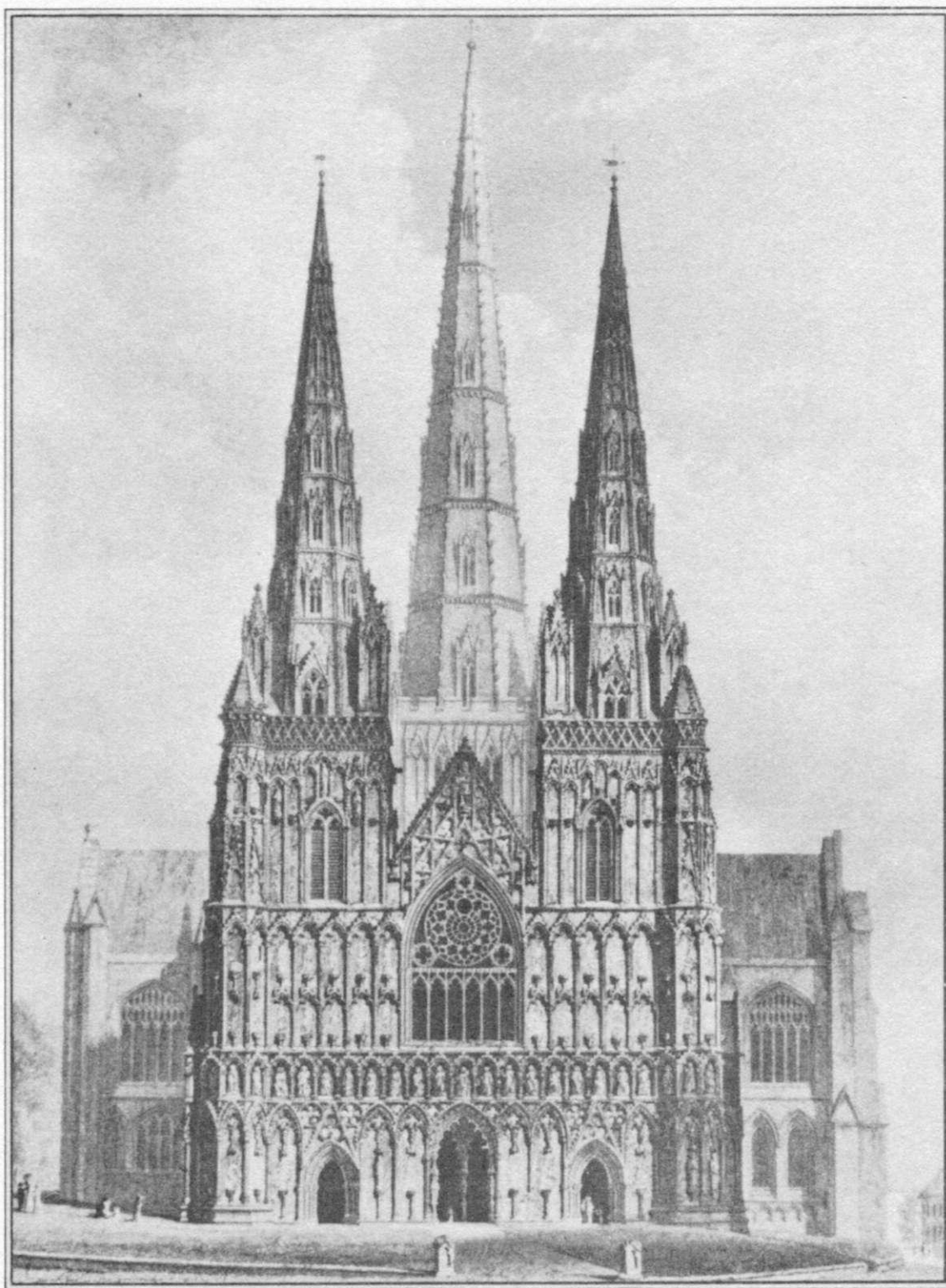




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EXCAVATIONS AT WALL (STAFFORDSHIRE) BY E. GREENFIELD IN 1962 AND 1964 (WALL EXCAVATION REPORT no. 15)

ALEX JONES

with contributions by Lynne Bevan, R. A. G. Carson, Sally Cottam, Brenda Dickinson,
Jeremy Evans, Ruth Leary, Donald Mackreth, and Jennifer Price, and illustrations by Mark
Breedon and Nigel Dodds

INTRODUCTION

This report describes the results of excavations at Wall directed by Ernest Greenfield on behalf of the Ministry of Public Buildings and Works in 1962 and 1964. It was commissioned by English Heritage as part of its Backlog Publication Programme.

The excavations were undertaken in advance of the construction of a bypass to the south-east of Wall village, and the proposed widening of Ashcroft Lane (fig. 1A). The fieldwork was intended to examine the potential of the area of the bypass and of the proposed road widening for evidence of Roman military or civilian activity, and the results of a watching-brief undertaken during road construction were published in 1968 (Oswald 1968).

Greenfield's excavations of 1962 and 1964 were located in fields to the south-east of the modern village of Wall (figs. 1A-B), that is, south-east of the main focus of the Roman military and civilian complex at Wall, itself located on Watling Street midway between Mancetter to the east and Penkridge to the west (Welfare and Swan 1995, fig. 145; Margary 1973, 289). A second Roman road, Ryknild Street (Margary 1973, 286), leading from Metchley fort in Birmingham (Jones forthcoming) to the military complex at Derby, crosses Watling Street to the west of Greenfield's Site C (fig. 1B).

Roman military activity at Wall is attested by air photographic and excavation evidence. A possible Neronian vexillation fortress (Lyon and Gould 1964; Round 1983) was succeeded by an early Flavian enclosure, in turn followed by a Flavian triple-ditched enclosure (Round 1983), which may have continued in use into the 2nd century. Gould (1964, 7) has also suggested the existence of a fourth fort, based on the identification of a granary of possible military type. Two further crop-marked features, recently identified (Welfare and Swan 1995, fig. 145, camps 1 (not illustrated) and 2; fig. 1B), could also be military enclosures of 1st-century date.

Although a civilian settlement was mainly concentrated along Watling Street (e.g. Gould 1964), it extended over 1 km to the east of the centre of the present settlement (Oswald 1968). Traces of a vestigial street pattern have been recorded both to the north and south of Watling Street, following different alignments. The main feature of later Roman Wall is the triple-ditched enclosure straddling Watling Street (Gould 1964), interpreted as one of the pattern of *burgi* possibly established by Constantius Chlorus in AD 296. Also notable is the relative absence of other evidence of 4th-century activity (Esmonde Cleary 1987, 171).

In 1993 Birmingham University Field Archaeology Unit was commissioned by English Heritage to undertake an assessment of the surviving records of Greenfield's 1962 and 1964 excavations at Wall, and to prepare a proposal to bring the results to publication (Ferris and Evans 1993).

The purpose of Greenfield's investigations was to provide information concerning the extent, layout, chronology, and sequence of Roman civilian settlement adjoining Watling Street and Ryknild Street (figs. 1A-B), and also to investigate the potential of the area for evidence of early military activity.

Initial fieldwork in all of the four Areas investigated (1-4) comprised the excavation of test-pits, each measuring approximately 0.6m square, arranged in a regular grid-pattern at 6m intervals (except in the case of Area 3, where the interval was approximately 14m). Each test-pit was hand-excavated through the topsoil to expose the upper horizon of the natural subsoil. The test-pitting in Area 1 during 1962 was followed in the same year by the excavation of three trenches, dug to test the sequence of deposits previously recorded. Area 1 was further investigated selectively in 1964 by means of two area excavations (Sites B and D). Test-pitting in Area 4 (Site C) in 1964 was followed by the excavation of Trenches A-K, dug to achieve a more detailed understanding of the structures and deposits identified in the test-pits. No records of excavation at Area K survive. No archaeology

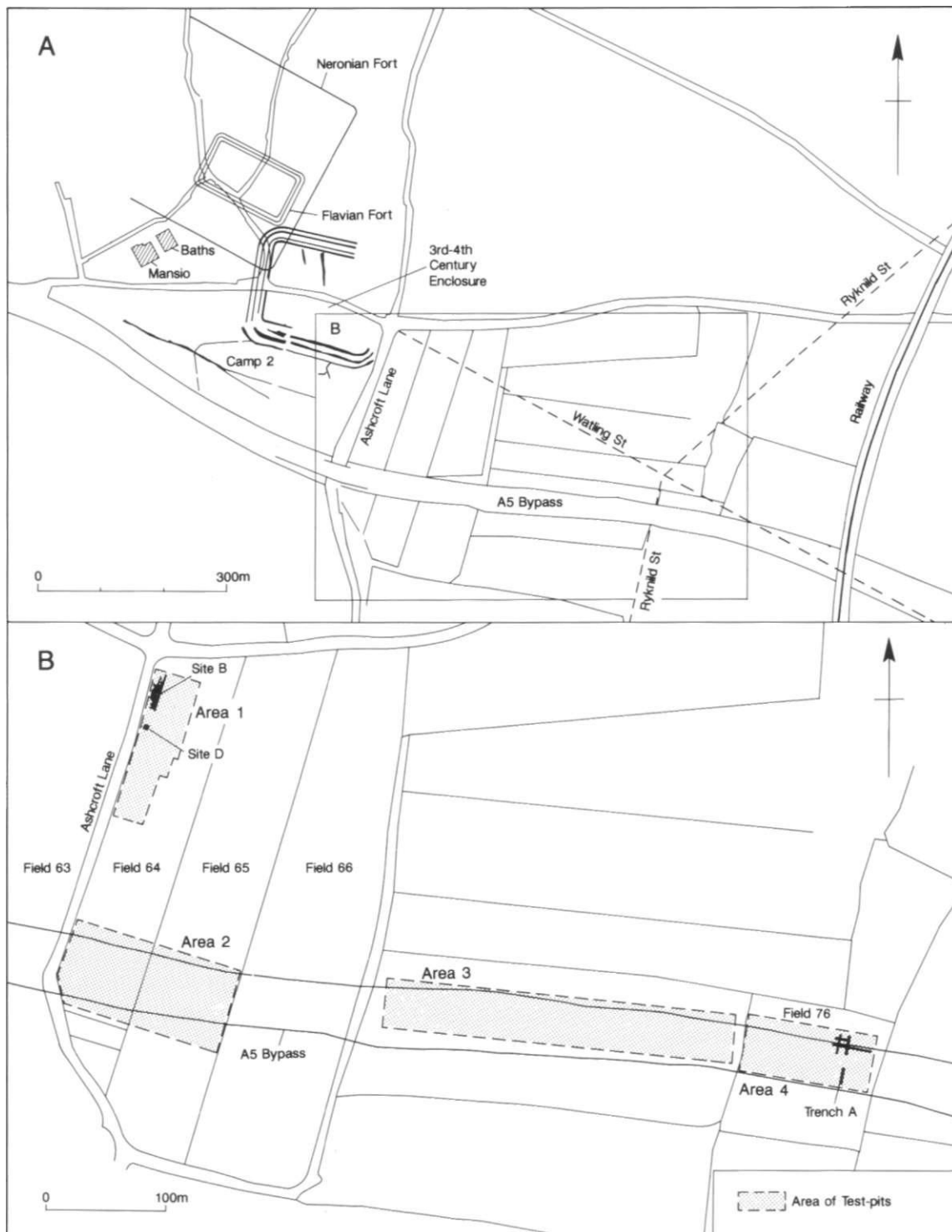


Fig. 1: Location of site

A: the main Roman sites (after Welfare and Swan 1995)

B: areas investigated in 1962 and 1964

was encountered in Area 2 (211 test-pits) or Area 3 (76 test-pits), and those areas were not further investigated.

Inked plans and sections were prepared for the 1962 excavations, and Greenfield had written three short interim reports (Greenfield 1962, 1964, and 1964a). Limited post-excavation analysis of some artifact classes was undertaken soon after completion of the excavations, and some finds illustrations were prepared for publication. No further analysis or reporting, however, has been undertaken prior to the present study.

The primary stratigraphic records comprise the site notebooks, which contain descriptions of the features and contexts excavated, scaled drawn plans and sections (all reproduced in this report) prepared using imperial measurements, and monochrome photographs. Many of the finds had been lost, and the finds reports published here are based on a study of the drawn and written records of the missing items, where available.

In the following account, the results of the two seasons of work have been conflated, whenever appropriate. The numbering sequence of the features devised by the excavator has been retained, but all contexts have been re-numbered in a new sequence, as have previously un-numbered contexts. A concordance of old and new context numbers may be found in the archive.

The archive is deposited with the English Heritage Store at Atcham, Shrewsbury.

THE RESULTS

PHASING

Five phases have been defined according to the principles of archaeological stratigraphy.

The phased and dated sequence in Area 1 (Sites B and D) is as follows:

Phase 1: Timber structures and occupation deposits (later 1st-early 2nd century AD: Site B).

Phase 2: Levelling-up deposit (mid-late 2nd century AD: Sites B and D)

Phase 3: Layout of stone surfaces (mid-late 2nd century AD: Sites B and D).

Phase 4: Stone-footed and timber-framed structures post-dating the stone surfaces (early 3rd century AD).

Phase 5: Excavation of ditch (4th century)

The phasing in Area 4 (Site C) is as follows:

Phase 2/3: Early civilian activity (early-mid 2nd century).

Phase 3: Yard surface and ditched boundaries (mid-late 2nd century).

Phase 3/4: Later occupation and activity (late 2nd-early 3rd century).

The coarse pottery from Site C could not be found and so the phasing is based upon the recorded stratigraphy and the limited dating evidence provided by the mortaria, samian, and coins. Consequently the unification of the phasing from Area 4 with the more comprehensively dated phasing at Area 1 is necessarily approximate, and for that reason the structural sequences from those areas will be discussed separately.

AREA 1: SITES B AND D

Phase 1 (Site B) description

Structures 1-3

This phase, the earliest of Roman activity, is represented by the excavation of beam-slots, post-holes, and pits into the buff-brown sand-gravel natural subsoil (1105). Parts of at least three rectilinear timber structures (Structures 1-3), defined by shallow beam-slots, were identified by Greenfield. These structures followed a similar, approximately north-south, alignment. However, no complete ground plans could be recorded within the limited areas investigated. The evidence for these structures is described and tabulated (table 1). The remaining features are described in summary.

The earliest identifiable structure, Structure 1 (fig. 2), was represented by two beam slots (F101, F128), cut into the subsoil (1105) and forming a right-angled intersection. Feature F101 cut features F128 and F149, and feature F128 cut pit F194. Feature F101 was U-shaped in profile and measured 0.3m in depth, while feature F128 was flat-based and measured a maximum of 0.1m in depth. Beam-slot F128 contained a number of small post-holes (F130, F113, F114, F152, F164; fig. 2). The beam-slots were backfilled with brown sand containing burnt clay (1135 in F128) and brown silt (1108 in F101).

The eastern end of Structure 2 (fig. 2) was recorded within the excavated area. The full length of its eastern side (F134) and the eastern ends of its northern (F182) and southern (F151) sides were defined by beam-slots cut into the subsoil (1105). Beam-slot F151 was also cut into Structure 1 beam-slot F101. Part of the northern side of this structure was defined by a beam-slot (F182), and part by

TABLE 1: Details of Main Structures. Area 1, Site B

<i>No/side.</i>	<i>Beam-slots</i>	<i>Alignment</i>	<i>Associated post-holes</i>
PHASE 1			
<u>Structure 1</u>			
Partition	F101	E-W	
East	F128	N-S	F129, F130, F113, F114, F152, F164
<u>Structure 2</u>			
North	F182/F108	E-W	F118
East	F134	N-S	
South	F151	E-W	F150, F181, F180, F183
<u>Structure 3</u>			
North	F192	E-W	
West	F110	N-S	F184, F187, F188, F189, F190
South	F175/F183	E-W	F148
PHASE 4			
<u>Structure 4</u>			
West	F172	N-S	
<u>Structure 5a</u>			
West	-	N-S	F120, F121, F122, F123.
South	F171	E-W	F102 ?F103, F111, F112
East	-	N-S	F102, F126, F125.
<u>Structure 5b</u>			
West	-	N-S	F109
South	-	E-W	F109, F135
East	-	N-S	F135, F143
North	-	E-W	F143
<u>Structure 5c</u>			
West	-	N-S	F137, F139, F141
South	-	E-W	F137, F191
East	-	N-S	F191, F195
North	-	E-W	F195, F141

a line of five intercutting post-holes (F108), which included circular, oval, and irregularly-shaped examples, and continued the east-west alignment of the beam-slot. Beam-slot F151 contained four post-holes (F150, F180, F181, F183; fig. 2). Despite disturbance from a later building (Structure 3), a possible entry-gap, measuring approximately 1m in width, was recorded in the eastern side of this structure. Two of the corner posts of Structure 2 were recorded at its north-eastern (F118) and south-eastern (F150) corners.

A 1m wide latrine (F136), filled with green stained silt (1143), was located within Structure 2. An oven (F107) was cut into the backfills of latrine F136. In plan, the oven measured 0.6m by 0.9m. Its basal lining comprised a bright buff clay, with its innermost surface burnt *in situ* to a bright red colour (1114/1), sealed by further clay deposits (1114/2).

The extreme western end of Structure 3 (fig. 2), the latest Phase 1 timber-framed building, was recorded within the area excavated. Its western side and the extreme western ends of its northern and southern sides were defined by beam-slots (F110, F192, F175 respectively), cut into the subsoil (1105). Feature F110 was also cut into the extreme north-east corner of Structure 2; feature F175 was cut into post-hole F148, and feature F192 was cut into pit F147.

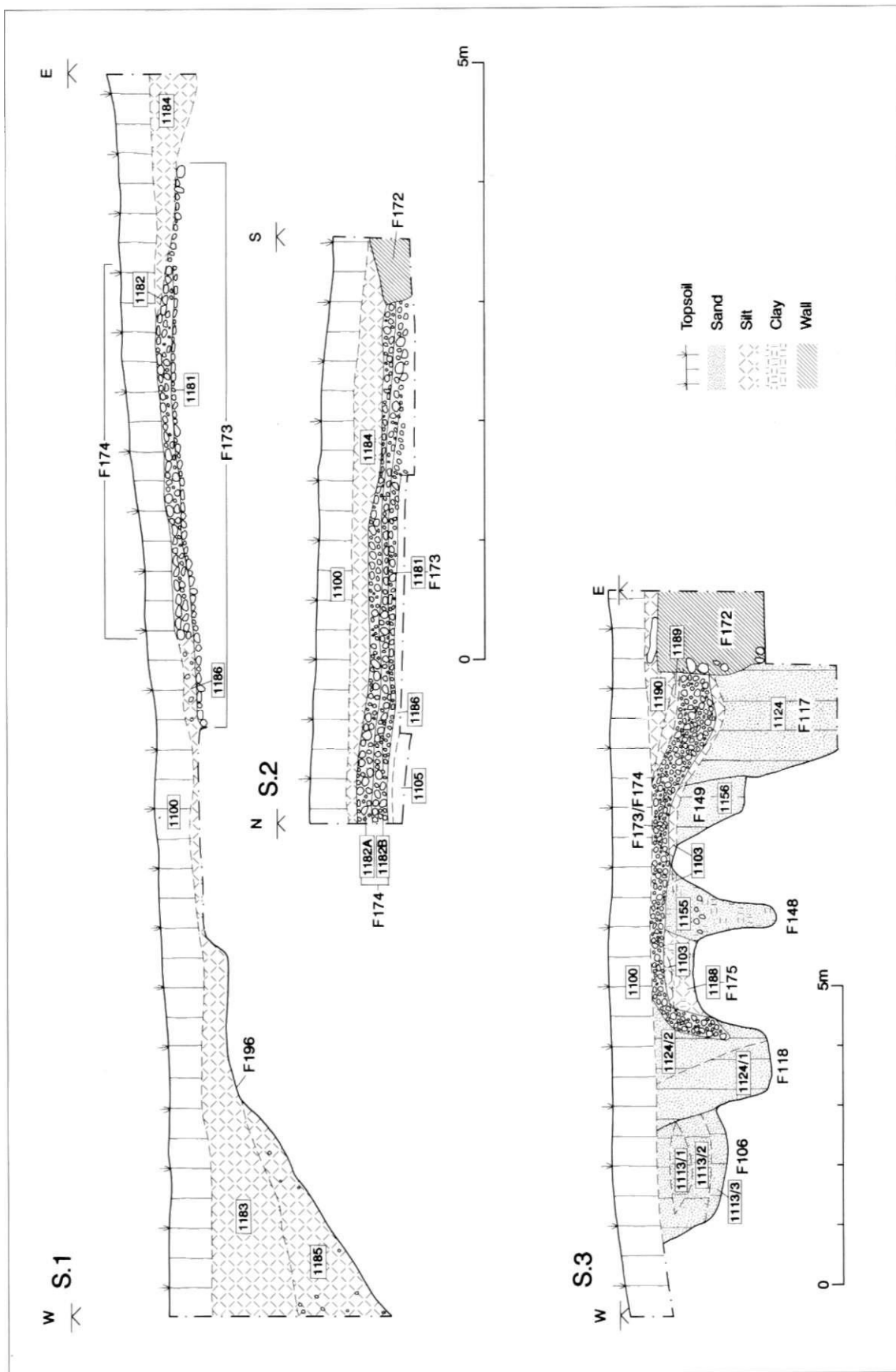


Fig. 3: Area 1, Site B: sections

Feature F110 was vertically-sided with a flat base, and measured approximately 5.7m in length and 0.18m in width and depth. It contained a number of post-holes, probably dug to retain timber uprights positioned at the ends of the beam-slot (F119, F138) and also along its length (F184, F187-F190; fig. 2). Beam-slot F110 was backfilled with a dark red clay (1117). No associated post-holes were recorded within the northern and southern beam-slots of this structure.

A group of small stakeholes (F16, F146, F154-6, F159-61, F185-6; fig. 2), dug into the subsoil (1105) and into infilled feature F149, was located within the interior of Structure 3 and may have been associated with this building. The apparent north-south alignment of the stakehole group (except feature F16) could indicate that the stakeholes may have defined a partition or fence, respecting the alignment of beam-slot F110. A possible latrine-pit (F127), which measured 0.7m by 1.3m in plan and was located 1m to the west of beam-slot F110, could also have been associated with Structure 3.

Other features

A further beam-slot (F149; figs. 2 and 3) was dug into the subsoil (1105), following the predominant north-south alignment. It was cut by a slightly curving beam-slot (F168), which was dug on an east-west alignment and which appeared to terminate to the west at feature F106, which was aligned north-south. The remaining Phase 1 features (fig. 2) comprised a curvilinear slot (F104), a ditch (F133: only partly defined), and four pits (F147, F105, F194, F131/F165). Feature F131/F165 was a possible quarry-pit; ditch F133 was cut by Structure 3 and by a shallow slot (F152).

Phase 1 (Site B) interpretation

Structures 1-3 and feature F149 formed parts of timber-framed buildings located within the interior of a fort. Although the bounds of this fort could not be identified by excavation, it is possible that part of its boundary could have been defined by a cropmarked ditch (Camp 2, fig. 1A), or by the south-west corner of Field 66 (fig. 1A).

Feature F128 formed the eastern external wall of Structure 1, and contained traces of timber uprights jointed to its ground-beam. Beam-slot F101, interpreted as a partition, contained no evidence of associated timber uprights, although it was cut more deeply than external wall F128. There was no trace of the northern or western sides of this building. Although it is impossible to determine the function of this structure, it could have formed part of a barrack-block, or a store. A Flavian barrack-block excavated at Wall by Round (1983, fig. 3) measured 4m in width.

The association of Structure 2 with a latrine (F136) and a hearth (F107) suggests this building also formed part of a barrack-block, measuring approximately 5.5m in width. However, no trace was found of any internal sub-divisions. The line of post-holes (F108) may have been created by the repeated re-positioning of a doorway, defined by two timber uprights.

Structure 3 may be interpreted as the west end of a barrack-block, measuring 11m in width, its long axis aligned approximately east-west, although again, there was no evidence of internal sub-division (e.g. Johnson 1983, fig. 129). It is possible that features F149, F168, and F106 may have formed part of the same structure. Features F149 and F106 could have defined two outer walls and beam-slot F168 an internal partition. As so defined, this building would have pre-dated Structure 1.

Structure 1 (F101) contained Flavian-Trajanic pottery, and samian and mortaria fragments dating to the range AD 70-80 and to the 2nd century respectively. Structure 2 contained a fragment of stamped samian ware (F108), dating between AD 85-110, and late 1st- to early 2nd-century pottery (F136). Structure 3 contained Flavian-Trajanic pottery (F110 and F119), and a single sherd of mortarium, of mid 2nd-century date (F110).

Feature F149 contained Neronian-Flavian pottery. Feature F131/F165 contained an iron Colchester brooch dating to the early 1st century, a brooch dating in the range AD 75-150/175, and two coins of Domitian, one dated to AD 87. A coin of Domitian (dated to AD 86) was also found in feature F150. The pottery from features F104 and F127 was dated late 1st to 2nd century. Feature F101 contained pottery of late 1st- to early 2nd-century date. Features F104 and F105 contained pottery of Antonine date. Feature F131/F165 contained a jar of 2nd-century, or later, date.

Phase 2 (Site B) description and interpretation

At Site B, Phase 2 is defined by the deposition of a largely homogenous layer of black, charcoal-

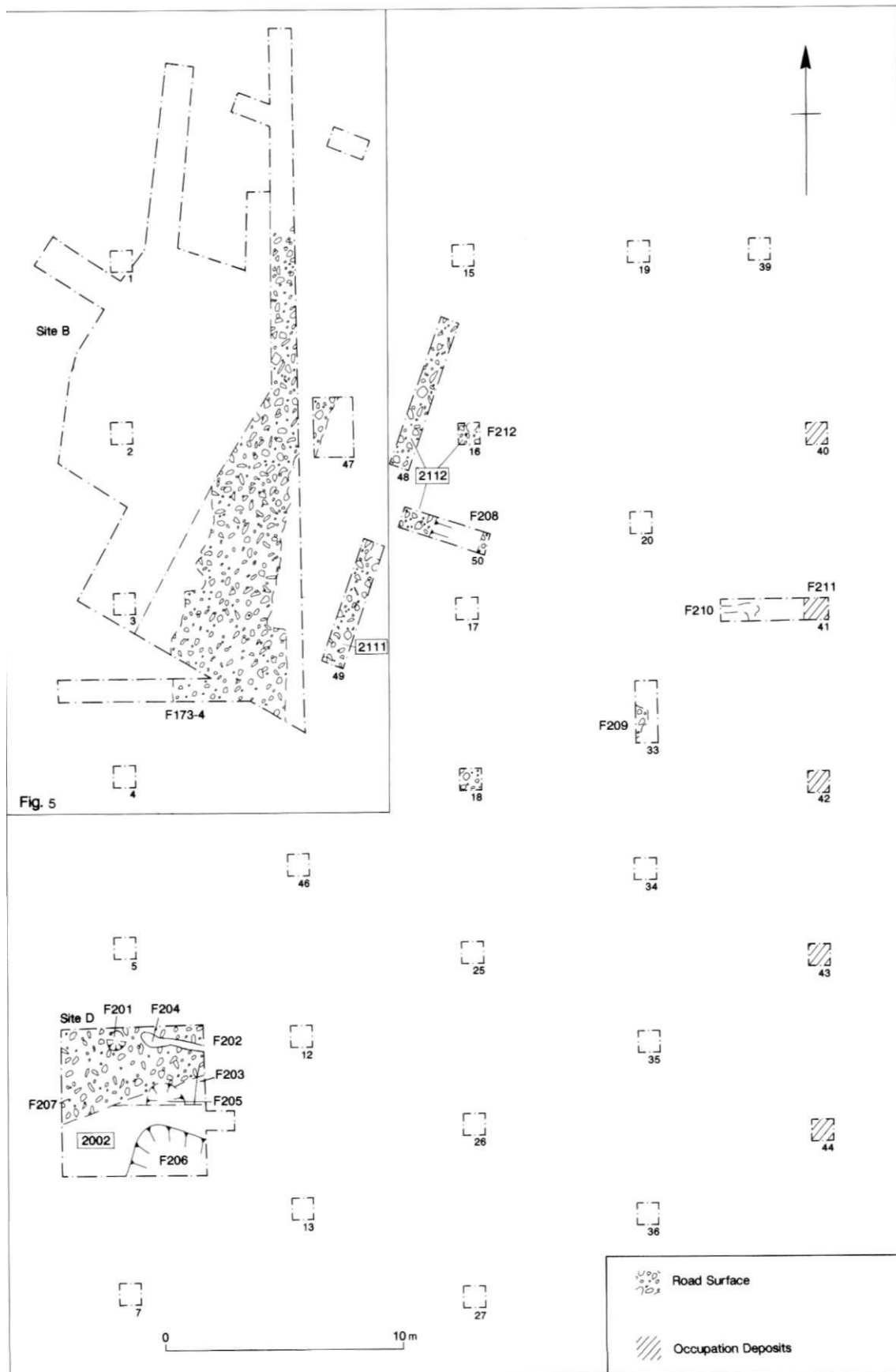


Fig. 4: Area 1, Site B: phase 2 and unphased test-pits; Site D: all phases

stained silt (1103; fig. 3), overlying the subsoil (1105) and both infilling and sealing the Phase 1 features. The material may have been imported onto site as a levelling-up deposit.

This layer contained pottery of Hadrianic-Antonine date, and Black Burnished ware of 2nd-century date, the Antonine material being concentrated in the north-east extension of Site B. Some Neronian and Flavian residual material was also present. A brooch dated in the range AD 75-175 was also found in layer 1103/1. It should be noted that finds from the Phase 1 feature fills, and from the Phase 2 deposits, were not always separated during excavation.

Perhaps the most important finds from the Phase 2 deposits are fragments of glass moiles, pincer trail, and melted glass blobs which indicate that glass-blowing was one of the activities undertaken either on site or nearby. No particular concentration of this glass-working waste could be detected within Site B. The evidence for glass-working is discussed more fully below (pp. 22-4).

It is possible that some of the Phase 1 features (e.g. F104, F105, F131/F165; fig. 2) were also finally backfilled as part of this levelling-up process.

Phase 3 (Sites B and D) description and interpretation

At Site B, the Phase 1 features and Phase 2 layer 1103 were sealed by a layer of silt (1186) and by Phase 3 pebbled surface F173 (figs. 3 and 4). This silt (1186) was sealed by a pebble surface (F173), composed of compacted pebbles and gravel (1181), exposed for a maximum width of 4.7m. Surface F173 was sealed by a layer of silt (1193), overlain in turn by an upper pebble surface (F174; figs. 3 and 4), consisting of layers of pebbles and gravel (1182A/B). A pebbled surface (F207; fig. 4) recorded in Area D may have been contemporary with surfaces F173-4 in Area B. Other, unphased, pebble surfaces (2111-2; Trenches 48-9; fig. 4) are discussed below (p. 12).

Surfaces F173-4 at Site B and F207 at Site D (fig. 4) were probably pebbled yards or hardstandings.

The pottery recovered from the Phase 3 surfaces is dated to the Hadrianic-Antonine period and the later 2nd century. The finds from the various pebbled surfaces were not distinguished at excavation.

Phase 4 (Sites B and D) description

At Site B, Phase 3 was defined by the construction of a stone-footed building (Structure 4), a timber-framed building (Structure 5), and the deposition of silt and occupation deposits (1184) over the latest Phase 3 surface (F174). The Phase 4 features were dug into the Phase 2 and 3 features and deposits, and into the underlying subsoil.

A drystone wall (F172, Structure 4; figs. 3 and 5; plate 3), aligned approximately north-south, was cut into the Phase 3 pebbled surfaces (F173-4), which may have continued in use. The wall measured 0.7m in width and survived to a maximum height of two courses. Its southern end was disturbed by later robbing (F183).

A deposit of charcoal (1102E/5E) was recorded to the east of wall F172, within the interior of Structure 4, and overlay the Phase 2 build-up deposit (1103E/5E). This charcoal deposit contained a heat-shattered pane of glass, overlain by a layer of burnt fragments of decorated daub, sealed in turn by an almost complete iron window grille (plates 5-6).

Following the destruction of Structure 4 by fire, a timber-framed building (Structure 5a; fig. 5), measuring approximately 8m square in plan, was erected immediately to the west of Structure 4 and following its alignment. The Structure 5a post-holes were cut through the Phase 2 and 3 deposits, and into the underlying subsoil (1105). Two post-holes forming part of the east side of Structure 5a (F125, F126) were cut into wall footing F172, which may have been levelled in preparation for this timber-framed building. The south wall of Structure 5a was formed by a vertically-sided beam-slot (F171), positioned perpendicular to the southern end of wall F172, which contained sub-rounded stone fragments (plate 4). Beam-slot F171 was cut by a post-hole (F103). Post-holes F102 and F120 formed the cornerposts of the southern wall of this structure. The west wall of Structure 5a was formed by four post-holes (F120-F123). These features were sub-circular in plan, except feature F123 which was sub-rectangular. Post-holes F121 and F122 were backfilled with pebbles, and post-holes F120 and F121 were backfilled with sandy soil.

To the north of Structure 5a were two further timber-framed buildings (Structures 5b and 5c), defined by post-holes forming slightly differing alignments. Structure 5b (fig. 5) measured

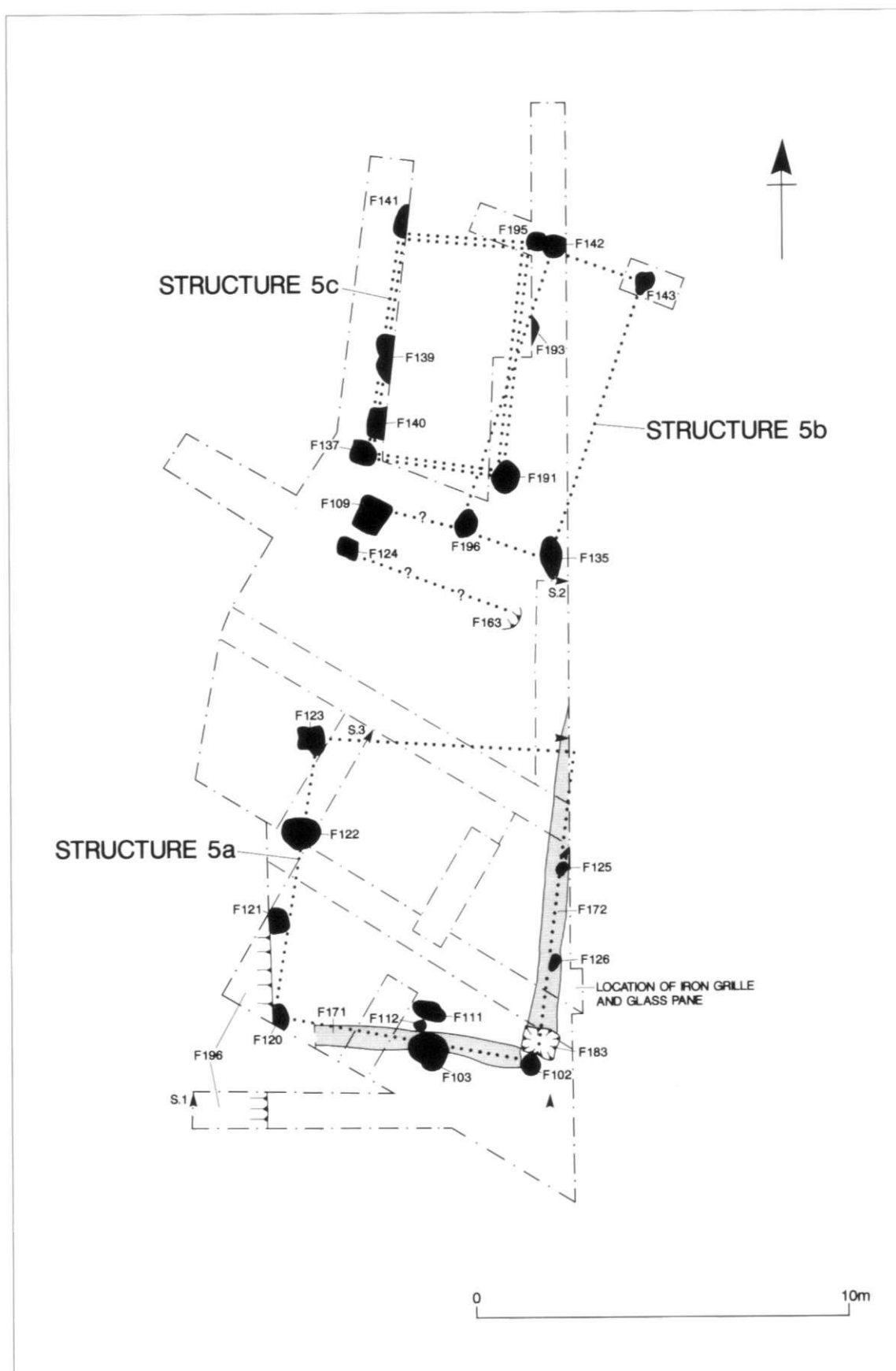


Fig. 5: Area 1, Site B: phases 4-5

approximately 8m in length and 6m in width. Four corners of this building were defined by post-holes (F196, F142, F143, and F135), but it is possible that the structure could have extended further to the west where there are two further post-holes (F109, F124). Both sets of post-holes were circular or sub-rectangular in plan.

