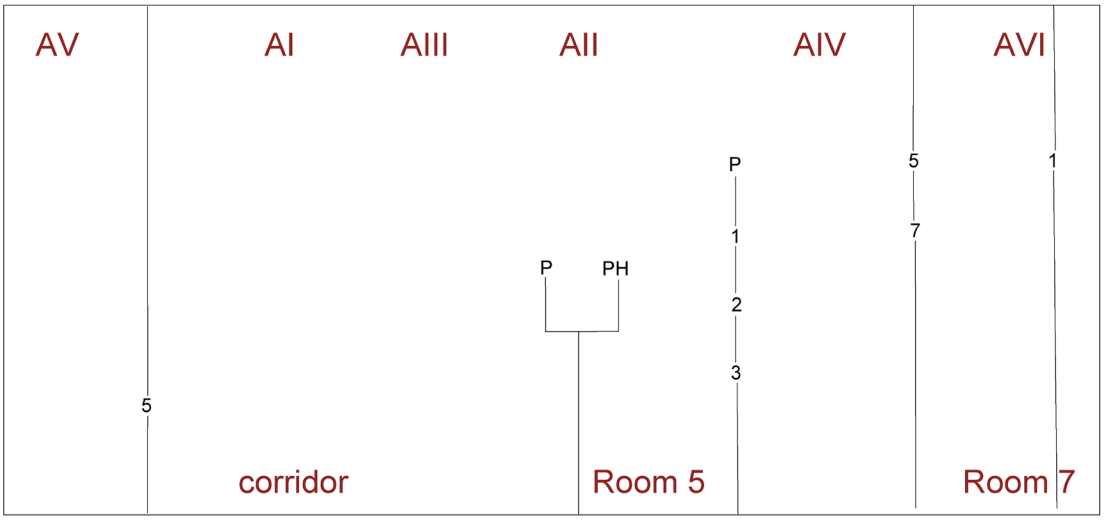


Figure 34 Area A Phase 4 matrix

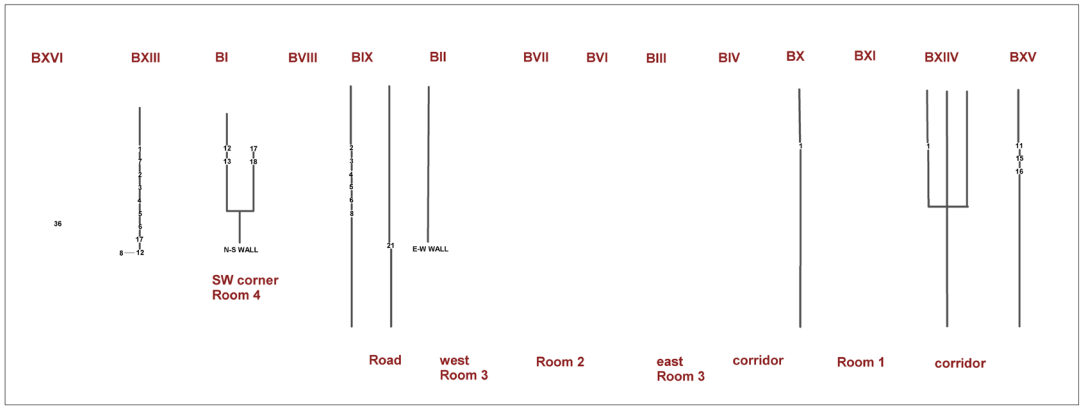


Figure 35 Area B Phase Four matrix

Phase 4A

The western external wall (Wall A) (Fig. 5.3)

The line of this wall, and of walls B and C running away eastwards at right angles to it, was detected in Trenches B VIII, IX, and XIII. The majority of the exposed 10m length of walling was represented by a robber trench recorded in the north section of B IX (context P2), and B XIII (context RT). B IX (P2) was 1.3m wide at its base, 2.2m deep and a minimum of 2.4m wide at the top, where it was cut by another medieval pit (P1). B XIII (RT) was of comparable dimensions; 1.2m wide at its base, 2.1m at the top, with a depth of 2.2m.

Whilst the southern continuation of A was not confirmed by excavation, it is assumed that it continued for *c.*23.80m to form the west wall of the building, and that walls D, E, in addition to that discovered in 1944, joined it at right angles in order to form the southwestern corner of the macellum. The northern continuation of wall A was detected along the eastern side of excavations undertaken across the north-south Roman street in 1960 by David Clarke of Leicestershire Museums.

The South Range

(i) Wall B (Fig. 5.6)

Wall B formed the northernmost wall of the south range, running perpendicular to A. Its junction with A survived as in situ masonry walling above rubble footings in B IX/II and is shown with its associated floors in the west section of B II/I. The wall survived as a 3m length of masonry, but its course as a robber trench was traced running eastwards for a further 13m across trenches B II, B III (P1), and B IV (see west section of B III).

The construction trench of wall B (B IX (21)) was flat bottomed and 1.3 m wide at its base. On the north side, the trench was straight sided and the floor abutted directly on to the wall face. On its south side, however, the trench widened, possibly indicative of attempted robbing. The footings of the wall at its west end had been robbed, causing the wall to tilt downwards. These consisted of loose, unmortared, Charnwood masonry measuring 0.2m-0.3m across, whilst the wall superstructure consisted of roughly

squared and faced mortared Charnwood stone blocks. Flat stone slabs measuring 0.06m-0.08m thick were employed as levelling between courses of more irregular stone. The facing on each side of the wall was up to 0.25m deep, and the core consisted of stone rubble set in mortar. The width of the wall footings was 1.3m, and the wall itself 1.4m wide. The total height of surviving wall including footings was 1.4m.

(ii) Wall C (Figures 5.4 & 5.6)

Wall C ran parallel with and 5m to the south of B, and only survived as a robber trench. Its junction with A was identified in B VIII, and observed to continue eastwards for a distance of 2.5m, its northern edge traced in B VII (RT), B VI (P2), and its southern edge in B XI (P2); and B X(4). See west sections of B VII, and B X/VI.

(iii) Wall D (Figures 5.3, 5.6 & 6.1)

Wall D was observed running parallel to, but a further 11m to the south of, wall C as a robber trench (P2) at the south end of B XIV. It was of comparable dimensions to A, B, and *c*: 2m deep, and 1.4m wide (see section). The length of robber trench exposed was 2.5m, but not observed over the projected line in the 2003 excavations (Derrick 2005).

(iv) Wall E (Fig. 6.2)

A further 5m to the south, a fourth parallel wall, E was traced as a robber trench (13) occupying the southern half of B XV. The trench itself was more substantial than its companions, possibly implying that the wall itself had been larger than the others. The trench was not fully excavated, but at its lowest point it was 3.35m wide, and 3.0m deep. The sides flared out, providing a maximum width of at least 3.3m. The length of trench exposed was 3.5m.

Discussion

The even (5m) spacing of the two opposing pairs of walls, B and C, and D and E, with an 11m gap between the inner walls of each pair, suggests a basilican arrangement to the building, with two aisles flanking a central nave or hall. This arrangement was originally suggested by Wacher (1959) when the site was first excavated, but at this time, the forum for *Ratae* had not yet been discovered, and this, like the Jewry Wall site before it, must have appeared a likely candidate.

Figure 36 Column base discovered in Bath Lane in 1907

Discoveries made in 1944 suggested that E was not, however, the southernmost macellum wall, with a section of wall F, running in parallel 5.5m to the south of E, uncovered during work under the Blue Boar Lane road surface. It lay in close proximity to, but slightly to the east of, the point where it would, logically, be joined by wall A in order to form the south-west corner of the building. Excavations undertaken in 2003 under the Travelodge, served to further clarify the plan. The southernmost wall (F) was again observed in 2003 (415), surviving to a height of *c.*1.94m and measuring 1.27m wide, reinforcing the view that this represented the southern external macellum wall (Derrick 2005).

Further discoveries towards the east end of Blue Boar Lane indicate that wall E may have represented an internal colonnade. In 1859, a short section of east-west walling with in situ columns was revealed (*TLAAS* 2, 23-4), and would appear to have been on the same alignment as wall E. One column measured 5ft 8 1/2ins in diameter, resting on a 12in deep plinth, whilst the other was 1ft 5 1/2 ins in diameter and without a plinth. Both were of millstone grit. The wall was again observed in 2003, preserved beneath a medieval building and of the same Dane Hills sandstone construction as wall F/415 (*ibid*). In 1907, a column base was discovered close to a portion of north-south walling '5ft. thick' running across the junction of Blue Boar Lane and Highcross Street. This wall appears to represent the eastern external wall of the macellum.

The West Range

Walls A and B formed the western and northern limits of the west range. A series of

three parallel walls (G, H, and J) projected northwards at right angles to B and in parallel with A. The spacing between A and G, and G and H was 3.3m. The exact spacing of H and J is unknown, but appears to have been the same.

(i) Wall G (Fig. 4.6, 37 & 38)

In situ remains of this north-south wall were revealed in B I, which appeared to be of sleeper wall type comprising a single course of possibly dressed ashlar masonry overlying rubble footings. A 1.9m length of the wall survived unrobbed of 1.4m width (see north section of B I). The junction of the G with wall B was in the form of a robber trench.

It is unclear as to whether the function of wall G changed over time or whether it had been subject to alteration, but it did appear at some point to have formed the foundation to a colonnade, involving the cutting of a depression into the centre of the upper surface of the wall in order to house an 0.5m x 0.6m ashlar block, set with weak mortar and rubble. The block was 0.15m in height, and stood proud of the wall. It had a 0.1m square slot cut centrally into its upper surface, in order to accommodate a projection from the base of a column. The dimensions of the block indicate a column measuring less than 0.5m in diameter, possibly similar to that found for wall E, where a 1 ft 5½ ins. Diameter colimn was found, or slightly under 0.5m in diameter (RJB). The distance between wall B and the assumed position of the column would have been 2m. It is possible that removal of the column may have preceded the destruction of the building, as the roof debris appeared to directly overlie the wall with no indications of disturbance.

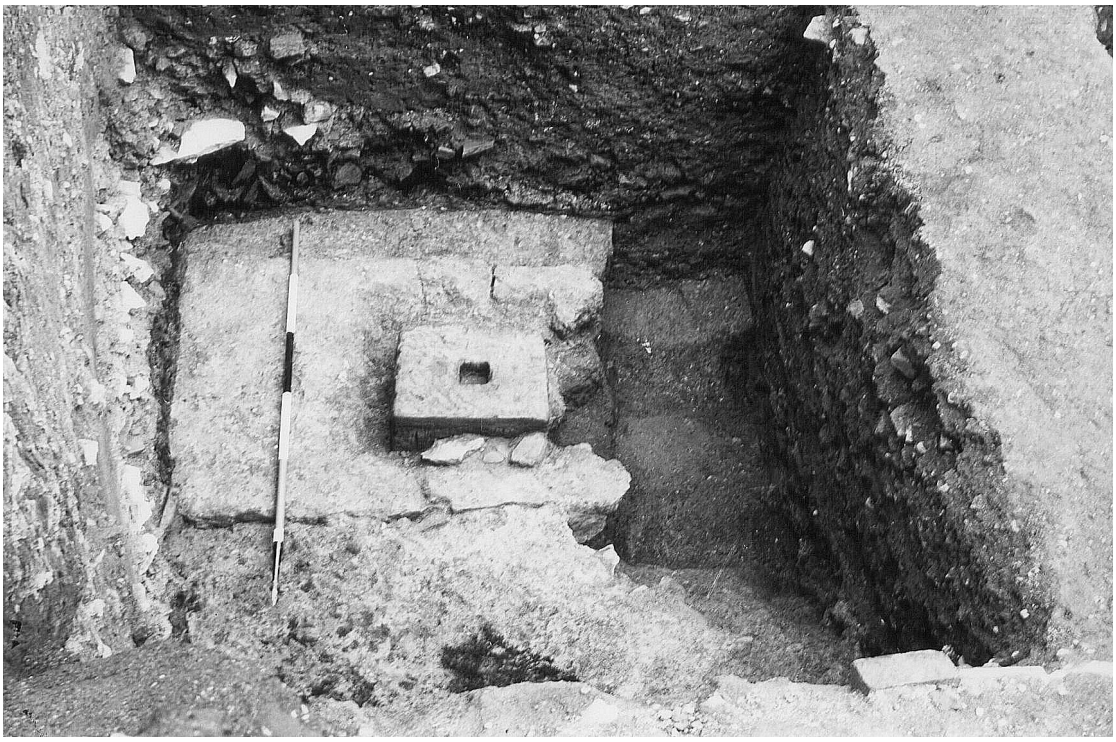


Figure 37 BI: ashlar block, floors and wall, with Phase 4 wall running north-south; view east

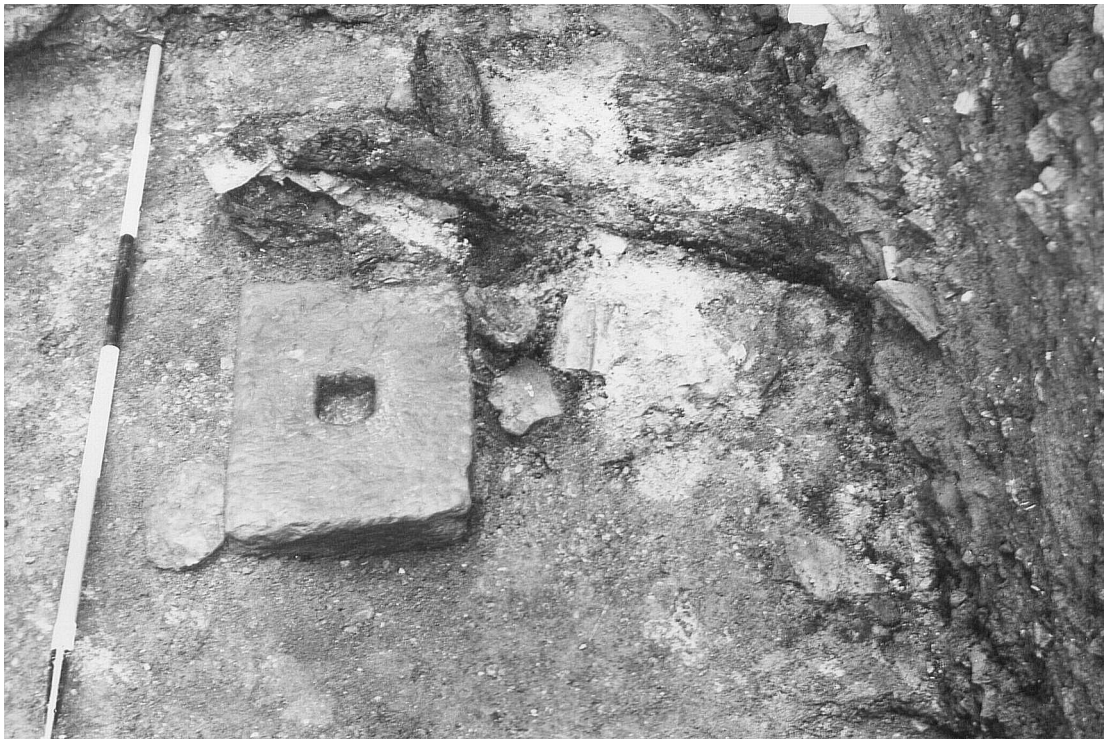


Figure 38 BI: burnt roof timbers of Phase 4 building destruction overlying ashlar block of Phase 4 wall; view east

(ii) Wall H (Figures 5.5 & 5.6)

Running in parallel, east of G, the evidence for wall H took the form of a robber trench (PI) close to its junction with wall B, in B III (see north section of B III). Its continuation northwards was observed in A I (context P1) and A III (Pit IV). The total length of the wall was 13m.

(iii) Wall J (Fig. 4.1)

The line of a third wall running in parallel to A was traced north to south across Site A V, VI and IV. Its junction with wall B could not be confirmed by excavation. The wall was represented 8m to the north of B by in situ masonry footings (5) in A V, only 0.5m of the entire width of which was excavated, and only a 0.6m length exposed. The wall line continued north for a further 7m in the form of a 0.6m wide robber trench which cut through the floor of the peristyle and Room 7 of the Phase 2 structure.

It was the view of the excavators that the footings pertained to a wall of greater width than indicated by the robber trench which extended northwards. They proposed that this point represented a change in wall width for the north section, and that the south section of the wall that joined wall B was of the same width as the other walls of the building, namely, 1.3m as opposed to 0.6m. Whether this width change can be supported on as meagre evidence as this is debatable, and it may be more accurate to suggest that the wall was of the same reduced width along its full length.

(iv) Wall K

The aisle formed between walls G and H appears to have been partitioned by an east-west wall K, running 10m to the north of wall B. The northern edge of the robber trench (Pit III) of this wall ran along the south side of A Ill.

The Flooring of the Phase 4 Structure
(Figures 4.6, 5.1, 5.6, 6.1 & 6.2)

Contexts:
B I; B III (1); B IV (1); B VI (1); B X; B XIV (2);B XV

In considering the constructional elements of the floors, a distinction has previously been drawn between contexts belonging to the piecemeal Phase 3 demolition and built up sequence, and those belonging to Phase 4, representing the final levelling prior to the laying of floors or, possibly, those layers which themselves functioned as flooring. This is most clearly observed in areas B III, IV, VI, and XIV where it appears that the ground level needed to be raised considerably. For this purpose a large amount of orange gravel was imported on to the site, possibly Soar Valley river gravels (B III/IV/VI (1)). This area corresponds to the location of the proposed north aisle of the south range, and it may be significant that there was no indication of flooring above this gravel build up, implying that this may itself have funtioned as the floor in this area.

Alternatively, all traces of concrete flooring in this area could have been removed by later activity, as would appear to have been the case in area B XIV. (2) is a similar deep layer of gravel build up mixed with clay-rich and pebbly material. In the north east corner of the trench the overlying floor (1) and (1A) were preserved, and comprised a very coarse *opus signinum* containing large rounded pebbles, similar to that found elsewhere in the building. This would indicate that the surface of the proposed nave or hall had been floored. A second area of flooring in the nave was excavated in B X, abutting against the line of the north wall. A layer of weathered *opus signinum* (1) up to 0.2m thick containing sand, pebbles, and fine brick, overlay a deep build up (0.8m) of orange pebbly loam (2).

(i) The Floor Sequence in B XV (Fig. 6.2)

The southern half of this trench was occupied by the robber trench (13) of wall E running east-west. The trench cut a sequence of floors on its north side asociated with the Phase 4 structure. This is the only instance on the excavation of a floor sequence, and suggests that this southern part of the building was subject to a high degree of alteration during its functional life.

Trench 13 lay was located *c.*8.5m south of the Phase 2 courtyard house. Although the layers below the Phase 4 floor sequence are thus difficult to relate to the Phase 2 structure, the dating of the samian material suggests that they post-date the Hadrianic construction date. The area was excavated down to natural sands and gravels in the northern half and along the extreme southern edge, although the robber trench itself, which cut into the natural was not fully dug. On the south edge of the area a row of

weakly mortared stones (14) lying in a bed of silt over natural was the earliest feature, producing Flavian/early Trajanic samian, and may have been contemporary with Phase 1 or 2.

On the north side, the earliest level consisted of a thick layer of clay and sand (18) overlain by a deep deposit of mortar and stone rubble (17), which may have derived from the destruction of the Phase 2 courtyard house to the north, and is of similar composition to B XIV (4), with which it may have been continuous. The rubble produced samian of early-mid-Antonine date (AD 138-192), the latest dated such material from the entire assemblage.

Rubble layer (17) was sealed by a mortar floor (16), the earliest floor in the south aisle of the Phase 4 building and seemingly positioned *c.*1m lower than the floor of the nave (B XIV (1)). At the west end of the trench, (16) was overlain by a thin layer of orange gravel (i5), which may have functioned as a temporary repair prior to replacement of the entire floor by a new plaster floor (11), which appeared worn and fragmentary.

Floor (11) was overlain by a 0.15m thick rubble deposit (10) which may have served as hardcore bedding for a new floor. At this point, however, a trench was cut into the floor against the north side of the wall, most likely as some form of building maintenance such as underpinning. The pit was filled with pebbly gravel containing lumps of red clay (12) which also partially overlay rubble (10). The surface of the fill was consolidated by a layer of sandstone slabs (9) which formed the new floor in this area, the weathered state of which possibly infers use over a considerable period prior to major alterations in this part of the building. The floor level was raised by 1.0m by levelling up with rubble and red clay lumps (8), which effectively brought it up to the same level as the adjacent nave of the south range. The new floor surface (7) was of orange gravel, and this represented the last in the sequence. The pottery derived from this flooring appeared to consist of residual Hadrianic-Antonine samian together with Trajanic reeded rim bowls 104/107.

Figure 39 BI/IX: Phase 4 east-west wall viewed north-east with the Phase 4 furnace centre left

(ii) The West Range (Fig. 4.6)

Contexts: B I

B I, over the west range, provided the only instance of Phase 4 floor levels in direct association with in situ wall masonry. In other areas floor levels were cut by the medieval (Phase 6) robber trenches of the Phase 4 walls.

The area enclosed on three sides by walls A, B, and G represented the southwestern part of the west range, and was represented the best preserved part of the building. The flooring of this area appeared to directly overlie Phase 1 deposits (B I (14)) that were cut by the external west wall of the Phase 2 structure. This wall was removed during the course of Phase 4 construction, and the robber trench fill (15) was sealed by a layer of stones and ceramic building material (13) with a TPQ of AD 200-250, which acted as bedding for an *opus signinum* floor (12). This floor suffered heavy wear, necessitating clay patching. The area bounded by walls B, G, and H was paved in the same manner, a grey loam B I (18) forming the bedding for a thin *opus signinum* floor (17).

Phase 4B: The use of the Phase 4 Building (Figures 39-41)

Evidence for activity within the building is restricted to area B I, the proposed external 'portico' of the west range, bounded by walls A, B, and G.

The Furnace B I (19) (Figures 40 & 41)

A small furnace (19) was set into the concrete floor (12), surrounded by an extensive area of burning, representing a rare example of a structure associated with the production of glass vessels. The approximately circular feature measured *c.*0.5m in diameter, the lining and base of which consisted of unbonded coursed masonry and (possibly) reused Roman ceramic building material. A small opening on the south-east side represented a flue. Large quantities of glass making waste were associated with this structure, and solidified molten glass coated the tiles of the inner furnace. The feature also produced a bloom of cupellation waste, linked to copper melting or the extraction of silver, and indicative of a working, not smelting furnace (Ashley & Morgan, this volume). The colour of the glass suggests a 3rd-century date for the assemblage.

Figure 40 BI: Phase 4 furnace viewed north-east

Figure 41 BI: Phase 4 furnace viewed north

Phase 5: Destruction of the Macellum and Post-Macellum Occupation

Phase 5A Destruction of the Macellum

The abandonment and destruction of the south range (Figures 45 & 46)

The new floor level (7) was in use for an unknown period. At its east end a slight scoop appeared to have functioned as a hearth. Its thick oak charcoal fill (6) produced Flavian and Antonine samian pottery. Cut marks on certain fragments suggested that these represented trimmings. A thin layer of dirt (5A) accumulated over the entire surface, which was then covered by a dump of building rubble (5). After the accumulation of two thin layers of silt (4) and (2) divided by a layer of plaster (3), the deposits were sealed by a fall of painted wallplaster (1) from the collapsed ceiling.

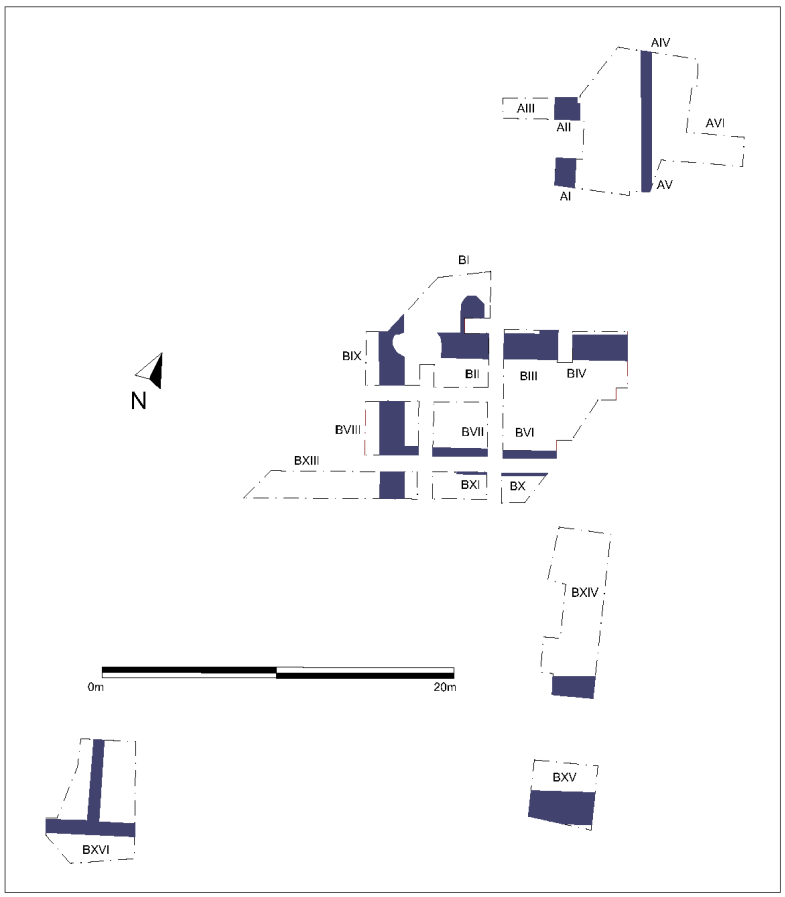


Figure 42 Phase Five

Figure 43 Area A Phase Five matrix

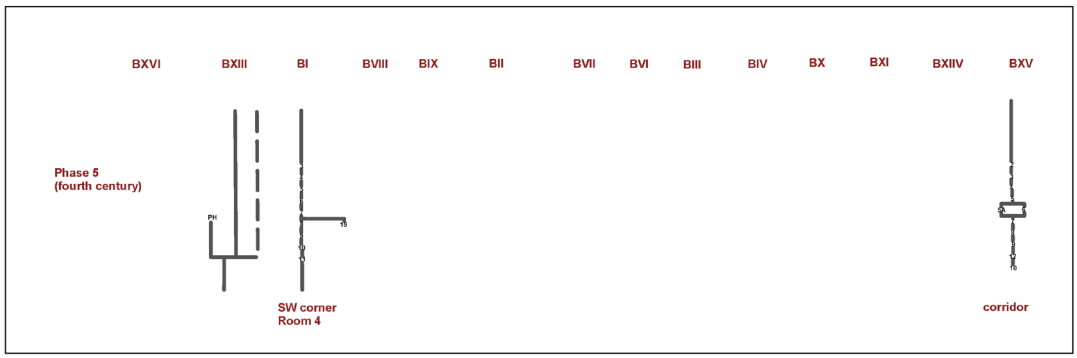


Figure 44 Area B Phase Five matrix

The abandonment and destruction of the west range (Fig. 6.5, 45-7)

Floor, B I (12) was covered by an irregular layer of charcoal (11) on which a layer of dirty clay (10) had accumulated. The area was then covered by a layer of small stone and tile fragments (9) with a loose mortar binding, which might be interpreted as a floor repair. The entire area, including the colonnade wall G, was then overlain by a loam containing charcoal and mortar (8) which contained mid-2nd century samian and overlay a dense layer of burnt roof timbers and tile (7). The timbers were of oak, and nails had been used to attach a roof of tegulae and imbrices. Layer (7) was up to 0.4m, thick, but was only recorded in the area bounded by walls A, B, and just immediately east of wall G, although it may well have extended to wall H or further. There was possible evidence for it in the north section of B III, where a layer of burnt bricks was recorded above a series of clay and mortar floors, but this may belong to Phase 2.

The Phase 4 structure may have been levelled at this juncture, as the collapsed roof was covered by a thick build up (4.6m) of rubble (6), containing stone, brick, and tile. Due

to the extent of medieval robbing it is uncertain as to whether the walls were entirely demolished at this time, or else stood proud of the rubble. This has an important bearing on the intended development (or otherwise) of the site.

Figure 45 BI: destruction of Phase 4 building with fallen roof timbers, viewed north-west

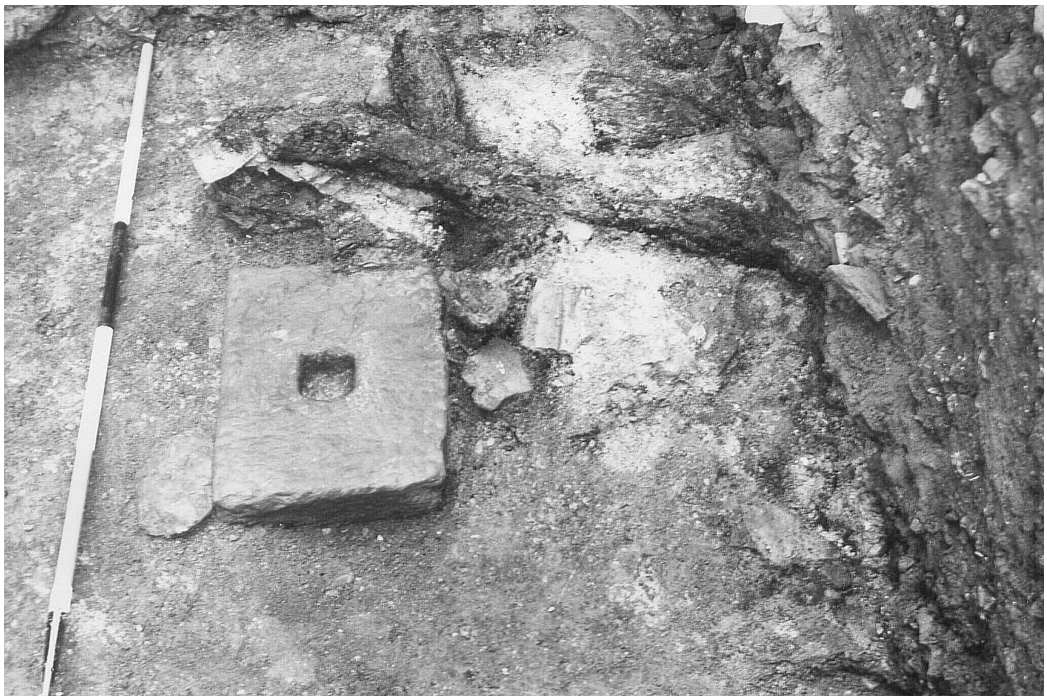


Figure 46 BI: burnt roof timbers of Phase 4 building destruction overlying ashlar block of Phase 4 wall; view east

Fig. 47 BI: North trench section showing macellum destruction sequence

Phase 5B: Post-Macellum Occupation (Figures 5.6 & 6.5)

Contexts: B I (5), (4), (3), (2)

A sequence of silts (5), (4) and (2) accumulated over the build up of debris (6), suggesting that this area of the building or plot lay open and uninhabited. However, a spread of stone brick, tile, and nails (3) below the final silt (2) may simply have been a dump of building rubble, or it may be suggestive of a floor and some form of timber structure, of which only the fixings survived. The latter possibility was suggested by Wacher (1975, 357) in order to give an impression of living conditions in Ratae during the latter part of the 4th or early in the 5th century.

The Roman Street

The North-South Road Sequence in B XIII (Fig. 7.3)

Contexts: 1, 2, 3, 4, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24

The robbing of the Phase 4 west wall (A) meant that it was not possible to tie in the road sequence with the structures in Insula XVI or XV. A 1.6m sequence of deposits were excavated, representing the successive surfaces of the eastern half of the street, and the associated roadside ditches and silt deposits along its eastern side.

A series of four main surfacing episodes was identified, as follows:

Road Surface 1
The earliest surface overlay natural sands and gravels and consisted of a continuous, 0.2m thick layer of stiff grey clay (24) with occasional boulders and samian dating to *c.*AD 65-85. The excavated width of 4.2m had a slight camber along the eastern edge.

The absence of silt build ups on this surface may indicate this as representing the make up for the first road surface, although the overlying layers do not extend to the full width of this clay bedding. Instead an eastern cambered edge was observed *c.*1.m in from the edge of the clay, formed by the laying of a thin gravel layer (23) over a small area and the relaying of clay (22) along the eastern edge. The road surface itself consisted of a compacted gravel metalling (21) of up to 0.25m thickness. A thin layer of silt (20) had accumulated prior to the worn central portion of the road being built up with gravel (19), over which a further layer of road silt (18) collected.

Road Surface 2
The entire road was then resurfaced with sand and gravel (16) to a thickness of 0.3m, giving it an overall height of 0.8m above natural. The steep camber led to a substantial build up of silts (15) and (14) against the eastern edge. The former produced samian pottery dating to *c.*AD 75-90. The faint outline of a ditch with a *c.*0.75m semicircular profile was observed on the eastern side of (15), with a silt fill of a barely distinguishable nature. Attempts had been made to consolidate this silt by the laying down of a cobbled surface (13) level with the second surface (16). However, a silt (12), containing abundant oyster shell, continued to accumulate over this.

Road Surface 3
A layer of loose gravel (17) was laid down across surface (16) and consolidated silt (12). This appears to have formed only a temporary surface, as no silt accumulated on its surface prior to the laying down of a wider and more substantial hard rammed gravel metalling (6). This appeared to extend further east than the original clay bedding (24), although its eastern extent had been truncated by a later roadside ditch (7), the fill of which yielded Flavian/Hadrianic samian. If the newly-widened road was to have been associated with construction of the Phase 4 building, then the metalled surface would have abutted almost directly on to its west wall (A). In reality there was a gap of a minimum of 6m between the road and the west side of the Phase 2 building.

Surface (6) served to level the road, as a result of which there was no camber to enable surface runoff or the accumulation of silt. A shallow roadside ditch may, however, have existed, obscured by the later recut (7). A substantial layer of silt (5) containing samian dating to *c.*AD 125-140, accumulated towards the centre of the road, creating a cambered surface. This would suggest that the 2m margin along the eastern edge was regularly cleared of silt, perhaps to allow pedestrian traffic easier passage.

Road Surface 4
Silt (5) was consolidated by a new surface (4) of rough paving, comprising large, flat, but irregular shaped stones, bonded by a weak mortar mix. Silt (3) accumulated against the reinforced camber, and over the margin of the old surface (6), which was evidently no longer cleared of silt on a regular basis. Silt (3) produced late second/early third-century samian pottery.

Road Surface 5
Little silt appears to have built up on surface (4), indicative of the effectiveness of the cambered surface, prior to the laying down of a further sand and gravel metalled surface (2) across the entire road width, mirroring that of the third surface (6) in its eastern extent. Problems with surface water and silt runoff may have precipitated the cutting of a ditch with a semi-circular profile, measuring *c.*0.8m in width, the fill of which (7)

was a silty loam and contained early Flavian/Hadrianic samian pottery. An absence of wear in the new surface (4), for example in the form of wheel ruts, is indicative of either a very short period of use, or of light traffic. The ditch appeared not to have been recut, and silted up prior to the entire surface being overlain by a 0.5m depth of sandy soil (1) which produced samian pottery dating to *c.*AD 100-120. The layer was in turn cut by the medieval robber trench targeting the Phase 4 west wall (RT), a medieval post hole and a modern feature. It is possible that layer (1) forms the same context as that constituting the Phase 3 build up prior to construction of the Phase 4 building, and represents a gravelling of the area.

Insula XV Area B XVI

Overview

To the west of the north-south street, in the adjacent Insula XV, a single isolated box trench was excavated, B XVI, revealing limited evidence for a separate sequence of buildings comprising a Phase 2 clay brick structure with timber partitions, and a Phase 4 masonry building. They are probably best interpreted as successive phases of shops fronting on to the east-west street opposite the Forum and Basilica complex. Although there is no way of directly relating activity between insulae XV and XVI, evidence from pottery has enabled a broad correlation, and so the same phase sequence seen in the latter, has been followed.

Phase 1 (Figures 7.4 & 7.5)

Early Surfaces
Contexts: (29), (49), (40A)

Natural was overlain by an orange sand and pebble surface, possibly representing the true surface of natural sands and gravels, which was only recorded at the base of the north section, and which was covered by an even 0.2m thickness of silty sand (29). Dating evidence suggested that the activity was contemporary with that of Phase 1 activity in insula XVI. Silt (29) contained pre-Flavian samian and a Rosette brooch of a type 'unlikely to have arrived in Leicester later than *c.*AD 40' (D. Mackreth small find No.2). Overlying (29) in the area to the west of the Phase 2 gravel platform, and cut by it, was a black ashy layer (49), and (40A), which yielded a boot sole, and a sherd of Flavian samian. Layer (29) was also seen at the southern end of the trench, outside the later Phase 2 and 4 buildings. The phase appeared to be of late 1st century or early 2nd century AD date.

Phase 2 (Figures 7.4 & 7.5)

Clay brick wall and timber sleeper beam building
Contexts: (40), (41) and (35) (east section and north section)

Silt (29) appeared to cover the entire excavated area, with the exception of a 1m-wide strip running along the east side of the trench, where a platform of orange gravel and stone (40) was inserted into it. The platform was 0.3m thick, and served as a hard-standing for a 1.5m long north-south stretch of clay brick walling (41), which was 0.35m wide and survived to a height of 0.6m (preserved lengthways in the eastern section of the trench and widthways in northern section). The division of the wall into

horizontal courses of unfired grey clay bricks was most apparent in the north section, where each was divided by layers of sandy mortar. At least four courses were identified, although compression had caused considerable distortion to their thickness. Areas of white plaster render survived on the visible western wall face, the eastern face hidden within the baulk.

The north-south line of the clay brick wall (41) was extended southwards by a timber sleeper beam trench (35) for a distance of 2.9m before being cut by the east-west aligned robber trench of the later Phase 4 stone wall. There was no evidence to suggest that it extended south of this, and so any return sleeper beam, running east (or west), is likely to have coincided with the later stone wall, and thus have been removed. An eastern, right-angled return, at the north end, and abutting on to the clay brick wall was, however, clearly visible in the eastern section (35), measuring 0.25m wide at its base and 0.3m deep.

Floor Sequence inside the Phase 2 Timber Structure, east of the wall line (Fig. 7.4)
Contexts:(31), (32), (33) (34), (35), (36), (37)

No information regarding the sequence east of the clay wall (41) was visible, as it was hidden by the eastern baulk of the trench (see north section). The floor sequence within the timber-walled area of the Phase 2 structure was recorded in the east section. A dark occupation layer (37) lay directly over the gravel platform (40) on which the structure was constructed, suggesting that it represents the original flooring. Layer (37) contained samian dating to at least AD 135, suggesting at the earliest an early Antonine date for the initial use of the structure. This is at a slight variance with the pottery dating for the sequence of cobbled surfaces in front of the structure (20)-(28) (see below), where the end date appears to be Hadrianic from the samian.

Context (37) was overlain by a mixed layer of burnt material (33) containing samian of AD 130-150. This was sealed by a thin wedge of red clay flooring (34) which, in the area close to the west wall, had been supplemented with burnt red clay (45), in order to form a possible hearth. A deposit of trodden occupational debris (32) accumulated over the clay floor was followed by a deposit of compressed sandy silt (31), which appeared closely comparable to (21) and (20) to the south of the building, and may have dated to a period of abandonment following partial demolition of the building.

The Phase 2 Sequence to the west of the claybrick wall (41)
Contexts: (46), (47), (48) (North section)

The Phase 1 deposits were sealed by a trample of black soil (48) containing samian of AD 60-80 and recorded in the north section. A shallow, north-south, V-section gully cut (48) (40A) and (49), occupying the area between the Phase 2 clay brick wall (41) to the east, on to which it abuts, and the Phase 4 masonry wall on the west side, which cuts it. Its fill (47) contained samian dating at the latest to AD 110-130, a brooch dating to the last quarter of the 1st century, and a number of greyware vessels with dished everted rims, of Flavian-Trajanic date (Nos. 71, 79, 92, 183). The gully was sealed by a thin trodden layer of ash, charcoal and animal bone (46) containing Trajanic samian.

The Phase 2 sequence to the south of the building
Contexts: (20), (21), (22), (23), (24), (25), (26), (27), (28) (East section, south of Robber Trench (1)

The area south of Robber Trench (1) (robbing Phase 4 masonry south wall) is presumed to be outside the Phase 2 clay-brick and timber structure, as any southern wall would appear to have ben removed by the Phase 4 masonry wall. Although both the Phase 2 and Phase 4 building faced on to the east-west street, opposite the location of the forum, they are set back from the street, perhaps suggesting the existence of a portico.

The Phase 2 sequence comprised a series of cobbled surfaces separated by deposits of occupation debris. Phase 1 silt layer (29) was sealed by a layer of orange pebbly sand (28) with a markedly trodden surface. The deposit was thickest towards the south-west corner of the trench, thinning to the east where it was visible in section. Along the south edge of the trench it gave way to a more substantial cobbled surface, possibly corresponding to the transition from portico area to the road surface. This surface was overlain by dark occupation material (27) and in turn sealed by a new cobbled surface (26). The accumulated overlying debris (25) contained bone, oyster, and charcoal and a coin of Vespasian COS III. The samian was predominantly Neronian in date, but with one example of Form 29 of Neronian or early-Flavian date and a further sherd of Form 18 of Flavian date. Greyware vessels included a dished-everted rim beaker or jar, of Flavian or Trajanic date.

The occupation sequence was sealed by a red clay and orange pebbly sand floor (24), above which a series of compressed soil and silt layers (23)-(20) had accumulated. Silt (23) contained Flavian samian, and had fine pebbles impressed into its surface. (22) produced samian of AD 65-85, and silt (21), samian of AD 70-90 date. Finally, silt (20) provided a Trajanic or early Hadrianic (AD 105-25) date for the close of the phase.

Discussion of Phase 2

The use of the clay-brick walling technique (41) suggests the building was broadly contemporary with the town house in the adjacent Insula XVI, but its exact relationship with the timber sleeper beam structure that abuts it at its southern end, and the Phase 4 masonry building, with which it shares an alignment on the street grid, is uncertain. It is perhaps most logical to view the clay and timber walls as contemporary parts of one structure. If the sleeper beam (35) was contemporary with the clay wall, rather than being a later addition, then the beam itself must have rested directly on to the gravel platform (40), without cutting through surrounding deposits. Rather, the trench was actually created by the build up of floor levels inside the structure, butting up against the inside of the timber wall (see above). Certainly, the removal of the wooden sleeper beam was contemporary with the general destruction of the Phase 2 structure, as the fill (35) of the trench was continuous with (44), which overlay the demolished clay wall and floor sequences. How far east the return (35) continues is unknown but was limited by the line of the north-south street a few metres further east, close to its junction with the east-west street separating it from the proposed, or impending, site of the forum in Insula XXII, to the south, built during the middle decades of the 2nd century.

Phase 3: The destruction and levelling of the Phase 2 structure (Figures 7.4 & 7.5)

Destruction deposits

Contexts: (19), (30), (44)

Phase 2 deposits were sealed by (44) to the north of the robber trench, (19) to the south

of the robber trench, and by (30) west of the north-south wall of Phase 4. All three layers were of similar mixed rubble composition, including burnt daub, clay and stone fragments, and large lumps of charcoal which might derive from burnt roof timbers.

The latest samian pottery from (44) was of probable Antonine or at least late-Hadrianic date, and may be residual. (19) contained early Flavian and Flavian/ Trajanic samian and a mortarium stamp dating to AD 130-160, whilst (30) produced pottery spot-dated to the Hadrianic-Antonine period by John Wacher, at the time of the excavation.

Phase 4: Structural evidence for the masonry-founded building
(Figures 7.4 & 7.5)

A substantial masonry wall ran parallel to, and 2m to the west of, the line of the clay wall and sleeper beam, measuring 0.55m wide and constructed of roughly dressed Charnwood granite blocks bonded with yellow sandy mortar. The total height of masonry surviving was 0.8m, of which only 0.3m was of superstructure. The surviving wall length was 4.5m, but at its south end, at its junction with the east-west wall, it had been severely robbed. The east-west wall was represented by robber trench (1) except for two areas of *in situ* rubble footings (38), which were preserved at the east and west ends of the exposed length of 5m. The medieval Phase 6 robber trench was straight-sided and 1m wide at its base. A pit (39) associated with the footings at the east end of the robber trench produced samian of AD 160-190.

The south wall continued eastwards for an unknown distance, but is assumed at some point to have made a right angle return northwards to form the south-east corner of the building. The sequence north of robber trench (i) was thus assumed to have been located inside the building. A layer of sandy loam (50) overlay (44) within the area bounded by the masonry walling of the Phase 4 structure, seemingly similar to layer (13) to the south of the robber trench. Silt (43) overlay (50), and provided the make up for a sequence of clay floors (42) which had been compacted into a 0.2m thick layer and situated *c.*1m above the Phase 2 flooring. The precise relationship between the floors and the wall was unclear, however, due to disturbance from a post-medieval cellar.

The floor sequence was overlain by a thick layer of occupational rubbish (17), which was sealed by a 0.1m-0.15m thick mortar floor (16). A layer of silt (15) had accumulated over this surface, which was in turn sealed by a further floor layer of mortar and pebbles. This final flooring episode lay *c.*2m above natural sands and gravels.

Phase 4 The External sequence to the south of the Phase 4 Masonry Structure (Fig. 7.4)

Street frontage or portico
Contexts: (18), (13),(12), (11), (10), (9), (8), (7), (6), (5), (4), (3), (2)

Rubble (19) of Phase 3 was partly overlain by a wedge of mortar (18) which extended 0.45m to the south of the robber trench. The mortar and exposed area of (19) were covered by a layer of sandy loam (13) of similar composition to (50), providing make

up for Phase 4 surfaces outside the building. Dating evidence from (13) suggested a late 2nd century AD or later construction date, and included a coin of AD 150-60 and Central Gaulish samian of AD 160-190. Context (13) was sealed by a thin layer of white sand (12), probably representative of the decayed remnants of a concrete surface outside the front entrance to the building and on the same level as the lowest clay surface (42) within the building. Occupational rubbish (11) and road silt (10) had accumulated over this to a depth of 0.2m before being sealed by a compact orange gravel surface (9) with brick and tile fragments impressed into it. (9) was at the same level as the highest clay floor inside the building. In common with (12), it was thickest towards the eastern side of the trench, suggesting that this was the position of the threshold. Dark silt and rubble (8) had accumulated over this gravel surface before its replacement by a heavily-worn pinkish-white mortar surface (7). This was subsequently covered with burnt material (6) and later sealed by a new mortar floor (5). In contrast to the earlier surfaces, both (7) and (5) were thickest at the western side of the trench and at the same level as the internal mortar floor (16), suggesting contemporaneity. (5) was repaired with pebbly gravel (4), over which silt (3) had accumulated. The entire sequence was sealed by a possible fallen wall (2), comprising courses of faced Charnwood granite laid in buff mortar. The wall was faced with smooth plaster on the outer face and most likely formed the collapsed front wall of the building.

Overall summary of the Roman Sequence

The Blue Boar Lane excavation of 1958 is of considerable significance regarding the understanding of the development of early Roman Leicester and, as such, is of direct relevance to subsequent excavations conducted in the vicinity including the 2003 Stibbe excavation and others associated with the Highcross development, namely Freeschool Lane and Vine Street. Notably, it is particular relevance in terms of demonstrating the rising prosperity of the city during the second century AD as manifested in the construction of sizeable private residences and, subsequently, the establishment of significant structures directly linked to the emergence of commercial structures, namely the the proposed market hall (macellum).

The insula XVI courtyard house

Mid 2nd century. Now in Jewry Wall Museum, Leicester.

Introduction

The painted wall plaster material consists of three areas of wall-decoration from the peristyle of the courtyard. The scheme is partially reconstructed from plaster found in situ at the base of the wall in A, and partly from jumbled fragments collected according to a gridded recording system. The house was built in the early part of the 2nd century AD, but the paintings are ascribed to a later renovation.

The reconstructions posed considerable difficulties due to the scarcity of joining areas discovered. As a result it is probable that several elements detailed here are inaccurate. In the *aedicula* reconstructed on the north wall (B), for example, it is unlikely that the columns above the arch should have been prolonged to join the upper structure, since this involves a change from fluted columns into pillars, a change in colour from green and brown to white, and an unlikely change in perspective (see below). Similarly, where fragmentary details have been completed in modern paint, the effect is often unconvincing. The figures in the red fields provide a good illustration: examination of photographs of the relevant fragments taken at the time of excavation shows that they must have been considerably more naturalistic than at present restored. These and other anomalies can only be properly assessed in relation to those which were not included. In the meantime it is simplest to describe the decorations as restored, making only passing reference to the uncertainties.

West Wall (to left of central door)

Lower Part of the Wall

(2.71 m. long x 0.87cm, high)

An illusionary projecting podium, painted yellow with a curving recess at the right above a brownish red baseboard at least 12 cm high. The front face of the podium, about 67.5 cm. high, has projecting mouldings at top and bottom. At the bottom, above a pale green fascia, a *cyma recta* decorated with leaf-and-dart painted in dark reddish purple with white details, and a beading decorated with diagonal purple lines. At the top, another *cyma*(?) and a fascia decorated at intervals with sets of three vertical strokes of purple, white, purple. The vertical face between the mouldings shows indecipherable traces of imitation reliefs, painted purple white and red with the aid of a pair of horizontal guide-lines scored in the plaster. At the right-hand side the podium is bevelled inwards, then gives way to the curving back-wall of the recess. Here the lower mouldings are omitted, but the upper are continued, the fascia being decorated with a spiral motif, perhaps intended to indicate S-curved modillions seen at an angle. On the

floor of the recess, there are traces of unidentifiable angular objects. The treatment of perspective is somewhat clumsy, especially in the upper mouldings, whose exact profile cannot be determined. The lighting, too, is not entirely successful; the bevelled face is painted yellow-white as if catching the light, yet the immediately adjacent back-wall of the niche is brownish-orange, suggesting shadow.

Figure 48 Courtyard House west wall of peristyle painted wall plaster: projecting podium

Upper Part of the Wall

(3.03 m. long x 2.08 m. high)

In the main zone a pair of large red fields separated by a columnar *aedicula* on a black ground; above this, a black frieze divided into rectangular panels containing various motifs. The *aedicula*, which corresponds in position to the recess in the podium, presents uncertainties in some details but is safe in its main essentials. Its main framing elements are a pair of slender yellow-green columns (61.5 cm. apart) which reach up to the lower edge of the frieze and are crowned by simple bevel-capitals with snake-like volutes projecting inwards. These capitals play no real supporting role but are engaged to the imitation mouldings running above the red fields. Between the columns is a lofty arch in pale blue, pale yellow, and brown, surmounted by delicate palmette and volute ornaments in yellow; and within the arch, forming the central axis of the *aedicula*, is a single fluted column set in a curving bay framed by two further, more slender columns. The central column, coloured yellow with white highlights and brown shadows, seems to have had objects attached to it, including a possible blue shield, and to have been encircled by a spiralling plant-tendril embellished with green leaves, white fruits, and white and blue honeysuckle-like flowers. Perched on a side-branch at one point is a bird (a dove?) delicately painted in white, purple, and blue. Another bird, long-necked and rather larger, stands lower down, immediately next to the column. A graffito identifies it as a peacock (Wright 1962, p. 197, No. 34, e and report below). The two columns of the bay are olive-green, and the upper edge is formed by a concave purple band which links the capitals (again of simple bevel type); a broad red band forms an inner border. Connecting this two-columned bay with the framing arch are short curving cross-pieces.

Figure 49 Courtyard house, west wall of peristyle, upper level wall plaster

Figure 50 Painted Courtyard house, west wall of peristyle, upper level wall plaster (detail)

Figure 51 Courtyard house, west wall of peristyle, detail of aedicula

To left and right of the main *aedicula,* overlapping the edge of the red field, projects a wing supported by another olive-green column. The column at the right preserves a pedestal with strongly projecting bevel-mouldings at top and bottom, whilst that at the left casts a purple shadow on the background. In each case the space between the column and the edge of the main *aedicula* is framed by a purple band.

Figure 52 Courtyard house painted wall plaster: west wall of peristyle, human figure (detail)

Within the red fields originally stood human figures; part of one such, wearing pale blue drapery with white highlights, has survived (set in the left field). The surface of each field was framed by delicate ornamental candelabra at the sides and an elaborately decorated horizontal rod suspended above. Of the candelabra only those immediately to left and right of the *aedicula* remain. That at the right is shown rising from a blue flower at the centre of a volute which grows bracket-like from the edge of the neighbouring column; the bottom of the other one is not preserved. In each case the stalk and main elements are white and yellow, and the ornaments are chosen from a standard repertory: a plate surmounted by three vertical stalks, producing an effect rather like a trident, a pair of green leaves on yellow stalks, a pale blue disc with white outline sometimes embellished with bobbles, a pale blue almond shape with yellow volutes growing from the sides. The horizontal rod is preserved only above the left-hand field. It is suspended from the upper frame at three points by elaborate ornaments similar to the candelabra but incorporating volutes and, in the case of the central one, carrying trefoil leaves. To this is attached a pair of large oval shields (?), whitish yellow in colour at the top and bluish below. On either side of the shields and of three small blue discs which mask the points of suspension is a long pendant fastened with a loop at the top and ending in a trefoil at the bottom. The rod itself is formed by a chain of stylised yellow flowers and leaves. The volute-ornaments above it, the pendants, and the side-candelabra all cast purple shadows to the left.

Above a series of horizontal stripes in various colours which suggest a series of mouldings comes the frieze. The section above the *aedicula* is divided into two identical panels, each framed by pale blue borders, and each containing an ornament based on a pair of yellow dolphins. These leap to left and right above a short curving red-purple band with leaves hanging from it; a green ribbon with a wavy upper edge arcs above. The only other part of the frieze restored is the section above the left-hand field of the main zone. This is divided into a central panel with a reddish-brown border and two longer, unframed side-panels. The side-panels contain shell- or umbrella-like canopies, pale green and yellow, fastened by volutes at the corners and supported at the centre by a short candelabrum resting on a blue semi-circle and flanked by a pair of yellow flowers on short stalks. In the central panel there is a tragic mask. Its face is pale blue with purple shadows and white highlights, while its *onkos* and trailing hair are reddish-purple; behind it slopes a yellow *pedum.* The light falls from the right, as in the decoration below. The frieze is crowned by a horizontal yellow band, above which comes a zone with yellow double-volute ornaments on a red ground.

Figure 53 Painted wall plaster: west wall of peristyle (detail)

North Wall (Section beginning c.6 m. from the north-west corner)

4.49 m. long x 2.13 m. high

This section is more fragmentary and the designs less well preserved than in (A), so the reconstruction is particularly problematical. Generally speaking the scheme is identical, with large red fields alternating with black-ground architectural 'Durchblicke', the whole ensemble surmounted by a black-ground frieze and a pink zone with double volute ornaments. The architectural forms are, however, more complicated and apparently less logical; for example there are perspectival ceiling-coffers along the tops of the red fields; and the frieze carries stretches of repeating candelabrum ornaments rather than individually treated panels.

In view of the uncertainties in the restoration a briefer description will suffice. No part of the socle remains, but parts of a black predella *c.*27 cm. high have been reconstructed. This *predella* is interrupted by the green and white pedestals which supported the columns of the *aediculae* and was decorated with pale and dark green sinuous forms, possibly dolphins or plant tendrils.

In the main zone there are two complete red fields with the intervening *aedicula* and traces of another at the right. The principal feature of the more complete *aedicula* is a coffered arch supported by jutting entablatures and containing a frontal Cupid or Psyche, a *pedum* in the right hand, its legs apparently resolved into volutes. The painting is sketchy and the colouring un-naturalistic. The arch is pale green and red with white highlights; the Cupid or Psyche has crimson hair and pale blue wings, and is otherwise pale blue and brown with touches of white and crimson. Above the arch, set between delicate yellow palmettes, is a pecking bird, again sketchily painted, this time in pink and brown with purple shadows and white highlights. The upper part of

the ‘Durchblick’ juts into the frieze and contains the entablature of a pavilion supported by two white pillars. On top of the cornice, much faded, rests another theatrical mask with high reddish- brown *onkos*. The relationship to this pavilion and the arch below remains uncertain, and it is curious that the pavilion is shown in perspective from the right while the arch is apparently represented frontally. Once again the architecture of the ‘Durchblicke’ overlapped on to the red fields to left and right: the restoration shows delicately painted green and white columnar structures in three stories.

The candelabra and ornamental rods in the red fields incorporate many of the same motifs as the decoration of the west wall (A) but in some respects show important differences. Thus in the right field the rod seems to have been linked to the tops of the candelabra by diagonal swags, while in the left it is simplified to a white line with bobbles above it and three swags hanging below, but is given the additional embellishment of a yellow cockatoo perched at either end. This second rod casts a purple shadow underneath, and a similar shadow appears to left of the columns which overlap the left field. No shadows are visible in the right field.

There are tantalising traces of the figures which stood within the fields. These appear to have been deliberately mutilated in antiquity (I am grateful to Prof. Wacher for his opinion on this point), and their restoration is thus particularly difficult, but the fragments discovered belonged to at least three personages, all shown in frontal view. One wore green drapery and had a curving white band passing in front of the right shoulder; a second wore a short white cloak slung from the left shoulder and apparently had the right hand raised to the chin; the third was again dressed in green and held the end of a white band or fillet in his or her left hand. These figures, as the fragments make clear, were expertly painted with a confident use of white highlights on the yellow and pink of the flesh.

Figure 54 Courtyard House north wall painted wall plaster: mutilated human figures

Figure 55 Courtyard House north wall painted wall plaster: mutilated human figures (detail)

West End of North Wall

5 cm. wide x 74 cm. high

Fragments restored to form part of a black vertical strip adjacent to a red field. Within the black strip, which is framed by pale green foliate borders, there are remains of an elaborate ornament incorporating yellow tendrils and volutes, whitish green trefoil leaves, and, most striking, a large disc seen in perspective with a down turned flange decorated with a fringe of bobbles (shown upside down in Davey and Ling 1982, Pl. LI and Fig. 27). The underside of the disc is red, and the flange pale green, with white bobbles along the near side, of pale blue along the far side. The interstices within the volutes and tendrils are filled, as in the similar ornaments in the frieze and main zone of (A) and (B), with flat washes of red/pale blue.

Discussion

The illusionistically projecting podium is similar to the contemporary or slightly later examples in the 'painted house' at Dover (Davey and Ling 1982, pp. 111-14, No. 14) and is reminiscent in its solidity of the Pompeian Second Style, but the decoration of the main zone is much closer to the Fourth Style. The alternation of large flat fields and 'Durchblicke' containing slender and unreal architectural forms; the motif of a plant spiralling up a column; the delicate ornamental borders inside the main fields; the device of volutes and tendrils with interstices filled with solid colour; and (in the frieze) the shell- or umbrella-ornaments - all can be more or less closely paralleled in the wall-decorations of Neronian or Vespasianic Italy.

However, the general two-dimensional treatment of the frieze, with its framed panels and more or less stylised ornaments, again recalls an earlier phase, namely the late

Second and early Third Styles. We are dealing with a characteristic 2nd century decoration in which themes and motifs not normally found together in the Pompeian period are mixed to create a new 'eclectic' manner.

The particular scheme used here, which depends upon an alternation of red fields and black 'Durckblicke', is clearly derived from the simpler red and black schemes popular in Britain and the other north-western provinces during the Flavian and Trajanic periods. The closest parallels occur in House XXI, 2 at Verulamium (Davey and Ling 1982, pp. 171-5, No. 41 A-C) and probably in a fragmentary decoration at Winchester (Davey and Ling 1982, pp. 194-6, No. 47). In both cases the red fields carry delicate candelabra which are painted in the same colours (yellow with blue, green, and white accessories) and include many of the same floral and foliate motifs as ours (cf, also fragments from Colchester and Scampton: Davey and Ling 1982, p. 153, No. 32). Neither, however, has the elaborate architectural pavilions or the human figures of the Leicester decoration.

Outside Britain there are interesting parallels, though with different colour-schemes, in Antonine decorations at Rome and Ostia. At Ostia, in Rooms IV, V and VI of the House of the Yellow Walls, yellow fields alternate with red intervals carrying slender architectural structures which overlap, like the Leicester ones, on to the fields to left and right (Felletti Maj 1961, pp. 44 f., Pls. IX, X); the yellow fields, moreover, are framed by floral candelabra and rods of the Leicester type, here painted red. At Rome the same system of yellow fields and red intervals containing flimsy overlapping architecture occurs in a house beneath the basilica of S. Giovanni in Laterano (Santa Maria Scrinari 1965, p. 40, fig. 68; on the dating De Vos 1968-69, p. 170 n. 119; Mielsch 1981, pp. 215-17). Here the vertical candelabra are lacking, but horizontal ornaments of Leicester type remain, and there are also figures in the yellow fields. Despite the differences in colour, these decorations clearly represent the same artistic phase as those from Blue Boar Lane.

It is unfortunate that we do not have a more complete stretch of the decoration. The surviving sections from the north and west walls show differing treatments of the pavilions, of the ornamentation in the red fields, and of the frieze, while there are differences of treatment even within the same section, for example in the forms of the candelabra and horizontal rods of the two red fields from the north wall. It is therefore difficult to understand what rules of symmetry or parataxis governed the decorations as a whole. In peristyles at Pompeii the wall-decorations normally employ a broadly paratactic arrangement with a rhythmic alternation of roughly identical 'Vorhange' and 'Durchblicke', as in the Houses of the Vettii and of the Dioscuri (both Neronian) (Peters 1977, pp. 108 f., Pls. 75, 76; Richardson 1955, pp. 55-60, Pls. XI-XIII). The perspective of the architecture in the 'Durchblicke' may be treated in mirror-image in the two halves of a wall (Eristov 1978, p. 629; Peters 1982, p. 643, Figs. 16, 17), but there is no fundamental change in the architectural forms. It is possible, however, to find examples with somewhat more complex arrangements, such as the late-Claudian or early-Neronian decoration in the upper peristyle of the Villa San Marco at Stabiae, where one of the fields (the central one?) is singled out for more elaborate treatment than the rest and is framed by architectural 'Durchblicke', whereas the adjacent pair of fields is separated by a flat fascia with a scroll-ornament (Elia 1957, Folder A; for the dating Bastet 1972, pp. 83 f.; Strocka 1984, p. 38).

Possibly some form of axio-symmetrical arrangement obtained on the walls at Leicester. All the visible shadows cast by vertical elements fall to the left; so, since Section A certainly and Section B probably lay within the left half of their walls, the shadows would be consistent with a central light-source, as found in the paintings at Dover. The perspective is certainly more complicated, at least on the north wall, where some architectural elements are viewed frontally, some from the right, but any detailed interpretation is rendered difficult by the uncertainties of the reconstruction and is best not attempted.

The painting of the main zone shows a masterly hand or hands using quick and confident but at the same time delicate brushwork. Some passages are almost impressionistic, such as the Cupid or Psyche). On the west wall, however, it is noteworthy how much heavier and less careful is the painting of the podium in comparison with the main zone and frieze.

Insula XVI, Market-Hall

Late second or 3rd century. Now in Jewry Wall Museum, Leicester.

An area of ceiling-decoration reconstructed from scattered fragments measuring 1.21 m. x 1.20 m. The pattern is formed by an alternation of two elements, each based on roundels. The larger roundel (diameter 17cm to 18.5cm) consists of a white central medallion surrounded by a broad yellow border between pinkish-red lines. The central medallion contains a purple rosette with four petals and the yellow border contains eight radial almond shapes, dark blue with a pale blue bar across the widest point. From the outside of the roundel grow alternate pale-green palmettes and yellow-green lotus-buds the latter crowned by pink circumflexes, the former by large boomerang-shaped elements, dark blue along the outer margin, and pale blue along the inner.

Figure 56 Macellum: reconstructed ceiling decoration

The smaller roundel (diameter 12cm to 13cm) has a central medallion, half-pink and half-purple, enclosed by a broad purple border. The line separating the central medallion and the border alternates from one row of roundels to the next, being either white or black; the outer contour is always black. From the roundel radiate alternately pale green trefoils and leaf-sprays the colour of which alternates from roundel to roundel, now pale green, now yellow. Scored guidelines radiate from the small roundels along the diagonals and axes of the scheme. There are also compass-drawn guide-lines round the large roundels, corresponding roughly to the tips of the palmettes. Despite the care taken in marking out the scheme, the painting of details seems to have been rather irregular and may have included mistakes; for example, some leaf sprays seem to have grown inwards towards the roundels rather than outwards. The distance between the centres of small and large roundels is 38cm to 39cm.

This type of ceiling-design, in which a basically geometric design is concealed beneath a repeating pattern of small curvilinear shapes and diagonal and/or axial leaf-ornaments, is a favourite in Roman painting, occurring for instance in various forms in Nero's palaces at Rome (Bastet 1971, pp. 157-60, Figs. 7-9; *Antike Denkmaler*, iii, 2 (1912-13), Pls. 16-18; Dacos 1969, Figs. 23, 29, 33). The surviving metropolitan parallels are 1st-century in date, but later examples are known from the provinces, for instance from sites in Austria, Switzerland and France (Allag 1983; Ling 1984, pp. 293-5). In Britain fragments from Silchester (Ling 1984), 1982, p. 215, No. 8), all showing medallions with plant-forms radiating fr+om them, may have derived from similar schemes. For purely rectilinear panel -schemes with foliate frames compare ceiling-paintings from House XXI.2 at Verulamium (Davey and Ling 1982, pp. 175-8, No. 41 D) and from the villa at Great Witcombe/Gloucestershire (Davey and Ling 1982, pp. 199f., No. 50).

Scheme 1 (Figure 58)

It is possible to suggest this reconstruction on the basis of six major pieces. The scheme comprises a pink dado splashed with various colours to imitate marble, the height of which is unknown. The main zone consists of a grey-green field which is plain, apart from two thin yellow lines which run down either side, *c.*6.5cm from the edge. This area is surrounded by three borders, two yellow and one red; these are separated from each other and the field by white lines. The second yellow band graduates gently into the pink dado and there is no clear division, although one has been shown on the reconstruction.

Figures 59 and 60 show five key pieces which have been used in the reconstruction of Scheme 1, and indicate the relationships between the field, the three bands and the dado.

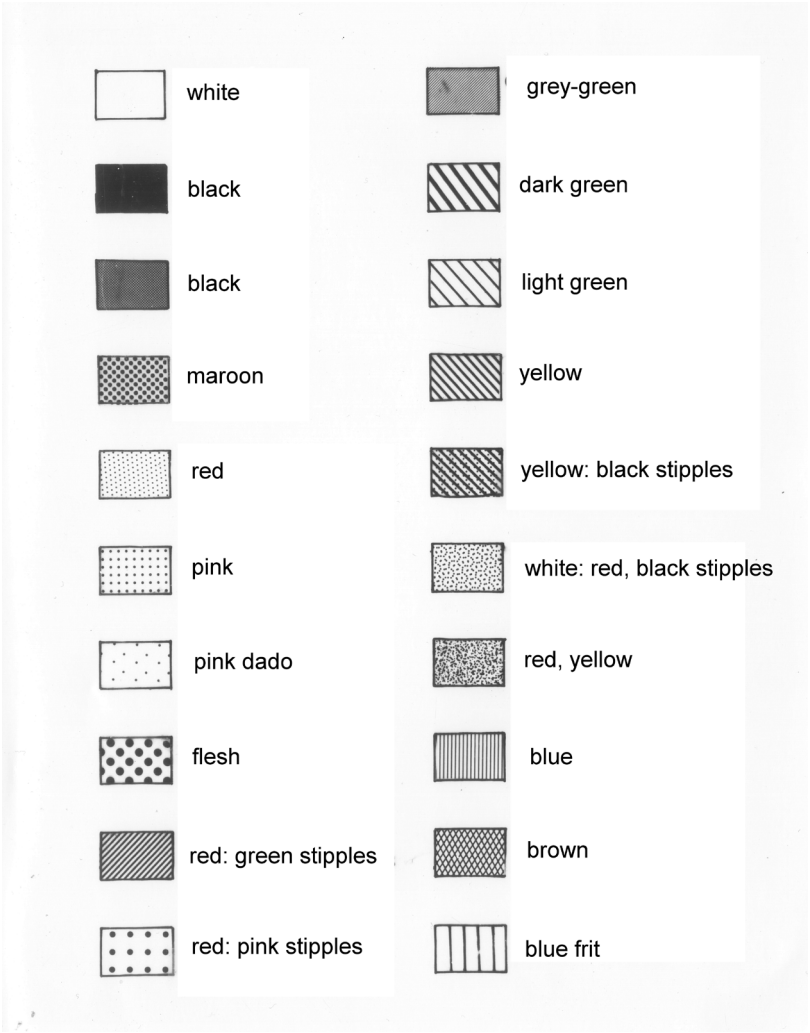


Figure 57 Key to plaster colours

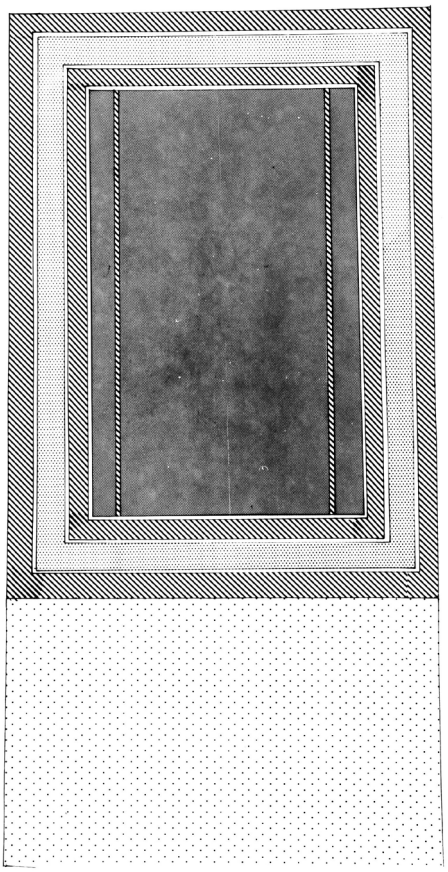


Figure 58 Wall plaster: unreconstructed schemes. Scheme 1

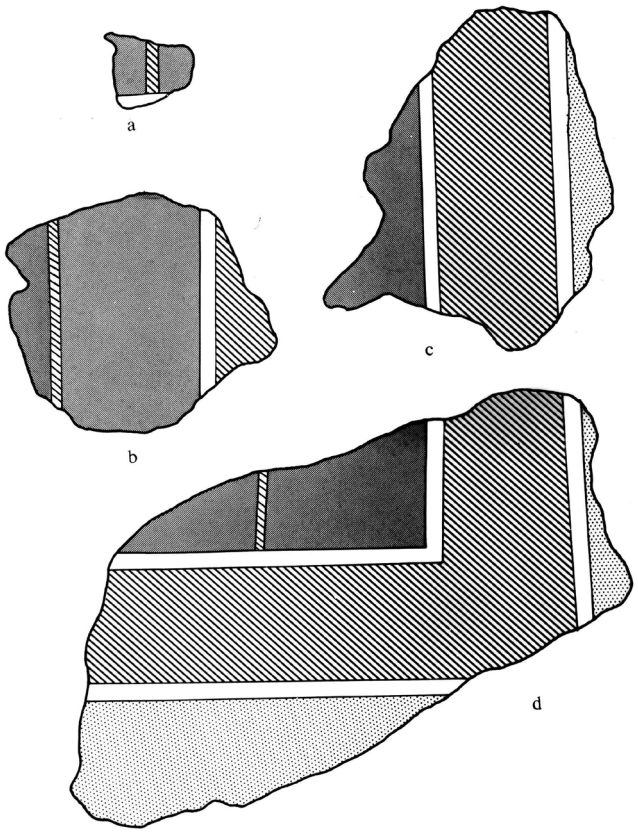


Figure 59 Wall plaster: unreconstructed schemes Scheme 1 fragment

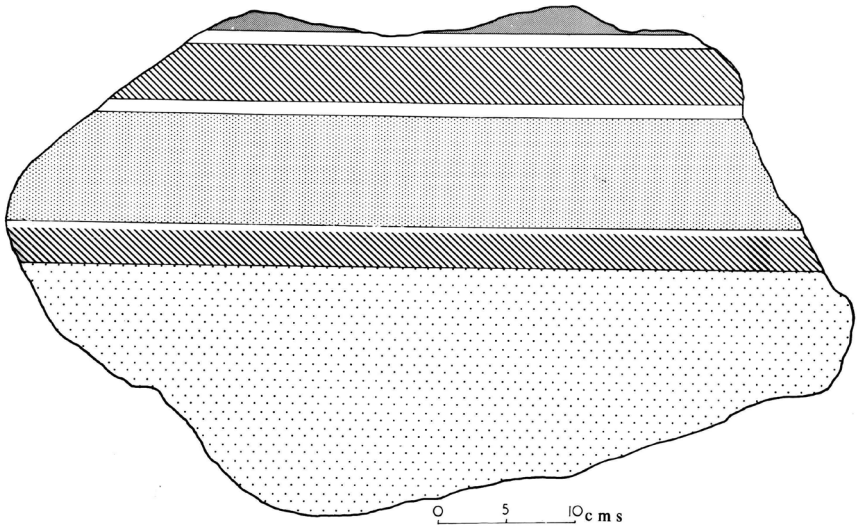


Figure 60 Wall plaster: unreconstructed schemes Scheme 1 fragment

Scheme 2 (Figure 61)

This is an example of a window panel and demonstrates quite clearly the style of the period, the niche being narrow at the rear and widening out into the room. With this style of window the splays were usually white or cream to reflect the maximum amount of daylight (Liversidge 1969). This panel was, however, painted black with the exception of four small trapezoidal areas of white, one on each side. There is also a black band on the wall surrounding the window.

The fragment also shows the colours used to paint the wall beneath the window. The wall around the window is painted yellow and underneath the window there is a panel comprising a field of white surrounded by a black line, a red band and a second black line. The yellow from the area around the window continues down to surround this panel. There is no evidence for any decoration inside the white field and no evidence for the base of the panel. The fragment in shows the angles between the bottom of the niche and the wall, and the bottom of the niche and the side, which were 230° and 90° respectively.

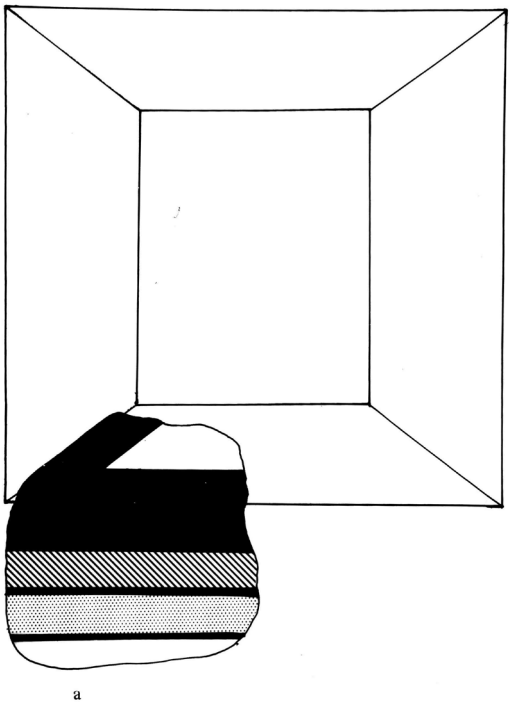


Figure 61 Wall plaster: unreconstructed schemes Scheme 2

Scheme 3 (Figure 62)

There was plentiful evidence from the Blue Boar Lane wall plaster to show that many of the patterns were very simple, with evidence for white panels with red and yellow frames and a black geometric pattern on the white field. It has not been possible to suggest an accurate reconstruction for these fragments, but similar fragments have been found from sites across Roman Britain.

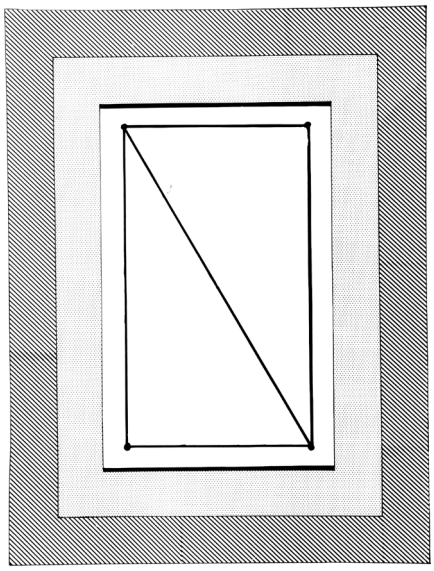


Plate IX

Figure 62 Wall plaster: unreconstructed schemes Scheme 3

Scheme 4 (Figures 63-65)

This is the second window panel and is much lighter than the one in Scheme 2. The niche is painted red with a white trapezoid on each side (Figurs 64 and 65). The red continues in a band around the window, and beneath the red. On the wall are yellow and dark green bands separated by thin white lines. Beneath these bands there is an area painted pink with wavy maroon areas painted on top. There is some evidence of a dark green possibly diagonal stripe crossing the panel, but no other fragments could be joined to this piece to provide enough evidence to attempt a reconstruction, although numerous fragments apparently belonging to the same decoration were recovered (Figure 63).

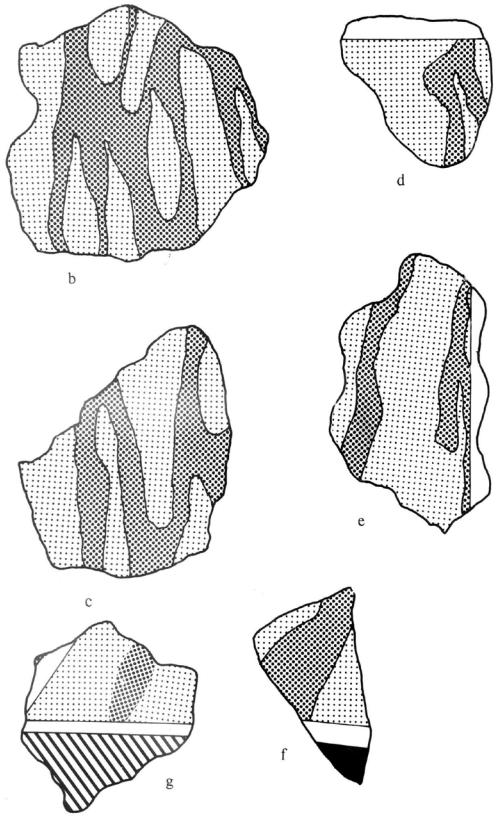


Figure 63 Wall plaster: unreconstructed schemes Scheme 4

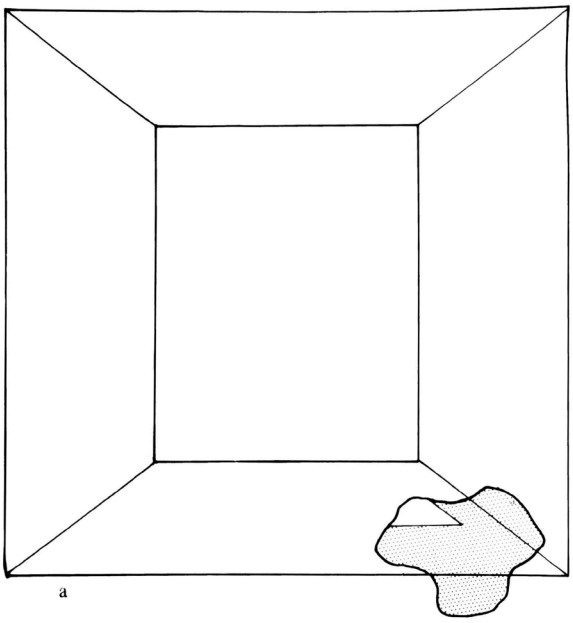


Figure 64 Wall plaster: unreconstructed schemes Scheme 4

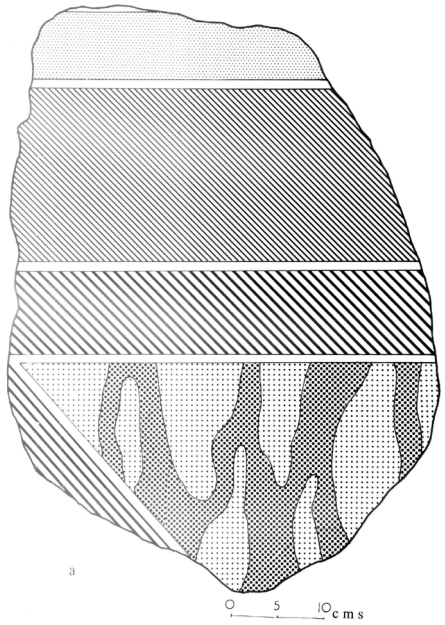


Figure 65 Wall plaster: unreconstructed schemes Scheme 4

Scheme 6 (Figure 66)

The fragment drawn in Figure 66 consisted of over ten smaller pieces which fitted together and provided evidence for four panels separated by bands and stripes. The bottom two panels appear to belong to the dado, and show a stippled effect which was employed to imitate marble. The bottom left hand panel has a red background with pink stippling and the bottom right hand panel has a yellow background with black stippling. These panels are separated from each other by a band 34cm wide which is divided into three smaller ones. These comprise two dark green and one yellow band separated from each other and the panels by thin white lines. The dado is surmounted by a dark green band and there is some evidence for the style of decoration of the main panels. Once again these appear to be purely geometric in style and they appear to show two panels separated by a dark green band 34cm in width.

The top right hand panel shows an outer band of yellow and the start of what could be a rectangle divided into triangles, one of which is white with red and black stipples, the other of which is dark green, and they are separated by a thin yellow line. The top left hand panel has an outer band of white with red and black stipples, surrounding a yellow possible rectangle which is outlined by a thin black line. In the corner of the panel there is a small right angled triangle which is yellow with black stipples. The triangle is surrounded by a thin black line and a band of white with red and black stipples.

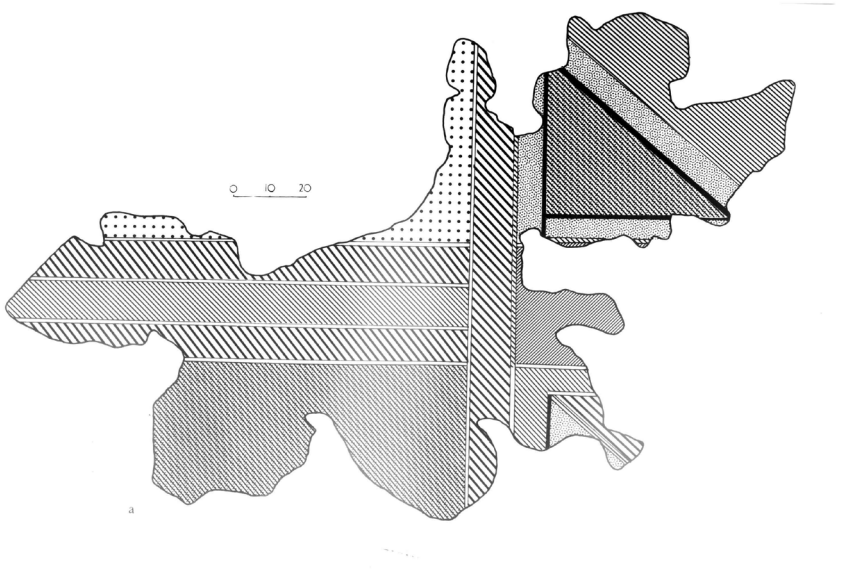


Figure 66 Wall plaster: unreconstructed schemes Scheme 6

Scheme 6? (Figures 67 and 68)

The fragments shown in these plates may have formed part of Scheme 6; if so, they belong to the horizontal band which bisects it. Both plates show fragments which include part of the central band, the width of each band being comparable to that in Scheme 6, and the design, itself, very similar. The difference between the patterns is in the yellow band, which has a thin black line running across the top, 6mm from the green, and no white lines between the yellow and green. The yellow band also has a pattern of red wavy lines which form very rough circles, which run across it. Plate 52 shows part of a panel and two of the three central bands, Figure 67a shows the central and parts of the other two bands and Figure 67b shows the bottom of the middle band, the bottom band and probably the top of a yellow panel. The major difference between these three fragments and Scheme 6 is the top, 6mm from the green band, and also has a pattern in the form of red wavy lines which form very rough circles painted across it.

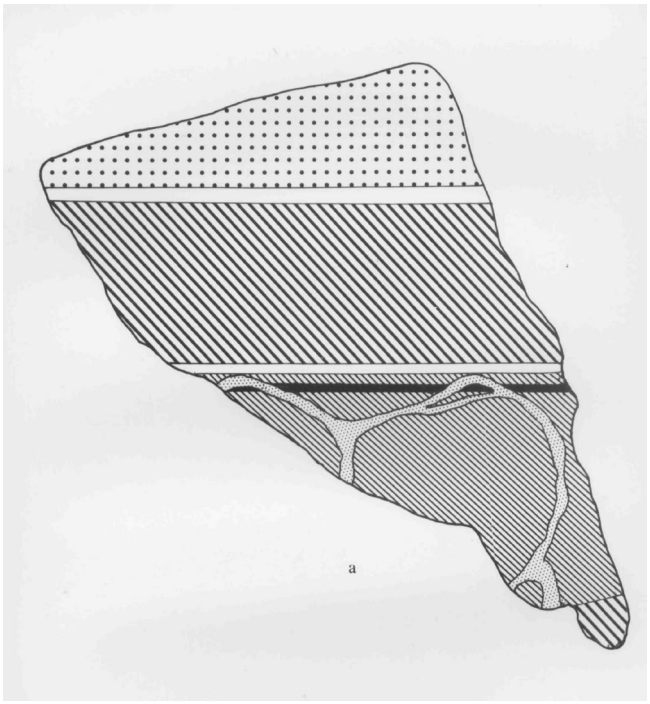


Figure 67 Wall plaster: unreconstructed schemes Scheme 6?

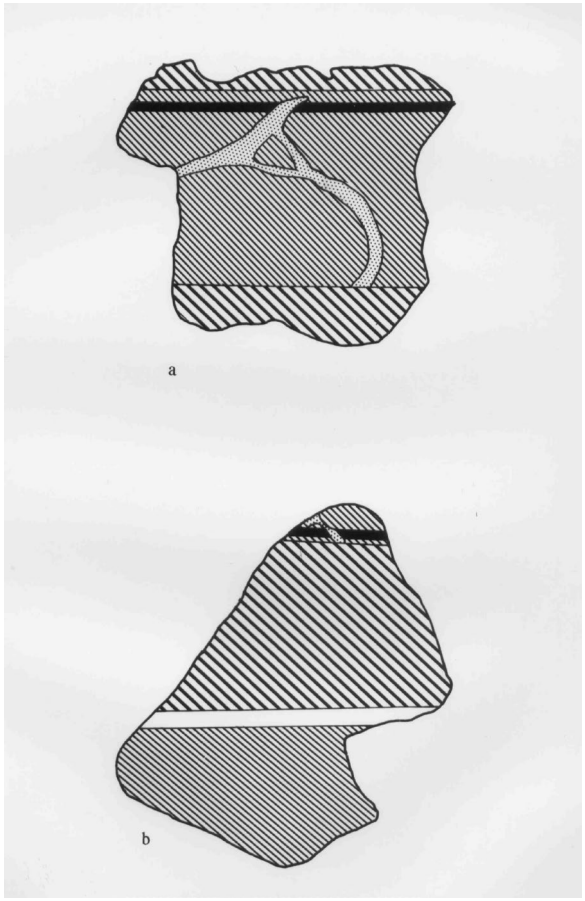


Figure 68 Wall plaster: unreconstructed schemes Scheme 6?

The panel at the top of the fragment on Figure 67 is the same colour as the panel in the top left hand corner of Scheme 6, red with pink stipples, and the panel at the bottom (Figure 67b) is yellow, which is the colour of the outer band of the panel on the bottom right. This may mean that the panels were repeated but in a different order along the wall, and the central band was altered slightly to add more variety to the scheme. Fragment C is identical in style to Plates XXIII and XXIV, but with a white central band. The top band is still in dark green, the next band is white with a dark green line running across the top 6mm from the top band (*cf* Figure 67a), and has the same pattern in the form of red wavy lines running across it. There is no evidence for the bottom band.

Red Floral Pattern

Several fragments belonging to a scheme of red background with polychrome floral patterns were identified, but the number was too small for any reconstruction to be attempted. Sixteen fragments can be ascribed to this decoration and it is possible that these pieces belong to the scheme that Dr. N. Davey reconstructed from the wall of the peristyle which is on display in the Jewry Wall Museum.

Figure 69 shows what may be part of a tall Roman candelabrum, although no lights are present. The stem is yellow, below which is a blue pine cone outlined in light green and yellow. There are also maroon petals to the left of the pine cone. Below this motif comes a yellow flower with light green petals and a maroon leaf. There is a maroon border at the top. The scheme is very similar to one found on the Woolworth site, Winchester. (Liversidge 1977, p 76, and Plate 5.11.).

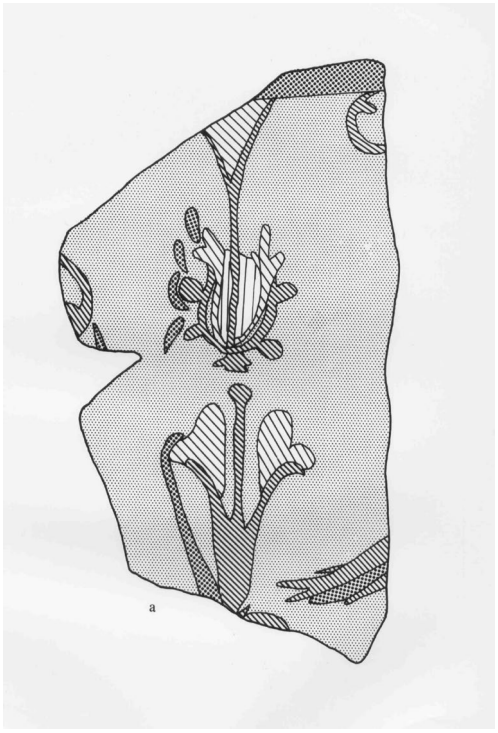


Figure 69 Wall plaster: unreconstructed schemes Red floral pattern

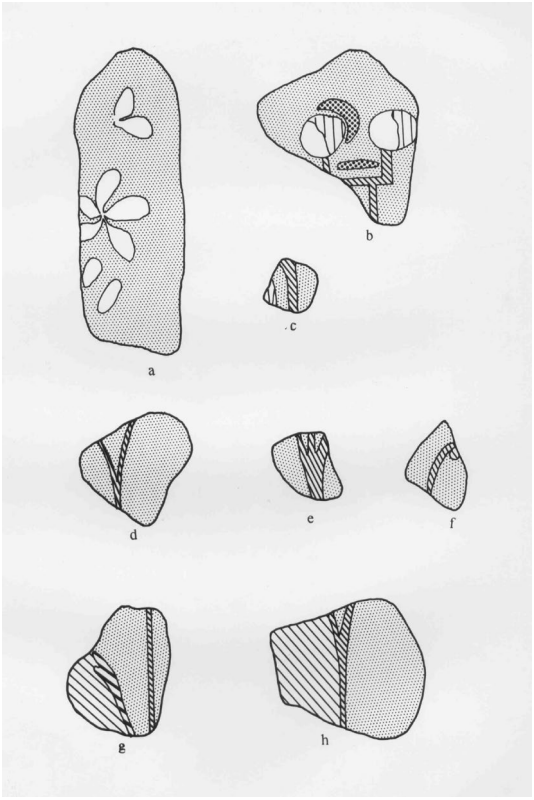


Figure 70 Wall plaster: unreconstructed schemes Red floral pattern

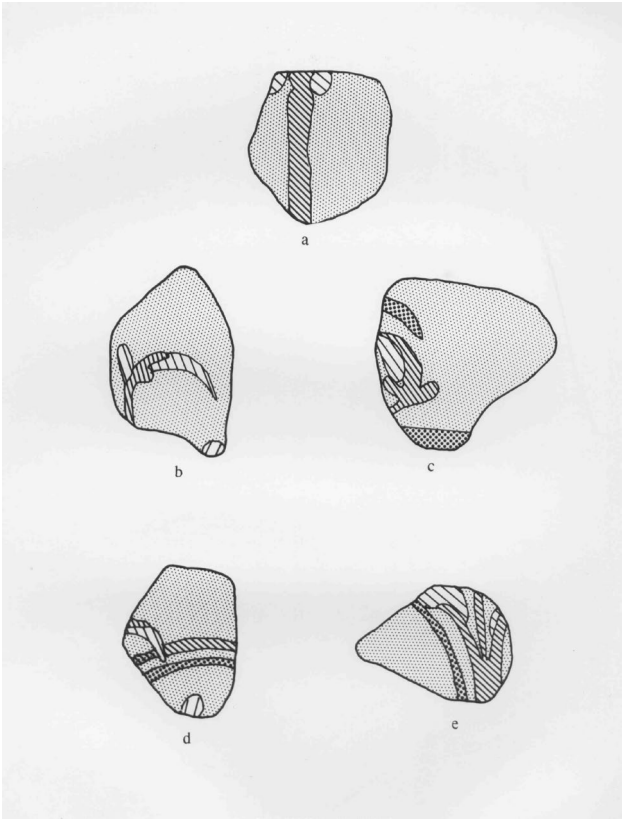


Figure 71 Wall plaster: unreconstructed schemes Red floral pattern

Figures 70-72 show fragments containing various floral patterns which all fit with the basic repertory of the peristyle decoration. This has:

> ornamental candelabra rising from a blue flower, the stalk and main elements are white and yellow, and the ornaments are chosen from the same basic repertory: a plate with three vertical prongs rather like a trident, a pair of green leaves on yellow stalks, a pale blue disc with white outline sometimes embellished with bobbles, a pale blue almond shape with yellow volutes growing from the sides.
> (Davey and Ling 1982)

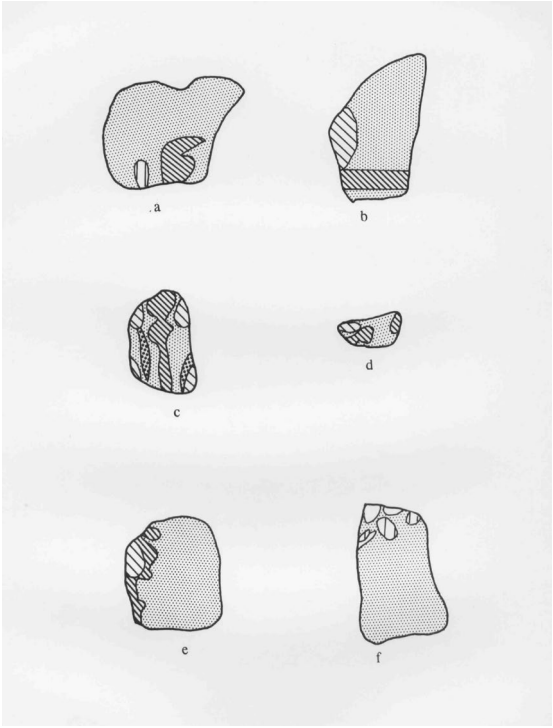


Figure 72 Wall plaster: unreconstructed schemes Red floral pattern

These fragments come from BIV and BXIV, the location of the peristyle. Figure 73 shows two fragments which include the maroon border. Figure 73a shows a white line with alternating white trefoils and single buds projecting into the red field, where there is evidence of a maroon leaf and a yellow band. Figure 73b shows the red field with yellow and light green floral patterns. In this fragment the yellow stems run into the maroon border, and there are horizontal bands of light green, black, and yellow above. The fragment is identical to part of the decoration on the west wall of the peristyle and must have been overlooked by Davey when he attempted his reconstruction.

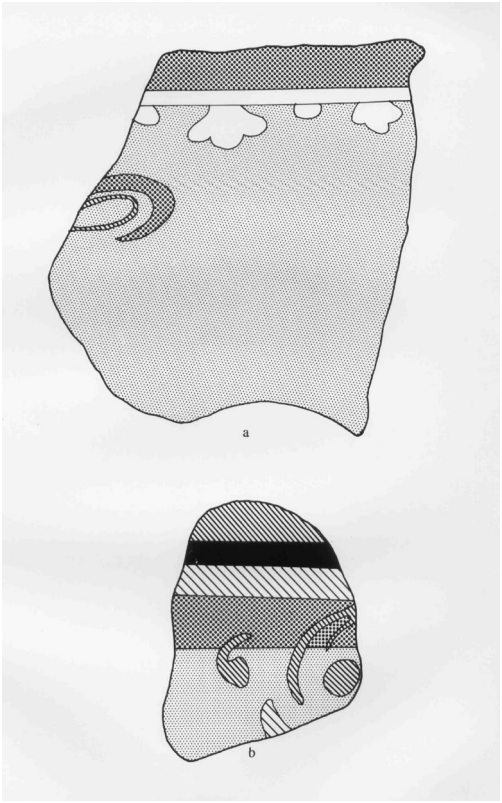


Figure 73 Wall plaster: unreconstructed schemes Red floral pattern

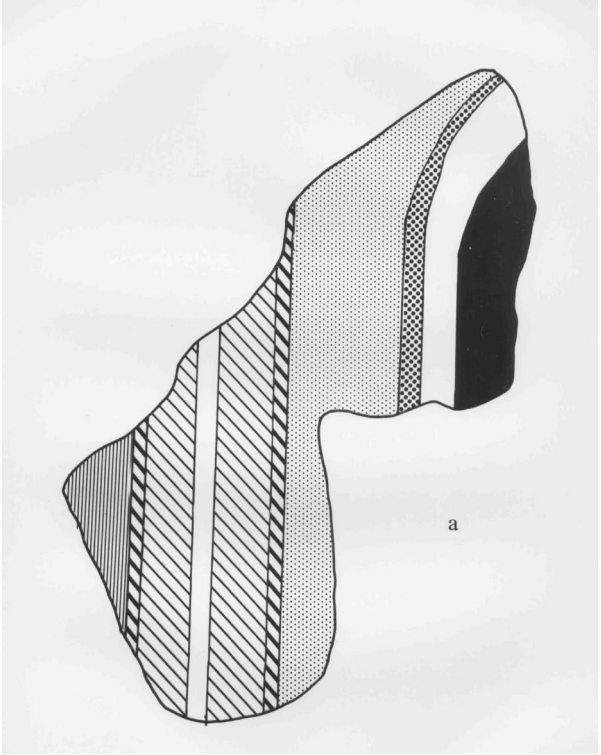


Figure 74 Wall plaster: unreconstructed schemes Unknown decoration

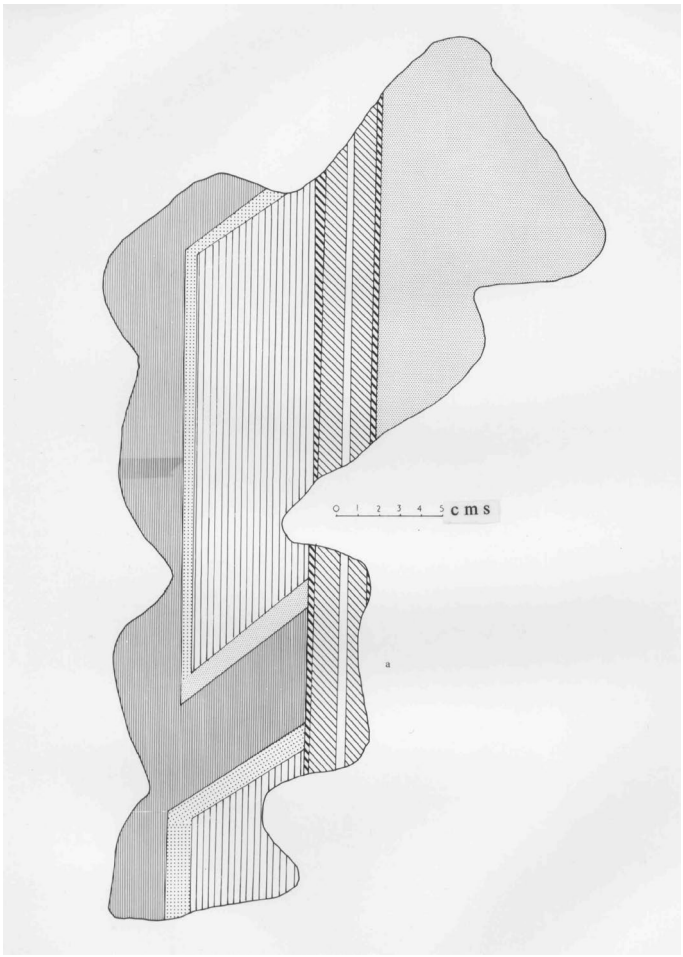


Figure 75 Wall plaster: unreconstructed schemes Unknown decoration

Figures 74 and 75: These two fragments could not be assigned to any known decoration. Figure 74 appears to be some form of architectural decoration in the form of an arch, surrounded by vertical bands. The interior of the arch is black, with white and maroon running around it and curving at the top. There is also an area of red, 3.5cm wide which follows the curve of the arch at the top. This red band has a series of vertical lines

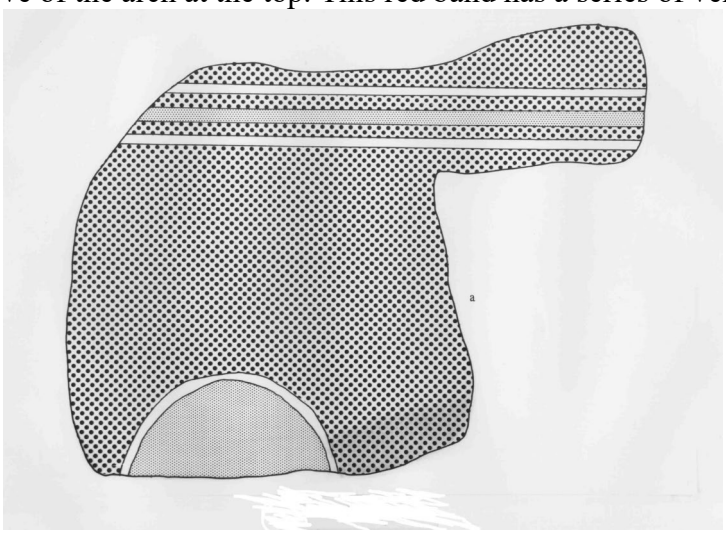


Figure 76 Wall plaster: unreconstructed schemes Unknown decoration

next to it which can be seen on the fragment on Figure 75. These lines are dark green, light green, white, light green, dark green and blue.

Figure 75 is a second fragment from the same pattern and may represent door panels. Next to the red band there are five bands in dark green, light green and white. On the left of these is an area of blue which has parallelograms of blue frit (*c.*20cm long x 5.5cm wide) surrounded by a thin red band.

Figures 76 and 77: These two plate show fragments from a flesh coloured panel which contains floral motifs and thin lines. Figure 76 shows a large area of flesh with three lines running across the top part of the fragment. At the bottom of the fragment there is a semi-circle of red surrounded by a white band; the semi-circle has a diameter of about 8cm.

Figure 77a shows a flesh background with four horizontal stripes, a vertical stripe, five leaf shapes and a semi-circle. The lower of the four stripes is red with the next three in white, all separated by flesh coloured lines. The top white line has five white leaves coming from it and is similar to some of the fragments found in the Roman *castrum* at Nijmegan (Peters 1965-66, 118). There is a vertical red stripe running up the right hand side of the fragment and a small red semi-circular object on the left hand side, which could be part of a flower.

Figure 77b shows a pattern of stripes. From top to bottom they are flesh, yellow, white, yellow, flesh, yellow,white, yellow, white, yellow. No other fragments join up with this piece.

Figure 77c shows two lines dividing two bands or panels. The top band is flesh, the two lines are black then white and the bottom band is maroon.

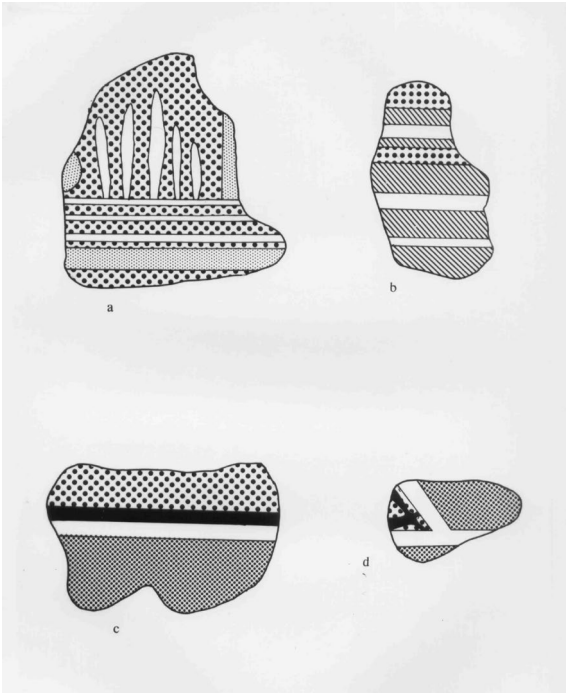


Figure 77 Wall plaster: unreconstructed schemes Unknown decoration

Figure 77d is a continuation of Figure 77c and shows the end of the flesh panel. The horizontal white line is joined by one at about 45°. To the bottom and right of these two lines the panel is maroon. The black line is also joined by a second black line at 45°, but this line is separated from the white one by a thin band of flesh. The area between the two black lines is flesh coloured.

Figure 78: Fragment A comes from a highly decorated panel comprising ten horizontal bands and twelve bands at an angle of 60°. The sloping bands are alternating colours of maroon and red and these join a maroon band 7mm wide followed by a yellow band 8mm wide. Next in the sequence is a thin black line which has a 2.5cm x 1.5cm egg-shaped black spot above. The spot crosses the next two lines, which are yellow and white, and into the wide light green band. This has a reversed comma shaped object in black painted in it and, finally, a third white line. Fragment B shows a panel painted red with pink stipples, then a black line, a light green line and a white line.

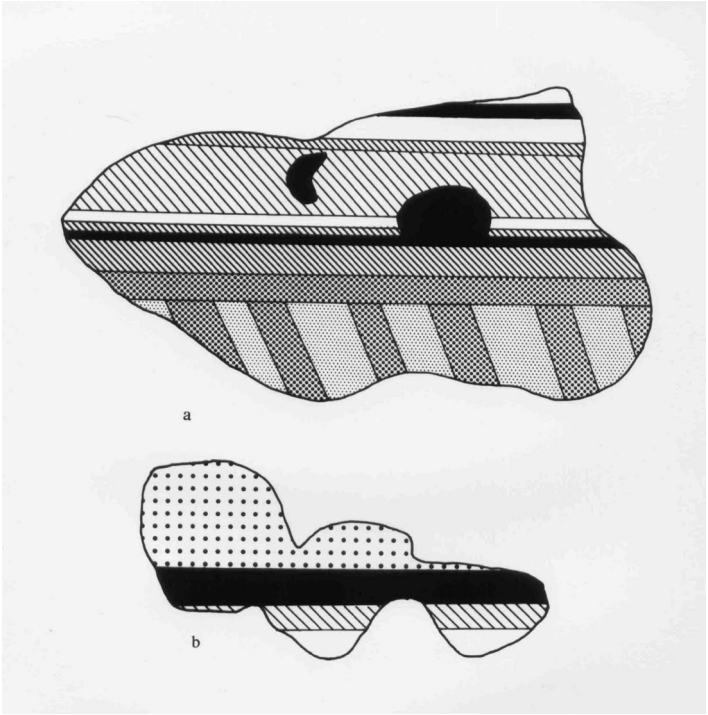


Figure 78 Wall plaster: unreconstructed schemes Unknown decoration

Appendix 1: Mortar

Mortar analysis was performed on ten samples of plaster, five from different contexts in the same trench and five from different trenches. The results are shown in Table 1. It was hoped that differences in their composition would help to date their construction, as was achieved with plaster from the villas at Stein and Ravensboscht (Swinkels and Moormann 1979). Unfortunately this proved impossible as no major differences were found.

The analysis, however, showed that an undercoat of coarse sand from local riverine deposits was mixed with lime and applied to the walls. This coat was then allowed to

dry out before a much finer top coat was applied. The ground colours were then put onto this surface whilst still wet so they would bind with the lime. Only one coarse layer and one fine layer were used. This contrasts with Vitruvius' recommendations of one rough layer, three coats of lime and sand, followed by several coats of a fine lime and marble powder, before the colours were finally applied. No roller marks were present on any of the pieces of mortar and so it was not possible to look at this method of application.

Appendix 2: Pigment Analysis and Application

Analysis was carried out by x-ray diffraction and revealed that, with the exception of blue glass and cinnabar, all of the other pigments were fairly common. Colours used for the background would have bound onto the mortar by chemical action, but those used to do the more detailed work would have to be mixed with some form of binding agent. Egg white, animal size and lime water were commonly used for this purpose. It was not possible to determine the binding agent's exact nature, except to say that it was organic in origin due to the fact that organic agents usually disappear when subjected to long periods of burial. At Cologne, chromatographic analysis of Roman wall paintings revealed a weak presence of amino-acid, which could be explained if the pigments had been mixed with animal size (Noll *et al*. 1973, p.86, 1975, p56f), but the results only showed that an organic binding agent was used, rather than lime water. The background colours were applied with a brush, strokes being apparent on most of the plaster. The detail also appears to have been brush applied.

Pigments present consisted of:

Black:	Carbon
Red:	Ochre or Cinnabar (Hgs)
Yellow:	Ochre
Orange:	Ochre
Pink:	Ochre or Cinnabar
Green:	Earth
Blue:	Glass
White:	Lime

Discussion

Two important pigments were traced in the colours used, namely cinnabar and blue frit. These were used in the more elaborate decoration, whereas cheaper ingredients such as the earths, were used for the remainder of the scheme (Appendix 2). Cinnabar especially was a very expensive pigment and was classed by Pliny as one of the 'brilliant' pigments.

Although possible reconstructions have been suggested, only Scheme Six may be ascribed with any certainty to a particular room, the vast majority of pieces coming from BX1 (Fig. 3). The pieces from the remaining schemes were scattered across large areas of the site, overlying walls and contained in pits (see Figures 4 and 5). It has therefore proved impossible to approximate their sizes. However, none of the extant

wall plaster came from B11 and B111, although some was recorded during excavation, and it is therefore improbable that any of the schemes came from the walls in this room.