Structure 5c (fig. 5) measured approximately 6m by 8m in plan. Its four corners were defined by post-holes F137, F141, F195, and F191, which were mostly sub-circular in plan.

An occupation deposit (1184; fig. 3), which accumulated over the western edge of the uppermost pebbled surface (F174), may have been deposited during the use of one of the Phase 4 structures, although it post-dated the destruction of wall F172 of Structure 4.

Phase 4 (Sites B and D) interpretation

Wall F172 formed the west side of a building (Structure 4), which measured probably no more than 24m in length, as it was not seen in Test-Pit 9. None of the other walls of this structure was identified. The charcoal deposit (1102E/5E) represents the destruction of the building by burning. The superimposition of the pane and grille could suggest that they came from the same window opening, although there are no published examples of this superimposition from Britain. The association of this building with an iron window grille, a window pane, and patterned daub suggests that it was of high status, or fulfilled a function associated with security.

Structure 5a may have been partly of half-timbered construction. Wall F172 of Structure 4 may have been reduced to form the eastern basal wall of Structure 5a, whose southern, basal wall would have been formed by feature F171. Post-hole F102 may be interpreted as its south-eastern corner-post. The three excavated corners of the building were represented by post-holes F102, F120, and F123; the north-eastern corner lay outside the area excavated. The south-western (F120) and north-western corner-post (F123) were also recorded; the north-eastern corner-post lay outside the area excavated. This building could have been used for storage, as no evidence of internal features, such as hearths, was recorded.

In contrast to Structure 5a, Structures 5b and 5c were wholly of timber-framed construction. Excavation concentrated on revealing the basic plan of the buildings, although their entire floor area was not investigated. It is possible that they were used for storage.

Destruction deposit 1102E/5E associated with Structure 4 contained samian dating to the period AD 150-180. Pottery associated with the Phase 4 layer 1184, which overlay Phase 3 surface F174, is dated to the 2nd century. Features F122 and F137 contained early-mid 2nd-century pottery.

At Site D (fig. 4), later activity, which may be datable to Phase 4, was represented by deposits both overlying, and cut into, the Phase 3 pebble surface (F207). After the surface went out of use, it was overlain by a layer of red clay (2002). One pit (F205) was both cut into, and sealed by, layer 2002. A further pit (F206) was cut into the uppermost horizon of the clay. The remaining Phase 4 features were cut into surface F207. These comprised beam-slots (F202, F203), joining at right-angles, a possible post-hole (F204), and a large post-hole (F201).

Layer 2002 contained pottery dating to the 2nd century, mortaria fragments of early-mid 2nd-century date, and two coins of Antoninus Pius, one dated to AD 155. Pit F205 contained pottery dating to the 2nd century. Features F201 and F204 contained pottery of 2nd-century date.

Layer 2002 was interpreted by Greenfield in his records as the floor surface of a rectangular building. The remaining features, comprising post-holes and pits, may have been associated with, or post-dated, this clay-floored building.

Phase 5 (Site B) description and interpretation

The extreme eastern edge of a ditch (F196; figs. 3 and 5), aligned approximately north-south, was partly excavated. It cut Phase 4 post-holes F120 and F121. The ditch fills comprised grey-brown silts (1185, 1183). The upper ditch fill (1183) was also spread over the contemporary ground surface to the east of the cut. The ditch was interpreted by Greenfield as the outermost ditch defining the western side of the *burgus* enclosure (Gould 1964). The excavator dated the pottery, now lost, from feature F196 to the 4th century.

Unphased features

The excavation of the widely-spaced test-pits in 1962 (fig. 4) uncovered evidence for peripheral

activity adjoining the structures defined by area excavations (Sites B and D), and also provided important negative evidence for the extent of activity in this roadside zone. However, this activity cannot be phased because of the loss of the majority of the finds.

The main feature recorded was an extensive pebble surface (2111-2; in Test-Pits 16-17 and 48-50), which may be interpreted as one or more yard surfaces, perhaps contemporary with the Phase 3 pebble surfaces (F173-4; Site B). Two intersecting beam-slots (F210) were recorded in Test-Pit 41, and a short length of possible drystone walling (F209) was found in Test-Pit 33.

A stratified sequence of deposits was recorded in some test-pits. In Test-Pit 41 a layer of silt (41/4) was overlain by a clay surface (41/6), which was sealed in turn by a pebble surface (41/5). This test-pit also contained a hearth (F213: not illustrated). A similar sequence was recorded in Test-Pit 16, which also contained a hearth (F214: not illustrated).

Test-pitting revealed evidence for timber-framed buildings (Test-Pit 41), and possible clay floor surfaces (Test-Pits 33 and 41). Test-Pits 16 and 41 also contained hearths, and a length of drystone walling (F209) was recorded in Test-Pit 33.

Coins of Domitian were recovered from Test-Pits 17 and 42, one dated to AD 91; Test-Pit 4 produced an unstratified coin dated AD 330-5.

AREA 4: Site C

Phase 2/3 description

The earliest features (figs. 6 and 7) comprised two irregularly shaped, possible pits (F9 and F11) and a post-hole (F12), all cut into the buff-brown sand subsoil (2014). These infilled features were sealed by a layer of grey silt (2016/2058), which overlay the subsoil.

The remaining Phase 2/3 features (figs. 6 and 7) were either sealed by, or dug through, layer 2016/2058, and into the underlying subsoil. These comprised post-holes (F10 and F21), pits (F15 and F18a), a gully (F18), and a possible gully (F17). The fills of features F10, F21, and F15 comprised grey silts, similar to layer 2016/2058. Gully F18 was cut by feature F18a. The primary fill of the gully was a grey sand-silt (2057), overlain by a dark grey silt deposit (2056), similar to the fill of feature F18a (2054). The uppermost fills of these features comprised red sands and clays (2055, 2053). Two ditches, aligned approximately east-west (F2, F3, Trench A: not illustrated), were also cut into the subsoil. Although undated, both of these features were sealed by a Phase 3 pebble surface (2002), and may be ascribed to Phases 2/3. Layer 2016/2058 contained a single sherd of mortarium, dated to the mid 2nd century.

Phase 2/3 interpretation

The post-holes may have defined a timber-framed building, although no ground-plan could be obtained in the limited areas investigated; the pits may have been dug for rubbish disposal. Feature F18 may have represented a ditched boundary.

Phase 3 description

Following the abandonment of the Phase 2/3 structures, the next event was the laying of a pebble surface (F22; 2052, figs. 6 and 7), sealing layer 2016/2052, and the backfilled Phase 2/3 features. The pebbles were set in a matrix of brown soil, mixed with red clay (2052), which deepened towards features F18/F18a, possibly to level-up the ground surface. This surface was recorded in Trenches F, H, I, and J; other areas of pebbling in Trench A (2002) and Trench E (2030) were probably contemporary.

Pebble surface F22 contained two fragments of mortaria dated to the mid-late 2nd century. It may be interpreted as a yard or hardstanding.

Phase 3/4 description

A Phase 3/4 surface (F23; figs. 6 and 7) sealed the Phase 3 yard (F22), which was also overlain by Phase 3/4 deposits (2033, 2034, 2040) and cut by Phase 3/4 features.

Possibly the earliest Phase 3/4 feature was a layer of red clay (F23; 2021), which sealed the western edge of the Phase 3 pebbled yard (F22) and also overlay the Phase 2/3 possible former ground

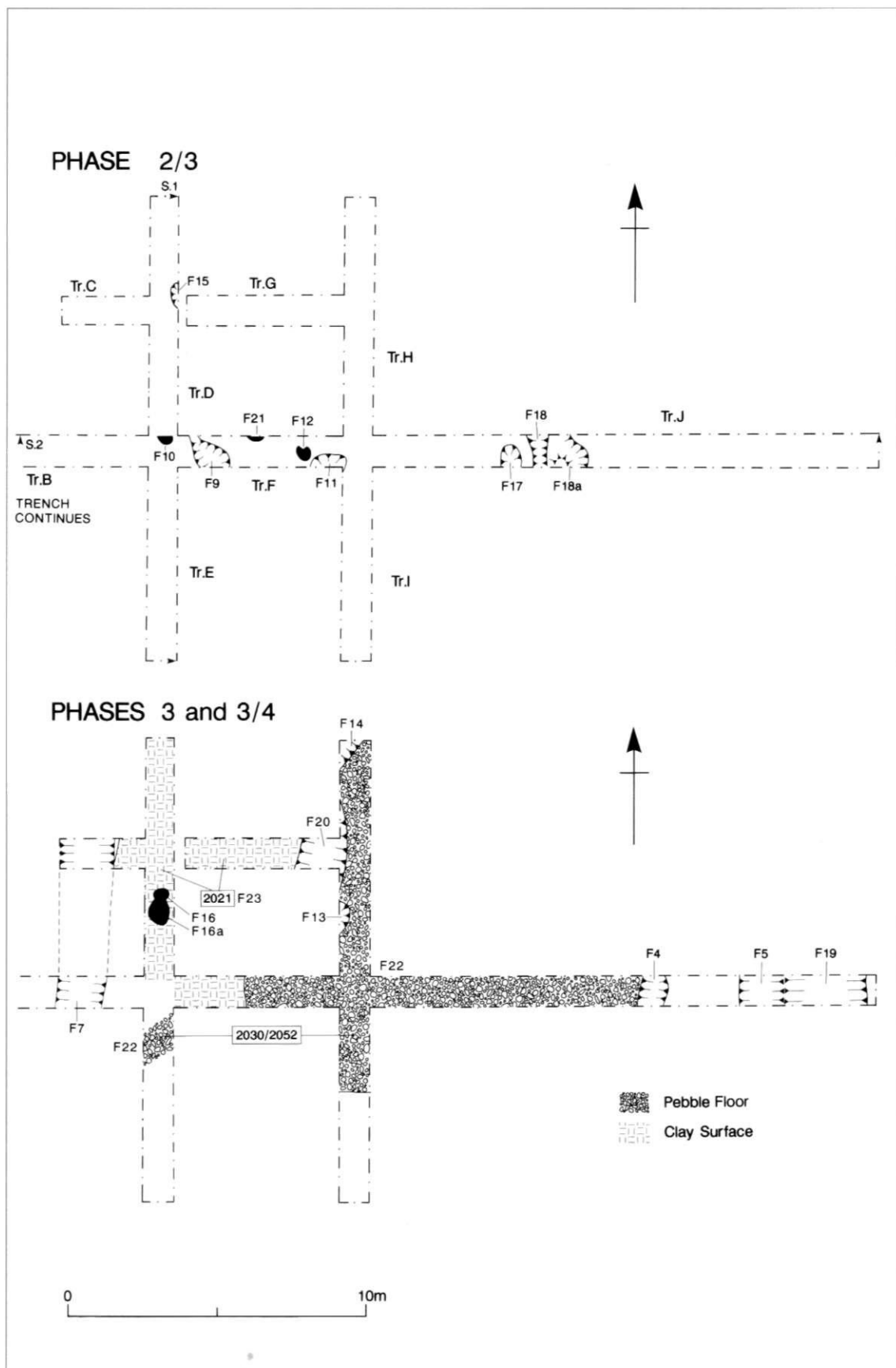


Fig. 6: Area 4, Site C: phase 2/3 and phases 3 and 4

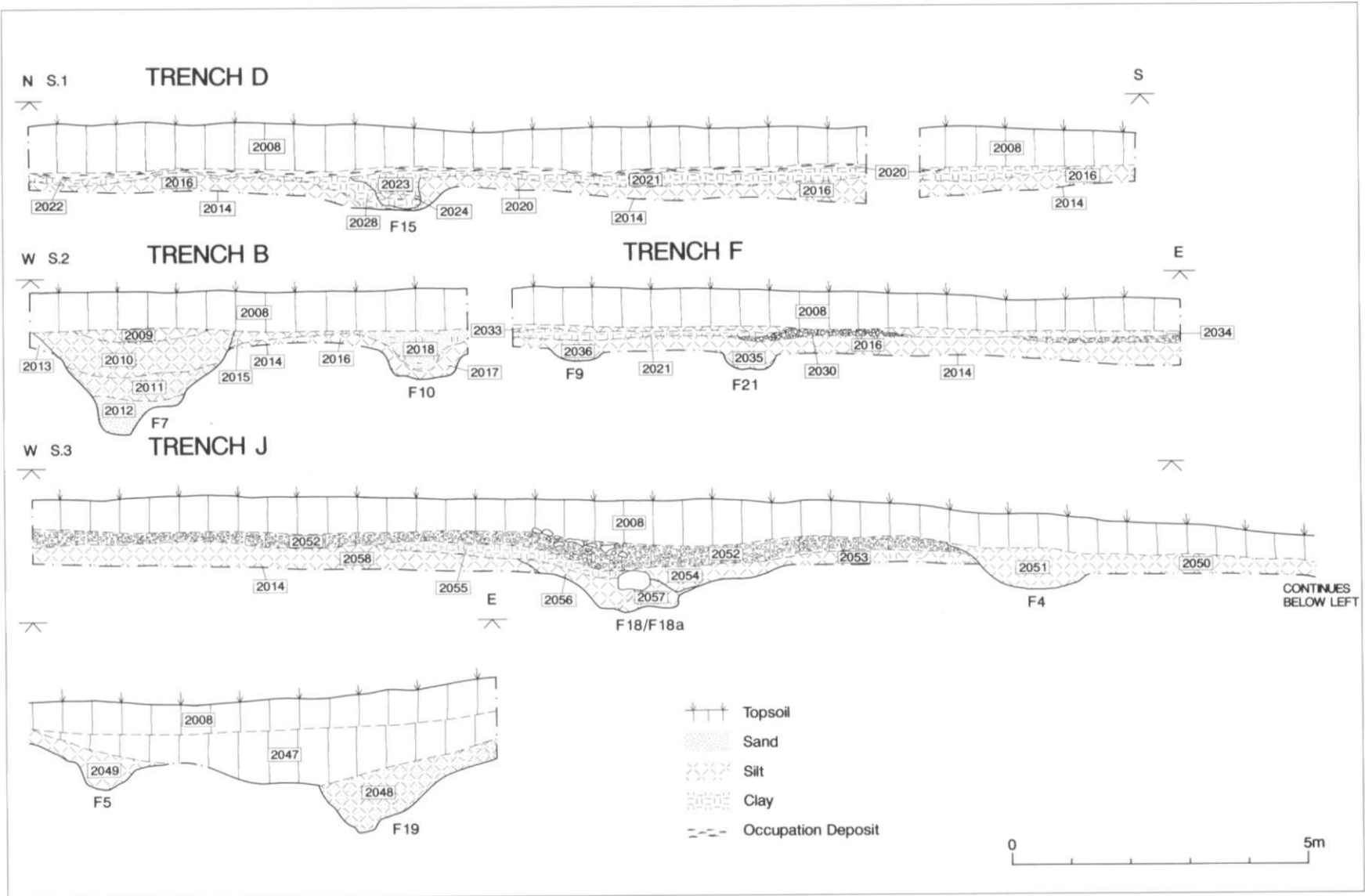


Fig. 7: Area 4, Site C: sections

surface. The clay surface was cut by two intercutting post-holes (F16, F16a; figs. 6 and 7): feature F16 was cut by feature F16a. Surface F23 was also recorded in Trenches B, D, E, F, and G. Deposits of grey silt (2020, 2033, 2029, not illustrated), accumulated over the yard surface during, or after, its use.

The extreme eastern limit of the Phase 3 yard surface F22 was cut by a small, flat-based ditch (F4; figs. 6 and 7), aligned approximately north-south. A further ditch (F5), cut to the east of the former, may have been contemporary. Ditches F4 and F5 were backfilled with grey silt (2051, 2049 respectively), which was not distinguished at excavation from the layer of light grey silt (2050), recorded overlying the subsoil between the two infilled ditches. Ditch F19, of irregular profile, was cut into the subsoil to the east of ditch F5 and followed its alignment. Feature F19 was backfilled with a grey-brown sand-silt (2048). A layer of soft brown soil (2047) sealed both features F5 and F19.

Ditch F7, which may belong to Phase 3 or 4, was aligned approximately north-south and cut Phase 2/3 layer 2016/2052. It was recorded in both Trenches B and C. The primary ditch fill was a grey sand (2012), sealed by layers of dark grey sand-silt (2011) and a grey-brown sand-silt (2010). The remaining hollow of the feature was filled with yellow-brown silt (2009). A second ditch (F20) and a possible third ditch (F14), both cutting surface F22, may also belong to Phase 3.

Layers 2033 and 2034, and the infilled Phase 3 features, were sealed by the ploughsoil (2008).

Feature F23 contained fragments of mortaria dating to the 2nd century. Layer 2042 contained fragments of glassworking waste. Layer 2033 contained a brooch dated to the first half of the 3rd century.

Phase 3/4 interpretation

Clay surface F23 may be interpreted as the floor of a building, possibly represented by post-holes F16 and F16a. This building may have been contained within a plot, defined at its western and eastern edges by ditches (F7 and F4 respectively). The eastern boundary, defined by feature F4, may have been re-cut (e.g. F5, F19).

Unphased

Well F6 (plate 7) was not recorded in plan or section, although a written description and photographs survive. Its base was lined with timber planking, overlain by five courses of dressed sandstone blocks of drystone construction. The recorded finds include large quantities of Roman pottery, fragments of millstones, and animal bone, but this material has not been located. Fragments of leather and wood planking were also found. The single surviving sherd of pottery from this feature is dated to the mid 3rd century.

THE FINDS

Following the description of each item in the catalogue, the original find number is given first, followed by the Area/Site designation, the trench, context and phase number. For example, Brooch no. 6 is described in the catalogue as ... 3, Site C, Tr. H, 2033, Phase 3/4, meaning that the item was original find number 3, from Site C, Trench H, layer 2033, Phase 3/4.

COINS by R. A. G. Carson (report prepared in the 1960s)

Area 1, Sites B and D

- 1 Constantinopolis issue. Rev. uncertain, LRBC I, 71. AD 330-335. 27, Test-Pit 4, u/s.
- 2 Domitian Denarius. Rev. Cos XV minerva, RIC 156. AD 91. 29, Test-Pit 17/2, unphased.
- 3 As Domitian. Rev. moneta, RIC 242A. AD 81-96. 183, Test-Pit 47, unphased.
- 4 As Domitian. Rev. moneta cos XIII, RIC 254. AD 87. 369, F131/F165, Phase 1.
- 5 As Domitian. Rev. uncertain. AD 81-96. 370, F131/F165, Phase 1.
- 6 As Claudian imitation, RIC 66. AD 41-54. 374, 1101/1, ploughsoil.
- 7 As Domitian. Rev. fortuna. AD 81-96. 379, 1101/5\6, ploughsoil.
- 8 As Claudian imitation, RIC 66. AD 41-54. 380, 1193, Phase 4.
- 9 As Domitian Cos XII. Rev. Virtuti Augusti, RIC 340. AD 86. 387, F150, Phase 1.
- 10 As Antoninus Pius. Rev. uncertain. AD 138-161. 996, Site D, 2002, Phase 4.
- 11 As Antoninus Pius. Rev. Britannia, RIC 934. AD 155. 997, Site D, 2002, Phase 4.

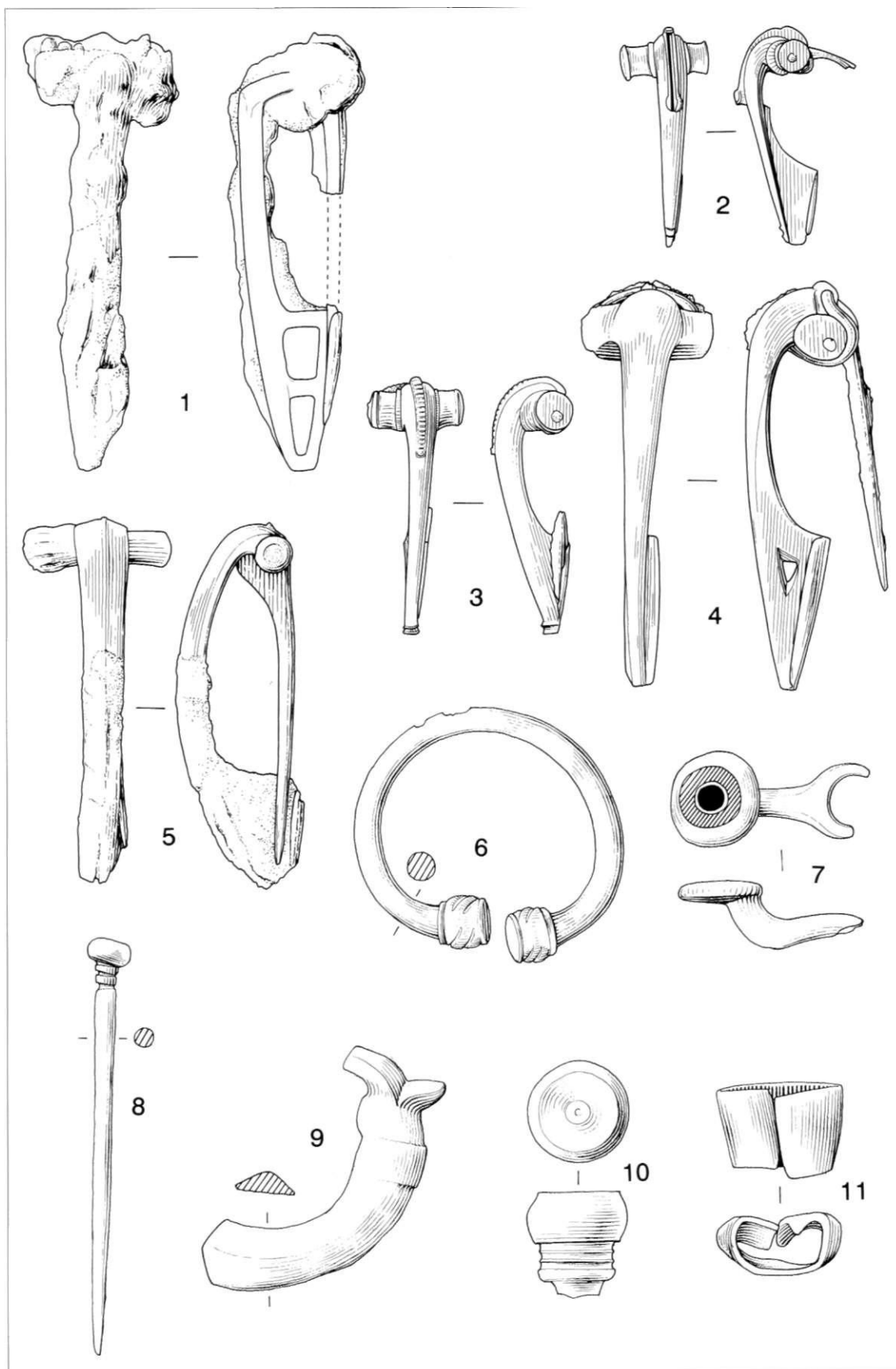


Fig. 8: Brooches and copper alloy objects (at 1:1)

Area 4, Site C

- 12 Denarius of Trajan. Rev. Imp TRP Cos VI DD SPQR Trajan's Column, RIC 356. AD 114-117. 2, Trench E, 2029, Phase 3/4.
- 13 Sestertius of Trajan. Rev. uncertain. AD 98-117. 5, Trench D, 2020, Phase 3/4.

Area 3

- 14 Sestertius of Nerva. Rev. Vehiculatore Italine Reunisa, RIC 93. AD 97. 1, u/s.

This is too small an assemblage on which to base any meaningful comparisons.

BROOCHES by Donald Mackreth

All the brooches are made from copper alloy, unless otherwise stated. All are described from drawings and, where noted, from X-rays.

Catalogue

All brooches, except no. 6, are from Site 1.

Colchester

- 1 Iron brooch. The x-ray shows clear traces of a multi-coil bilateral spring with a strong suggestion that it is integral with the bow. No trace of a hook or chord can be seen. The single discernible wing, like the bow, is deep; the other wing is covered with corrosion products. The profile is fairly straight and the catch-plate is as a result more trapezoidal in shape than a triangle. The catch-plate has two large piercings one above the other, separated by a thin bar. 373, Site B, F131/F165, Phase 1 (fig. 8.1).

Iron Colchester brooches are uncommon on settlement sites. Their incidence from purely Roman sites, as opposed to sites which have pre-conquest origins, is very low. The present example is an early form of the brooch, as the piercing in the catch-plate shows. The only site which offers useful comparisons and dates is the King Harry Lane cemetery (Stead and Rigby 1989; phase 1, G211,2, G235,2, G249,2, G296,4; phase 2, G420,4). The published dating gives an overall range to these examples of AD 1-55. However, the dating of the phases is not entirely secure.

Colchester Derivative

Brooches 2-4 have their sprung pins mounted in the Polden Hill manner: an axis bar through the coils is seated in a pierced plate at the end of each wing, the chord being held by a rear-ward facing hook in the middle.

- 2 Brooch. Each wing has a moulding at the end. The junction of the bow with the wings is masked by a curved moulding rising from the wings. The bow has a skeuomorph of the hook on the Colchester, divided by a groove and with a small nib on each side at the end, and is plain down to the usual two-part foot-knob. 26, Site B, Test-Pit 37/2, unphased (fig. 8.2).
- 3 Brooch. A basic repeat of the last, the mouldings on either side of the head are beaded. The skeuomorph hook is a plain beaded ridge ending in a small boss. 366. Site B, F131/F165, Phase 1 (fig. 8.3).
- 4 Brooch. The wings and bow are plain. The head of the bow is bulbous and no mouldings are shown on either side. The foot is slightly rounded and the catch-plate has a small triangular piercing. 376. Site B, 1103/1, Phase 2 (fig. 8.4).

Brooches 2 and 3 are members of a fairly well-known family whose chief distribution lies in the west of England, especially the Severn Valley, although examples are found all over Roman Britain. Brooch 4 is placed with them as it belongs to the earlier strand which originated the group, but being very plain it has very few parallels and none with a date. The piercing in the catch-plate should be counted as an early feature and would, in any case, pre-date the main family whose dating has recently been reviewed (Mackreth forthcoming), and shows that the beginning of the *floruit* is close to AD 75 and runs strongly through to c. AD150/175.

- 5 Brooch. The axis bar of the hinged pin is housed in plain circular-sectioned wings. The bow is almost straight-sided with a median arris. The profile is more of an arc of a circle than the usual part-involute. The catch plate may have been made from sheet metal and inserted into a cut in the lower part of the bow, the nick in the bottom of that is suggestive. 364, Site B, F123, Phase 4 (fig. 8.5).

As the brooch is now lost, the writer has had to assume that the drawing accurately represents the type. In which case, the chief features would be the inserted catch-plate and the distinctive profile of the bow. These, with the hinged-pin, belong to the relatively far south-west and the technique of making a separate catch-plate and fitting it into a saw-cut in the bow derives ultimately from those brooches which were made entirely from sheet metal (e.g. Holbrook and Bidwell 1991, 232, fig. 100,1). Plain examples, however, are very unusual, most examples having an applied plate on the front projecting behind to form a hook for the chord of a false spring, the pin itself being hinged. The applied plate ultimately becomes cast-on ornament and the false spring is abandoned. The family is poorly dated, e.g. Camerton, AD 120-150 (Wedlake 1958, 219, fig. 51, 11). If the Wall example is of a later date than that it must have been residual, as was the Camerton brooch; its form and decorative elaboration, coupled with pierced and decorated catch-plates, cannot be as late as the 2nd century and all the decorated items should be before AD 75. In the present case, the plain character could indicate a date slightly later than that, but it is still unlikely to be 2nd-century.

Penannular

- 6 Brooch. The plain ring has a circular section. Each terminal is prominent and made up of two discs with cabling between. 3, Site C, Tr. H, 2033, Phase 3/4 (fig. 8.6).

The smaller size of the terminals suits the main group of penannular brooches, whether they are early, middle, or late. Large terminals are more characteristic of brooches belonging to the Principate than the Dominate, hence a date before AD 250 can be virtually guaranteed, and the writer would be happier with one before the mid 2nd century.

SMALL FINDS by Lynne Bevan

Copper Alloy

Descriptions of the following items had to be taken from the original records and drawings, because the majority of the objects have been lost. The most interesting item in this small group of eleven objects is a button and loop fastener, the head of which is enamelled with an 'eye' motif, no. 1 (fig. 8.7). Military usage, possibly during the 1st century, has been suggested for such fasteners, the precise function of which remains uncertain but appears to have been connected with clothing or saddlery (Wild 1970). A pin, no. 2 (fig. 8.8), three fittings, nos. 3-5 (fig. 8.9-11), and six studs and nails (not illustrated) were also recovered. In addition, there was a number of studs and nails with raised heads, described in the archive catalogue. Some were convex (e.g. archive catalogue nos. 6, 10, 11), including examples which might have fulfilled a decorative function in upholstery or furniture and boxes (see Crummy 1983, 115-119.). The larger examples may have been attached to clothing or saddlery.

Catalogue

All objects are considered to be Roman.

- 1 Button and loop fastener with broken ?circular-ended loop. Head is inlaid with enamelled 'eye' motif. This type of flat cast fastener with an enamelled head conforms to Wild's 'Vindonissa' fasteners Class V111b, named after the 1st-century type-site in Upper Germany (1970, fig. 2, 142-143). Other examples were found at Hod Hill, another 1st-century site (*ibid*). Whether used for clothing, or in horse equipment, 'the number of fasteners found on military sites suggests strongly that they were items of military equipment' (*ibid*). No parallel has been found for the 'eye' motif on the Wall fastener. It is a motif often found on Roman glass beads, possibly one with apotropaic significance, and the shape is well-suited to the circular form of this fastener. Diameter of head: 14mm, thickness: 3mm, average thickness of broken loop: 5mm. 357, Site B, Test-Pit 2, ploughsoil (fig. 8.7).

- 2 Pin with ovoid, irregular-shaped head above two 'reels.' Length: 69mm, average width of shaft: 3mm. 367, Site B, F131/F165, Phase 1 (fig. 8.8).
- 3 Curved rod with collared, forked terminal, broken at other end. Triangular sectioned. Possibly part of a buckle. Average width: 10mm. 368, Site B, F131/F165, Phase 1 (fig. 8.9).
- 4 Knob, solid cast, possibly a foot from a casket or small stand. Diameter of flat, circular base: 12mm. 383, Site B, 1103/8, Phase 2 (fig. 8.10).
- 5 Circular collar, formed from coiled strip. Length of strip: 40mm, height: 13mm, thickness: 1mm. 378, Site B, F173-4, Phase 3 (fig. 8.11).

Iron Objects

With the exception of the window grille, described separately below (p. 26), this small collection of eight objects was not available for re-examination, and descriptions were, therefore, obtained from the original records and finds drawings, when available. Only recognisable objects have been illustrated; the remaining objects are described in the archive catalogue.

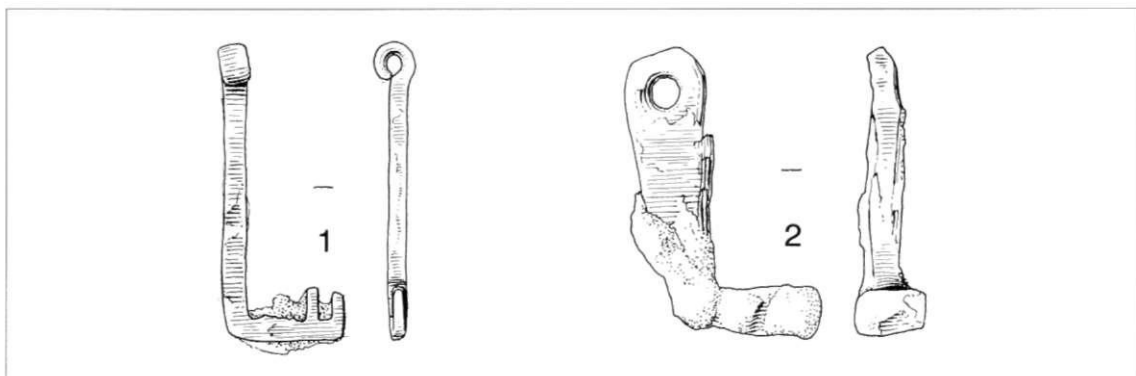


Fig. 9: Iron objects (at 1:2)

Catalogue

- 1 T-shaped lift key with rolled bow, two teeth, and a square-sectioned shaft. Length of shaft: 76mm, of base: 30mm, thickness: 4mm. Similar to an example from London (Manning 1985, Plate 40: 31). 385, Site B, F105, Phase 1 (fig. 9.1).
- 2 Slide key, very corroded. No teeth visible on bit. Length: 72mm, maximum width: 20mm, thickness: 4mm. 362, Site B, F106, Phase 1 (fig. 9.2).

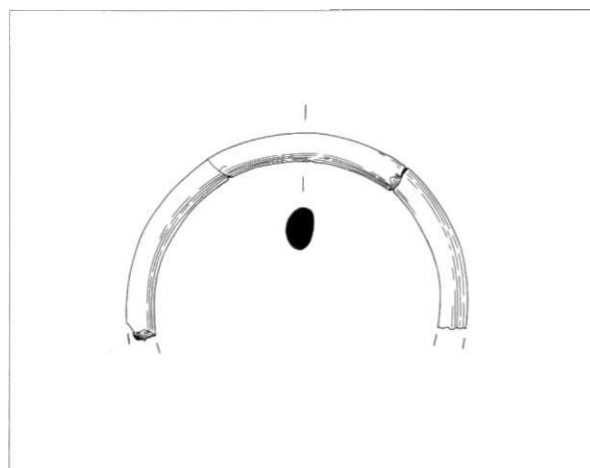


Fig. 10: Shale object (at 1:1)

Shale bracelet

- 1 Bracelet. Three fragments of undecorated bracelet with ovoid section. Diameter: 83mm, thickness: 8mm. 362, Site B, F104, Phase 1 (fig. 10).

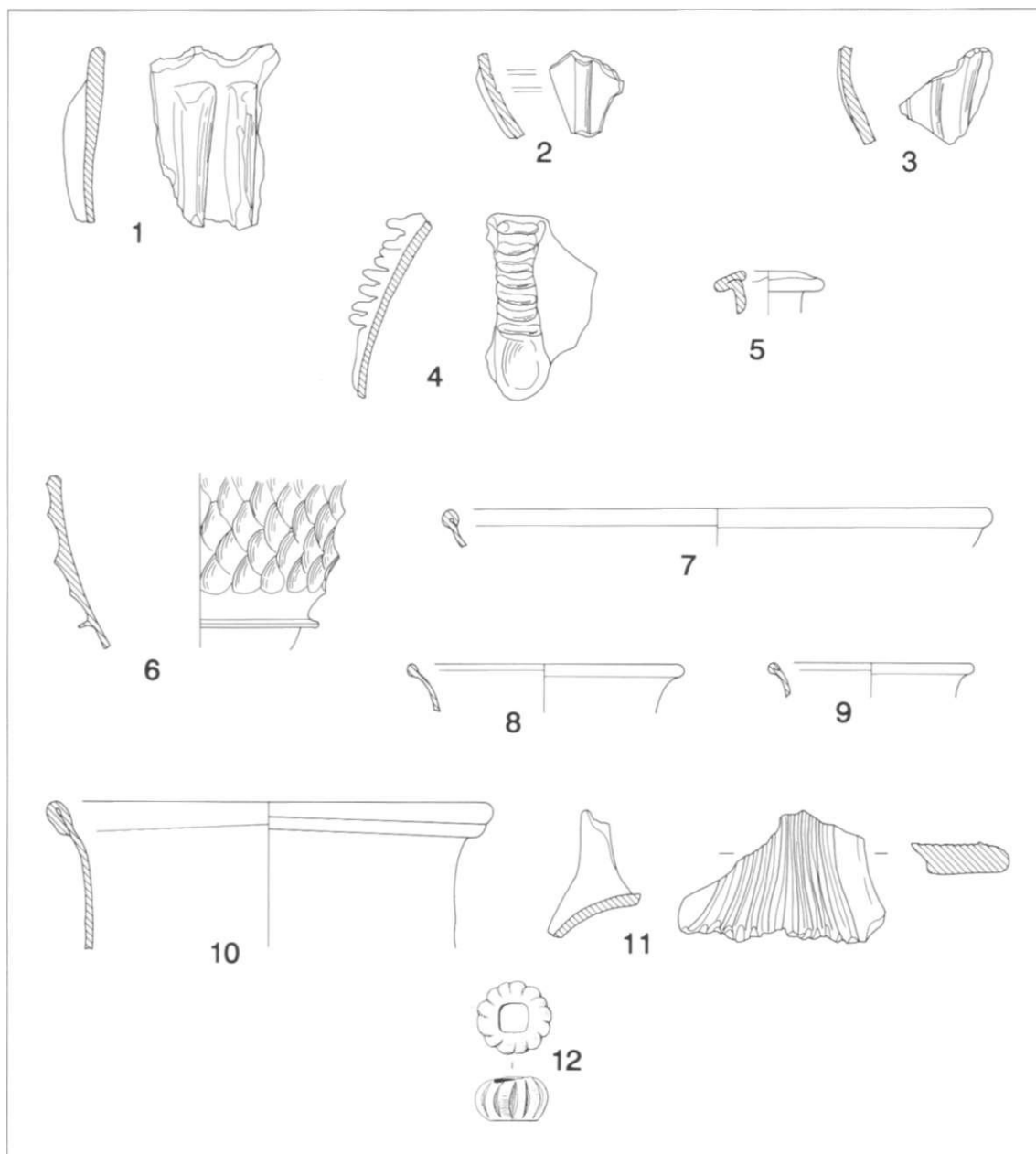


Fig. 11: Glass (at 1:2)

GLASS by Lynne Bevan, with Sally Cottam and Jennifer Price

Full details of glass vessels other than those described here are in the archive catalogue.