Panel decorations are common across the Roman Empire, especially examples ones on a white background. Examples have been discovered in Rome, Palatine, Herculaneum, Nijmegen, Carnuntum and Glanum, as well as other villas and towns. In *Die Romische Wandmalerei in der Schweiz*, Drack establishes that, from the middle of the 2nd century AD, most of the walls examined in his study area had a white background, and that most of these were divided into fields by stripes, bands and lines. Examples similar to the schemes occur at Lockleys (Ward-Perkins 1938), Catterick (Long 1980), Druten (Borda 1958), Glanum (Barbet 1974), and Stein and Ravensboch (Swinkels and Moormann 1979), although no exact parallels could be found. The closest parallel found was one similar to Scheme V1, although a dado was present, from Winteringham where, above the dado, there were rectangles, then different coloured stripes and bands and further rectangles above these (Liversidge 1976).

The window plaster from Blue Boar Lane is very similar in design to window plaster from the other sites. The plaster shows how the windows were painted to fit in with the general colour scheme of the rest of the room, and this was also true of the few door pieces that were found. They also show quite clearly the type of windows that were being constructed in the more important houses in Roman Leicester.

Mortar Analysis **Graham Morgan & Kathy Ashley**

Mortar analysis was carried out on seven samples of wall plaster from Area A. Selection was initially based on visual scrutiny where mortars appeared of differing types or of particular interest, though geological examination suggests that the overall composition of the aggregate was similar, i.e. basically quartz, quartzite, flint, ironstone, sandstone, with varying smaller particles of limonite, granite, red/yellow ochre, fossils, burnt clay and silica.

The samples analysed were taken from the following contexts:

Sample 1	A VI Salvage
Sample 2	A V 8 (96)
Sample 3	Unprovenanced
Sample 4	A VI (4)
Sample 5	Unprovenanced
Sample 6	A II (8)
Sample 7	A I (10)

The particle size distribution curve indicates that, in general, the amount of aggregate used was fairly consistent, the amount of lime used in the finishing coat being appreciably greater than that used in the under layers. This is to be expected, the basic materials being used in the production of mortar in Roman Britain, being generally the same as those used in the rest of the Roman World.

Vitruvius, writing *c.* the 1st century BC recommends the use of quarry sand for mortar used in structural work, but advocates the use of river sand for plaster work.

> fresh quarry sands…are useless for plaster work because they are too thick textured, and the lime, when mixed with straw cannot, because of its violent action, dry without cracks.
> .....
> ..... Vitruvius 2. 1V

The mortar layers from the Blue Boar Lane excavation consist generally of a coarse lower layer, containing large particles of flint/quartz etc, ranging from angular to smooth, in an approximate ratio of 70% aggregate to 30% lime (see Table p.). On to this surface, a finer layer of mortar would then be applied, generally containing a higher ratio of sand to aggregate than the coarse under-layer. The number of layers of mortar used in Roman Britain varies to some degree, but in general, and contrary to practice in Europe, only two or three coats were used. This is an obvious deviation from the recommendations of Pliny and Vitruvius who advocate the use of one rough layer of mortar, three coats of lime and sand, followed by several fine layers of lime and marble powder or powdered calcite. (Vitruvius 3. 7. Pliny 36. 55).

The intonaco layers from the samples analysed were found to contain a degree of calcite. Microscopic analysis of the outer layer revealed the presence of calcite within the surface pigment in some samples. Norman Davey and Roger Ling (Davey and Ling 1982, 59) cite examples from Cologne of pigments permeated with calcite crystals. It was concluded that they had been deliberately mixed with the pigment to produce a ‘glistening’ effect.

working of the plaster by craftsmen would force the tiny mirror-like faces of the crystal-fragments to align themselves parallel to the surface and thus reflect light.

Reported among the finds (No. 43) from the Legionary Fortress at Caerleon is the broken portion of a highly polished stone, a fine-grained quartzitic sandstone, evidently used as a burnishing stone or rubber. The stone had been deliberately shaped; its underside flattened and the upper surface slightly convex. Both surfaces bore traces of red pigment. A reasonable supposition would be that it was either used as a tool for the grinding down of raw pigment, or that it was used the burnishing of wall plaster. A similar tool has been described by Boon. This is a rectangular marble rubber from Silchester. Highly polished and glossy, it had evidently been used for the grinding and mixing of pigments, several samples of which were found in the same context (Boon 1974, 211).

An extensive four year doctoral survey by Graham Morgan, Senior Curator, Leicester University, into Romano-British wall plaster and mortar has since been completed. The analysis which follows was carried out under his direction and the results incorporated into the finds of the survey. All the samples chosen had a definite paint layer, with the exception of Sample 6, which was merely whitewashed.

Description of Samples

Sample 1
A V1 Salvage

Red/yellow spots (0.1mn) on red/brown intonaco (0.25-0.5mm) on fine mortar layer, (l0mm) on grey, gravel mortar (25mm) on muddy colour mortar with fine gravel (l0mm).

Sample 2
A V 8 (96)

Decorative yellow (0.05mm) on red (0.25mm) bands, on fine (0.5mm) intonaco, on (6mm) fine, sandy mortar, on (35mm) coarse, dark mortar with gravel inclusions. The lower, coarse, layer contained impressions of grass or straw. This sample, being burnished, is an example of 'fresco secco' since this technique cannot be applied to **a** true fresco 'buon fresco'. The pigment, mixed with hydrated lime, would have been applied to a dry background, giving the effect of painting in fresco without the necessity of having to complete the work before the plaster had completely dried. There were, however, certain disadvantages to this technique, since it was not considered to be as durable as true fresco, and the colours tended to be opaque.

Sample 3
(Unprovenanced)

Thinly painted black layer (0.05mm) on fine, white intonaco, (1mm) on fine gravel mortar layer (15mm) on coarse, gravelly mortar (35mm) with muddy traces adhering. Lower layer impressions of grass and/or straw and holes impregnated with iron.

Sample 4
A V1 (4)

Yellow and red on black (0.5mm) on cream intonaco (0.75mn) on fine, sandy mortar (9mm) on coarse, gravel mortar (40mm) with grass or straw inclusions. Traces of mud adhering to back of lower layer, but difficult to know if this was from the wall or the burial deposit.

Sample 5
(Unprovenanced)
Graffiti sample 'And who, catamite...you?')

Black spots on yellow (0.05mm) on white intonaco (0.25m). Both intonaco and paint layers very thin. Top layer (9mm) fine mortar containing small pieces of gravel. Lower layer (35mm) more coarse containing calcareous inclusions. Evidence of grass or straw.

Sample 6
A 11 (8)

Appears to have a coating of whitewash (less than 0.05m) over layer of cream, sandy intonaco (1-1.5mm). Two other distinct layers which appear to be of the same consistency i.e. fairly coarse inclusions, sandy colour, lumps of flint, charcoal etc. Upper layer measures 9mm. Lower layer 15mm. Limewash coating seems to have been deliberately applied - brush strokes apparent.)

Sample 7
A 1 (10)

Fairly thick black (0.lmm) on creamy, white intonaco (2mm). Two apparent layers each containing small rocks and calcareous inclusions. Upper layer measures 12mm, lower layer 25mm. Both layers similar and very pale in colour. Lower layer has evidence of grass or straw inclusions.

Sample 1
A V1 Salvage

Description
Red/yellow spots on red/brown intonaco.

Measurements
Intonaco Layer 0.25-0.5mm

Red/brown Layer	0.1mm	
Layer A	0mn.	mortar.
Layer B	25mm	grey/gravel mortar.
Layer C	10mm	muddy colour mortar with fine gravel.

Weight	*Before dissolving in dilute HCL*	*After*
Intonaco Layer	0.9720gms	0.5658gms
Red/brown Layer	0.6155gms	0.3108gms
Layer A	99.00gms	69.00gms
Layer B	185.00gms	132.00gms
Layer C	12.9273gms	10.0894gms

Observations
Reaction effervescent in all cases. Layer C appeared to contain large lumps of charcoal.

Sample 2
AV 8 (96)

Description
Decorative yellow on red bands.

Measurements

Yellow	0.05mm	
Red	0.25mm	
Intonaco	0.50mm	
Layer A	6.00mm	fine, sandy mortar.
Layer B	35.00mm	darker, gravely inclusions. Impressions of grass or straw.

Weight	*Before dissolving in dilute HCL*	*After*
Red Layer	0.3563 gms	0.0330 gms
Intonaco (white plaster layer)	0.7667 gms	0.0768 gms
Layer A	33.00 gms	24.00 gms
Layer B	287.00 gms	216.00 gms

Observations
Very effervescent. This sample, being burnished, must have been 'fresco secco', as this technique cannot be applied to a true fresco, (buono fresco).

Sample 3
(Unprovenanced)

Description
Thinly painted black layer on fine white intonaco.
Layer A: Fine layer with bits of gravel.
Layer B: Coarse, gravely mortar with muddy traces adhering.
Impressions of grass or straw – holes impregnated with iron.

Measurements

Black painted layer	0.05mm
Intonaco	1.00mm
Layer A	15.00mm
Layer B	35.00mm

Weight	*Before dissolving in dilute HCL*	*After*
Black layer	0.0953gms	0.0199gms
Intonaco	1.1158gms	0.1089gms
Layer A	43.2961gms	30.6278gms
Layer B	120.99gms	94.00gms

Sample 4
A VI (4)

Description
Yellow and red on black, on cream coloured intonaco, on fine, sandy plaster, on coarse, gravelly plaster with grass/straw inclusions. Traces of mud on back but difficult to know if from wall or burial.

Measurements

Black layer	0.50mm
Intonaco	0.75mm
Layer A	9.00mm
Layer B	40.00mm

Weight	*Before dissolving in dilute HCL*	*After*
Black layer	0.4901gms	0.0538gms
Intonaco	1.0800gms	0.0867gms
Layer A	32.17gms	23.6887gms
Layer B	240.00gms	178.00gms

Observations
Trowel or float marks on top of intonaco layer.

Sample 5
Unprovenanced
Graffiti sample ‘And who, catamite...you?’)

Description
Black spots on yellow paint,very thinly coated on thin intonaco.
Top layer,fine,containing small pieces of gravel.
Lower layer more coarse,containing calcareous inclusions.
Evidence of grass or straw.

Measurements

Yellow layer	0.05mm

Intonaco	0.25mm
Layer A	9.00mm
Layer B	35.00mm

Weight	*Before dissolving in dilute HCL*	*After*
Yellow layer }		
Intonaco }		
Layer A }	96.00gms	74.00gms
Layer B	274.00gms	198.00gms

Sample 6
All (8)

Description
Appears white. Has layer of creamy, sandy intonaco, plus two other distinct layers which appear to be of the same consistency i.e. fairly coarse inclusions, sandy colour, lumps of flint, charcoal etc.
Seems to have a deliberately applied layer of lime brushed on - brush strokes apparent.

Measurements

Whitewash	less than 0.05mm
Intonaco	1.00-1.50mm
Layer A	9.00mm
Layer B	15.00mm

Weight	*Before dissolving in dilute HCL*	*After*
Intonaco & whitewash	1.9672gms	0.8900gms
Layer A	34.1135gms	23.8276gms
Layer B	29.1859gms	19.8141gms

Sample 7
A I (10)

Description
Fairly thick black paint on creamy, white intonaco. Two apparent layers, each containing small rocks and calcareous inclusions. Both layers similar and very pale in colour.
Grass/straw marks in lower layer.

Measurements

Black layer	0.10mm
Intonaco	2.00mm
Layer A	12.00mm, tapering to 9mm
Layer B	25.00mm

Weight	*Before dissolving in dilute HCL*	*After*
Black layer	0.0743gms	0.2440gms
Intonaco	0.6794gms	0.1955gms

Layer A	24.7867gms	19.8163gms
Layer B	67.3064gms	50.3649gms

In all cases, the samples were dissolved in dilute HCL then rinsed in frequent changes of water until a PH reading of 7+ was obtained. The insoluble residues were then weighed and sieved, then weighed at each individual mesh size, at which stage a geological examination was carried out. The results were then plotted on a graph, mesh size/ % of total residue, and compared.

Sample No.	% Gravel	% Sand	% Silt	% Lime	Notes
'A' Layers					
1	11.53	80.59	7.88	30.30	
2	10.54	81.62	7.84	27.27	
3	10.10	81.30	8.60	29.26	
4	5.80	86.90	7.30	26.36	
5	9.20	84.90	5.90	22.92	Incl. paint & intonaco
6 (A2)	36.90	52.00	8.40	30.15	
7	6.00	84.90	9.10	26.02	
'B' Layers					
1	20.35	74.71	4.94	28.65	
2	24.20	71.10	4.70	24.74	
3	20.90	77.50	1.60	22.31	
4	21.50	75.00	3.50	25.80	
5	18.80	76.60	4.60	27.74	
6	35.20	58.80	6.00	32.11	
7	8.60	85.70	5.70	25.17	
1	26.29	62.63	11.08	21.95	
Paint Layers					
1	Residue mainly quartz/ironstone sand and a small amount of charcoal.			50.00	
2	Fine grains quartz sand/red ochre			91.00	
3	Fine grains quartz, ironstone, charcoal, silica			79.00	
4	Few quartz grains, carbon, red ochre			8.00	
5	-				Included in Layer A
6		84.70	15.30	54.76	Intonaco & whitewash
7				67.00	
Intonaco Layers					
1	Residue mainly quartz/ironstone sand			42.00	
2	As above & small amount red ochre			90.00	
3	Fine quartz sand, silica & burnt clay			90.00	
4	Grey silt with quartz sand			92.00	
5	Incorporated in Layer A				
6	Mainly quartz, ironstone, yellow ochre, limonite, silica 84.70		15.30	54.76	Intonaco & whitewash
7	Fine grains quartz/ironstone sand			71.00	

Table 1

Sample No.	Context	% Gravel	% Sand	% Silt	% Lime	Comments/Description
1	A VI Salvage				50	Red/yellow/brown unburnished.
					42	Intonaco off white, traces of charcoal.
		11	81	8	30	Quartz, quartzite, ironstone, flint, sandstone, granite, burnt clay. (Upper Layer).
		20	75	5	29	(Lower layer) Quartz, quartzite, ironstone, flint, burnt clay.
		26	63	11	22	(Mud layer) Quartz, quartzite, ironstone, flint, limonite, coarse pale sandstone, burnt clay, charcoal, silica.
2	AV 8 (96)				91	White/yellow/red burnished.
					90	Intonaco sandy, traces of calcite.
		10	82	8	27	(Upper Layer) Quartz, quartzite, ironstone, flint, sandstone, small particles burnt clay, silica, red ochre.
		24	71	5	25	(Lower Layer) Quartz, quartzite, ironstone, flint, limonite, chert, yellow ochre, particles burnt clay, fossil, red ochre.
3	(Unpr.)				79	Black. Burnished.
					90	Intonaco white, fine quartz sand, traces of calcite.
		10	81	9	29	(Upper Layer) Quartz, quartzite, ironstone, flint, limonite, fossil-iferous ironstone, particles of silica. Large charcoal lump, willow/poplar
		21	77	2	22	(Lower Layer) Quartz, Quartzite, ironstone, flint, limonite, granite, micaceous sandstone, lime-burning clinker.
4	A VI (4)				89	Yellow/red on burnished black.
					92	Intonaco - cream, quartz sand/grey silt, calcite present.
		6	87	7	26	(Upper Layer) Quartz, quartzite, ironstone, flint, granite, limonite, sandstone, red ochre, silica particles
		21	75	4	26	(Lower Layer) Quartz, quartzite, ironstone, flint, burnt clay.
						Black on yellow, unburnished. Intonaco white. Both incorporated into Upper layer.
		9	85	6	23	(Upper Layer) Quartz, quartzite, ironstone, flint, limonite, chert, yellow & red ochre.
		19	77	4	28	(Lower Layer) Quartz, quartzite, ironstone, flint, sandstone, clinker.
6	A II (8)		85	15	55	Limewash + Intonaco, creamy white on cream sandy intonaco.
		40	52	8	30	(Upper Layer) Quartz, ironstone, flint, oolitic ironstone, sandstone, burnt clay, clinker, fossils.
		35	59	6	32	(Lower Layer) Quartz, quartzite,

						ironstone, f 1int, granite, fine sandstane, limonite, fossil, burnt clay, claystone & charcoal fragments.
7	AI (10)				67	Thick burnished black, red specks with calcite.
					71	Intonaco - sandy white with some calcite.
		6	85	9	26	(Upper Layer) Quartz, quartzite, ironstone, flint, limonite, silica.
		8	86	6	25	(Lower Layer) Quartz, qu,artzite, ironstone, flint, limonite, burnt clay, fossil, silica.

Discussion

Table 1 above shows the general composition of the mortar to be fairly consistent. Whilst provenancing the aggregate was not possible, but it is reasonable to assume that the source was a local river sand deposit. The building from which the samples were taken is dated roughly to the Hadrianic period (AD117-138), mainly from the pottery evidence. The mortar analysis, by itself, cannot be used for dating purposes except within the broadest terms, though it is helpful in its ability to relate one part of a building to another.

All of the samples chosen for analysis had a definite paint layer, with the exception of Sample 6 which was merely whitewashed. Samples Nos. 2, 3 and 4 showed impressions of grass or straw inclusions in addition to which the holes in Sample 3 were impregnated with iron, and Nos. 5 and 7 had calcareous inclusions.

Two of the samples provided evidence of tool marks. No. 4 had trowel or float marks on the surface of the intonaco layer, and brush marks on the layer of limewash on Sample 6 would seem to indicate that it had been coarsely applied as a finishing coat to the cream, sandy coloured intonaco. Unlike the other samples, Nos. 6 and 7 had two distinct layers which appeared to be of the same consistency, i.e. sandy, rather than dark in colour and containing fairly coarse inclusions. With the exception of these two samples, all the upper layers were finer in content than the lower layers which consistently contained larger, more angular lumps of quartz, flint, etc.

The composite graph gives a clear indication of the operation of a process of selective grading of the aggregate used within each layer of mortar, the fine river sand peaking at 250 um (60 mesh) and representing over 40% of the total insoluble content. It seems likely that the Romans would have used lime from the nearest available source, most probably a low silica limestone chalk or possibly lias limestone. The use of either calcite or marble-flour in the intonaco layers, as recommended by both Pliny and Vitruvius, is accepted as standard practice, although at least one case of the use of alabaster dust has been identified in antiquity (Davey and Ling 1982, 54), but no evidence of this was apparent in the samples from the Blue Boar Lane excavation. Grass and/or straw was evidently used in some of the samples, particularly in the thicker, lower layers, as a means of binding and strengthening the mortar, this again is a fairly standard means of achieving a stronger bond.

There is no evidence to suggest that the mortar and plaster work was of especially fine quality, but the use of expensive pigments in the painting of the wall plaster suggests that the building was of a reasonably high status, the finest plasterwork and fresco painting being restricted to the more public areas, for instance, the elaborate peristyle, and the less used or least important rooms having appreciably poorer decoration. For evidence of the latter we have only to look at Sample 6, Context A 11 (8), on which a very rough layer of limewash had been applied to the intonaco.

Pigment Analysis

Graham Morgan and Kathy Ashley

Pigment analysis was carried out by Graham Morgan of Leicester University, on a representative sample of painted wall plaster from the excavation. The techniques used for identification were X-Ray Diffraction and both microscopic and chemical analysis. The following results demonstrate that, largely, natural pigments were used, with the addition of the more expensive imported cinnabar (red mercuric sulphide, HgS), and Egyptian Blue (copper calcium silicate: Ca Cu Si4 010).

Description of Samples

Sample 1
A V 7

Red (cinnabar) on yellow (ochre) on black (carbon) on white (lime) intonaco (0.50mm) on l0mm mortar. The intonaco contained calcite.

Sample 2
A I 16

White (lime) on pale green (earth + lime). On vermilion (0.5man) on yellow (ochre) (0.1mm) on burnished black.
Cream (lime + ochre).
Dark red (red ochre) on cream (lime + ochre). On grey (carbon + lime) (0.2) on sandy white intonaco (lime) (0.50) on 10mm mortar.
Specks of Egyptian blue on upper layers.

Sample 3
BL 64

White (lime) on dark red (ochre) on vermilion (cinnabar) on yellow (ochre) on burnished black (charcoal). Measurement of pigment layers 0.05mm, all on grey (carbon + lime) (0.4mm) on sandy white (lime) intonaco (0.5-0.6m) on 10mm mortar. The white layer showed evidence of brush marks and contained glassy blue particles. Calcite grains apparent in grey layer.

Sample 4
Unprovenanced

Red (mainly ochre) on yellow (ochre). Together less than 0.05mm, on burnished black (carbon 0.005mm) on white intonaco (lime) (0.75mm) on 9mm mortar. Evidently sample was completely black at some time and unlike Sample 3. No grey was noticeable beneath the black pigment. Calcite grains were apparent in the intonaco layer.

Sample 5
A 1 16

Burnished red (cinnabar) over coarse dark red stripe (coarse red ochre grains) on pale blue green (green earth + Egyptian blue 0.25mm) on pink intonaco (brick dust and lime 0.50mm). The red fairly coarse and contained calcite: traces of yellow underneath green.

Sample 6
A V 2

Burnished red (red ochre + brick dust and calcite, 0.40mm), on sandy white intonaco (lime + calcite, 0.75m) on sandy mortar (5mm). On treatment with hydrochloric acid, the pigment separated into ochre and silica.

Sample 7
Unprovenanced: with graffiti

Pink spots (ochre + lime), on burnished maroon (dark red ochre + a small amount of carbon + calcite). Total measurement of the depth of the pigment was less than 0.05mm. The pigment layers were over an off-white intonaco (lime, 0.40mm), on 30mm mortar on 10mm mud layer. The XRD result verified the pigment to be amorphous iron and not cinnabar.

Sample 8
Unprovenanced

White stripe (lime) on burnished maroon (dark red ochre + carbon + calcite), with thin yellow interface (ochre) on 1mm white intonaco (lime + calcite) on 10mm mortar. This sample was very abraided and the pigments, thin yellow, maroon, and white, proved too small to measure i.e. less than 0.05mm. The XRD result verified amorphous iron and not cinnabar as in the previous sample.

Sample 9
A V 2

Yellow (ochre) and white (lime + traces of blue) streaks, on green (green earth + specks of blue) + Blue Egyptian blue), on burnished black (charcoal - lump apparent), on 0.75mm sandy, off - white intonaco (lime). Total paint layers: less than 0.05mm. A layer of bright pink pigment noticed on top of the sample proved to be modern, i.e. it was above the PVA layer, therefore must have been applied post-burial, possibly for identification purposes.

Sample 10
Associated with layers, AS(6), AV(2), and A V1 (4)

Pink (red ochre + lime + cinnabar) on white.
Pink (red ochre + lime + cinnabar on coarse blue (Egyptian blue),
Pink (red ochre) + lime + cinnabar on burnished black (charcoal).
White (lime) with blue specks (Egyptian blue) on black (charcoal), on 0.10m tapering grey (carbon + lime), overlapping with 0.30ma tapering red (red ochre), on 1.50m sandy white intonaco (lime and calcite), on 7mm of sandy mortar. The layers of pigment proved too small to measure.

Sample 11
A 11 (5) 99

Pale blue green (Egyptian blue + green earth), on green (earth), on coarse blue (Egyptian blue) with clear glass, on 7m grey/buff, sandy mortar, on 35m mortar. The total measurement of the pigment layer was 0.06m, and, interestingly, this sample had no intonaco, the pigment and glass being applied directly onto the mortar. The use of clear glass with Egyptian blue in this way, so far, appears to be unique.

Sample 12
Unprovenanced

Pale blue (Egyptian blue 0.10mm) on white (lime 0.05mm) on black (carbon 0.05mm) on 1.00mm sandy white intonaco (with calcite) on l0mm pale, sandy mortar.

In addition, pigment analysis was carried out on the paint layers of those samples selected for mortar analysis, with the following results:

1: AV1 Salvage

Yellow (ochre , red (ochre), and white (lime) spots on pink (red ochre + lime) on 0.25-0.5mm off-white intonaco (lime + calcite + traces of charcoal), the charcoal giving the intonaco its greyish appearance. The pigment layers measured 0. lmm.
.
2: AV 8

White stripes (lime), black band (carbon), white (lime) on 0.05mm yellow (ochre) on 0.25m fine, burnished red (ochre), on 0.50mm sandy white intonaco with traces of calcite.

3: Unprovenanced

0.05mm burnished black, (carbon), on 1.0mm fine white intonaco with calcite. Large lump of charcoal, from either willow or poplar in upper mortar layer.

4: AV 1 4

Yellow (ochre) on red (ochre), on 0.50mm burnished black (carbon), on 0.75mm cream coloured intonaco with calcite.

5. Unprovenanced

0.05mm Black spots (carbon) on yellow (ochre) on 0.25mm white intonaco (lime).

6. A 11 8

Less than 0.05mm creamy white (lime), on 1.00mm-1.50mm sandy white intonaco (lime).

7. A I 10

0.10mm burnished black (carbon) with red specks (ochre calcite) on sandy white intonaco (lime), with some calcite.

Discussion

The pigments identified can be seen to consist mainly of natural earth colours with the addition of cinnabar and Egyptian blue.

White ----------Pure lime
Black ----------Soot or charcoal
Red ----------Ochre or cinnabar
Yellow ----------Ochre
Green ----------Earth
Pink ----------Ochre or cinnabar + lime
Blue ----------Egyptian blue
Grey ----------Soot or charcoal + lime

Of special note is the use of the imported pigments, cinnabar and Egyptian blue. The cost of cinnabar is recorded by Pliny (33. Ch.40) to have been around 70 sesterces (350 pounds) per Roman pound (320 grams) - so expensive that fresco painters found it necessary to insist that, generally, the client must supply his own pigment. Vitruvius (V11.9) describes the process of obtaining the pigment,

> 'When the lumps of ore are dry, they are crushed in iron mortars and are repeatedly washed and heated until all the impurities are gone and the colours come.'

The supply of cinnabar to the Roman world is reputed to have been derived from mines in one particular area of Spain: Sisapo (or Sisopu) (Bailey 1932, 23). It has been suggested that this may refer, in particular to the mines of Almaden, the most important source of cinnabar in the world (Gettens *et a1*.1972, 46.).

The survey of Romano-British wall plaster and mortar by Graham Morgan has, to date, confirmed the occurrence of cinnabar at 18 different sites in Britain. More will, no doubt, become evident as the survey nears its completion. Certainly this testifies to a far more widespread use than was previously supposed if we consider that, in 1975 (Ling 1975, 55), only four known sites produced samples of the pigment; namely York, Leicester, London (Southwark) and the villa at Piddington, Northamptonshire.

X-Ray diffraction has confirmed the use of both cinnabar and Egyptian blue, in many of the samples of painted wall plaster from the excavation and, taking into account the high cost of both pigments, we may suppose the building from which they were taken to be of reasonably high status. Egyptian blue (copper calcium silicate 1, a commercially manufactured pigment, was made by combining a mixture of silica (sand), a copper salt, a calcium salt, and a flux, in a temperature of between 850 and 950 degrees centigrade, in an oxidizing atmosphere (Stodulski *et al.* 1984, 148.). Evidence of its manufacture has been found as early as the IVth Dynasty (*c.*2600 BC) in Egypt, and as late as the ninth century in a Roman fresco.

Sample 11 (Context AII (5)) is an unusually interesting example of application and technique. So far the Morgan survey has discovered no comparable examples of the use of clear glass in this way. In our sample the surface pigment layer had been removed, effectively exposing the underlying layer of glass and coarse pigment beneath. The painted background in some of the samples would have been applied in

true fresco, the colour being fixed by chemical reaction, the lime within the plaster being brought to the surface of the intonaco with the evaporating moisture and forming a film of calcium carbonate over the painting.

Some of the samples showed evidence of burnishing which would have entailed the use of a float (*liaculum*) or stone rubber. These samples are representative of the technique known as 'secco', literally, 'dry work', which is not so durable as true fresco though easier in application. Detail painted over the background colour would almost certainly have been applied in tempera, the pigment being mixed with an organic binding agent, probably animal size, or egg white.

Although the samples used in the analysis are merely fragments of a greater complex of painting and frescoes, they give us an indication of the abilities, techniques and resources utilised by the craftsmen who built and decorated the building from which they were taken.

Graffiti **R.P. Wright**

During Phase 2C, when the courtyard building was disintegrating, the wallplaster around the peristyle was subjected to vandalism, including the scratching of graffiti into the wall surfaces, as well general weathering due to the possible removal of the roof. The deliberate hacking out those of areas of the scheme incorporating human figures may be significant.

The substantial size of many of the wallplaster fragments has meant that some of the graffiti is comprehensible, and the reconstruction of the panels allows it to be placed within the original scheme. The west wall in particular has a number of pieces of graffiti, all placed at around head height, while the reconstructed area of the north wall is by comparison almost devoid of graffiti, except for one piece high up on the right hand column.

The graffiti was originally published in the *Journal of Roman Studies* in 1962 and 1964, but it has been decided to republish it all together, with some additional material.

From the west wall of the peristyle:

a: On four fragments of red painted wallplaster, which do not link up:

IE^; VM; MI^; V

b: On a fragment from the north wall of the peristyle:
...]INI.

c:]M^IS[; QVINN[, with 1st N erased.

d: On a fragment with a red background, and vertical bands of green, maroon, white, red, white, maroon, and green, flanking on the left hand side:

NOM[

e: Vertical bands of green, red, and yellow define a zone of black in which a long-necked bird flanks what appears to be a column; the graffito P^VO, `peacock', is level with its bill.
Note: this graffito is now incorporated into the reconstructed panel, as are the following...

f: On a red area with a small patch of green near the right margin:

i: Directly above one another.

].DEBETQVE.[
]SLO[
]II[

ii: 8cms below i, in smaller, neater letters:]VIV^T
a: On yellow fragment: ^C QVIS TE CIN^E[DE

‘And who, catamite,....you?’

b: On four grey fragments with a lateral band of pink:
CO[...] CIVILIS CLVSVS IIST CA[.../]. CILIS S...S..
[‘Civilis is in confinement’.

c: On cream vertical panel on buff on a red background:
EQV^ G / ELLA; CVLO; (at left side) FIDIS FIDIS ‘that mare’; (obscene phrase); ‘faith’(?).

d: yellow, vertical white stripe, green on black, white stripe, yellow; at top: V^P[.]S; below (in majuscules) LIBR<I>IS, (in cursive) libris.

e: seven fragments with black background: MV

f: red: PV

g: black: S]IBI DIX[IT ‘said to him-(or her)self’

h: red: XII.SP / ^[.

The Mosaic Reconstructions **D.S. Neal**

Reproduced from: Neal, D.S. & Cosh, S.R. 2002 *Roman Mosaics of Britain Volume I, Northern Britain*. Illuminata Publishers for the Society of Antiquaries of London: London, 105-6.

Room 5 Mosaic

Blue Boar Lane. Room 5. Found 1958. Dimensions: room 8m by at least 4.50m; fragment 2m by 1.75m. Tesserae: grey, white and red, 12mm; border: red tile, 30mm. Mid-second century. Destroyed. Figure: line drawing based on oblique photographs taken by the excavator.

Only the corner of this mosaic from the south-east angle of the room is known – too little to reconstruct its original scheme with certainty. It has a grey right-angled band (thirteen tesserae wide) forming the corner of the main panel. This borders a band of swastika-meander, within which is a narrow right-angled grey line forming the corner of a row of grey superimposed thorns. These appear to be borders to a large mosaic which, assuming the wide grey band ran around the whole mosaic and that the width of the border was fairly constant, would have been about 7m wide east-west. Around the mosaic is a border of coarse red tile tesserae, wider on the south side than the east.

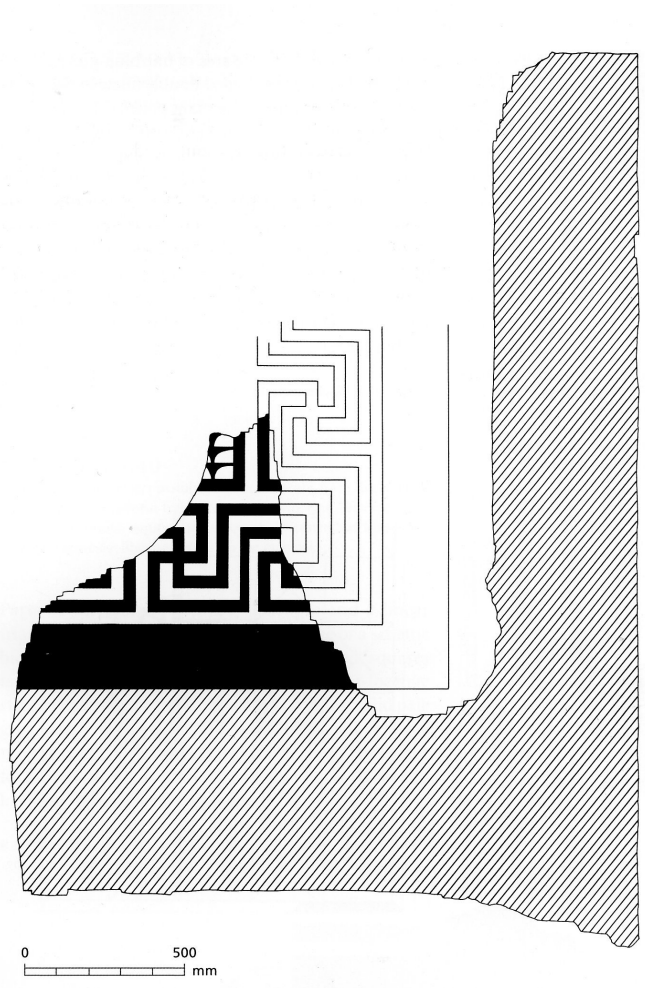


Figure 79 Room 5 mosaic reconstruction. North to top.

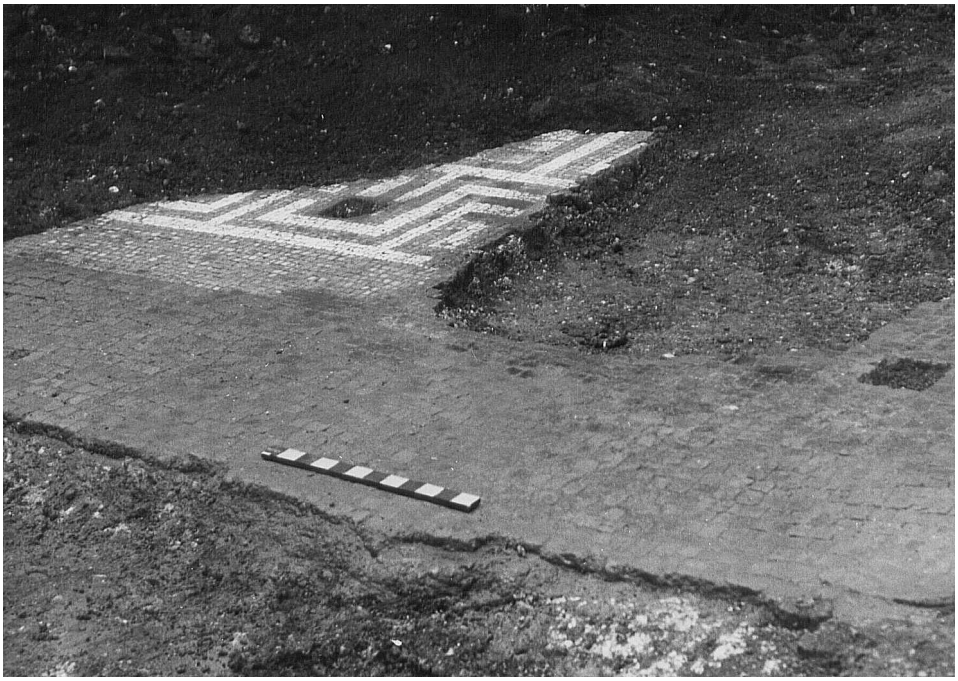


Figure 80 Room 5 mosaic, view north-west

Room 7 Mosaic

Blue Boar Lane. Room 7. Found 1958. Dimensions: room at least 4m by 5.20m; fragment 2m by 3m overall. Tesserae: grey, white, red and yellow, 14mm. Mid-second century. Destroyed. Figures: painting and reconstruction drawing by DSN based on excavator's site plans, photographs and colour slides, and a fragment preserved in Jewry Wall Museum.

When found, this mosaic, from the south-west corner of the room, was in three sections: a large border fragment and two adjoining parts of the ornamental panel, one part having faulted from the other; the illustration shows them in their correct relationship. Very little of the design survives but the corner of a possible central panel is framed in round-tongued double guilloche outlined grey with red, yellow and white strands. This is surrounded by double fillets of white and blue-grey and a scheme of adjacent squares set at 45° to the borders. Alternate squares contain red-lipped four-petalled flowers with excrescences, and in the others, white posied-squares on a grey-blue ground (forming triangles in the corners), containing blue-grey concave squares. The larger fragment forms part of the border with a large area of fine blue-grey tesserae with alternating right-angled double fillets in blue-grey and white surrounding the main panel.

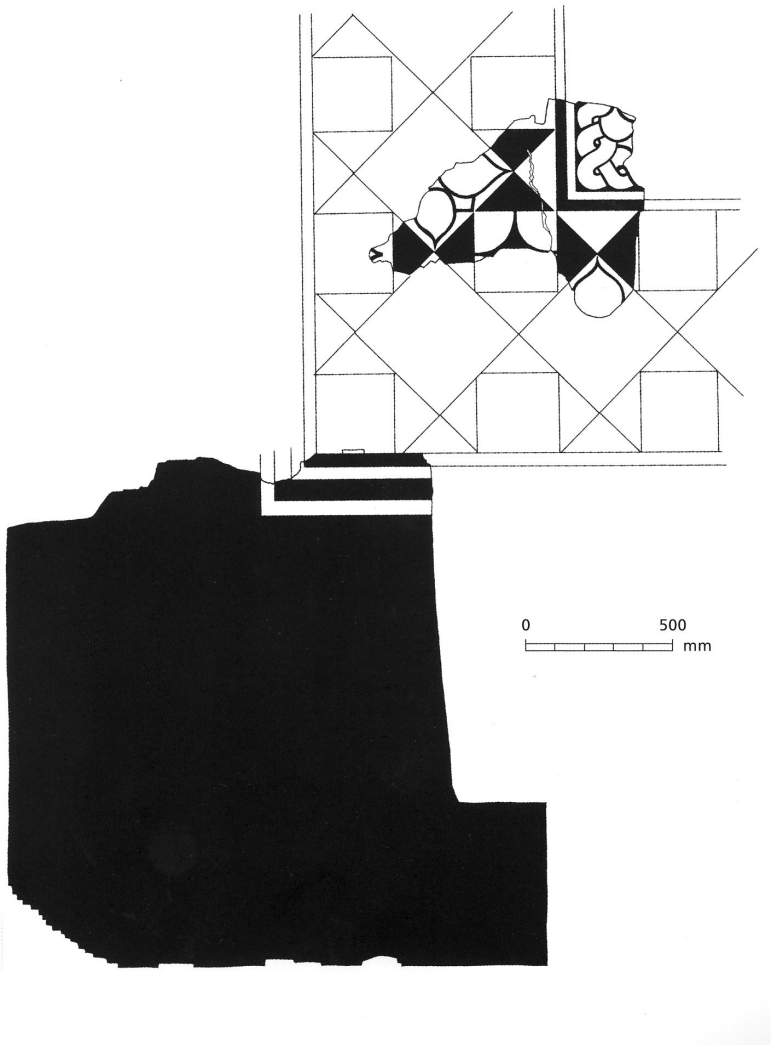


Figure 81 Room 7 mosaic reconstruction

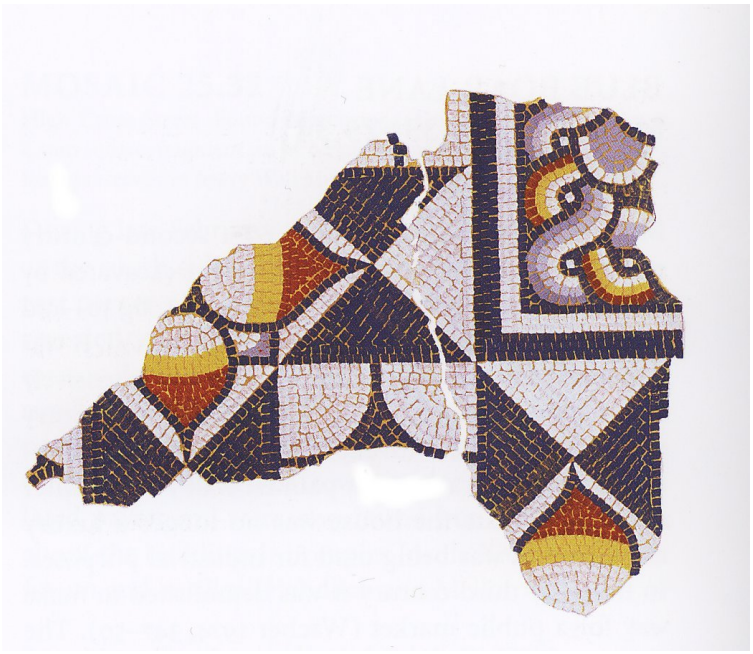


Figure 82 Room 7 mosaic reconstruction

The reconstruction is an attempt to show the original scheme of the mosaic. It is a variation of Planche 120h in Le Décor. The design has no parallel in Britain although in Neal's opinion it has similarities with Mosaic 25.42 (unknown provenance), possibly recorded by Throsby. The grey concave square and the stylised flowers are typical of second-century pavements, for example, Pavement A, Insula 2 from Colchester, as is the use of fine dark tesserae for the border.

The Architectural Stonework **Janet Huskinson**

Illustrations by Ann Shepherd

1) Fragment of a Relief with a Bearded Figure (Deity?)

Provenance: Leicester, Blue Boar Lane/Vaughan Way close to the site of the supposed macellum, 1964, together with a scale-patterned column drum (subsequently destroyed).
Location: Leicester, Jewry Wall Museum 644-1964
Negative number: A 7231/1/1
Damage: Broken off as a roughly rectangular fragment. Surface chipped and abraded.
Dimensions: Height: 440mm; Width: 190mm; Depth: 155mm; Maximum depth of relief-work: 10mm. Worked in relief.
Material: limestone.

The figured section occupies the lower 250mm below a projecting plain moulding 30mm wide. Above this the stone has been cut back, with traces of a border 85mm wide decorated with a zig-zag pattern of grooves. The figure, carved in quite low relief relative to the thickness of the stone, is of a bearded man wearing a cap and a mantle draped over his shoulder; only his head and left-hand side survive. He appears to be looking back as he moves to his left. Although they are now badly worn, his facial features are well-proportioned, with a long classical nose. A wide groove outlines the body and a more delicate line, the eye; the drapery folds are plastically rendered. The background to the figure is worn, but on the right-hand side of the panel is a groove, like a sideways V, which might have been part of the original composition.

It has been suggested from its posture, costume and other possible attributes that the figure may be a river- or sea-god, perhaps Oceanus (Caplan unpublished manuscript in archive*). In addition, mouldings on architectural fragments found nearby, reported on below, may include some marine motifs (Hebditch and Mellor 1973, 6). The identification as Oceanus is certainly possible, but there is no reason to assume it necessarily to be the case. Firstly, the posture: it is not clear from the fragment as it survives that the figure is reclining in the position typical of these water-gods, rather than moving towards his right. In fact, his left arm is turned out and away in a position which is not typical of reclining figures − even of those which hold out some object − as they keep their arms close to their bodies for support. Secondly, the cap is worn by fishermen, for example, on the Lateran Jonah sarcophagus (Volbach 1961, no.40), but also by characters from mythology such as Odysseus and Hephaestus. For example, Odysseus is portrayed on a sarcophagus in the Vatican Museums, showing Achilles on Scyros, where he also moves sideways (Koch and Sichtermann, *Romische Sarkoplaage* 129; Fig. 137.).

Figure 83 Fragment of relief with bearded figure or deity

LEICESTER MERCURY, FRIDAY, AUGUST 21, 1964 21

...rease Wages In Bid

BRECHT IS OUT— SARTRE IN

THE Young Playgoers of Leicester's Phoenix Theatre Society have had to think again about their summer production on September 6.

They had secured first performing rights on a Bertolt Brecht play, "The Trial of Luculus", but this has been abandoned because only about 25 people turned up for audition for the cast of over 40.

After quick consultations with assistant director Nicholas Barter, who is in charge of production of the Young Playgoers' offering, it was decided to present "The Flies" by Jean Paul Sartre, instead.

This has a cast of about 25 and is now in rehearsal.

The setting of "Virtue In Danger" will be used. "It's ideal," said a member of the society's publicity team.

The Young Playgoers are going all out to make a production really profitable, so that they can boost the society's funds, and thus support the Phoenix.

A picture of the Roman relic (above) taken before it was accidentally smashed by workmen. Below: The other discovery—a sculpture of the head and shoulders of a man, thought to be either Roman or medieval.

Roman Relic Found —Then Workmen Smash It Up

WORKMEN with sledgehammers have smashed up a valuable Roman relic only recently discovered in excavations near Leicester's Central Ring Road.

The relic, part of a column dated roughly between the late first and fourth century A.D., had been described by Leicester Museum authorities as "unique" for the area.

They were hoping to acquire it and eventually have it as a show piece for their proposed Roman museum to be laid out in a long gallery beneath the new Vaughan College.

The heavy column section with its unusual scale-like pattern was unearthed recently on a site between Blue Boar Lane and Vaughan Way.

The site foremen, who knew its value, issued instructions that it was not to be damaged—but then new workmen arrived and they presumably knew nothing of its worth.

Finding it too heavy to move, they smashed it up into several fragments.

A shocked Mr. J. F. L. Norwood, Keeper of Antiquities at Leicester Museum, said on hearing the news: "It is quite intolerable, but fortunately this sort of thing is very rare.

"Once the men are told about a piece like this, they are usually very good and very careful."

Another find, also thought to be a Roman relic, was made in the same area. It is a fragment of a sculpture showing the head and shoulders of a male figure.

Mr. Norwood has not yet had time to examine this discovery closely, but thinks it must either be of Roman or medieval origin. This has not been damaged.

Remarkable

"Both are extremely valuable pieces and it was a remarkable turn of fate that they should have been discovered together. Usually many years go by before we find something like this," he declared.

The discoveries were made on a site at present being prepared for extensions to the textile firm, Davis Manufacturing (Leicester) Ltd.

Cotton growers of the southern Soviet Republics are planning to harvest 5,220,000 tons of cotton this year, beating last year's all-time record by 10,000 tons.

Figure 84 Scale-patterned column drum and bearded figure relief (Leicester Mercury 21/8/1964)

Finally, it is impossible to identity for certain the attributes of crab-claws on the cap, and anchor-fluke on the right hand edge, which might contribute to an interpretation of the figure as a representation of the sea-god Oceanus (Caplan unpublished interpretation in archive*).

The scale-patterned column drum with which it was discovered (Figure 84) may provide a different lead, but one that cannot be pursued further through lack of supporting evidence. Similar drums have been found on other British sites, and some have been linked with so-called 'Jupiter Columns'. In these monuments, which are well-known in the north-western provinces of the Roman Empire, the column rests on a base which is decorated with reliefs depicting gods, occasionally of the days of the week (Woodfield 1978, 69, 82-3, no.18; 1980, 33; Lambrechts 1942, 81-2). It is possible that this fragment came from such a column.

*Editorial note: it was decided by NJC not to include the manuscript 'The Leicester Oceanus' sent by C. Caplan to the editor (NJC) in 1989, within this final site report. The basis of his identification are dependent on attributes already considered by the author (JH) as impossible to confirm, and the remainder of the manuscript does not contain any further relevant information supporting the original contention. The full manuscript remains in the site archive.

2) Fragments of Architectural Mouldings

Six architectural mouldings (i-vi) are described below, four probably from a pediment and two from a cornice.
Provenance: Leicester, Blue Boar Lane 1859.
Location: Leicester, Jewry Wall Museum

i) Section of Pediment

Museum Acc. No. 23
Negative number: A 723112/I1
Dimensions: Height: 750mm; Width: 470mm; Depth: 590mm; Maximum height: decorated surface tapers from 210mm (right) to 130mm (left).

A roughly wedge-shaped fragment. The side surfaces are pitted and the top dressed with a groove for attachment. Surface of decoration flattened by weathering, particularly on the left.

The decoration which survives on the front face consists of a flat border approximately 8cm in height, surmounted by what was probably a continuous 'scroll', worked in high relief. This has a smooth, well rounded surface, and thickens on the right-hand side where it appears to loop back on itself. It is in this fragment that one sees most easily the possibility of identifying the decoration as 'sea creatures' (Hebditch and Mellor 1973, 6), as the long scroll could so easily be the coiled, serpentine tail of some sea-monster (Volbach 1961, no. 40).

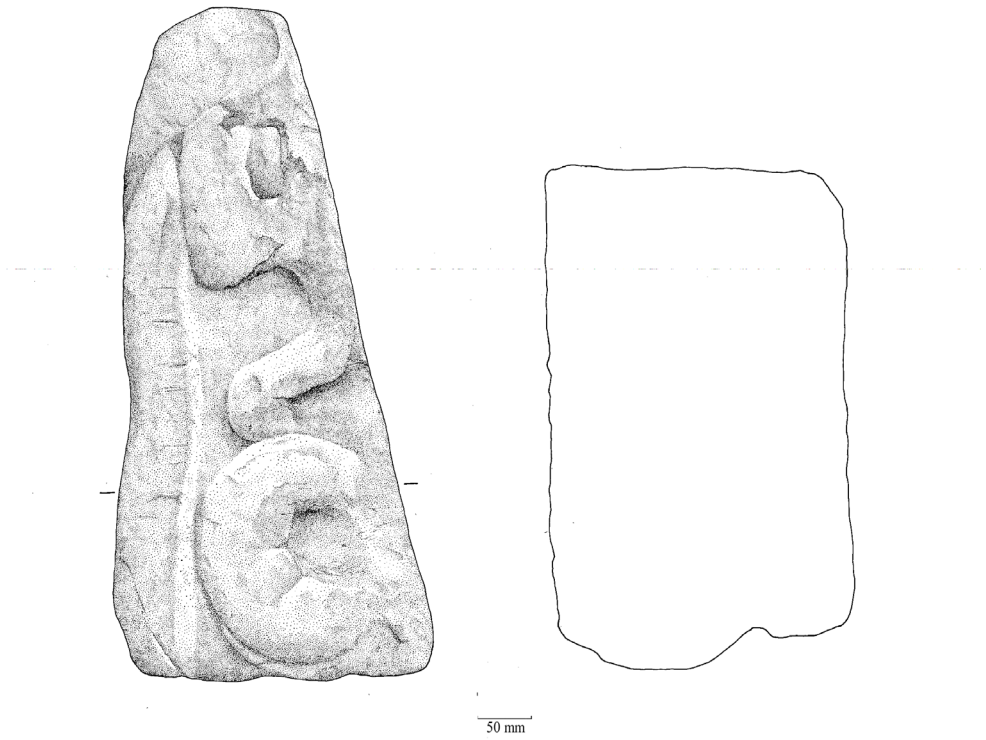


Figure 85 Section of pediment (Acc. No.23)

ii) Section of Pediment (?)

Museum Acc. No. 22
Negative number A 231/B/6
Dimensions: Height: 290mm; Width: 350mm; Depth: 350mm.
A roughly triangular fragment.

The surviving decoration consists of two contiguous loops of scroll. As with Fragment 23 (No. i) these are worked in high, well-rounded relief, but their inner side is indented in a way which could suggest the fronds of a leaf, or, possibly, fins along the edge of a fish tail.

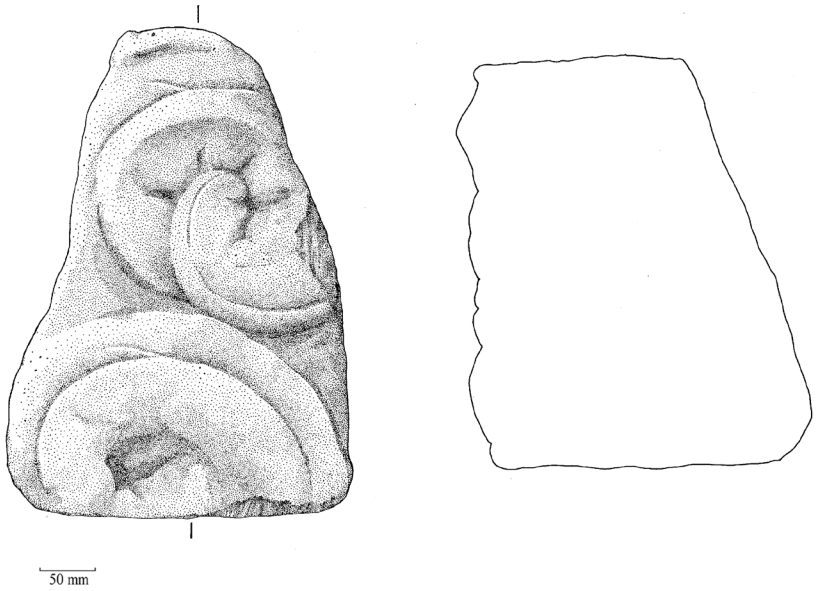


Figure 86 Section of pediment (Acc. No.22)

iii) Section of Pediment (?)

Museum Acc. No. 24
Negative Number A *7231/2/13*
Dimensions: Height: 340mm; Width: 390mm; Depth: 370mm.

Fragment of a wedge-shaped block: the left corner is broken away, but the sides are roughly dressed. The fragment can be fitted with No. 25 (iv), straight sides together.

The relief is decorated with acanthus-style foliage, which unfolds, as it were, from the narrower end of the fragment. There are traces of what may have been a flat moulding in the lower left-hand corner.

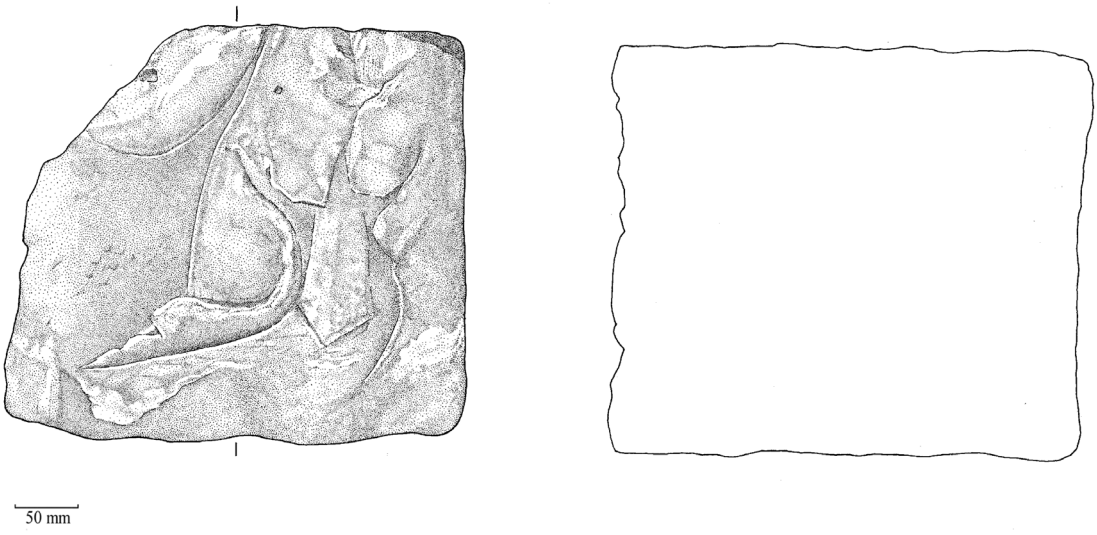


Figure 87 Section of pediment (Acc. No.24)

iv) Section of Pediment

Museum Acc. No. 25
Negative number: A 7231/2/17
Dimensions: Height: 340mm; Width: 360mm; Depth: 370mm.

Similar shape to No. 24 (iii); large chip missing on lower right-hand corner, and abrasions along bottom edge. The sides and top are dressed.
The decoration comprises acanthus-foliage in an arrangement roughly symmetrical with that of No. 24 (iii)

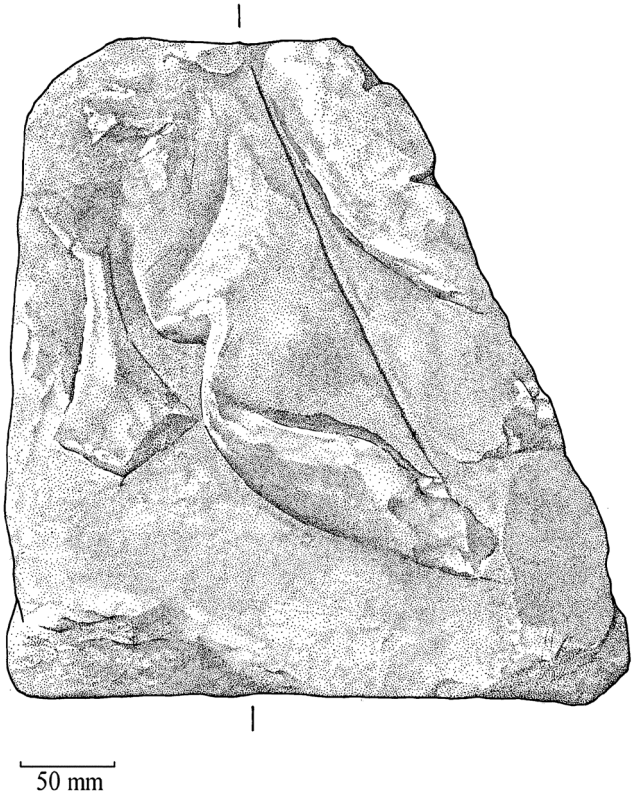


Figure 88 Fragment of pediment (Acc. No.25)

v) Fragment of Cornice (?)

Museum Acc. No. 26
Negative number: A 7231/2/4
Dimensions: Height: 230mm; Width: 550mm; Depth: 600mm.

The upper surface and sides of stone have been broken away, and the surface of the remaining moulding is badly weathered.

This architectural moulding may have formed part of a cornice. It comprises a double rounded fillet, surmounted by a cymation with acanthus leaves.

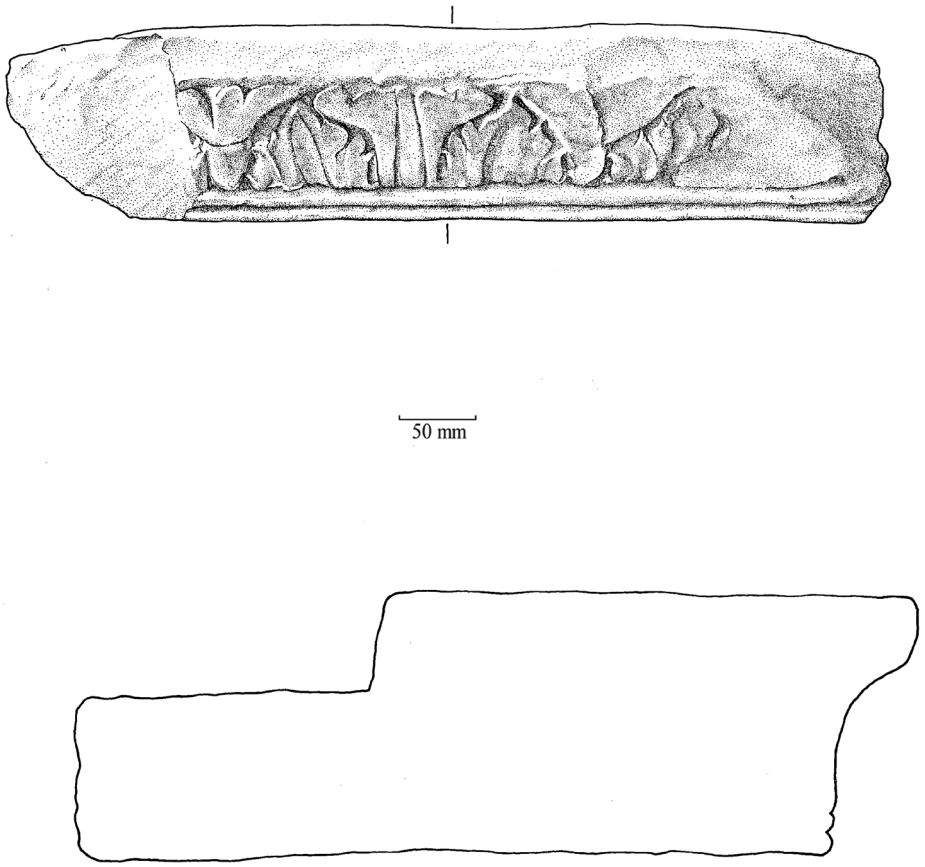


Figure 89 Fragment of cornice (Acc. No.26)

vi) Fragment of Cornice

Museum Acc. No. 21
Negative number: A 7231/3/15
Dimensions: Height: 240mm; Width: 1.20m; Depth: 780mm (the back section is *c.*50mm lower).
The lower corners have been broken off. The top is dressed and has a hole in the top measuring 140mm by 20mm by 110mm deep.

Similar decoration to fragment No. 26 (No. v.), but much better preserved.

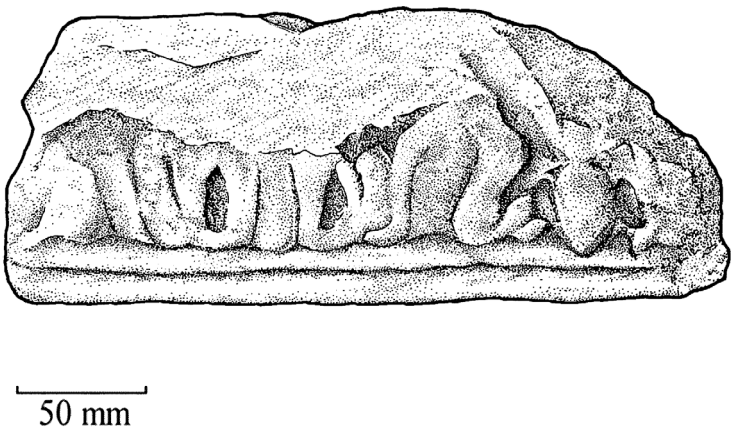


Figure 90 Fragment of cornice (Acc. No.21)

Summary

The architectural reliefs form a coherent group, and their function is largely suggested by difference in their shape and size. Those which are essentially wedged-shaped have been attributed to a pediment (or pediments?), whereas the longer, narrower pieces are clearly part of a continuous architectural moulding which may have formed the cornice of a building.

The common motif of their decoration seems to be acanthus foliage. This is clearest in the mouldings where it adorns a cymation profile, and it can be seen unequivocally in fragments 24 and 25 (Nos. iii and iv). On the remaining two fragments the scroll-work is less clearly foliate, and on No. 23 Ci) its identification as the smooth, coiled tail of a sea-monster is understandable. However, the predominance of the leaf motif in the other fragments suggests that it might also be represented on this stone, and the aquatic interpretation (challenging though it is) seems less likely given the slender evidence for identifying the man on the figured relief as some water-deity.

This consistency of decorative motif suggests that the architectural reliefs all came from a single building. Hebditch and Mellor (1973, 6) listed three possibilities: that this was a triumphal arch set up at a street junction, or a small building (temple?) at the north end of Insula XXII B, or the 3rd century building in Insula XVI, which has been described as a macellum. This last seems at the moment most likely: certainly their find-spot seems to have been close to the south-east corner of this insula. It is perhaps interesting in this connection to refer again to the discovery of the scale-patterned column drum nearby, since the great majority of other Romano-British examples come from urban centres, and at Caerwent and Cirencester are closely associated with the major civic buildings (Holbrook 1998, cover illustration). However, whilst Jupiter Columns, which may have scale-patterned shafts, are surmounted by a figure of the god slaying a giant monster with a fishlike tail, this seems to be too tenuous a link to be of use in interpreting the content of these architectural scrolls.

The Relief-Patterned Fluetiles **John Leveson Gower**

Introduction

Seven pieces of relief-patterned tile from the excavations at Blue Boar Lane, Leicester are currently in the Lowther Collection of relief-patterned tile in the British Museum. One piece is of a pattern already known to Lowther when he produced his *corpus* of relief-patterned tile in 1948 (Lowther 1948a), whilst the other six pieces are of a pattern unfamiliar to him at that time.

Further published examples of flue tiles have been recovered from excavations in Leicester undertaken subsequent to Blue Boar Lane, a number of which feature in the corpus of patterned tiles (Betts *et al*. 1994) and, most recently, in the Highcross Leicester synthetic publication (Buckley *et al*. 2021).

Die 13 (Figure 91)

A single tile fragment decorated with die 13 came from Pit 1, a possible medieval robber trench. This die is also known from the Jewry Wall excavations in Leicester, as well as many sites throughout southern England including London (four different sites together with two unprovenanced examples), Southwark, Fishbourne (Sussex), Colchester (Essex), St Albans (Hertfordshire), Lullingstone (Kent), Rayne (Essex), Cobham (Surrey), Beckley (Oxfordshire), Edington (Wiltshire) and North Cray (Kent).

Figure 91 Flue Tile Die 13 (no scale)

As regards dating evidence there is a. Hadrianic *terminus post quem* for the piece from Fishbourne whereas the piece from Miles Lane, London was associated with pottery dated *c.*AD 100-200 and that from Bucklersbury House, London with late 2nd century pottery. There is some evidence that the roller used for die 13 was used over a long

period of time with some examples of the pattern produced showing signs of the splitting of the roller.

Die 67 (Figure 92)

Six pieces of tile with the pattern of die 67 were found during the excavations. Two of the pieces were from Phase 5/6 contexts (4th century destruction of the macellum, or medieval pits), one from the second or early 3rd-century construction of the macellum and three from the late Antonine destruction of the Courtyard House. One other specimen, found in 1951, was an unstratified find from the area of the forum, on disply in the Jewry wall Museum. This was presumably insula XXI, interpreted as the site of the public baths which were completed in *c*.AD 155-60.

The only other known specimen of die 67 comes from Cave's inn, Warwickshire (*Tripontium*), although there is no information on the context in which it was found (Lucas 1984).

Figure 92 Flue Tile Die 67 composite (no scale). Drawn by Gillian Hale

Relief Patterned Tile from Leicester

In addition to the dies mentioned above, three others (7, 9 & 30) are known, all from the site of the public baths (Lowther 1948b). To date, die 7 is only known from one other site, namely the bath building at Cobham in Surrey. Die 9 is found at many sites, including Cobham, London, Lullingstone, Southwark, St Albans and Rayne, all of which produced examples of die 13. Die 30 is unique to Leicester, being found in a 2nd century context in the Jewry Wall excavation and from an unstratified context at Site 9 at Bath Lane (Clay and Mellor 1985). The specimens from both sites were fragments of voussoir tiles. No fabric analysis has been carried out on the relief-patterned tile from Leicester; indeed, fabric analysis of relief-patterned tile it still in its infancy. It would be particularly interesting to carry out a detailed fabric analysis of the die 13 tiles which are geographically so widely distributed.

The Samian Ware

Brian R. Hartley and Brenda M. Dickinson

Introduction

The date of this assemblage as a whole ranges from the Claudian period to the late second or early 3rd century, and the proportion of South Gaulish samian was considerably higher than that of the combined Central and East Gaulish wares. Conversely, the total of East Gaulish vessels (two) was surprisingly low.

Of the individual sites, only Site B produced enough samian to provide any significant chronological pattern or evidence of sources of supply. It should, however, be mentioned that Site A produced no pre-Neronian material, and that the latest piece was late Antonine. The date range for the material from Site B extended from the Claudian period to the late second or early 3rd century, although samian was not being discarded in any great quantity before the Flavian period. It is interesting to note that whilst South Gaulish ware as a whole predominated, the proportion of Flavian-Trajanic material was comparatively low, and that of Trajanic ware from Les Martres-de-Veyre was unusually high. It would appear that Les Martres products dominated this particular market under Trajan. Thereafter, samian does not appear to have been used in great quantity until about the middle of the Antonine period. The latest East Gaulish piece from Site B was quite possibly of 3rd century date.

The Catalogue

Note: All the material originates from Southern Gaul (La Graufesenque and associated potteries), unless otherwise stated. Illustrated vessels (Fig. 93.1-14) are indicated at the end of the relevant entries.

Phase I

I B (25)
Forms 18, 22, 24, and 27, Neronian or early Flavian.

I A (27)
i: Form 29, with leaf-tips of a kind found on bowls stamped by Matugenus ii of La Graufesenque. *c.*AD 60-75.
ii: Forms 15/17 and 24. Neronian or early Flavian.
iii) Form 18, with strong external offset at the junction of base and wall *c.*AD 50-70.
iv) Form 18 with stamp [BA]SSI; Bassus i of La Graufesenque, a Die 14 l. The latest records are at Malton and Rottweil-Hochmauren, but there are fifty examples in the Geschirr depot at Burghofe, presumably dumped in AD 69. *c.*AD 60-75.

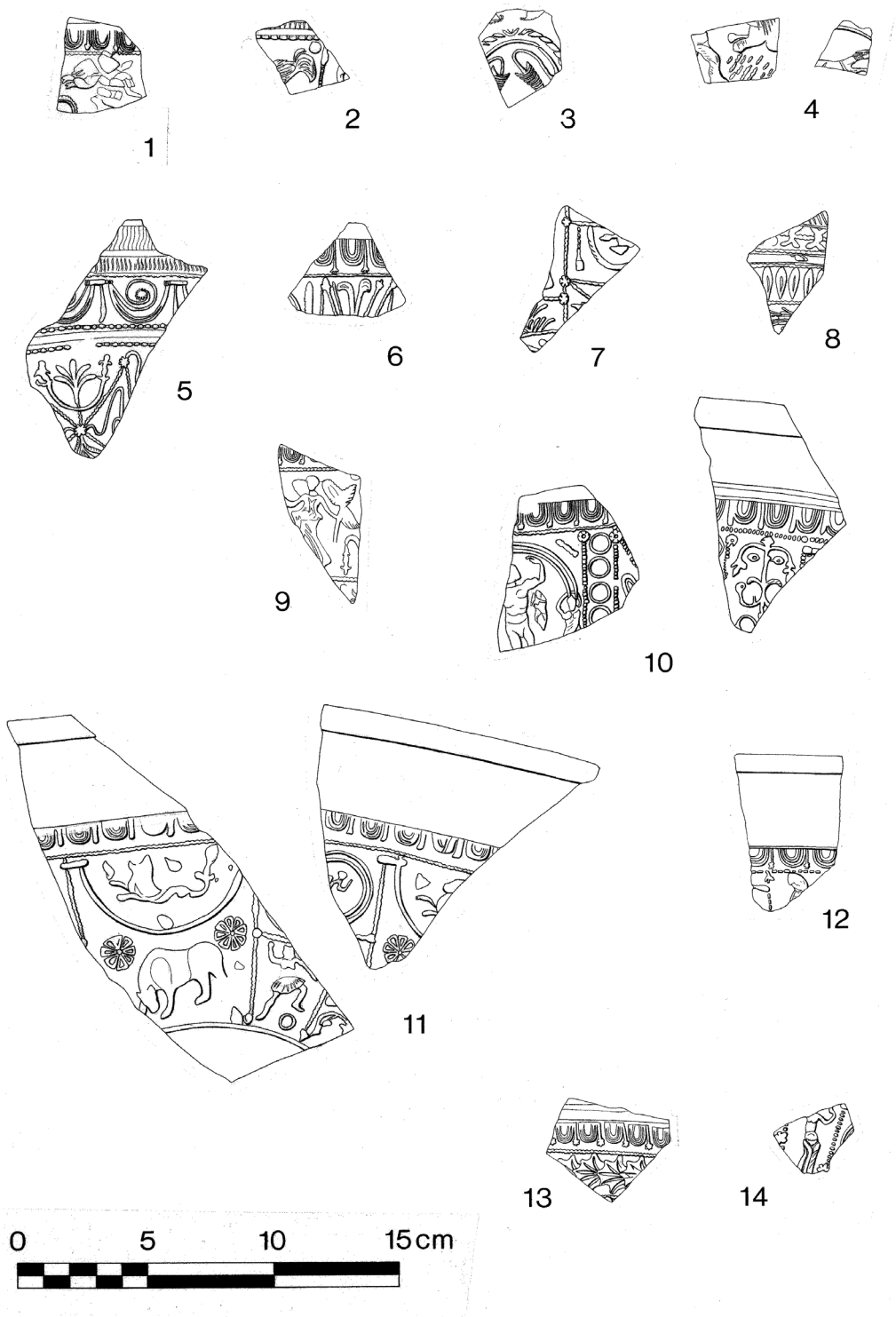


Figure 93 Samian Pottery, Figures 1-14

IA (28)
Form 18, Neronian or early-Flavian.

IB (17)
Form doubtful, probably Flavian.

IB (14)
i: Forms 18, 27, and Curle 11, Flavian.
ii: Form 37, with an ovolo present in the Pompeii hoard of AD 79 (Atkinson 1914). *c*.AD 75-90.
iii: Form 37 rim, Central Gaulish (Les Martres-de-Veyre). Trajanic.

IB? (20) Phase 1?
Forms 18 (2) and 35 (3), Flavian.

Phase 2

AI (10)
Form 27? Neronian or early Flavian.

AI (14)
i: Form 27, Central Gaulish (Las Martres-de-Veyre). Trajanic.
ii: Form 37, by an anonymous mould maker who worked at Leis Martres-de-Veyre. The cupid is D.223 = 0.386. *c*.AD 100-120. Illustration 1.

AI (15)
Forms 18, 18R, and 27, all Flavian.

AI (16)
Dish, c.AD 60-100.

AI (14)
Bowl(?), Neronian or early Flavian.

AII (15)
Form doubtful, 1st century.

AIV (13)
Form 18, Neronian or early Flavian.

AIV (15)
i: Form 29, an extraordinarily thick sherd with badly moulded scroll *c*.AD 70-85.
ii: Form 37. The zonal decoration includes a triple festoon with bird. Probably by Mercator i and *c*.AD 80-110.

AVI (11)
Form 29. Neronian or early Flavian.

AVI (14)
Form 18(R?), probably pre-Flavian.

BII (16)
Form 18, Neronian or early Flavian.

BIII (11)
i: Forms 18 (two), 27, and Hermet 29 (Stanfield Form 22. *Arch. J.* 86 (1930), Fig.4, 16 ; id. 93 (1937), p.101). All Neronian or early Flavian.
ii: Form 29, with decoration including leaf-tips. *c*.AD 60-70.
iii: Form 29, with details all on bowls stamped by Calvus i, but clearly his early work. The plant in the saltire is on a Neronian bowl from Neuss (Knorr 1919, Taf.17B). The upper zone has a parallel at Bonn (*ibid*., 17A), and on a bowl from York which also has the bird. The elliptical festoon is on a Calvus bowl from Mainz. *c*.AD 65-75. Illustration 5.
iv) Form 37, with striatedbuds and bead-rows suggesting-4-i connection with Germanus i of La Graufesenque. *c*.AD 70-85.

B VII (12) Phase 2
i: Form 29, a remarkably small bowl with zonal wreaths, probably from the same vessel as B IX (18), B XIII (13) and B XIII (14). Neronian? Illustration 8.
ii: Forms 15/17, 18 (3), 27 (2), 35/36, 36 (2), and Curle 11, Flavian.
iii: Form 37 (three fragments from two bowls), Flavian Trajanic, one *c*.AD 75-100.

BXIV (16)
Forms 18(R?), 27, and 67 (the last two burnt). Flavian or Flavian Trajanic.

Phase 3

All (8)
i) Form 29. The arrangement of the decoration recalls the Bassus i/Coelus firm. The cockerel is D.1026. *c*.AD 55-65. Illustration 2.
ii) Form 33, Central Gaulish. Mid-2nd century.

AII (9)
Forms 15/17 or 18, and 27, Neronian or early-Flavian.

A IV (8)
Dish footring, 1st-century.

AIV (10)
Walters form B1 rim (burnt), Central Gaulish. Cf. *Archaeologia* XCII (1947), 152. Hadrianic or early Antonine.

AIV (10a)
Form 33 (burnt), probably Central Gaulish. Antonine.

AIV (12)
Form and date doubtful, probably Antonine.

AV (9)
Form 30, Central Gaulish. The leaf is Rogers M41. He has no exact parallel for the festoon, which may be part of a scroll. The acanthi below the festoon are not closely identifiable, but belong to the range Rogers K16-35. Almost certainly Hadrianic. Illustration 3.

AVI (2)
i: Form 27, Central Gaulish. Probably Hadrianic.
ii: Scrap, Central Gaulish. 2nd century.

AVI (3)
i: Form 18(?), probably Flavian.
ii: Form 29 or 37, with two basal wreaths, including one used by Censor I on bowls from signed moulds from Neuss and Narbonne (composed of the motif Knorr 1919, Taf.22, 7), *c.*AD 70-85.

B I (15)
Forms 15/17, 18, 27, and 37 (two), Flavian. One of the decorated bowls has an arena scene; cf. Hermet 1934, Pl. 24 for the 4 figures on a bowl stamped by Bassinus I of La Graufesenque. After AD 80, Illustration 4.

B II (1)
i: Form 18, Neronian (?).
ii: Form 27 with stamp FELIXSEV; Felix I and Severus I of La Graufesenque, b. Die 1a. This was used on Forms 24 and Ritt. 9, but also occurs at Caerleon and in period IV (Flavian) at Valkenburg ZH, as well as at Aislingen and Burghofe.

BII (8)
i: Form 27 with flattened rim, Claudian or early Neronian.
ii: Form 29, Neronian.
iii: Forms 15/17 or 18, 15/17R or 18R and 33, Flavian.

B II (9)
i) Form 18, Neronian or early Flavian.
iii: A pre-Flavian fragment.

B II (12)
All the vessels are Flavian or Flavian -Trajanic, with one exception (Form 27, pre-Flavian). Form 27 is stamped PATR; Patricius I of La Graufesenque, b Die 19d. The Die originally gave stamps reading PATRI. Chester offers the only site dating, but Patricius's general record suggests a range *c.*AD 70-100. The Flavian or Trajanic pieces are forms 18R, 33, 35, and Curle 11 variant, with barbotine dots replacing the normal leaves.

B II (13)
i: Form Ritt.9, Claudio-Neronian.
ii) Form 29, in the style of Germanus I of La Graufesenque (Hermet 1934, Pl.42, 3, with brilliant gloss *c.*AD 60-80.

B III (1)

i: Forms 18 (three), 27, and 37 (two; one joining a sherd in BVI (1), mostly Flavian.
ii: Form 27, Central Gaulish (Les Martres-de-Veyre). Trajanic.
iii: Form 33 rim, Central Gaulish. Hadrianic or more probably early Antonine.

B III (7)
i: Form Ritt. 12, Neronian.
ii: Forms 18 and 27, Flavian.

B IV (1)
i: Form 27, Neronian.
ii: Forms 27, 29 (?), 37 (three), and Curle 11, Flavian.
iii: Form 18 (two), Flavian-Trajanic.
iv: Form 18 with stamp OF.VITA ; Vitalis II of La Graufesenque, b.Die 8h'. 8h is known from Newstead, 8h' from Butzbach. *c.*AD 85-105, with a joining sherd in B VI (1).
v) Form 18/31 (two), Central Gaulish (Les Martres-de-Veyre). *c.*AD 100-120.

B IV (2)
Form 37. A coarsely-moulded bowl with an ovolo with four-pronged tongue not yet recorded on any stamped or signed bowls. The horn-like motif was used by Sabinus IV. *c.*AD 85-110. Illustration 6.

B IV (7)
i: Forms 18 and 27, Flavian.

B VI (1)
i: Forms 18, 18R, and 27, Flavian.
ii: See B IV (1) iv (above).
iii: Form 37 with an ovolo used by Memor, Mommo, and a potter whose name begins with Trim. *c.*AD 75-90.
iv: Form 37, with joining sherd in B II (1). The grass-tufts are typical of the period *c.*AD 85-110, and the style recalls the work of Mercator I. Illustration 7.
v: Form 18/31, Central Gaulish (Les Martres-de-Veyre?), with a stamp V or ^.
*c.*AD 100-120.

B VI (2)
Form uncertain, 1st-century.

B VI (6)
i: Form 29. *c.*AD 45-60.
ii: Forms 18 and 27, Flavian.

B VII (1)
i: Form 27 (?), probably Neronian.
ii: Forms 18R, 27, 35, 37 (three), and Knorr 78 (without surviving decoration), Flavian.

B VII (2)
i: Form 15/17, Claudio-Neronian.
ii: Forms 18/31R and 33 (?), Central Gaulsh (Les Martres-deVeyre). Trajanic.

B VII (5)
i: Form 30, *c*.AD 65-80.
ii: Form 27, with the stamp of an illiterate potter. The footring is unworn and has adhering kiln-grit. *c*.AD 70-85.
iii: Form 37, by an anonymous potter of Les Martres-deVeyre. The figure (0.363 variant?) and spiral were both used by potters associated with Ioenalis I. *c.*AD 100-120.

B VII (7)
i: Form 29, perhaps by Germanus i, with a lion (Hermet 1934,
pl.25, 8A). *c*.AD 65-80.
ii: Forms 18 (reused as a rubber) and 27, Flavian.
iii: Form 37, with a large scroll of the kind used by Flavius Germanus, Mercator I, Patricius I, and their contemporaries. *c.*AD 85-110.
iv) Form 27, Central Gaulish (Les Martres-de-Veyre). Trajanic.

B VII (8)
i: Form 18 with stamp IRTNV(SFE) retrograde, in double impression.
Irtnus of La Graufesenque, c. Die1a. Probably Neronian, on the fabric and glaze.
ii: Form 29, chip, Flavian (?).

B VII (9)
i: Form 27 with stamp OFRVF retrograde. Although unique this is certainly a stamp of Rufus III of La Graufesenque, whose career was mainly early-Flavian. *c.*AD 65-85.
ii) Form 67, Flavian.

B VII (10)
i: Form 18, Neronian-Flavian.
ii: Forms 27 (?) and 30 or 37 (rim), Flavian.

B IX (9)
i: Forms 27 and 29, Flavian.
ii: Form 37, with similar decoration to the bowl in B (7). *c*.AD 85-110.
iii: Form 18/31 (Les Martres-de-Veyre. Trajanic.
iv: Form 18 rim, Central Gaulish. Hadrianic? (Apparently Lezoux ware, and so scarcely earlier than AD 115.

B IX (11)
i: 1st-century scraps, including form Curle 11.
ii: Form 18/31, Central Gaulish (Les Martres-de-Veyre). Trajanic.

B IX (14)
i: Forms 15/17, 18, 29, 30 or 37, all Flavian or early Trajanic.
ii: A rouletted variant of form 30, Central Gaulish. Such bowls were made at Lezoux under Trajan, but this is in the normal Lezoux fabric of the main export period and so should be later than AD 125.

B IX (18)
i: Forms 15/17 (2), 18 (4), $^{27}{}_{(3),}$ 33, 35 (3) and 67, *c*.AD 65-90.
ii: Form 29, from the same bowl as B VII (12), etc.

iii: Forms 30 and 37 (2), *c.*AD 75-90. The form 30, probably with panelled decoration, has a corner-tassel, a Victory (Hermet 1934, pl.20, 102), basal chevron wreath and an unusual small ovolo. Illustration 9.
iv: Form 18/31, Central Gaulish (Les Martres-de-Veyre). Trajanic.

B XIV (2)
i: South Gaulish residual material, with forms 15/17R, 15/17 or 18, 18 (at least 4), 27 (2), 29 (2), 30, 35/36 (2), 37 (2) and Curle 11 (2). In addition there are:

1: Form 27g, South Gaulish.
The stamp is very badly blurred, but almost certainly reads CSILVI, from a die of the La Graufesenque potter, C. Silvius Patricius (18d). It normally appears on Form 27 and is known from dated contexts at Caerleon (2) and the Ulpia Noviomagus site at Nijmegen. *c.*AD 65-95.
2: Form 29, South Gaulish.
With internal stamp of Meddillus, MEOILLVS (from Die 5a). Both zones consist of winding scrolls, both including small leaves and nine-petalled rosettes. The leaf is on stamped form 37s of M. Crestio from Mainz (Knorr 1952, Taf. 19B) and London (British Museum). The upper zone also contains a small, serrated leaf. The decoration in the lower zone includes a striated spindle and an anthemion. The style does not suggest an obvious mouldmaker, though the decoration looks Neronian rather than Flavian. Meddillus is known to have been at work before AD 61, as one of his stamped vessels occurs in Period 1 at Verulamium (Hartley 1972, S2). The footring is unworn and the bowl is unusual in lacking fluting below the decoration. *c.*AD 60-70.

ii: Dish (?) Central Gaulish, in typical 1st-century micaceous Lezoux fabric, with orange glaze. Neronian or later.
iii: Form 18a cup, and a scrap, Flavian or FlavianTrajanic.
iv: Forms 30 and 33, Central Gaulish (Les Martres-de-Veyre). Trajanic.
v: Form 18/31 (2), both from Les Martres-de-Veyre. One has a fragmentary stamp, VC, J or JM. Trajanic.
vi: Form 27 (2), Central Gaulish. On one the glaze has been partly wiped off the rim and upper wall. Hadrianic Antonine.
vii: Form 37, Central Gaulish; in the styles of Criciro V, the Quintilianus I group, Docilis I, and one without identifiable decoration. Hadrianic-Antonine.
viii: Form 37, in the style of either Criciro v, or Divixtus i of Lezoux. The panels include: 1: An arcade containing a man with a cup (O.566), and supported by caryatids (D.656 = 0.1199).
2: A vertical series of rings.
3: A saltire. The wavy line below the ovolo (Rogers B52) makes attribution to Criciro rather more likely, but a range *c.*AD 140-170 should be allowed. Illustration 10.
ix: Forms 18/31R-31R (two), 33, and 81 (?), and a jar. Central Gaulish, Antonine.
x: Form 31R, Central Gaulish. *c.*AD 160-190.

B XIV (3)
Mostly Flavian-Trajanic, but with one small fragment of form 37 with large S-motif used by Central Gaulish potters in the period *c.*AD 125-150.

B XIV (5)

i: Material ranging from the Neronian period to the Flavian-Trajanic, with forms 18, 27 (at least two), 30 or 37, 18/31, 37 (*c.*AD 80-110), 67, and an inkwell.
ii: Form 18, Central Gaulish, in the coarse, micaceous fabric typical of 1st century products of Lezoux. *c*.AD 60-80,
iii: Form 36, Central Gaulish (Les Martres-de-Veyre). Trajanic.

B XIV (7)
i: Form Ritt.9, pre-Flavian.
ii: Form 29 rim, Flavian.
iii: Form 18/31, Central Gaulish. Trajanic or Hadrianic.

B XIV (8)
i: Forms 18 (two), 24, 27 (three), and 36 (?), 1st century.
ii: Forms 27 (three), and 33 (four), Central Gaulish. Hadrianic or early-Antonine.
iii: Pedestal (from a beaker?), Central Gaulish. Antonine?

B XIV (9)
i: Forms 18/31, 27 (two), 37, and several scraps, 1st-century.
ii: Forms 18/31 and 30, Central Gaulish, (probably Martres-de-Veyre). Trajanic.
iii: Forms 18/31 or 31, 33, and the kind used at Lezoux in the mid-2nd century).
iv: Form 81 and two scraps, Central Gaulish. EarlyAntonine.
v: Form 37 in the style of the Cerialis II-Cinnamus ii group of Lezoux. The panels have:
1: A single festoon with a cow (D.29 = 0.42) over an eight-petalled rosette (Rogers C53) and perhaps a bear (D.817 = O.1609).
2A: Perhaps a medallion;
2B: a kilted figure (D.103 = O.177).
3: A vinescroll (Rogers M31). Another sherd has two panels:
A: a pygmy (0.696A) in a small double medallion.
B: a large panel, probably repeating (1). The ovolo is Rogers B144. was introduced early in the Antonine period presence of a similar bowl in Antonine I at Newstead (*Proc. Soc. Ant. Scot*. lxxxiv (1952), p.27 no-8). *c*.AD140-170. Illustration 11.
27 (two), 37, and several scraps. Central Gaulish.

B XIV (10)
i: Forms 18, 18R(?), and 27, Flavian or Flavian-Trajanic,
ii: Forms 27 and 33, Central Gaulish (Les Martres-deVeyre?).
Trajanic or early-Hadrianic.
iii: Form 27, Central Gaulish. Hadrianic to Antonine.
iv: Form 37, with ovolo used at Lezoux by Cerialis II Cinnamus II group (Rogers B144). *c*.AD 140-170.

BXV (17)
Three joining fragments of form 33, Central Gaulish. Early to mid-Antonine.

Phase 4

A IV (7)
i: Form 37, Central Gaulish, in the style of Do(v)eccus I of Lezoux, (cf S.& S. 1958, pl.149, 35). The Pan-mask is D.675= 0.1214. *c*.AD 165-195.

ii: Form 33, Central Gaulish. Antonine.
iii: Footring of form 31 etc., Central Gaulish. Probably Antonine.

B IX (5) Phase 4?
Form 29 footring, probably Flavian.

BIX (21)
Form 18, *c.*AD 50-65.

BXV (8)
i: Forms 18R, 27, and 29, Flavian.
ii: Forms 18/31, 27, 30 or 37, 33, 35, and 36, Central Gaulish (Les Martres-de-Veyre). Trajanic.
iii: Forms 18/31 or 31, 27, and 46, Central Gaulish. Hadrianic-Antonine.

B XV (10)
i: Form 27, Neronian-Flavian.
ii: Form 35, Central Gaulish. Hadrianic or early-Antonine.
iii: Form 37, Central Gaulish, in the style of Stanfield and Simpson's X-6, with his characteristic panel borders of
separated beads. The ovolo (Rogers B32), Diana (D.64) and small bud (Rogers G297) were all used by him. *c.*AD 125-150. Illustration 12

B XV (12)
i: Forms 27 (2), 29 (in the style of Murranus?) and Curie 11, Neronian or early-Flavian.
ii: Form 35 and a cup fragment, Central Gaulish. Hadrianic or early-Antonine.
iii: Form 38 or 44 with stamp [CINTV]SMF; Cintusmus i of Lezoux, b Die 4b. There are several examples of this stamp on form 27. Another die, with the same reading, occurs on vessels from an early-Antonine group at Castleford. *c.*AD 145-165.

Phase 5

A VI (1)
i: Forms 33 (2) and 38 (?), Central Gaulish. Antonine.

B I (6)
i: Forms 33 and 36, Flavian,
ii: Antonine, Central Gaulish ware, with forms 31 (burnt, from Les Martres-de-Veyre), 33 (two), a dish, and a dish or bowl.

B I (8)
i: Form 18/31, Central Saulish (Les Martres-de-Veyre). Trajanic.
ii: Form 27, Central Gaulish. *c.*AD 130-150,
iii: Forms 31 and 33 (two), Central Gaulish. Hadrianic or early-Antonine.

B I (19)
Forms 27 and 37, both early-Flavian.

Phase 6

BXII Pit II
i: All Flavian or Flavian-Trajanic, with forms 27(two) and 37.
ii: Form 18/31(R?), Central Gaulish (Les Martres-de-Veyre), with a pale slip under the glaze. Trajanic.
iii: Form 30, Central Gaulish. Pre-Antonine.
iv: Forms 18/31 (thick and misshapen) and 46 (with rosette stamp), Central Gaulish. Hadrianic-Antonine?
v: Form 81, Central Gaulish. Antonine?
vi: Forms 31, 33, and 37, Central Gaulish, Antonine.
vii: Form 37, Central Gaulish, with an ovolo used at Lezoux by the Cerialis II-Cinnamus II Group *c.*AD 140-170.

B XIV Pit I
i: Form 15/17 or 18, Flavian-Trajanic.
ii: Form 37, Central Gaulish, with a Perseus (D.146). Antonine.

B XIV Pit II
i: Form 27, Neronian.
ii: Form 30 or 37, Flavian-Trajanic.
iii: Form 18/31R-31R, Central Gaulish. *c.*AD 145-165.
iv: Form 33, Central Gaulish. Hadrianic or early-Antonine.

The Roman North-South Street (Trench B XIII)

Surface B.XIII (24)
Several fragments, including the base, of a very coarse bowl
of form 29. The upper zone has a festoon with a bird (Hermet 1934, pl.28, 50) and a panel of leaf-tips. The lower zone consists of straight gadroons. This is probably the work of an apprentice, but the style suggests the period *c.*AD 65-85.

B XIII (15)
i: Forms 15/17 or 18, 18 and 33, Flavian.
ii: Form 29 (2), probably *c.*AD 70-85W
iii: Five joining fragments of form 18 with stamp SA[BINVSF]; Sabinusii of La Graufesenque, b Die 41a. This stamp occurs at Pompeii and Newstead, and on Flavian form 29s. *c.*AD 75-90.

Surface B XIII (13)
i: Forms 27 and 35, Flavian.
ii: Form 27, Central Gaulish (Les Martres-de-Veyre). Trajanic.
iii: Form 29, probably from same vessel as B VII (12), B IX
(18), and B XIII (14). Neronian?
iv: Form 29, Neronian.
v: Form 30 (?) rim, Flavian.

B XIII (14)

i: Forms 18 (3), 18R, 27 (5?), 29 (probably same vessel as B
VII (12) etc.), 33a, 33, and 37 (6), all Flavian or FlavianTrajanic.
ii: Form 27 with stamp [OFR]VFIN; Rufinus II of La Graufesenque, a Die 4c. There is some slight indication of pre-Flavian use, but most of the sites recorded with this stamp are Flavian foundations. *c.*AD 65-85.
iii: Form 18 with stamp FPASS; Pass(i)enus of La Graufesenque, b Die 9a'. A stamp from a devolved die originally giving OFPASSE. The full version is present in the Nijmegen fortress, and there are no pre-Flavian contexts for the devolved version. *c.*AD 70-80.
iv: Form 18/31 (2), Central Gaulish (Les Martres-de-Veyre). *c.*AD 100-120.
v: Form 37 in the style of Docilis i of Lezoux. The festoons (Rogers F71) are on bowls (signed) in the Musee de Cannes, and (unsigned) at Corbridge (S.& S. 1958, Pl. 91, 5). The double rings are on a signed bowl from Carlisle (*ibid*., 9). The pygmy (D.439 = O.698) is on an unsigned bowl from Heronbridge. The bright glaze and poor workmanship are typical of his work. *c.*AD 30-150.

Surface
i: Form 31, Central Gaulish. Antonine.
ii: See B XIII (3) below.

B XIII (3)
i: Forms 31R and 33 (2), Central Gaulish. Mid- to lateAntonine.
ii: Form 45, East Gaulish. Late second- or 3rd-century. With another sherd in B XIII (2)

B XIII (4)
i: Form 27, Flavian,
ii: Form 30 or 37 rim, Central Gaulish (Les Martres-deVeyre). Trajanic.

B XIII (5)
i: Form 27, Central Gaulish (Les Martres-de-Veyre). Trajanic.
ii: Form 37, Central Gaulish, with panels:
1: a scarf-dancer (D.217 = O.354).
2: Hercules (D.446 = O.753).
Both figure types, the fine, wavy-line borders and beaded junction-mask were used by a potter who made moulds for Medetus and Ranto at Les Martres-de-Veyre, and either sold some to Lezoux or migrated there. This bowl is in Lezoux fabric, and so is likely to belong to the period *c.*AD 125-140.

B XIII (6)
Forms 27, 35/36, Flavian and 37 (without surviving decoration),

B XIII (7)
i: Form 18, early-Flavian.
ii: Form 30 or 37 rim, Central Gaulish. Probably Hadrianic.

B XIII (12)
i) Forms 18, 27, 33a and 33(?), Flavian.
ii) Form 37 (2), one with the ovolo of Frontinus (*c.*AD 75-90), the other *c.*AD 90-110.

iii: Form 18/31, South Gaulish? Flavian or Trajanic.
iv: A small fragment in the fabric of Les Martres-de-Veyre. Trajanic.

Medieval Activity

B XIII Pit I
Mainly South Gaulish ware and Flavian or Flavian-Trajanic, including form 18 with stamp CO[SIRU]; Cosius Rufinus of La Graufesenque, a Die 8a. This stamp was used on form 29s with early-Flavian decoration. A dish stamped with a broken version of the die occurs at Camelon *c.*AD 70-90.

B XIII Pit II
i: Form 18(R?), Flavian-Trajanic.
ii: Form 18/31, Central Gaulish. Hadrianic-Antonine.
iii: Form 33, Central Gaulish,. Antonine.

Insula XV

Phase 1

B XVI (29?)
Form 29, pre-Flavian.

B XVI (49)
Form 36 (?), Flavian.

B XVI (22)
Forms 18 (two), 27 (two),

B XVI (23)

i: Form 29 (?), burnt, and
ii: Form 67, Flavian.

Phase 2

B XVI (21)
Form 37 with 79 (Atkinson an ovolo represented in the Pompeii hoard 1914, no.47). *c*.AD 70-90.

B XVI (22)
of AD 29, and a scrap, c.AD 65-85, two cup fragments. 1st-century.

BXVI (25)
i: Forms 15/17, Neronian.
ii: Form 29 (?), 15/17 variant, 18, 29, 67, and an inkwell, Neronian
iii: Form 18, Flavian.

BXVI (31)
Forms 18/31 and 35, Central Gaulish (Les Martres-de-Veyre). Trajanic.

BXVI (32)
i: Form 37. Zonal decoration, with a rosette-tongued ovolo, not known on stamped bowls, and a wreath of webbed leaves. *c*.AD 70-85. Illustration 13.

BXVI (33)
Form 37, in the style of Paternus IV of Lezoux, with his characteristic beads, rosettes, and a Venus (D.175 = O.281). This potter's style was influenced by the Sacer I group.*c*.AD 130-150. Illustration 14.

BXVI (37)
i: Mostly 1st century, including forms 18, 29, and Ritt.9, all Neronian. Also two eroded dish fragments, 1st century.
ii: Form 37 rim, Central Gaulish, with ovolo of Cinnamus II, Criciro V, or Divixtus I. After AD 135.

BXVI (46)
i: A pre-Flavian scrap.
ii: Form 18/31, Flavian-Trajanic.
iii: Form 18/31 and a cup. Central Gaulish (Les Martres-deVeyre). Trajanic.

BXVI (47)
i: Forms 18 and Ritt.9, pre-Flavian or early-Flavian and 37 (two).
Flavian or Flavian-Trajanic.
ii: MISSING
iii: Form 37, with an ovolo replacement of large circles over a bead-row. Similar replacements were used by an anonymous mould-maker at Les Martres-de-Veyre (S.and S. 1958, Pl. 45, 521-2) who also used the large circle of this piece Cibid., Pl.44, 511). *c*.AD 110-30.

BXVI (48)
Forms 15/17 and 18, *c*.AD 60-80.

Phase 3

B XVI (9)
i: Uncertain form, Flavian
ii: Form 36, probably the angular variant (Oswald and Pryce 1920, Pl. LIII, 20) made at Les Martres-de-Veyre. Trajanic.

B XVI (10)
Forms 18 (burnt and 18R, Flavian.

B XVI (13)
i: Flavian or Flavian-Trajanic ware.
ii: Forms 18/31 and 27, Central Gaulish (Les Martres-deVeyre). Trajanic.
iii} Form Ludowici Tg, Central Gaulish *c*.AD 160-190.

B XVI (19)
i: Forms 15/17R (burnt), 18, and scraps, Flavian or FlavianTrajanic.
ii: Form Curle 11 flange, Central Gaulish (Les Martres-deVeyre). Trajanic.

B XVI (20)
Form 37, Central Gaulish, by an ancestor (at Les Martres-deVeyre) of the Sacer I group of Lezoux. Freestyle decoration, with a stag (0.1704) and panther (D.795 = 0.1542) in a field of acanthus tips. *c.* AD 105-125.

B XVI (36) Phase 4?
i) Forms 18, 18R, and 67 (with `hairpin' barbotine). 1st century.
ii) Form 18/31R, Central Gaulish. *c.*AD 140-160. iii) Form 31,
Central Gaulish. Antonine.

B XVI (39)
i: Forms 18R, 27, 29, and 37, Flavian.
ii: Form 18/31, from Les Martres-de-Veyre. Trajanic.
iii: Form 31 with stamp PRIMANIM; Primanus ii of Lezoux, b Die 3b.
This stamp is in the Wroxeter Gutter, and on form 31R. *c.*AD 160-190.

B XVI (44)
i: Flavian or Flavian-Trajanic ware,
ii: Forms 18/31 (3), 27, and a footring, Central Gaulish (Les Martres-de-Veyre).
Trajanic.
iii: MISSING
Gaulish. Hadrianic-Antonine,
iv: Form 37, with an ovolo used by Attianus II and Drusus II at Lezoux *c.*AD 125-145,
v: Form 37, Central Gaulish, probably Antonine.

Phase 6

B XVI
i: Forms 18R and 37, South Gaulish. Flavian.
ii: Form 18/31-31, Central Gaulish. Hadrianic-Antonine.
iii: Forms 31 and 36, Central Gaulish. Mid to late Antonine.
iv: Two Central Gaulish scraps. Antonine,
v: Form 37, Central Gaulish. A bowl in the style of the PaternusV group, with ring-tongued ovolo (Rogers B105) and panels including:
1: a sea-horse (D.33).
2: a mask (D.695), in a single festoon. The combination of rounded beads below the ovolo and rhomboidal beads in the vertical border suggests that the bowl is probably by Paternus himself. *c.*AD 160-195.

The Roman Pottery (excl. samian) Elizabeth MacRobert

Editorial Note NJC

This report has been edited from an archive report written by Elizabeth MacRobert in 1983 as part of the submission for the Post-Graduate Diploma in Post-Excavation Studies at Univerity of Leicester. The original report included a full quantification of the material in addition to classification of the entire assemblage by form and fabric, using a series independent of that subsequently devised by Leicestershire Museums (Pollard 1994). However, the discard policy employed on-site, whereby only fineware (or unusual) bodysherds were kept in addition to rims, dictated that statistical analysis would be of limited usefulness, and so this part of the original report has been omitted.

Only a small proportion of the original catalogue is presented here, and comprises those vessels that support the dating of the phase or are of intrinsic interest (Figs. 94-95). However, online publication has become available since the original completion of the edited report, and so the opportunity has been taken to publish the plates of drawings (Figs. 96-103), but without the accompanying catalogue entries. A large proportion of the material was residual, and there are few ceramically important groups within the assemblage as a whole. This has been done to avoid the repeated publication of forms commonly encountered on Leicester sites, (Kenyon 1948, Clamp 1985, MacRobert 1987, and Pollard 1994). The original report, including the quantification, fully illustrated catalogue and computerized database are held in the archive.

For detailed fabric descriptions refer to Pollard (1994) West Leicester.
The author and editor are grateful to Dr Richard Pollard for editorial advice.

The edited catalogue by phase (Figures 94 and 95)

Phase 1

1: (206) Fabric ?C4 (see Pollard in Clamp 1985, 26). Cornice rimmed beaker, with fugitive roughcast sand decoration. Slip is matt red on the interior, and mottled matt red to brown on the exterior. Joins with rimsherd from Phase 2 A VI (11). One other example from Phase 3. Silt spread A I (25), overlying the cobbled surface (Phase 1B).

2: (165) Fabric WW5. Flagon with disc mouth. Silt spread A I (27), below the cobbled surface (Phase 1A).

3: (203) Fabric GW3. Plain rimmed bowl with perforations in base and side: used as a strainer. A II (17).

4: (15) MO 7. Verulamium region AD 60-100. B VII (12).

5: (17) Fabric MO13?. Imported mortarium with bead and downcurved flange. Possibly from Gaul (check RJP) AD 50-80. Silt spread A I (27).

6: (61) GW 5/6. B VII (12).

Phase 2

Very little pottery was found in the construction levels of the courtyard house, and much that was appears to be residual from Phase 1. It is therefore difficult to define the date of construction precisely, but it would appear to be during the Hadrianic period, as the latest samian dates to AD 100-120, and the presence of BB1 indicates a date after AD 120.

7: (205) C 14. Lyon ware, beaker with quartz roughcasting. B II (19).

8: (60) Fabric SW 5/6. Globular jar with everted rim, and zone of burnished lattice between horizontal shoulder and girth grooves. A I (24).

9: (247) Fabric BB1. Handle with semi-circular section. This would appear to belong to the growing number of recognized examples of flagons (usually pinched-spouted) manufactured in Dorset black burnished ware. A number of examples have been brought together by Wallace and Webster (1989) who believe they span the mid-1st to late 2nd century, and there is another from Leicester (Pollard 1994, 96, fig. 61.188). In Leicester they are likely to date to the middle decades of the 2nd century. A 1 (16).

Phase 3: Phase 2 Courtyard House Destruction Levels

The largest proportion of pottery from the excavations comes from these contexts. The latest samian dates from AD 140-170, and while BB1 is common, there is little Lower Nene Valley colourcoated material, which indicates a destruction date in the later 2nd century, or even into the early 3rd century taking into account evidence from the Norfolk St Roman villa site (Pollard unpublished report).

10: (246) MD 2 and 4. Indented beaker, with diagonal folds and everted rim. Mica-dusted. B II (7).

11: (93) MD 2 and 4. Globular beaker with lid-seated rim. Mica dusting on external surface and inner surface of rim. B VI (5).

12: (216) MD 2 and 4. Globular beaker with everted rim. Overall mica-dusting, and inner rim and exterior surface burnished. B IV (1).

13: (119) MD 5. The interior and part of the external surface is mica-dusted. B IV (1).

14: (204) C 11. Anderson's North Gaulish Fabric 1, (1980). Bag-shaped beaker with cornice rim, and clay roughcast decoration. The colourcoating ranges to matt red-brown to dark purple on both surfaces. B XIV (9).

15: (218) C 2. B IX (18).

16: (207) C 17. (probably C 2). Bag-shaped beaker with simple cornice. The coating is matt brown on both surfaces. B III (7).

17: (214) OW 2. Bag-shaped beaker with simple cornice or out-turned rim. Another similar example from this phase has clay roughcast decoration. B IX (14).

18: (202) LG 4. Lead glazed hemispherical bowl. B X (7).

19: (168) WW 2. Flagon. B II (3).

20: (148) WW 2. Tazza with 3 pie-crust fronds. B VII(3).

21: (136) WW 2. Lid. A I (18).

22: (199) WW 2. Plain-rimmed dish. B XIV (2).

23) (52) WW 2. Shallow flanged dish with red painted decoration on the flange. (Northants?). B XIV (2).

24: (200) WW 5. Small plain rimmed dish. B VII (9).

25: (251) WW? Crucible?; fabric unclassified. B IX (14).

26: (123) BB1. Lids in Dorset black burnished ware are now recognised as being more common than previously. This example is undecorated. B X (8).

27: (20) AM 9A. Beltran 4 (Haltern 70) (Beltran Lloris 1970, Fig.184.12). B XIV (8).

The author is grateful to Dr Paul Sealey for help with the identification of the Amphora fabrics from the site.

Phase 4: The Construction of the Macellum

28: (217) C 14 (Lyon ware). Globular beaker. B I (13). 29) (170) WS 4 (OW 3). B XV (10).

29: (170) WS 4 (OW 3). B XV (10).

Phase 5. Pottery from the Macellum Destruction Levels

TPQ provided by lower Nene Valley folded beaker type 39 mid to late 3rd century BI 7

30: (219) C 2. (Nene Valley?). Bag-shaped beaker with simple cornice rim, and slightly lustrous red-brown colourcoat. B I (8).

31: (167) WW 3. Flagon or flask, with neck cordon and flat rim. There are bands of orange paint around the neck and body. Nene Valley Type 95. B I (4).

32: (201) OW 2. Imitation Samian Drag.31 . B I (7).

33: (209) GW 5/6. Bead and flange rimmed bowl. B I (4).

34: (35) GW 3. Globular jar with smooth profile. Flaring rim is continuous with neck and body . cf. Kenyon 1948, Fig. 46, 26. B I (19).

Phase 6

35: (19) MO? Mortarium of possible southwestern origin with likely date range AD 60-80. An over-fired waster, but still usable. Other sherds of possible southwestern mortaria come from B IV (1) (Phase 3), and B VIII (1) (Phase 6).

The author is grateful to Kay Hartley for her identification of the mortaria from the site.

Pottery from the N-S street. (Trench B XIII)

36: (215) OW 2. Jar. Joins with sherd from 2. B XIII (12).

37: (158) WW 2. Flagon. B XIII (14).

38: (144) SW 3. Lid. B XIII (15).

39: (242) SW 5/6. Jar. B XIII (15).

40: (23) SW 5/6. Jar. Possible kiln waster. B XIII.

Pottery from Excavations in Insula XV (Trench B XVI)

70: WW2 jar with everted rim. B XVI (46).

71: GW3 jar with everted rim. B XVI (47).

79: GW3 jar with everted rim. B XVI (47).

92: GW3 jar with everted rim. B XVI (46).