A total of 152 fragments of glass was found from Sites A-D, 73 from vessels, 64 fragments of a window pane, 2 beads, and 13 fragments providing evidence for glass manufacture. The window pane and glass-working debris are described separately below (pp. 24-6 and 22-4 respectively). Despite a high incidence of fragmentation among the vessels, the glass is generally well-preserved with little weathering. In the following discussion the vessels have been divided into three groups: cast vessels, blown vessels, and bottles. Distinctive forms in each group are illustrated (fig. 11). The catalogue includes a record of the thickness of each fragment.

Vessels

Cast vessels

Notable in the collection are three fragments from pillar-moulded bowls, all of which are blue-

green in colour and have retained traces of the characteristic ribs nos. 1-3 (fig. 11.1-3). No. 1 (fig. 11.1) is an upper-body fragment from below the vertical rim, and nos. 2-3 (fig. 11.2-3) are body fragments from lower parts of the vessels. The thin wall of no. 1 (fig. 11.1) has been carefully ground above the rib, and the interior of no. 2 (fig. 11.2) has been decorated with horizontal wheel-cut lines. Examples of blue-green vessels with wheel-cut lines have been recovered from a number of 1st-century sites, including Colchester (Cool and Price 1995, 15-26) and Usk (Price 1995, 140-9, figs. 42-3). Pillar-moulded bowls (Isings 1957, form 3) are common on 1st-century sites in Britain and throughout the Roman Empire. For example, a minimum of six pillar-moulded bowls occurred at Kingsholm, three of which were blue-green (Price and Cool 1985, nos. 4-5b).

Catalogue

- 1 Fragment with two vertical ribs from the shoulder of a pillar-moulded bowl. TH:3-5mm, 360, Site B, u/s (fig. 11.1).
- 2 Fragment with one vertical rib and two interior wheel-incised lines from the lower body of a pillar-moulded bowl. TH:1.5-3mm, 455, Site B, 1103/1, Phase 2 (fig. 11.2).
- 3 Fragment with two vertical ribs from the lower body/base of a pillar-moulded bowl. TH:3mm, 310, Site C, 2008, ploughsoil (fig. 11.3).

Blown Vessels

Twenty-five fragments from blown glass vessels were found. Three of these are small fragments from dark blue jugs (not illustrated). The first two fragments are from angular ribbon handles, one with a central rib, both possibly from the same vessel; the third is a convex body fragment. Strong colours usually indicate a 1st-century date and conical jugs in strong colours have been found in Flavian burials at Winchester (Harden 1967) and Radnage, in Buckinghamshire (Skilbeck 1923, fig. 2c).

A fragment from beneath the handle of a yellow-green conical jug, no. 4 (fig. 11.4) was also found. Decoration consists of a series of pinched projections, three of which are partially fused together. A similar piece in blue-green glass is known from Corbridge, where it has been included in a group of 'long-necked jugs ... made in the Seine-Rhine region', the majority 'produced during the period AD 65-125/30' (Allen 1988, 289, fig. 131:7). A fragment of folded rim from a blue-green jug, or possible bath flask (no. 5, fig. 11.5; Isings 1957, form B1) was found, as were two small blue-green jug fragments. The first of the jug fragments was a body fragment with part of one remaining rib (not illustrated) and the second was a handle fragment with a central rib (not illustrated). A generally later 1st- to early 2nd-century date has been attributed to this form of jug (Isings 1957, forms 52 and 55).

No. 6 (fig. 11.6) is a fragment from a colourless, facet-cut drinking cup. The fragment comes from the lower body of the vessel and shows the intersection between the decorated register consisting of a series of deeply-ground oval facets and the lower, plain zone with its deep horizontal ridge. A similar example of this form of high-quality cup, but with larger facets and evidence of a diagonally-projecting foot, was found at Pentre Farm, Flintshire (Price 1989, fig. 29.5), and a complete example is known from Barnwell, Cambridgeshire (Harden *et al.* 1987, 194, no. 104). This distinctive form of cup has been found in many parts of the Roman world in contexts dating to the later 1st century and first half of the 2nd century.

Nos. 7-10 (fig. 11.7-10) are rim fragments from blue-green vessels, the first three of which have folded rims. No. 7 (fig. 11.7) is from a wide-mouthed bowl with a tubular rim, and no. 8 (fig. 11.8) is probably also from a bowl, although a much narrower type. No. 9 (fig. 11.9) is from a small jar. This example is very similar to two jars from Harlow, Essex, belonging to 'a series of jars and small pots commonly found in the western provinces from mid 1st to mid 2nd century AD' (Price 1985, 194-195, fig. 3.23-24). No. 10 (fig. 11.10) is an unusually badly-formed rim from a tubular-rimmed bowl. This common form is known from many sites, including Colchester (Cool and Price 1995, 94-99) and Verulamium (Charlesworth 1972, 199, nos. 1-18, fig. 74: 6-11 and 1984, 151-3, nos 53-70, fig. 62. 21-29), and occurs in contexts dating from the mid 1st to mid 2nd century. This poor-quality example might have been a waster which would accord with the glassworking evidence from Site B.

Catalogue

All fragments are blue-green in colour unless otherwise stated.

- 4 Fragment with a series of pinched projections from base of handle of jug or flask. Yellow-green. Three of the projections have fused together. TH:2-12mm, 6, Site C, 2016/2058, Phase 2/3 (fig. 11.4).
- 5 Fragment of folded rim from a jug or bath flask. Pale blue-green. TH:3mm, 990, Site D, 2002, Phase 4 (fig. 11.5).
- 6 Fragment from facet-cut cup, showing segment of upper decorated and lower plain zones separated by a cordon. De-colourised. TH:3-4mm, 512, Site B, 1103/2, Phase 2 (fig. 11.6).
- 7 Rim fragment from bowl. TH:2mm, 991, Site D, 2002, Phase 4 (fig. 11.7).
- 8 Rim fragment from bowl. TH:2mm, 746, Site B, 1103/4, Phase 2 (fig. 11.8).
- 9 Rim fragment from jar. TH:2mm, 822, Site B, F126, Phase 4 (fig. 11.9).
- 10 Rim fragment from tubular-rimmed bowl. TH:2mm, 4, Site C, 2016/2052, Phase 2/3 (fig. 11.10).

Bottles

Forty-five fragments from blue-green glass bottles were recorded, including fragments of rim, base, shoulder, and handle and part of a typical 'reeded' handle, no. 11 (fig. 11.11). Although the original shapes of the bottles are not always apparent, there are 29 cylindrical bottle fragments, 7 prismatic bottle fragments, and 9 uncertain fragments in this collection. At least four individual cylindrical bottles are represented in the largest group, which comprised 27 glass fragments (G4/5, 214/215: archive catalogue nos. 34-60). Cylindrical bottles 'occur very widely on 1st-century sites, particularly in Flavian contexts, and they are not common after the 1st quarter of the 2nd century' (Price 1989, 80). Their presence here in greater quantity than the longer-lived square bottles suggests an early date, similar to that suggested by the chronologically-diagnostic cast and blown vessels, discussed above.

Catalogue

- 11 Fragment of 'reeded' handle, blue-green in colour. TH:10mm. 777, Site B, F110, Phase 1 (fig. 11.11).

BEADS by Sally Cottam

The melon bead, no. 1 (fig. 11.12), probably belongs to the late 1st or early 2nd century. Glass melon beads are not common in Claudian-Neronian contexts, but they occur in small numbers in the Flavian-Trajanic/early Hadrianic period, especially on military sites. Examples are known at Red House, Corbridge (Charlesworth 1959, 166, fig. 22; 1979, 59, no. 2, 17-18), and from Malton, Ribchester, Castleford, Carlisle, Camelon, and Elginhaugh (all unpublished).

The small annular bead (no. 2: not illustrated) is less easily datable. Some of these are likely to have been in circulation in Britain well before the Claudian conquest, but most have been found in Roman contexts on a wide variety of sites (Guido 1978, group 6 iib, 656, 143-5). Beads very similar to the Wall example were found in Neronian-early Flavian contexts in the legionary fortress at Usk (Price 1995, 106, 109-10, nos. 17-21, fig. 31), and others of the same type have come from 4th-century contexts, as at Frocester Court villa, Gloucestershire (Price 1979, 46, no. 58).

Catalogue

- 1 Intact melon bead. Dark blue. Thirteen segments. Some wear at both ends. Height 13mm, maximum diameter 20mm, perforation 8-9mm. 30, Field 62 (fig. 1B), u/s (fig. 11.12).
- 2 Intact annular bead. Pale bluish green. Very irregular in profile. Bubbly, black specks. Height 5.5mm, diameter 13.5-15mm, perforation 8mm. 359, Site B, Test-Pit 4, 1100, ploughsoil. Not illustrated.

Glassworking evidence by Jennifer Price and Sally Cottam (not illustrated)

Four categories of glassworking evidence were identified. These comprise moiles, pincer trail, melted blobs, and vessel fragments which may have been spoiled in production. All of the pieces were from Site B, with the exception of nos. D3-4, from Site C.

Moiles (lettered A in catalogue)

Moiles are the more or less tubular parts of the paraison from the area adjacent to the blowing iron (Price 1974, 81-2). Noted at several production sites in Britain (Price and Cool 1991, 25-7, fig. 2, 2-4), they remain after the top of the vessel has been severed from the blowing iron and are certain evidence for glass blowing. The presence of five or six moiles at Wall is noteworthy, though it does not necessarily imply either large-scale or continuous production of vessels at the site. Only bluish-green moiles were found, though the dark blue trail on no. A1 suggests that coloured glass was in use in the workshop at the same time. The variation in the diameters of the moiles demonstrates that several different blowing irons were used in the workshop, and the bubble patterns in all the moiles suggest that the glass gathers were turned clockwise on the blowing irons.

Catalogue (all Site B)

- A1 Fragment. Bluish green. Cylindrical tube expanding out, thick-walled at edge in contact with blowing iron. Length 27mm; Diameter 25-33mm; Thickness 2.5-5mm. 745, 1103/6, Phase 2.
- A2 Fragment. Bluish green. Cylindrical tube, expanded end and internal step at point of contact with blowing iron. Length 29mm; Diameter 12.5-27mm; Thickness 1-2.5mm. 525, 1103/6, Phase 2.
- A3 Fragment. Bluish green. Cylindrical tube expanding out, thick-walled near point of contact with blowing iron. Length 30.5mm; Diameter approx 22mm; Thickness 1-2.5mm. 526, 1103/6, Phase 2.
- A4 Fragment. Bluish green. Cylindrical tube expanding out, thick-walled expanded end and internal step at point of contact with blowing iron. Length 30.5mm; Diameter 19.5mm+; Thickness 1.3-4.5mm. 513, 1103/2, Phase 2.
- A5 Fragment. Bluish green with dark blue streak. Cylindrical tube, expanding in thickness at one end. Length 14.5mm; Diameter approx 28mm; Thickness 2.5mm. 860, F137, Phase 4.
- A6 Fragment. Bluish green. Very distorted. Twisted cylindrical tube. Length 33mm; Diameter approximately 18mm; Thickness 1-1.5mm. 801, F117, Phase 1.

Pincered trail (lettered B in catalogue)

The pincered trail (B1), probably a waste piece from the application of a trail, is also good evidence that glass was being worked at Wall, but does not argue directly for the production of blown vessels. Similar pincered fragments are known from other production sites in Britain (Price and Cool 1991, 25, 27-8, fig. 2.7).

Catalogue

- B1 Fragment of trail. Bluish green. Narrow ribbon, expanding to terminal with impression of pointed tool, perhaps pincers, on both surfaces. Length 18mm; maximum width 11mm. 358, Site B, 1100/4, ploughsoil.

Melted blobs (lettered C in catalogue)

These items (C1-2) are less convincing as glassworking waste. There is no indication of the human manipulation of the glass, and both examples could be the products of an accidental fire.

Catalogue (Site B)

- C1 Fragment of blob. Bluish green. Small part of plano-convex terminal, flat surface with dimpled impressions. Dimensions 19 x 16.5mm. 516, 1103/2, Phase 2.
- C2 Blob. Bluish green. Narrow ribbon expanding to elongated lump with rounded edges. All surfaces affected by heat. Dimensions 31.5 x 8mm. 726, F105, Phase 1.

Glassworking waste fragments (lettered D in catalogue)

On their own, these fragments would probably not have been noted as unusual, but when, as here, they have been found in association with moiles, trail, and blobs, they may be considered as possible 'wasters' from glass-vessel production. Similar waste fragments have not been noted very often at production sites in Britain, except at Mancetter (Price and Cool 1991, 26-7, fig. 2, 913).

Catalogue

- D1 Convex body fragment. Bluish green, dark blue marvered patch. The fragment appears to have two bluish green gathers, the inside one being extremely bubbly. The bubble patterns are comparable with A5 above. Dimensions 44/5x17mm. 859, Site B, F137, Phase 4.
- D2 Convex body fragment. Bluish green. The fragment appears to have two gathers, the inside one being extremely bubbly. The bubble patterns are comparable with items A5 and CI above. Dimensions 30.5x32.5mm. 820, Site B, F124, Phase 4.
- D3 Convex body fragment. Bluish green. Extremely bubbly, black specks. Narrow, irregular, partly marvered trail. Dimensions 34x23.5mm. 53, Site C, F6, Phase 5.
- D4 Convex body fragment. Pale bluish green. Very bubbly, some black specks. Dimensions 26x14.5mm. 294, Site C, 2042, Phase 3/4.

Conclusion

The evidence for glassworking is an important discovery, though in the absence of crucibles, burnt areas, or other evidence for hot-temperature production nearby, it is not possible to explore the wider significance of the material. Only one hearth (F107: Phase 1) was recorded in Site B, but this feature is unlikely to be associated with glass production, and it contained no glassworking waste. The objects are largely derived from Site B, Phase 2 deposits (1103), with the majority of the remaining Site B material derived from adjoining, redeposited layers (Phase 4). There is little doubt that glass blowing took place nearby.

The Phase 2 deposits (1103) provide a date in the Antonine period for this activity. Some vessel glass was produced at different sites in Britain in the 1st-4th centuries, and the categories of material found at Wall might be of any date within this period. Many of the sites have, like Wall, produced only a very small quantity of glass-production evidence and are assumed to have blown glass vessels only occasionally, but a recent find of 50 kilograms of glass-blowing and other working debris in an early 2nd-century pit in London (pers. comm. John Shepherd) indicates that large-scale working also took place in the province.

GLASS PANE AND WINDOW GRILLE

Window pane by Jennifer Price and Sally Cottam

A pale-greenish matt-glossy, cast window pane (fig. 12), measuring at least 293 x 342mm, has been reconstructed from 64 very melted fragments found together in a Phase 4 context (1102E/5E), a layer of charcoal and debris derived from the destruction by fire of Structure 4 (wall F172). The original size of the pane was certainly larger than the present dimensions, as the centre has been distorted extremely by intense heat, and some of the fragments had become folded into three layers of glass.

The pane was formed by casting or pouring glass into a flat tray, which was the dominant production method in the 1st to 3rd centuries AD (see Boon 1966, for discussion of similar window glass in Wales). Although most of the pieces in the Wall pane are badly affected by heat, it remains possible to recognise the flat, matt under-surfaces and the uneven, glossy upper surfaces which are characteristic of cast window glass.

Two of the edges are noticeably thicker than the remainder of the pane, and are rounded from contact with the casting tray, while at least one edge appears to be grazed, indicating that the pane was shaped to fit the window opening after it had been cast. Grazed edges have been noted on many other pieces of cast window glass in Britain, including the substantially complete pane from Garden Hill in Hartfield, Sussex, which measures 255 x 235mm (Harden 1974).

There is some evidence to suggest that the matt surface of the pane was fixed into the window opening, as most of the fragments with rounded edges have a narrow and rather uneven roughened band close to the edge on the matt surface only. This implies that the pane was secured by an adhesive material such as mortar, rather than being fitted into a wooden frame. Interestingly, Plate 6 shows that when the pane melted and fell out of the window opening, it landed, matt surface down, within the interior of the building. On the basis of the datable finds from Phase 4 levels, it may be argued that the building was erected in the early 3rd century, but this does not necessarily mean that the window pane was made at that time. Although some new window panes were probably still being

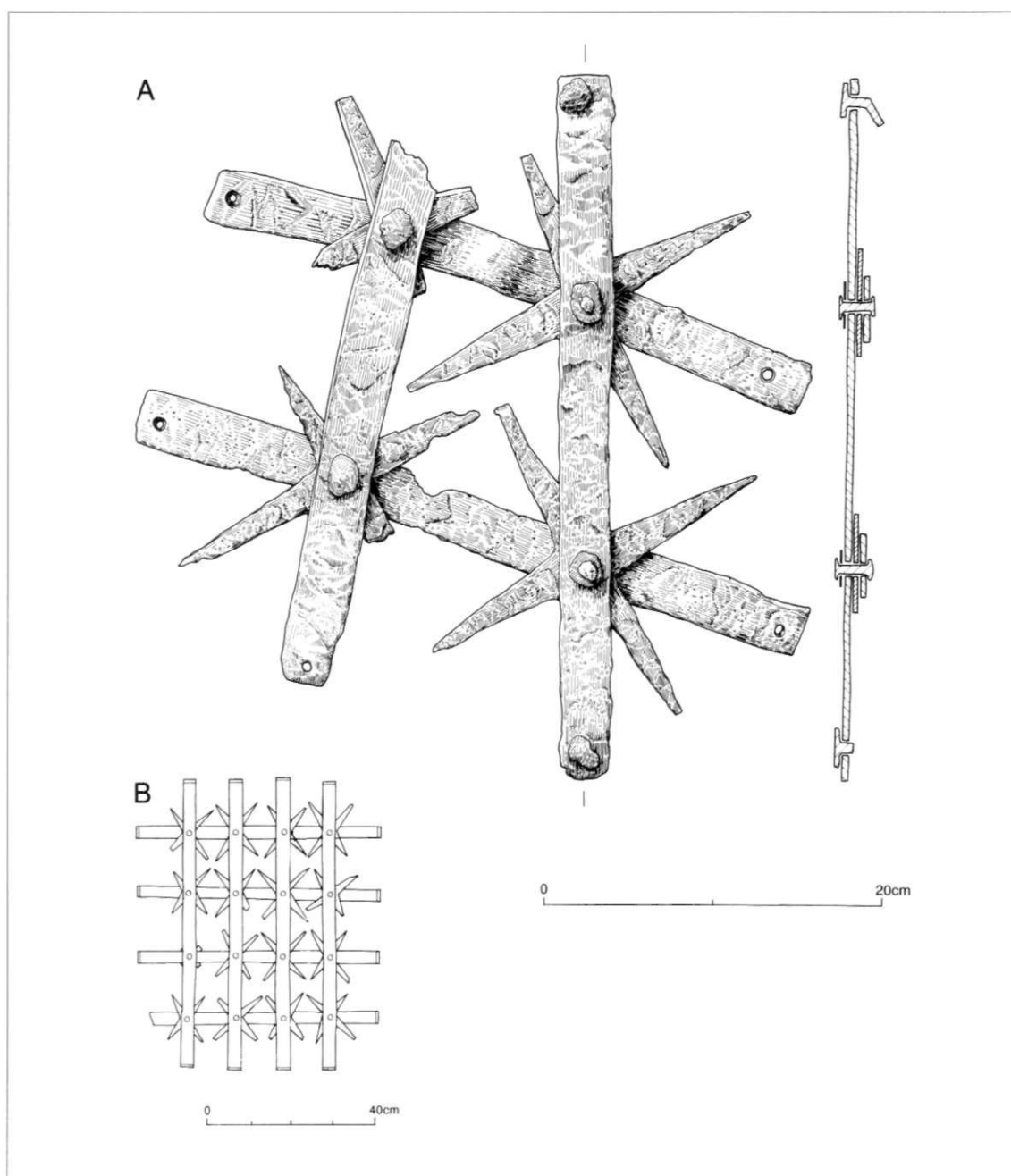


Fig. 12 : A: window grille
B: simplified view of grille from Hinton St. Mary

formed by casting in the early 3rd century, such panes were often very long-lived. It is at least possible that this pane had been fitted into an earlier building before being fitted into the stone building. A large deposit of cast, matt-glossy panes which were in the north range at Fishbourne when the building was destroyed by fire in the later 3rd century (Cunliffe 1971, 188), was not new material, as the edges of many of the panes had traces of mortar. It appears that that glass had been removed from the windows of several rooms and was being stored.

An iron window grille was found in the same destruction deposit (1102E/5E) as the window pane, the two items separated by a layer of daub. This association of the pane and the grille could suggest that both derived from the same window opening. However, the lack of parallels for a Roman window opening containing both a glass pane and a grille, and the intervening layer of burnt daub, could indicate that the pane and grille were set into window openings on different levels of the same building. It is more probable that the gradual process of the inward collapse of the building, whilst

burning, caused this fortuitous superimposition of the pane, plaster, and grille, the pane being uppermost in this destruction deposit.

Iron window grille by Lynne Bevan

The full-size window grille (fig. 12; plate 5) from the Phase 4 deposit (1102E/5E), associated with the destruction by fire of Structure 4, is an item with few parallels in Britain or on the Continent. This example conforms to the type most commonly found in the northern provinces, the attachment of star-shaped crosses at the intersections of the grid (Manning 1985, 128), but is unusual in its completeness, good condition, and close association with a pane of window glass.

Catalogue

Window grille, consisting of four rivetted, flat bars with four star-shaped attachments, set between the main bars of the frame and rivetted in place. The star-shaped attachments may have been for decoration, security, or both purposes. Similar, but smaller, attachments (16 in total) were used in the larger grille from Hinton St. Mary, Dorset, dated to the late 3rd to 4th centuries (fig. 11B; Manning and Painter 1967, 2-6, 1). A window grille from Holstein, Switzerland, was unusual in being found associated with window glass, suggesting perhaps that grille and pane were used together (Manning and Painter 1967, 127), although there are no other Continental parallels for this association (Manning 1985, 128). 415mm square, thickness: 3mm. 116, 1102E/5E, Phase 4 (fig. 12)

ROMAN POTTERY

COARSE POTTERY (Area 1, Site B and Site D) by Ruth Leary

A total of 324 sherds of Romano-British pottery, from Sites B and D only, was examined; the material from Area 4, Site C, was lost, except for the mortaria and samian ware and no. 53 (below). The surviving assemblage was made up almost entirely of rim sherds or decorated body sherds; plain bodysherds were not retained by the excavator. This bias in the collection makes quantification by sherd count or weight inappropriate, and rim percentage values are therefore used to produce estimated vessel equivalent values. The absence of pottery quantification in reports of previous Wall excavations makes it impossible to be confident to say when wares were first appearing or disappearing in the stratigraphic sequence. The inherent bias in the collection caused by the discard policy, and the loss of the Area 4 (Site C) material, may also obscure the true chronology.

A catalogue forms part of the site archive.

Fabrics

The fabric of the pottery was first examined by eye and sorted into fabric groups on the basis of colour, hardness, feel, fracture, inclusions, and manufacturing technique. A sample of the sherds was further examined under a x30 binocular microscope to verify these divisions. The size of the sample was as large as was felt necessary for each fabric group.

BB1 As Williams 1977.

BSB1 Black/buff. Hard with smooth feel and fairly smooth fracture. Sparse to moderate, well-sorted, fine, sub-angular quartz; sparse, fine to medium-sized, rounded grey inclusions, possibly clay pellets. Similar to GRA1 but 'Romanising'.

CTA1 Brown. Hard with soapy feel and irregular fracture. Abundant, ill-sorted, fine to medium-sized shell; rare, fine, rounded, black inclusions.

CTA2 Grey with pink tinge. Soft with smooth feel and irregular fracture. Moderate, medium-sized, platy vesicles; rare, fine, sub-angular quartz.

GRA1 Grey, often light grey with darker surfaces. Fairly hard with smooth feel and finely irregular fracture. Sparse, medium-sized, angular quartz; rare, fine to medium-sized, brown iron oxides.

GRA2 Dark grey with reddish brown margins and grey core. Soft with smooth feel and laminar fracture. Rare, medium-sized, subangular quartz; rare, fine, rounded, brown iron oxides.

GRA3 Very pale grey. Soft with smooth feel and fracture. Very rare, fine, sub-angular quartz; brown iron oxide streaks; probably sub-visible quartz.

- GRA4 Grey with off-white core. Hard with bumpy feel and fairly smooth fracture. Rare, medium-sized, sub-angular quartz; rare, fine to medium-sized, rounded, black inclusions.
- GRA5 Grey with brownish red core. Hard with smooth feel and fracture. Sparse, well-sorted, fine, sub-angular quartz.
- GRB1 General code for medium sandy grey wares.
- GTA1 Dark grey. Hard with sandy feel and irregular fracture. Moderate, ill-sorted, medium to fine, sub-angular quartz; sparse to moderate, very coarse, angular grey grog; sparse, medium-sized, rounded, brown inclusions.
- GTA2 Dark grey with buff and orange patches. Soft with smooth feel and irregular fracture. Moderate to sparse, ill-sorted, fine to medium-sized, angular, grey-buff grog; sparse, fine to medium-sized, rounded, red/brown inclusions.
- GTA3 Orange. Hard with bumpy feel and irregular fracture. Sparse, medium-sized, sub-angular quartz; sparse, ill-sorted, fine to very coarse, angular grog; sparse, ill-sorted, fine to very coarse, shell and vesicles; sparse, ill-sorted, long, thin black inclusions and rounded black inclusions; sparse, ill-sorted, medium to fine, rounded red/brown inclusions.
- OAA1 As GRA1 but oxidised to pink/red range.
- OAA2 Pale pink. Soft with smooth feel and fracture. Sparse, fine to medium-sized, sub-angular quartz; sparse, ill-sorted, medium to coarse, angular, buff grog.
- OAB1 As GRB1 but oxidised to red-pink range.
- OBA1 As GRA1 but oxidised to buff/brown range.
- OBBI As GRB1 but oxidised to buff/brown range.
- OBBI2 Dirty yellow/buff. Hard with harsh feel and irregular fracture. Moderate, well-sorted, medium-sized, sub-angular quartz. Similar but rather coarser than painted wares from Northamptonshire.
- OW1 Pale orange. Soft with smooth feel and finely irregular fracture. Rare, fine, sub-angular, quartz; sparse, rounded, red/brown iron oxides. Traces of cream slip.
- OW2 Fairly bright orange with traces of pale cream, mica-rich slip or self-slip. Soft with smooth feel and finely irregular fracture. Sparse, fine, sub-angular quartz.
- OW3 Orange with grey core and dirty white, thick slip. Hard with smooth feel and fracture. Sparse, fine, angular quartz; sparse, fine, rounded, black inclusions.
- SW1 Orange. Hard with smooth feel and fairly smooth fracture. Rare, fine, sub-angular quartz. Sparse, well-sorted, medium-sized, sub-angular vesicles. Severn Valley ware.
- SW2 Orange. Soft with smooth feel and fracture. Rare, fine, sub-angular quartz; rare, fine, rounded, red/brown inclusions; sparse, fine to medium, angular, buff-brown grog. Probably Severn Valley ware.
- SW3 Orange. Hard with smooth feel and fracture. Rare, medium-sized, sub-angular quartz; rare, medium-sized, rounded black inclusions. Probably Severn Valley ware.
- WS1 Orange with cream slip. Moderate, well-sorted, medium-sized, sub-angular quartz; sparse, medium-sized, rounded, red inclusions.
- WW1 White/off-white. Hard with smooth feel and fracture. Very sparse, fine, sub-angular quartz; sparse, ill-sorted, fine to coarse, rounded, red/brown iron oxides.
- WW2 Buff/cream. Fairly hard with smooth feel and fracture. Rare, fine sub-angular quartz; rare, fine, rounded, red/brown inclusions. Imported butt beaker ware.
- WW3 White. Hard with sandy feel and irregular fracture. Moderate, well-sorted, medium-sized, sub-angular quartz; sparse, ill-sorted, fine to coarse, rounded, red/brown inclusions. Possibly Brockley Hill.

Dating and sequence

The pottery ranged in date from the mid 1st to the mid 3rd century. Occupation is demonstrated at Wall from the Neronian period (Gould 1993, 1-6) and certainly some coarse ware sherds such as the GTA, BSB, and OAA3 wares from Greenfield's excavation may belong to that period (nos. 10, 23, 37, and 58). Several vessels were likely to belong to a Neronian phase of activity: the cupped rim

vessel (no. 46), the shell-tempered jars (no. 1), possibly some of the fine, buff ware cordoned bowls (no. 37), platters (no. 39), and shell-tempered storage jars (no. 64). A bodysherd from an imported white-ware butt beaker (not illustrated) also belongs to this phase, as may some of the white ware rouletted bodysherds. Some vessel forms in GRA1 may also be pre-Flavian in date (nos. 6 and 26), and some rim sherds, such as the everted rims (no. 17), may belong to pre-Flavian or Flavian jars as the sherds are too fragmentary to ascertain if the profile is globular or more ovoid. Other forms, such as the grey-ware cordoned and carinated bowls (nos. 3, 16, 36, 40, 41, 45, 49, and 66) and the rusticated and rouletted jars and reeded-rim bowls (nos. 22 and 42), are more likely to be Flavian but appear elsewhere in pre-Flavian contexts. In addition, pre-Flavian forms such as the rebated-rim jars in shell-tempered ware (no. 1) were still being used in the Flavian period elsewhere (at Derby, Dool *et al.* 1985, 114, and at Leicester, Clay and Pollard 1994, 77).

In contrast to the small amounts of pre-Flavian material, a large percentage of the assemblage was made up of forms typical of the Flavian-Trajanic period and well-paralleled in the Flavian-Trajanic levels at Mancetter, Rocester, Derby, and the other excavations at Wall. The material from Phase 1, therefore, suggests that the phase should be dated to the Flavian-Trajanic period. In Phase 2 and in the uppermost fills of Phase 1 features later pottery appears including mid and late 2nd-century BB1 and grey types. A large amount of Flavian-Trajanic material was present in the Phase 2 assemblages and continued to appear in Phases 3 and 4, presumably redeposited as earlier features were disturbed and pottery incorporated into later deposits.

Phase 1

The earliest features at Site B (F101, F128, and F149) contained sherds of pottery of the late 1st and early 2nd centuries (nos. 1-5 and 10), comprising the common Flavian-Trajanic everted-rim jar form, shell-tempered, rebated-rim jars, rusticated and rouletted sherds in grey ware, a Severn valley cup or tankard, and a Dressel 20 amphora sherd. Two grog-tempered sherds were found in feature F149, one from a carinated bowl or cup of pre-Flavian type, in addition to Flavian-Trajanic types.

Structure 2 contained a small number of sherds but these too dated to the late 1st to early 2nd century and comprised sherds from a fine, everted-rim beaker in OAA1, a GRA1 carinated bowl (as no. 36) and the body of a WW3 ring-necked flagon from feature F108, and a GRA1 handle fragment from feature F118. The latrine pit, F136, within Structure 2 contained part of a GRA1 platter with internal off-set (as no. 39), which is certainly current in the pre-Flavian levels at Wall but may continue to be in circulation in early Flavian levels.

The latest Phase 1 building, Structure 3, contained similar Flavian-Trajanic forms (as no. 17, including a rusticated example), but feature F110 also contained a GRB1 rim sherd from a wide-necked jar of later date (as no. 60), dating from the Antonine period and most common in the 3rd to 4th century. The possible latrine pit, F127, contained more Flavian-Trajanic material including WW1 beakers and lid sherds, a GRA1 rusticated sherd, and an OW3 footring base. Of the remaining Phase 1 features, the slots (F104-6) contained more Flavian-Trajanic types (nos. 6-8 and 44), as did the pits (nos. 11-12) but with the addition of Black burnished ware jars and dishes and OBA1 flanged bowl of Antonine date in pit F105 (as nos. 33, 48, and 50) and two rim sherds from jars with longer, everted-rims (as nos. 19 and 51) in pits F104 and F165. This form superseded the Flavian-Trajanic, short, everted-rim form in the 2nd century. Ditch F133, however, contained only a channel-rimmed jar of Northamptonshire type, current from the 1st century (no. 9).

Thus the Phase 1 features may be dated firmly to the Flavian-Trajanic period with the possibility of some pre-Flavian activity suggested by the presence of earlier sherds, both in these features and elsewhere on the site (see below); only sherds of 1st-century date were found in features F133/F165 and F136. The final stage of occupation is dated by the Antonine pottery from pits F104, F105 and F133/F165.

Phase 2

The levelling layer deposited across Site B in Phase 2 contained a large group of pottery (nos. 13-46) made up principally of redeposited Flavian-Trajanic vessels, which adds to our knowledge of the range of vessels reaching the site during that period (see below), some pre-Flavian forms (nos. 21, 23, 26, and 37), and some mid-late and late 2nd-century BB1 and grey ware forms (nos. 15, 19, 32, 33, 35, and as no. 50). The BB1 sherds suggest this levelling took place in the second half of the 2nd century.

Phase 3

Pottery from the Phase 3 silt and pebble layers included black burnished ware jars and dishes of the mid and late 2nd century and everted-rim jars typical of the 2nd century (nos. 50-51). Some earlier pieces were also present, including pre- or early-Flavian types such as the cordoned jar (no. 52) and a carinated cup (as no. 36). This material was not necessarily typologically later than the latest material from Phase 2.

Phase 4

Pottery from the silt layers (1184) over the Phase 3 surfaces (F174) contained Flavian-Trajanic types only (nos. 63-5), as did the drystone wall of Structure 4. The charcoal deposit within Structure 4 contained sherds of a mid 2nd-century BB1 jar and a beaker base similar to painted jars from Northamptonshire of the Flavian-Antonine period (nos. 67-8). Feature F122, a post-hole of Structure 5, contained a sherd from a BB1 dish, probably of mid 2nd-century date (no. 55) and feature F137 contained sherds of a jar common in the Antonine period (no. 57), but the other post-holes yielded only small quantities of re-deposited Flavian-Trajanic sherds (nos. 54, 56, 59, and 66).

On Site D, layer 2002 contained a Severn Valley ware basal sherd (no. 61), and sherds from two jars, one of typical Flavian-Trajanic form and the other probably dating from later in the 2nd century, came from pit F205. Post-hole F201 contained several sherds of the fine grey ware typical of the Flavian-Trajanic deposits, including a simple platter (as no. 6), and post-hole F204 contained the rim of a wide-necked jar with everted rim of late 2nd-century date (no. 60).

The latest sherds from Greenfield's excavations were a 3rd-century BB1 jar (no. 53: Area 4, Site C) and a grey ware copy of a Castor box (no. 61), but unfortunately details of the former feature do not survive.

Catalogue

Full details of the other pottery vessels may be found in the archive catalogue.