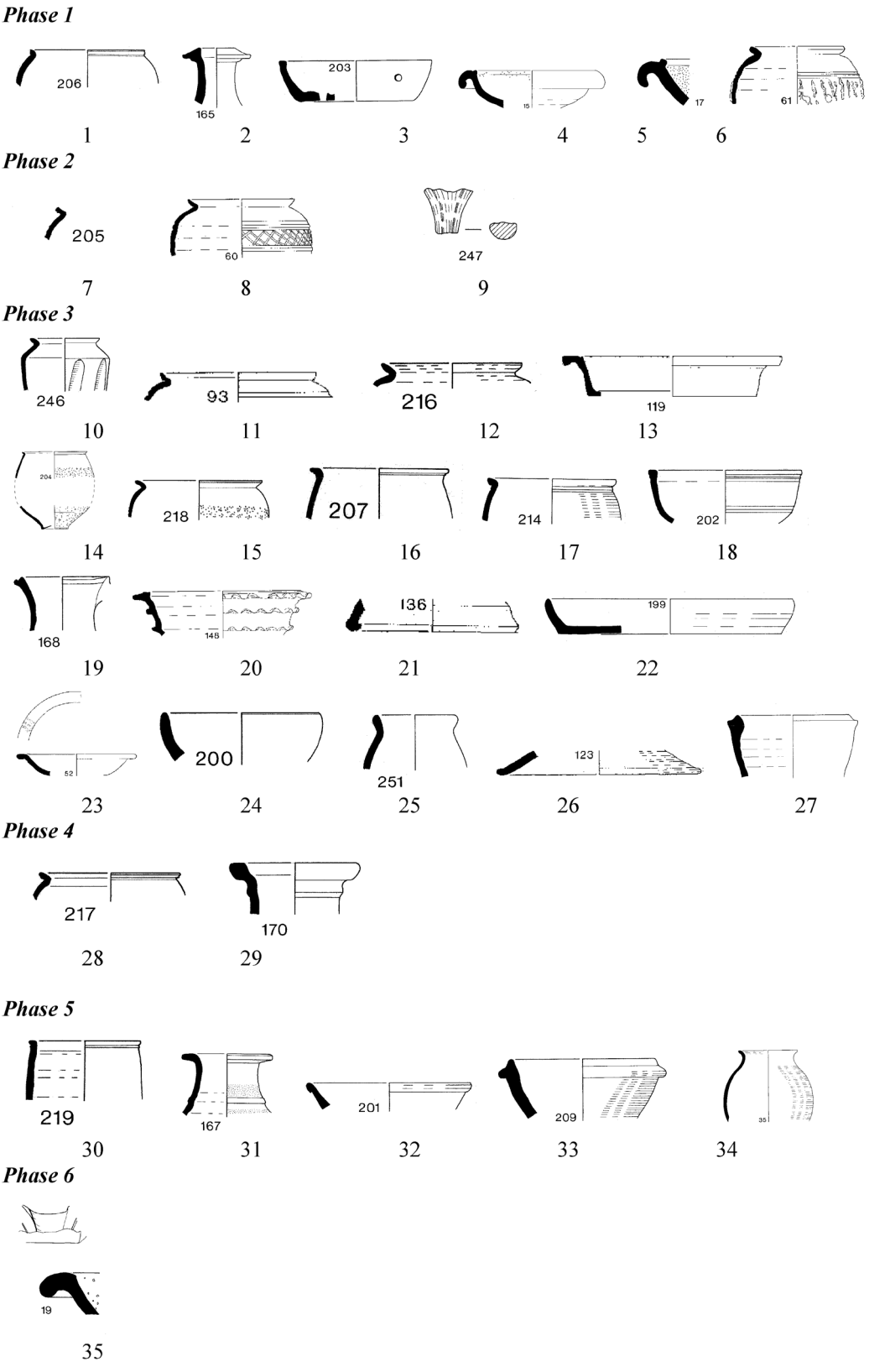


Figure 94 Roman pottery types by phase:
1-6: Phase 1; 7-9: Phase 2; 10-27: Phase 3; 28-29: Phase 4; 30-34: Phase 5; 35: Phase 6

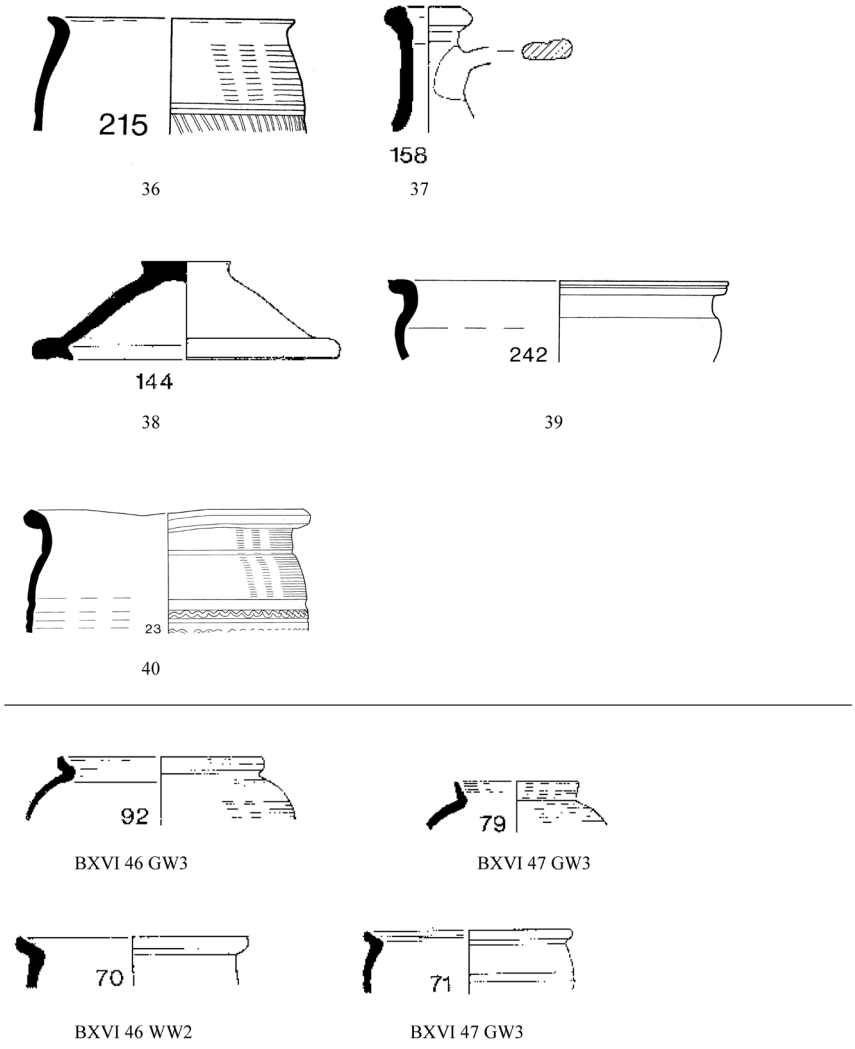


Figure 95 Roman pottery from N-S street BXIII, 36-40 and from Insula XV, BXVI (70-1, 79, 92)

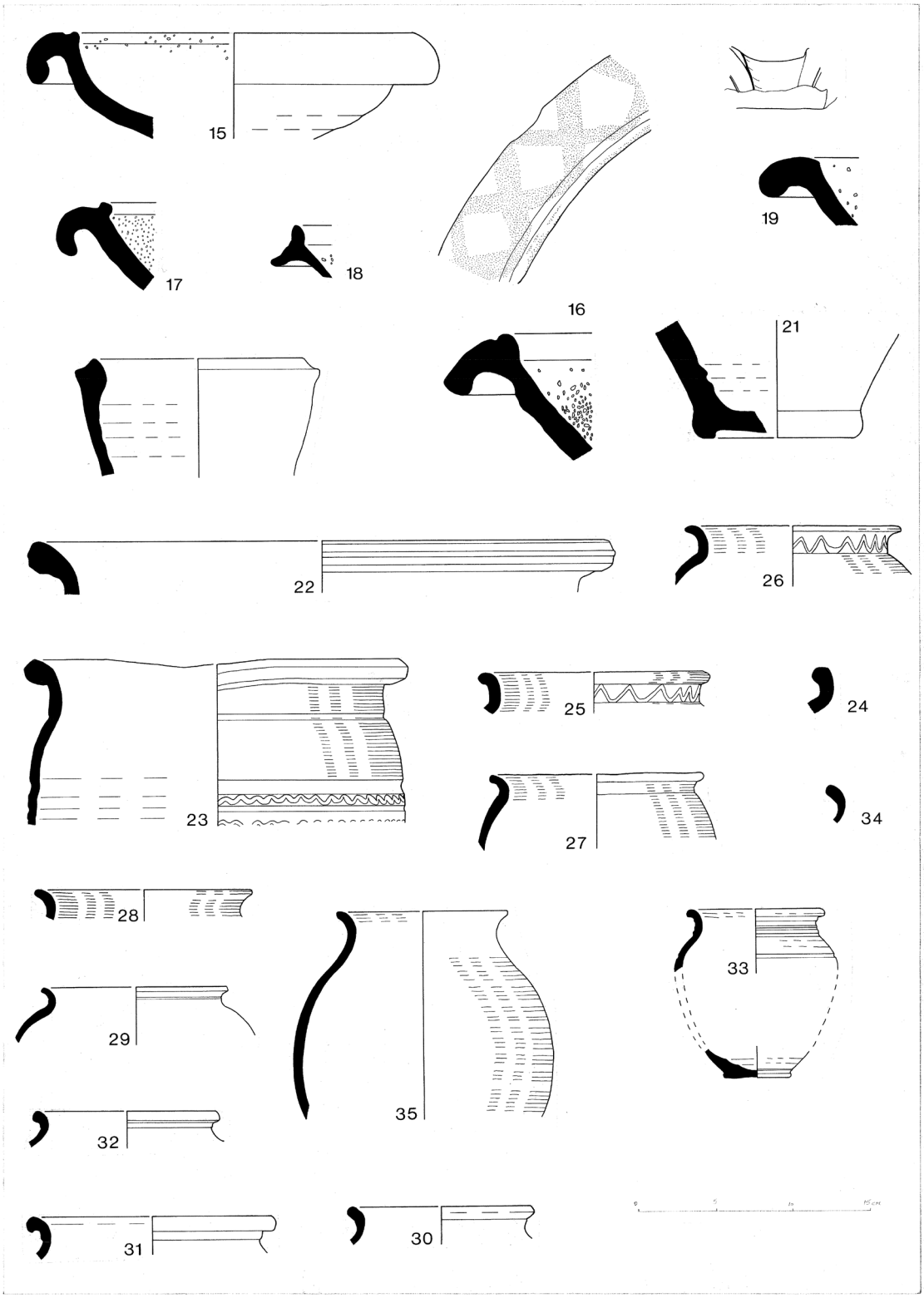


Figure 96 Roman pottery, original plate: Vessels 15-35

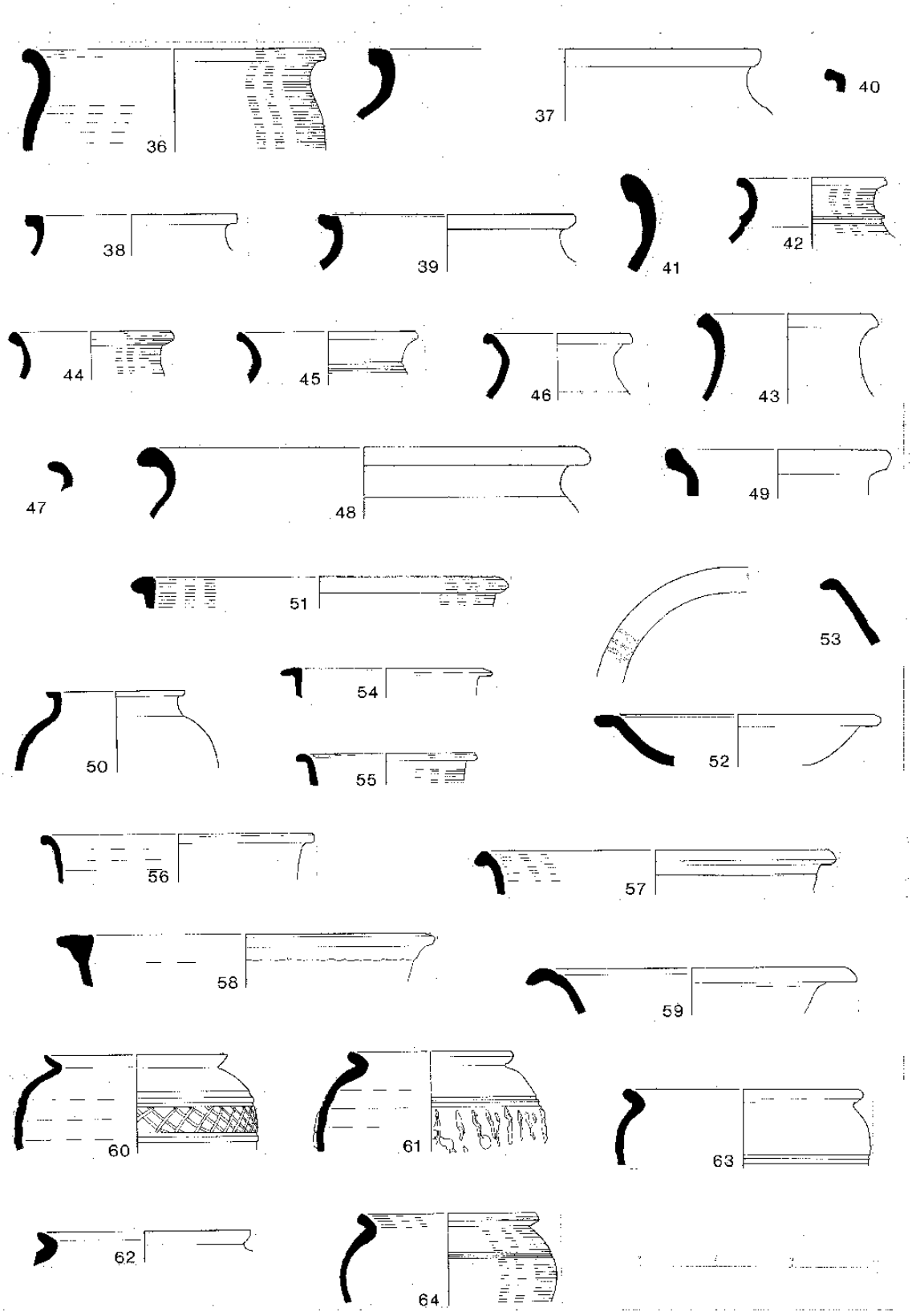


Figure 97 Roman pottery, original plate: Vessels 36-64

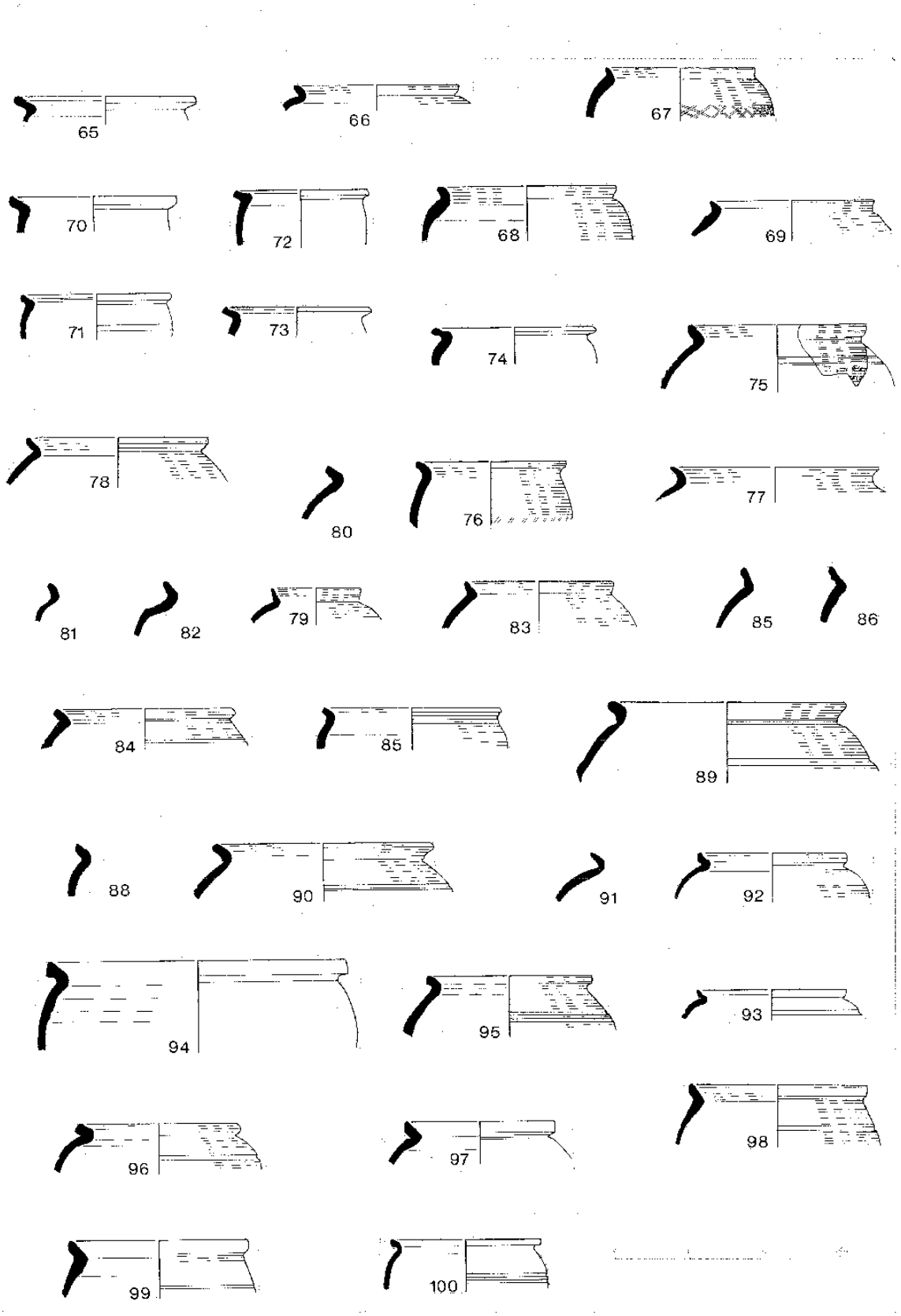


Figure 98 Roman pottery, original plate: Vessels 65-100

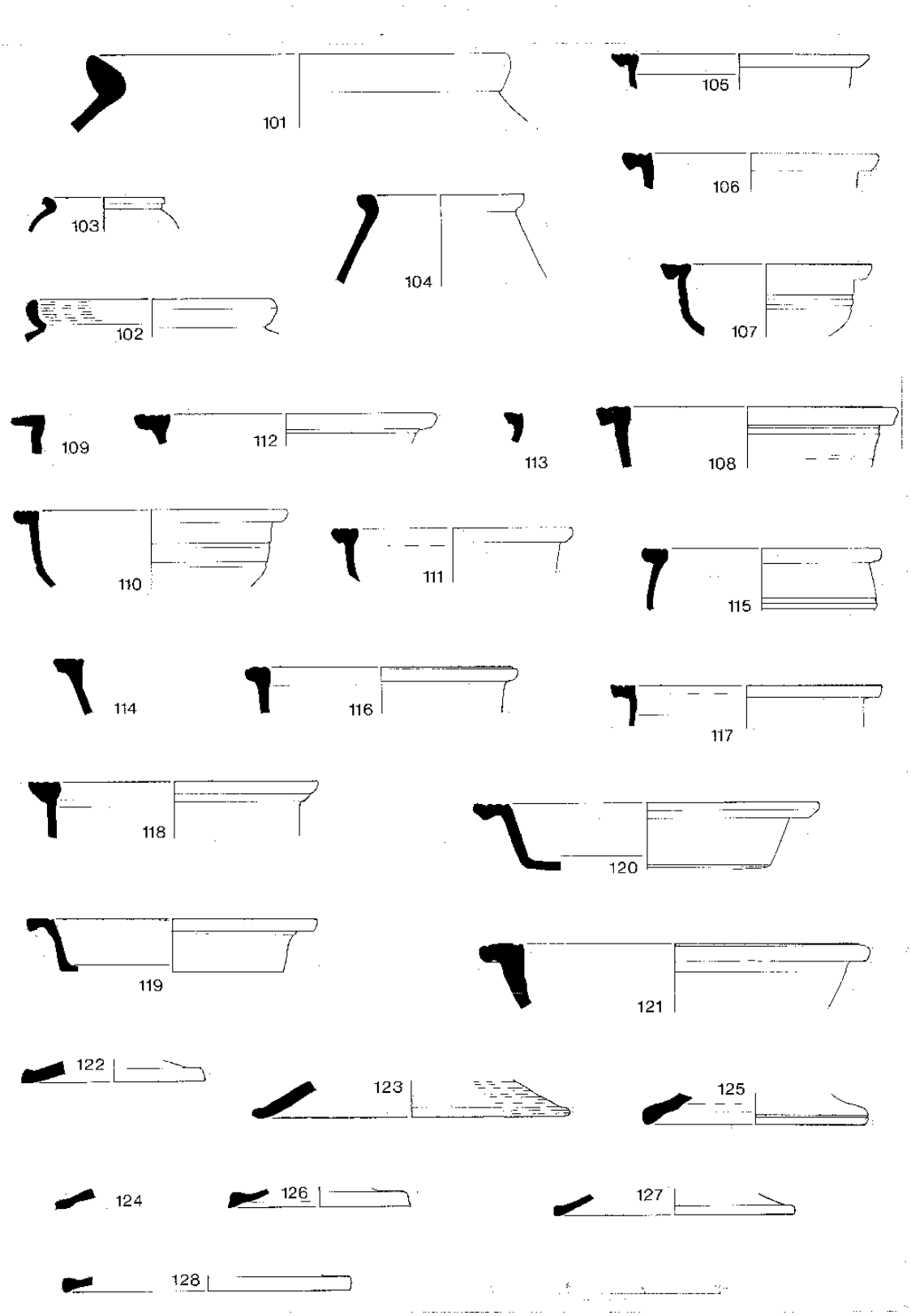


Figure 99 Roman pottery, original plate: Vessels 101-128

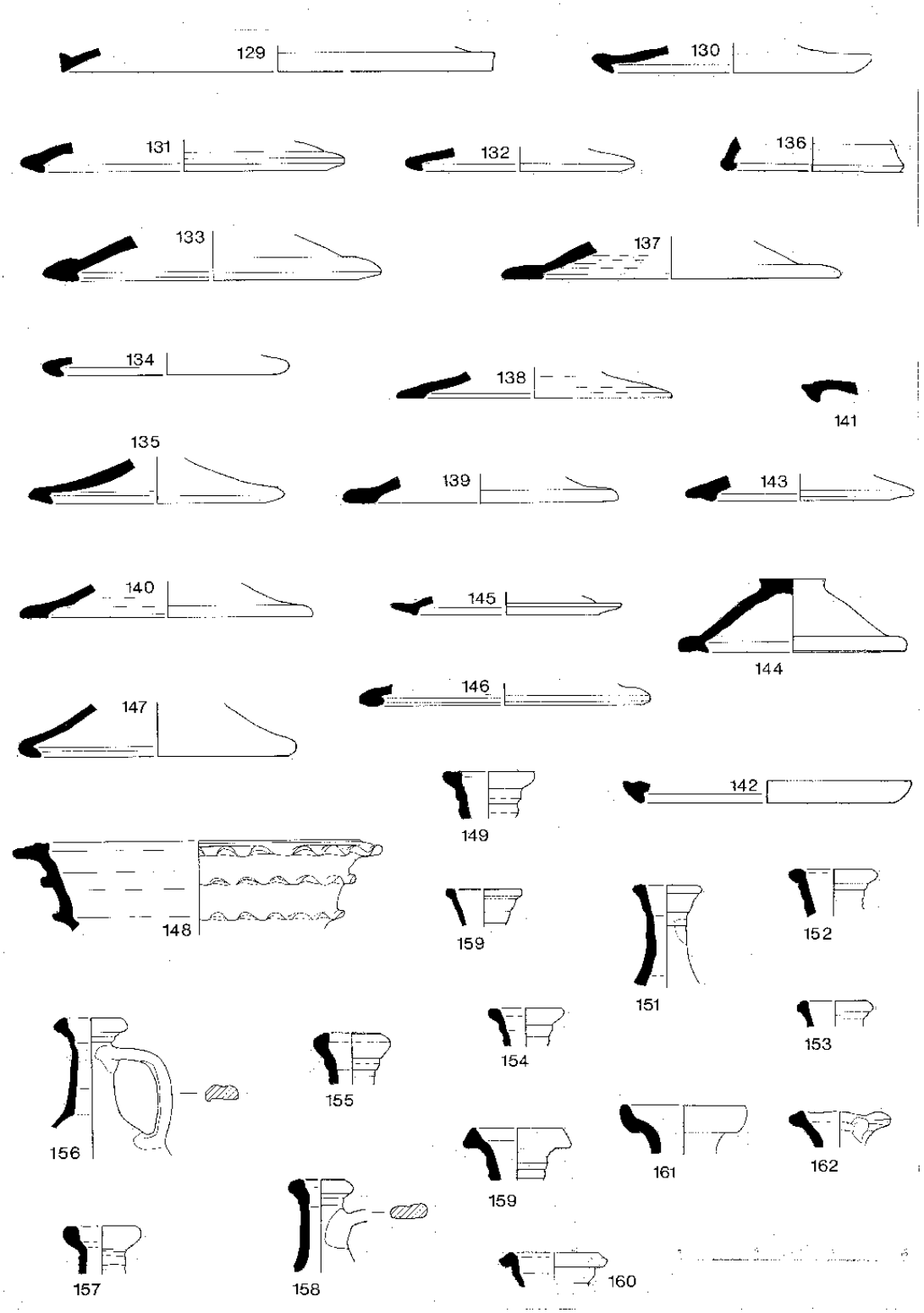


Figure 100 Roman pottery, original plate: Vessels 129-162

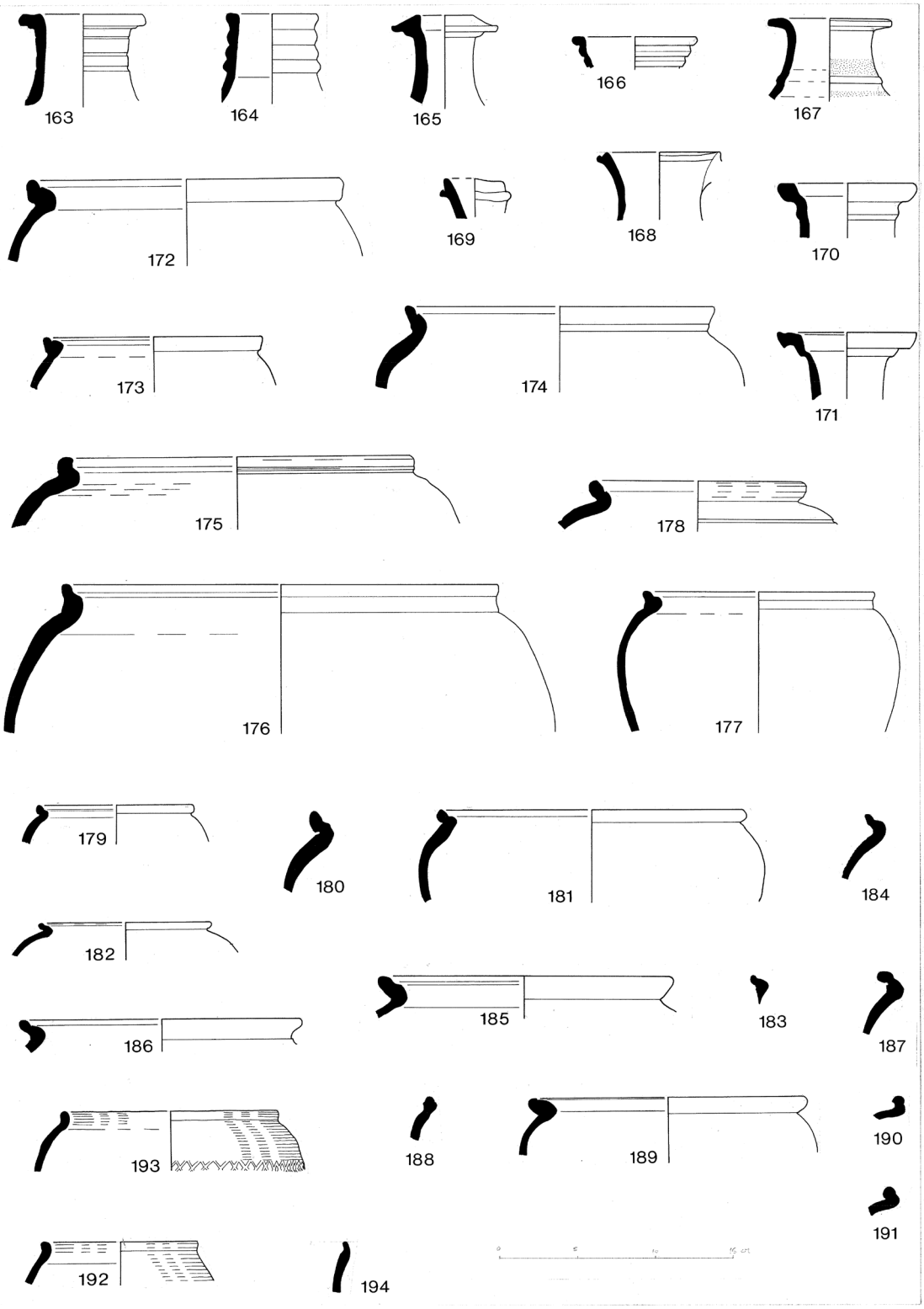


Figure 101 Roman pottery, original plate: Vessels 163-194

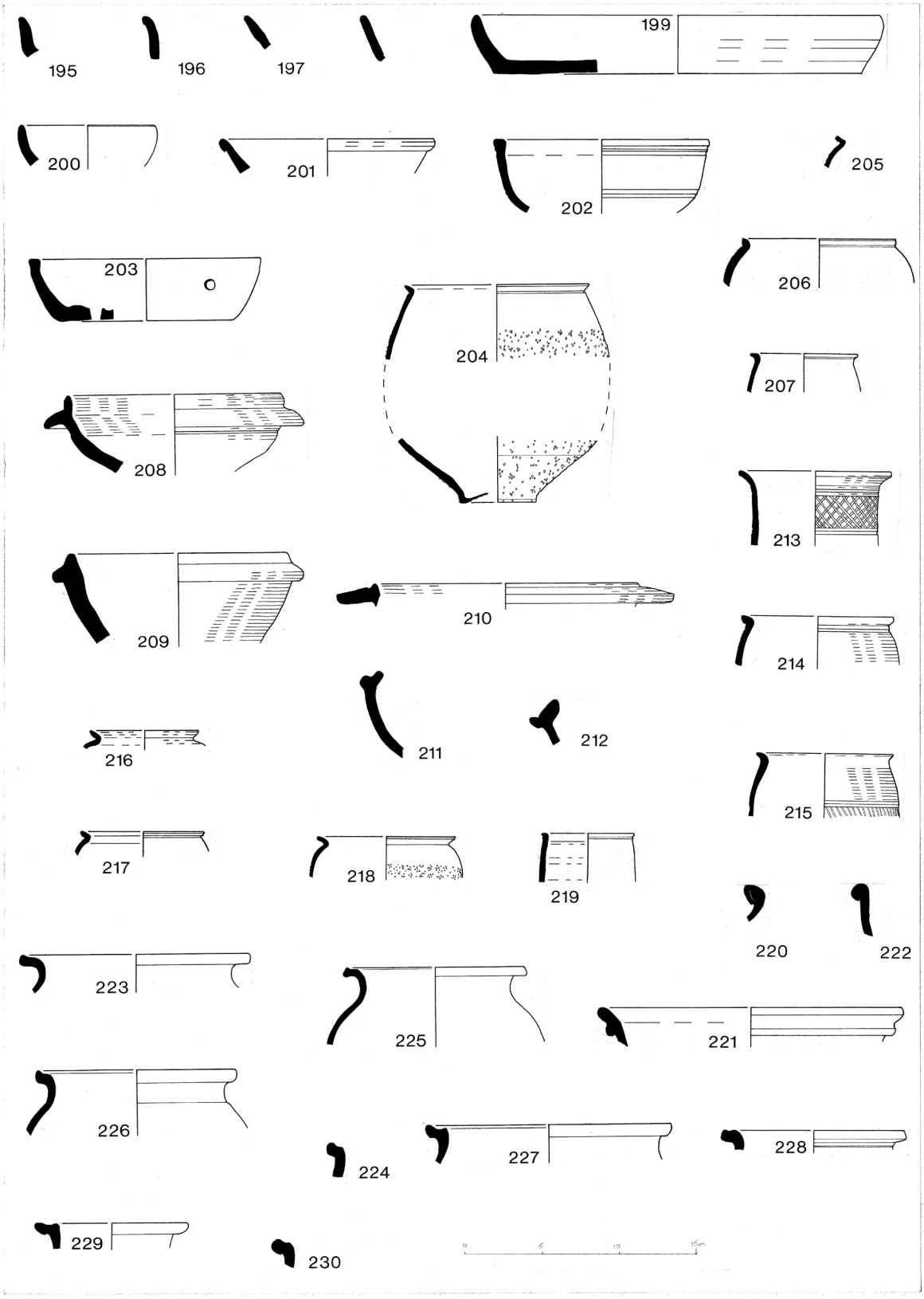


Figure 102 Roman pottery, original plate: Vessels 195-230

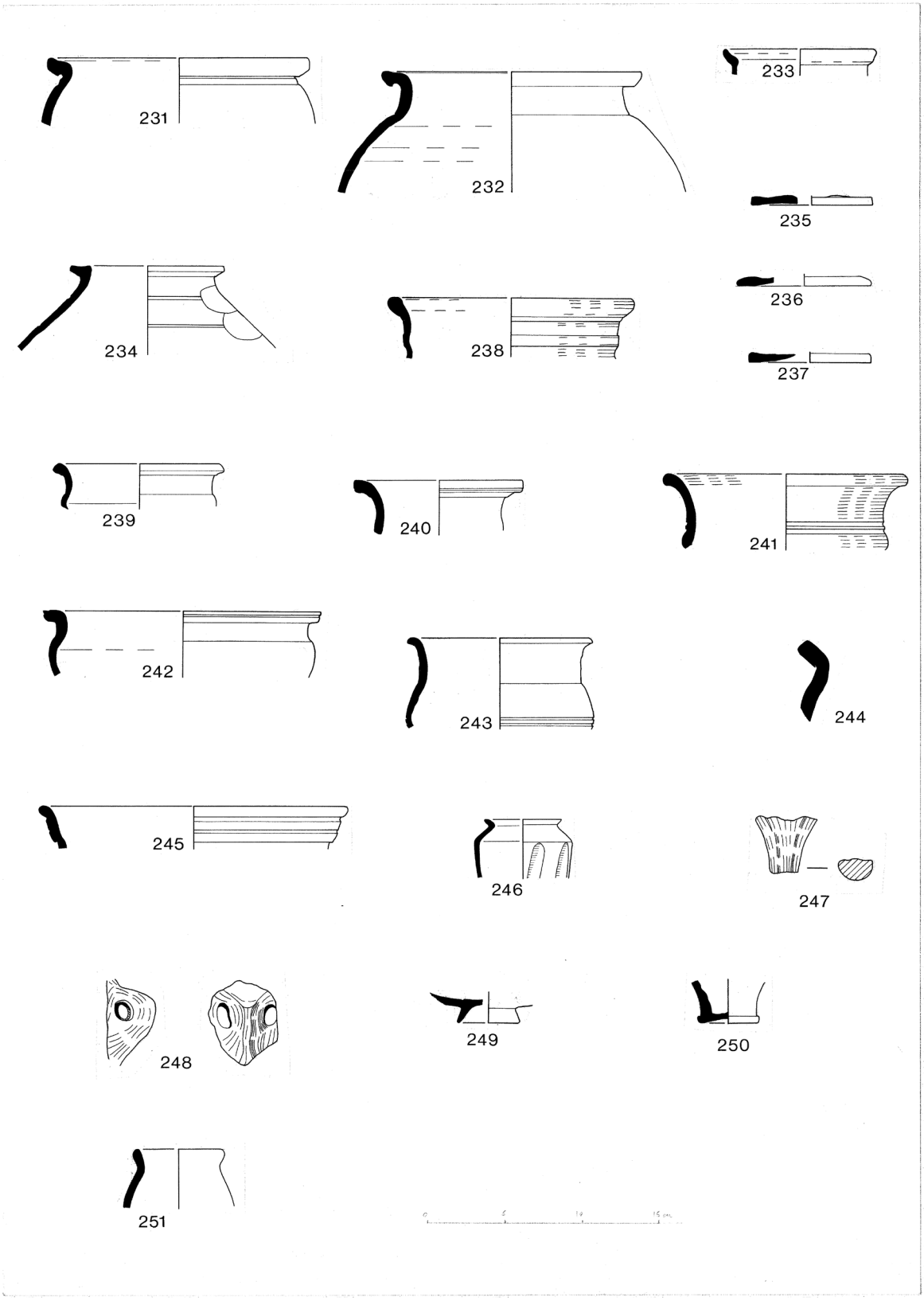


Figure 103 Roman pottery, original plate: Vessels 231-251

The Mortarium Stamps **Kay Hartley**

MO 7. Phase 6. B+, joining sherds from B IX (18), Phase 3

Diameter 36.5cms. 0.25 Eve. Worn vessel in granular, cream fabric with sandwich core of pink and cream, with abundant quartz inclusions. The trituration grits comprise fine quartz, flint, and red-brown granules, combined with fine concentric scoring. The potter's stamp is from a die which gives MORICAMVLV when completely impressed (cf Frere 1984 Ver. III, fig 118, no.88 for facsimile drawing). The fabric and rim forms used by Moricamulus are typical of products of the potteries in the Verulamium region, but none of the kilns has yet been found. He was working within the period AD 70-110. (See Frere, 1972, 376, no.29 for further details).

MO 4. Phase 3. B XIV (2)

Diameter 29cms. 0.25 Eve. Two joining rim fragments; overfired to reduced grey throughout. The broken and smeared stamp cannot be identified with certainty, but is probably a retrograde stamp of Icotasgus; all the general features of the mortarium would fit this attribution. Icotasgus worked in the Mancetter-Hartshill potteries. Five of his stamps have been recorded from sites in Scotland, some of Antonine foundation, and fifty-four from sites in England and Wales, excluding the production sites. Icotasgus has a fairly typical distribution for a Mancetter potter working in the Antonine period, but many of his products show pre-Antonine characteristics in the rim forms and the trituration grits used, and a date of AD 130-160 should cover the period of his activity.

MO 4. Phase 5, B I (19)

Two joining fragments lacking most of the flange, from a mortarium burnt before fracture, in a hard cream fabric with much fine quartz, and a little red-brown tempering, and with red-brown trituration grit. Part of one letter of the potter's stamp survives; this is almost certainly the final M of a stamp which reads MINOM for Minomelus. Four of his stamps have been recorded from Antonine deposits in Scotland and thirty-nine from sites in England and Wales excluding the production sites at Mancetter and Hartshill where he worked. A date of AD 130-160 should cover his activity.

The Chemical Analysis of Amphora Sherds **John Evans and M.D. Card**

The rim sherds of two amphorae, one of type Pel. 47 and one of Beltran IV, were examined chemically in order to determine their probable contents. Samples weighing approximately 5g were crushed and extracted with a soxhlet apparatus and a series of solvents of varying polarity. The application of various chromatographic techniques to their extracts enabled certain of the substances present to be identified.

The hexane extracts gave triglyceride patterns that were provisionally identified by comparison with known materials using Thin Layer Chromatography (TLC). Further data were obtained by hydrolysing part of the hexane extract, and converting the fatty acids into methyl esters for examination by Gas Liquid Chromatography (GLC). The results gave good agreement with the presence of olive oil.

The chloroform and water extracts were also examined by TLC. The former were found to contain traces of resin (pine?), and the latter to contain the sugars manose and maltose. The results are interesting because one would not normally associate these sugars with olive oil. Rather, the sugars suggest the original presence of a fermented system such as wine. However, as fermentation is a natural 'decomposition' process, it may well be that the sugars have been produced by the decay of the original contents of olives, and so the presence of olive oil should not be unexpected.

One explanation might be that the amphorae were reused for the transport or storage of olives or olive oil, but an alternative might be the fact that wine was sometimes capped by a thin layer of olive oil in order to inhibit evaporation and oxidation processes.

Two further examples of Pelichet 47 were examined and produced evidence for wine, while two further examples of Beltran iv produced evidence for olive oil.

The Medieval Pottery Elizabeth MacRobert

Introduction

The medieval and post-medieval pottery from Blue Boar Lane comes mainly from a number of separate pits and robber trenches belonging to Phase 6. It is therefore of very limited use in questions of chronology as any medieval occupation on the site was not given due consideration during excavation. Quantities of the different fabrics are on the whole small, and the fabrics are all typical for medieval and post-medieval deposits in Leicester. Virtually all the medieval wares also occurred on the Austin Friars site (Woodland 1981).

There is a marked predominance of local pottery from Potters Marston (rf. Figure 104, Fabric 67). Most of the forms are also fairly standard cooking pots/storage jars, with a few bowls, with the exception of the Stamford wares, which also include a number of collared vessels and one jug. By the fifteenth and sixteenth centuries a few vessels at least were coming from further afield, such as the Tudor Green ware and possibly a sherd of Brill, although again sources for some fabrics have not been established.

Possible Anglo-Saxon Material

A few sherds are tentatively suggested as being Anglo-Saxon. They are described below and illustrated (Fig. 104, nos. 252-255)

1: Phase 6, AV3, fabric 7e. A hard, rough, slightly soapy fabric, with a dark grey core and red-buff surfaces. It contains frequent large iron ore and grey grog. (Fig. 104.252)

2: Phase 3, BX1V 5, fabric 66. A hard, slightly rough grey fabric, which contains moderate to frequent, small to medium quartz, and sparse amounts of very large, grey and black grog, and small to large iron ore. One sherd also contains sparse large calcite. The exterior and the interior rim are burnished, and the sherd is probably hand made. (Fig. 104.253)

3: Phase 3, B111 1, fabric 66. The interior rim and the exterior are burnished, and the sherd is probably handmade. (Fig. 104.254)

4: Phase 3, BX1V 2, fabric 38. A hard, rough fabric with a dark grey-black core and buff exterior. It contains frequent large quartz, and sparse amounts of large to very large iron ore, small mica, and small to large rounded calcite. It is possible that the vessel may, instead, be Iron Age. (Fig. 104.255)

The Medieval Fabrics

Stamford Ware (Leics. fabric code ST1-3)

Fabric 59: A hard white fabric with moderate, small to medium quartz, and sparse amounts of small to large iron ore and small mica. The glaze is generally a thin light

green and yellow one, but occasionally is applied somewhat more thickly. The fabric is similar to that on fabric 59, and the fabric is similar to Kilmurry's fabric G (Kilmurry, 1980).

Fabric 94: A hard smooth fabric which is white throughout and contains sparse amounts of small quartz, large calcite and small…
…fairly thinly applied, but there are also two examples of a green glaze with very dark green or black spots which is Kilmurry's developed glaze 3 (*ibid*.). The fabric is similar to Kilmurry's fabric B (*ibid*.).

Fabric 97: A hard slightly rough fabric which is white throughout. It contains frequent small quartz and sparse large quartz. It also has sparse small to medium iron ore. The glaze is similar to that on fabric 59, and the fabric is similar to Kilmurry's fabric A (*ibid*.). The number of forms is small, although there are several examples of Kilmurry's bases 2 and 3 (*ibid*.). For the other forms refer to pp. 68-9. Virtually all the sherds are of eleventh or twelfth century date, although one or two may be slightly earlier or later.

Potters Marston Ware (Leics. fabric code PM)

Fabric 67: A hard rough fabric with a grey core and generally orange-buff surfaces. It contains moderate amounts of large to very large calcite and large quartz, and sparse small to medium iron ore and small to large gold mica. The fabric occurs mainly in cooking pot/storage jars, particularly forms 100-105, 111, 117 and 124. There are also some bowls and one jug. In this fabric, the round bodied jars are generally later and the incised slashes on the rims of jars earlier (Debbie Sawday, pers. comm.). The vessels are all hand-made, and the industry active from the twelfth to the early fourteenth century (rf. Woodland 1981).

Splashed Ware (Leics. fabric code SP)

Fabric 75: A hard rough fabric with a grey core and orange surfaces. It contains frequent large quartz and sparse medium to large iron ore. A few sherds have a green glaze with brown or yellow mottling.

Fabric 83: A hard, rough fabric which is black throughout. It contains frequent medium to large quartz and sparse small mica.

Fabric 96: A hard, rough fabric with a grey core and exterior surface, and an orange interior surface. This is a finer version of Fabric 75 containing moderate large quartz and sparse small to large iron ore and small calcite. The sherd has a green brown lead glaze. The source of the splashed ware is unknown and possibly local, although it is not Nottingham ware (Debbie Sawday pers. comm.). The material from the Austin Friars site was dated *c.*AD 1100-1250 on the basis of the decorative motifs (Woodland 1981). There is a tendency for the forms to be similar to those in the Potters Marston fabric, especially the rounded/shouldered globular vessel No.1. All the vessels identified are cooking pot/storage jars, with the exception of two bowls. The forms of the splashed ware from Derby are also very similar, but the fabric is different.

Stanion/Lyveden Type Ware (Leics. Fabric code LY1-5)

Fabric 89: A hard rough fabric with a grey core and orange surfaces or black throughout. It contains frequent small to large calcite and sparse amounts of small iron ore and medium quartz. Some sherds may also have large sparse grog. The main forms occuring in this fabric are 101 and 109, with everted rims. Similar forms can be found in Lyveden ware, but the fabric cannot be closely linked with any of the Lyveden fabrics. It may, nevertheless, be in the same tradition - the source may lie within the Stanion-Lyveden industries.

Torksey-Type Ware (Leics. fabric code TO)

Fabric 84: A hard rough fabric which is grey throughout or with brown margins. It contains frequent medium to large quartz and sparse amounts of small mica and medium calcite. Of the recognisable forms there are two jars and one bowl. The vessels from the Austin Friars were dated *c.*AD 1000-1250 (rf. Woodland 1981).

Chilvers-Coton Ware (Leics. fabric code CC1, 2 and 5)

Fabric 91: A hard rough fabric which is cream throughout. It contains moderate large quartz and sparse amounts of large iron ore and calcite. This is similar to Chilvers-Coton fabric C (Deborah Sawday, pers. comm.).

Fabric 95: A hard harsh fabric which is either grey or cream. It contains frequent, large quartz and sparse small to large iron ore, and may be Chilvers-Coton fabric A (Deborah Sawday, pers. comm.).

The glaze on both fabrics is either green or brown and usually slightly mottled. Forms 120 and 129 occur once in these fabrics. Comparable material from the Austin Friars has been dated to *c.*AD 1250-1400/25, but may date from *c.*AD 1200.

Fabric 79: Possibly also a Chilvers-Coton product. The fabric is hard and harsh with a pink-buff core and exterior, and grey interior. The only vessel in this fabric is form 104, which has a green glaze on the interior. The fabric contains frequent large to very large quartz and moderate small to medium iron ore.

Medieval Sandy Wares (Leics. fabric code MS1-3)

Fabric 93: A hard rough fabric which is pink throughout and has a green glaze. It contains frequent large to very large quartz and sparse amounts of small iron ore and large calcite. It is equivalent to fabrics P ii and P iv from the Austin Friars (Woodland 1981).

Fabric 86: A hard harsh fabric which is pink throughout apart from a cream-buff exterior surface. It contains moderate amounts of large to very large quartz and

medium to very large calcite, and small to large iron ore. It is equivalent to fabric P viii from the Austin Friars (*ibid*.).

Fabric 92: A hard harsh fabric which is cream-buff throughout or has grey surfaces. It has a brown-green or orange-yellow glaze. The fabric contains frequent large to very large quartz, moderate small to medium iron ore and sparse large calcite. It is equivalent to fabric P xv from the Austin Friars (*ibid*.).

The dating of these wares on the Austin Friars site is to *c.*AD 1200-1400 with PXV continuing slightly longer (*ibid*.). The only recognisable form is one instance of form 101 in fabric 92.

Cistercian Ware (Leics. fabric code CW2)

Fabric 101: A hard smooth fabric which is red-brown throughout. The fabric gives the colour to the glaze. It contains sparse amounts of medium red iron ore, medium rounded calcite and medium quartz.

There is no known source for the Cistercian ware found in Leicester which has been dated to *c*.AD 1450-1540 on the Austin Friars (*ibid*.), although a slightly later date range of *c.*AD 1475-1550+ may be postulated.

Midland Purple (Leics. fabric code MP2)

Fabric 90: A very hard harsh fabric which may be brown, orange or grey throughout. The glaze varies from red purple to orange red, and green to purple-brown. The fabric contains frequent large quartz and sparse large iron ore and calcite. The identifiable forms in this fabric comprise a bowl, a cistern and a cistern lid. The dating of Midland purple fabrics is, as yet, insecure, but the presence of the cistern suggests that these pieces date to after *c*.1400.

Tudor Green-Type Ware (Leics. fabric code TG1-2)

Fabric 100: A hard smooth fabric which is cream throughout with a green glaze. It contains sparse to moderate small quartz and small iron ore.

The one recognisable base is paralleled at Donnington Park and the other two sherds may well be Tudor Green ware itself (Deborah Sawday pers. comm.). The ware is generally dated from *c.*1400 to 1600 (Davies and Sawday 1999, 166).

Fabric 87: A soft rough fabric which is orange throughout. It contains very frequent small quartz and sparse medium to large iron ore. There are a few specks of glaze on the single sherd in this fabric. The sherd is part of a handle which may be hand-made. It is possible that it is a Brill fabric, but macroscopic examination of Brill fabrics did not confirm this. Alternatively it could be a product from an industry nearer Leicester, or if it is wheel-thrown it might be an import. (M. Mellor, pers. comm.).

Stoneware (Leics. fabric code SW)

Fabric 105: Three body sherds of stoneware, two of which have a mid-brown glaze on the exterior and two a clear glaze on the interior. The glaze is a salt glaze.

Post-Medieval Earthenware (Leics. fabric code EA)

Fabric 85: A hard smooth fabric which is red-brown or pink throughout. It contains sparse amounts of large quartz, large iron ore, some of which is laminated. The glaze is either brown or black. The only identifiable form is a bowl in form 103. Slip ware.

Fabric 98: A hard rough fabric which is white throughout. It contains moderate small to large calcite and sparse amounts of medium quartz and small to large iron ore. It has an over-slip glaze, the slip being yellow and brown. The only sherd in this fabric is in form 128. This sherd, a platter, is obviously post-medieval, probably Staffordshire.

The Medieval Vessel Form series and illustrated Catalogue (Fig.104.256-63)

1. Cooking pot/ storage jar with vertical neck and flat rim. The body curves from the neck at *c.*30-35 degrees, rf. Woodland 1981, fig 33.110.

2. Everted rim cooking pot/ storage jar.

3. Necked, everted rim cooking pot/ storage jar, rf. Woodland 1981, fig. 29.53.

4. Wide-mouthed bowl, rf. Woodland 1981, fig. 30.61. and fig. 30.62.

5. B X1, Pit 1, fabric 79. Probably a mortar. The interior has a green glaze overall and there appear to have been four lug handles on the exterior which have removed part of the exterior surface. Illustrated. (Fig.104.256)

6. Jar with triangular, everted rim, rf. Woodland 1981, fig. 31.83, and Hurst, 1967-68, fig.2.17.

7. BX111 Pit 1, fabric 67. Illustrated. (Fig. 104.257)

8. Cooking pot, Kilmurry 1980.

9. Everted, slightly lid-seated rim of a jar.

10. Jar with everted, slightly undercut rim.

11. Lid, rf. Kilmurry 1980.
12. B V111 1, fabric 67. Jar with nearly vertical sides. Illustrated. (Fig. 104.258)
13. Wide-mouthed vessel with folded rim.

14. Wide-mouthed bowl.
XV1 3, fabric 92. Illustrated. (Fig. 104.259)
V111 1, fabric 75. Illustrated.(Fig. 104.260)

15. Collared vessel rf. Kilmurry 1980.

16. Small bowl, rf. Kilmurry 1980.

17. Jar with body curving from the rim at c.15-20 degrees.
11 pit 2, fabric 67. Illustrated. (Fig. 104.261)
1V pit 1, fabric 67. Illustrated. (Fig. 104.262)

18. Large, straight-sided bowl, rf. Kilmurry 1980.

19. Vessel with slightly thickened simple rim. 20. Ridge tile.

21. Large curved-sided bowl. Kilmurry 1980.

22. Cistern lid with concentric grooves and ridges on one side.

23. Collared vessels, Kilmurry 1980.
24. B XV 3, fabric 67. Illustrated. (Fig. 104.263)

25. Simple-rimmed jug, rf. Woodland 1981, fig.30.60. 26. Jug, Kilmurry, 1980.

27. Platter with feathered rim, rf. Kelly and Greaves 1974, fig. 12.97.

28. Flat-rimmed dish.

29. Cooking/serving vessel, rf. Kilmurry 1980.

30. Globular cup, Kilmurry 1980.

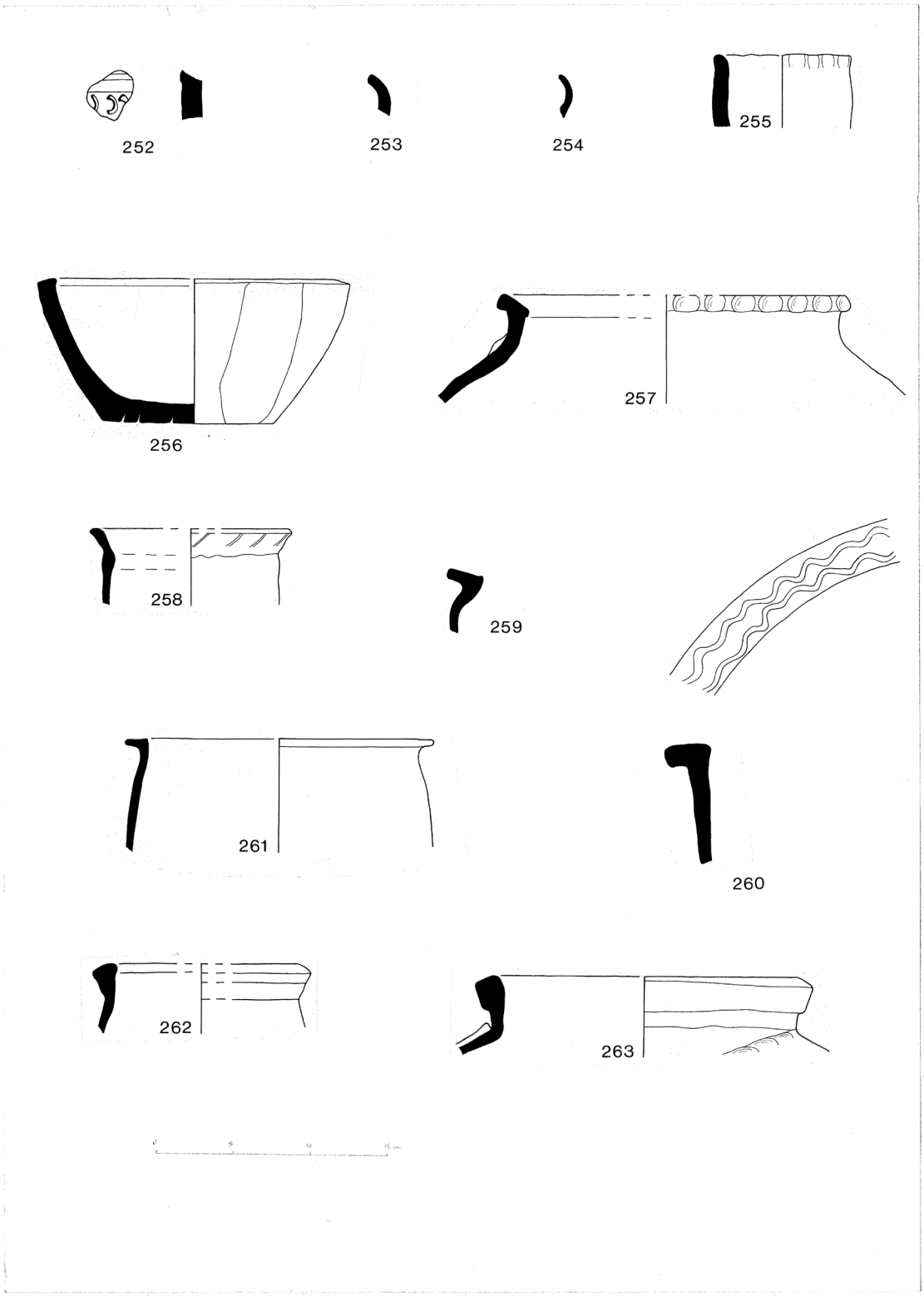


Figure 104 Anglo-Saxon and medieval pottery: Vessels 252-263

The Roman Glass H.E.M. Cool & Jennifer Price

The excavations at Blue Boar Lane produced 230 fragments of Roman vessel glass from a minimum of thirty-eight vessels. This material is primarily of mid 1st to early 3rd century date. In addition there are ten vessel fragments which show evidence of re-use as tools (Nos. 60-9) and 12 fragments of window glass (Nos. 70-1). Probably the most important element of the assemblage of Roman glass from this site, however, is the waste associated with glass blowing which was found in the vicinity of the glass furnace.

This report is divided into four parts. The first part concerns the vessels and the second the evidence for glass blowing. The fragments re-used as tools and the window glass is dealt with in the third and fourth sections.

Editorial Note (NJC) unfortunately the original illustrations to accompany the report and catalogue have been lost in the intervening 30 years since their completion and it was not possible to get the vessels redrawn.

The Vessels

Nearly all of the vessel glass (96%) was found in phased contexts, the majority being recovered from the destruction debris of Phases 3 (35%) and 5 (30%). Only a little glass (5%) was found in contexts associated with the earliest occupation, but fragments from several other vessels found in later contexts may originally have been connected with this activity as they are types frequently found on Claudian or Neronian sites which are rare after the earliest Flavian period. The largest group of identified vessels are those which came into common use during the Flavian period and which continued in use for varying lengths of time during the 2nd century. Vessels which were in use from the mid second into the 3rd century are also represented but in smaller quantities. Later glass is rare and only one fragment (No. 28) can be identified as coming from a 4th century vessel. The assemblage is thus primarily one of late 1st to early 3rd century date.

This date is supported by the colours of the glass, most of which is either colourless (23%) or blue/green (64%), with a little (4%) glass in light green and yellow/green shades. The strong colours such as deep blue, yellow/brown and emerald green which went out of use during the Flavian period make up approximately 6% of the assemblage. No fragments of the greenish colourless bubbly glass so typical of the 4th century period were found.

The earliest vessels identified are the pillar moulded bowls (Nos. 1-3) and Hofheim cups (no. 32, and possibly nos. 5 and 6). Other vessels of late Neronian or early Flavian date are represented by the handle and base fragments Nos. 39 and 41 and a number undiagnostic body fragments (Nos. 13c, 48b-d & 58c) which were found in Phase 1 contexts.

Polychrome pillar moulded bowls (Isings Form 3) were in use during the 1st half of the 1st century and went out of common use during the middle part of the century (Berger 1960:10; Harden & Price 1971: 329; see also Cool & Price 1995, Nos. 1-6). No. 1 is an emerald green bowl with opaque yellow marbling or spirals and opaque red spots. Though not as common and the blue and white or yellow/brown and white marbled

bowls, this colour combination is the commonest three-colour one on polychrome pillar moulded bowls from Romano-British sites. It occurs at Brandon, Herefordshire, a site occupied from *c*.A.D. 55 to 60 (Price 1987a: 72, 74 No. 1, Fig. 15), at Sheepen, Colchester in a Neronian context (Harden 1947: 294 No. 19), at Richborough in pits dated from the Claudian to early Flavian period (Bushe Fox, 1932: 84 No. 59P1. XV) and at Greenhithe, Kent (Charlesworth 1966, 189 No. 1), Fishbourne (Hardern and Price 1971: 326 No. 3), Folliat House, Chester and Usk (both unpublished). Blue/green pillar moulded bowls such as Nos. 2 and 3 were contemporaneous with the polychrome ones but continued in use into the late 1st century and are a very common find on Romano-British sites (Price 1985, 304; Cool & Price 1995, Nos. 25-184). No. 2 was found in a Phase 1 context and thus can be placed with certainty amongst the early vessels in this assemblage. No. 3 was found in a Phase 3 deposit and cannot be more closely dated than to the 1st century.

No. 32 came from a blue/green Hofheim cup (Isings Form 12) and it is possible that the abraded deep blue and emerald green body fragments Nos. 5 and 6 may also have come from vessels of this kind. These cups are a very common find on Claudian and Neronian sites in Britain but become uncommon after the early Flavian period (Price 1985, 305; Cool & Price 1995 Nos. 29-33i).

The type of jug from which the blue/green handle fragment (No. 39) came cannot be identified. It is a rod handle with a pinched projection, and such projections used decoratively rather than as thumb rests appear to have been most common on handles in the 1st and early second centuries. They occur, for example, on wide mouthed globular jugs which were in use primarily in the Flavian period (Cool & Price 1995 Nos. 997 & 1042) such as the ones from Cologne (Fremersdorf 1961: 42, Taf. 69) and from a cremation with also contained a coin of Trajan (AD 98-102) at Wederath-Belginum, Krs. Bernkastel-Wittlich (Goethert-Polaschek 1982: 284 Abb. 4e). Projections similar in appearance but pinched from an additional trail applied to the handle may also be noted on early trefoil mouthed jugs like the one from Colchester (May 1930, 278 No. 229, Pl. LXXXVI/91; Thorpe 1935: 23, P1. ViIIa; see also Cool & Price 1995: No. 1128). It is, therefore, interesting to note the presence of No. 39 in a Phase 1 context, as it provides another early example of using pinched elaborations on handles.

None of the other fragments from Phase 1 contexts can be closely identified apart from a body fragment from a blue/green square bottle bottle (No. 58c) of the type discussed below. They consist of a blue/green tubular base ring fragment (No. 41) and featureless light green (No. 13c) and blue/green (No. 48b-d) body fragments.

Fragments from vessels of those types which first became common during the Flavian period include No. 19, from an indented beaker, no. 4, from a cast colourless bowl, Nos. 14 to 17 from facet-cut beakers and other colourless vessels produced by grinding blown blanks; Nos. 12 and JJ from tubular rimmed bowls or collared jars; No. 37 from a conical or globular jug and Nos. 49 to 59 from cylindrical and prismatic bottles.

No. 45, which may come from an inkwell, may also be included chronologically with this group, although such vessels were never numerous. No. 19 is part of a green-tinged colourless beaker with probably four large indents and a high-domed base with a pushed-in base ring. It is likely to have been similar in overall shape to an example

from a mid-1st century well at Richborough (Bushe-Fox 1926: 49 No. 8 Pl. XIX), although No. 19 would have been a much larger example. Indented beakers of this general type came into use during the middle of the 1st century. They are primarily a Flavian form which may have continued in use into the early 2nd century and are not very common on Romano-British sites (Cool & Price 1995, Nos. 385-93).

No. 14 is the rim fragment of a facet-cut beaker. It has a ground-out ridge above the facet-cut zone and thus belongs to Oliver's Group 2 (Oliver 1984, 36). Facet-cut beakers normally have a truncated conical outline with straight sides sloping in, as may be seen on the beaker from Barnwell, Cambridgeshire (Harden *et al*. 1987, 194 No. 104). No. 14, by contrast, has a more convex-curved upper body and is likely to have come from the ovoid bodied variant of the form such as the one from Nijmegen (Oliver 1984, 42 Fig. 15). These are much rarer than the truncated conical examples which are relatively common on later 1st century sites in Britain and the rest of the Empire. In addition to the one from Nijmegen, examples have been recorded from Nida-Heddernheim and Nied, Wiesbaden (Welker 1974, 63 No. 150 and footnote 188, Fig. 9) and from Begram in Afghanistan (Oliver 1984, 42). Facet-cut beakers came into use during the late Neronian period and continued in use into the early years of the 2nd century (Cool & Price 1995 Nos. 395-400), and it is to this period that No. 14 belongs.

Nos. 15 to 17 are all colourless vessels from Phase 3 contexts made in the same manner as facet-cut beakers in that the exteriors of blown blanks were all completely ground to produce decoration in relief. No. 15 probably comes from the lower body of a facet-cut. beaker of Oliver Group 2 (1984, No. 36). Nos. 16 and 17 are decorated by narrow ribs and have been cut from thinner blanks than is normal for facet-cut beakers. A range of relatively thin-walled cylindrical and convex-sided cups and beakers with ground-out ribs such as those from Silchester (Boon 1974, Fig. 36.6) and Verulamium (Charlesworth 1984, 156 No. 107-8, Fig. 63/58 & 60) were in use during the later 1st and the 1st two-thirds of the 2nd century (Cool & Price 1995 Nos. 401-10). No. 16 may have come from a shallow bowl with horizontal ribs similar to one found in a pit at Felmomgers, Harlow, dated by samian pottery to AD 160-70 (Price 1987b, 187, 202 No. 1, Fig. 1). It is not possible to identify the precise form of No. 17.

The commonest glass tablewares found on Romano-British sites during the mid-1st to mid-2nd century are tubular-rimmed bowls (Isings Forms 44/45; Cool & Price 1995, Nos. 630-692)), collared jars (Isings Forms 67b and c; Cool & Price 1995: Nos. 732-64) and globular and conical jugs (Isings Forms 52 & 55; Cool & Price 1995 Nos. 871-993). Although all of these types of vessels were in existence prior to the Flavian period, it was not until this period that they became very numerous. Collared jars were common until the early 2nd century after which they occur less frequently, as is also the case for the globular jugs. Tubular rimmed bowls and conical jugs, in contrast, remained in use until the third quarter of the 2nd century. In this assemblage there is a rim fragment of a blue/green ribbed collared jar (No. 33), the upper part of the rim from either another collared jar or a tubular rimmed bowl in light green glass (No. 12) and a body and pinched handle attachment of a blue/green ribbed, probably conical, jug (No.37). It is possible that some of the base fragments could also have come from this range of vessel forms. Applied true base rings such as the two blue/green ones - Nos. 43 and 44 - were the commonest bases on tubular-rimmed bowls, whilst the blue/green lower body and open pushed-in base ring fragment No. 40 could have come from either a globular jug or conical jar. All of these types of vessels were frequently decorated

with ribs and it is very likely that some of the ribbed body fragments (Nos. 7-10c, 13-13b & 47-48b) could also have come from such vessels.

The ribbed collared jar rim fragment no. 33 is worthy of special note as at one point the lower edge of the rim has been pulled down into a point, an unusual feature in such vessels. No. 11 is a light green rim fragment with the edge folded in and a pinched trail applied to the rim edge. There is no indication of the body shape due to the fragment apparently having been grozed just inside the rim to produce a sharp edge. On vessels from Romano-British sites this feature is most often found on late 1st or early 2nd century jugs such as that from Bayford-next-Sittingbourne, Kent, found in a cremation burial containing samian pottery dated to the Trajanic/Hadrianic period (Payne 1877, 47 No. E; Harden *et al.* 1968, 83 No. 109), and a ribbed jug with a pinched spout from a context dated to AD 100-150 at Claydon Pike, Gloucestershire (Price & Cool 2007). At 75mm the rim diameter of No. 11 is wide for a jug, but the example from Bayford also has a particularly wide mouth of *c.*70mm in diameter. No. 11 may, therefore, tentatively be identified as coming from a late 1st or early 2nd century jug. It was found in a Phase 2 context but may already have been of some age by that stage due to reuse.

There are 61 fragments (Nos. 49-59) from blue/green prismatic and cylindrical bottles (Isings Forms 50 & 51; Cool & Price 1995, Nos. 1834-2239. This represents 27% of the Roman vessel glass from the excavation, by no means exceptional on a site occupied during the 1st and second centuries. Such bottles were in use during the Claudio-Neronian period but became very common and widespread only during the Flavian period. Cylindrical bottles appear to have gone out of use during the early 2nd century and hexagonal ones probably shortly after. Square bottles, by contrast, continued in use probably until at least the end of the 2nd century.

The bottles represented by Nos. 49 to 59 consist of at least three square (Nos. 51-3), one hexagonal (No. 1), two prismatic, probably square (Nos. 55 & 56) and one cylindrical (No. 57) examples, most of which were large. The prismatic bottles were blown into a body mould, thus allowing moulded patterns to be formed on their bases. The commonest patterns are those with one or more concentric circles which may have additional decoration in the corners. Included in this category are No. 51, with at least one circle, and No. 55 with at least two. No. 52 comes from a square bottle with at least one circle and a triangular pellet in the corner and No. 53 from one which may have had an L-shaped moulding outside concentric circles, similar to a bottle in a 1st century cremation at Bishopsgate, London (RCHM London 1928, 159, Fig. 65.32), though No. 53 was from a larger bottle. Most of the base fragments found at Blue Boar Lane came from the outer edges of the base, so the possibility of different patterns at the centre cannot be ruled out, but the only bottle which certainly had such a design is No. 56 which has the tips of two mouldings inside a circular frame. These may be the tips of radiating spokes or petals, but as only one reaches the circular frame the design may have been similar to a base from Birrens with eight radiating spokes with a circular pellet in each space (Robertson 1975, 133 No. 8, Fig. 46.4), although that one did not have the enclosing circular moulding found on No. 56.

No. 45 may be an upper body fragment of a blue/green cylindrical inkwell (Isings Form 77; Cool & Price 1995 Nos. 862-6) such as the one from Patcham, Sussex (Griffiths 1912, 63, Fig. 1). Such vessels appear to be relatively rare although the numbers known

from Roman Britain are steadily increasing. They came into use during the mid 1st century and probably continued in use until the end of the century at the earliest.

Vessels dated to the 2nd century are represented by Nos. 21 to 23 which come from at least two colourless wheel-cut beakers. Such beakers are either of cylindrical, carinated or ovoid form and have tubular pushed-in base rings, separately blown feet or, occasionally, concave bases (Cool & Price 1995, Nos. 426-64). Some thin-walled, cylindrical examples with tubular base rings were in use by the end of the 1st century, but their main period of use was the second and third quarters of the 2nd century when they were the commonest glass drinking vessel in Roman Britain. All of the fragments from Blue Boar Lane probably belong to this period. No. 22 came from a carinated example such as the example found in a pit at Felmongers, Harlow, Essex dated by samian to the period AD 160 to 170 (Price 1987b, 189, 202-3 nos. 8-10, Fig.2), whilst No. 21 may have come from a slightly more ovoid example similar to another beaker found in the same pit (*ibid.* 289, 303 No. 13, Fig. 2). It is possible that the colourless tubular pushed-in base ring No. 20 also came from a beaker of this range, although it could have come from another form, such as an indented type such as No. 19.

Vessels in use during the later second and earlier third centuries are represented by Nos. 24 to 27 which come from colourless cylindrical cups, and Nos. 30 and 31, which come from colourless cylindrical bottles. Colourless cylindrical cups (Isings Form 8Eib; Cool & Price 1995, Nos. 465-540) came into use during the third quarter of the 2nd century and become very common during the last quarter of the century continuing in use into the mid 3rd century. Plain cups with a vertical rim such as that from Airlie, Angus (Charlesworth 1959, 44, Pl. 1.4) are the commonest forms, but there is also a variant with a slightly out-turned rim decorated with a horizontal trail on the upper and lower body, for example the one from Baldock, Herts (Westell 1931, 276 No. 4828). There are two of the plain cups (Nos. 25 & 26) and one of the trailed ones (No. 24) in this assemblage. The base fragment No. 27 may also have come from a cup of this type.

The rim fragments Nos. 30 and 31 come from two colourless cylindrical bottles with wheel-cut or abraded decoration similar to that found at Hauxton, Cambridgeshire (Harden 1958, 12 No. 2, Fig. 6; Cool & Price 1995, Nos. 2243-50). These were in use during the later 2nd and 3rd centuries and occur in moderate numbers on Romano-British sites of this date. The only 4th century vessel which can be identified is the conical beaker No. 28 (Isings Form 106; Cool & Price 1995 Nos. 570-88), made of colourless bubbly glass and has a ground rim, a combination which is less prevalent than the greenish colourless bubbly glass with an unground rim, the for this very common 4th century form.

The remaining fragments of vessel glass are either of those forms which either cannot be closely identified or closely dateable. In the 1st category there are blue/green fragments from jugs or flasks (Nos. 36-36e & 38), colourless and blue/green base fragments (Nos. 29, 41 & 44) and a blue/green trailed body fragment (No. 46). These cannot be more closely dated than to the 1st to 3rd century on the basis of the colour of the glass. There are also rim fragments from two blue/green jars with rolled-in rims. Examples of this long-lived form can only be dated by their contexts. These came from Phase 2b and Phase 3 contexts and may thus be dated to the 2nd century.

The Glass Blowing Waste

Blue Boar Lane is very significant for the study of glass production in Roman Britain due to its having produced a rare excavated example of a glass furnace. The amount of glass waste was, however, minute, consisting of approximately 400 fragments weighing a total of *c.*400gms. This may have arisen from the industrial activity phase having been was very short lived, or possibly because the waste was carefully collected to be used as cullet or, rather, that only a relatively small amount of the area was excavated.

The waste is clearly the result of glass blowing, the fragments consisting of cylindrical moiles, roundels, fragments with pinched edges, rods and trails, and a variety of lumps including ones with rounded knobbly surfaces (see Tables 1 – 3 and Figure 105). In general, these fragments are very similar to the assemblages of waste from glass blowing found at such sites as Mancetter, Colchester, London and Wroxeter, although it is noticeable that the proportions of different types of waste which make up the assemblage differ in several major respects from those recorded at Mancetter and Sheepen, Colchester(*). These are the only two groups of glass blowing waste to have been studied in detail so far and the only ones with which detailed comparison can be made.

Figure 105 Fragments of glass blowing waste

The moile fragments derive from glass cylinders which may have had internal vertical ribs. Some have a rim-like edge which is flat or obliquely slanting and which appears to have been sheared off when hot. In the few cases where sufficient is preserved for it to be possible to measure the rim diameter, this ranges from 25mm to 30mm. The thickness of the walls range from 1mm to 3.5mm (mean 2.25mm), whilst that of the rims lies between 3.5mm and 8mm (mean 5.5mm). The greatest length of any of the fragments is 29mm, but the majority are considerably shorter. Moile fragments constitute the waste left in close proximity to the blow pipe after a vessel has been blown, and thus demonstrate that the waste found at Boar Lane was associated with glass blowing rather than with other types of glass working processes. The fragments found here are similar to those from the other glass blowing sites, although it is noticeable than in comparison to those from, for example, Mancetter, they tend to have fewer bubbles and impurities. Another difference is that the other form of rim edge commonly encountered at Mancetter and elsewhere which looks as if it has been compressed and has a triangular profile, is missing from this assemblage. The quantity of vessel waste being dealt with, however, is so small that no significant conclusions can be drawn from these differences. These fragments constituted 18% of the individual fragments and 20% of the total weight of the glass waste.

Another waste form which repeatedly occurs may be termed a 'roundel', which when complete are of either circular or elongated oval shape. Roundels have convex-curved smooth upper, and concave lower surfaces, which are frequently uneven and retain impurities. These fragments are thickest at their centre, and when unbroken taper towards sharp edges. It is, however, frequently the case that on the oval examples one of the longer edges is thick and rounded whilst the other three sides taper as normal. A small number of these fragments were found at Mancetter but none could be identified amongst the glass waste from Sheepen, Colchester. At Blue Boar Lane, by contrast, this type of waste constitutes a sizeable proportion of the entire waste assemblage. 15% if measured by individual fragments, or 20% if measured by weight can be assigned to the 'roundel' category, which is effectively the same as the amount of represented by cylindrical moiles. The activity that produced this type of waste has not yet been identified.

20% of the individual waste fragments or 25% if measured by weight, consists of waste fragments with a straight edge formed by the pinching or clipping of the glass whilst hot in order to remove the surplus. The remainder of the fragment have a tendency to be short rods or trails, which frequently retain tool marks. On the best preserved example, the marks appear to have been produced when the trail was grasped between the pointed tips of a pair of pincers. The combination of these marks from pincers and the pinched or clipped off edges may have been produced when a substantial trail, perhaps for a handle, was applied. This type of waste was not identified in either the Mancetter or Colchester assemblages. The remainder of the glass waste consists of fragments from drips and trails of hot glass and lumps with rounded knobbly surfaces which appear to be the result of molten glass being rapidly cooled in water. There are also a number of miscellaneous lumps, some of which are heat affected, which could well be associated with glass working.

95% of the glass waste is blue/green in colour and the remaining 5% colourless. Although the latter makes up a small proportion of the waste, it is clear that glass blowing was also taking place in colourless glass due to the recovery of two cylindrical

moiles in clear glass. There were in addition two fragments of dark yellow/brown glass with clipped or pinched edges, indicating that glass of this colour was being worked though not necessarily blown. The dark blue heat-affected lump found in a Phase 6 pit on site AI need not, however, have had any connection with glass working as heat affected lumps may a product of domestic accidents.

The vessel glass assemblage did not appear to include any waster fragments, nor were any of the miscellaneous blue/green body fragments (nos. 48c-af) appreciably more bubbly than might be expected in any assemblage of glass from an ordinary, non-industrial site. In this aspect the assemblage differs from that from, for example, Mancetter, where recognisable wasters and very bubbly body fragments from wasters were common. Whilst the lack of wasters means that it is not possible to identify the vessel forms being produced, the relative lack of bubbles and impurities in the waste suggests that the products may have been of good or at least reasonable quality.

With the absence of any wasters indicative of the types of vessels being manufactured, the date of the activity which produced the waste must be deduced from its colour and the date of the contexts in which it and the furnace was found. An industry working with blue/green and colourless glass might be expected at any time from the later 1st to at least the end of the 3rd century. Strong colours such as dark yellow/brown occur mainly in the 1st century, and lose popularity during the Flavian period. Due to the fact that these colours were subsequently used very sporadically, and as the amounts of dark yellow/brown glass waste were so negligible, it would be inadvisable to attempt to date the glass production more closely without the use of the dark yellow/brown fragments.

Tables 1 to 3 indicate which contexts produced glass waste. It is evident that the bulk of the material was found on Site BI in Phase 5 contexts, and especially in BI (19), the glass furnace. In addition to the waste from Phase 5 deposits, a small amount of material derived from Phase 6 deposits on Sites B1, Al and AVI. This phase represents medieval stone robbing, and hence disturbance and redeposition of earlier material is to be expected. Five contexts dated to Phase 3 or earlier also produced waste. In three of these cases (AI (28), AII (9) and BII (8)), the waste consists merely of heat-affected lumps and so may not be connected with glass production. The remaining fragments consist of a rim fragment from a cylindrical moile, a ‘roundel’ and four lumps from BI (14) which is a Phase 1 context, and a small fragment of a cylindrical moile from the Phase 3 context BIX (18). With such a heavy concentration in Phase 5 contexts though, the likelihood is that these isolated fragments are intrusive rather than representative of glass production in Phases 1 or 3.

The dating of Phase 5 is not straightforward. Although pottery from the destruction deposits has been dated to the mid to late 3rd century, 4th century pottery has been found in certain earlier Phase 4 contexts. From the small amount of information stemming directly from the waste, a 3rd century date would appear appropriate due to the fact that if the activity was taking place during the 4th century, it is probable that the glass would have been of the greenish colourless bubbly type prevalent during this period, rather than blue/green and colourless variant, as here.

This small amount of glass waste raises many interesting problems. Although it appears to differ markedly in composition from other assemblages of waste, this may merely be due to the fact that so few other groups of material have been studied in any detail.

Comparison with the substantial corpus of material recently discovered in London suggests the presence of comparable groups. There are two possible explanations for the differences between the Blue Boar Lane and Mancetter or Colchester assemblages. 1stly, and obviously, other types of vessels were being manufactured here, and secondly, they may stem from different workshop practices. The glass blowing at Mancetter and Colchester was taking place during the 2nd century, whereas, as noted above, the glass blowing here may be of 3rd century date. The difference in the waste may, therefore, be the result of changing manufacturing techniques. Until there are more waste assemblages from sites of different periods, such suggestions must remain open.

We would like to thank Dr. D. Allen for making her work on the Colchester glass waste available to us in advance of publication.

The Evidence for Re-use

A very interesting aspect of the Roman vessel glass found at Blue Boar Lane is the relatively large numbers of fragments showing evidence for re-use (Nos. 11, 42 & 60-8), which takes four forms. These consist of a single fragment from the base of a vessel with a base ring where the side of the vessel has been grazed (No. 42), three fragments which have been grozed to an approximately circular shape (Nos. 60-2), seven fragments where one side has been flaked to an effectively sharp edge (Nos. 11 and 63-8), and one fragment where the edge has been ground smooth (No.89).

Glass discs formed by grozing the side of a vessel with a base ring such as No. 42 are not uncommon finds on Romano-British sites, and may have served a range of purposes. At Winterton, for example, a perforated example was found which may have served as a spindle whorl (Charlesworth 1976, 245 No. 7 Fig. 133). It should be noted, however, that this appears to be unique. At Krefeld Gellep a set of seven grozed discs, four of glass and three of pottery, were found in Grave 1822, dated to the second half of the 4th century (Pirling 1974, Taf. 59.10-6), possibly representing a gaming piece. A third use is suggested by a fragment from Colchester (Cool & Price 1995, no. 1470), which has very heavy wear on the sides of the base ring. This wear could have occurred if the sherd derived from a jar stopper, but not if it came from a vessel. The function of stopper does not appear to have been a common function for these discs, however, as it is unusual to find wear on the sides of the base rings.

The discs and sub-square fragments (Nos. 60-2) probably represent gaming counters. This form of re-use is not as prevalent as is the case with the grozed base discs but may be noted at, for example, Aldborough (Harden 1959, No. 1), Springhead, Kent (Charlesworth 1959, Table 11.1), Frocester Court, Gloucestershire (Price 1979, Fig. 18.55) and Barnsley Park, Gloucestershire. (Price 1982, No. 52). Similar secondary working tends to be more prevalent with pottery, as with the Church Street sewer at York, where twelve counters were recovered manufactured from samian, mortaria and colour-coated pottery (MacGregor 1976, 21 Nos. 16-21 & 23-29). No. 62 is particularly unusual as the edge has been ground smooth and not merely grozed.

The third type of re-use consists of flaking a body fragment in the manner of flint, suggesting that the tools would have served two different purposes. On Nos. 62 to 65

a change of angle in the fragment has been exploited so that the flaked edge comes to a sharp ridge; the possibly grozed fragment No. 11 has a similar edge. The flaking on Nos. 66 to 68, by contrast, has resulted in a blunter edge. This type of re-use was 1st noticed by Dr. D. Allen in an assemblage from Meld Avenue, Prestatyn and it has also been recognised in the assemblages from various other sites such as Sea Mills (Cool & Price 1987, 96, 98 No. 21 & 26, Fig.95) and Colchester (Cool & Price 1995),

The fourth type of re-use occurs on a body fragment of a prismatic bottle where an edge has been ground smooth. It is rare to encounter fragments of Roman date where edges have been ground rather than grozed, although one of the fragments made into a counter (No. 61 Phase 3) had also been subject to grinding. No. 69 was found in a medieval context, raising the possibility that such grinding continued as a practice beyond the Roman period.

The high proportion of re-used fragments in a relatively small assemblage of glass artefacts such as this is unusual. The majority derive from Phase 2 or 3, clearly indicating that re-use is taking place during the Roman period. The sheer quantity of this material may be explained by the unusual character of the site. If it did form part of the *macellum*, counters and tools are the types of finds that one would expect to be present.

Window Glass

Twelve fragments of window glass were found on the site. All but one were of the cast matt glossy variety which was in use during the 1st to third centuries. The majority derive from Phase 2 (Nos. 69a-e) or Phase 3 (Nos. 69f-j) contexts, with the sole exception of a fragment (No. 69k) from Phase 6. A single fragment of residual blue/green blown Roman window glass was found in a medieval context. Blown window glass is normally greenish/colourless and generally occurs in 4th century contexts, but blue/green blown window glass is also known and has occasionally been found in contexts dating to as early as the 1st century (Price & Cool 1995).

Blue Boar Lane Glass: Catalogue

Abbreviations

PH .....Present Height
RD .....Rim Diameter
BD .....Base Diameter
WT .....Wall Thickness
Dim. .. Dimensions
All measurements are in millimetres

Pillar Moulded Bowls

These fragments are fire polished externally and wheel polished internally.
Where the rim is present it is wheel polished internally and externally.

1 B IX (14) Phase 3
Rim fragment. Polychrome; emerald green ground with opaque yellow marbling and some opaque red spots. Upper part of rim only.
PH. 13.

2 B I (14) Phase 1
1 rim and 1 lower body fragment. Blue/green. Parts of 2 ribs sloping in smoothly to rim without tooling at tops. Exterior of rim only lightly wheel-polished; wheel-polishing on interior especially marked below rim.
PH 38, RD c. 120, rim thickness 4.
J
B XVI (39) Phase 3
Rim fragment. Blue/green. Part of 1 rib with tooling mark at top.
PH 33, RD 105, Rim thickness 4.5.

Cast

4 A1 Pit IV Phase 6
Rim fragment of bowl. Colourless; clouded iridescent surfaces. Wide everted **rim** with overhang; broken at Junction with body. Top surface of rim ground to leave raised ridge by overhang and at rim/body junction. All surfaces ground and polished. RD 230, WT 1.5.

Blown

Deep Blue

5 B II (7) Phase 3
Body fragment of cup. occasional small bubbles; iridescent surfaces. Slightly convex-curved side possibly curving in towards base. 2 pairs of narrow abraded bands. Dim. 4Ox15, WT 2.
Also 2 other deep blue undecorated body fragments

b.... *B* XIII Pit I Phase 6
c….C I (14) Unphased

Also 1 flat mid blue body fragment d.... *B III* (7) Phase 3

Also 2 melted deep blue lumps e... B I(19) Phase 5
Emerald Green

6 B VI (5) Phase 3
Lower body fragment of cup? Small bubbles; flaking iridescent surfaces. Convex-curved side curving into thickened base. Abraded horizontal band on lower body. Dim. 31x9.5, WT 1-3.5.

Yellow/Brown

? A I Pit I Phase h
Body fragment. Light yellow/brown. Some bubbles; iridescent surfaces. Straight side sloping into carination. Diagonal optic blown rib in shallow relief. Dim. 38x21, WT 1.

8 B I (10) Phase 5
3 body fragments. Dark yellow/brown; flaking iridescent surfaces. Convex-curved; optic blown rib in shallow relief on largest fragment. Dim. 24x14, WT 1.

9 B II (1) Phase 3
3 body fragments. Light yellow/brown. Occasional bubbles; flaking iridexcent surfaces; 1 fragment strain cracked. Virtually straight side; tooled rib in high relief an largest fragment.
Dim. (largest) 54x29, WT 3.

Also 1 undecorated 1 dark yellow/brown body fragment.
b.... A VI (2) Phase 3

Yellow/Green

10 B III (11) Phase 2
Body fragment. Occasional small bubbles; iridescent surfaces. Straight side; terminal of wide rib in shallow rib. Dim. 30x=3, WT 2

Also 2 other body fragments each with 1 rib in shallow relief
b.... B VII (7) Phase 3
c.... B IX (18) Phase 3

Also 1 undecorated yellow/green body fragment d.... B VII (12) Phase 2

Light Green

11 B XVI (47) Phase 2
Rim fragment of jug. Flaking iridescent surfaces. Outbent rim, edge rolled in. Pinched trail applied to rim edge. Inner edge of fragment grozed(?).
RD c. 75

12 B 111 (1) Phase 3
Rim fragment of bowl or jar ? Occasional bubbles; iridescent surfaces. Upper part of tubular or collared rim. Dim. 19x?.

13 B II (12) Phase 3
Body fragment. Occasional small bubbles; iridescent surfaces. Slightly convex-curved wide bodZT; 3^1 vertical narrow ribs in high relief.
Dim. 30x29, WT 2.

Also 1 other body fragment with 1 similar rib
b.... B X(?) Phase 3

Also 2 undecorated light green body fragments
c.... B I(14) Phase 1
d.... B VIII (1) Phase 6

Colourless

14 B IX Pit II Phase 6
Rim fragment of ovoid facet-cut beaker. Occasional bubbles; slightly dulled surfaces. Exterior ground. Vertical rim, edge cracked off and ground; convex-curved body sloping out slightly. Exterior ground to leave decoration in relief - 2 ribs below rim edge and 1 above slightly raised central zone separated by sunken band; raised central area facet-cut in quincunx with parts of 2 oval facets from top row and small part of third from
second row.
PH 33, RD c. 70, WT 2-3.

15 B IV (5) Phase 3
Body fragment of beaker? Occasional small bubbles; iridescent surfaces. Exterior ground. Straight-sided lower body sloping in. Exterior ground to leave decoration in relief - 1 rib, Dim, 32x22, WT 4-8.

16 B XIV (4) Phase 3
Base fragment of bowl? Occasional snail bubbles; flaking iridescent surfaces. Exterior Ground. Convex-curved body. Exterior ground to leave (?) base ring in relief. Dim. 58x28, WT 1.5-3.5.

17 B IX (18) Phase 3
Body fragment of beaker or cup. Occasional small bubbles; dulled iridescent surfaces. Exterior ground. Straight side. Exterior ground to leave decoration in relief - 3 close-set ribs.

18 B XVI (9) Phase 3
Lower body or base fragment of facet-cut bowl. Iridescent surfaces; strain crack. Convex-curved side. 2 wheel-cut lines with part of a horizontal oval facet below. Dim. 24x19, WT 3.

19 B III (1) Phase 3
10 lower body and base fragments of indented beaker. Slightly green-tinged. Occasional small bubbles; flaking iridescent surfaces; strain cracks, Rounded carination to convex-curved lower body; pushed-in base ring bent out to side; base missing probably domed. Lower part of 2 large indents. PH 29, BD 55, WT 3.5.

20 B VII (3) Phase 3
Lower body and base fragment of beaker, Occasional small bubbles; flaking iridescent surfaces. Convex-curved lower body sloping into tubular pushed-in base ring bent out to side; base missing, probably domed.
PH 10, BD 35, WT 2.
22 B XIV (8) Phase 4
Body fragment of wheel-cut beaker. Occasional small bubbles; iridescent surfaces; strain crack. Straight side with carination to lower body. 2 wheel-cut lines above carination. Dim. 44x33, WT 2.

21
B IV (5); B III (7) Phase 3
3 body fragment of wheel-cut beaker. Occasional small bubbles; dulled surfaces; strain cracks. Straight side curving out to
(missing) rim; slightly convex-curved lower body. 1 horizontal wheel-cut groove on upper body, 3 on lower body. Dim. (largest) 39x33, WT 1.5.

Also 2 other body fragments with 2 wheel-CUt lines probably from a similar beakers
b... B III (7) Phase 3
c… B I(S) Phase 5
23 B XIV (9) Phase 3
Base fragment of beaker. Dulled surfaces; strain crack. Lower edge of separately blown foot with convex curved side sloping out and then bent out almost horizontally, edge cracked off and ground. Base worn.
PH 5, ED 40, WT 1.5.

24 B I(10) Phase 5
3 rim and 5 body fragments of trailed cylindrical cup. Small bubbles; flaking iridescent surfaces. Slightly outbent rim, edge fire thickened; straight side. Horizontal trail an upper body.
PH 21, RD c. 70, WT 1.

Also 1 other straight-sided body fragment with 1 horizontal trail
b... B I (19) Phase 5

25 B I(3) Phase 5
1 rim and 1 body fragment of cylindrical cup. Small bubbles; flaking iridescent surfaces. Vertical rim, edge fire rounded; straight side.

PH 23, RD 105, WT 1.

26 B i(8) Phase 5
Rim fragment of cylindrical cup. Heavily weathered, iridescent surfaces; strain crack. Vertical rim, edge fire thickened. PH 11.

27 B I Pit I Phase 6
Base fragment of cylindrical cup ? Some small bubbles; flaking iridescent surfaces. Wide lower body; solid pushed-in base ring; base missing.
BD c. 50, WT 1.

28 B IX Pit II Phase 6
Rim fragment of conical beaker. Tiny bubbles; iridescent surfaces. Curved rim, edge cracked off and ground; straight side sloping in. 2 abraded bands on upper body. PH 22, RD 70-80, WT 1.

29 B II (13) Not phased Base fragment. Occasional small bubbles; iridescent surfaces;
strain cracks. Side curving into slightly concave base. Dim. 28x27, WT 1.5.

30 A I Pit 1 Phase 6
Rim fragment of bottle. Occasional small bubbles; dulled surfaces; strain cracks. Funnel mouth, rim edge bent out up and in. RD 90, thickness 4.5.

31 A VI (2) Phase 3
Rim and handle fragment of bottle. Clouded surfaces. Funnel mouth, rim edge bent out, up and in; cylindrical neck. Part of folded upper handle attachment on neck. PH 18, RD c. 60, neck thickness 4.
Also 1 fragment possible from a handle attachment
b.... B I(i0) Phase 5

Blue/Green

32 A 1I (17) Phase 1
Rim fragment of cylindrical cup. Small bubbles; iridescent surfaces. Slightly incurved rim, edge cracked off and ground; straight side. Wide wheel-cut line with narrow abraded band below, below rim edge.
28, WT 2.

33 B III (5) Phase 3
Rim fragment of collared jar. Occasional smtill bubbles; iridescent surfaces; green impurity. Rim edge 1st rolled in, then bent out and down, upper part of collar bent out;, lower edge of rim pulled down into a point. Vertical rib running up under collar.
PH 21, RD 75, WT 1.

34 A IV (15) Phase 2B
Rim fragment of .jar. Occasional small bubbles; dulled surfaces. Horizontal rim, edge bent up and in.
RD 70, WT 1.5.

36 B XVI (1) Phase 6
Rim fragment of jug or flask. Many bubbles; iridescent surfaces. Rim edge bent out, up and in. Slightly distorted.
RDc. 40

Also 1 cylindrical neck fragment of a jug with part of the folded upper handle attachment
b…B I (15) Phase 3

Also 5 cylindrical neck fragments from jugs or flasks
c....B VII (12) Phase 2
d…B IV (4) Phase 3
e…A IV (7) Phase 4
f…B I (7) Phase 5 (2 fr.)

37 C I (13) Unphased
Body and handle fragment of ribbed jug. Some bubbles; iridescent surfaces. Lower part of pinched extension trail retaining small part of body with diagonal ribs.
Dim. 45x25, WT 1.5

Also 1 pinched projection from this or similar handle extension.
b…C I (13). Unphased

38 A IV (7) Phase 4
Body and handle fragment of jug. Small bubbles; iridescent surfaces. Convex-curved body; tip of prong from a lower handle attachment.
Dim. (body) 25x12, WT 2.

39 B I (14) Phase 1
Handle fragment. Many elongated bubbles; flaking iridescent surfaces; streaky green impurity. Straight oval-sectioned rod handle with pinched projection; one end expanding towards a handle attachment.
Length 45, Section 10x8,

40 B IX Pit II Phase 6
2 joining lower body and base fragments of jar or jug. Small bubbles; clouded iridescent surfaces. Convex-curved side; open pushed-in base ring; base missing. Base ring worn.
PH 16, BD 75, WT 2.

41 B I (14) Phase 1
Base fragment of bowl, jar or jug. Iridescent surfaces. Intermittently tubular pushed-in base; side and base broken. Heat affected and distorted.
Dim. 21x7, WT 1.

42 C I (14) Unphased
Base fragment of bowl or jug. Many bubbles; some large; iridescent surfaces. Large applied true base ring with diagonal tooling marks; slightly concave base. Underside of base ring flattened and worn. Side grozed.
BD 100.

43 B XVI (47) Phase 2
Base fragment of bowl or jug. Small bubbles; iridescent
surfaces. Edge of side curving into slightly concave base; applied true base ring.
BD c. 50, WT 1.5.

44 B XVI (39) Phase 3
Base fragment. Small bubbles; flaking iridescent surfaces. Part of shallow concave base witbh circular pontil scar centrally. Dim. 40x21, pontil scar diameter c. 13.

45 C I (9) Unphased
Upper body fragment of inkwell. Many bubbles; iridescent surfaces; streaky green impurities; inclusion. Side curving over to slightly convex-sided cylindrical upper body; small fragment of additional glass probably from handle. PH 28, BD c. 45, WT 2.

46 B I(19) Phase 5
Body fragment. Iridescent surfaces. 'B' curved side. overlapping trails
Dim. 1602, WT 1.

47 B IX (14) Phase 3
2 body fragments. Many bubbles; iridescent surfaces. Convex curved side; larger fragment retains terminal of tooled up rib. Dim. (largest) 47x41, WT 2.

48 B VII (7) Phase 3
Body fragment. Occasional small bubbles. Almost straight-sided. Parts of 3 narrow vertical ribs, Dim. 4100, WT 1.5.

Also 2 other body fragments each with 1 rib
b.... B I(14) Phase 1

Also 59 undecorated blue/green body fragments
c….A I (25) Phase 1 (3 fr)
d….B I (14) Phase 1
e….A VI (11) Phase 2A
f….A I (15) Phase 2B
g….B VII (12) Phase 2 (2 fr)
h….B VII (14) Phase 2
i….B XIV (10) Phase 2 (2 fr)
j….B XVI (33) Phase 2
k….B XVI (46) Phase 2
l….A III (5) Phase 3
m….B II (8)
n….B III (7) Phase 3 (2 fr)
o….B XIII (14) Phase 3
p….B IV (5) Phase 3
q….B VII (3) Phase 3
r….B VII (7) Phase 3
s….B IX (11) Phase 3 (bubbly)
t….B IX (18) Phase 3 (3fr)

u…B XIV (8) Phase 3
v….V VI (5) Phase 3
w…A II (3) Phase 4
x….B I (10) Phase 5
y….B I (19) Phase 5 (22 fr, 11 heat-afffected)
z….B XV (12) Phase 5
aa…A I Pit I Phase 6
ab…A V (3) Phase 6
ac…A VI (1) Phase 6
ad…B II Pit III Phase 6 (2 fr)
ae…B IX Pit II Phase 6
af…B II (13)?

49 B IX (18) Phase 3
Rim fragment of bottle or large jar. Rim bent out, up, in and flattened
RD 100

50 A VI (2) Phase 3
Rim fragment of bottle. Rim bent out, up, in and flattened; cylindrical neck; scar from handle attachment on outer edge of rim.
RD 50-60

Also 1 cylindrical neck fragment from bottle
b.... A III Pit I Phase 6

Also 2 folded upper handle attachments from 2 different bottles
c.... B I(‘19) Phase 5

Also 1 fragment from the angle of a bottle handle
d.... A I Pit ? Phase 5

Also 5 fragments -from reeded bottle handles
e….B VII (3) Phase 3
f…..B I (8) Phase 5
g….B I (10) Phase 5
h….B I (19) Phase 5
i…..C I (14) Unphased

Also 1 fragment from the shoulder of a bottle
j.... B III (1) Phase 3

51 A I (17) Phase 2A
Lower body and base fragment of square bottle. Base design - at least 1 circular moulding.
PH 33, diameter of outer circle 100, estimated width of bottle 110.
52
B I (19) Phase 5

Base fragment of square bottle. Base design - at least 1 circular moulding with triangular moulding in extant corner Diameter of outer circle *c.*90, estimated width of bottle 215.

53 B XIV (3) Phase 3
Lower body and base fragment of square bottle. Base design - broken at edge of circular moulding with 1 arm of a(?) 'L'shaped moulding in extant corner.
PH 52, probable width of bottle *c.*90.

54 B I(10) Phase 5
Lower body and base fragment of hexagonal bottle. base design - none preserved
FH.15, dim. (base) 39Y21,

55 B I Pit I Phase 6
Lower body and base fragment of prismatic bottle. Base design - at least 2 concentric circular mouldings. PH 32, Diameter of outer circle c. 120, estimated width of body 140.

56 B XIV (8) Phase 3
Base fragment of prismatic bottle. Base design 1 circular moulding with 2 elements from an internal design (possibly a rosette).
Diameter of outer circle c. 80, estimated width of bottle 100

Also 1 other fragment from the base edge of a prismatic bottle
b... B III Pit 1 Phase 6

57 B X(7) Phase 3
Lower body and base fragment of cylindrical bottle. Vertical side; shallow concave base.
PH 15, BD c. 120-130.

Also 1 other base fragment probably from a cylindrical bottle
b.... B IX (21) Phase 4

58
37 body fragments from prismatic bottles
3 fragment with 120° angles from hexagonal bottles
a.... B I(8) Phase 5
b.... B I (19) Phase 5 (2 fr.)

7 fragments with 90° angles from square bottles
c.... B I(14) Phase 1
d.,.. B XIV (8) Phase 3
e,,.. B XIV (9) Phase 3
f..,. A I (5) Phase 5
g. .,. B I(10) Phase 5 (2 fr.)
h.... B III Pit I Phase 6

27 flat fragments
i.,.. B XIV (16) Phase 2

j….A I(18) Phase 3
k…. B XIII (14) Phase 3
1.... B VII (3) Phase 3
m.... B VII (6) Phase 3 (2 fr,)
n.... B IX (14) Phase 3
a.... B IX (18) Phase 3
p,.,. B XIV (8) Phase 3 (3 fr.)
q.... A I(6) Phase 5
r.... B I (7) Phase 5 (2 fr.)
s.... B 1 (8) Phase 5 (3 fr)
t.... B 1 (10) Phase 5
u.,.. B I (19) Phase 5 (4 fr)
V... B XU (8) Phase 5
w... B XV (12) Phase 5
x….A I Pit I Phase 6
y…A I Pit IV Phase 6
z.... B III Pit I Phase 6

59 body fragments with vertical scratch marks from cylindrical bottles
a.... B IX (18) Phase 3
b.... B IX Pit II Phase 6
c.... C I (16) ?

60 B XVI (47) Phase 2
Counter. Body fragment of prismatic bottle grozed to oval outline.
Dim. 35x34.

61 B IX (18) Phase 3
Counter ? Body fragment possibly deliberately grazed to a subsquare outline.
Dim. 28x26

62 A I (16) Phase 2a
Counter ? Body fragment of prismatic bottle. 1 curved edge ground smooth; other edges broken. Dim. 31x25, original diameter c. 45.

63 B XiII (15) Phase 2
Fragment re-used as tool. Body fragment of cylindrical bottle ? Grozed along carination to shoulder to produce a sharp edge. Dim. 28x28.

64 B I (10) Phase 5
Fragment re-used as tool. Shoulder fragment of battle; re-use as in no. 63.
Dim. 29x26.

65 B VII (12) Phase 2
Fragment re-used as tool. Shallow concave base fragment; side grozed to produce projecting sharp edge. Dim. 32x25.

66 A I (15) Period 2b
Fragment re-used as tool. Sub-triangular body fragment of prismatic bottle; 1 edge grazed.

Dim. 38x25.

67 B XVI (22) Phase 2
Fragment re-used as tool. Rectangular body fragment of prismatic bottle; 1 short edge grozed.
Dim. 70y28

68 B I(1Q) Phase 5
Fragment re-used as tool ? Approximately square body fragment of square bottle; 1 edge grozed.
Dim. 51x47.

69 B XIII Pit 1 Phase 6
Fragment of prismatic bottle; 1 edge ground smooth. Dim. 38x25.

4: Window Glass

70 11 fragments of cast matt/glossy window glass, blue/green unless otherwise stated.

a.... A I (23) Phase 2A
b.... A II (14) Phase 2B
c….B VII (12) Phase 2
d….B VII (17) Phase 2
e….B XVI (32) Phase 2
f…..A IV (10) Phase 3
g….B III (1) Phase 3 (green tinged colourless)
h….B III (5) Phase 3 (green tinged colourless)
i…..B III (7) Phase 3 (with rounded edge)
j…..B XIV (2) Phase 3 (with rounded edge)
k….B IV Pit 6 Phase 6

71 B II Pit III Phase 5
1 fragment of blown blue/green double glossy window glass with one rounded edge.

Table 1: Blue-Green Glass Waste (Numbers of Fragments)

	Cylinder Rim	Moile Neck	Roundel	Pinched Fragments	WR	DT	Lump
AI (28) (1)							1
BI (14) (1)	1		1				4
AII (9) (1)							1
BII (8) (3)							1
BIX (18) (3)		1					1
BI (2) (5)							
BI (6) (5)	3						1
BI (8) (5)	3	4	3			1	6
BI (10) (5)	1				1		
BI (19) (5)	19	22	62		10	43	90
AI Pit I (6)		2			3	3	2
AI Pit IV (6)			1	1	1	1	
AVI (1) (6)	1			1			
BI Pit I (6)			2			3	4

Table 2: Blue-Green Glass Waste (Weight in Grammes)

	Cylinder Rim	Moile Neck	Roundel	Pinched Fragments	WR	DT	Lump
AI (28) (1)							-5
BI (14) (1)	-5		-5				5
AII (9) (1)							-5
BII (8) (3)							10
BIX (18) (3)		-5					-5
BI (2) (5)					-5		
BI (6) (5)	-5						-5
BI (8) (5)	10		-5	5		-5	10+
BI (10) (5)	-5			5	-5		
BI (19) (5)	25	20	70	80	20	30	105
AI Pit I (6)		5			15	-5	15
AI Pit IV (6)			-5	-5	-5	-5	
AVI (1) (6)	-5			-5			
BI Pit I (6)			5			5+	15+
TOTAL	**c.80**		**75-80**	**90-5**	**35-40**	**40**	**165 (380)**

Also: BI (19) produced 7 glass and brick-like fired pottery sherds (*c.*40gm).

	Moile Neck	Roundel	Pinched Fragments	WR	Lump
BI (19) (5)	1 (-5)	2 (-5)	7 (5)	3 (-5)	3 (-5)
AI Pit I (6)	1? (-5)				1 (-5)

Also: AI Pit I = 1 dark blue lump (-5)
B1(19) 2 dark yellow-blue pinched WR (-5)
(Figure in brackets = weight in grammes)

Abbreviations Used:
WR: water rounded lump
DT: drips and trails

The Small Finds Irena Lentowicz (with brooches by Donald Mackreth, intaglio by Martin Henig, ceramic counters by Nicholas J. Cooper, and flint by Alex Gibson)

Introduction

The division of the catalogue into functional categories follows Crummy (1983) and those represented are:
Category
1: Objects of Personal Adornment and Dress
2: Toilet, Surgical or Pharmaceutical Instruments
3: Objects Associated with Manufacture or Working of Textiles
4: Household Utensils and Furniture
5: Objects used in Recreation
11: Fastenings and fittings
15: Objects associated with metal working
17: Objects and waste material associated with flint knapping

Category 1) Objects of Personal Adornment and Dress

Brooches

Headstud

1) Phase 2. B XVI (47). SF No. 189
The original surface of the brooch was lost when it was stripped during conservation. How the spring was once joined to the body is now hidden by the glue which now joins the two. The chord would have been held by a forward-facing hook. The presence of an axis bar through the spring suggests that there had been a cast loop behind the head of the bow, although a proper integral Colchester-style system cannot be entirely ruled out. The wings are largely missing, but a vertical moulding next to the bow on the left-hand side possibly shows that each had once been stepped. The stud has a sunken annular recess around a central boss. The main part of the bow has a step down each side and twelve rectangular recesses for enamel, now missing. The bow is stopped at the bottom with three cross-mouldings below which is a flute and then the foot-knob made up of two mouldings. The catch-plate is mainly lost.

The style of the brooch is early in the sense that sprung-pins were used before hinged ones. Rectangular cells or single strips of enamel (e.g. Gould 1964, 43, Fig.18,3) occur more frequently on sprung-pin brooches than on those with hinged-pins in the ratio of more than 3 to 1, amongst those recorded by the writer, while the usual lozenge-and-triangle design, in proportion to other patterns on hinged-pin Headstuds, is nearly 5 to 1. Despite these indications, dating is not readily available. One with continuous bichrome enamel and a sprung-pin from Wall, Staffordshire, was dated to *c*.AD 60-80/5 (*ibid.*), another with lozenges and triangles from Colchester dated to *c.*AD 80/5-100 (Crummy 1983, 13, Fig. 19, 65). Another brooch from Honley, Yorks., without a stud or enamel and with a separately-made foot-knob fitted to the bow was found with a coin hoard running up to AD 72/3 AD (Richmond 1925, 14, Figs.2, 2A). This brooch may match one from Alcester (excavations, C.M. Mahany, to be published) which, while of a simpler form again, is recognizably an early stage of the Headstud type in

general and has a Colchester spring system. Putting this into context, the initial stages of a straightforward development ending with the standard varieties of the Headstud (e.g. Wedlake 1982, 128, Fig. 53, 59) Wheeler and Wheeler (1928, 162, Fig.13, 12), belong to the period before AD 70, but the best dating for brooches such as the present specimen is probably the last quarter of the 1st century AD.

Rosette

2) Phase 1. B XVI (29) sf.197.
The spring is housed in a cylinder formed by wrapping two flaps cast at the head of the bow round the coils. The condition of the brooch is not good and all that can be seen of the ornament on the front of the casing is a pair of vertical grooves at the ring-hand end. The bow has two prominent projections marked with grooves along one or both edges and separated by a waist with two small cross mouldings. The bridge at the top is short, narrow, and has a marked angle in profile. The foot-plate is riveted to the bottom of the bow and has, at the top, the remains of a lozenge-shaped plate with part of what had been pierced and repousee sheet on the front. The lower part of the foot-plate had once been a fantail bearing three wide flutes with a groove down the dividing ridges.

The form of the bow clearly derives from the type with a fully moulded lion (e.g. Feugere 1985, P1s.102-3, 1334-46) and the stage of development represented by the two-part construction with the applied decorative plate is exactly coeval with the plain Rosette with a circular plate, the same openwork applique, and a bow repeating the ornament on the foot. Such brooches also have lozenge-shaped plates and are a mark of the Augustan-Tiberian period. Feugere's discussion of *fibules leontomorphes* agrees with the basic proposition in that the full lion belongs to the end of the 1st century BC and the early 1st century AD, whilst the devolved shape, as here, is fully late Augustus-early Tiberius (Feugere 1985, 285).

In terms of the use of brooches, the end of manufacture does not mark the end of use. Rather there follows a period during which the bulk of the surviving brooches were commonly to be seen and, because of the difficulty of determining when an item is purely residual, it is the estimation of when this phase ends which is difficult to assess. In Britain, there were at least four of these brooches found at the King Harry Lane cemetery, a sufficient guarantee that they were arriving here within their proper floruit. Beyond that, dating is not easy. A pair from Colchester came from a remarkable grave-group which was published as being Claudian in date, but the ensemble is such that there can be little doubt that it is pre-Conquest (Hull 1942). Another from Barton Court Farm was given an incorrect date as an object and was said to come from an ambiguous context. By assigning it to the earlier period, the evident difficulty of the writer is removed as the brooch then fits the 1st half of the 1st century date (Miles 1986, 5:D7, Fig.102, 9). What is remarkable about those recorded by the writer is that not one comes from a purely Roman site, unless Leicester is counted as such, all having good pre-Conquest provenance. The conclusion is that this brooch is unlikely to have arrived in Leicester later than *c.*AD 40. It remains to be noted that there is at least one other brooch of this form from the town (found in Henry Street in 1907, now in Jewry Wall Museum, 116, 1962/998).