Phase 1 (Sherds 1-12)

- 1 CTA1 lid-seated jar. *Cf.* Gould 1968 nos. 57-8 from Neronian rubbish layer and Flavian-Trajanic kilns at Derby (Brassington 1971, nos. 137-42). 956, F101 (fig. 13.1).
- 2 GRA1 everted-rim jar with slight neck (possibly later than no. 17). 679, F10 (fig. 13.2).
- 3 SW2 straight walled cup or tankard with bead rim, *cf.* Webster 1977, nos. 38 and 60, probably 1st or 2nd century. The SW2 tankard form is more common in the 2nd century in this area (Booth 1986, 32). 676, F101 (fig. 13.3).
- 4 GRA1 jar with rim similar to cornice rim beaker form. 677, F101 (fig. 13.4).
- 5 GRB1 jar with small handle. 689, F101 (fig. 13.5).
- 6 GRA1 plain walled platter, *cf.* Hawkes and Hull 1947, no. 21; Marsh 1978, type 24. The fabric contrasts with those used for the platters in the Neronian deposits at Wall (Gould 1964, nos. 143-7, 155-6; Gould 1968, nos. 35-7), and compares better with the fabric of platters from Flavian-Trajanic layers and of Flavian-Trajanic vessel types (*cf.* Round 1971, no. 9). 697, F104 (fig. 13.6).
- 7 GRB1 blunt-ended everted-rim jar, *cf.* no. 32 for general form and Frere 1972, fig. 107, late 1st to 2nd century. 694, F104 (fig. 13.7).
- 8 OBB2 everted rim with band of dark brown paint on neck, *cf.* Woods 1970, fig. 39. Flavian-early Antonine. 718, F105 (fig. 13.8).
- 9 GTA3 channelled-rim, rilled jar. Common jar form in Northamptonshire in the 1st century *cf.* Jackson and Dix 1988, 77-9). 846, F133 (fig. 13.9).
- 10 GTA2 bodysherd of bowl or wide-mouthed jar with grooves and cordons, probably belonging to cordoned and carinated bowls, *cf.* Hawkes and Hull 1947 nos. 211-7 as no. 5. Possibly pre-Flavian or Flavian. 877, F149 (fig. 13.10).
- 11 GRA1 narrow-necked jar with outcurving rim and burnished wavy line decoration on neck. Similar jars would be more common in the 2nd century or later, although earlier examples are known, *cf.* Kenyon 1948, fig. 25 no. 16 dated Claudian. 900, F131/F165 (fig. 13.11).

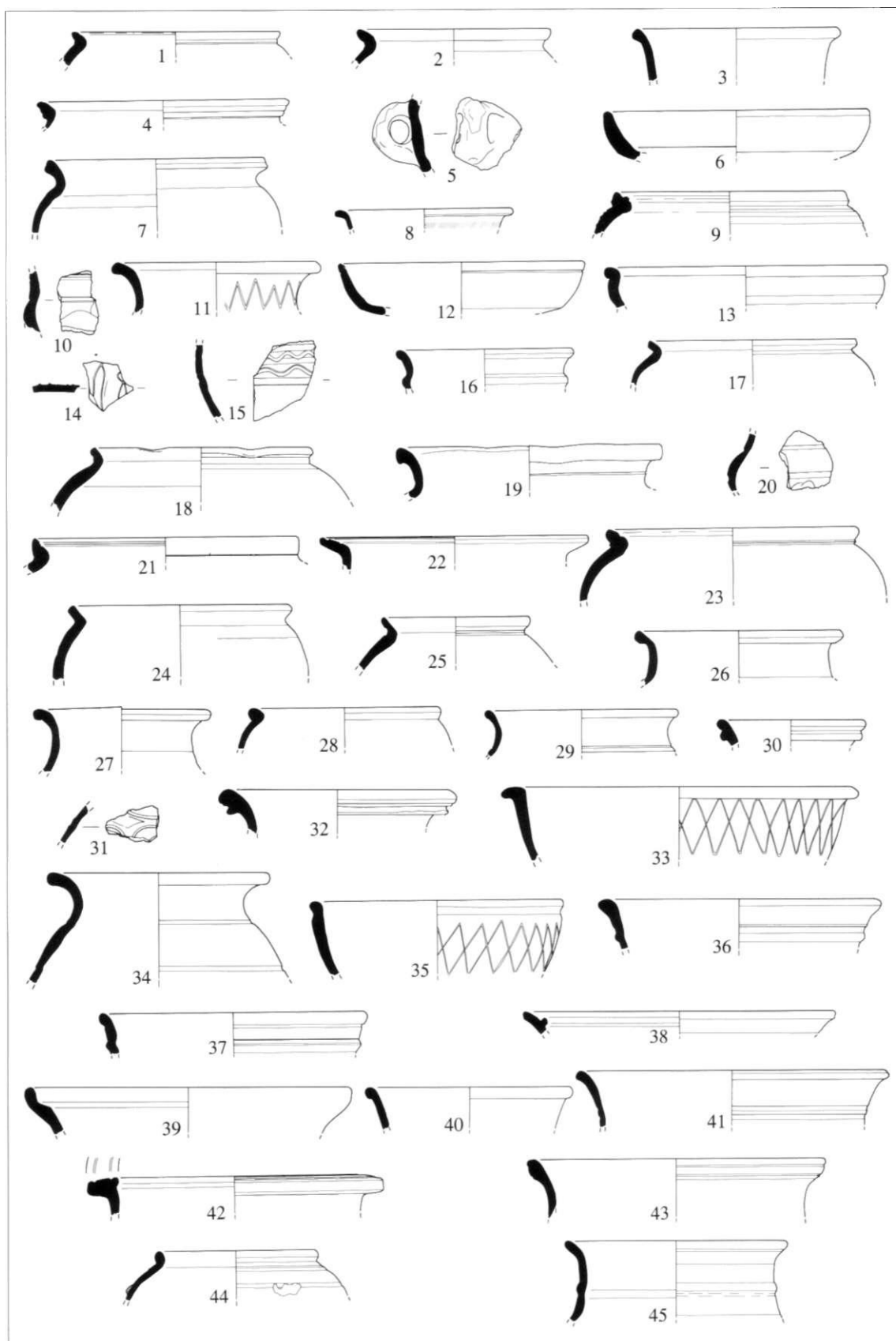


Fig. 13: Roman coarse pottery: phases 1 and 2 (at 1:4)

- 12 GRA1 bowl with grooved rim. 934, F131/F165 (fig. 13.12).

Phase 2 (Sherds 13-46)

- 13 GRB1 grooved rim dish or bowl, traces of burnishing outside. Strongly incurving body seems to be going in to a groove, suggesting this may be a bowl as Round 1983, no. 134, Flavian-Trajanic. 411, 1103/1 (fig. 13.13).
- 14 GRA3 bodysherd with fine, delicate rusticated decoration. Rusticated wares date from the pre-Flavian period through the Flavian-Trajanic into the Antonine period (Stead 1976, 147). 414, 1103/1 (fig. 13.14).
- 15 GRA1 bodysherd, with double grooved wavy lines defined by horizontal grooves, *cf.* Round 1992, no. 35, dated to the later 2nd century. 415, 1103/1 (fig. 13.15).
- 16 GRA1 cordoned bowl with everted rim. Form derived from 'Belgic' cordoned bowl series, *cf.* Flavian-Trajanic deposit at Derby (Brassington 1971, nos.10-12) and Gould 1964, no.153 in pre-Flavian or early Flavian deposit. 440, 1103/1 (fig. 13.16).
- 17 GRA1 everted-rim jar. This form was the most common jar form on Site B, often with a groove on the shoulder. The rim and upper body is indistinguishable from rusticated and rouletted, everted-rim sherds. These jars are the most common jar form of the Flavian-Trajanic period, with the pre-Flavian examples being more globular (*cf.* Frere and St. Joseph 1974, nos. 81-5). However, it is difficult to distinguish the earlier from the later jars, in the case of rim sherds. *Cf.* at Wall from pre-Flavian deposits (Round 1983, nos. 20-1) and Flavian deposits (Round 1983, nos. 32-3, 37-8). 445, 1103/1 (fig. 13.17).
- 18 GRA1 everted-rim jar. As no. 17, but distorted. 442, 1103/1 (fig. 13.18).
- 19 GRA1 narrow-necked jar with undercut rim, distorted. 439, 1103/1 (fig. 13.19).
- 20 GRA1 bodysherd with bulge demarcated by two grooves probably from bowl derived from 'Belgic' form Cam 218 (Hawkes and Hull 1947). 447, 1103/1 (fig. 13.20).
- 21 CTA1 rebated-rim jar, as no. 1. 451, 1103/1 (fig. 13.21).
- 22 GRA1 rim of reeded-rim bowl, *cf.* Frere 1972, nos. 211-14, 393-5, Flavian. 446, 1103/1 (fig. 13.22).
- 23 GTA1 rebated-rim jar, *cf.* Gould 1968, no. 38. In fabric and form similar to Trent Valley ware (Todd 1968a, no. 1) considered to be Flavian, and probably Neronian in date, and in decline by the end of the 1st century. At Leicester most grog-tempered fabrics had declined by the end of the Flavian period (Clay and Pollard 1994, 75). At Wall where the Flavian fine grey ware repertoire is extensive, this type is unlikely to have survived, and it is found predominantly in the pre-Flavian levels. 461, 1103/1 (fig. 13.23).
- 24 GRA1 everted-rim jar as no. 17. 548, 1103/5 (fig. 13.24).
- 25 WW1 everted-rim beaker, *cf.* Round 1983, nos. 32 and 37 in Flavian-Trajanic phase; Gould 1964, no. 125 in Neronian context. 550, 1103/5 (fig. 13.25).
- 26 GRA1 sharply everted rim of developed girth or butt beaker, with slight internal cupping, *cf.* Neronian context at Mancetter (Scott 1981, no.7). 605, 1103/6 (fig. 13.26).
- 27 GRA1 everted-rim narrow-necked jar. A long-lived, simple form. The fine fabric suggests a late 1st-2nd-century date. 609, 1103/6 (fig. 13.27).
- 28 GRA1 stubby everted-rim jar, variant of no.17. 485, 1103/2 (fig. 13.28).
- 29 GRA1 fine everted-rim necked beaker with double groove on shoulder, possibly a poppy-head beaker of Hadrianic-Antonine date (*cf.* Marsh and Tyers 1978, 569), or a developed butt beaker as no. 26. 488, 1103/2, (fig. 13.29).
- 30 GRA1 bifid rim, probably copying mid to late 1st-century flagon types, *cf.* Frere 1972, no. 242 dated AD 75-85. 493, 1103/2 (fig. 13.30).
- 31 OBA1 sherd decorated with barbotine circles, usually with barbotine dots also, *cf.* Marsh and Tyers 1978, 569 Flavian. 502; Frere 1972, no. 130, AD 60-75. 502, 1103/2 (fig. 13.31).
- 32 GRA1 bifid-rim, narrow-necked jar, *cf.* Gould 1964, no. 109 from a well which included late 2nd- and 3rd-century types. 628, 1103/8 (fig. 13.32).

- 33 BB1 flat-rim dish, *cf.* Gillam 1976 no. 60, mid 2nd century. 626, 1103/8 (fig. 13.33).
- 34 SW1 narrow-necked jar with outcurving rim and grooves at base of neck and upper body, *cf.* Webster 1977, nos. 1-6, a long-lived type. 624, 1103/8, (fig. 13.34).
- 35 BB1 grooved-rim dish, *cf.* Gillam 1976, no. 69, mid 2nd century. 627, 1103/8 (fig. 13.35).
- 36 OBA1 cordoned bowl, *cf.* Brassington 1971, nos. 9-13, Flavian-Trajanic, Dool *et al.* 1985, 97 no. 65. At Derby this form was still current in the Antonine levels. See also Ball and Ball 1985, no. 27. 625, 1103/8 (fig. 13.36).
- 37 GTA2 cordoned bowl as no. 16, *cf.* Gould 1964, no.138, pre-Flavian, 610, 1103/6 (fig. 13.37).
- 38 GRA1 bowl with plain rim and flange bent upwards. Unusual form, probably variant of flanged hemispherical bowl as no.48. 663, 1103/5/6 (fig. 13.38).
- 39 GRA1 plain-rim platter with pronounced internal offse, *cf.* Gould 1968, nos. 35-7 Neronian layer; Round 1971, no. 9. Flavian. 651, 1103/4Y7 (fig. 13.39).
- 40 GRA1 bead-rim bowl, probably from carinated bowl. As no. 36. 649, 1103/4/7, (fig. 13.40).
- 41 GRA1 cordoned cup, *cf.* no.36. Round 1983, no. 45. 518, 1103/4 (fig. 13.41).
- 42 OBA1 rim of reeded-rim bowl. Examples are known from pre-Flavian levels, but this form was more common in Flavian levels (Frere 1972, nos. 211-14, 393-5). Examples from this collection resemble the Flavian type more closely. 431, 1103/1 (fig. 13.42).
- 43 GRA 1 thickened rim with external grooves, *cf.* Brassington 1971, no. 15; Dool *et al.* 1985, 93, no. 22 dated Trajanic to early Antonine. 565, 1103E/5E (fig. 13.43).

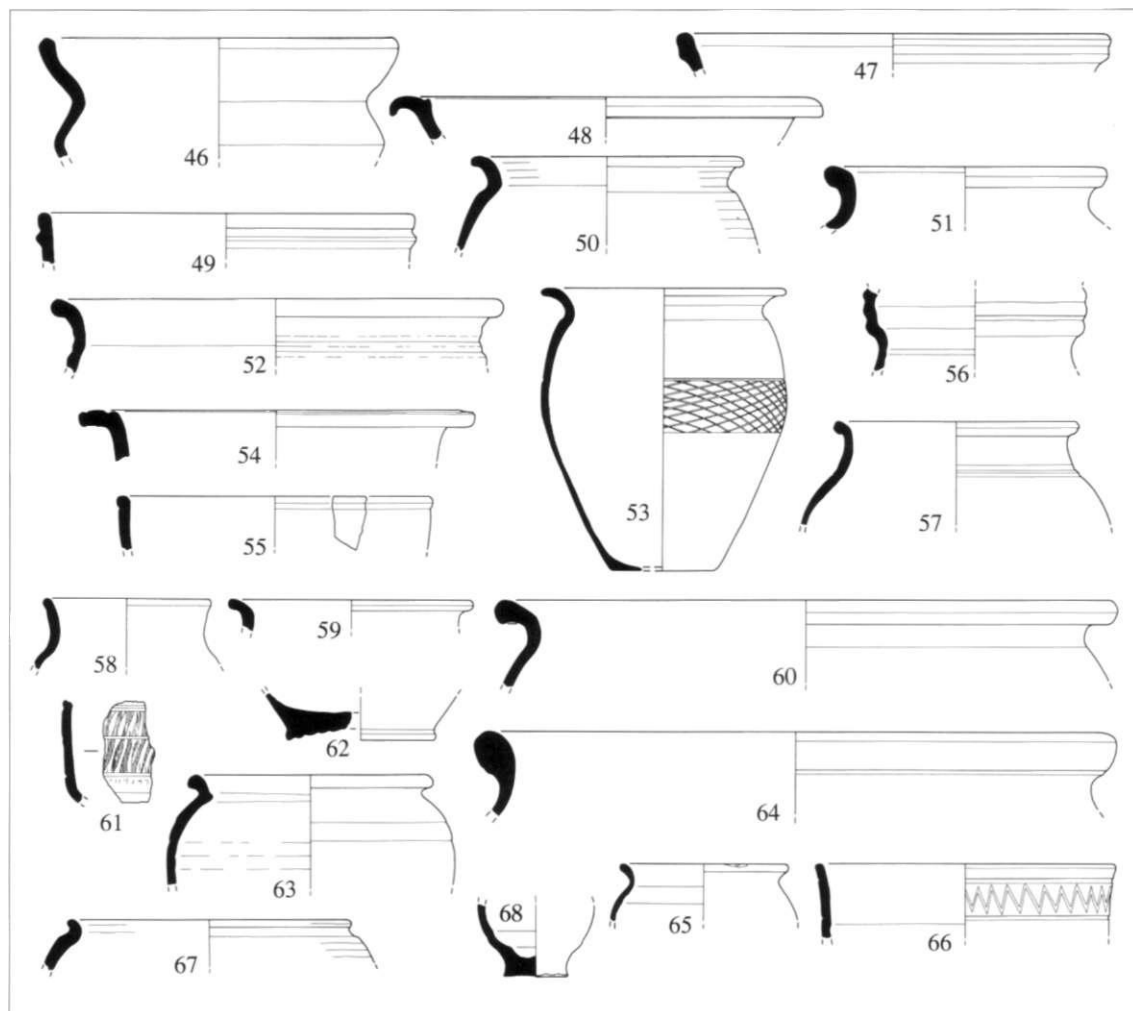


Fig. 14: Roman coarse pottery: phases 3 and 4 (at 1:4)

- 44 GRA5 with red/brown core, beaker with upright rounded rim, shoulder groove and smudged barbotine dot. Burnished, *cf.* Marsh and Tyers 1978, 568, IIIb1, dated Flavian, Frere 1972, fig. 103. Neronian-early Flavian. 743, 1103/4 (fig. 13.44).
- 45 GRA1 cordoned bowl with outcurving rim. As nos. 36 and 40. 769, 1103/2 (fig. 13.45).
- 46 OAA3 cup-mouthed bowl, *cf.* pre-Flavian type at Usk (Greene 1973, 34, no. 9) and in Neronian rubbish layer at Wall (Gould 1968, no. 33). 126, 1103/6 (fig. 14.46).

Phase 3 (Sherds 47-52)

- 47 GRA1 square rim of bowl, *cf.* Ball and Ball 1985, no. 3, carinated bowl, Flavian-Trajanic. 401, F173-4 (fig. 14.47).
- 48 OW1 flanged bowl, *cf.* Dool *et al.* 1985, 95 no. 36. Hadrianic-Antonine and also Round 1992, no. 53. 403, F173-4 (fig. 14.48).
- 49 OBA1 plain-rim, cordoned cup, as no. 36. 584, F173-4. (fig. 14.49).
- 50 BB1 jar *cf.* Gillam 1976, no. 4, late 2nd century. 540, F173-4 (fig. 14.50).
- 51 GRA4 necked jar with squared everted rim, *cf.* 2nd-century jars at Verulamium, Frere 1972, fig. 124. 538, F173-4 (fig. 14.51).
- 52 GRA1 necked, wide-mouthed jar with everted lip, and multiple cordons on shoulder, *cf.* Hawkes and Hull 1947, no. 220, pre and early Flavian forms at Verulamium, Frere 1972, fig. 105 and later jars, Brassington 1971, nos. 28-36. 537, F173-4 (fig. 14.52).

Phase 4 (Sherds 53-68)

- 53 BB1 jar with cavetto rim and obtuse lattice, burnished decoration, *cf.* Gillam 1976, no. 8, mid 3rd century. Area 4, Site C, 27, F6 (fig. 14.53).
- 54 OBA1 reeded rim bowl, as no. 22. Flavian. 790, F112 (fig. 14.54).
- 55 BB1 grooved-rim dish or bowl, *cf.* Gillam 1976, no. 68, early to mid 2nd century. 815, F122 (fig. 14.55).
- 56 GRA1 narrow-necked vessel with multiple cordons outside neck or rim, *cf.* Brassington 1971, no. 146. 817, F122 (fig. 14.56).
- 57 GRA1 necked, bead-rim jar, *cf.* Round 1971, no. 16 in Flavian-Trajanic level, and in Flavian-Trajanic levels at Rochester (Leary 1996, no. 2), but continued in use into the Antonine period. 856, F137 (fig. 14.57).
- 58 GRB1 tall everted rim possibly of poppyhead beaker, *cf.* no. 29 and Marsh and Tyers 1978, 569 type IIIF5-6, dated to the 2nd century. 858, F137 (fig. 14.58).
- 59 BSB1 everted-rim sherd, burnished all over, probably from 'Belgic' bowl. 857, F137 (fig. 14.59).
- 60 GRA2 with reddish brown core, wide-mouthed jar with outcurving rim, thickened and rounded at the tip, *cf.* Round 1992, no. 206 in Antonine deposit. 1003, F204 (fig. 14.60).
- 61 GRB1 body sherd with zones of rouletting demarcated with horizontal grooves. An unusual sherd, since the curvature suggests a wide girthed vessel and a carination at the bottom and possibly also at the top. The coarse, harsh fabric and the zoned decoration is like that of narrow-necked jars in the 3rd and 4th century, or, possibly a copy of a Castor box, *cf.* Cameron and Lucas 1969, no. 44. 947, F171 (fig. 14.61).
- 62 SW3 footing base with pronounced throwlines outside the base. Probably Severn Valley ware. 988, 2002 (fig. 14.62).
- 63 OBB1 rebated-rim jar, *cf.* Dool *et al.* 1985, 94 no. 6 in Flavian-early Antonine levels and Round 1983, nos. 118, 131-2, 135 from Hadrianic levels. 467, 1184 (fig. 14.63).
- 64 CTA1 squared-rim storage jar. Such jars derive from Iron Age types and are current from the 1st century AD, but can be long-lived, *cf.* Round 1992, fig. 19, no. 210 dated to the 2nd century. 640, 1184 (fig. 14.64).
- 65 GRA1 everted-rim beaker. Neronian or Flavian. 639, 1184, (fig. 14.65).
- 66 GRA1 plain-rim bowl with grooves and burnished zigzag decoration, *cf.* no. 41. and Brassington 1980, nos. 373 and 523 and Dool *et al.* 1985, 197 no. 160 for form and decoration. Probably Flavian-Trajanic. 862, F139 (fig. 14.66).

- 67 BB1 jar, *cf.* Gillam 1976, no. 30. Mid 2nd century. 556, 1102E/5E (fig. 14.67).
 68 OBB2 beaker base, *cf.* painted wares from Northamptonshire of Flavian to Antonine date (Woods 1970, 37 fabric A). 557, 1102E/5E (fig. 14.68).

Trade and stylistic associations

Study of the published Neronian assemblages from Wall (Gould 1964, nos. 116-123, 137-144, 151-161; Gould 1968, nos. 32-69; Round 1983, nos. 1-27; Round 1971, nos. 1-5) suggests the common forms were platters, jars with rebated and chunky, short, everted rims in black coarse or shell-tempered fabrics, jars with short, near upright rims and pronounced, nodular rustication, white ware necked jars, jars with inbent rims, collared and early ring-necked flagons, Lyons ware and various oxidised fine wares such as cupped-rim bowls, white ware rouletted beakers, and grey painted sherds. The coarse wares seem to be a mixture of 'native' type fabrics and wares described as buff, brown, or orange, with the everted-rim jars in fine, grey ware not present until the destruction layer of Round's phase 1 (Round 1983, no. 20-1). The vessel range can be extended to include a variety of carinated and cordoned vessels found in later levels but possibly only those in the early 'native' wares are pre-Flavian, and the fine, grey ware examples are Flavian and later (Round 1983, nos. 54, 191; Gould 1964, nos. 138 are early types; Round 1983, nos. 82, 161 are later types). This collection extends the range to include channelled-rim jars and North Gaulish butt beakers.

TABLE 2: Percentages of vessel forms using EVES by fabric

<i>Fabric</i>	<i>Estimated vessel equivalent</i>	<i>Relative percentage</i>
Amphora	1	1
BB1	9	10
BSB1	1	1
CTA1	3	1
CTA2	1	1
GRA1	30	33
GRA2	3	3
GRA3	1	1
GRA4	1	1
GRA5	2	2
GRB1	11	12
GTA1	1	1
GTA2	2	2
GTA3	1	1
OAA1	1	1
OAA2	1	1
OAB1	1	1
OBA1	4	4
OBB1	1	1
OBB2	1	1
OW1	1	1
OW2	1	1
OW3	1	1
SW1	1	1
SW2	1	
SW3	1	1
WS1	1	1
WW1	5	5
WW2	1	1
WW3	1	1
Total	90	100

TABLE 3: Relative percentages of vessel forms using EVES

<i>Form</i>	<i>Fabric</i>	<i>EVES</i>	<i>REL %</i>	<i>Fig. nos.</i>
Platter	GRA1/GRB1	2	2.22	39,6
Grooved-rim bowl/ dish	GRB1/BB1	3	3.33	35
Flat rim H bowl/dish	BB1	4	4.44	33
Cupped-rim bowl	OAA2	1	1.11	46
Cordoned and carinated	GTA2/BSB1/ GRA1/OBA1/SW2	9	10.00	16,36-7,49 51,40,41 3,45,66
Carinated bowl with grooved rim	GRA1/GRB1	2	2.22	43
Reeded-rim bowl	GRA1/OBA1	2	2.20	22,42
Flanged bowl	OBA1/OW1/GRA1	3	3.33	38,48
Wide-mouthed jar	GRA1/GRB1	2	2.22	60
Everted-rim beaker	GRA1/GRA5 GRB1/OAA1 OAB1/OB2 WW1	10	11.11	65
Poppyhead beaker	GRA1	1	1.11	29
Butt beaker	GRA1	1	1.11	26
BB1jar	BB1	3	3.33	31
Everted-rim jar	GRA1/GRA5 GRB1/OBA1	11	12.22	17
Rebated-rim jar	CTA1/GRA1 GRB1/GTA1	7	7.78 12.40	1,21
Necked jar	GRA1	1	1.11	57
Outcurved- rim jar	GRA1/GRA4 GRB1	5	5.56	7
Channel-rim jar	GTA3	1	1.11	9
Rusticated jar	GRA1	4	4.44	*
Narrow-necked jar	GRA1/GRA2 GRB1/SW1	5	5.56	34
Storage jar	CTA	1	1.11	63
Flagon	GRA1/WW1	3	3.33	*
Other	AMPAVW1/OW2 WW2/CTA2/OW3 WS1/GRA1/SW3	9	10.00	
TOTAL		90.00	99.7	

The forms and decorative techniques compare in some respects with other Neronian military sites such as the Lunt, Longthorpe, and Usk. The variety of fabrics suggests a number of different sources (table 2). The shell-tempered wares may be local, as are some of the grog-tempered wares. One grog-tempered jar (no. 23) compares well with Trent Valley ware, and along with the channelled-rim jar (no. 9) it indicates that some vessels came from further away. The various fabrics from this early activity could be usefully examined in more detail, and also compared with local clay deposits to ascertain their sources. The fine grey rusticated wares are indistinguishable from the later Flavian-Trajanic vessels, and were probably made by military potters.

In contrast to the earlier residual material from Phase 1 deposits, the Flavian-Trajanic pottery types were nearly all produced on site, and compare well with the contemporary military potteries at Mancetter, Rocester, and Derby. Wasters were identified in GRA1 and WW1 (nos. 18 and 19 and as no. 25). The everted-rim jars (no. 17) from the four military centres are virtually indistinguishable, and other forms such as the cordoned and carinated bowls and flanged bowls (nos. 3, 16, 36, 38, 43, 48, 49, and 66) are very similar. Rocester and Wall share the necked, everted-rim jars (no. 57) and reeded-rim bowls (no. 54) absent or rare at Derby. The rebated-rim jar (no. 63) is quite different from grey ware versions at Derby and Rocester, and only superficially similar to the oxidised 'pre-Derbyshire' ware jars at Derby (Leary 1996, nos. 88 and 123; Brassington 1971, 204-252). Wall so far lacks the exotic elements present at both Rocester and Derby, such as the glazing phase at Derby and the mica-dusting at Rocester, although it shares the use of fine white fabrics (as no. 25), white slips, and paint (traces of brown splash on unillustrated WW1 cordoned sherd and white arcs on flanged bowl as no. 48 from F105).

Non-local wares were also present in small quantities (table 2). Painted jars from Northamptonshire (no. 8; Round 1983, fig. 12, no. 57) were also found at Rocester (Leary 1996, no. 121) and Tripontium (Cameron and Lucas 1969, fig. 10, no. 41) and continued the Northamptonshire connection in the Neronian period. A second group of white painted wares at Wall (Gould 1964, 31), often decorated with circles, can be recorded from Margidunum, Derby, and Mancetter. Flagons from the kilns in the area of Verulamium probably augmented locally-made flagons in WW1 and OW1 and were also found at Rocester (Leary 1996). The fine grey ware, everted-rim jar with barbotine dots (no. 44) contrasted with the other fine grey wares in fabric and is probably not made on site. On other sites in Wall, roughcast wares have also been identified (e.g. Anderson 1980, fig. 5).

The Hadrianic and Antonine activity is characterised by the introduction of BB1 ware and the development of the local pottery industry. Small numbers of Severn Valley ware vessels were present during this phase, as were new forms such as the flanged bowl (no. 48), cordoned bowl no. 12 (*cf.* Gould 1964, no. 184), and roller-stamped beakers (Gould 1964, 31). The new forms and techniques compare well with Mancetter and Derby, roller-stamping being a possible link between Mancetter and Rossington Bridge (Buckland *et al.* 1980, 154). Without proper quantification of the fabrics and forms from the other excavations at Wall, it is not possible to be sure what effect the arrival of BB1 and Severn Valley ware may have had on the local potteries. At Derby and Rocester BB1 made little impact, presumably because of the strength of the local industries, whereas at Melandra BB1 took half the market during the Antonine period.

The absence of any colour-coated wares, or later grey ware types, suggests the occupation in this area was not intense in the later Roman period.

Conclusion

The pottery from Wall is clearly related closely to that produced at contemporary military potteries at Mancetter, Derby, and probably Rocester. Given the evidence for the movement of potters between Mancetter, Derby, and Rossington Bridge, Doncaster (Dool *et al.* 1985, 129; Buckland *et al.* 1980, 146), it would be very profitable to compare the forms and fabrics present at Mancetter, Derby, Rocester and, perhaps, Rossington Bridge with those from this and other excavations at Wall. Such an exercise does not lie within the scope of the present report, and, indeed, is not possible until the material from Wall and Mancetter are fully published. Comparison with other sites such as Leicester and Wroxeter will also be possible when they are published in a fully quantified form. The assemblage, however, can be compared with material from Derby (Dool *et al.* 1985, tables 4-9, particularly Phases 1 and 2), where quantification by fabric and form was published and from

Rochester (Leary 1996). The relative percentages are not directly comparable as the Wall quantification includes some redeposited Neronian and later Antonine material, and some slight distortion may be expected. However, the range and relative quantities of grey wares, oxidised wares, and white or white slip wares is very similar on all three sites, the most obvious difference in the fabric population being in the small shell-tempered ware contribution and the exotic fabrics such as mica-dusted and glazed wares at Derby and Rochester and the native grog and sand-tempered wares at Wall. The jar forms at all three sites are similar but at both Wall and Rochester there was a greater variety of everted-rim jar types. Reeded-rim bowls were present in small numbers at Wall and Rochester but not Derby; otherwise the proportions of bowl types were very similar. This limited analysis suggests further work on the pottery from other Wall excavations and comparison with other sites would be worthwhile.

MORTARIA by Jeremy Evans

The collection consists of some 47 sherds, amounting to a total weight of 3.457kg, and would appear to be substantially complete, relative to the original collection. Perhaps four or five individual sherds may have been lost, the most important a possible stamped sherd from Area 4, Site C, Trench A, 2002. Reasonable numbers of bases and some bodysherds survive, but rims do seem to be over represented (*cf.* Booth 1994), and some bias in the original collection policy seems likely, most probably in the non-collection of bodysherds.

Fabrics

The fabrics have been grouped following the Warwickshire Museum type series codes

Imports

- M13 A buff fabric with sub-angular white quartz temper c. 0.5-2mm and some gold mica 0.5mm. Trituration grits, common white sub-angular, white quartz c. 2-4mm, and occasional brown stone inclusions c. 2-4mm. Source: continental, possibly central France or Italy.

Whitewares

- M21 A white fabric with abundant sand temper c. 0.3-0.4mm. Source: Verulamium/Brockley Hill.
 M22 A fairly clean white fabric. Trituration grits, angular red and black grog c. 1-4mm. Source: Mancetter/Hartshill.
 M26 A white mortarium fabric with common, fairly coarse sand temper c. 0.3-0.4mm and occasional red ironstone inclusions c. 0.5-1mm. Trituration grits; occasional sub-angular quartz c. 2mm. Source: ?West Midlands/Wroxeter.
 M28 A hard white fabric with some sand temper c. 0.2mm. Trituration grits; some sub-rounded grey quartz c. 1-2mm, and common sub-angular brown stone c. 1-4mm. Source: unclear, probably Midlands.

Oxidised mortaria

- M35 An oxidised orange mortarium fabric with some grey-white sand temper c. 0.5-1mm and very occasional pinkish-white rock inclusions c. 2-3mm. Trituration grits; occasional angular white quartz c. 3-4mm. Source: unclear, probably Midlands.

White-slipped oxidised mortaria

- M48 An orange-brown oxidised mortarium fabric with occasional sand c. 0.3-0.4mm and occasional rounded white ?calcareous inclusions c. 0.5-1mm. Interior and exterior coated with a thin white slip. Source: unclear, probably Midlands.
 M491 An orange oxidised while slipped mortarium fabric with some sand temper c. 0.2-0.3mm. Interior and exterior white slipped, interior scoured. Trituration grits, common small white and grey sub-rounded quartz grits c. 1-2mm. Source: unclear, probably Midlands.

Catalogue

Fabric M22

- 1 Class A mortarium with flange rising above bead, interior burnt? and abraded. Early-mid 2nd century. 77, Site B, Test-Pit 2/2, unphased (fig 15.1).

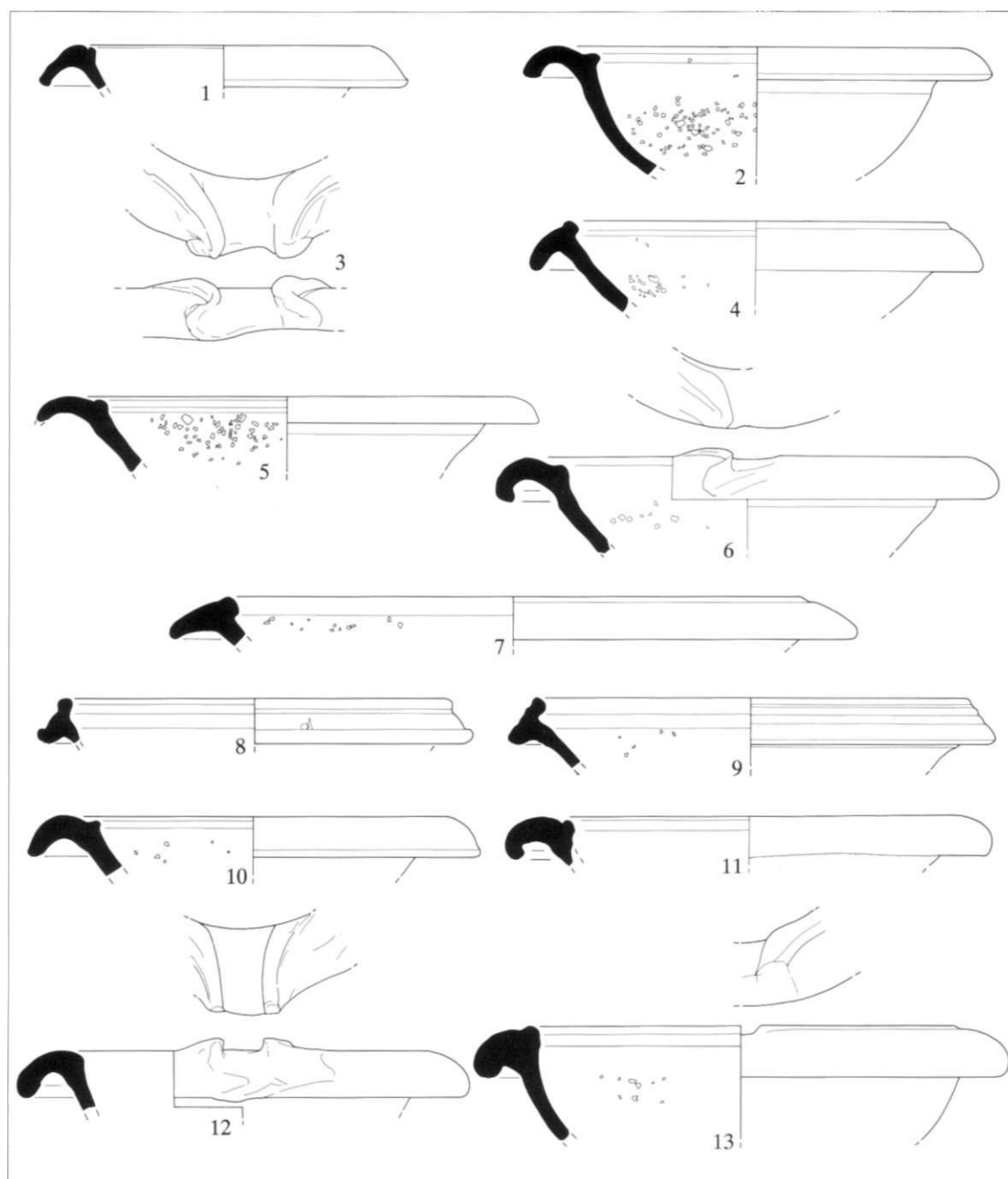


Fig. 15: Mortaria (at 1:4)

- 2 Class A mortarium with flange rising above bead. The flange is hooked back. *Cf.* Catterick (Hartley and Evans forthcoming) type M70. Probably early-mid 2nd century. 138, Site C, 2002, Phase 3 (fig 15.6).
- 3 Class A mortarium with flange rising above bead, trituration grits, early quartz and grog mix. Early 2nd century. Burnt after break. 970 and 972, Site D, 2002, Phase 4 (fig 15.2).
- 4 Class A mortarium with flange rising above bead, flange end broken off and burnt. Early trituration grits with grog and quartz mix. Probably early 2nd century. 419, Site C, F8, Phase 3/4 (fig 15.5).
- 5 Mortarium spout, probably on a Class B mortarium with bead above flange. The misfired fabric is a pale orange. *Cf.* Catterick (Hartley and Evans forthcoming) type M79, mid-late 2nd century. 91, Site B, Test-Pit 17/2, unphased (fig 15.3).