The argument implied by the preceding paragraph is that there is a good probability that the present brooch should have arrived in Leicester before any Roman army presence could be established in the early years of the Conquest. However, one brooch is not enough, even with a partner, to sustain such a case. If other brooch types are brought forward, the matter can be examined in greater detail. The writer has recorded fifteen Colchesters (Kenyon 1948, 249, Fig. 80, 4, 5; Clay and Mellor 1985, 69, Fig.38, 5; Buckley and Lucas 1987, 104, Fig. 42, 12; Jewry Wall Museum, 116, 1962/495/562/678/963-4/968/1029,356, 1951 F47, 375, 1951 F98, 6, 1958), four rosettes- the two mentioned above and two more (Jewry Wall Museum, 116, 1962/851/957), and four Langton Downs (Hebditch and Mellor 1973, 45, Fig.18, 8; Clay and Mellor 1985, 69, Fig. 38, 7; Jewry Wall Museum, 381, 1951 F34, and no number. Note, Buckley and Lucas 1987, 101, Fig. 42, 9, is not, as stated, a Langton Down). In addition, there is an example of an unnamed type which belongs to the 1st century B.C. (e.g. Stead 1976, Fig. 1, 3). The number may not seem impressive, especially when it can be argued that the Colchesters could conceivably all have arrived with an army unit. If, however, there had already been a settlement, the bulk of the Colchesters would already have been present. These brooches form 15% of all brooches from Leicester recorded by the writer. Cirencester is a roughly comparable site whose brooch total is made up of both old collections and modern excavations. The same types of brooches, but without the 1st century B.C. example, are present in roughly the same numbers, but they only form 6% of the overall number recorded by the writer. On this basis, Leicester has better evidence for pre-Roman occupation than Cirencester where, however, this element still poses a problem of interpretation.

2a) Phase 6. B I Pit I. SF No.115 Incomplete, tail of a Rosette brooch comprising a tapered strip with raised central panel. L: 32mm.

Hod Hills

3) Phase 1. A I(26), SF. 37
The head is rolled-over to house the axis bar of the hinged-pin. The bow has two cross-mouldings at its top, otherwise it tapered to a foot-knob. There is a wide central ridge, decorated with elongated beading, separated from bordering ridges, also with beading, by deep flutes. The foot is lost. On each side of the bow is a series of projections.

4) Phase 3. B II (12), SF.55
The fragment has been squashed flat and consists of the upper bow and what had once been the rolled-over head. The bow is straight-sided with four grooves down it.

4a) Phase 3. A IV (8). SF No. 38.
Upper bow and head of a Hod Hill brooch. Bow decorated with vertical grooves.

No Hod Hill has been published from a secure pre-conquest deposit save for one from Baldock (Stead and Rigby 1986, 120, Fig. 47, 112) which is said to have come from a context dating to the 1st quarter of the 1st century. As this would make it earlier than the main type from which it derives, a mistake must have been made in its phasing. The only Hod Hill from Skeleton Green, one of the signs of how early that collection closes, came from an ambiguous deposit which prevents any certainty that it had arrived before the Conquest (Partridge 1981, 121-2, Fig.72, 55). However, the type had fully evolved

from the Aucissa series by the time of the Conquest as it arrived in great numbers and variety of design at that period. Brooch 4 is, as far as its condition allows any comment, an ordinary Hod Hill, except for the lack of any clear top edge to the fluting on the upper bow. Brooch 3, on the other hand, betrays influence, not so much from a particular type or sub-variety, but from the use of a distinctive- decorative trick) some brooches clearly of the Hod Hill type have, transversely through their bows, iron bars on which were mounted separately made copper alloy knobs. Evidence is limited, but it would appear that this technique generally occurs early on in the overall floruit. The distribution of the Hod Hill in Britain shows conclusively that the bulk of examples had passed out of use by AD 70, those surviving, belonging to a late strain which was to develop on the continent into one or two of the distinctive 2nd century designs found there. Neither of the present specimens belongs to this element and there is a possibility that Brooch 3 may have passed out of use by AD 60. Parallel from Causeway Lane, Leicester (Mackreth 1999, 253 and fig.119.26)

Late La Tene

5) Phase 4. A VI (1). SF No.8.
Copper alloy brooch spring and pin in two fragments. L: 28mm, W: of head 9mm, Diam: of pin shaft 2mm. The spring has six coils and the chord is internal.

Miscellaneous Fragment

6) Phase 4. B II (7). SF No.50.
Three fragments of an eight-coil spring and pin. L: of spring 20mm.

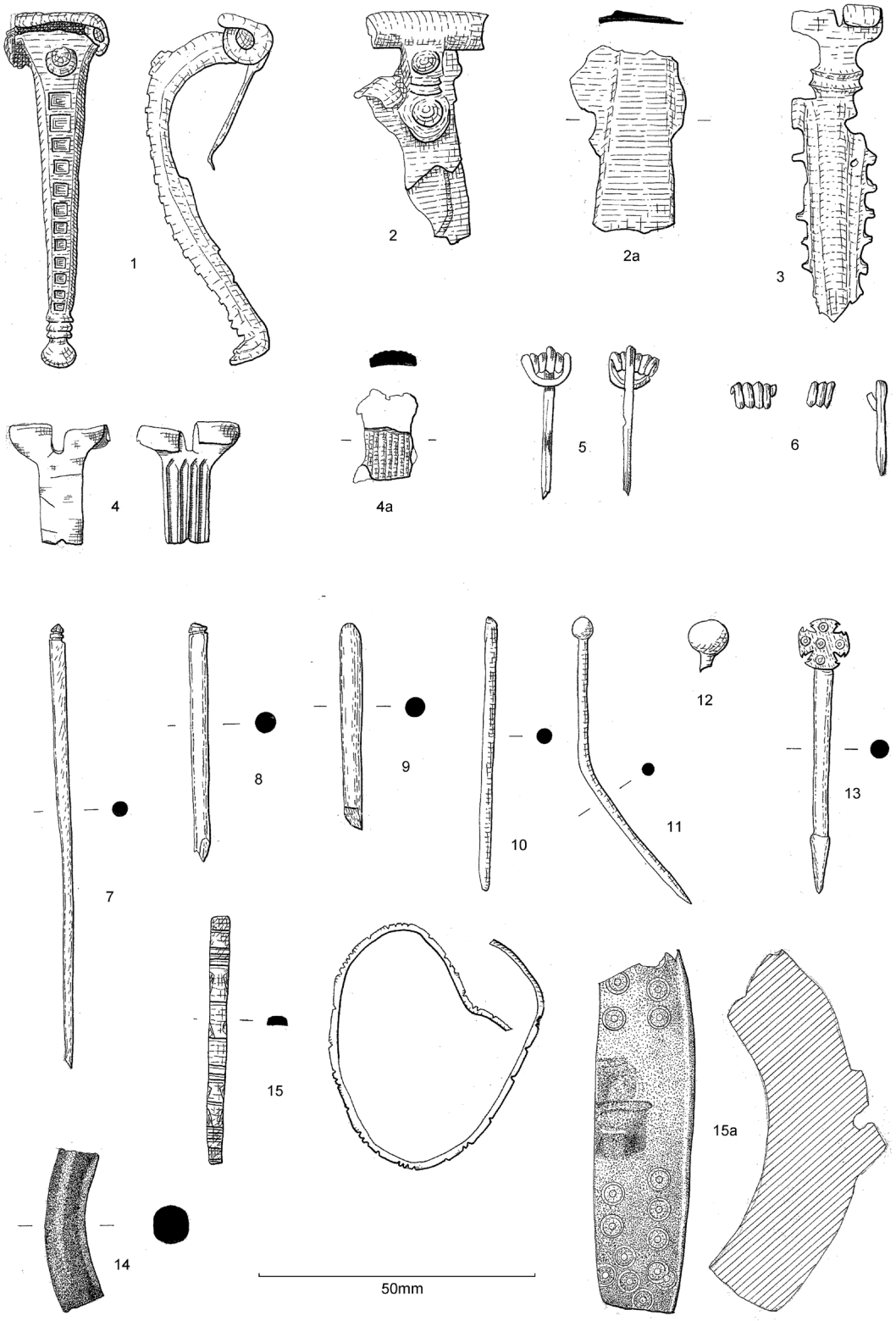


Figure 106 Small Finds Figure 1: Items of Personal Adornment (Nos. 1-15), Objects of shale (No. 15a)

Roman Hair Pins

Six hairpins of Roman date were recorded; three of bone and three of copper alloy and were classified according to Crummy (1983, 19-30). The function of these pins as hair fasteners rather than dress fasteners is supported by the fact that pins have been found near, or on, skulls in a number of cemetery sites, for example at Colchester in the 4th century cemetery at Butt Road (Crummy 1983, 454); at Lankhills, where 16 pins were found in the region of skulls (Clarke 1979, 315); and at York where well preserved hair was found with a jet pin *in situ* (Macgregor 1976, 13).

All three of the bone examples have tapering shafts, and date to the first half of the Roman period, two of them belonging to Crummy's Type 2 dating to c. AD 50-200. However, the two identifiable copper alloy examples are of Crummy's Type 3 with spherical head which dates to the late 3rd and 4th century.

Bone

7) Phase 3. B XIV (9). SF No.165
Crummy Type 2. Two irregular transverse grooves beneath conical head; facetted shaft tapering to a broken tip. L: 81mm, Diam: 3mm.

8) Phase 3. B XIV (8). SF No.175.
Crummy Type 2 One transverse groove at base of damaged; highly polished shaft of circular section tapers to a broken tip. L: 42mm, Diam: 3mm.

9) Phase 2. A VI (11). SF No.130.
Highly polished, tapering shaft fragment of circular section. L: 38mm, max. Diam: 4mm.

Copper Alloy

10) Phase 3. B XIV (8). SF No.173.
Incomplete with plain conical head, Crummy Type 1. L: 49mm, Diam: 3mm.

11) Site B Unstratified. SF No.22.
Complete with bent shaft and spherical head, Crummy Type 3. L: 57mm, Diam: 1.5mm.

12) Phase 3. B XIV (10). SF No.184. Badly corroded, fragmentary spherical pin head, Crummy Type 3. The shaft is missing.

Saxon Dress Pin

13) Unstratified.
Pin with flat cruciform head and hipped shaft. L: 51mm, W: of cross 10mm, Diam: of shaft 3mm. Both faces of the head are decorated with ring and dot motifs. The shaft is cut to a fine sharp point. Hand carved; cut marks visible around the neck (Jessup 1950, 102, Pl. 9, No 3).

Hipped-shaft pins are assigned to a date range covering the sixth to ninth centuries (Stevenson 1955). They seem to be British in origin, although they are found abroad,

for example in the Netherlands (Roes 1963, 65, Pl 52, No 11). Numerous pins with circular heads and hipped shafts are known, both in bone and copper alloy, for example from Northampton (Oakley 1979, 310, Fig 138, No 46); from the Saxon monastery at Whitby (Peers and Raleigh 1943, 63, Fig 13, Nos.1, 7 and 7a). Such Saxon hipped pins are attested to have been worn as dress pins; the hipped shaft would prevent the pin from falling out of loosely woven material.

Armlets

Two armlets in shale and copper alloy respectively were recorded.

Shale
14) Unstratified.
Fragment of plain shale bracelet of circular section. Internal diam: 60mm.

Plain examples are not closely dated but the range will lie between the mid-second and the early fourth centuries (Lawson 1976, 248).

Copper Alloy

The majority of copper alloy armlets date to the late third and early fourth centuries, as they were a very common form of ornament in this period (Barford and Hughes 1985, 151). Discussion of basic variations in material, cross-section and fastening of copper alloy armlets is given in Clarke (1979, 301-314) and his classification is used.

15) Phase 6. BI PI. SF No.20.
Incomplete, distorted armlet in three fragments, Clarke Type DIf. T: 1.5mm, height 3.5mm. D-shaped cross section. Outer surface only decorated with continuous, repetitive decoration of panels of incised grooves separated from the next by plain panels which are halved by a single groove. The plain panels have a shallow, elongated triangular notch at each corner. Since the armlet is incomplete, the method of fastening cannot be determined.

It has been suggested that armlets ornamented with transverse grooves and notched panels are imitative of threaded bead bracelets (Cunliffe 1975, 209). Similar armlets have been found at Lydney in 4th century contexts (Wheeler and Wheeler 1932, 82) and Gadebridge Park (Neal 1974, 147, Fig. 65, No. 242).

Shale Pendant

15a) Phase 6. B I (1). SF No.138.
Fragment of crescent-shaped pendant with square tapering section. Upper (convex) face bears series of ring and dot motifs and the base of a perforated lug for suspension. W.17mm; T 17mm.

A small number of examples are recognised and others are probably mistaken for armlets, when the tapering section is not apparent. A recently excavated example from Leicester comes from Vine Street (Buckley *et al*. 2021, 194, fig.6.19), with others from Scarborough (John Leveson Gower pers. comm.) and Shakenoak (Brodribb et al. 1973). A close Continental example in jet comes from Kastell Deutz, Rhineland (John Leveson

Gower pers. comm.). The author is grateful to John Leveson Gower for identifying the significance of this object.

Ear Ring

16) Phase 2. B III (11) SF No.135. Probably base silver. Penannular, plain tapering ring of oval section. Max. T: 2.5mm. cf Thetford (Rogerson and Dallas 1984, 69, Fig. 110, No. 17).

Finger Rings

17) Phase 3. B XIV (10). SF No.191.
Complete copper alloy ring. Plain, with sub-rounded section. Internal Diam: 19mm, T: 5mm.
A similar ring at Butt Road Cemetery in Colchester on the index finger of a skeleton may indicate that rings not usually assigned as finger rings may be so (Crummy 1983, 45, Fig 50, No 1749).

Intaglio *Martin Henig*
Previous Publication: Henig 1974, No. 614 (p.83 Plate xix) and 1978 (p.261 Plate xix)

17a) Context: LEI 58 B XIV (17) Phase 2 SF No. 192
The intaglio is cut on nicolo, which as usual has a bevelled edge. Its maximum dimensions are 13mm x 10mm, with the upper surface measuring 9mm x 7mm. There is some slight wear on this face.

The device or impression described is a goat seated on the ground, in profile to the right, and behind it is a *calathus* (wickerwork basket) containing fruit. The cutting is a good example of the Imperial Small Grooves style, dated by Maaskant-Kleibrink (1978, 251-85) to the later 1st and earlier 2nd century AD. Details such as the striations on the basket (representing the wickerwork), and the simplified treatment of the raised foreleg betray a tendency towards stylisation which becomes prevalent at this time.

It is tempting to see a general resemblance in style to some of the gems from the main outfall drain at Bath (e.g. Henig 1988, 32, Nos. 22 and 26 respectively; a standing goat, and a gazelle cornered by a hunting dog).

The basket appears on a number of gems from Britain, almost all of which - as far as can be ascertained - are of the same putative date as this example (e.g. Henig 1978, No. 400 from Corbridge; 688 from Chester, and app. 54 from Ebchester. Additionally see also Zienkiewicz 1986, 129 No. 5, and 131-2 No. 22, from the bath-house drain at Caerleon). It is clear that like the *Cornucopia* is signifies abundance and fecundity. In passing it may also be noted that the Matres on Romano-British and Romano-Gallic sculpture usually carry baskets of fruit (Toynbee 1964, 172).

A close parallel to this gem is set in a 3rd century ring in the British Museum (Marshall 1907, No. 539 Plate15; Walters 1926, No.2380), having evidently been reused.

Beads

All of the eight beads recovered are of fairly common types, and classification and terminology is based on Guido (1978) and, to a lesser extent, Beck (1928). All of the beads have one perforation. Material is attributed by visual examination only.

Gadrooned Beads

Melon beads are the commonest bead found on Roman sites. Gadrooning is the term used to describe the convex curves which form an ornamental edge. These beads are common in 1st and 2nd century contexts and there is a slight indication that the smaller the bead the earlier it is in date (Guido 1978, 100). This seems to correspond with the evidence from the site as the smaller beads come from earlier contexts. True melon beads were imported from Claudian to Antonine times; they were possibly imitated by local factories. Although confined to the 1st and 2nd centuries, they are long lived and reappear in post-Roman times. Melon beads were commonly made of turquoise frit which decays to white. They were also made of faience and paste as well as glass.

18) Phase 3. B VI (7) SF No.62
Gadrooned bead. L: 18mm, Diam: 26mm. Turquoise frit. Opaque. cf Colchester (Crummy 1983, 30, Fig. 32, Nos. 520 and 521).

19) Phase 3. B II (12). SF No.57.
Gadrooned bead. L: 12mm, Diam: 18.5mm. Turquoise frit. cf Colchester (Crummy 1983, 30, Fig. 32, Nos. 520 and 521).

20) Phase 2. B XVI (34). SF No.168
Fragment of gadrooned bead. L: 9.5mm, reconstructed Diam: l2mm. Turquoise frit. opaque. cf Colchester (Crummy 1983, 30, Fig. 32, Nos. 520 and 521).

21) Phase 2A. A I(16). SF No.6. Fragment of gadrooned bead. Opaque. Turquoise frit. Not illustrated.

Long Beads

Long beads are so-called when their L: is more than 1.1 times their Diam:. They may have polygonal or circular sections.

Circular Section
A single bead with a circular section was found. As this is an uncommon type, very few are known from British sites. Those which have been found are sky blue in colour, opaque and with L: varying from 11mm to 18mm.

22) Phase 6. B VIII (1). SF No.131
Oblong glass bead with round section. L: 16mm, Diam: 7.5mm. Sky blue transparent, cf Weston-under-Penyard, Bolitree (Palmer and Hills 1871, 207).

Beads of Polygonal Section
Long beads with pentagonal, hexagonal or octagonal sections. These beads tend to be invariably light green in colour and opaque and are considered to have been cheap

imitations of emeralds (Guido 1978, 96). They were popular for a long period but were particularly common in late Roman period. They were probably manufactured by winding molten glass around a metal rod; while the glass was still half-molten it was flattened to form facets.

23) Long polygonal glass bead with hexagonal section. L: 10mm, Diam: 7mm. Light green opaque glass. cf Winchester (Clarke 1979, 298, Fig. 73, No. 85f(e)); Verulamium (Frere 1972, 214, Fig. 79, No.75).

24) Long, polygonal glass bead with pentagonal section. L: 4m, Diam: 3iiW. Light green opaque glass.
cf Colchester (Crummy 1983, 34, fig 36, no. 1421). Phase 3. B IX (18) SFno.93 .

Short Beads

Short beads are so called when their length is of a ratio of more than 0.3 but less than 0.9 of their diameter.

25) Unstratified
Large biconical shale bead with circular section (Beck Type 1.C.2.e). L: 15mm, Diam: 22mm.

Belt Fittings

No distinction has been made in this report between personal adornment of a civilian or military nature. This becomes especially important in this section of the report. It has been assumed that belts were the prerogative of the soldier (Hawkes and Dunning 1961, 28) and in Crummy's Colchester report belts and belt fittings are placed in the category of 'Military Equipment' (1983, 129-140). Although Hawkes and Dunning comment on the incongruity of finds not only on non-military sites but also in female graves, by quoting an example from Dorchester (Hawkes and Dunning 1961, 9) they give several possible reasons for the presence of such finds on rural estates. For example, local custom imitating Roman fashion, and the presence of a visiting military garrison. However, as Clarke points out (1979, 289), belt fittings have been found on non-military sites and the theory that belts were military or official should be proved rather than assumed.

Discussion on the manufacture and stylistic development of belt fittings, on the ethnic origins of the wearers and their position in society has concentrated on the latter part of the Roman empire and is discussed in Hawkes and Dunning (1961), Simpson (1976) and Clarke (1979).

26) Unstratified. SF No.119b
Almost complete copper alloy buckle and plate. L: 46mm. Semi-circular, deep loop with straight hinge bar with squared knobs at either end, cast in one piece. The loop is decorated along the upper and lower edges with a zigzag line. The tongue is L-shaped in section and the tip projects beyond the confine of the loop. The square, double-leaf buckle plate wraps around the bar and acts like a hinge for the loop. It is damaged on the upper edge of the top plate, and the back plate is incomplete. The plate would

accommodate the end of the belt and would have been attached by means of rivets, one of which survives, a square rivet in the bottom right corner. The top plate is decorated with repousse decoration of a border of zigzag line, a raised groove and the figure of a human with arms stretched towards a long-necked animal, possibly a deer. This buckle is very unusual as few are known with representations of animals and human figures on the plate (Simpson 1976, 195).

27) Site A Unstratified. SF No.120
Hinged copper alloy belt fitting, damaged. L: 53mm, W: 16mm. Double leaf plate folded and held by three rivets. Upper leaf decorated with triangles filled with a trellis pattern. This is probably an attachment plate for the end of a broad belt.

28; Unstratified Incomplete copper alloy double-looped buckle with stayed attachment on which the tongue would have been fastened. Modern date.

Decorative Mounts

These mounts were often used not only to decorate belts but also to strengthen them. Projecting pins would have fastened them to the leather. Similar filigree strips have been found on various sites including Richborough (Cunliffe 1968, 93-96, Pl. 35, 36 and 37).

29) Phase 5. B I(7). SF No.116
Incomplete copper alloy belt plate. Symmetrical, openwork fretted design. No evidence of means of attachment survives. L: 28mm, W: 20mm, T: 2mm. Cf Chichester (Down 1974, 141, Fig 8.16, No. 36).

30) B XIV Unstratified. SF No.150
Virtually complete copper alloy belt plate. Almost symmetrical open-work design. Protruding central shaft would have attached the plate to the belt. L: 16.5mm, W: 28.5mm, T: 3mm.

Footwear

The only evidence of footwear was the remains of two rows of badly corroded iron hobnails.
Work has been undertaken not only on the leather uppers but also on the nail patterns on the bottom of shoes. Rhodes has produced a typology based on the finds from London (Rhodes 1979, 99-128). Type A consists of a single row of nails between 10mm and 15mm apart, with a cluster of nails near the tread and on the heel, and one or two nails on the waist; Type B also consists of a single row of nails but these are spaced more widely, 15 to 25mm apart, and can vary as to whether or not they have nails within this border; Type C is the most heavily nailed with two rows along the outer edge and clusters on the sole and heel. Nails are the primary means which hold the uppers to the soles. Roughly circular with square shafts, hobnails were made of iron to last. They were driven through sole layers and the points were forced to curl over and beaten back into the sole.

31) Phase 1. B XVI (49). SF No.196
A series of seven heavily corroded hobnails, three on one side and four on the other, encrusted in the earth, showing a portion of the original hobnail pattern. Also two loose corroded hobnails.

As the hobnails are only of a fragmentary nature it is not possible to assign them categorically to a type. However, from the x-ray it appears that the nails form a single row, and therefore that this is not from a Type C shoe. As the nails are closely spaced it seems probable to assume that the hobnails belong to a Type A shoe. This is the most common pattern and is found in all sizes including those of children.

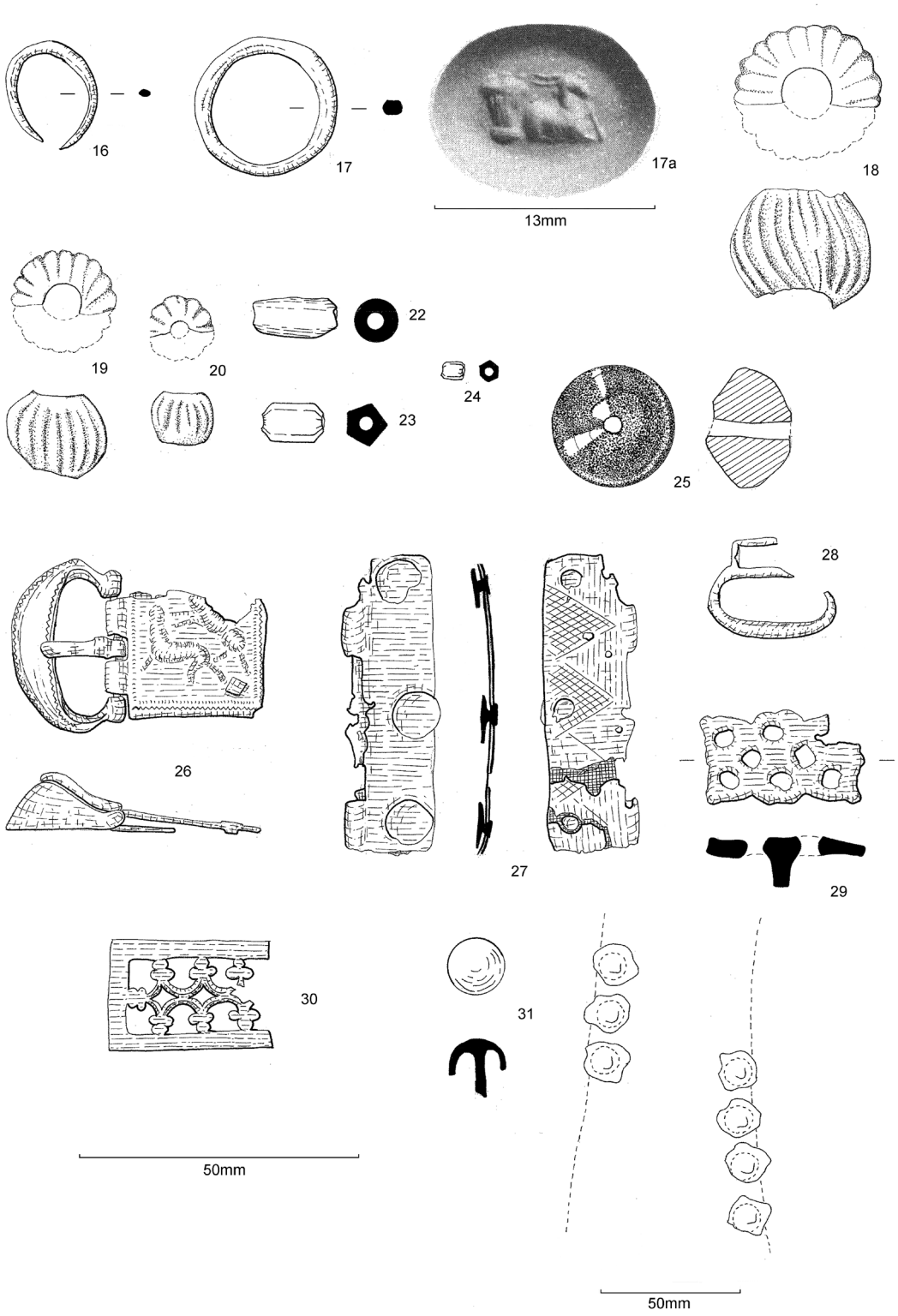


Figure 107 Small Finds Figure 2: Items of Personal Adornment (Nos. 16-20, 22-31)

Category 2) Toilet, Surgical or Pharmaceutical Instruments

Many objects in this category could be used as surgical instruments as well as for toiletry purposes, although they were probably employed more for the latter than the former. The application of these instruments to surgical as well as toiletry contexts is given in Milne (1970), and where possible the relevant section has been quoted.

Razor

Razors were used for shaving facial hair. They were long, slightly curved instruments with the cutting edge on the concave side.

32) Phase 3. B IX (14). SF No. 80
Long, curved copper alloy blade, probably from a razor. Convex in section. L: 122mm, max. W: of blade 19mm, max. T: 2.5mm. cf. London (Wheeler 1930, 74, Pl. 36, No.1).

Ligulae

Two ligulae were found, one of bone and one of copper alloy. A ligula is a long stemmed instrument with a small flat or cupped expansion on the end. Ligulae were used for a variety of purposes including extraction of salves, ointments and cosmetics from boxes and bottles; uses are discussed in Milne (1970, 63 and 77-79).

33) Phase 2. B XVI (46). SF No.182
Complete bone ligula. L: 88mm, max. W: of head 6mm, Diam: of shaft 3mm. Tapering shaft with flattened, scooped-out head. Head damaged on underside and near tip of shaft which is hand carved.

34) Phase 5. B IV Pit I. SF No.47 Incomplete, corroded copper alloy ligula. L: 61mm, Diam: of shaft 2.5mm. The shaft is damaged at the top. Varying section. Bead and reel moulding at the junction of the shaft and scoop. The scoop is damaged, almost entirely missing. Cf Colchester (Crummy 1983, 60, Fig. 64, No. 1921).

Tweezers

Tweezers were used for plucking out unwanted body and facial hair. They were usually made of a single strip of copper alloy, beaten and folded into shape. The narrow band of metal was bent to form a loop at the top and the ends were curved over to form pincers. The loop improves elasticity and the pincers act as a grip. They could be individual items or part of a cosmetic set (Crummy 1983, 59); the loop could serve as an eye for a ring or cord. Although basically very similar, tweezers vary considerably in shape and size, and some examples are decorated. No clear picture of development in design can be seen, although Kenyon (1948) divides tweezers into two types Type A with parallel sided arms and Type B with flaring arms.

35) Phase 3. B XIV (2). SF No.152
Four fragments of incomplete, copper alloy tweezers. Half of loop and part of one arm remaining. W: of loop 5mm, max. W: of arm fragments 6mm.

It is impossible to recreate the completed tweezers as the fragments do not appear to join. However, as the W: of the tweezers varies from 5mm at the loop to 6mm at the widest point it is probable that these tweezers can be assigned as Kenyon Type B.

Category 3) Objects Associated with Manufacture or Working of Textiles

Needles

Two complete examples of copper alloy needles are illustrated, and other three examples of probable shafts were also recorded (Sfs 63 and 84 from phase 3 and sf 48 from phase 5). No examples in bone were found.

Crummy's Type 2 seems to have been produced from the 1st century throughout the Roman period, whilst Type 3 needles come from later third and 4th century and post-medieval contexts at Colchester (Crummy 1983, 65).

36) Phase 2. B XVI (23). SF No.164
Badly corroded needle in three fragments, Crummy Type 2. L: 50mm, W: of head 3.5mm. Spatulate head with rectangular eye. Probably cast.

37) Phase 6. B I Pit I. SF No.28
Complete needle, Crummy Type 3. L: 67.5mm, W: of head 3mm. Rectangular eye, with groove running above and below eye to carry the thread so the maximum W: of the needle head is not increased. Striations in the groove and around the eye indicate that the eye of this needle was cut rather than cast.

Spindlewhorl or Pierced Roundel

37a)) Manufactured from a bodysherd of a jar or flagon in a sandy whiteware fabric. The convex upper surface is sooted, and has a piece of iron corroded against it. The perforation has a slight hourglass profile which is probably due to the method of manufacture by drilling from both sides rather than wear through suspension. Diam: 52mm. T: 5mm. Diam: of perforation 6mm.
Phase ?5 B XV (10)

Category 4: Household Utensils and Furniture

This category covers a wide range of artefacts used in a domestic context.

Spoons

Five incomplete spoons were recovered and one fragment of bone which has been interpreted as a spoon handle. Two of the spoons were of bone and three of copper alloy. As stated, all the examples are incomplete, but as far as can be distinguished all the spoons are round bowled and are therefore assigned to Crummy Type 1. This type dates from the second half of the 1st century and to the 2nd century (Crummy 1983, 69). Various uses have been proposed; the bowl of the spoon may have been for eating eggs and other foods, whilst the pointed end of the handles would serve to extract shell

fish or snails from shells (Collingwood & Richmond 1969, 315). Smaller spoons, such as Number 40, may have been used as condiment spoons.

The bone spoons were carved and shaped by hand; all three show markings which indicate this. The copper alloy spoons were made by rolling a sheet of thin metal for the handle and hammering out and trimming a bowl to the desired shape.

38) Phase 3. B IX (18). SF No.102
Incomplete bone spoon. Bowl damaged, reconstructed Diam: 21mm. Handle with rounded tip and faceted oval section. Carving marks around head. L: 132mm, Diam: of shaft 5mm.

39) Phase 2. B XVI (47). SF No.188
Incomplete bone spoon. Most of bowl missing. Handle with pointed tip and facetted oval section. L: 120mm, Diam: of shaft 4mm.

40) Phase 2. B XVI (48). SF No.193
Incomplete bone shaft, probably of spoon, broken at both ends. Facetted and oval in section. L: 54mm, W: 3.5mm.

41) Phase 1. B I (14). SF No.134
Incomplete copper alloy spoon in many fragments. Damaged bowl, reconstructed Diam: 20mm. Incomplete handle not attached to bowl. Round in section. L: 59mm, Diam: 2.5mm. X-ray 766.

42) A III Unstratified. SF No.14
Incomplete, small copper alloy spoon. Bowl is damaged, Diam: 12mm. Handle missing.

43) Phase 3. B XIII (14). SF No.112
Fragment of handle and bowl of badly corroded copper alloy spoon. Illustration from x-ray.

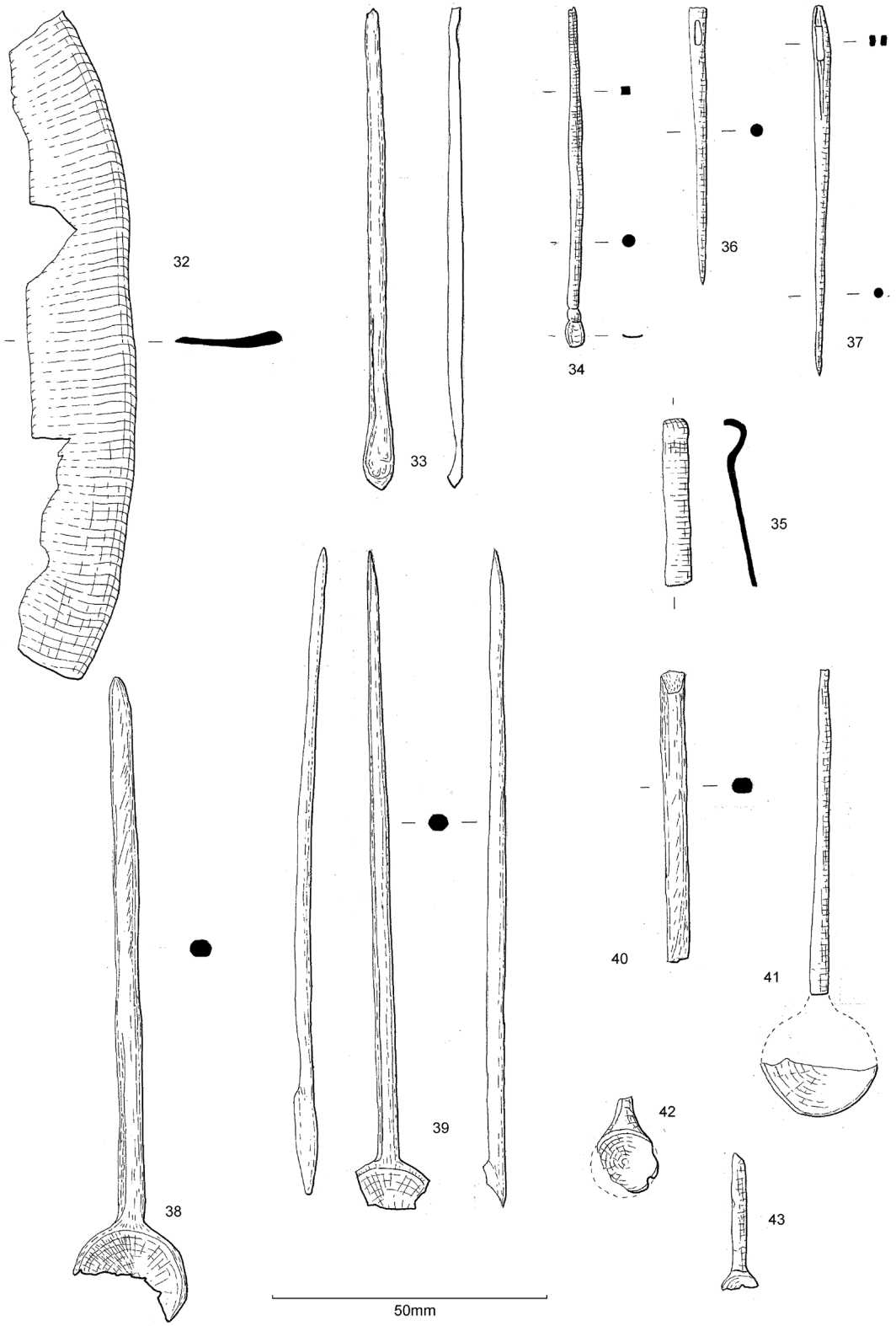


Figure 108 Small Finds Figure 3: Toiletry Instruments (Nos. 32-35), Household Utensils (Nos. 36-43)

Ewer

44) Phase 3. B XIV (5). SF No.163
Curved ewer handle. The hinge attachment; for the lid is broken. L: 83mm. cf Camulodunum (Hawkes and Hull 1947, 332, P1.99, No 14).

The handle would have been soldered on to the vessel near the rim and on the side. The lid is not usually preserved but for examples see Richborough (Bushe-Fox 1932, 83, Pl. 14, No. 49); Dover (Philp 1981, 165, Figure 40, No 212).

Knife

Although only one example of a knife was found at Blue Boar Lane, knives were amongst the commonest implements found in Roman Britain (Collingwood and Richmond 1969, 315). They vary in size and shape depending on their use. There are three main blade types): straight, which are more common; triangular, which tend to be large, and curved blades which usually end in a semi-circular loop and have bone handles (Ward 1911, 203).

Handles were obviously necessary for clasping the tool and there were three main methods of attachment) riveting, used on two-piece handles; driving the tang into the marrow cavity of a bone packed with wood shavings; and fixing the tang with an iron clip to hold the blade against the handle. Although many knives have bone handles the majority of knives are without handles, which may indicate that most were probably of wood. The handle is illustrated with the blade end upwards. The shape of the blade was determined from the x-ray.

45) Phase 4. B I(15). SF No.76
Iron knife, with partially surviving curved blade and flat tang, terminating in a loop (although only part of the blade survives, obscured by corrosion products, the loop is visible from the x-ray as is the beginnings of a curve). Decorated bone handle of two convex plates of bone, fixed to the blade by two rivets. Both plates are decorated with patterns of trellis work, transverse grooves and ring and dot motifs. L: 54mm, max. W: 20mm. cf Colchester (Crummy 1983, 110, Fig 111, No 2935); Tokenhouse Yard, London (Guildhall 1908, 46, P1.17, No. 7).

Box or furniture fittings

Bone Inlay

Thin strips of bone or antler decorated with incised geometric patterns were principally used as decoration for wooden boxes or caskets. However, it is also possible that they were used as decorative and connecting plates on composite combs. Carved bone inlay has also been found as decoration on larger items of furniture, for example the Roman couch found at Cambridge (Nicholls 1979).

Groups of inlay strips have been found at Richborough (Henderson 1949, 158, P1.57; Wilson, 1968, 102, P1.61 and 62). The strips are neatly finished off to fit closely together. They were pinned with small wooden pins inserted through holes in the strips,

which were usually unrelated to the incised pattern adorning these strips. Hassall and Rhodes (1975) have published a list of descriptive terms for the decoration and these have been used here.

46-47) Two fragments of strip inlay of antler with incised decoration. The under-surface of both strips is rough, showing the cancellous tissue. Both strips have small, circular perforations, probably used for fixing pegs, and show signs of the stress which led to fracture) on 46 one transverse incision was cut too deep, causing a break, whilst 47 has warped in the centre and become distorted.
Phase 6. B I Pit I. SF No.33

46) Bone inlay strip in two pieces. Incised central and transverse grooves divide strip into 20 boxes with alternating incised decoration of ring and dot squares and saltire motifs (Hassall and Rhodes, No (ii) and (iv)). Two circular perforations. L: 60mm, W: 16mm, T: 2mm.

47) Irregular row of centrally-placed triple ring and dot motifs. Bevelled edge. Two circular perforations. Warped and damaged in centre. L: 76mm, W: 15mm, T: 2.5mm. cf Portchester Castle (Cunliffe 1975, 224, Fig 119, No. 123). Parallel from Causeway Lane, Leicester (Cooper 1999, 270 and fig.130.150)

Ring Key

Ring keys generally belong to small boxes or caskets of personal possessions rather than doors or cupboards. The notches and projections in the key ward and the lock were designed to prevent opening by the wrong key. A ring key was found in the lock of the 1st box found at Butt Road, Colchester (Crummy 1983, 85). Rotary keys are a standard form and can be assigned to the third and fourth centuries (Crummy 1983, 84).

48) Unstratified.
Rotary key on thick ring. Projecting rectangular key ward, 11mm by 9mm, with a small projection. Internal Diam: 16mm., cf Grandford (Potter and Potter 1982, 35, Fig. 15, No .27)

Antler Point

49) Phase 4. A VI (1). SF No.149
Carved, drilled and polished antler tine, cf Shakenoak (Brodribb *et al.* 1973, 143, Fig.72, No.120).

Worked antler tines have been found on a number of sites. A typology based on the number and positioning of the drilled perforation has been proposed for the material from Glastonbury (Bulleid and Gray 1917, 440). The antler tine was stripped of its horny outer layer, carved to the required shape and highly polished. A hole was bored through the spongy centre in the top. Frequently a notch is carved on the inner curve. Their function is uncertain, although there is some evidence that they were used as cheek pieces (Roes 1963).

Whetstones

50) Phase 5. B I(19). Associated with the furnace.
L: of whetstone with rectangular section and flat, smooth sides. Manufactured from a laminar fine grained, grey stone, and broken at both ends. L: 62mm. W: 22mm. Height 13mm. Not illustrated.

51) Phase 5. B I(19). Associated with the furnace.
L: of whetstone with roughly rectangular section, but with one very worn rounded edge. One end is broken, and the other two appear to have been sawn flat. Manufactured from the same fine grained stone as above. L: 48mm. W: 25mm. Height 15mm. Not illustrated.

52) Phase 3. B II (11)
Roughly rectangular block of stone, of similar T: and type to the two above, but wider. The upper and lower surfaces, and two sides are smooth and lightly scratched; the other two edges broken. Not illustrated.

Copper-alloy Household Fittings

53) Phase 6. B IX Pit II. SF No.70
S-shaped link, probably part of chain which may have had some utilitarian use in the household, possibly for hanging lamps or holding instruments together. L: 18mm, W: 7mm. cf Verulamium (Frere 1972, 124, Fig. 30, No.82); Skeleton Green (Partridge 1981, 80, Fig 39, No.1).

54) Phase 3. B VII (1). SF No.40
Length of bronze wire bent to form an s-shaped hook, possibly for suspension. Rectangular in section. cf South Shields (Allason-Jones and Miket 1984, 63, No 3. 1261).

55) Phase 3. B XVI (19). SF No.155
Hollow, teardrop shaped terminal. Incomplete and damaged with perforation. L: 42mm, Diam: 19.5mm.

56) Phase 3. B IV (1). SF No. 83
Cross-shaped moulding. Broken top and bottom. Transverse arms are rounded. L: 20mm, W: 29mm, maximum T: 5mm.

57) Phase 6. B I Pit I. SF No.103
Pierced, ornamental strip with decorative leaf-shaped motif. L: 62mm, maximum W: 12mm, T: 2mm. It is not possible to assign an exact purpose to this but it was probably intended as a mount, although it lacks definite means of attachment. A similar motif is found at Lydney Park (Wheeler and Wheeler 1932, 90, p1.29, No. 134) and Richborough (Cunliffe 1968, 96, Plate 38, No. 135).

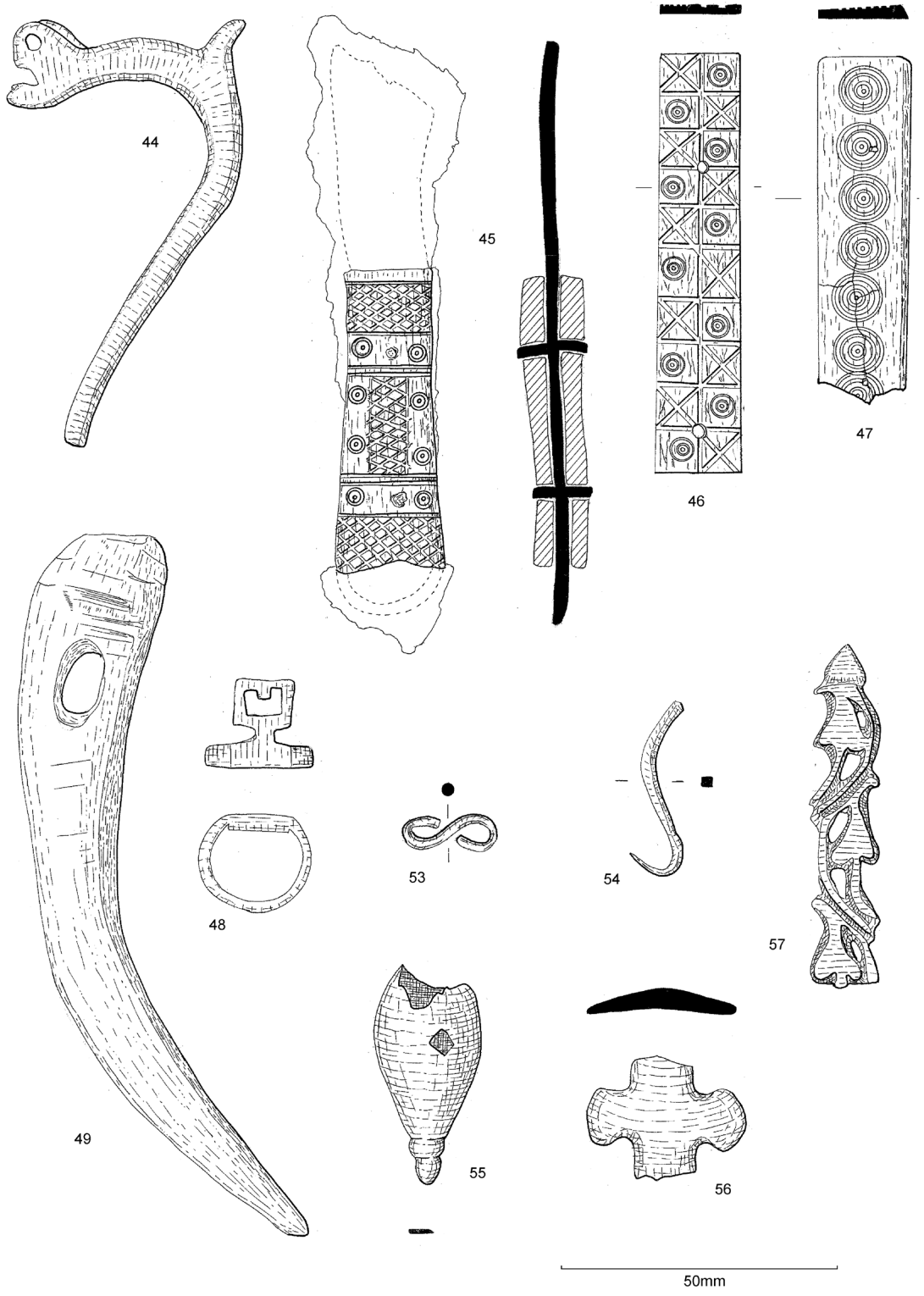


Figure 109 Small Finds Figure 4: Household Utensils (Nos. 44-54), Weapon (No. 55) and Copper Alloy Objects (Nos. 56 & 57)

Category 5: Objects used in Recreation

Various objects used in games are a common occurrence on Roman sites; dice, discs and dice boxes are found. The only evidence of games on the Blue Boar Lane site were counters, and a possible dice box fragment. Clarke set out a comprehensive review of finds of gaming sets and counters from various sites in Britain and abroad (1979, 252-254). Counters were made from a wide range of materials, including pottery and glass, as well as bone. Effort was made to differentiate between sets, ranging from inlaying stones of different colours, painting on patterns, or staining. Various games could be played and counters were probably used for several different games. Descriptions of board games popular in the Roman period can be found in Bell 1960.

Counters of Bone, Stone, Pottery and Tile

Six counters were found; one of bone, two of stone, two of pottery and one of tile.

58) Phase 2. B III (11). SF No.129. Bone counter stained green, Kenyon Type A (Kenyon 1948, 266, Figure 91, No. 17). Diam: 10mm. The indentation in the middle is due to the method of manufacture by turning on a lathe. Marked on underside.

59) Phase 5. A VI (1)
Very worn, small and rounded counter manufactured from a granular pink stone. Surfaces slightly polished through wear. Diam: 21mm. T: 5mm. Probably a board gaming counter. Not illustrated

60) Phase 3. B IV (7)
Stone roundel or counter, manufactured from similar fine-grained grey stone to that used for the whetstones from the site. Surfaces very smooth and faintly scratched. Ground convex edge. Diam: 41mm. T: 7mm. Not illustrated.

61) Phase 2. B XVI (23)
Small pottery roundel manufactured from a bodysherd of a greyware jar with rusticated decoration, and an oxidized core. Edge ground smooth. Diam: 20mm. T: 6mm. Not illustrated.

62) Phase 3. B XIV (9)
Broken pottery roundel, in ovoid shape, manufactured from the base sherd of a burnished greyware dish. Upper surface burnished grey. Lower surface with burnished loops copying the decoration on the base of Black Burnished ware one dish form (Gillam 329). Edge ground to give convex profile. Maximum Diam: 43mm, T: 5mm.

63) Phase 3. B XIV (8)
Tile roundel in hard red clay fabric. Subrounded shape with edge smoothed for part of the circumference, where not damaged. Diam: 52mm. T: 1mm.

Dice Box

64) Phase 6. B VIII (1). SF No.86
Fragment of polished bone cylinder with sloping sides and wide neck. Decorated with thick raised bands on top, middle and bottom. L: 60mm, T: 1.5mm.

This object was made from a portion of bovine femur; it was cut from the shaft, the cancellous tissue removed and the inner and outer surfaces smoothed. Cylindrical vessels of similar shape and comparative size are known. Identifications as dice boxes has been put forward for bone examples found at Chichester (Down 1981, 160, Figure 8, No. 39) and from Glastonbury (Bulleid and Gray 1917, 407, Figure 146, No. 352). However, it has also been suggested that these were possibly cosmetic boxes (Blurton 1977).

Category 11 Fastenings and fittings

This category covers two groups of objects which can be classed as fasteners, that is nails and studs. The distinction between studs and nails is categorized by the size and shape of the head. Studs were designed to project above and therefore decorate the surface on which they were fixed, while nails have flat heads and were functional. However, some nails have projecting, decorative heads while many studs are flat. The definition is, therefore, subjective.

Nails

65) Unstratified
Iron nail with thick round head. Shaft is square in section. L: 63mm, Diam: of shaft 11mm, maximum Diam: of head 20mm, max T: of head 12mm. Traces of mineralised wood, probably oak, found at right angles indicating that the nail fastened two pieces of wood. Manning 1985 Type 1

NOTE) One of a large number of Fe nails from the site, which came particularly from the Phase 5 destruction levels of the Phase 4 structure, where the roof had collapsed due to fire. (see iron report in archive).

66) Phase 3. B XVI (17). SF No.170
Small copper alloy nail with bun-shaped head and square sectioned shaft. L: 19mm, head 4mm cf Gadebridge Park (Neal 1974, 148, Fig.65, No.269). Probably used in furniture upholstery (Crummy 1983, 115).

Studs

All the studs are of copper alloy and most are badly corroded as a result of inadequate storage conditions and the fact that none of them were treated or conserved in any way after excavation. The drawings are taken from x-rays.

Studs were fashioned from sheet metal and the shafts, which tend to be square shaped in section, were soldered on. Their use in many cases is decorative as well as functional. They were probably attached to objects of leather or wood. Theoretical reconstructions including studs can be found in the reports on material from Colchester (Crummy 1983, 87) and Skelton Green (Partridge 1981, 519).

Crummy's typology (1983) has been used and the studs have been divided into two types) Type 1, flat-headed, and Type 2, convex-headed.

Type 1
Type 1 studs are flat headed and probably performed a more or less functional purpose. Many have down-turned rims, probably intended to grip the material they fastened.

67) Phase 3. B IX (18). SF No.100
Incomplete stud. Flat head of thin sheet, max T: 1mm, with down-turned rim. Diam: 18.5mm. Square sectioned shaft. L: 7mm.

68) Phase 1. B XVI (29). SF No.166
Badly corroded, incomplete stud. Flat head of thin sheet, max T: 1mm, one edge turned over. Diam: 16mm. Bent, square sectioned shaft. L: 5mm.

69-74) Six badly corroded, damaged studs.
Phase 3. B XVI (19). SF No.156

69) Incomplete, damaged stud in four fragments. Flat head of thin sheet, max T: 1.5mm. Diam: 15mm. Square sectioned shaft with foot, slightly bent. L: 6.5mm.

70) Incomplete, damaged stud. Flat head of thin sheet, max T: 1.5mm, with down-turned rim. Diam: 15mm. Rectangular sectioned shaft with foot, slightly bent. L: 7mm.

71) Incomplete, damaged stud. Flat head of thin sheet, max T: 0.3mm, with down-turned rim. Diam: 15mm. Bent. shaft, circular section. L: 9mm.

72) Incomplete stud in three fragments. Flat head of thin sheet, max T: 1mm**,** with down-turned rim. Diam: 15mm. Circular sectioned shaft incomplete.

73) Incomplete head of stud. Flat head of thin sheet, max T: 1mm. Diam: 14mm. Shaft missing.

74) Large, damaged stud. Head of thin sheet, max T: 2mm, with down-turned rim. Concave depression in middle, rising to rim. Diam: 38mm. Square sectioned shaft, slightly bent. L: 9.5mm.

75) Phase 6. B I Pit I. SF No.113
Incomplete copper alloy stud. Flat head of thin sheet, max. T: 0.5mm. Slight raised groove on underside, bump in middle of disc. Diam: 38mm. Shaft missing.

76) Phase 4. B I(15). SF No.75
Badly corroded, slightly damaged stud. Flat head of thin sheet, max T: 1mm, with down-turned rim. Diam: 14mm. Circular sectioned shaft. L: 6mm.

77) Phase 4. B I(15). SF No.72
Badly corroded, incomplete stud. Flat head of thin sheet, maximum T: 4mm, down-turned rim. Diam: 14mm. Shaft broken away.

78) Phase 2B. A I(25). SF No.15
Badly corroded, incomplete stud. Damaged flat head of thin sheet, max T: lmm, Diam: 13mm. Circular sectioned shaft, bent, tip broken off. L: 3mm.

79) Phase 1. B XVI (49). SF No.194
Corroded stud. Originally flat head now with upturned rim. Convex moulding on underside. Diam: 11mm. Bent, incomplete shaft. L: 4mm.

80) Phase 2. B XVI (47). SF No.187
Incomplete stud. Flat head of thin sheet, max. T: 1mm, with down-turned rim. Diam: 13mm. Shaft missing.

81) Phase 4. B I(15). SF No.73
Badly corroded stud in four fragments. Flat head with down-turned rim. Diam: 11mm. Shaft missing.

82) Phase 3. B III (7). SF No.65
Badly corroded fragments of thin copper alloy sheet, probably stud. Diam: 13.5m. Shaft missing.

83) Phase 3. B XVI (17). SF No.171
Corroded, incomplete stud. Very little of flat head surviving. Round sectioned shaft. L: 7mm. Not illustrated.

Type 2
Domed studs were probably used as a decorative feature adorning furniture, belts, and harnesses for example.

84) Phase 3. B VII (8). SF No. 85
Damaged oval stud with high, convex, circular centre and folded over rim, maximum T: 1mm. Diam: 0.22mm by 16mm. Bent, square sectioned shaft. L: 7.5mm, cf Colchester (Crummy 1983, 116, Fig 120, No. 3140). Skeleton Green (Partridge 1981, 305, Figure 110).

85) Phase 2. B III (11). SF No.126
Badly corroded, misshapen, composite stud. Copper alloy convex head Diam: 16mm. Ferrous, circular sectioned shaft. L: 15mm.

86) Phase 3. B XIV (2). SF No.145
Almost complete, badly corroded stud, with domed head. Diam: 11mm. Circular sectioned shaft. L: 6mm.

87) Phase 3. B XIV (10). SF No.185
Badly corroded stud, with domed head. Diam: 8mm. Shaft missing.

88) Phase 3. B VII (1). SF No. 36
Complete stud, with high-domed head. Diam: 4.5mm. Circular shaft. L: 4mm.

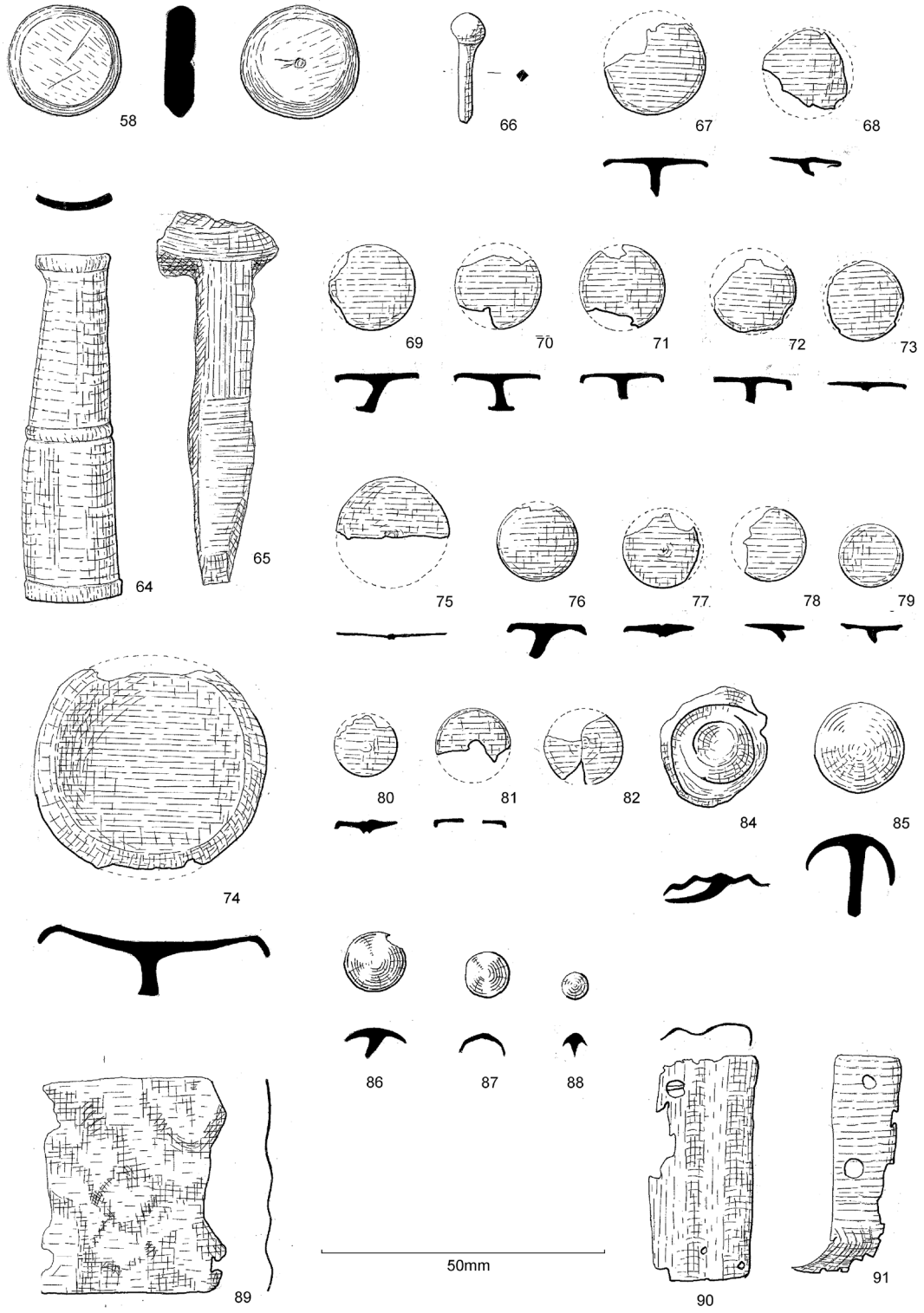


Figure 110 Small Finds Figure 5: Counter (No. 58), Fasteners (Nos. 64-73, 75-82, 84-88), Misc. Copper Alloy Objects (Nos. 81-91)

Sheet fittings
Additional to those catalogued below, thirty other undiagnostic sheet fragments were recorded in archive.

89) Phase 5. B I(10). SF No. 60
Thin, crumpled sheet with two perforations along edge. L: 38mm, W: 33mm, T: 0.25mm.

90) Phase 4. A VI (1). SF No.9
Thin plate with two convex mouldings. Curved over one end with two perforations. Bar along back. L: 18mm, W: 40mm, T: 0.5mm.

91) Phase 4. B IX (5). SF No. 64
Incomplete, curved strip with two punched perforations. Distorted, lower portion bent over. L: 40mm, W: 12mm; T: of sheet 1.5mm.

92) Phase 6. B I Pit I. SF No.27
Flattened strip, originally forming a ring. Raised repousse decoration of row of dots around edges. Three perforations. L: 32.5mm, W: 10mm, cf Nettleton (Wedlake 1982, 210, Figure 88, No. 37).

Sheet Discs

93) Phase 6. B XIII Pit I. SF No. 78.
Incomplete disc with stamped decoration. Diam: 26mm, T: 0.25mm. Possibly a jetton?

94) Phase 6. B I Pit I. SF No. 23
Incomplete copper alloy disc, with applied curl. Reconstructed Diam: 25mm, T: 0.5mm. Possibly a jetton?

95) Phase 3. B II (16). SF No. 77
Incomplete, badly corroded disc. Perforated section. Diam: 11mm.

Lead

Four objects of lead were found.

96) Phase 6. B I (1). SF No.109
T-shaped fragment of lead sheet. D-shaped in section. W: across arms 36.5mm, L: 15mm.

97) Phase 6. B I Pit I. SF No.17 Hook-shaped fragment.

98) Phase 2. B XVI (46). SF No. 185
Concave disc. Diam: 11mm, T: 2mm. Weight 0.75gm. cf Verulamium (Frere 1972, 146, Plate. 67b, No. 185.
The weights from Verulamium vary between 1.7gm and 9.1gm. As this object weighs only 0.75gm it is possibly not a weight.

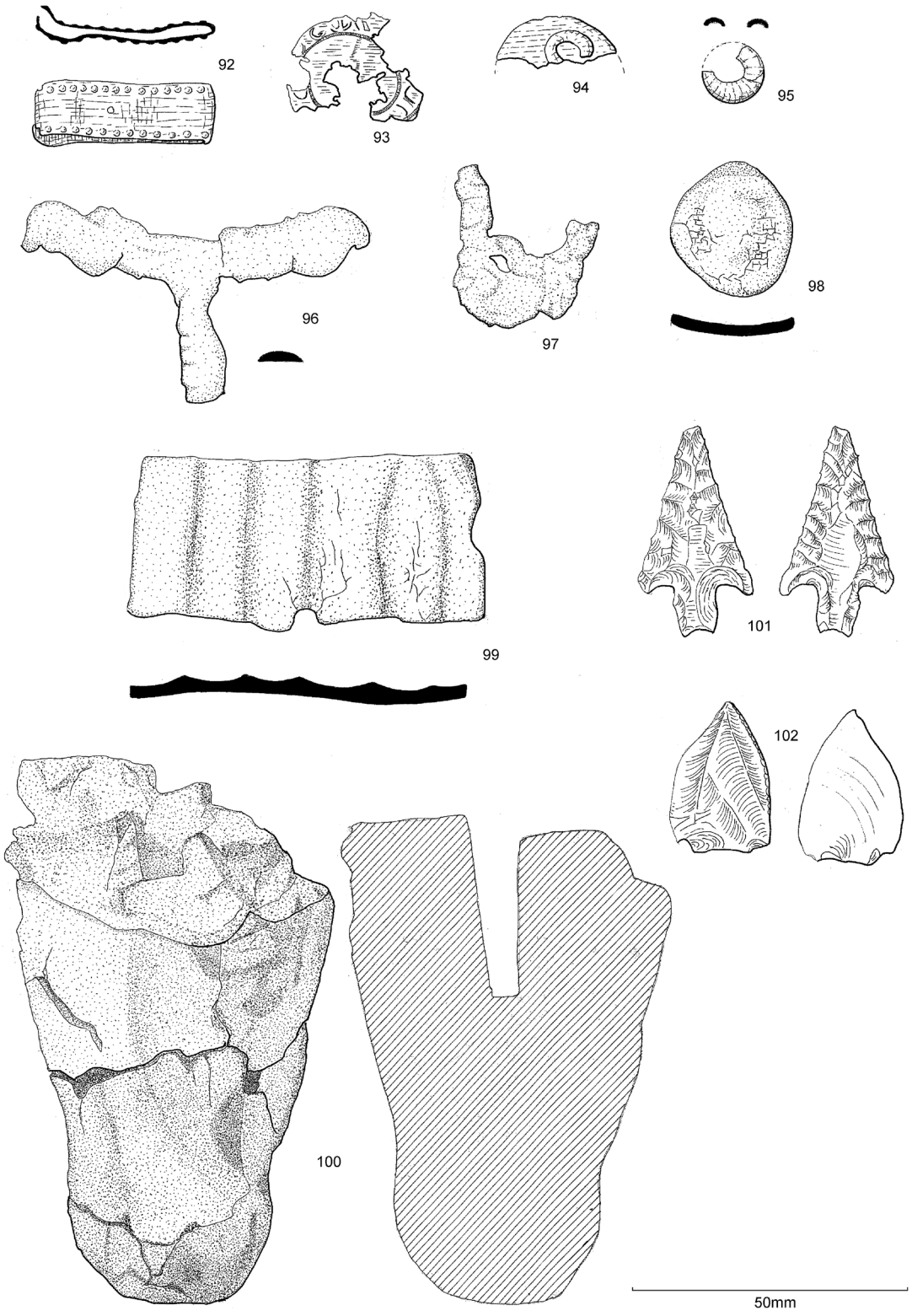


Figure 111 Small Finds Figure 6: Misc. Objects of Copper Alloy (Nos. 92-95), Lead (Nos. 96-99), Weapons (Nos. 101 & 102)

99) Phase 3. B IV (4). SF No. 51
Slightly distorted rectangular plate. Ridged surface. Circular perforation on lower edge. L: 62mm, W: 29mm, max T: 2mm.

Category 15: Objects associated with metal working

100) Phase 6. A I Pit IV. SF No. 4.
Ceramic mould fragment in the shape of a cone with rounded bottom. Broken at top with square hole, centrally placed. Maximum L: 98mm, maximum Diam: 56mm.

Category 17 Objects and waste material associated with Prehistoric Flint knapping Irena Lentowicz (nos. 101-102) and Alex Gibson (nos. 103 & 104)

101) F162 BXV1 25 Phase 2
Barbed and tanged flint arrowhead, Green Type Sutton B(k). Length 37mm, breadth 21mm.
cf Marshfield; Blockley, 1985, 209, Figure 64a, No. 42. Loughor; Ling and Ling, 1979, 25, Figure 7, No. 1.

102) F56 B1X 1 U/S
Leaf-shaped flint arrowhead, Green Type 3A(j). Length 27mm, breadth 20mm.
Barbed and tanged arrowheads become dominant after 1750 BC (Green, 1981, 129). This is a common type of flint arrowhead, often associated with beaker graves.

103) Phase 3-5 A IV (7)
A fine end scraper on a struck flint flake. The implement just qualifies as a long end scraper, as the length /breadth ratio is 3:2. The working is probably by pressure flaking and retouching is only visible at the end of the flake. This is well-polished and abraded on the extreme edge testifying to extensive use. There is no working on the main flake surface though conchoidal features such as concentric waves are visible. There is no trace of the bulb of percussion or the striking platform. Not illustrated.

Scrapers of this type are common in the Neolithic period and the present implement can be paralleled on late Neolithic sites such as Durrington Walls (Wainwright and Longworth 1971), at Rackham (Holden and Bradley 1975), Mount Pleasant (Wainwright 1979), and at Fengate (Pryor 1978 and 1980). With the exception of Rackham, these end scrapers are associated with late Neolithic pottery such as Grooved Ware, Beaker and Peterborough ware. There is a general tendency for end scrapers to shorten as they progress chronologically and by the Beaker and Early Bronze Age periods, end scrapers are usually small and rounded. One would therefore tentatively assign the Leicester scraper to a period between 2500 and 2000 BC although there is obviously the likelihood of overlap into the immediately preceding and subsequent periods.

104) Phase 6. B VII Pit II
A small flint sickle blade probably made from a large flint pebble. Traces of the cortex still survive on the worked surface. The main flake surface still survives but has not received attention. The bulb of percussion and the striking platform (at the broader end

of the implement) have been removed but possible traces of a bulbar scar still survive as do the concentric waves. The implement may originally have been more curved but has been broken. There is no evidence to suggest that the implement was hafted, but the broken section may have gone into a small butt which may have been intended to assist hafting. Retouch is visible along both sides of the blade as well as at the narrower end, though traces of ware and polishing are more in evidence on the concave side as would be expected. The abruptness of the retouch on the narrow end may suggest that it had been broken and repaired. Not illustrated.

Parallels for this type of implement again date to the Neolithic and Early Bronze Age and is certainly typical of the tool repertoire of farming communities. The most recent review of curved flint sickle blades is still that of Clark (1930), in which Clark pointed out that the paucity of stratified examples and sickles with good dateable associations. In general they are dateable to Grooved ware and Beaker times, and generally the same date-span as the scraper above. The sickle, however, is far more open than that for curved examples similar in shape to this one, been found quite frequently in East Anglia and the Fen Edge. The frequency of late Neolithic occupation sites in this area may well suggest a date of *c.*2000 BC for this implement also, although the dangers of such presumed association cannot be over-emphasised.

The Roman Coins Robert Abbott

	Context/Phase	S.F.	Emperor	Description	Date	Reference
1-6	BXIII (14)	121	Domitian (Ae)	Illegible	81-96	
2	BXVI (25)	161	Vespasian	VICTORIA AUGUSTI.S.C. Victoria advancing L.	69-79	M&S 502
2a	AVI (11)	16	Constantius	Illegible	305-6	Intrusive?
3-5 (3)	BXVI (13)	154	Claudius	CERES AUGUSTA S.C. Ceres seated L.	41-54	M&S 67
3-5 (3)	BXVI (44)	178	Vespasian	COS VIII. Prow with star. (AD 77-78)	77-78	M&S 168
4-5	AVI (1)	140	Constans (?)	Illegible	337-50	
4-5	AVI (1)	141	Tetricus I	Pax type	270-73	
4-5	AVI (1)	142	Vespasian	IMP XIX Sow 1. (AD 77-78)	77-78	M&S 109
4-5	AVI (1)	144	Urbs Roma	Wolf & twins, two stars above	330-41	Goodacre 11
4-5	AVI (1)	146	Urbs Roma	Mars stg.1	330-41	Goodacre 2
4-5	AVI (1)	147	Constantine II (?)	Victory I. With shield	317-40	
4-5	AVI (1)	148	Urbs Roma	Wolf & twins, two stars above	330-41	Goodacre 11
5	BI (3)	95	Caracalla	PONTIF TR P III. Sol. Standing front holding globe & spear (AD 200)	200	M&S 30
6	AIV (3)	10	Constantine II	GLORIA EXERCITUS. Soldiers with standards	330-40	Goodacre 21
6	AIV Pit 1	89	Constantine II	GLORIA EXERCITUS. Soldiers with standards	330-40	Goodacre 21
6	AVI (plus?)	129	Constantine II (?)	Illegible	317-40	
6	BI Pit 1	19	Constantine II (?)	Illegible	317-40	
6	BI Pit 1	21	Constantine I	PROVIDENTIAE AVGG. Gate of praetorian camp	324-30	Goodacre 95
6	BI Pit 1	31	Constantius II	GLORIA EXERCITUS. Soldiers with standard	330-40	Goodacre 18
6	BI Pit 1	32	Constantius II	GLORIA EXERCITUS. Soldiers with standard	330-40	Goodacre 18
6	BIII Pit 1	45	Tetricus I	SPES AVGG. Spes walking 1	270-73	M&S 132
6	BIV Pit 1	71	Claudius Gothicus	Illegible	268-70	
6	BIX Pit 11	68	Tetricus I	SPES PUBLICA. SPES walking 1.	270-73	M&S 135

Coins listed in site book but not listed in report of Robert Abbot:

	Context/Phase	**S.F.**		**Description**	
	AI (10) No.138 in SFR	2		Ae coin. Clipping?	
	AIV Pit 111. No.97 in SFR	11		Ae coin?	
	BI Pit 1	18		Ae coin	
	BI Pit 1. No.112 in SFR	23		Ae coin	
	BII Pit11. No.152 in SFR	29		Two Ae fragments. Coins?	
	BIII (1)	35		Ae coin	
	BIV Pit 1. Three crescent-shaped fragments listed in SFR as Cont. No.95, under misc. coin clippings? But from different context. AI (27)	41		Ae coin (not found)	
	BIII Pit 1. No.155 in SFR	46		Ae coin	
		77		Bronze studs?	
	BIX (18)	92		Ae coin	
	BI Pit 1. No.164 in SFR	108		Ae coin	
	BI Pit 1. no.114 in SFR	117		Ae coin. Burnt?	
	BI 6	123		Ae coin	
	B plus	124		Ae coin	
	B plus NB these three show pencil cross on RHS of entry – not coins? Check small finds	125		Ae coin	
	BXIV (17)	198		Ae coin	
	A plus	none		Coin fragment	

Industrial Activity Kathy Ashley, Graham C. Morgan, and Justine Bayley

Ash Sample

Vitrified clay with fuel ash slag/glass surface and glass residues. Also a fragment of cuprous slag - vesicular grey/green with cuprite and sand particles - possible cuppelation slag.
Weight 62 gms.

Slag

Al (15) Vitrified clay and fuel ash slag - Furnace lining.
Weight: 52 gms.

Al (21) a) Vitrified clay and fuel ash slag with sand.
Weight: 24 gms.
b) Iron object.

Al (23) Vesicular fayalite with charcoal and rust.
Weight: 192 gms.

Al (25) a) Fuel ash slag with fused sand and vitrified clay.
Weight: 104 gms.
b) Fragment of fast grown oak - 80mm diameter - see charcoal report.
c) Vesicular fayalite with charcoal and rust.
Weight: 710 gms.
d) 3 iron objects.

A1V (7) Vesicular fuel ash slag with sand, charcoal and rust. Classed as smithing furnace residue. Weight. 280 gms.

B1 (1) Cuppelation slag - vesicular copper and copper corrosion products, (lead and silver present).
Weight: 400 gms.

B1 (8) Possible cuppellation slag - lenticular section. Dense grey / red fayalite - like material. Green corrosion
on outside with traces of cuprite - specks of copper and silver metal.
Weight: 515 gms.

B1 (14) Vesicular fayalite with charcoal and rust. Iron working slag.
Weight: 168 gms.

B1(19) Vesicular glass weith fuel ash s1ag.
Weight: 222 gms.

B11(5) a) Enderbite.
Weight: 48 gms.
b) Vesicular fayalite with fuel ash slag and fused sand.
Weight: 160 gms.

B111(1)	a) Vesicular fayalite with charcoal and rust. Weight: 282 gms. b) Vesicular fayalite, slightly more consolidated than previous sample, possibly furnace bottom. Weight: 170 gms.
B1V (1)	a) Vesicular fayalite and fused sand with fuel ash slag. Weight 38 gms. b) Vitified clay. Weight: 134 gms.
B1V (1)	a) Vesicular fayalite with charcoal and rust - Pit furnace residue. Weight: 398 gms. b) Fuel ash slag with sand - very glassy surface Weight: 14 gms.
BV11 (8)	Fuel ash slag and sand - very glassy. Weight: 28 gms.
BV11 Pit 2	Vesicular fayalite with charcoal and rust. Weight: 240 gms.
B1X (4)	Vesicular fayalite with charcoal and rust. Weight: 108 gms.
B1X (11)	a) Furnace lining / fuel ash slag. Weight: 12 gms, b) Concreted iron object found in association with above, therefore a mixed deposit.
B1X (18)	Vesicular fayalite with charcoal and rust. (Oak charcoal) Weight: 74 gms.
BX111 (14)	a) Fuel ash slag with fused sand, charcoal and rust. Weight: 280 gms. b) Iron object.
BX1V (17) a)	Vesicular fayalite with charcoal and rust. Weight 254: gms. b)Vitrified clay: 10 gms.
C 1 (13)	Vesicular fayalite with traces of copper corrosion - particular note. Weight: 16 gms.

This collection appears to represent a working, not smelting furnace. There is also evidence for copper melting or silver extraction from base alloys at cupellation.

The Crucible Deposits Justine Bayley

Phase BXIII (14) Phase 3
The crucible sherd was analysed using x-ray flourescence. Copper, zinc, lead, and tin were all detected in significant amounts, suggesting that the alloy being melted was a leaded gunmetal i.e. a copper alloy with deliberate additions of more than a few percent of Sn, Zn, and Pb. The additional layer of less refractory clay is a common feature on Roman metal melting crucibles.

Charcoal Graham C. Morgan

Sample	Species	Diam. (mm.)	Rings	Age	Growth	Comments
A1(5)	Oak	40+				Fragmentary
A1(16)	Oak	40+				Fragmentary
A1(18)	Oak	50+				Preserved wood on corroded iron nail
A1(18)	Oak	10	3	3		Twig
A1 25)	Oak	60+			F	-
A1(25)	Oak					Fragmentary piece attached to iron nail
A1(28)	Poplar	60	8	15		
A1(28)	Oak	15	1 5	15		Twig
A11(6)	Oak	60+	8	10+		Cut marks suggest trimmings
A11(8)	Oak	80+	6	20	F	
A11(9)	Oak	80+	6	20	F	
A11(14)	Oak					Fragmentary mineralised wood and charcoal attached to corroded iron object
A11(14)	Oak					Knot – fragments
A111 Pit 1	Oak	25	20	20	S	Branch
A111 Pit 1	Coal					Heated – identified as bitumenous coal
A1V Pit 1	Coal					Bitumenous coal
AV1 (11)	Poplar					Fragment, plus others – unidentifiable
B1 (7)	Oak					Charcoal fragment attached to iron
B1 (14)	Oak					Charcoal contained in working slag (smithing)
B1 (14)	Oak					Charcoal fragment attached to iron
B11(13)	Oak	50	14	20		
B11(16)	Oak	80	15	30		Worm eaten
B11 Pit 2	Oak	40	37	37	S	
B11 Pit 2	Oak	80+	6	30		Medieval
B11 Pit 2	Hazel	60+	15	20+		
B11 Pit 3	Oak	80+	20	100	S	
B111 (11, 13?)	Oak	60+	5	8+	F	
BV1 (4)	Oak	25	6			
BV1 (4)	Oak	60	20	60	S	
BV1 (5)	Oak	80	10	30	F	
BV1 (7)	Oak	60	8	10	F	
BV1 (8)	Oak	80	7	20	F	
BV1 (12)	Hazel	15	7	7		
BV1 (12)	Oak	20	4	6		
BV11 (14)	Oak	80+	13	30	F	
B11X Pit 2	Oak	80+	13	30	F	
BX (8)	Oak	80	32	50	S	
BX Pit 3	Oak	10	5	5		
BXV1 (39)	Oak					Fragment of mineralised wood attached to iron
Box 1	Oak	80	25	30		No context
Box 1	Hazel	20	12	12		No context
Box 2	Oak	80+	9	12	F	
Box 3 BL (7)	Oak	150	12	30	F	Plank (roundwood) 20mm thick. Also wood from same size tree but not cut as planks
BL (19)	Oak	10	5	5		With ash sample
BL (19)	Oak	80	4	10	F	With ash sample

Species Present:

Oak (Quercus spec.)
Poplar (Populus spec.)
Hazel (Corylus avellana)

In the identification of charcoal it is difficult to distinguish poplar from willow, hazel or alder. Therefore, these species appear in the preceding list; either may have been used.

The Animal Bone Leslie Cram

This report has been compiled and edited by N.Cooper from a draft report and notes written by the author in 1972. The whereabouts of the material itself with the exception of the horn cores from B VI (8) is unknown. The material studied by Cram also included five bones from the Defences site at Elbow Lane (Defences Site 5), which have already been published (Gouldwell in Buckley and Lucas 1987).

Introduction

A total of 533 bones from all periods were identified by species. The total size of the excavated assemblage retrieved is unknown, but it is clear that many small fragments were discarded on-site. Of the total identified, 399 derived from Roman contexts, and 134 from Medieval Phase 6. The figure for Roman contexts does not include the assemblage of cattle skull and horn fragments from B VI (8) attributed to Phase 2C. (59 bones?)

Material from the Roman Phases

Phase 2C B VI (8)

The material found overlying the floor of Room 2 of the Phase 2 courtyard house during its period of abandonment prior to demolition has led to the suggestion that this part of the house may have been used as a workshop for the preparation of horn for manufacturing.

The material comprises a group of cattle skull fragments that all derive from the horn core and surrounding frontal bone, with no other parts of the skull of mandible present. There are a total of 59 horn cores represented, divided equally between right and left, and they are derived from a minimum of 40 different animals. There are no cases in which a matching pair of horn cores from one animal are attached to each other by a complete frontal bone, and only two of the cores are likely to have come from the same animal, although many examples are too broken to say with any confidence that they pair up.

However, whilst some of the horn cores are complete and joined to the frontal bone, in the majority of cases the horn core and frontal bone have clearly been broken in antiquity. The breaks are rough in all cases except five which have the marks of an axe or saw. In three of these cases, the marks are on the horn core itself, and on the remaining two they are on the surrounding bone. It would appear then that the horns were broken individually from the cattle skulls, taking some of the surrounding cranium with them, and that some were later trimmed using an axe or saw (perhaps as part of the process of manufacture), or were removed in the 1st instance using this method. Other bone was also derived from this context, comprising 24 broken fragments and two complete sets of bones from rear feet of cattle. These would appear similar in composition to the domestic food refuse that typifies the rest of assemblage from the site.

Bibliography

Allag, C. 1983 'Enduits peint d'Orleans' *Gallia* 41, 191-200

Allason-Jones, L, and Miket, R., 1984 *Catalogue of Small Finds from South Shileds Roman Fort*. Gloucester: Alan Sutton Publications.

Atkinson, D., 1914 A hoard of samian ware from Pompeii, *Journal of Roman Studies*, 4, 26-64

Bailey, K.C. 1929 and 1932 *The Elder Pliny's Chapters on Chemical Subjects* (Parts 1 and 2). Arnold and Co. London.

Barbet, A., 1974 *Receuil General des Peintures Murales de la Gaule, 1*. Narbonnaise, 2. Glanum

Barford, P.M. and Hughes M., 1985 Other objects of copper alloy *in* Blockley 1985

Bastet, F.L. 1971 'Domus Transitoria, I' *Bulletin van de Vereeniging tot Bevordering der Kennis van de Antieke Beschaving* 46, 61-87.

Bastet, F.L. 1972 'Domus Transitoria, II' *Bulletin van de Vereeniging tot Bevordering der Kennis van de Antieke Beschaving* 47, 144-72.

Beck, H.C., 1928 Classification and nomenclature of beads and pendants, *Archaeologia* 77, 1-16

Bell, R.C., *1960 Board and Table Games of many Civilisations*, Oxford: Oxford University Press

Berger, L., 1960 *Römische Gläser aus Vindonissa*. Veröffentlichen der Gesellschaft pro Vindonissa Band IV. Basel: Birkhäuser Verlag

Betts I., Black, E.W. and Gower, J., 1994. A Corpus of Relief-Patterned Tiles in Roman Britain. *Journal of Roman Pottery Studies* 7

Blockley, K., 1985 *Marshfield: an Iron Age and Romano-British Settlement in the South Cotswolds*, Oxford: BAR 41.

Blurton, T.R., 1977 Excavations at Angel Court, Walbrook 1974, *Transactions of the London and Middlesex Archaeological Society* 28, 14-100

Boon, G. C., 1974 *Silchester: The Roman Town of Calleva* Newton Abbot and London: David & Charles

Borda, M., 1958 *La Pittura Romana* Milan: Società Editrice Libraria

Brodribb, A.C.C., Hands, A.R. and Walker, D.R., 1973 *Excavations at Shakenoak Farm near Wilcote, Oxfordshire*. Pt.4 Oxford: Exeter College

Buckley, R. & Lucas, J. 1987 *Leicester Town Defences.* Leicester: Leicestershire Museums, Art Galleries and Records Service.

Buckley, R., Cooper, N.J. and Morris, M., 2021 *Life in Roman and Medieval Leicester: Excavations in the town's north-east quarter, 1958-2006.* Leicester Archaeology Monograph 26. Leicester: University of Leicester Archaeological Services.

Bulleid, A. and St George Gray, H., 1917 *The Glastonbury Lake Village Vol II*, The Glastonbury Antiquarian Society

Bushe-Fox, J.P., 1926 *First Report on the Excavations of the Roman Fort at Richborough, Kent.* London: Rep. Res. Comm. Soc. Antiq. London. 6

Bushe-Fox, J.P., 1932 *Third Report on the Excavations of the Roman Fort at Richborough, Kent.* London: Rep. Res. Comm. Soc. Antiq. London. 10

Caplan, C., unpublished *The Leicester Oceanus Altar.* Blue Boar Lane 1958 Site Archive

Charlesworth, D. 1959 Roman Glass in Roman Britain. *Archaeologia Aeliana* 4th series XXXVII 33-58

Charlesworth, D., 1966 'The Glass 188-9' *in* A.P. Detsicas, An Iron age and Romano-British Site at Stone Castle Quarry, Greenhithe. *Archaeologia Cantebrensis.* LXXXI *136-90*

Charlesworth, D., 1976 'The Glass, 244-50' *in* I.M. Stead. *Excavations at Winterton Roman Villa and other Roman Sites in North Lincolnshire 1958-1967.* DOE Archaeological Report No. 9: London

Charlesworth, D. 1984. 'The Glass, 146-73' *in* S.S. Frere, *Verulamium Excavations III*: Oxford: Oxford University Press

Clamp, H. 1985 The late Iron Age and Romano-British pottery. *In* Clay and Mellor 1985, 41–59.

Clark, J.G.D. 1930 'The Curved Sickle Blades of Britain' *Proceedings of the Prehistoric Society of East Anglia*, 7

Clarke, G., 1979 *The Roman Cemetery at Lankhills*, Winchester Studies 3, pre-Roman and Roman Winchester, Part 2. Oxford.

Clay, P. & Mellor, J., 1985 *Excavations in Bath Lane, Leicester.* Leicestershire Museums, Art Galleries and Records Service Archaeological Report No. 10

Clay, P. & Pollard, R. 1994 *Iron Age and Roman Occupation in the West Bridge Area, Leicester: Excavations 1962–1971.* Leicester: Leicestershire Museums, Arts & Records Service.

Collingwood, R.J. and Richmond, I.A., 1969*, The Archaeology of Roman Britain*, London: Methuen

Connor, A. & Buckley, R. 1999 *Roman and Medieval Occupation in Causeway Lane, Leicester.* Leicester: Leicester Archaeology Monograph 5.

Cool, H.E.M. & Price, J., 1987a 'The Roman Glass, 92-9' *in* P. Ellis, Sea Mills, Bristol: The 1965-68 Excavations in the Roman town of Abonae. *Transactions of the Bristol & Gloucestershire Archaeological Society* 105, 15-108

Cool, H.E.M. & Price, J., 1995 *Roman vessel glass from excavations in Colchester, 1971-85*. Colchester Archaeological Reports 8

Cooper, L. 1996 A Roman cemetery in Newarke Street, Leicester. *TLAHS* 70, 1–90.

Cooper, N.J., 1999, The small finds, in Connor and Buckley*,* 239-282

Coward, J. & Speed, G. 2009 *Urban life in Leicester: An archaeological excavation at Freeschool Lane, Vol. 1: The site sequence.* Unpubl. ULAS Report 2009-140.

Crummy, N. 1979 A chronology of bone pins. *Britannia* 10, 157–63.

Crummy, N. 1983 *The Roman Small Finds from Excavations in Colchester 1971–9*. Colchester: Colchester Archaeological Report 2.

Cunliffe, B. W., 1968 *Fifth Report on the Excavations of the Romna Fort at Richborough, Kent*. Oxford: Society of Antiquaries of London Report 23.

Cunliffe, B.W., 1971 *Excavations at Fishbourne, 1961-1969*. Oxford: Society of Antiquaries of London Report 26-27

Cunliffe, B.W., 1975 *Excavations at Portchester Castle:vol. 1, Roman*. Oxford: Society of Antiquaries of London Report 32.

Dacos, N. 1969 *La decouverte de la Domus Aurea et la formation de grostesques a la Renaissance*, Studies of the Warburg Institute 31. London and Leiden, Brill.

Davey, N. 1972 ' The conservation of Romano-British painted plaster' *Britannia* 3, 251-68

Davey, N. & Ling, R., 1982 *Wall-Painting in Roman Britain*. London: Society for the Promotion of Roman Studies.

Davies, S. and Sawday, D., 1999, Post-Roman pottery and tile, *in* Connor and Buckley, 165-213.

Derrick, M., 2003 '5A Cank Street and 6-8 Silver Street (SK 587 045)' *in* R. Buckley & S. George, Archaeology in Leicestershire & Rutland 2002, *Transactions of the Leicestershire Archaeological and Historical Society* 77, 127

Derrick, M. 2005 *An archaeological evaluation of land at Highcross Street and Vaughan Way, Abbey Ward, Leicester*. Unpubl. ULAS Report 2005-180.

Derrick, M. 2009 The excavation of a Roman cemetery at 21–33 Newarke Street, Leicester. *TLAHS* 83, 63–102.

De Vos, M. 1968-9 Due monumenti di pittura post-pompeiana, *Bulletino della Commisione Archaeologica Comunale di Roma*, 149-72

Down, A., 1974, *Chichester Excavations* Vol. II, Chichester: Phillmore.

Down, A., 1981, *Chichester Excavations* Vol. V, Chichester: Phillmore

Drack, W., 1950 *Die Romische Wandmalerei der Schweiz.* Basel: Birkhäuser

Elia, O. 1957 *Pitture di Stabia*. Naples

Eristov, H. 1978 'A propos d'une peinture de Carmiano a l'Antiquarium de Castellammare di Stabia', *Latomus* 37, 625-33.

Felletti Maj, B.M. *1961 Le pitture delle Case delle Volte Dipinte e delle Pareti Gialle* (Monumenti della pittura antica scoperti in Italia III, Ostia I/II). Rome: Istituto Poligrafico dello Stato.

Feugere, M., 1985 *Les Fibules end gaule Meridionale dela Conquete a la fin du Ve siècle apres J-C*, Paris: Revue Archaeologique de Narbonnaise Supplement 12.

Finn, N. 1993 An archaeological evaluation at 71–95 Sanvey Gate, Leicester. *TLAHS* 67, 93–4

Finn, N. 2004a *The Origins of a Leicester Suburb: Roman, Anglo-Saxon, Medieval and Post-Medieval Occupation on Bonners Lane.* BAR British Series 372. Oxford: Archaeopress.

Fremersdorf, F., 1961 *Rvmfsches Geformtes Glas in Ifiiln.* Die Denkmaler des Romischen Koln VI: Koln.

Frere, S.S., 1972 *Verulamium Excavations Volume 1*. London: Society of Antiquaries of London Report 28.

Frere, S.S., 1984 *Verulamiun Excavations Volume III.* London: Society of Antiquaries of London Report 42.

Gardner, R., 2005 The Roman Cemetery at Clarence Street, Leicester *TLAHS* 79, 27-89.

Gettens, R.J., Feller, R.L. and Chase, W.T. 1972 *Studies in Conservation* 17, 45-69

Goethert-Polaschek, K., 1982 Neue Glasfunde aus Wederath-Belginum. *Trier Zeitschrift* 45, 279-88

Gould, J., 1964, Excavations at Wall (Staffordshire), 1961-3 on the Site of the early Roman Forts and of the Late Roman Defences, *Transactions of the Lichfield and South Staffordshire Archaeological and Historical Society* 5, 1-50.

Green, H.S., 1980 *The Flint Arrowheads of the British Isles: a Detailed Study of Material from England and Wales with comparanda from Scotland and Ireland, Pt. 1*, Oxford: BAR 75.

Griffiths, A.F., 1912 A Roman Glass Inkpot Found at Patcham, Sussex. *Sussex Archaeology* Co1I, LV, 63-73

Guido, M., 1978 *The Glass Beads of the Prehistoric and Roman Periods in Britain and Ireland*, London: Society of Antiquaries Research Report 35.

Harden, D.B., 1947 'The Glass' 287-307 *in* C.F.C. Hawkes & M.R. Hull (eds.). *Camulodunum: First Report on the Excavations at Colchester 1930-1939*. Oxford: University Press

Harden, D.B., 1958 'Four Roman Glasses from Hauxton Mill, Cambridge, 1870'. *Proc. Cambs. Ant. Soc.* LI, 12-6

Harden, D.B. & Price, J. 1971 'The Glass' 317-68 *in* B. Cunliffe. *Excavations at Fishbourne, 1961-1969. Volume II: The Finds*. London: Society of Antiquaries

Harden, D.B., Hellenkemper, H., Painter, K. & Whitehouse, D., 1987 *Glass of the Caesars*: Milan: Olivetti

Hartley, B.R., 1972, The Roman occuparion of Scotland: the evidence of the samian ware, *Britannia*, 3, 1-55.

Hassall, M.J. and Rhodes, J., 1975, Excavations at the New Market Hall, Gloucester. *Transactions of the Bristol and Gloucester Archaeological Society* 93, 15-100.

Hawkes, C.F.C. and Dunning, G., 1961, Soldiers and Settlers in Britain, Fourth to Fifth Century, with a catalogue of animal ornamented buckles and related belt fittings, *Medieval Archaeology*, 5, 1-70

Hawkes, C.F.C. and Hull, M.R., 1947 *Camulodunum*, Oxford: Society of Antiquaries Report 14.

Hebditch, M. & Mellor, J., 1973 The Forum and Basilica of Roman Leicester. *Britannia* 4, 1-83

Henderson, A.M., 1949, Small objects in metal, bone etc. *in* J.P. Bushe-Foxe, *Fourth Report on the Excavation of the Roman Fort at Richborough, Kent*. Oxford. Society of Antiquaries Report 16.

Henig, M. 1974 *A Corpus of Roman Engraved Gemstones from British Sites*. BAR British Series 8. Oxford 1st edition (2nd edition 1978)

Henig, M. 1988 'Gemstones from the outfall drain' in B.W. Cunliffe, *The Temple of Sulis Minerva at Bath, Volume 2: The Finds from the Sacred Spring*. Oxford University Committee for Archaeology 16. Oxford.

Hermet, F., 1934 *La Graufesenque (Condatomago),* Paris.

Holden, E.W. and Bradley, R.J. 1975 'A Late Neolithic Site at Rackham' *Sussex Archaeological Collections* 113.

Hull, M.R., 1942, An Early Claudian Burial found at Colchester, *Antiquaries Journal*, 22, 59-65.

Isings, C., 1957 *Roman Glass from Dated Finds*. Groningen: Walters

Jessup, R., 1950, *Anglo-Saxon Jewellery*, London: Faber and Faber

Kelly, J.H. and Greaves, S.J., 1974, *The excavation of a kiln base in Old Hall Street, Hanley, Stoke-on-Trent, Staffs*., City of Stoke-on-Trent Museum Archaeological Report 6.

Kenyon, K.M., 1948 *Excavations at the Jewry Wall Site, Leicester*. London: Society of Antiquaries Report 15

Kilmurray, K., 1980 The Pottery Industry of Stamford, Lincolnshire, c. AD850-1250, Oxford: BAR 84

Kipling, R. 2010 'A medieval undercroft, tenements and associated buildings at 9 St Nicholas Place and related sites, Leicester'. *TLAHS* 84, 117–50.

Knorr, R., 1952, *Terra Sigillata Gefasse des ersten Jahrhunderts mit Topfernamen*, Stuttgart

Koch, G. and H., Sichtermann*, Ramische Sarkoplaage* 129; Fig. 137

Lambrechts, P., 1942 *Contributions a l'étude des divinités celtiques,* 81-2. Bruges: De Tempel

Lawson, A.J., 1976, Shale and jet objects from Silchester, *Archaeologia* 105, 241-275.

Ling, R. 1984 'Two Silchester wall-decorations recovered', *Antiquaries Journal* 64, 280-97

Ling, R. and Ling, L., 1979 Excavations at Loughor, Glamorgan: buildings in the western part of the fort, *Arch. Cambrensis* 78, 13-39.

Liversidge, J., 1962 *Cirencester: Romano-British Wall Paintings from the Dyer Court Excavations, 1959*. TBGAS: 81

Liversidge, J., 1968 *Britain in the Roman Empire*. London: Routledge and Kegan Paul

Liversidge, J., 1969 'Furniture and Interior Decoration' *in* Rivet, A.L.F (ed.), *The Roman Villa in Britain*. London: Routledge and Kegan Paul

Liversidge, J., 1976 'The Wall Paintings' *in* Stead, I. (ed.), *Winterton Roman Villa*

Liversidge, J., 1977 'Recent Developments in Romano-British Wall Painting', *in* J. Munby and M. Henig (eds.), *Roman Life and Art in Britain*. Oxford: British Archaeological Reports 41

Liversidge, J., 1982 *Roman Provincial Wall Paintings of the Roman Empire.* British Archaeological Reports International Series 140

Long, C., 1980 *Romano-British Painted Wall Plaster from Catterick*. Unpublished thesis for Diploma in Post-Excavation Studies, Leicester University

Lowther, A.W.G., 1948a *A Study of the Patterns on Roman Flue-Tiles and their Distribution.* Research Papers of the Surrey Archaeological Society No. 1

Lowther, A.W.G., 1948b 'Relief Patterned Flue-Tiles from the Forum site' *in* K.M. Kenyon, *Excavations* at the *Jewry Wall Site, Leicester,* 275-78. Reports of the Research Committee of the Society of Antiquaries of London, No. XV (Oxford)

Lucas, J., 1984 'Tripontium, Third Interim Report'. Tr*ansactions of the Birmingham and Warwickshire Archaeological Society* 91 (1981), 25-54

Lucas, J. & Buckley, R. 2007 *Excavations at Little Lane and St Peter's Lane, Leicester (Shires) 1988–9*. Unpubl. ULAS Report 2007-147.

MacGregor, A., 1976 *Finds from a Roman Sewer System and an Adjacent Building in Church Street.* The Archaeology of York Volume 17: The Small Finds. Fascicule 1. London: Council for British Archaeology

Maaskant-Kliebrink, M. 1978, *Catalogue of the Engraved Gems in the Royal Coin Cabinet, the Hague: the Greek, Etruscan and Roman Collections*. The Hague

Mackreth, D.F., 1999, The brooches, *in* Connor and Buckley, 246-253

MacRobert, E., 1983 *Pottery from Blue Boar Lane, Leicester.* Unpublished thesis for Diploma in Post-Excavation Studies, Leicester University

MacRobert, E. 1987 The Roman Pottery (excluding samian) *in* Buckley and Lucas, 65-75.

May, T., 1930 *Catalogue of the Roman Pottery in the Colchester and Essex Museum*. Cambridge: Cambridge University Press

Marshall, F.H. 1907 *Catalogue of Finger Rings: Greek, Etruscan, and Roman in the Department of Antiquities, British Museum*. London

Mellor, J.E. 1976 Roman Leicester. *In* C.D.B. Ellis *History in Leicester.* 13-22. Leicester: Leicester City Council.

Mellor, J.E. and Lucas, J.N. 1978-9 'Norfolk Street Roman Villa' *in* A. McWhirr (ed.) 'Archaeology in Leicestershire and Rutland 1979' *Trans. Leicestershire Archaeol and Hist*. Soc 54, 68-70 (67-81)

Mielsch, H. 1981 Funde und Forschungen zur Wandmalerei der Prinzipatszeit von 1945 bos 1975, mit einen Nachtrag 1980, in H. Temporini and W Haase eds., *Aufsteig und Niedergang der romischen Welt* 2.12.2: 157-264. Berlin and New York, de Gruyter.

Miles, D., 1986 *Archaeoology at Barton Court Farm, Abingdon, Oxon*, London: CBA report 50.

Milne, J.S. 1970 *Surgical Instruments in Greek and Roman Times,* Chicago: Ares Publishers.

Neal, D.S., 1974 *Excavations of the Roman Villa at Gadebridge Park, Hemel Hempstead 1963-68*, London: Society of Antiquaries Report 31.

Nicholls, R.V., 1979 A Roman Couch in Cambridge, *Archaeologia* 109, 1-32

Noll, W., Bom, L. & Holm, R., 1973 *Chemie Phasenbestand und Fertigung – stechnik von Wandmalerein des Romischen Köln, Kölner Jahrbuch für Vor – und Fruhgeschicte* XIII

Noll, W., Bom, L. & Holm, R., 1975 'Die Romische Wandmalereien der Kölner Domgrabung von 1969' *in*: *Naturwissenschaft licher Sicht*, Linfert

Oakley, G.E., 1979, The other finds, in *St Peter's Street Excavations 1973-76*, Northampton: Northamprton Development Corporation.

Oliver, A., 1984 'Early Roman Faceted Glass'. *Journal of Glass Studies* 26, 35-58

Oswald, F. and Pryce, T Davies, 1920, *An introduction to the study of terra sigillata*, London

Palmer, W.C. and Hills, G.M., 1871, On a series of antiquities collected at Ariconium, near Ross, Herefordshire, *Journal of the British Archaeological Association* 72, 203-218.

Partridge, C., 1981, *Skeleton Green: a Late Iron Age and Romano-British Site*, London: Britannia Monograph.

Payne, G., 1877 Roman Interment Discovered at Sittingbourne. *Arch Cant.* XI, 47-8

Peers, C. and Raleigh-Radford, C.A., 1943, The Saxon Monastery at Whitby, *Archaeologia* 92, 27-88

Perring, D., 2002 *The Roman House in Britain* London and New York: Routledge

Peters, W.J.T., 1965-6 *Mural Painting fragments found in the Roman Castra at Nijmegen.* BROB 15-16

Peters, W.J.T., 1977 'La composizione delle pareti dipinte nella Casa dei Vetti a Pompei' *Mededelingen van het Nederlands Instituut te Rome* 39, 95-128.

Peter, W.J.T, 1982 'La composizione delle pitture parietali di IV stile a Roma e in Campania' in *La regione sotterrata dal Vesuvio. Sudi e prospettive* (Atti del convegno internazionale 11-15 novembre 1979), 635-59. Naples, Universita degli Studi.

Peters, W.J.T., 1979 *Mural Painting Fragments found in the Legionary Fortress and the Canabae Legionsis at Nijmegen.* BROB 29

Philp, B., 1981 *The excavation of the Roman fort of the Classis Britannica at Dover, 1970-1977*, Dover: Kent Archaeological Rescue Unit.

Pirling, R., 1974 *Das Römisch-Frankische Gräberfeld von Krefeld Gellep 1960-63.* G.D.V. Serie B Band 8: Berlin

Pliny, *Natural History*, Books 33-35. London: Loeb

Pollard, R., 1994 Iron Age and Roman pottery, *in* Clay and Pollard, 51-114

Potter, T.W. and Potter, C.F., 1982, *A Romano-British Village at Granford, March, Cambridgeshire*, London: British Museum Occasional Paper 35

Price, J., 1985 'The Roman Glass, 305-12', *in* F. Pitts & J.K. St. Joseph, *Inchtuthil: The Roman Legionary Fortress Excavations 1952-65.* Britannia Monograph Series No. 6: London

Price, J., 1987a 'The Roman Glass, 71-6', *in* S.S. Frere, Brandon Camp, Herefordshire. *Britannia* XVIII, 49-92

Price, J., 1987b 'Glass from Felmongers, Harlow in Essex: A Dated Deposit of Vessel Glass found in an Antonine Pit', 185-206. *Annales du 10e Congès de I'Association Internationale pour 1'Histoire du Verre:* Amsterdam

Price, J. & Cool, H.E.M 2007 'The Glass' *in* D. Miles, S. Palmer, A. Smith and G Perpetua Jones. *Iron Age and Roman Settlement in the Upper Thames Valley: Excavations at Claydon Pike and other Sites within the Cotswold Water Park, Gloucestershire* Thames Valley landscape Monograph 26. Oxford: Oxford University Scholl of Archaeology.

Pryor, F.M.M. 1978 *Excavation at Fengate, Peterborough, England: the Second Report*. Royal Ontraio Museum Monograph 5

Pryor, F.M.M. 1980 *Excavation at Fengate, Peterborough, England: the Third Report*. Royal Ontraio Museum Monograph 6 and Northamptonshire Archaeological Society Monograph 1.

RCHM London 1928 Cremtion from Bishopsgate, London.

Rhodes, M., 1980, Leather footwear, in Jones, D.M. Excavations at Billingsgate Buildings 'Triangle', Lower Thames Street 1974, *London and Middlesex Archaeological Society* Paper 4, 99-128.

Richardson, L. 1955 *Pompeii: the Casa dei Dioscuri and its Painters Memoirs of the American Academy in Rome 23*). Rome.

Richmond, I.A., 1925, *Huddersfield in Roman Times*, The Tolston Memorial Publications Handbook 4.

Richmond, I.A. 1959 'Roman Britain in 1958' Journal of Roman Studies 49, 102-39.

Robertson, A. S., 1975. *Birrens (Blatobulgium)* Glasgow: Constable

Roes, A., 1963 *Bone and Antler Objects from the Frisian Terp-Mounds*, Haarlem: H D Tjeenk Willink and Zoon NV.

Rogers, G., 1974, *Poteries sigillees de la Gaule Centrale. I. Les motifs non figures*, 28th supplement to *Gallia,* Paris

Rogerson, A. and Dallas, C., 1984, *Excavations at Thetford, 1948-9 and 1973-80*, East Anglian Archaeology 22, Chelmsford.

Stead, I.M., 1976 *Excavations at Winterton Roman Villa, and other Roman sites in north Lincolnshire,* 1958-1969. London: Dept. of the Environment Archaeol. Rep. 9, London.

Santa Maria Scrinari, V. 1965 'Per la storia e la topografica del Laterano', *Bollettino d'arte* 50, 38-44.

Simpson, C.J., 1976, Belt buckles and strap ends of the later Roman Empire: a preliminary survey of several new groups, *Britannia* 7, 192-223.

Stanfield, J. and Simpson, G., 1958, *Central Gaulish Potters*. Oxford

Stead, I.M., 1976, *Excavations at Winterton Roman Villa, and other Roman Sites in North Lincolnshire, 1958-1969*, London: DoE Report 9.

Stead, I.M and Rigby, V., 1986 *Baldock: The Excavation of a Roman and pre-Roman Settlement, 1968-72*, London: Britannia Monograph 7.

Stevenson, R.B.K., 1955, Pins and the Chronology of Brochs, *Proceedings of the Prehistoric Society* 21, 282-294.

Stodulski, L., Farrell, E. and Newman, R., 1984 *Studies in Conservation* 29, 148

Strocka, V.M. 1984 Casa del Principe di Napoli (VI 15, 7.8) (hauser in Pompeii 1). Tubingen, Wasmuth.

Swinkels, L.J.F. & Moormann, E.M., 1979 *Wall Painting Fragments from Roman Villas at Stein and Ravensbosch*. BROB 29

Thorpe, W.A., 1935 *English Glass*. London: Black

Toynbee, J.M.C., 1962 *Art in Roman Britain.* London: Phaidon Press.

Toynbee, J.M.C., 1964 *Art in Britain under the Romans*. Oxford: Clarendon Press

Ulrich, R.B., 2007 *Roman Woodworking* New Haven and London: Yale University Press

Vitruvius M.P., *On Architecture.* Books 2 and 7. London: Loeb

Volbach, F.W., 1961 *Early Christian Art*. London: Thames and Hudson

Wacher, J., 1959 'Roman Britain in 1958: Leicester'. *Journal of Roman Studies* 49

Wacher, J.S., 1975 *The Towns of Roman Britain*. London: Batsford

Wainwright, G.J. 1979 *Mount Pleasant, Dorset: excavations 1970-1971*. Society of Aniquaries Research Report 37. London.

Wainwright, G.J. and Longworth, I.H. 1971 *Durrington Walls: excavations 1966-1968*. Society of Aniquaries Research Report 29. London.

Walters, H.B. 1926 *Catalogue of engraved Gems and Cameos: Greek, Etruscan, and Roman in the British Museum*. London

Ward, J., 1911, *The Roman Era in Britain*, London: Methuen

Ward-Perkins, J.B., 1938 *The Sculpture of Visigothic France*. Oxford: Society of Antiquaries

Wedlake, W.J., 1982, *The Excavation of the Shrine of Apollo at Nettleton, Wilts., 1956-71*. London: Society of Antiquaries Report 40.

Welker, E., 1974 *Die Römischen GIäser von N'ida-Reddernhejm.* Schriften des Frankfurter Museums fur Vor- und Frühgeschichte III: Frankfurt am Main

Westell, W.P., 1931 A Romano-British Cemetery at Baldock, Hertfordshire. *Archaeological Journal* 88, 247-301

Wheeler, R.E.M., 1930, *London in Roman Times*, London: London Museum Catalogue 3.

Wheeler, R.E.M. and Wheeler, T.V., 1928, The Roman Amphitheatre at Caerleon, Monmouthshire, *Archaeologia* 78, 111-218

Wheeler, R.E.M. and Wheeler, T.V., 1932 *Report on the Prehistoric, Roman, and post-Roman Site at Lydney Park, Gloucestershire*, Oxford: Society of Antiquaries Report 9

Wilson, M.G., 1968, Other objects of bronze, iron, silver, lead, bone and stone, *in* Culnliffe, 93-110.

Woodfield, P., 1978 'Roman architectural masonry from Northamptonshire', *Northamptonshire Archaeology* 13, 69, 82-3, no.18

Woodfield, P., 1980 Roman Buildings at Ringstead, Northants. *Northamptonshire Archaeology* 15, 1980, 33

Woodland , R. 1981 Medieval Pottery in J.E, Mellor and T. Pearce, *The Austin Friars, Leicester*, 81-129. London: CBA Report 35

Wright, R.P., 1959 'Roman Britain in 1958: I: Sites Explored', *Journal of Roman Studies*, 49, 113-115

Wright R.P., 1962 'Inscriptions and graffiti from Roman Britain: Leicester', *Journal of Roman Studies*, 52, 196-7

Wright, R.P. 1963 'Inscriptions and Graffiti from Roman Britain: Leicester', *Journal of Roman Studies* 53

Zienkiewicz, J.D. 1986 *The Legionary Fortress Baths at Caerleon 2: the Finds*. Cardiff.