- 6 Class B mortarium, with bead above spout and downsloping, slightly curved flange. *Cf.* Catterick (Hartley and Evans forthcoming) type M76. Mid-late 2nd century. 137, Site C, 2002, Phase 3 (fig. 15.4).
- 7 Class M mortarium with bead and fairly straight, outsloping flange. Later 2nd century. 68, Site C, Test-Pit 7/83, ploughsoil (fig. 15.7).
- 8 Class C collared mortarium, beaded at top and bottom. *Cf.* Catterick (Hartley and Evans forthcoming), types M86-7. Probably first quarter of the 3rd century. 362, Site C, Trench K, u/s. (fig. 15.8).
- 9 Class E reeded hammerhead mortarium. *Cf.* Catterick (Evans and Hartley forthcoming) type M93. Probably 2nd quarter of the third century or later. 363, Site C, Trench K, u/s. Fig. 15.9.

Fabric M26

- 10 Class A mortarium with flange rising slightly above bead. *Cf.* Alcester (Booth 1994) nos. 43-4, AD 100-160. 54, Site B, Test-Pit 11/2, unphased (fig. 15.10).
- 11 Class A mortarium with flange rising slightly above bead, flange hooked back. *Cf.* Booth 1994, no. 42, dated AD 100-140. early-mid 2nd century. 361, Site C, Trench K, u/s (fig. 15.11).

Fabric M28

- 12 Class A mortarium spout, with flange rising above bead. *Cf.* Alcester (Booth 1994) no.20. Perhaps mid 2nd century. 783, Site B, F110, Phase 1 (fig. 15.12).

Fabric M35

- 13 Class B mortarium with bead above heavy flange. Probably mid-late 2nd century. 320, Site C, Trench J, 2030, Phase 3 (fig. 15.13).

TABLE 4: Mortaria fabrics

<i>Fabric</i>	<i>% sherd</i>	<i>% wt</i>	<i>% min no. rims</i>	<i>%EVE</i>
M13	2	1	3	6
M21	4	2	7	1
M22	79	75	73	84
M26	6	7	10	6
M29	2	4	3	3
M35	2	3	3	1
M48	2	1	3	0
M91	2	1	0	0
n=n=	47	3.457kg	30	352

Supply

Table 4 quantifies the mortaria. The numbers are small but the basic pattern is reasonably clear, with the assemblage being dominated by Mancetter-Hartshill material throughout the 2nd and 3rd centuries. First-century material is probably limited to Continental M13 imports, Verulamium region ware, and the local fabric M491. Thereafter, Mancetter dominates supply from its inception around the beginning of the 2nd century until the site collection comes to an end, perhaps in the first half of the 3rd century. Amongst the datable material, that of the 2nd century is predominant, with earlier and later 2nd-century types roughly balanced, but with little material dating either to the 1st or 3rd centuries. Perhaps surprisingly, no fabrics which could be attributed to Wroxeter have been identified.

SAMIAN by Brenda Dickinson

D = figure type in Dechelette 1904.

O = figure type in Oswald 1936-7.

Decorated Ware

Area 1, Site B

- 1 Form 30, Central Gaulish, in the style of Divixtus i of Lezoux. The seated Abundance (0.802), the Venus (D.179a = 0.305) on a mask, the vertical and horizontal saltires and, almost certainly, a Bacchus (D.534 = 0.571) are all on stamped form 30s from Silchester and Colchester (Stanfield and Simpson 1958, pi. 115, 3, from the same mould), c. AD 150-180. S41, 392, 1100/1, ploughsoil. 554, 1102E/5E, Phase 4. S78, 614, u/s (fig. 16.1).
- 2 Form 30, South Gaulish, in the style of Memor of La Graufesenque. The trifid motif in the bottom of the saltire (Hermet 1934, pi. 14, 42) and the thick, striated spindle are on a signed bowl in the Pompeii Hoard (Atkinson 1914, no. 74). The pair of gladiators (variants of D.603-4 = 0.1016-7) and, probably, the bud in the saltire, are on a signed bowl from Chester, c. AD 70-90. 396-8, F173-4, Phase 3 (fig. 16.2).
- 3 Form 37, South Gaulish. The ovolo, with tongue on the right, ending in a blurred trident, is on stamped bowls of M. Crestio from London (formerly Guildhall Museum) and Strasbourg. The ivy leaf in the wreath was used by Mercator i (Knorr 1919, Taf. 57, 25). c. AD 75-100. 436, u/s (fig. 16.3).
- 4 Form 37, South Gaulish. The (male) figure to the right is not illustrated in any of the corpora of figure-types. The palmate leaves are not closely paralleled, but are of a type in use at La Graufesenque in the pre- and early Flavian periods. This piece almost certainly falls within the range c. AD 70-85. 475, 1101/2, ploughsoil (fig. 16.4).
- 5 Form 37, Central Gaulish. The ovolo (Rogers B144) was used by Cinnamus ii on some of his earlier bowls (cf. Simpson and Rogers 1969, fig. 2, 9) and by associated potters, such as Cerialis ii and Paullus iv. It occurs, with the figure-type, a Perseus (D.146 = 0.234), on a bowl from Lezoux by a member of this group (Simpson and Rogers 1969, fig. 3, 20). c. AD 135-170. 552, 1102E/5E, Phase 4 (fig. 16.5).
- 6 Form 30, South Gaulish. The trident-tongued ovolo was used by Biragillus i, on a signed bowl from Vaison-la-Romaine (Mees 1995, Taf 11, 3). It is probably also on a signed mould of Baccinus ii, from La Graufesenque, which has the dog (0.2004) and hare (0.2129?). L. Tr-Masc(u)lus used the grapes and the dog on stamped bowls from Hof Steinhausen (Knorr 1952, Taf. 37A) and Cannstatt (Knorr 1905, Taf. XI, 1), respectively. The partly-impressed grass-tufts (Hermet 1934, pi. 14, 87) were used by all three potters. The satyr (0.597), Hercules with Hydra, (D.468 = 0.786), and geese (0.2244, 2286) were in common use in the later 1st and early 2nd centuries. A bowl of form 37 in the Flavian-Trajanic Bregenz Cellar hoard has the columns, chevron arcade, Hercules, satyr, and grass-tufts (Jacobs 1913, Taf III, 18). His Taf. I, 8 adds the dog. c. AD 85-110. 615, 1103/8, Phase 2 (fig. 16.6).
- 7 Form 37, South Gaulish. The trident-tongued ovolo was used by Albanus iii, Amandus Hi, G. At-Pas-, Bassinus i, Litugenus i and Mas-, all potters working at La Graufesenque in the Flavian-Trajanic period. The *bestiarius* and gladiator (variants of D.622 = 0.1043 and D.610 = 0.1044, respectively), stag (D.859 = 0.1738), and dog (0.1924) appear with the ovolo on a bowl from Holt (Grimes 1930, fig. 35, 19). c. AD 85-110. 642-3, 1103/9, Phase 2 (fig. 16.7).
- 8 Form 37, Central Gaulish, with a mould-stamp of Cinnamus ii (see stamp No 1). The bowl has his ovolo 3 (Rogers B143). 658, 1100/5\6, ploughsoil (fig. 16.8).
- 9 Form 67, South Gaulish. Scroll decoration, with the lower concavities filled with tips of almond-shaped leaves. The buds in the upper concavities were either carved freehand in the mould or were distorted in stamping. The feathery frond was used at La Graufesenque by several mould-makers, but the tiny double rings are unusual. It is rarely possible to attribute vessels of this form to specific potters because of the virtual absence of signed examples, but the style of decoration suggests a date c. AD 70-85. S96, 659, 1103/5\6, Phase 2. 699, F104, Phase 1 (fig. 16.9).
- 10 Form 29, South Gaulish, in the style of Iustus i. Only the panther (0.1573A) and palmate leaf are unknown for him. Bowls of form 29 with his IIVST mould stamp show the Cupid with bird (0.502) and the triple medallion (Rome), both hares (London, formerly Guildhall Museum), and the small rings (York: Dickinson and Hartley 1993, 746, 2645). Form 37 with the same

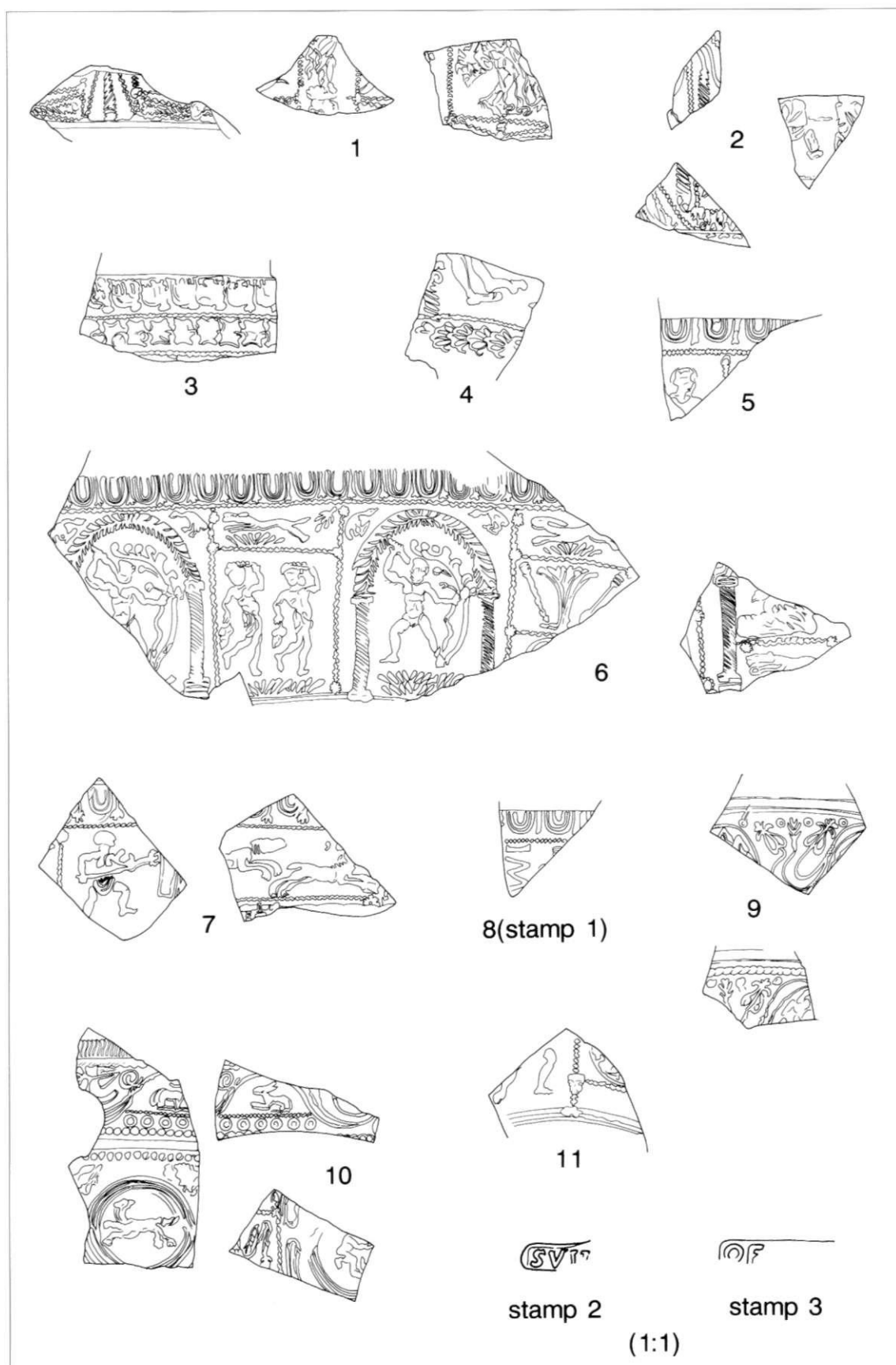


Fig. 16: Samian (at 1:2; stamps at 1:1)

stamp, from Castleford (Hartley and Dickinson, forthcoming), has the hare to left, the stirrup-leaf and the pendant bud. c. AD 70-85. 672-3 and S100, F101, Phase 1 (fig. 16.10).

Area 4, Site C

- 11 Form 37, Central Gaulish. A bowl in the style of Austrus at Lezoux, with his double ridge below the decoration (Stanfield and Simpson 1958, pi. 94). The figure-type, a satyr (D.364 = 0.627), is on a stamped bowl from Ravenglass (Stanfield and Simpson 1958, pi. 94, 5). The cup at the panel junctions (close to Rogers U65) appears on stamped bowls in Hadrianic contexts at Lezoux. c. AD 125-140. 104, 2000, ploughsoil, Test-Pit 17 (fig. 16.11).

Potters' stamps

- 1 [CINNA]MI retr. on form 37: Cinnamus ii of Lezoux, Die 5b (Walke and Walke 1968, Taf. 57, 6). This common label stamp occurs frequently both in Scotland and on Hadrian's Wall, but is found in greater numbers in Scotland. It has also been noted several times in Lower Danube provinces, where there was a considerable market for Lezoux ware in the early- and mid-Antonine periods, c. AD 150-180. 658, Site B, 1101/5\6, ploughsoil (fig. 16, stamp 1).
- 2 SVLP[ICIV] on form 18: Sulpicius of La Graufesenque, Die IIa (Hermet 1934, pi. 113, 164). Sulpicius's stamps are known from Flavian-Trajanic foundations, such as Cannstatt, Saalburg, Wilderspool and the main site at Corbridge. This particular one occurs at Malton. c. AD 85-110. 754, Site B, F108, Phase 1 (fig. 16, stamp 2).
- 3 OF... on form 18, South Gaulish. Early-Flavian. 868, Site B, F143, Phase 4 (fig. 16, stamp 3).

Discussion

The excavations produced relatively modest quantities of samian, consisting largely of small, rather weathered sherds. There were only three sources; South Gaulish ware coming from La Graufesenque, Central Gaulish mainly from Lezoux, and a few vessels from Les Martres-de-Veyre. The material divides thus:

TABLE 5: Quantification of samian by source

	Site A	Site B	Site C
Maximum vessel count	39	84	54
% of samian by source			
South Gaulish	33	80	24
Central Gaulish (Les Martres)	13		17
(Lezoux)	54	19	69

The samian as a whole ranges from the pre-Flavian period to the middle of the 2nd century, or, in the case of Area 2, where it is derived from topsoil only, slightly later. Area 1, Site B stands out from the other areas because of its higher proportion of 1st-century material, just under half of which is pre-Flavian, with two Claudio-Neronian pieces. By contrast, on Sites A and C the samian peaks in the late Hadrianic or early Antonine period.

Trajanic ware from Les Martres-de-Veyre was present on all the sites, but was not as prominent as the earlier and later material. This is not necessarily significant, however, as Les Martres ware was scarce in many parts of Britain in the early 2nd century.

Area 2 produced the latest samian, a decorated bowl in the style of Casurius ii, giving a *terminus* of c. AD 160 for the acquisition of samian on that site. The latest datable pottery from Site B is a bowl of Cinnamus ii, which will be after AD 150. The material from Area 4 includes Antonine ware, but nothing closely datable within the period. The absence of any Central Gaulish vessels of later 2nd-century date, apart from the Casurius bowl, or of East Gaulish ware from Rheinzabern and Trier suggests that samian was not reaching any of the sites after c. AD 165.

STAMPED DAUB by Lynne Bevan

Eight fragments of daub were recovered, all of which appear to have been part of wattle-and-daub walling. Seven of the fragments have grooved impressions resulting from contact with a wattle structure, and one fragment (fig. 17), from the deposit associated with the destruction of Structure

4 by fire (1102E/5E), exhibits a series of linear impressions on its flat, outer surface. This form of surface treatment was achieved by stamping with either a flat stamp or a roller (Russell 1990, 90-95), but it is impossible to identify which method was used in this instance due to the small size of the fragment.

Although the patterning appears decorative, its purpose was usually purely functional, providing an effective uniform 'keying' for daub, although the effect would have a more 'visually pleasing aspect' than simple trowel marks if plastering were delayed for any reason (Russell 1990, 111). A distinctive series of 'designs' has been recognised among excavated examples of daub, similar to those used on box flue tiles. Lowther (1949) compiled a typology of box flue dies to which similarly-stamped examples of daub were later related (Russell 1988). The surface treatment shown in fig.17 is closest to that of Lowther's Tile Group 5, 'diamond and lattice'. This group was one of the simple geometric style regarded by Lowther as the earliest form of box tile die (Lowther 1949), and examples of Groups 5 and 9 have been found in 'late 1st/early 2nd-century contexts in London, Canterbury, and St. Albans' (Russell 1990, 95). That quantities of stamped daub from destruction levels of the Boudiccan revolt at Colchester have been originally dated to c. AD 60, supported by the evidence from other sites such as Sheepen and Verulamium, suggests that the stamped daub predates the earliest stamped tiles by 25 to 30 years, and possibly provided the inspiration for the latter (*ibid.* 110-111).

Examples of daub stamped with 'diamond and lattice' patterns are known from a number of sites, including Wroxeter, Leicester, and Wall itself, and exhibit similar forms of latticed decoration and clearly also belong to Group 5. The closest parallels for the stamp from Wall (fig. 17) are those with the more intricate lattice between the diamonds, for example, Colchester, Lullingstone, and Mucking (Russell 1990, 99, fig. 8).

Catalogue

Daub fragment exhibiting stamp-impressed 'diamond and lattice' pattern. This fragment shows the latticed intersection between three diamonds. Approximate dimensions: 110 x 115, thickness: 48mm. BC1, 558, Site B, 1102E/5E, Phase 4 (fig. 17).

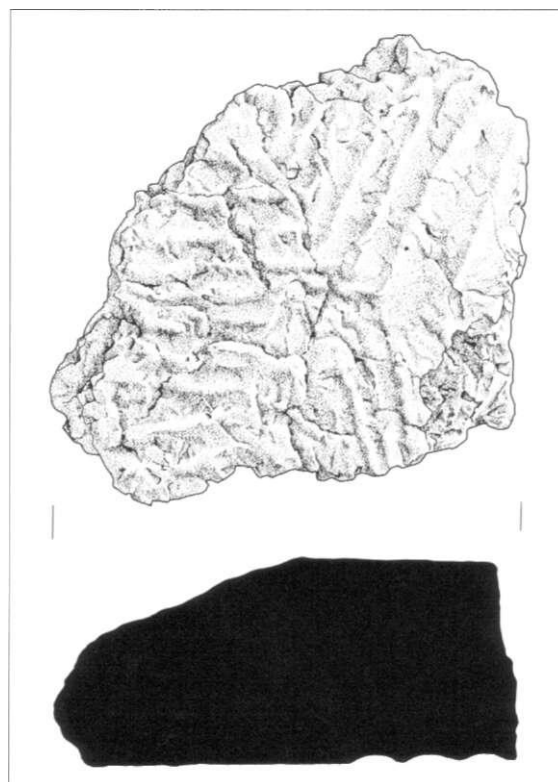


Fig. 17: Daub (at 1:2)

DISCUSSION

Chronology and economy

Early activity (Area 1, Site B)

Greenfield's excavations produced no features or finds of exclusively Claudian date. The earliest artifacts (from Area 1, Site B) comprised two sherds of residual samian, dated to the Claudian-Neronian period, an iron Colchester brooch of early 1st-century AD date, and two Claudian copy coins. However, Reece has noted that these coins are not necessarily of Claudian date, since very little bronze coin circulated until AD 64 (Reece 1985, 22). This early, low-denomination coinage provided petty cash for spending around the camp by the soldiery, and may also have functioned as a symbol of the 'separatedness' of the Roman monetary economy to the native *vicani* (Hurst 1985, 125).

The limited evidence for the early military origins of Wall has recently been debated by Round (1993) and Gould (1993). There is presently very little datable evidence for Claudian military activity, although two recently identified, incomplete, cropmarked, possible military enclosures at Wall (Welfare and Swan 1995, fig. 145, Camps 1 and 2) could be interpreted as marching camps of Claudian or later date. Camp 1 (not illustrated) lay to the west of Greenfield's Area 1. Meeson's postulated military enclosure (Staffordshire C. C. 1987) follows a different alignment, being in part defined by the south-east angle of Field 66 (fig. 1B), and could also be of early date and represent another military campaign.

Early 1st-century military campaigns in the West Midlands are represented for instance by marching camps of Claudian, or Claudio-Neronian date, at Mancetter (Scott 1981, 23) and Greensforge (Frere and St. Joseph 1983).

Phase 1 (Area 1, Site B)

The Phase 1 structures lay within the interior of one or more forts of mainly Flavian-Trajanic date, whose complete bounds remain to be identified. Phase 1 marked the first use of the site in a complex, but well-defined, stratigraphic sequence. Elements of three, or possibly four, timber-framed structures, founded on timber ground-beams, were identified. Interpretation of the function of these buildings is hampered by the incomplete ground-plans recovered, and the lack of definition of the associated fort's perimeter and thus of an understanding of the position of each building within the fort.

The recovery of Neronian pottery from Phase 1 ditch F133 and beam-slots F149 and F101 could suggest a Neronian origin for the Phase 1 military activity, which is otherwise dated to the Flavian-Trajanic period. Neronian military activity at Wall is represented mainly by a cropmarked fort, located to the north of Watling Street (fig. 1B; Round 1983, fig. 1), and by evidence of buildings and Neronian artifact scatters, identified to the north-east of the baths (fig. 1B; Round 1983, 13).

The earliest identifiable building was Structure 1, represented by part of its eastern side (F128) and a possible internal partition (F101). This building was succeeded by Structure 2, also of Flavian date, which was in turn cut by the extreme south-west corner of Structure 3, the latest in the sequence of Phase 1 buildings and dated to the Flavian-Trajanic period. Such a complex sequence of re-building is perhaps unexpected in a fort context, although excavation by Round within the interior of the Flavian fort to the north identified a sequence of three phases of timber-framed buildings (Round 1983, 14), within a sequence of forts whose complete defensive perimeter has still to be identified. Structures 1 and 3 could have been parts of auxiliary barrack-blocks, which typically measure 10m in width and between 40-50m in length (Johnson 1983, 167). The association of this building with a latrine (F136) and a hearth (F107) could argue that the structure formed the rearmost of a pair of rooms within a barrack block. Structures 2 and 3 contained no internal divisions which are characteristic of barrack-block construction (Johnson 1983, 171), and it is possible that these buildings could have been stores or stables (e.g. Johnson 1983, figs. 136-7).

An alternative interpretation of the Phase 1 sequence from Greenfield's excavation could be that Structures 2 and 3, which followed a similar alignment, were associated directly with and together formed part of a barrack-block (e.g. Johnson 1982, figs. 136-7), the officers' quarters being represented by Structure 2. However, it is difficult to reconcile this alternative interpretation with the recorded stratigraphy and dating evidence.

Traces of timber-framed buildings have been identified by Oswald on the eastern edge of Field 63 (fig. 1B), by Gould (1964, fig. 1, sites K, S, and NOP) to the west of Ashcroft Lane, and by Sterenberg (1989) to the west of Manor Farm. Although lying outside the area of the military enclosures as presently recognised, it is possible that these features could have been associated with the Phase 1 military activity noted by Greenfield. Recently Round (1993, 5) has re-interpreted the buildings found by Gould as being civilian. Oswald also identified a ditch in the eastern zone of Field 63, containing 2nd-century pottery, which could define one side of a hitherto unrecognised military enclosure. Although the orientation of this ditch was not described, it is also possible that it could define the eastern limit of the late Roman enclosure (fig. 1B), in which case the pottery would be residual.

The evidence from Round's excavations (1983, 14) suggests that the Flavian fort was abandoned in the Trajanic period. Other forts at Greensforge (Frere and St Joseph 1983), Metchley (Jones forthcoming), and Baginton (Hobley 1975) were abandoned around the same time.

The pottery from Phase 1 features and deposits was mainly Flavian-Trajanic in date, although a small quantity of pre-Flavian wares was also present. The early military forms compare well with material from other Neronian military sites, such as the Lunt, Longthorpe, and Usk. The different fabrics present indicate different sources for the pottery. The shell-tempered and possibly the grog-tempered wares may have been produced locally, and the fine grey rusticated wares may be the products of military potters. In contrast, the Flavian-Trajanic wares were produced mainly on site, and compare well with the products of military kilns at Mancetter, Rocester, and Derby. Evidence of pottery production at Wall is also provided by the recovery of wasters from Phase 1 contexts. However, no evidence was found of the more 'exotic' wares found at both Derby and Rocester. The small quantities of local wares present indicate trade, with Northamptonshire (painted jars), Margidunum, Derby, and Mancetter (white painted wares), and with Verulamium (flagons). The Phase 1 mortaria, include Continental imports, Verulamium region ware, and a local fabric (M491). Apart from the pottery, the only artifact of possible military origin was the button and loop fastener with the eye motif. The item, however, could be used on clothing or as horse equipment, which is not exclusively of military origin.

An alternative interpretation of the Phase 1 building sequence is that it represents early civilian settlement.

No evidence of Phase 1 activity was recorded in Area 4 (Site C).

Phase 2 (Area 1 and Area 4)

Phase 2 is represented in Area 1, Site B by the deposition of a charcoal-rich layer (1103), interpreted now as a levelling deposit and originally by Greenfield (1964) as an *in situ* occupation deposit. If, as is probable, Phase 1 is military in character, Phase 2 probably represents the first civilian activity on site.

Phase 2 glass-working was represented by moiles, pincer tail, melted blobs, and vessel fragments which may have been spoiled in production. The material was fairly well distributed throughout Area B, and provides the first indication of glass-working at Wall. The moiles indicate glass-blowing, while differences in their diameter suggest that a number of different blowing-irons were in use. No associated features could be recognised, and the scale of glass-working activity is not known. This glass-making assemblage could shed light on the range of industries represented at Wall and its trading links. However, it is difficult to establish the precise chronology or context of the glass-working because the finds from Phase 1 feature fills and the Phase 2 deposit were not separated at excavation.

An alternative interpretation of the finds from layer 1103 is that they represent the disposal of rubbish from activity closer to the Watling Street frontage.

Analysis of the Phase 2 pottery assemblage indicates the developed Black Burnished Ware and local pottery industries, and the introduction of Severn Valley Ware vessels. The newly introduced forms compare with those from Mancetter and Rossington Bridge. Three pottery wasters were also found in layer 1103.

The earliest activity in Area 4, Site C may be ascribed to Phases 2/3, although it should be noted that only a very limited number of the datable artifacts from this site have survived. The earliest

activity at Site C was represented by the excavation of pits, post-holes, and gulleys, features which probably represented the remains of timber-framed structures, although the absence of contemporary occupation deposits could indicate that occupation was neither long-lived or intense. The activity may have been contained within a plot, defined by ditched boundaries (e.g. F2, F3, F18).

The activity recorded by Greenfield at Site C post-dated the sequence recorded by Gould (1966, 4-6) at Site V, located approximately 150m to the east of the junction between Ryknild Street and Watling Street, and which was dated between the 1st century and the Antonine period. Gould (1966, fig. 2) noted that activity was concentrated along a narrow strip, extending no further than 4m from the Watling Street frontage. This contrasts with the spread of activity, not necessarily contemporary, recorded at Greenfield's Site B, where activity was recorded for a distance of 50m to the south of Watling Street. The evidence from this site is of particular importance, as it demonstrates occupation on the western fringe of an extensive area of peat. Gould (1966, fig. 2) also identified traces of occupation to the north of Watling Street, at a distance of approximately 275m to the east of the Watling Street/Ryknild Street junction, although this evidence does not necessarily mean that the intervening area, located on poorly-draining peat, contained ribbon-type settlement. A timber-framed structure with a floor of sand and gravel was recorded to the south-west of the Ryknild Street/Watling Street junction (Oswald 1968, 39).

Phase 3 (Area 1 and Area 4)

In Area 1, Phase 3 is represented by the layout of pebbled surfaces. Two successive surfaces were recorded in Area B (F173-4), and a single surface (F207) was defined in Area D to the south; similar pebbled surfaces were also recorded in test-pits adjoining Area B (fig. 3). These may be interpreted as yards or hardstandings. Other, unphased surfaces (e.g. 2111-2; Trenches 48-9, fig. 3) may have been associated. These surfaces were interpreted by Greenfield as forming a street, leading to Watling Street to the north, but it is difficult to support this interpretation from the limited information provided by the small areas excavated. A number of streets have been identified aligned at right-angles to Watling Street (Gould 1964, 13; Staffordshire C.C. 1987, fig. 2), but no associated linear cropmarked feature have been recorded in the vicinity, although such cropmarked features may not be easily distinguishable in the subsoil here.

Whichever interpretation is preferred, the significance of these surfaces is that they define the first activity following site clearance (Phase 2). Similar pebbled surfaces were also identified at Area 4.

In Area 4 Site C, Phase 3 is represented by the construction of a pebble yard surface or hardstanding (F22), sealing the Phase 2/3 features, including ditched boundaries. This yard may be associated with continued activity, perhaps located to the north, adjoining the Watling Street frontage (fig. 1B). Surface F22 may be dated to the 2nd century by the mortaria.

Phase 4 (Area 1 and Area 4)

In Area 1, Phase 4 is defined by the construction of Structure 4, represented by wall F172, which was cut through the Phase 3 pebble surfaces F173-4. Phase 4 is represented by the construction and destruction of Structure 4 by fire, followed by the construction of timber-framed buildings (Structure 5a-c). These buildings followed the approximate north-south alignment established in Phase 1, probably being laid-out at right-angles to Watling Street to the north (fig. 1A).

Although only an incomplete length of the western wall (F172) of Structure 4 was exposed, together with an associated burnt destruction deposit (1102E/5E), this discovery is nevertheless of considerable significance. The destruction deposit contained part of an iron window grille (fig. 14), daub fragments, and fragments of a glass window pane, which had collapsed within the interior of the building during a fire. Although the window-pane and iron grille were separated by a layer of daub fragments, it is nevertheless possible that they derived from the same window opening, despite the absence of a British parallel for window glass and an iron grille being set within the same window opening (Manning and Painter 1967, 126).

The closest parallel for the grille comes from Hinton St. Mary, where a similar grille was associated with the demolition deposit of a building containing a mosaic (*ibid.* 126). Manning and Painter suggest that the use of such grilles is largely confined to rooms which require special protection and that suggests that Structure 4 could have been of high-status, such as a villa, or, alternatively, that it

fulfilled a function associated with security, such as a strongroom, an argument which is perhaps supported by its proximity to Watling Street. It is perhaps worth noting in support of this hypothesis that Structure 4 was dated to the early 3rd century, and would have post-dated the *mansio*, destroyed by fire in the late 2nd century (Round 1992, 75).

A later phase of activity, post-dating the destruction of Structure 4, is represented by the construction of timber-framed buildings (Structures 5a-c), originally interpreted by Greenfield as representing a single massive timber-framed building (Greenfield 1964). The southern wall of Structure 5a was represented by beam-slot F171, which abutted the southern end of wall F172. The remaining three sides of this building were defined by post-holes. The eastern wall of this structure was positioned on-line with the western wall of Structure 4, and two post-holes belonging to the eastern side of Structure 5a (F125, F126) were cut into wall F172 of Structure 4. This superimposition, and the cutting of the two Structure 5a post-holes into wall F172, suggests that the eastern side of Structure 5a may have been formed by a timber superstructure resting on the partly demolished and levelled footings of wall F172, an interpretation also supported by the positioning of beam-slot F171 relative to wall F172. It is unlikely that Structure 5a formed a westwards extension of Structure 4, since the iron grille associated with the latter would have been set in an aperture within a stone, and not a timber, wall. Although no associated internal features were identified, a silt deposit (1196), recorded within its interior, overlying the Phase 3 surfaces (F173-4) and sealing wall F172, could be interpreted as an occupation deposit.

Two further timber-framed buildings (Structures 5b and 5c) were located in the north of Site B, approximately 4m to the north of Structure 5a. These buildings were constructed following slightly differing alignments (fig. 4). Neither structure was fully identified in plan, because of the limited extent of trenching here. The location of these buildings near to Watling Street could suggest a function associated with storage, since no internal features indicative of 'domestic' use were identified.

At Site D, pebble surface F207 was sealed by a layer of clay (2002), interpreted as the floor surface of a building. Other features, including beam-slots and a post-hole, were dug into the road surface, through the clay layer, and after disuse of the clay-floored building. This floor is dated by 2nd-century pottery. Traces of other timber-framed buildings recorded within test-pits (fig. 3) could have been contemporary.

At Area 4 Phase 3/4 activity was represented by the deposition of a clay floor-surface (F23), sealing the edge of the yard surface (F22). The Phase 3 pebble surfaces were sealed by silts and occupation deposits associated with Phase 3/4 activity. The Phase 3/4 floor (F23) may have been contained within a narrow plot, defined on its eastern and western sides by ditched boundaries (F4, F5, F19, F7), aligned approximately north-south. A brooch from a Phase 3/4 silt layer is dated to the early 3rd century.

The relative absence of colour coats, and of later grey-ware types, suggests that occupation here was not intense in the later Roman period. The Phase 2 mortaria assemblage was dominated by Mancetter/Hartshill products.

Phase 5 (Areas 1 and 4)

The latest Roman event at Area 1, Site B was represented by the excavation of a ditch (F196), aligned approximately north-south. Although only the extreme eastern edge of the ditch was located, this feature was interpreted by Greenfield as the eastern ditch of the later Roman cropmarked *burgus* enclosure (fig. 1; Webster 1959a, 26). Greenfield (1964) noted that the fills of ditch F196 contained 4th-century pottery, now lost. This ditch cut two of the Structure 5a post-holes (F120, F121), although there is no evidence to suggest there was a causal link between the disuse of Structure 5a and construction of the *burgus*. Nationally, there is little strong evidence for the clearance of buildings surrounding later Roman defences (Esmonde Cleary 1987, 171).

This enclosure, of 2.4 ha., straddled Watling Street. It was triple-ditched, with an inner drystone wall which has been traced only on its northern and western sides, where it fronted a turf rampart. Limited excavation within its interior has failed to identify any traces of contemporary settlement (Gould 1964). Webster has suggested that the enclosure may have been part of a network of *burgi*, or defended road stations, established by Constantinus Chlorus in AD 296 along Watling Street. Pottery dating to the 3rd century was recovered by Gould (1964, 3) from the enclosure ditches. Such

enclosures typically contained no substantial buildings within their interior, and may have been no more than a refuge in a time of trouble (Burnham and Wachter 1990). More evidence of activity within the limits of a *burgus* is forthcoming from Mancetter, where traces of contemporary building in timber and stone have been found, including quantities of 4th-century artifacts (Burnham and Wachter 1990, 259). A cropmarked, possible ditch (fig. 1B; Welfare and Swan 1995, fig. 145), respecting the alignment of the enclosure, may have been cut to define or defend the later Roman settlement of this area.

Well F6 at Area 4, Site C may also be dated to Phase 5, although the pottery from its fills, dated to the 4th century by Greenfield (1964) is now lost.

CONCLUSION

In terms of the aims of the excavation, to provide an understanding of the sequence of Roman activity to the south-east of the Neronian fort at Wall, the excavations of 1962 and 1964 were generally successful. The limited nature of the excavations, and the loss of many of the datable finds in the intervening period, has necessarily limited the opportunities provided for detailed functional reconstruction.

The Area 1 Phase 1 building sequence provides the first indicator of military activity in this area. Although the limits of the encircling military enclosure were not found by Greenfield, recent work by Welfare and Swan (1995) and map interpretation by Meeson (Staffordshire C. C. 1987) has identified respectively the north-western cropmarked corner of a military enclosure and the possible south-western corner of a military enclosure, and these discoveries may provide a context for Greenfield's Phase 1 (Area 1). The dating evidence suggests a Neronian origin for this military activity, although the identifiable buildings, possibly barrack-blocks (Structures 1-3), may be dated to the Flavian-Trajanic period.

The evidence for Phase 2 civilian glass-working is of particular importance.

Greenfield's excavations in Areas 1-4 have also provided important information concerning the nature of the succeeding civilian settlement. The window glass and iron grille associated with the Phase 4 Structure 4 suggest that this was a building of high status, or with a function associated with security, possibly forming part of a villa-type establishment. Perhaps of almost equal importance is the negative evidence provided by the widely-spread trenching and test-pitting concerning the extent of Roman activity to the south of Watling Street in this area.

A particular problem with the interpretation of the evidence from Greenfield's excavations is the lack of a published up-to-date synthesis of the excavated evidence from Roman Wall and the associated Roman military sites of the West Midlands. A review and published synthesis of the available evidence should be a priority.

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Plate 1: Area 1, Site B, after completion of excavation (from the south)



Plate 2: Area 1, Site B, Phase 3 surfaces F173-4 (from the south)



Plate 3: Area 1, Site B, Phase 4 wall footings F172 (from the north)



Plate 4: Area 1, Site B, Phase 3 beam-slot F171 in road surface F174 (from the west)

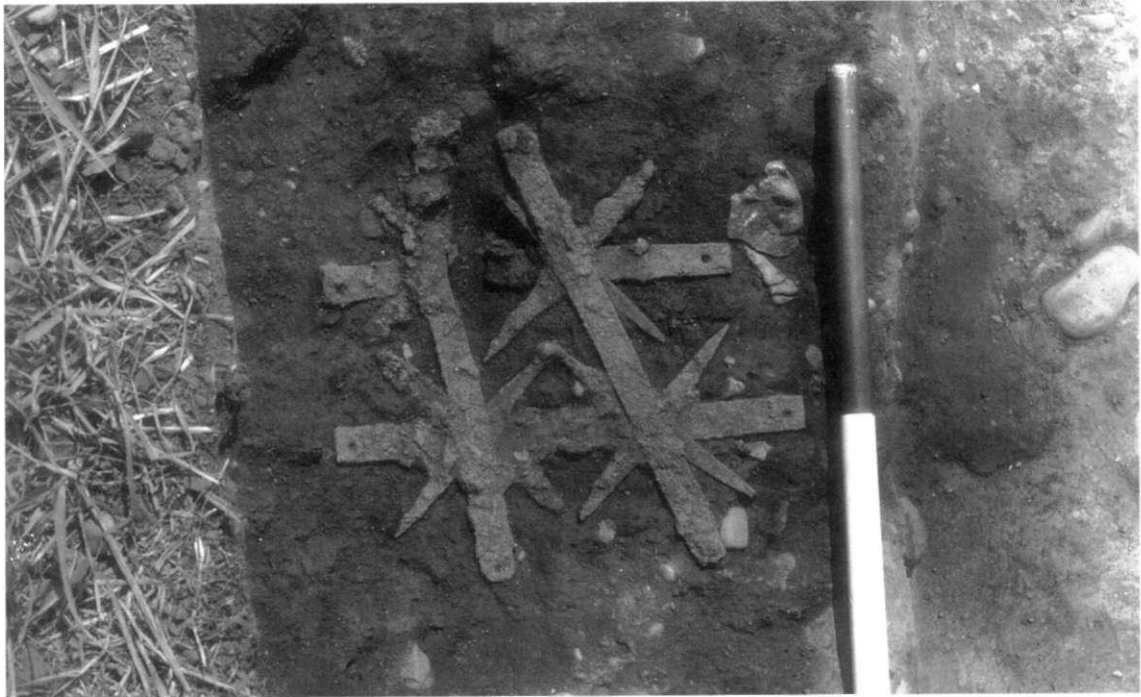


Plate 5: Area 1, Site B, window grille *in situ* (from the north)



Plate 6: Area 1, Site B, glass window pane *in situ* (from the north-west)



Plate 7: Area 4, Site C, well F6, unphased (vertical)

EXCAVATIONS WITHIN A MEDIEVAL AND POST-MEDIEVAL TENEMENT AT STONE, 1993

GWILYM HUGHES

with contributions from Lynne Bevan, Peter Davey, James Greig, Lisa Moffett, Stephanie Pinter-Bellows, Stephanie Ratkai, and David Smith, and illustrations by Mark Breedon and Nigel Dodds

INTRODUCTION

This report describes the results of an archaeological excavation undertaken at 9 High Street, Stone, a tenement of the former Falcon Inn. The work was undertaken prior to the construction of the Stone Town Centre Bypass. Although the proposed road will be higher than the existing ground level, associated works, including the construction of a sewer and a culvert to carry the Scotch Brook, threatened deposits of archaeological interest. The work was carried out by Birmingham University Field Archaeology Unit during August 1993 on behalf of Staffordshire County Council and Severn Trent Water plc.

The site is located at the eastern end of the High Street on its northern side (fig. 1b). It is bounded to the west by the former Falcon Inn (now Changes Restaurant) and to the east by the Scotch Brook. An evaluation undertaken by Gifford and Partners suggested that further excavation would provide the first significant sample of the medieval and post-medieval archaeology of a tenement plot in this small market town (Gifford and Partners 1992).

THE EXCAVATION

METHOD

The excavation was confined to the eastern portion of the tenement alongside the Scotch Brook (fig. 1b). It was not possible to undertake work in the western half of the tenement in view of the structural sensitivity of the adjoining building, no. 11 High Street, to prolonged open excavation.

The excavated area varied between 4 m and 5 m wide and was 50 m long (fig. 2). The compacted hardcore surface (1000), underlying brick rubble, (1001, 1105), and other modern overburden (1045, 1133) were removed mechanically under archaeological supervision. All underlying deposits and structures of archaeological interest were excavated by hand. A record, which included drawn scale plans and sections and monochrome photographic prints and colour slides, was maintained throughout the excavation. Sampling was undertaken of those deposits which suggested a high potential for providing palaeo-environmental information.

As there was a limited amount of space for the temporary storage of spoil, the excavation had to be carried out in two stages. The southern half of the area was investigated first. This had to be fully backfilled before excavation could commence on the northern part of the site.

RESULTS

Phase 1 - Pre-structural deposits (figs. 3 and 4)

The top of the natural waterlain gravels (1078) was encountered at a depth of between 1.6 m and 1.8 m below the current ground surface. In the central area of the trench the gravels appeared to be overlain by a deposit of waterlogged, dark grey/brown silt (1147). This was in turn overlain by a thin lens of gravel 0.1 m thick (1146). A small sondage, 0.25 m deep, was excavated through the deposit with the intention of obtaining environmental samples for beetle, plant macrofossil, and pollen remains. It was not possible to excavate a deeper sample because of waterlogging. No artefacts were recovered from these deposits and it seems likely that they pre-date any archaeological structures. The results of the environmental sampling suggest a natural waterlain deposit (see below page 00)

Phase 2 - Medieval (figs. 3 and 4)

The silt and gravel in the central area of the site (1146 and 1147) was overlain by thin deposits of dark brown/black waterlogged silt (1041 and 1141), each up to 0.05 m thick and containing charcoal,



Fig. 1: Location of site

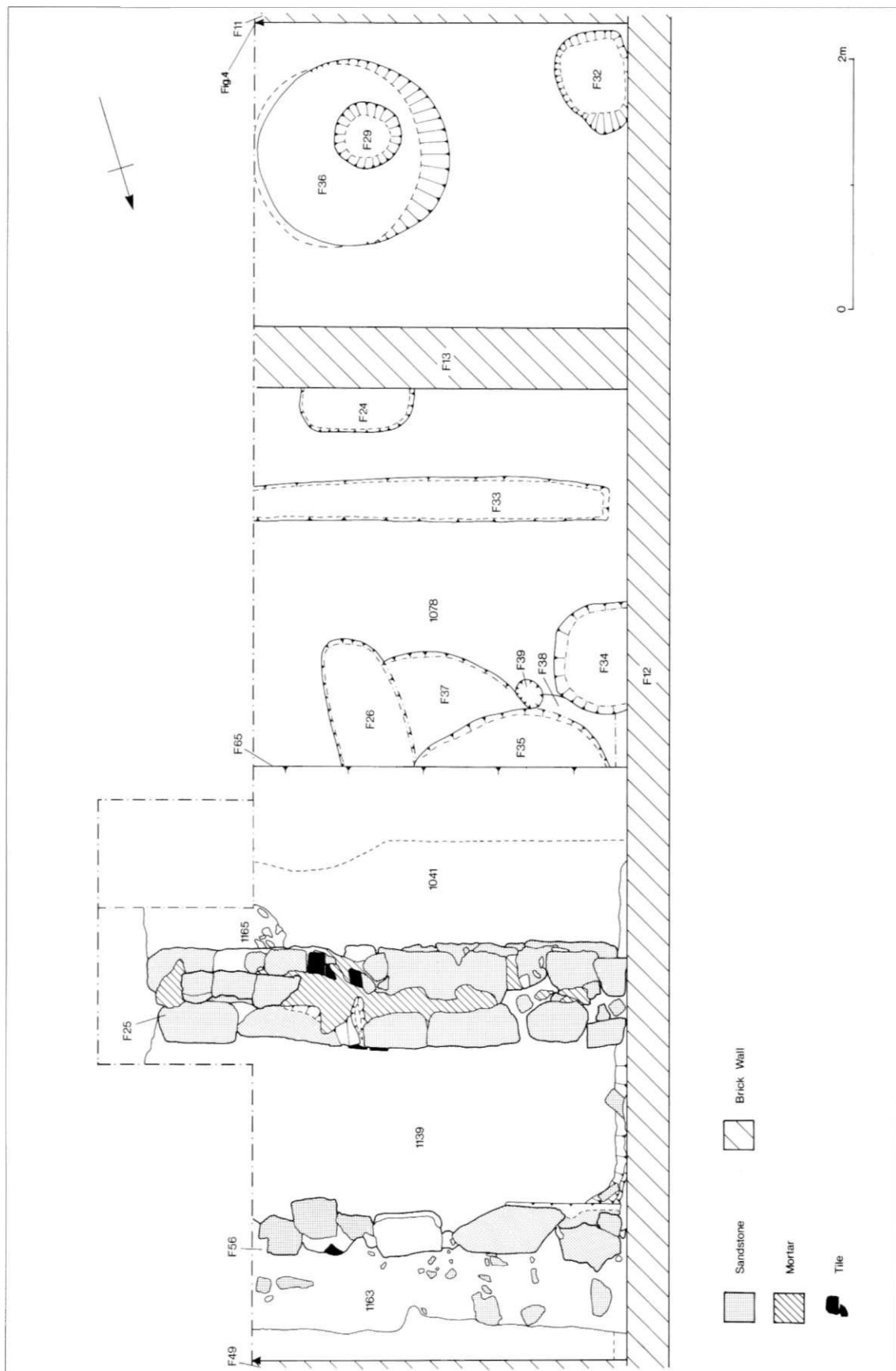


Fig. 3: Plan of central area of trench

fragments of waterlogged wood, and leather. A group of small intercutting pits (F26, F34-35, F37-F39) cutting the natural gravels (1078) was recorded to the south of these deposits. Unfortunately it was not possible to determine the relationship between the pits and the waterlogged deposit (1041) because of a later intrusive cut (F65, possibly the edge of the evaluation trench). Two other features, cutting the natural gravels to the south of this group of features, may be contemporaneous with the pits: a shallow gully (F33), orientated east-west, and a large circular pit (F29/F36), 1.4 m in diameter and partially undercut on its eastern side.

Although the evidence is very fragmentary, it seems possible that these features and deposits represent the fragmentary remains of a timber building and associated pits, set back from the street frontage. The waterlogged deposits (1041, 1141 and 1145) possibly represent the remnants of timber floor surfaces, while the gully (F33) may have formed part of an associated structural element. Environmental samples were taken from these deposits (see below page 82).

Pottery from these features and deposits (see below page 65) suggests that the earliest activity, dating between the mid 13th and early 14th century, is represented by the large pit (F29/F36). The waterlogged deposit (1041 and 1145) and several of the associated pits (F37 and F38) contained pottery of the 15th century.

The only evidence for medieval activity in the southern part of the excavated area was a single sherd of 12th- or 13th-century pottery from a deposit of clay (1008) underlying the make-up for the post-medieval floors. It seems likely that any early deposits that might have existed in this area, close to the street frontage, would have been destroyed subsequently by post-medieval activity. No evidence of any medieval activity could be identified in the northern part of the site.

Phase 3 - Early post-medieval

The waterlogged deposits (1041 and 1145) were cut and partially overlain by a sandstone wall (F25), orientated east-west and running across the full width of the trench (fig. 3). The lower three courses of this wall appeared to represent a broad stone foundation, 0.8 m wide and 0.7 m high. Four wooden stakes (F58-59, F61 and F64) had been rammed into the underlying waterlogged silts to provide additional support for this foundation. Three small sandstone blocks at the eastern end of the wall appeared to be all that had survived of the original superstructure. The ledge between the southern face of these blocks and the face of the underlying foundation was 0.2 m wide. It seems likely that the ledge corresponded with the original level of the associated floor. No trace of a return for the wall could be identified. The eastern end of the surviving fragment had been truncated by the culvert for the Scotch Brook and the western end by the brick wall of a later cellar.

The southern face of the stone foundation was butted by a deposit of dark brown silty clay (fig. 4: 1044). This deposit overlay the waterlogged deposit (1041) and sealed the various Phase 2 features. Similar deposits were recorded at the same level to the south (1087) and were partially overlain by a thin deposit of darker waterlogged silty clay (1059). Environmental samples were taken from this layer for comparison with the earlier waterlogged deposits (see below pages 79-85). The silty clay was in turn overlain by a layer of greenish-yellow sandy material containing brick and sandstone fragments (1039/1079).

The level of the top of the sandy deposit (1039/1079) corresponded to the ledge between the foundation of the sandstone wall (F25) and the fragment of superstructure, suggesting that it may have represented the original floor surface. This in turn suggests that the wall itself represents the rear of the building. No trace of either the internal arrangements of the structure nor its front wall could be identified. A second fragment of sandstone wall (F56) may also belong to this phase of activity, although no associated floor was identified and the relationship with the more substantial wall to the south is uncertain.

The pottery from the putative floor make-up (1044) suggested a late 15th- to early 16th-century date (see below page 65). The make-up was cut by two pits (fig. 3: F24 and F32), both containing early post-medieval pottery (see below page 00).

Two further sandstone walls (fig. 2: F1 and F3) were recorded within the southern part of the excavation. Both formed part of a late post-medieval (Phase 4) cellar (see below), although it seems possible that the western wall (F3) may originally have formed part of an earlier structure.

WEST FACING SECTION (DETAIL)

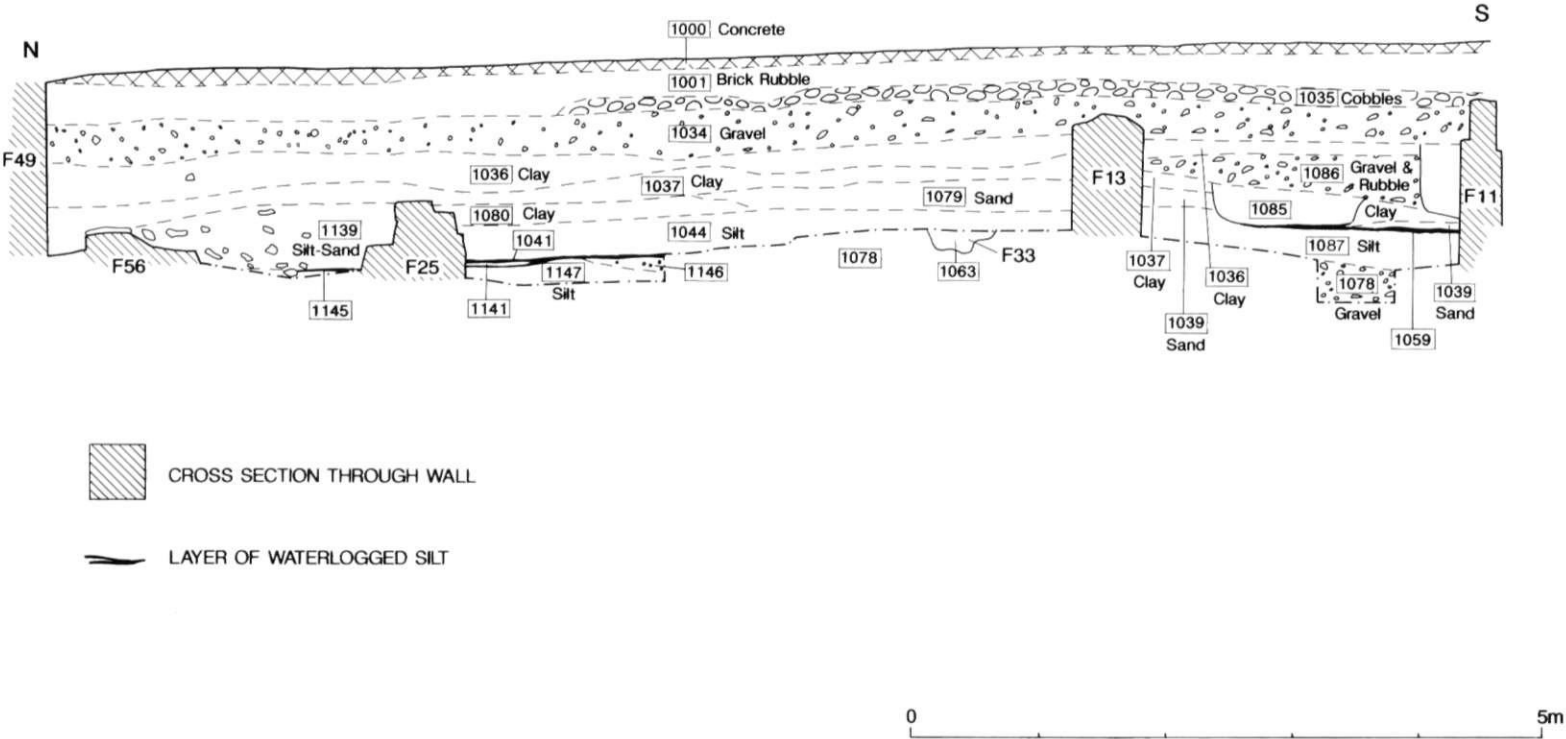


Fig. 4: Section of central area of trench

Phase 4 - Late post-medieval

The earlier waterlogged deposits (1145), in the space between the sandstone walls (F25 and F56) in the central area of the site, were overlain by a substantial dump of rubble (1139). This contained an important group of late 17th-century pottery (see below page 68) and clay pipes (see below page 72). The clay pipes appear to date the dump to the period between 1680 and 1690.

The southern part of the site is dominated by the construction of rectangular brick-built cellars to the rear of the street frontage (fig. 2). It seems possible that at least one of these incorporated part of an earlier sandstone wall (F3). Their brick floors, at a depth of 1.8 m, were set into a red clay which immediately overlay the natural gravels and would have destroyed any earlier deposits that might have existed. The large rectangular brick structure in the central area of the site (represented by walls F10, F12 and F49) with its internal divisions (F11 and F13) appears to have resulted in less disturbance to the earlier deposits. It seems likely that the walls of this structure recorded during the excavation were sub-surface foundations and that the associated floor levels were located at a higher level.

Several other brick structures were also recorded, including parts of two circular brick-built features, possibly wells (F18 and F31), and a brick culvert (F50).

The brick cellars towards the southern end of the excavation were backfilled with brick and rubble (1045). The upper deposits consisted of a series of rubble and hardcore layers (1001 and 1105) which sealed the most of the brick structures.

THE FINDS

MEDIEVAL AND POST-MEDIEVAL POTTERY by Stephanie Ratkai

There were 288 sherds recovered from the excavation, of which 93 were medieval or late medieval to early post-medieval transitional. The pottery information was recorded using Dbase 4 and a printout of the data is available in the archive. The medieval and early post-medieval pottery was recorded using the pottery recording codes used for the excavations at Stafford Castle (Ratkai forthcoming). Later pottery was recorded using letter codes, a key to which is included in this report.

TABLE 1 Medieval fabrics

The following is a list, with a brief description, of the medieval fabrics.

Fabric	Description
B04	Fine oxidised ware (?13) 14th c
B11	Fine, hard fired, buff-orange ware 15th c
B13	Fine, hard fired, orange ware 15th-early 16th c
B21	Coarse, sandy cooking pot/jar fabric 13th-early 14th c
B41	Surrey White Ware Type, white body copper green glaze 15th c
C11	White ware 13th-14th c
D11	Coarse sandy cooking pot/jar fabric 12th-13th c
D31	Fine sandy cooking pot/jar fabric 12th-13th c
E02	Sandy, oxidised cooking/pot jar fabric (12th) 13th c
E11	White/pink sandy coal measure clay ware 13th-15th c
E12	Pink coal measure clay ware (13th) 14th-15th c
E15	Buff/cream coal measure clay ware ?Sneyd Green product 14th-15th c
E16	Late medieval/early post medieval pink ware with brown/tan glazes (?late) 15th-16th c
E17	Variant of the above
F04	Late medieval sandy oxidised ware 14th-15th c
H01	Midland purple general type
H02	Very Hard fired red sandy ware Proto-Midlands Purple 15th c
H03	Hard fired coarse pimply ware with grey/orange fabric and purple surfaces
H05	Very hard fired fine fabric, with few visible inclusions, with grey and purplish body and surfaces
H06	Very hard fired grey fabric, buff-grey-purple surfaces 15th c
H07	Very hard fired grey-yellowish buff fabric with grey, brown or purplish surfaces 15th c
P02	Cistercian ware late 15th-mid 16th c

All the medieval material could be paralleled in the Stafford Castle type series. The earliest pottery (cooking pot fabrics D11, D31 and E02) dates from the 12th or 13th century. Cooking pot fabric B21 is slightly later and dates to the 13th-early 14th century. The remainder of the pottery is made up of mainly 14th- or 15th-century types, most of which are glazed (see Table 1). The predominant pottery was that derived from the coal measure clays ('E' fabrics), Midland Purple or proto Midland Purple ('H' fabrics), or Cistercian Wares (Fabric P02). Together there were 78 sherds in these fabrics, about 85% of the group (see Table 3). It was interesting to note that there was very little residuality on the site and it was unusual to find medieval pottery in 17th-, 18th-, and 19th-century contexts. The pottery is mostly unabraded and there is every indication that the pottery is a dump rather than a slow accumulation.

There were few rim sherds, although it was usually possible to assign a sherd to a general form type (see Table 2)

TABLE 2 Medieval pottery form types

context	cooking pot/jar	jug	jar	bowl	pipkin	cistern	cup	unknown
1008	1							
1049	1							
1068	2							
1076				1				1
1018		1						
1041	1	2	4	1	1			2
1060	1	2						
1070								1
1071								1
1145			1				1	1
1044	4	4		2		1	4	5
1057				1			1	
1087	1	2	1	1			2	
1161			5					

The earliest archaeological context on site appeared to be the clay deposit under the later post-medieval floors in the southern area of the site (1008), which contained a sherd dating to the 12th-13th century and the pit in the central area (F29/1049 and F36/1068) containing mid 13th- to early 14th-century pottery. By the 15th century there seems to have been an increase in activity, associated mainly with floor levels or floor make-up levels (1041, 1145 and 1060). Other 15th-century activity is associated with two pits (F37/1070 and F38/1071). The pottery from these contexts presents a rather mixed group, consisting of cooking pots, jars/cisterns, jugs, a bowl, a pipkin (fig. 5: 1), and a cup in a copper-glazed Surrey White Ware or Surrey White Ware type (fabric B41). Of particular interest in this group is a residual jug (fig. 5: 2) with applied face pad and strip (fabric B04, a very fine, iron rich fabric with few obvious inclusions). A similar jug was found at Stafford Castle in the backfill of the motte ditch in the Inner Bailey, probably dating to the later 13th or first half of the 14th century. The relative paucity of cooking pots, and lack of sooted sherds, together with storage vessels and jugs, is perhaps indicative of the pottery having originally been within a store room or buttery. There was a single sooted sherd from a jar or cistern with heavy external sooting on the base (1041).

The floor make-up layer (1044), associated with the sandstone wall (F25), contained late 15th- to early 16th-century pottery. Similar material was recovered from the fill of one of the pits (F35/1057). This group of pottery differs from that discussed above in that it contains sherds from Cistercian Ware cups (fabric P02; fig. 5: 3). The range of forms is broadly similar but with a greater number of bowls and cups. There were some sooted sherds from the silty clay (1044). These included two from a residual cooking pot in fabric B21, a sherd from a bowl in fabric E16 with heavy external sooting, and two other vessels of unknown form, possibly jars/cisterns with heavy external sooting. Also of interest was the base of a bowl with heavy internal abrasion. It is possible that this vessel may have been used as a mortar. The general character of the pottery is very similar to that pre-dating the

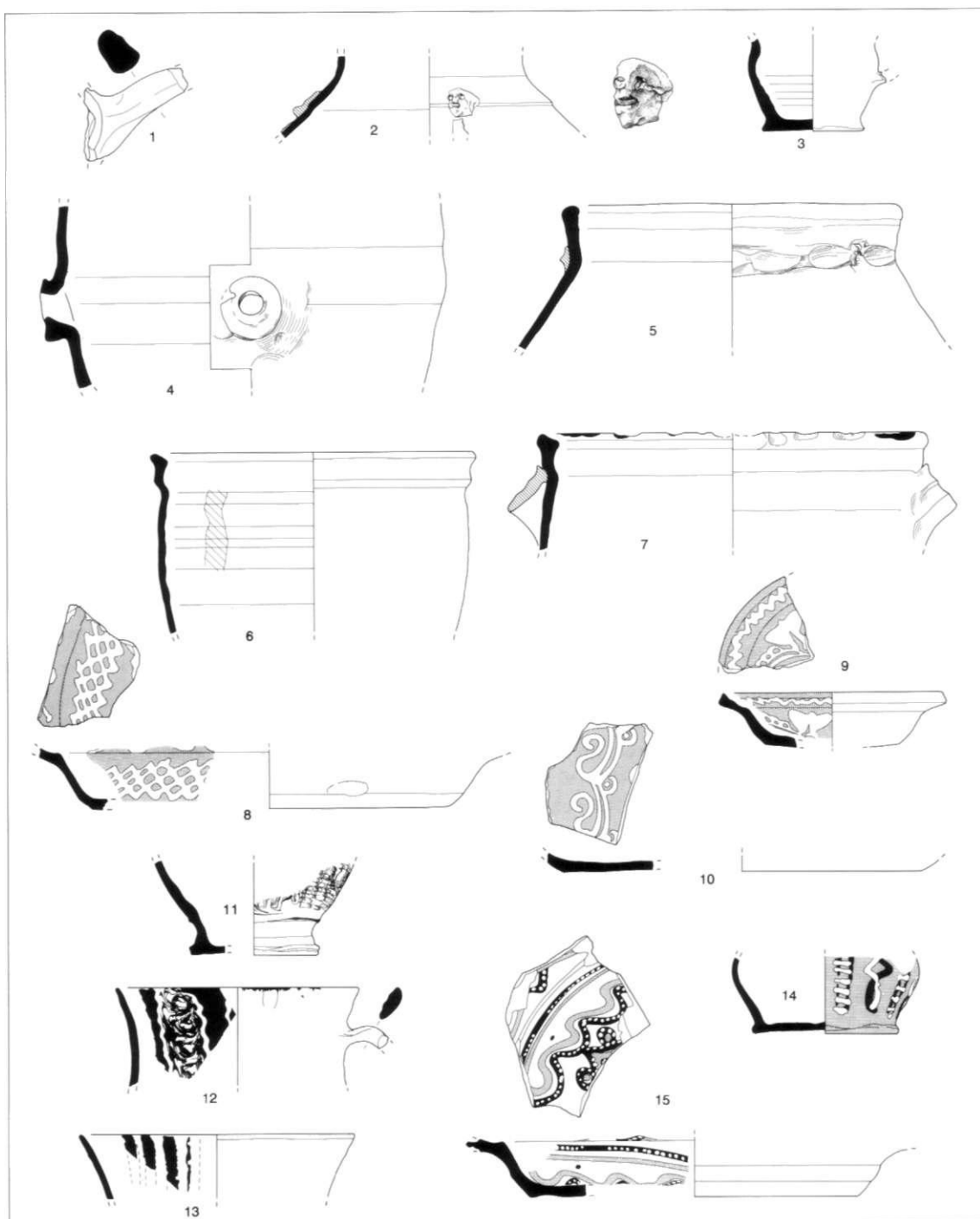


Fig. 5: Medieval and post-medieval pottery (at 1:4)

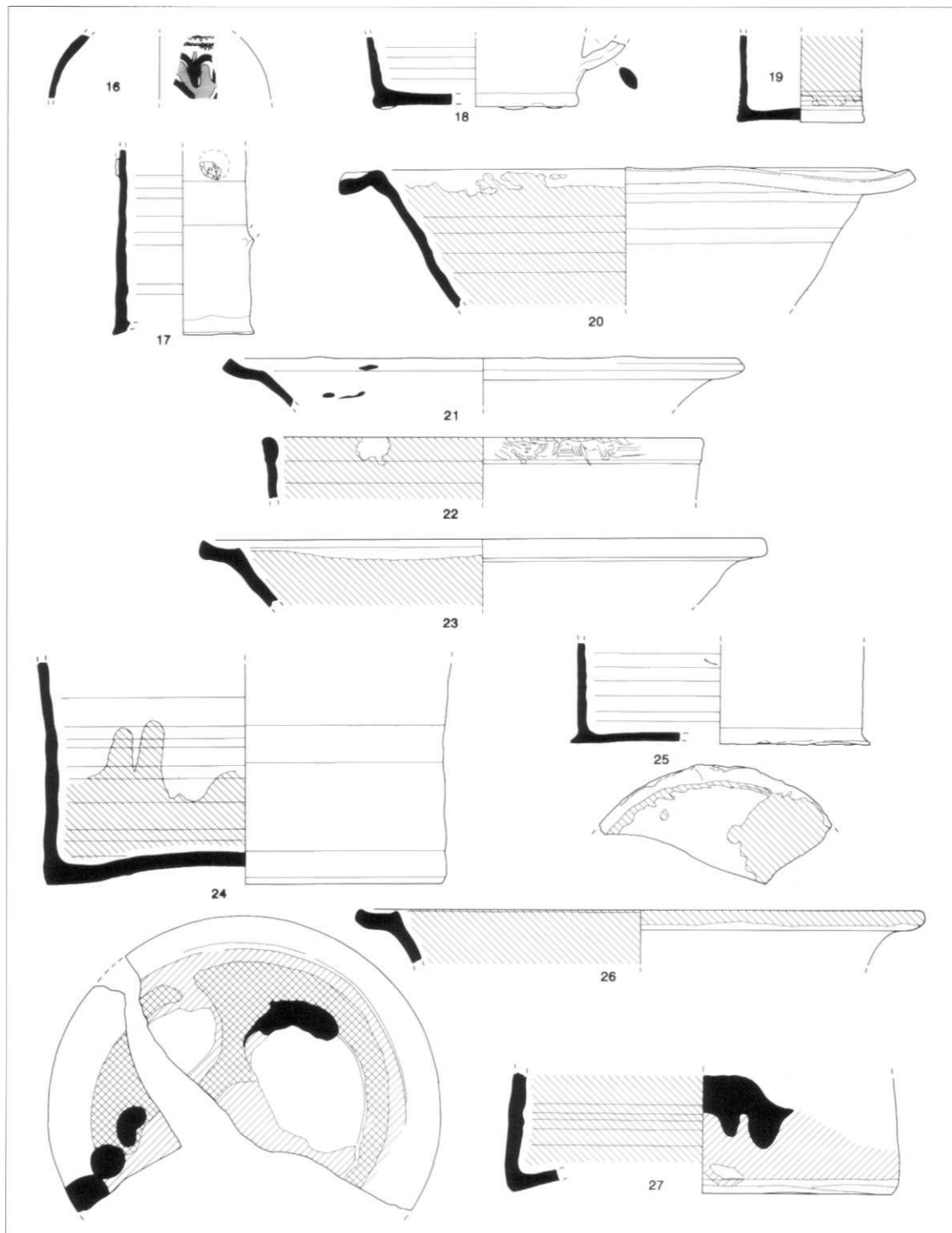


Fig. 6: Post-medieval pottery (at 1:4)

sandstone wall (F25) and it seems likely that it was derived from the same source. There was little evidence for cross-joining sherds from the site, although two contexts (1044 and 1063) appeared to contain sherds from the same cistern (fig. 5: 4)

TABLE 3 Medieval pottery fabric types

	D11	B21	E11	E12	B11	D31	H06	H07	E15	E16	B04	E02	H03	H05	B41	H02	E17	P02	HOI	B13	CW
1008	1																				
F29/1049		1																			
F36/1068		2																			
1076			1	1																	
F8/1018					1																
1041			1	1		1	1	1	5	1											
1060						1					1	1									
F37/1070								1													
F38/1071										1											
1145													2	1							
1044		2	1		1		3		5	1			1			2	1	4			
F35/1057																	1	1			
1087			1		1	1												3	1		
1161													1	1						1	2

The next period of activity on the site seems to be contemporary with the use of Mottled Wares. The most interesting group of this post-medieval material was from a dump (1139) between the two earlier sandstone walls (F25 and F56). This dump presented an homogenous appearance, the ceramics being more or less contemporary (Table 5). The group, therefore, was considered suitable for study in more detail than the remaining post-medieval ceramics, especially as independent dating was provided by a small group of clay pipes, with which the ceramics were apparently closely associated. The information from this dump of pottery and clay pipes seems to suggest evidence for an earlier *floruit* for Mottled Wares than has hitherto been supposed, there being no closely dated comparable groups in Stoke-on-Trent and the only dating evidence being that provided by Dr. Plot in his *Natural History of Staffordshire* (1686), where he mentions the production of Mottled Wares (pers. comm. D. Barker).

The post-medieval Dump (1139)

Midlands Purple Ware

A hard fired ware, with a smooth fracture and few visible inclusions. Surface and fracture colours vary from weak red to dull brown and purple. There were three vessels present: a jar with a thumbled cordon around the neck (fig. 5: 5), a jar or cistern with a collared rim (fig. 5: 6), and a jar with a horizontal handle (fig. 5: 7). Midlands Purple wares begin to appear in the 15th century. They are recorded on Table 5 as MP to distinguish them from the Medieval pottery and Medieval types of Midlands Purple Ware, the 'H' fabrics (see above).

TABLE 4 Post-medieval fabric key

CW	coarseware
MANG	(manganese) mottled ware
MBLW	(modern ie 18th C) blackware
MOCH	mocha ware
CRW	cream ware
MGW	modern glazed wares ie post-1750 factory produced wares
WSG	white salt glaze
STW	stoneware
YW	yellow ware
TGE	tin glazed earthenware
MP	midlands purple
SLIP	slipware

TABLE 5 Post-medieval fabric types

	MED	P02	MANG	BLW	YW	TGE	STW	SLIP	CW	MP	MBLW	WSG	MOCH	CRW	MGW
F33/1063	8		1	4											
1059		1	1												
1077			1												
1139			17	23	4	1	1	27	26	3					
F28/1048	1		1												
F32/1055			1												
F15/1024									1						
1039									1						
1040											1				
1045	1		33						1		2	2			
1054									3						
1138			1	2			1		11		3	1	2		
F24/1033			4						1		1		2		
1036														1	
1037			11	4					4						10
F31/1052															1
1067	1													1	

Slipware

Light on dark slipware with a fine buff-light orange fabric

There were two vessels in this fabric, both dishes. One had a trellis decoration, the other a floral motif (fig. 5: 8 and 9)

Light on dark slipware with a fine, sandy orange fabric

This was represented by a single vessel, a dish with a curvilinear design (fig. 5: 10).

Feathered slipware with a fine buff fabric

There were 12 sherds of feathered slipware, representing two cups and five flatwares. One cup is not fully oxidised giving a dull green and black appearance to the glaze. The base of a small cup is illustrated (fig. 5: 11).

Feathered slipware with a fine orange sandy fabric

There is a single base sherd from a dish. The exterior of the vessel is covered with a red slip. The internal surface is covered with a mix of red and white slip, which has been dragged around, producing a marbled effect rather than the more normal feathered pattern.

Slipware with a buff fabric (miscellaneous)

This group comprises three cups. The first has an internal red slip over which is a white slip design (fig. 5: 12). The exterior of the vessel is unslipped and shows yellow under the lead glaze. The second cup or ?mug has vertical red slip bands in the interior. The remainder of the vessel is unslipped and shows yellow beneath the rather poor, 'bubbly' lead glaze (fig. 5: 13). The third vessel is similar to the preceding but decorated with external blobs of red slip under the glaze.

Multi-slipware with a pale orange fabric

There was one cup with an unusual design on the exterior. This was made up of a vertical ladder pattern in white and red slip alternating with two vertical intertwined wavy lines. This produced the effect of a yellow and dark brown design on a rich tan background (fig. 5: 14).

Multi-slipware with a fine orange fabric

Three vessels, all dishes, belong in this category. The dishes were covered internally with a white slip. Over this was applied the design using iron rich slips which appeared tan and dark brown beneath the glaze. The external surface of the vessels was covered by an orange-red slip (fig. 5: 15).

Multi-slipware with a fine buff fabric

There was a single small sherd from a hollow ware, although it was not possible to be more certain about the form. The external surface was decorated with a ?heart-shaped design in iron rich slips which appeared tan and dark brown under the glaze (fig. 6: 16)

Blackware

Seventeen blackware sherds were present, which seemed to represent 10 vessels at least. There were three straight-sided tankards. One had shallow external rilling and a pale patchy internal deposit. The second was tall, narrow and cylindrical (fig. 6: 17) with an applied blob of white clay

which had traces of a stamp impression. All that survived of the third vessel was the base and part of the handle (fig. 6: 18). All three vessels had a thick internal and external black glaze. There were two body sherds from either a drinking vessel or small jug with a thick external glaze and a partial, patchy, thin internal glaze. Two body sherds from a mug or cup had a dark brown silvery metallic glaze and a handle scar. Three other vessels were represented by base-body sherds. They were black glazed internal and external, the glaze on the external having run down the surface in dribbles. It was not possible to ascertain the form of these vessels: they could be drinking vessels or chamber/stool pots. Vessels very similar to these were found in Civil War levels at Dudley Castle (Ratkai 1985). Two rim sherds of two separate vessels come from chamber/stool pots. One was glazed internal and external brown, the other black. In addition to the above there were five body sherds glazed internal and external.

Yellow Ware with a pinkish-buff fabric

There were three sherds from two flatwares. The internal surfaces were covered by a white slip, while there seemed to be a thin wash over the external surfaces, slightly darker than the clay body.

Yellow Ware with a yellowish cream fabric

There was a single flatware sherd with an internal glaze.

Tin Glazed Earthenware

This was not well represented, there being a single sherd, decorated with a festoon, most of which had broken away.

Manganese Glazed "Mottled" Wares

Eight vessels occurred in this ware. There were three tankard bases with sharp rilling at the base (fig. 6:19), a rim-body sherd from a cup or tankard and the handle from a cup/mug. In addition there were two bases from ?bowls, with an identical form but differing sizes, and the base sherd from a hollow ware, glazed internally, either a bowl or a ?chamber pot.

Coarsewares

Coarseware A

With a sandy, bricky orange fabric. There were four or five vessels, and three rim sherds (fig. 6: 20, 21, and 22), which were probably from bowls/pancheons. Two of the rim sherds (fig. 6: 20 and 21) had a thin internal and external slip slightly darker than the body of the pot and were glazed dark brown internally. The third showed evidence of external knife trimming and was sooted at the very tip of the rim. This, too, was slipped and glazed internally. In addition there were two bases, but not enough of the vessels remained for it to be certain whether they were from bowls/pancheons or from jars. One base was glazed internally but the glaze contained uneven yellowish patches (a sulphurous compound caused by the firing?). The base also had some external soot spots. The second base was slipped externally and was glazed internally. There was marked abrasion at the junction of base and body. It is not uncommon to see such wear marks on the bases of pancheons, the result of friction against a work surface while the contents of the vessel were being mixed. It was not possible to say whether this base was part of the same vessel as one of the rims.

Coarseware B

With a paler orange fabric than Coarseware A and with noticeable rounded red ferruginous and off-white inclusions. There was a pancheon and a thick walled body sherd most probably from a pancheon. Both were glazed and slipped as the Coarseware A vessels. The pancheon was also abraded at the base body junction.

Coarseware C

As Coarseware B but with much more frequent red and off-white inclusions. Only the base of a pancheon occurred in this fabric and it was similar in every respect to the pancheons in the other coarseware fabrics. This vessel was heavily abraded on the exterior.

Coarseware D

With a buff fabric. Two vessels were represented. There was a base with an internal red slip and dark brown glaze. The exterior of the pot had smears of red slip. The vessel was most probably a pancheon. The second vessel was also a pancheon (fig. 6: 23). It was slipped internally and externally but unlike the other coarseware vessels the glazing was more controlled and instead of degenerating

into dribbles ended in a neat line. Such careful glazing is perhaps most typical of the end of the 17th and 18th century.

Coarseware E

Hard fired or proto-stoneware. The fabric seems to be essentially the same as Coarsewares B and C. The colour of the clay varies from grey to dull brown to orange. Changes in colour are often seen in the fracture, although the surfaces are fairly uniform. Several vessels were represented. The base and part of the body of a large jar (fig. 6: 24) had an internal greenish-brown glaze which had dribbled down the wall of the pot. The exterior of the base showed the scars of other vessels which had been fired at the same time. From the size and shape of the scars they appear to have been cups/mugs. From the above evidence it looks very much as if this jar and presumably others like it were used as saggars, and such use has perhaps resulted in the hard firing of the fabric. There was a second large jar, with a similar internal glaze. It was unusual in having a pronounced 'pinched' base (fig. 6: 25). Two more base sherds represented two separate vessels, very similar but smaller. These sherds may have had a thin external wash or slip. Three body sherds, two with an internal black glaze, the third with an internal brown glaze, may also have come from similar jars. Another thick walled body sherd was glazed internally and externally with a thick black glaze. There was a single example of a pancheon (fig. 6: 26) with a thin external wash or slip and an internal dark brown glaze.

Coarseware F

With a hard fired buff fabric. The fabric contains frequent red and off-white inclusions and appears to be a hard fired variant of Coarseware D. This fabric was represented by only two vessels. The first was a ?jar comprising the lower section of the vessel, and the walls seemed to slope inward from the base (fig. 6: 27). The external surface was brown, over which was a purplish slip ending in a distinct line. Over the external surface was a black glaze dribble. The interior of the vessel was glazed dark brown. The details of the slip suggest, like (fig. 6: 23) above, a later date than the rest of the assemblage. The second vessel was represented by a thin walled, body sherd, glazed black internally and externally. The form was most probably a deep bowl but could have been a chamber pot. There were two other sherds which may have come from this vessel, although one of them was thicker walled.

It is probable that all the coarsewares are from the same clay source and that slightly different mixing, preparation, and firing techniques have produced apparent coarseware groups. It is, of course, quite possible that these differences could be obtained by a group of potters working on the same site and they do not necessarily indicate separate potteries. However, differences between Coarsewares D and F on the one hand and the other coarsewares, particularly with regard to slipping and glazing techniques, suggest either a later production date and/or a different place of manufacture.

There was also part of a Stoneware bottle which appears to date to the 19th century. As late Stoneware was found in the overlying layer (1138), it seems probable that the Stoneware is intrusive and does not invalidate 1139 as a closed group and part of a single dump.

The pottery from context 1139 is a mixture of 'kitchen' wares (i.e. jars and pancheons), drinking vessels, and more elaborate slipware dishes and platters. It seems likely that most of the pottery is of local manufacture and represents in the main the products of Stoke-upon-Trent and the rest of the Potteries. It is not often that an opportunity is granted to see a roughly contemporary group of ceramics from a domestic site of this date, and a group which is particularly valuable in view of the corroborating dating evidence from clay pipes.

The remainder of the post-medieval pottery is shown on Table 5.

CERAMIC BRICK AND TILE by Lynne Bevan

The ceramic brick and tile collection comprises 293 ceramic tiles and tile fragments weighing a total of 36,592 grammes, and two brick fragments weighing a total of 1,467 grammes. The tile was divided into seven distinct fabric groups, all of which are described fully in the archive report. Both the brick fragments occur in a coarser version of Tile Fabric B.

A high incidence of fragmentation (only six tiles were complete) precludes the identification of tile form in most cases. However, 13 tiles and fragments were identified as floor tiles. These bear traces of green-glazed decoration and, in some instances, complete quatrefoil motifs enclosed by bands of

glaze curving inwards from each corner. This design (Stafford 26) has been previously identified at St. Bertelin's church, Stafford, and in the demolition rubble of a building in the Inner Bailey of Stafford Castle (White), as well as at Dove Lane/Church Lane, Rocester (Stoke-on-Trent Museum K217.5, 1981). Most green glazed tiles (including all examples of Stafford 26) occur in Fabric G (a smooth compacted fabric with sparse mica and abundant quartz) in the disturbed context 1040. Other glazed fabrics are A and D, characterised respectively by limestone and grog. Whilst these fabrics were used for the production of green-glazed decorated floor tiles during the medieval period, unglazed fragments in these fabrics cannot necessarily be regarded as 'medieval', and may simply indicate the continuation of a successful tile fabric into a later period.

A further 16 fragments have retained traces of flanges, and 11 fragments the curvature characteristic of roof-tiles. Roof-tile fragments are difficult to date, but it may be possible to propose tentative dates for roof-tiles of Fabrics C and D which occur only in medieval and early post-medieval contexts. One curved example of Fabric C had been splashed with green glaze suggesting contemporaneity with the glazed floor tiles. Another example of Fabric C bears two cat's paw impressions. Fabric B, a purplish-red fabric characterised by limestone and grog, is restricted to post-medieval and modern contexts.

TABLE 6 Tile by fabric

Fabric	Number	Weight	Rooftile	Medieval Floortile
A	50	1,601	-	1
B	37	10,748	7	
C	67	3,755	4 - 1 with glaze	
D	76	12,504	11	1
E	14	490		
F	3	396		
G	46	7,098	5	11
Totals:	293	36,592	27	13

LEATHER by Lynne Bevan

Three well-preserved fragments of leather were recovered from the waterlogged deposit (1041) and from the possible gully of Phase 2 (F33/1063).

1. (1041) A fragment of the sole of a shoe without toe or heel, measuring 86 mm at the widest point tapering to 40 mm at the waist, with a thickness of 2-3 mm. There is some evidence of stitching approximately 2 mm in from the outside edge, increasing to 5 mm at the waist. The 1 mm holes are spaced at regular 5 mm intervals. The sole is narrow at the instep, probably belonging to the right shoe of a woman or youth, and is comparable in style to a 14th-century example from Norwich (Margeson 1993, figure 30:384).
2. (1041) Part of a leather strip with one tapered end. Probably a shoelace associated with the sole described above. Surviving length 74 mm; width 4 mm; thickness 2 mm.
3. (1063) Leather strip, possibly complete, measuring 115 mm in length with a maximum width at the centre of 5 mm tapering to 2-3 mm at each end. One end is slightly frayed, and the other is intact and pointed. The average thickness is 1.5 mm. This strip may also be from footwear.

THE CLAY TOBACCO PIPES by P. J. Davey (Department of Archaeology, University of Liverpool)

INTRODUCTION

The clay tobacco pipes recovered from the excavations at Stone have been recorded and studied according to *Guidelines* which have been proposed for the processing of excavated groups (Higgins and Davey 1988). These *Guidelines* are based on earlier systems used by the Department of Urban Archaeology in the Museum of London and by Higgins (1982; 1987) and on that agreed at the 1980

Conference of the Welsh Medieval Pottery Research Group at Cardiff (Davey 1981). A copy of the new *Guidelines*, Record Sheets, and Context Summary Sheets, together with record sketches, are held with the site archive. Stem-bore measurements have been taken using the butt end of imperial drilling bits graded in 64ths of an inch. Plaster casts have been taken of all the stamps in the collection. Dr. David Higgins has entered details of these into the National Tobacco Pipe Stamp Catalogue held at Liverpool.

The text which follows deals with the evidence which the pipes contribute towards the interpretation of the archaeological contexts in which they occur and provides a brief assessment of their local and regional significance.

THE PIPES IN CONTEXT

In all, the site produced 35 pipe fragments, representing a minimum of 19 individual pipes, from 11 contexts in the excavator's Phase 4. Ten of the contexts contained 14 fragments. The remaining context, the dump of rubble (1139) between the two sandstone walls (F25 and F26), contained 21 fragments which represent 60% of the whole collection from the site. The average of less than two fragments for each pipe present, with no mouth pieces, together with the very low average per context, indicate either a poor or selective recovery rate by the excavators or the product of extremely disturbed and redistributed contexts.

The chronological and socio-economic implications of the pipes can be considered in a number of ways. The stem-bore results can be assessed for each context excavated and can then be compared with the range of datable bowl forms and stamps present in the same groups. Both types of evidence can be used together to examine questions of residuality and absolute dating. The sequence adopted here is to look at the stem-bore results including a consideration of the single large context group (1139). This is followed by an examination of the evidence provided by datable bowl forms and marks.

The stem-bore measurements are shown in Table 7, in actual numbers of measurable fragments.

There is general agreement that, although Binford's system of dating excavated groups may be reliable for contexts with over 1,000 bore readings (cf. Harrington 1954), it tends to be misleading when applied to smaller numbers. A simple linear regression does not seem to apply in many centres in Britain where regional developments do not coincide with those of London or Bristol (Belcher and Jarrett 1971; Atkin and Davey 1985), nor does it seem to be accurate after about 1750 (Noel Hume 1979). On the other hand, studies of Chester material have shown both that reasonably accurate results can be obtained using much smaller groups and that during the 17th and early 18th centuries north-western pipe makers seem to have followed London in using progressively narrower wire to make the bore (Davey 1975; Rutter and Davey 1980).

TABLE 7 Stem-bore results

	8	7	6	5	4	Total	Bowls	Type A	_____
1139	1		8	7	1	17	1660-1690	Type B	
Other contexts	_____								
1014				2		2			_____
1024					2	2			
1036		1		2		3			
1037				1		1		Type C	_____
1038					1	1	1800-1840		_____
1043				1		1	1780-1820		
1045				2		2			
1052					1	1			^ ^ ^ ^
								type D	
1088		1				1			_____
Total		2		8	4	14			I I I I I I 1650 1660 1670 1680 1690 1700

TABLE 8 Date ranges of pipes from 1139

Context 1139

The 17 measurable fragments from this context have a mean stem-bore of 7.058/64". This gives a 'bore-date' of 1684.29 $\pm$ 17.5 which agrees well with the bowl forms present which seem to range from the 1650s to the 1690s.

The bowls present in this group may be divided into four broad types, described below as Types A to D.

Type A

There is a single example of a spurred form dating to the period 1650-80 (no. 21). This is a product of average quality only with a lumpy finish. The lack of both milling and bottering suggests that it is not likely to have been produced in one of the major centres. It is equivalent to Chester Form 54 (Rutter and Davey 1980, 219, fig. 79) or early examples from Newcastle-under-Lyme (Barker 1985, 264, fig. 5, no. 1).

Type B

Six of the bowls from Stone are narrow-bodied heeled forms, in a variety of fabrics and finishes. The two best quality examples (nos. 22 and 23) are milled and well-trimmed in fine, dense white clay, and both are stamped. They appear to be Newcastle or Stafford products of the period 1650-80 (Barker 1985, 264, fig. 5, no. 6: Charles Riggs Type III). The remaining four examples are in a less refined clay, but from good quality moulds with smooth, elegant profiles and neat finish. Two are rather more squat with slightly expanded heels (nos. 26 and 27), the other two are taller and more neatly finished (nos. 24 and 25). They are equivalent to Barker's Charles Riggs Types XIV and XVII respectively (Barker 1985, 267-269), Atkinson's Broseley Type 2B (Atkinson 1975, 24-26) and Higgins' Broseley Type 10c (Higgins 1987, 251-3). All four should be dated to the period 1660-80.

Type C

The six bowls of this type (nos. 28-33) form a very homogenous group. They have a wider body than Type B and are much more poorly fired and finished. The moulds have uneven surfaces and the clay is distinctly off-white with more impurities. Milling, where present, is partial and crude and bottering is absent. The heels are expanded and, where not damaged, are slightly tailed. None of the pipes is marked. This group is quite distinct from Broseley, Chester, or Newcastle products and almost certainly derives from a smaller centre, possibly Stafford or Stone itself. The general form, without the tailed heel, is close to Higgins, Broseley Type 11a, which he dates to 1670-90 (Higgins 1987, 252-3).

Type D

The two Broseley Type 5 pipes (Atkinson 1975, 25-26) in the collection also have tailed heels, but otherwise present a marked contrast to the Type C pipes. Both pipes are good quality products, burnished, milled, bottered, and stamped on the heel. The ?Daniel Overton pipe can be paralleled in finds from Much Wenlock and Stafford, the TD gauntlet mark has been found at Much Wenlock and Ironbridge and in the Robinson Collection from Willaston by Crewe. Similar gauntlet marks with a range of initials are found throughout the area of Broseley influence which extends from south Cheshire to south Wales. Neither pipe is likely to have been made in Broseley itself. These pipes were probably made during the period 1670-90.

Other contexts

None of the remaining context groups is large enough to allow bore-dating. The mean bore diameter of the group is 5.0/64", which gives a calculated 'bore-date' of 1740.55, clearly much too early for the majority of the collection (Oswald 1975, 92-95). Early 19th-century bowls occur in Contexts 1038 and 1043, and a number of individual narrow stems in Contexts 1045 appear to be of the same period. Taking all 14 pieces together, the range of bore sizes present suggests largely 19th-century deposits with some 17th- and 18th-century residual material.

DISCUSSION

The clay pipe evidence from Context 1139 consists of a small, chronologically coherent but typologically diverse group of forms, dating in total range to the period 1650-90. Looked at more closely it is clear that the most likely deposition date of these products is in the decade 1680 to 1690 (*cf.* Table 8)

The Charles Riggs pipe clearly derives from Newcastle, whilst the Daniel Overton and T gauntlet D pipes were probably made at a centre within the main area of Broseley influence. The majority of the bowl forms are not so easy to place. A majority of pipes in Type B and all Type C pipes are too poorly moulded and finished to be either Broseley or Newcastle products, even though the extended forms, tailed heels, and low milling suggest Broseley connections. The excavations in Stafford have produced quantities of CB marked pipes similar to no. 22, and they have also revealed a Daniel Overton product. Stafford may be a possible source for some of the Stone collection. The CB pipe, however, is very well moulded and finished, so if it is indeed a Stafford product, the remaining Stone pipes might well derive from a smaller, more local centre. The whole group makes a significant contribution to the understanding of pipe production and consumption in North Staffordshire during the latter part of the 17th century.

CATALOGUE

No	Context	/64"	Comment
1	1014	Stem 5	Chester roller-stamped stem with Chester Oval Stamp no. 47 (Rutter and Davey 1980, 161-3) and Border 105 on either side (ibid., 186-7); joins 1016 below; probably late 18th century (fig. 9: 16).
2	1016	Stem 5	Chester roller-stamped stem; part of a Border 105 survives; joins 1014 above (fig. 9: 16).
3	1024 (US)	Stem 4	Very thin, probably a 'churchwarden'.
4	1024 (US)	Stem 4	Thicker than 3, near bowl junction.
5	1036	Stem 5	Quite thick, joins 6; ?possibly 17th or early 18th century.
6	1036	Stem 5	As 5 above, which it joins.
7	1036	Stem 7	Probably 17th century.
8	1037	Stem 5	
9	1043	Bowl 5	Spurred, sooted; probably late 18th or early 19th century (fig. 9: 17).
10	1045	Stem 5	Very thin, probably 19th century.
11	1045	Stem 5	Very thin, probably 19th century.
12	1052	Stem 4	Thin, probably late 18th or 19th century.
13	1088	Stem 7	Probably 17th century.
14	1138	Bowl 4	Fluted and spurred, probably 1800-1840 (fig. 9: 18).
15	1139	Stem 8	Probably 17th century.
16	1139	Stem 7	Probably 17th century.
17	1139	Stem 7	Probably 17th century.
18	1139	Stem 6	Burnished and much whiter clay than the others; probably 17th century.
19	1139	Stem 6	Probably 17th century.
20	1139	Stem 6	Probably 17th century.
21	1139	Bowl 7	Type A; not bottered or milled; lumpy finish; probably late 17th century (fig. 7: 1).
22	1139	Bowl -	Type B; not bottered or milled; fumed grey in places; CB relief stamp on the side of the bowl; a number of CB stamps on Broseley style heeled bowls have been recovered from excavations in Stafford. The Stone example is very close National Stamp Index no. 995, an example of which from Stafford has an impression both on the heel and on the bowl. The maker is not known: 1660-80 (fig. 7: 2).

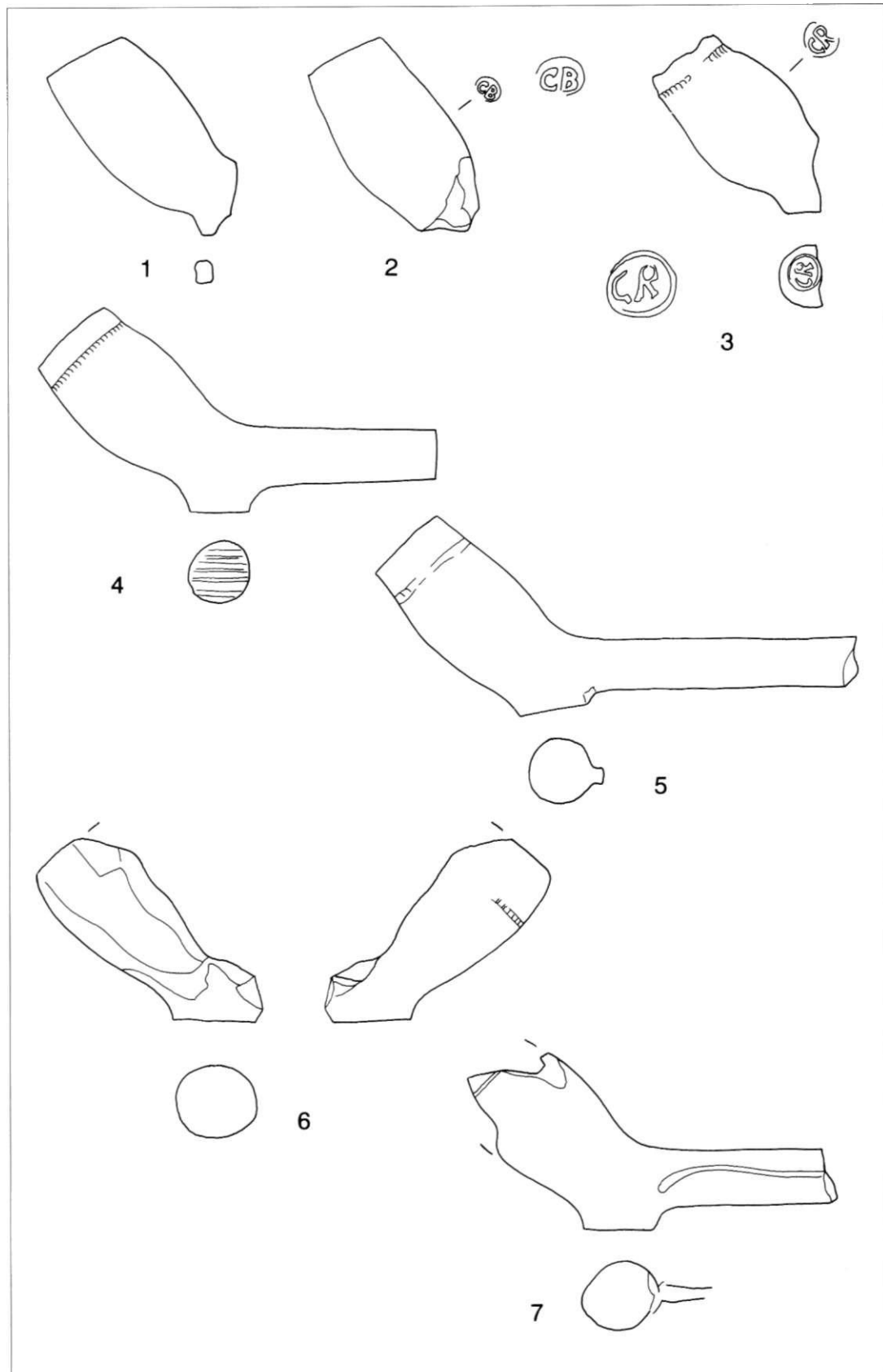


Fig. 7: Clay pipes (at 1:1)

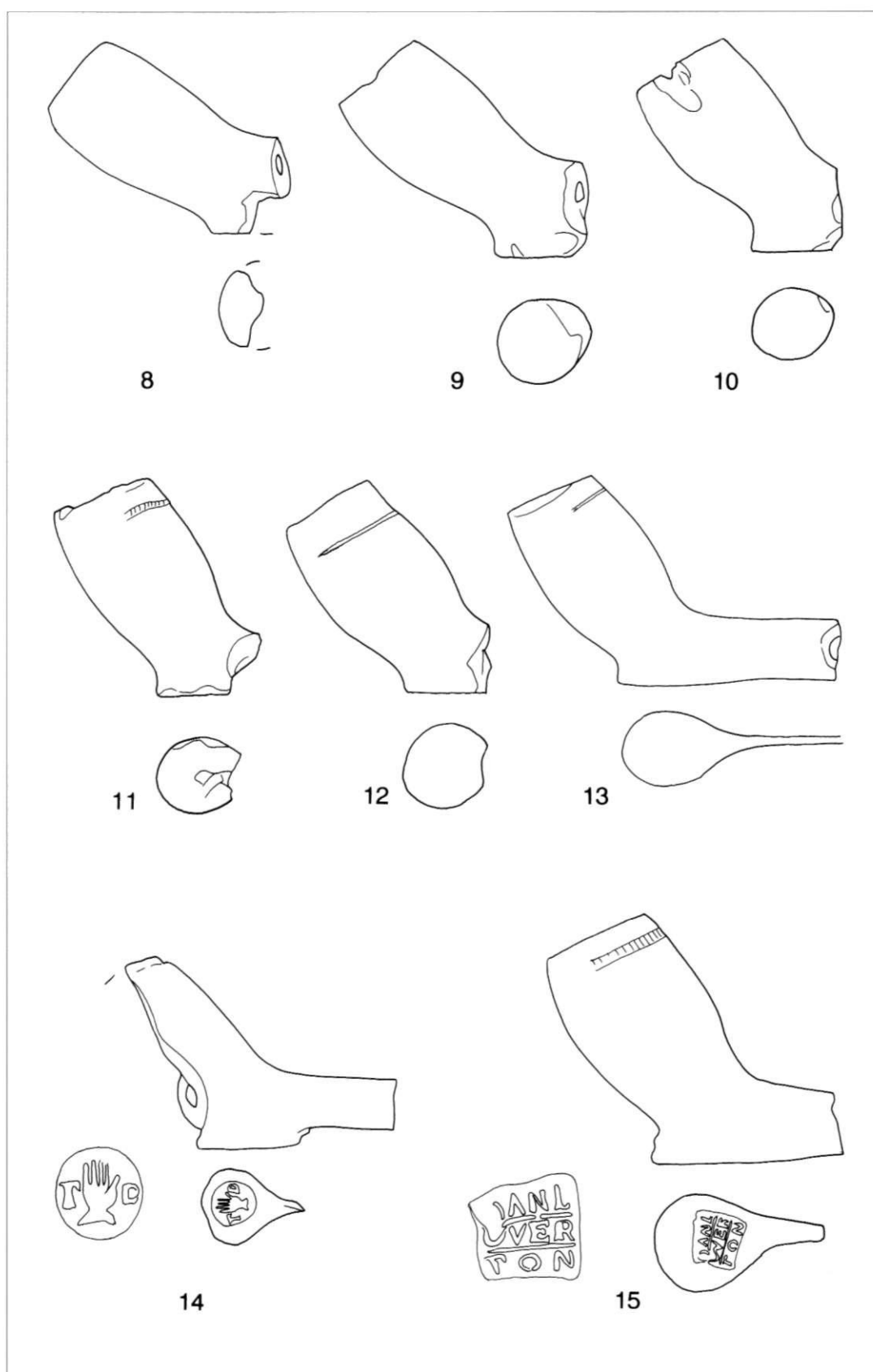


Fig. 8: Clay pipes (at 1:1)

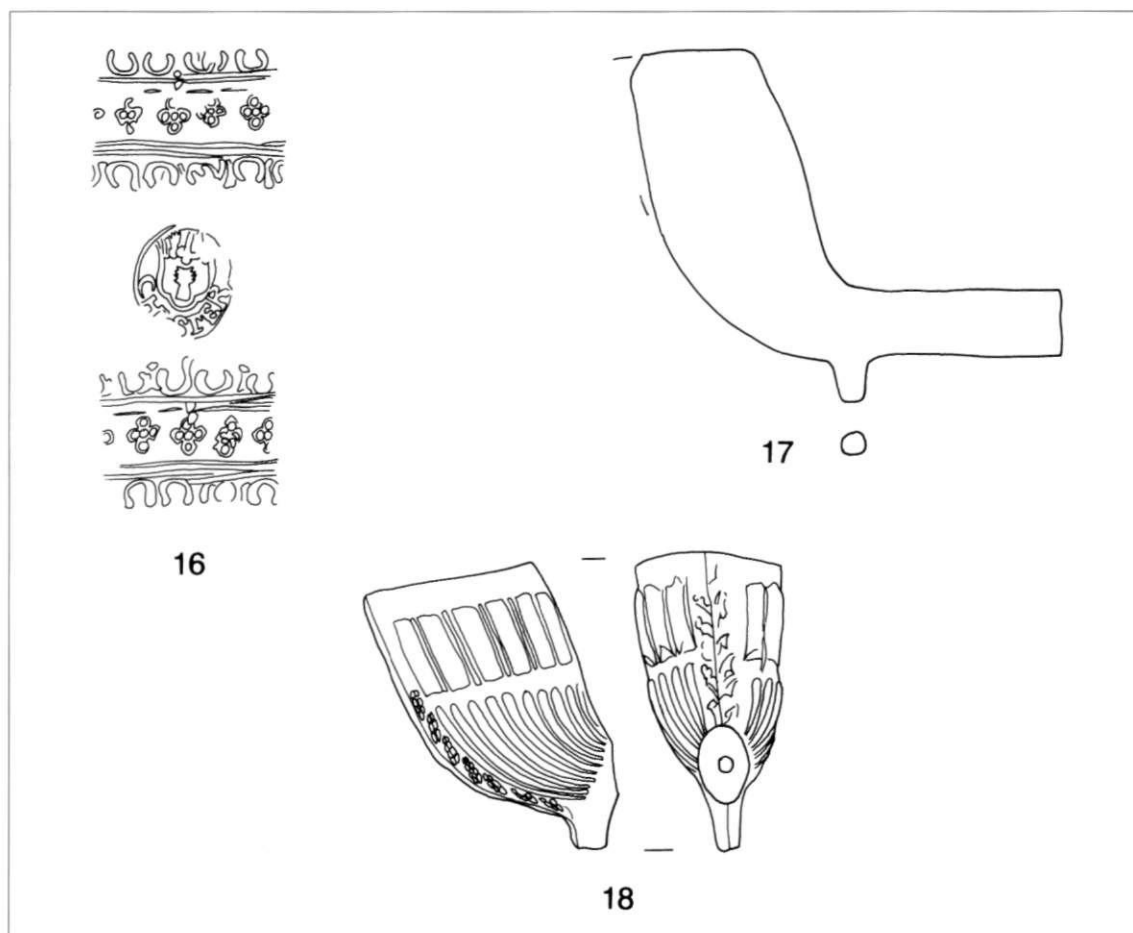


Fig. 9: Clay pipes (at 1:1)

23	1139	Bowl	Type B; bottered and milled; CR relief stamp on the heel and on the side of the bowl; National Stamp Index General Type 974; probably Charles Riggs of Newcastle; late 17th century (cf. Barker 1985, 249, 264, fig. 5, Type III - a casual find from Keele), 1650-80 (fig. 7: 3).
24	1139	Bowl 6	Type B; good quality front milling, elegant, well-made bowl; not bottered; probably late 17th century (fig. 7: 4).
25	1139	Bowl 7	Type B; good quality milled (low) bowl; not bottered; probably late 17th century (fig. 7: 5).
26	1139	Bowl -	Type B; broken; very low milling; not bottered; probably late 17th century (fig. 7: 6).
27	1139	Bowl 8	Type B; milled, not bottered; extensively damaged; an incised line on the side of the stem was made before firing took place and appears to be accidental; probably late 17th century (fig. 7: 7).
28	1139	Bowl 7	Type C; not milled or bottered; probably late 17th century (fig. 8: 8).
29	1139	Bowl 7	Type C; not milled or bottered; probably late 17th century (fig. 8: 9).
30	1139	Bowl 6	Type C; not milled or bottered; fumed grey in places; probably late 17th century (fig. 8: 10).
31	1139	Bowl 5	Type C; not bottered; very thin milling; probably late 17th century (fig. 8: 11).

32	1139	Bowl 6	Type C; not bottered; very thin milling; probably late 17th century (fig. 12).
33	1139	Bowl 7	Type C; vestigial milling on front; not bottered; probably late 17th century (fig. 8: 13).
34	1139	Bowl 6	Type D; bottered; milling indistinct due to encrustations; burnished; relief heel stamp T Gauntlet Type D; 45 examples of TD pipes, including some with gauntlets, form part of the Robinson Collection from Willaston by Crewe in south Cheshire and are thought to have been made in Nantwich (fig. 8: 14).
35	1139	Bowl 7	Type D; bottered; finely milled near rim; burnished; square relief stamp 7DANL/OVER/TON; nothing is known of this maker, but examples of the same stamp, with a deformed D and first O have been recorded at Much Wenlock and Stafford (National Stamp Index no. 73); the bowl form is Higgins' Broseley Type 15, 1670-90 (fig. 8: 15).

THE ENVIRONMENTAL EVIDENCE

THE PLANT REMAINS by Lisa Moffett

INTRODUCTION AND METHOD

Samples were collected from several of the waterlogged deposits (1041, 1059, 1141, and 1147) for plant macro-remains. A sample of 1 litre was sieved from each context. Each sample was sieved by washing through a series of three mesh sizes of 4 mm, 1 mm and 0.3 mm to separate the size fractions and make the samples easier to sort. The large fraction (4 mm sieve) was dried and sorted by eye for large items such as hazelnut shell fragments. Only a few identifiable remains were found in this fraction, although the presence of other material, such as wood and coal, was noted. The 1 mm sieve fraction was sorted in its entirety under a binocular microscope. A sub-sample of the fine fraction (0.3 mm sieve) from each sample was examined for small seeds. Only a few fragments of seeds were found in any of the fine fraction sub-samples, and all represented species found in the 1 mm fraction. Consequently, the fine fractions were not further sorted and virtually all of the results are from the 1 mm sieve fraction.

The material was identified by comparison with modern reference specimens. Results are presented in Table 9 in taxonomic order within approximate habitat groups. Taxonomy follows Stace (1991). No attempt was made to count every seed. Instead, items were scored according to their approximate abundance in the sample as given by the scale in Table 9. Since exact numbers of seeds are less important in interpretation than their relative abundance, it is unlikely that much information of importance has been lost by this method. Most of the material was preserved by water logging.

RESULTS

Phase 1 - Pre-structural (1147)

The earliest deposit appeared to be natural with no clear sign of human activity. By far the bulk of the seeds represented wet ground and aquatic species of plants. Bur-marigold (*Bidens cernualtripartita*), bur-reed (*Sparganium erectum*), and floating sweet-grass (*Glyceria* cf. *fluitans*) grow in wet environments such as stream edges and ditches. The sedges are assumed to have been growing in the same environment because most species of sedges grow in wet or damp ground, but there are also a few species which grow in dry habitats. Although it was not possible to say definitely that those identified were wet ground plants, that is the most likely possibility. Pondweed (*Potamogeton* sp.) and duckweed (*Lemna* sp.) are also associated with wet environments. The beetles found in this deposit (see below page 85) feed on some of these plants.

TABLE 9 Waterlogged plant remains

All items are 'seeds' in the broadest sense unless noted otherwise. Identifications by Lisa Moffett.

Key to abundance of items (approximate estimates only): + = 1-5 ++ = 6-25 +++ = 26-100 + + + + = 101-250

+ + + + + = 251 +

Context:	1147	1041	1141	1059	
Sample size (litres):	1	1	1	1	
Phase	1(pre- structural)	2 (15C)	2 (15C)	3 (L15/E16C)	
<u>Cultivated plants</u>					
<i>Cannabis sativa</i> L.	-	+	+	-	hemp
<i>Ficus carica</i> L.	-	+++	+	+	fig
<i>Beta vulgaris</i> L. fruit tops	-	+	+	-	beet
<i>Malus</i> sp. endocarp fragments				+	apple core fragments
<i>Vicia faba/sativa</i> (charred)	-	+	-	-	bean/vetch
<i>Vitis vinifera</i> L.	-	+	+	-	grape
<i>Linum usitatissimum</i> L.	-	-	+	-	flax
<i>L. usitatissimum</i> L. capsule fragments	-	-	-	+	flax
cf. <i>Foeniculum vulgare</i> Miller			+		fennel
<i>Triticum turgidum</i> rachis nodes	-	++	++	+++	?rivet/macaroni wheat
<i>Triticum cf. turgidum</i> glume bases	-	-	-	+	?rivet/macaroni wheat
<i>Triticum aestivum</i> s.l. rachis nodes	-	-	+	++	bread wheat
<i>Triticum</i> sp. free-threshing rachis nodes	-	+	+	+++	free-threshing wheat
<i>Triticum</i> sp. free-threshing glume bases				+	free-threshing wheat
<i>Triticum</i> sp. rachises	-	-	-	+	wheat
<i>Secale cereale</i> L. rachis nodes	-	-	+++	+ + + + +	rye
<i>Secale/Hordeum</i> rachis nodes	-	-	++	+ + + +	rye/barley
<i>Hordeum vulgare</i> L. six-row rachis nodes	-	-	-	+	six-row barley
<i>H. vulgare</i> L. rachis nodes	-	+	-	-	barley
<i>Avena cf. sativa</i> lemma bases				+	?cultivated oat
<i>Avena</i> sp. lemmas	-		+		oat
Cereal indet. (charred)				+	cereal
Cereal indet. culm fragments (large)	-	++	+	+ + + + +	cereal
Cereal/Poaceae culm fragments (small)	-	-	+	+ + + + +	cereal/grass
<u>Arable/disturbed ground species</u>					
<i>Ranunculus sardous</i> Crantz	-	+	+	+	hairy buttercup
<i>R. parviflorus</i> L.	-	+	-	-	small-flowered buttercup
<i>Urtica dioica</i> L.				+	stinging nettle
<i>U. wens</i> L.	-	+	-	-	small nettle
<i>Chenopodium cf. album</i> L.	+	+ + + +	+ + + +	++	fat hen
<i>Atriplex</i> sp.	-	++	+	+	orache
<i>Stellaria cf. media</i> (L.) Villars	-	++	++	+ + +	?common chickweed
<i>Agrostemma githago</i> L.	-	+	+	++	corn cockle
<i>Silene ? vulgaris</i> Garcke	-	+	+	-	?bladder campion
<i>Silene latifolia</i> Poiret	-	+	-	-	white campion
<i>Persicaria maculosum</i> lapathifolium	-	+	++	+	redshank/pale persicaria
<i>Polygonum aviculare</i> L.	+	++	+	++	knotgrass
<i>Fallopia convolvulus</i> (L.) Love	-	+	+	+	black bindweed
<i>Rumex acetosella</i> L.	-	+	+	+	sheep's sorrel
<i>Thlaspi arvense</i> L.			+		field pennycress
<i>Brassica nigra</i> (L.) Koch			+	+	black mustard
<i>Brassica rapa/nigra</i>	-	+	-	-	wild turnip/black mustard
<i>Brassica</i> spp.	-	+	+	-	cabbage etc.
<i>Raphanus raphanistrum</i> L.	-	+	+	+	wild radish
<i>Euphorbia helioscopia</i> L.	-	+	+	+	sun spurge
<i>Scandix pecten-veneris</i> L.	-	+	-	+	shepherd's needle
<i>Aethusa cynapium</i> L.	-	+	+	-	fool's parsley

TABLE 9 Waterlogged plant remains - *continued*

<i>Hyoscyamus niger</i> L.	-	+	-	+	henbane
<i>Solanum nigrum</i> L.	-	-	-	+	black nightshade
<i>Stachys arvensis</i> (L.) L.	-	+	+	-	field woundwort
<i>Lamium</i> sp.	-	+	+	+	dead-nettle
<i>Galeopsis angustifolia</i> Ehrh. ex Hoffm.	-	+	-	-	red hemp-nettle
<i>Galeopsis speciosa/tetrahit</i>	-	-	-	++	hemp-nettle
<i>Galeopsis</i> sp.	-	-	+	-	hemp-nettle
<i>Valerianella dentata</i> (L.) Pollich	-	+	-	-	cornsalad
<i>Centaurea cyanus</i> L.	-	++	+	+	cornflower
<i>Carduus/Cirsium</i>	++	+	-	+	thistle
<i>Carduus/Cirsium/Centaurea</i>	-	-	+	-	thistle/cornflower/knapweec
<i>Lapsana communis</i> L.	-	++	++	+	nipplewort
<i>Sonchus arvensis</i> L.	-	+	+	-	perennial sow-thistle
<i>Sonchus asper</i> (L.) Hill	-	+++	+	++	prickly sow-thistle
<i>Anthemis cotula</i> L.	+	++	+	++	stinking mayweed
<i>Chrysanthemum segetum</i> L.	-	++	+++	+	corn marigold
Asteraceae mayweed type flower head	-	-	-	+	daisy family
Asteraceae thistle type flower head	-	-	-	+	daisy family
<i>Bromus hordeaceus/secalinus</i>	-	+	+	-	soft-brome/rye brome
<u>Grassland species</u>					
<i>Ranunculus acris/repens/bulbosus</i>	+	++++	++++	+	buttercups
<i>Filipendula ulmaria</i> (L.) Maxim.	-	-	+	-	meadowsweet
<i>Potentilla erecta</i> (L.) Rausch.	-	+	++	+	tormentil
<i>Sanguisorba minor</i> Scop.	-	-	+	-	salad burnet
<i>Anthriscus sylvestris</i> (L.) Hoffm.	-	+	-	-	cow parsley
<i>Torilis</i> sp.	-	-	+	+	hedge-parsley
<i>Daucus carota</i> L.	-	-	+	-	(wild?) carrot
<i>Prunella vulgaris</i> L.	-	+	+	-	selfheal
<i>Odontites vernus</i> (Bellardi) Dumort.	-	+	-	-	red bartsia
<i>Rhinanthus minor</i> L.	-	+	-	+	yellow rattle
<i>Leontodon</i> sp.	-	-	+	-	hawkbit
<i>Taraxacum</i> sp.	-	+	-	-	dandelion
<i>Poa annua</i> L.	-	-	-	+	annual meadow-grass
<i>Poa</i> sp.	-	+	-	+	meadow-grass
<u>Wet ground and aquatic species</u>					
<i>Ranunculus flammula/reptans</i>	-	+	-	+	lesser/creeping spearwort
<i>Persicaria hydropiper</i> (L.) Spach	-	-	-	++	water-pepper
<i>Salix</i> sp. buds	-	+	+	-	willow
<i>Oenanthe fistulosa</i> L.	-	+	-	-	tubular water-dropwort
<i>Apium nodiflorum</i> (L.) Lag.	+	-	-	-	fool's water-cress
<i>Menyanthes trifoliata</i> L.	-	+	-	-	bogbean
<i>Lycopus europaeus</i> L.	+	-	-	-	gypsywort
<i>Pedicularis palustris</i> L.	-	+	+	+	marsh lousewort
<i>Sonchus palustris</i> L.	-	+	-	-	marsh sow-thistle
<i>Senecio aquaticus</i> Hill	-	+	-	-	marsh ragwort
<i>Bidens cernua/tripartita</i>	++++	-	-	-	bur-marigold
<i>Potamogeton</i> sp.	++++	-	-	-	pondweed
<i>Lemna</i> sp.	+	-	-	-	duckweed
<i>Eleocharis palustris luniglumis</i>	-	++	++	+	spikerush
<i>Blysmus compressus</i> (L.) Panzer ex Link	-	+	-	-	flat-sedge
<i>Carex</i> spp.	++	+++	+++	++	sedges
<i>Glyceria cf. fluitans</i> (L.) R. Br.	++++	-	-	+	?floating sweet-grass
<i>Sparganium erectum</i> L.	+++	-	-	-	branched bur-reed
<i>Sparganium</i> sp.	-	-	-	+	bur-reed
<u>Hedgerow/woodland edge species</u>					
<i>Corylus avellana</i> L.	+	+	+	+	hazel
<i>Rubus cf. fruticosus</i> L. agg.	+	+	-	-	bramble

TABLE 9: Waterlogged plant remains - *continued*

<i>Rubus</i> sp.	+	+	-	+	bramble/raspberry
<i>Rosa</i> sp. thorns	-	+	+	-	rose
<i>Prunus spinosaldomestica</i>	-	+	-	+	sloe/bullace/damson/plum
<i>Prunus</i> I <i>Crataegus</i> thorns	-	+	+	+	sloe/hawthorn
<i>Ilex aquifolium</i> L. leaf spines	-	-	+	-	holly
<i>Sambucus nigra</i> L.	+	+	+	+	elder
<u>Heathland species</u>					
<i>Pteridium aquilinum</i> (L.) Kuhn leaf frags.	+	++	+	+	bracken
<i>Calluna vulgaris</i> (L.) Hull stems/leaves	-	-	-	++	heather
<i>Ulex</i> sp. stems/leaves	-	-	+	+	gorse
<u>Unclassified</u>					
Moss fragments	-	++	+++	+++++	mosses
<i>Ranunculus</i> sp.	-	-	-	+	buttercup/spearwort
<i>Stellaria palustris</i> I <i>graminea</i>	-			+	marsh/lesser stitchwort
<i>Rumex crispus/conglomeratus/obtusifolius</i>	-	+	-	-	curled/broad-leaved dock
<i>Rumex</i> sp.	-	+	+	+	dock
<i>Viola</i> sp.	-	-	-	+	violet/pansy
Fabaceae pod fragments	-			+	pea family
<i>Senecio cf. vulgaris</i> L.	-	-	-	+	groundsel
Poaceae panicle nodes	-	-	+	-	grass
Poaceae	-	+	+	++	grass
? Prickle	-	-	+	-	
? Berries	-	-	+	-	
? Flower	-	+	-		
Tree buds	-	++	++	++	

A few plants of disturbed ground are represented by a very small number of seeds. These plants could have grown on drier ground above the stream edge, as stream banks are often disturbed by channel recutting. The seeds could also have been carried downstream from habitats some distance away. Similarly, hazel, bramble, and elder are represented by very small numbers of seeds and could have been growing either nearby or further upstream.

Phase 2 – Late Medieval (1041 and 1141)

The samples from the late medieval period were characterised by a mixed assemblage of plants that were probably derived from different sources. Also present were fragments of charcoal, uncharred wood, and small lumps of coal. Although the plants are grouped in Table 9 according to their probable habitats, these groupings are only one possible interpretation as many plants grow in a variety of habitats. Thus, some of the plants classified as arable or disturbed ground species can grow in grassy places, hedgerows, or damp places. Similarly, some of the grassland and damp ground plants can grow in arable fields under the right conditions. Bracken, although classified here as a heathland species, also grows in woods and rough grassland, and gorse is common in rough grassland as well as on heaths. A few plants were not classified in a group either because the identification was too imprecise or, in the case of ?groundsel (*Senecio cf. vulgaris*), because the plant is too cosmopolitan for a classification to be meaningful.

The two samples produced basically similar material, except that 1141 contained moderately abundant rye chaff, while there was no sign of rye in 1041. Consequently, the plants from both samples are discussed together. The two contexts appeared archaeologically to be essentially one layer, so it is likely that the difference has resulted from a chance distribution of material, which was probably deposited in a number of separate events.

Cultivated plants

Cereal remains identified included rachises (the flower stems) of rye (*Secale cereale*), rivet or macaroni wheat (*Triticum turgidum/durum*), bread wheat (*T. aestivum*), and barley (*Hordeum vulgare*). The single fragment of oat chaff (*Avena* sp.) could represent either a crop or a weed. No cereal bran was seen, either as whole grains or as fragments. Barley and bread wheat were present

in small amounts, though this does not necessarily reflect their relative importance as crops. It is not possible to distinguish rivet from macaroni wheat on the basis of a few rachises, but it is generally assumed that such rachis material represents rivet wheat, as this wheat is more suited to the British climate and there is historical evidence for its cultivation. Rivet wheat has been grown in southern Britain at least since the 11th century (Moffett 1991), though it is no longer a commercial crop.

Other crops included hemp (*Cannabis sativa*) and flax (*Linum usitatissimum*), both probably cultivated for their fibres, and beet (*Beta vulgaris*), an apparently popular vegetable at least since the Roman period (Moffett 1988), though it is not yet clear at what stage the plant began to be cultivated for its 'roots' as well as its 'greens'. A single charred bean or vetch seed (*Vicia faba/sativa*) was the only evidence for legume crops, though legumes often do not survive particularly well in waterlogged deposits.

Grape (*Vitis vinifera*) and fig (*Ficus carica*) are more likely to have been imported. Dried figs and raisins were imported in large quantities in the later Middle Ages (Gras 1918). Wine, an essential item on the tables of the rich, was also imported in very large amounts. Vines were sometimes cultivated in England, occasionally in vineyards for wine, but probably more often on a small scale for verjuice, the medieval equivalent of vinegar. Verjuice was made from unripe grapes and was thus considerably easier to produce than wine.

Plants of arable and disturbed ground

The largest group of plants from this period were those which grow in disturbed open habitats, generally with well-drained soils, such as crop fields, waysides, active stream banks, waste ground, and gardens. The great majority of plants in this group are annuals, but some perennials are also well adapted to a disturbed environment. Sheep's sorrel (*Rumex acetosella*) and perennial sow thistle (*Sonchus arvensis*) can reproduce from adventitious buds on thickened horizontal or oblique roots and thus can survive, and even flourish more strongly, if their root systems are broken by ploughing (Hakansson 1982).

Many weed ecologists in theory make a distinction between weeds of crops (segetals) and weeds of waste and disturbed ground (ruderals). In practice this distinction depends on specific ecological circumstances, including farming methods (Holzner 1982). Some plants are likely to have been more closely associated with arable habitats, but all of the plants in this group could have grown in crop fields and many of them also wherever human disturbance afforded suitable habitats. Association with cereal crop-processing waste may have been one means by which weed seeds became included in the deposit. Others could include dumping of garden waste or clearing of disturbed areas for another use.

Plants characteristic of arable habitats include corncockle (*Agrostemma githago*), field pennycress (*Thlaspi arvense*), sun spurge (*Euphorbia helioscopia*), shepherd's needle (*Scandix pecten-veneris*), cornsalad (*Valerianella dentata*), cornflower (*Centaurea cyanus*), nipplewort (*Lapsana communis*), stinking mayweed (*Anthemis cotula*), corn marigold (*Chrysanthemum segetum*), and brome (*Bromus hordeaceus/secalinus*). A number of these plants would not be seen in a modern British cornfield as a result of modern seed cleaning techniques and the use of herbicides. Corncockle, shepherd's needle, cornflower, and stinking mayweed are all very rare plants in Britain today. Others, such as nipplewort, are still common but more likely to be seen today along waysides and on waste ground. The bladder campion (tentatively identified as *Silene* cf. *vulgaris*) was said to have been common as a weed of barley on light soils in the late 18th century (Pitt 1794, 95).

Grassland plants

Some of the grassland plants may also have grown in crop fields. Buttercups (*Ranunculus acris/repens/bulbosus*), wild carrot (*Daucus carota*), and yellow-rattle (*Rhinanthus minor*) can grow in arable habitats. Red bartsia (*Odontites vernus*), although not regarded as an arable weed today, seems to appear not infrequently in archaeobotanical assemblages in association with cereal remains. It is also mentioned by Dickenson (1798, 104) as appearing in cornfields in Staffordshire. All of these plants, however, are also characteristic grassland plants, and the presence of other grassland plants in the assemblage which are unlikely to have invaded the crop fields, suggests that there is a genuine presence of grassland material.

Meadowsweet (*Filipendula ulmaria*) is a common plant of wet grassland. Yellow rattle (*Rhinanthus minor*) and self heal (*Prunella vulgaris*) grow in both wet and damp grassland, while cow parsley (*Anthriscus sylvestris*) is an important species of damp grassland. Other plants from a similar habitat include meadowgrass (*Poa annua*) and tormentil (*Potentilla erecta*), the latter generally occurring on acid soils. Wild carrot and salad burnet (*Sanguisorba minor*) are found in damp grassland but also commonly in chalk grassland, which tends to be dry. Hawkbit (*Leontodon* sp.) and dandelion (*Taraxacum* sp.) can be found in almost any type of grassland.

Salad burnet is mainly found in limestone areas in modern Staffordshire (Edees 1972, 86), and this was apparently where it was also recorded in the late 18th century (Dickenson 1798, 111). Stone is some distance from the nearest limestone in the north-eastern part of the county, but it need not follow that the plant was growing far afield. Liming to improve soil fertility was a common practice in the medieval period and could well have created favourable conditions for salad burnet, and perhaps also for wild carrot, another plant often found on calcareous soils.

Wet ground/aquatic species

Plants in this group mostly inhabit places such as wet ditches, marshes, and the edges of streams, lakes, and rivers. Except for the sedges (*Carex* spp.), wet ground plants were generally represented by small numbers of seeds.

Willow (*Salve* sp.) buds could conceivably be derived from the use or working of withies near the area of the deposit.

Floor coverings often consisted of plant material strewn loose on the floor, and sedges were well suited for this purpose, as well as for thatch. Other plants that might have been collected, perhaps inadvertently, with the sedges are lesser or creeping spearwort (*Ranunculus flammula/reptans*), tubular water-dropwort (*Oenanthe fistulosa*), marsh lousewort (*Pedicularis palustris*), marsh sow-thistle (*Sonchus palustris*), and marsh ragwort (*Senecio aquaticus*).

Spikerush (*Eleocharis palustris/luniglumis*) is thought to have sometimes invaded poorly drained areas of crop fields in the past, possibly from wet boundary ditches. Although not today regarded as a crop weed, it has frequently been found in archaeobotanical assemblages in association with cereal remains (Jones 1988). It needs at least seasonal flooding but appears able to survive periods when the soil is not completely waterlogged (Walters 1949).

Hedgerow/woodland edge plants

Hazel (*Corylus avellana*), ?bramble (*Rubus* cf. *fruticosus*), a fragment of fruitstone similar to sloe or a primitive plum (*Prunus spinosa/domestica*), and possibly elder (*Sambucus nigra*) could all represent plants collected for food from hedgerows and woodland edges. Evidence of hedges is slight in terms of amount of material, but suggestive. Thorns of rose (*Rosa* sp.), sloe, or hawthorn (*Prunus spinosa/Crataegus* sp.) and the spiny tips of holly leaves (*Ilex aquifolium*) could all have come from hedgerow trimmings.

Heathland plants

Fragments of bracken frond (*Pteridium aquilinum*) were very abundant, mainly in 1141. As noted above, the bracken could have been collected from heaths, rough grassland, and woodland. It was possibly brought into the town for a number of purposes. Bracken could have served as bedding both for animals and people, and there is evidence that it was sometimes incorporated in thatch (Letts 1993). There is also a possibility that bracken was fed to domestic animals.

A few leaf and stem fragments of gorse (*Ulex* sp.) suggest that gorse, too, was brought into the town, perhaps also for roofing or for fuel.

Phase 3 - Post-medieval (1059)

The most striking feature of the post-medieval sample was the predominance of cereal straw. Manually pulling apart unprocessed lumps of material showed fragments of cereal culms compressed together in an organic matrix. There were also some fragments of unidentified wood and a few lumps of coal.

The cereal straw itself is not identifiable to species but large numbers of rachis nodes of rye were present, suggesting that some or most of the cereal straw could also be rye. Rivet/macaroni wheat

and bread wheat rachis fragments were identified but in much smaller amounts. A couple of six-row barley and oat chaff fragments were also present. Many rachis nodes were too poorly preserved to identify to species and could have been either rye or barley, but are far more likely to be the former.

Rye and rivet wheat are tall cereals, and old varieties of bread wheat were much taller than modern varieties. The long straw of these cereals makes them very suitable for use in thatching. Letts (1993), in a study of thatch preserved in medieval and post-medieval buildings in southern England, found that rye, rivet wheat, and bread wheat were the three most common cereals used for thatching. The presence of these three cereals with a large amount of cereal straw does seem suggestive of thatch, although the evidence is highly circumstantial. Straw could also have had a number of other uses including flooring and bedding. Other potential thatching materials such as bracken, heather, and gorse are also present, though these too could have had other uses. The possibility that the remains could represent thatch also receives some tentative support from the beetle remains (see below page 93).

The assemblage of arable/disturbed ground plants is very similar to that from the late medieval layers, but the evidence for grassland species is scanty. Sedges and water-pepper (*Persicaria hydropiper*) were the most common seeds of wet ground plants. Hedgerow/woodland edge species were also still present, including a couple of thorns of sloe or hawthorn, although there was no sign of holly. Moss fragments were very abundant but have not yet been identified. The mosses could be of interest as it might be possible to determine whether they were collected from outside the town, and if so from what type of environment, or whether they were growing on the post medieval structure itself.

THE COLEOPTERA by David Smith

INTRODUCTION AND SAMPLE PREPARATION

Several of the waterlogged deposits (1041, 1059, 1141, and 1147) were sampled for beetle remains. The samples were prepared using a standard method of paraffin flotation as first outlined by Coope and Osborne (1968) and subsequently improved upon in Kenward *et al.* (1980). The resultant 'flots' were sorted under a low-power binocular microscope. The insect fragments were identified using a number of entomological keys and by direct comparison to the Gorham Collection of British Coleoptera housed in the Department of Ancient History and Archaeology, University of Birmingham.

RESULTS AND ANALYSIS

The coleopterous species recovered from this material are presented in Table 10. The taxonomy follows Lucht (1987).

The species recovered have been assigned to ecological groups following the scheme outlined in Kenward (1978), Hall *et al.* (1983), and Hall and Kenward (1990). Those groups presented in the right hand column of Table 10 are described at the end of that table.

The percentage of these ecological groups within each sample is given in Table 11 and a graphical plot of the percentage of the main groups is given in figure 10. A further breakdown of the percentages of the various compost groups and the wood and grain species is given graphically in figure 11.

A list of the species occupying the first ten ranks of abundance in each of the four samples is given in Table 12.

INTERPRETATION

Phase 1 - pre-structural phase (1147)

The majority of the species present came from aquatic or waterside environments. There was a wide range of water beetles which favour slow moving or stagnant eutrophic (fresh) water. Often these species are also found in the still waters around the base of aquatic plants. Typical of this environment are *Hygrotus inaequalis* (Balfour Browne 1940), *Ochthebius minimus*, the *Helophorus* species (Hansen 1987), and the *Bagous* weevils. The presence of other species of water beetle, such as *Agabus bipustulatus*, *Colymbetes fuscus*, and the *Dytiscus* species, suggest that less heavily vegetated areas of still, open water were also present.

TABLE 10 Coleoptera from 9 High Street, Stone

	1147	1041	1141	1059	Ecological Code
Carabidae					
<i>Nebria brevicollis</i> (E)	4	-	-	1	oa
<i>Notiophilus</i> sp.	-	-	-	1	oa
<i>Dyschirius</i> sp.	1	-	-	-	oa
<i>Clivina fossor</i> (L.)	1	-	-	-	oa
<i>C. contracta</i> (Four.)	-	-	-	-	oa
<i>Trechus</i> spp.	2	-	1	-	o a
<i>Bembidion guttula</i> (F.)	3	-	-	-	oa
<i>B.</i> spp.	1	1	-	-	oa
<i>Patrobis</i> spp.	1	-	-	-	oa
<i>Pterostichus stremus</i> (Panz.)	2	-	-	-	oa
<i>P. nigrita</i> (Payk.)	2	-	-	-	oa
<i>P.</i> sp.	-	-	1	-	ob
<i>Agonum</i> spp.	2	-	-	-	oa
<i>Amara</i> spp.	1	1	2	-	o a
<i>Chlaenius nigricornis</i> (F.)	2	-	1	-	oa-d
Halipidae					
<i>Halipus</i> sp. (F.)	1	-	-	-	oa-w
Dytiscidae					
<i>Hygrotus inaequalis</i> (F.)	1	-	-	-	oa-w
<i>Hydroporus</i> spp.	8	-	-	-	oa-w
<i>Agabus bipustulatus</i> (L.)	4	-	-	-	oa-w
<i>A.</i> spp.	2	-	-	-	oa-w
<i>Colymbetes fuscus</i> (L.)	-	1	-	-	oa-w
<i>Dytiscus</i> spp.	1	-	-	-	oa-w
Hydrophilidae					
<i>Hydraena</i> spp.	8	-	-	1	oa-w
<i>Ochthebius Minimum</i> (F.)	2	-	-	-	oa-w
<i>O.</i> spp.	7	3	1	-	oa-w
<i>Limnebius</i> spp.	4	-	-	-	oa-w
<i>Helophorus grandis</i> 111.	6	1	-	-	oa-w
<i>N. grandis</i> III. or <i>aquaticus</i> (L.)	8	-	-	-	oa-w
<i>H.</i> spp.	52	2	1	1	oa-w
Hydropilidae					
<i>Coleostoma orbiculare</i> (F.)	6	-	-	-	oa-w
<i>Sphaeridium</i> sp.	2	-	-	-	rf
<i>Cercyon impressus</i> (Sturm.)	3	-	4	-	r f
<i>C. haemorrhoidalis</i> (F.)	-	2	-	4	rf
<i>C. melanocephalus</i> (L.)	1	1	1	-	r f
<i>C. unipunctatus</i> (L.)	-	-	1	-	rf
<i>C. atricapillus</i> (Marsh.)	-	3	-	-	rf
<i>C. pygmaeus</i> (111.)	1	-	-	-	rf
<i>C. rarii</i> (111.)	1	1	-	-	oa-w
<i>C. anafo</i> (Payk.)	1	21	-	-	rt
<i>C.</i> spp.	2	21	5	6	
<i>Megasternum bletophagum</i> (Marsh.)	2	2	1	1	rt
<i>Cryptopileurum Minutum</i> (F.)	1 5	-	1	1	r f
<i>Hydrobius fuscipes</i> (L.)	2	-	-	-	oa-w
<i>Laccobius</i> spp.	8	-	-	-	oa-w
<i>Enochrus</i> spp.	6	-	1	1	oa-w
Histeridae					
<i>Onthophilus striatus</i> (forst.)	1	-	-	-	rt
<i>Acritus s nigricornis</i> (Hofm.)	-	-	1	-	rt
Histeridae Gen. & sp. indet.	-	-	-	1	

TABLE 10 Coleoptera from 9 High Street, Stone - *continued*

	1147	1041	1141	1059	Ecological Code
Scydmaenidae					
<i>Scydmaenidae</i> gen. & sp. indet	-	1	-		
Orthoperidae					
<i>Cirylophus cassidoides</i> (Marsh.)		3	2	2	rt
<i>Orthoperus</i> spp.				2	rt
Ptiliidae					
Ptiliidae gen. & spp. indet.	1	14	2	2	rt
<i>Acrotrichis</i> spp.		2	2	2	rt
Staphylinida					
<i>Micropeplus staphylinoides</i> (Marsh.)	-	6	5	2	rt
<i>Megarthritis affinis</i> Mill.	-	1	-	-	rt
M. spp.	-	5	-	-	rt
<i>Phyllodrepa floralis</i> (Payk.)	-	3	-	-	rt
<i>Omalius riparium</i> Thorns.	-	4	-	-	rt
<i>O. septentrionis</i> Thorns.	-	2	-	-	rt
<i>O. excavatum</i> Steph.	-	2	-	-	rt
<i>O.</i> spp.	-	18	2	7	rt
<i>Xlodromus concinnus</i> (Marsh.)	1	14	3	3	rt-h
<i>Lathrimaeum unicolor</i> (Marsh.)	1	1	-	-	oa-d
<i>Olophrum piceum</i> (Gyll.)	1	-	-	-	oa-d
<i>Lesteva longelytrata</i> (Goeze)	3	1 1		1	oa-d
<i>Trogophloeus bilineatus</i> (Steph.)	-	4	2	-	rt
<i>T. fuliginosus</i> (Grav.)	-	9	4	-	rt
<i>T.</i> spp.	1	43	12		
<i>Aploderus caelatus</i> (Grav.)	1	-	-	-	rt
<i>Oxytelus sculptus</i> Grav.	-	12	8	2	rt
<i>O. rugosus</i> (F.)	3	12	2	2	rt
<i>O. sculpturatus</i> Grav.	-	5	-	2	rt
<i>O. nitidulus</i> Grav.	-	4	2	-	rt-d
<i>O. complanatus</i> Er.-1-lrt					
<i>O. tetracaratus</i> (Block.)	1	1	-	1	rt
<i>Platystethus arenarius</i> (Fourcr.)	2	4	3	1	rf
<i>P. cornutus</i> (Grav.)	2	1	-	-	oa-d
<i>Bledius gallicus</i> (Grav.)	.	.	.	2	oa-d
<i>Stenus</i> spp.	11	4	3	1	
<i>Stilicis orbiculatus</i> (Payk.)	-	2	-	-	rt
<i>S.</i> sp.	-	-	1	-	
<i>Leptacinus</i> spp.	-	8	2	-	rt
<i>Gyrohypnus</i> spp.		1	-	1	rt
<i>Xantholinus</i> spp.	5 - 4		2	2	
<i>Othius</i> sp.	1	-	-	-	
<i>Neobisnius</i> spp.	-	20	3		
<i>Philonthus</i> spp.		3 -	3		
<i>Ocypus</i> spp.	-	-	1		
<i>Quedius</i> sp.	-	2	1	3	
<i>Tachyporus</i> spp.	-	1	1		
<i>Tachinus rufipes</i> (Geer)	2	-	-		
<i>T.</i> spp	1 1			2	
Aleocharinae gen. & spp. indet.	9	40	5	4	
Pselaphidae					
<i>Brachygluta</i> spp.	.	.	.	]	
<i>Trissemus impressus</i> (Panz.)	-	1	-		
				1	oa-p

TABLE 10 Coleoptera from 9 High Street, Stone - *continued*

	1147	1041	1141	1059	Ecological Code
Cantharida					
<i>Cantharis</i> spp.	1	1	-	-	ob
<i>Rhagonycha</i> spp.	3	-	-	-	ob
Elateridae					
<i>Adelocera murina</i> (L.)	-	2	-	1	oa-p
<i>Athous</i> spp.					
Helodidae					
<i>ICyphon</i> sp.	-	1	-	-	oa-d
<i>Scirtes hemisphaericus</i> (L.)	7	-	-	-	oa-d
Dryopidae					
<i>Dryops</i> spp.	1			-	oa-d
<i>Elmis aenea</i> (Mull.)	3	-	-	-	oa-w
<i>Oulimnius</i> spp.	1	- 1		-	oa-w
<i>Limnius volckmari</i> (Panz.)	1	-	-	-	oa-w
Heteroceridae					
<i>Heterocerus</i> sp.	1	-	-	-	oa-d
Dermestidae					
<i>Dermestes</i> spp.	-	1	-	-	h
Nitidulidae					
<i>Brachypterus urticae</i> (F.)	1	-	-	-	oa-p
<i>B. glaber</i> (Steph.)	-	-	-	1	oa-p
<i>Meligethes</i> spp.	3	1 1		2	oa-p
Rhizophagidae					
<i>Rhizophagus</i> sp.				1	
Cucujidae					
<i>Monotonía spinicollis</i> Aube	-	1	-	-	rt
<i>M. brevicollis</i> Aube	-	1	-	-	rt
<i>M. bicolor</i> Villa	-	2	-	-	rt
<i>M. spp</i>		7		-	rt
Cryptophagidae					
<i>Cryptophagus acutangulus</i> Gyll.	-	8	-	-	rd-h
<i>C. Identatus</i> (Hbst.)	-	2	-		rd-h
<i>C. distinguendus</i> Sturm.	-	1	-	5	rd-h
<i>C. . scanicus</i> (L.)	-	4	1	1	rd-h
<i>C. ?cellaris</i> (Scop.)		1		-	rd-h
<i>C. spp.</i>	3	43	6	19	rd-h
<i>Atomaria</i> spp.	2	8	3	1	rd-h
Lathridiidae					
<i>Enicmus minutus</i> (Group.)	1	45	9	7	rd-h
<i>E. transversus</i> (Ol.) or <i>Histrio</i> Joy	1	-	-	-	rt
<i>Cartodere filiformis</i> (Gyll.)	-	5	-	6	rt
<i>Corticaria</i> or <i>Corticarina</i> spp.	4	60	18	85	rt
Mycetophagidae					
<i>Typhaea stercorea</i> (L.)	-	-	1	-	rd-h
Colydiidae					
<i>Aglenus brunneus</i> (Gyll.)	-	12	3	1	rt-h
Endomychida					
<i>Mycetaea hirta</i> (Marsh.)	-	18	8	23	rd-h

TABLE 10 Coleoptera from 9 High Street, Stone - *continued*

	1147	1041	1141	1059	Ecological Code
Lyctidae					
<i>Lyctus brunneus</i> (Steph.)	-	1	-	-	1
Anobiidae					
<i>Anobium punctatum</i> (Geer)	-	11	1	28	lh
Ptinidae					
<i>Tipnus unicolor</i> (Pill. Mitt.)	-	6	6	6	rd-h
<i>Ptinus fur</i> (L.)	-	35	6	40	rd-h
Anthicidae					
<i>Anthicus floralis</i> (L.)	-	2	-	-	rf
Scarabaeidae					
<i>Geotrupes</i> sp.	-	-	-	1	oa-rf
<i>Oxyomus silvestris</i> (Scop.)	2	-	-	2	oa-rf
<i>Aphodius sphacelatus</i> (Panz.)	4	1	-	-	oa-rf
<i>A. prodromus</i> (Brahm.)	4	1	-	-	oa-rf
<i>A. sphacelatus</i> or <i>A. prodromus</i>	8	5	-	-	oa-rf
<i>A. fimetarius</i> (L.)	4	1	-	-	oa-rf
<i>A. ater</i> (Geer)	2	1	-	-	oa-rf
<i>A. granarius</i> (L.)	-	1	-	-	oa-rf
<i>A. spp.</i>	-	-	2	-	oa-rf
Cerambycidae					
<i>Leiopis nebulosus</i> (L.)	.	.	.	1	1
Chrysomelidae					
<i>Donacia marginata</i> Hoppe	4	-	-	-	oa-w-p
<i>D. simplex</i> F.	20	-	-	-	oa-w-p
<i>Plateumaris sericea</i> (L.)	2	-	-	-	oa-w-p
<i>Hydrothassa glabra</i> (Hbst.)	2	-	-	-	oa-w-p
<i>Prasocuris phellandrii</i> (L.)	1	-	-	-	
<i>Phyllotreta</i> spp.	2	4	-	1	oa-p
<i>Haltica</i> spp.	2	-	-	-	oa-p
<i>Chaetocnema</i> spp.	2	-	-	1	oa-p
Scolytidae					
<i>Phloeophthorus rhododactylus</i> (Marsh.)	1	-	-	-	1
Curculionidae					
<i>Apion</i> spp.	3	1	-	2	oa-p
<i>Strophosoma faber</i> (Fbst.)	-	-	1	-	oa-p
<i>Barynotus</i> sp.	1	-	-	-	oa-p
<i>Sitona tibialis</i> (Hbst.)	-	1	-	-	oa-p
<i>Phloeophagus lignarius</i> (Marsh.)	-	-	1	-	1 1
<i>Bagous</i> sp.	1	-	-	-	oa-d
<i>Dorytomus</i> spp.	3	-	-	-	oa-d
<i>Leiosoma deflexum</i> (Panz.)	1	-	-	-	oa
<i>Hypera</i> sp.	-	-	-	1	oa-p
<i>Sitophilus granarius</i> (L.)	-	4	2	1	g
<i>Micrelus ericae</i> (Gyll.)	1	-	-	-	oa-m
<i>Ceutorhynchus</i> spp.	1	1	-	1	oa-p

Ecological coding (Hall and Kenward 1990)

oa (& ob) - species which will not breed in human housing.

w - aquatic species.

d - species associated with damp watersides and river banks.

rd - species primarily associated with drier organic matter.

rf - species primarily associated with foul organic matter often dung.

rt - insects associated with decaying organic matter but not belonging to either the rd or rf groups.

l - species associated with timber,

p - plant feeding species,

m - species from moorland.

h - members of the 'house fauna' this is a very arbitrary group based on archaeological associations (Hall and Kenward 1990, Kenward and Hall 1995).

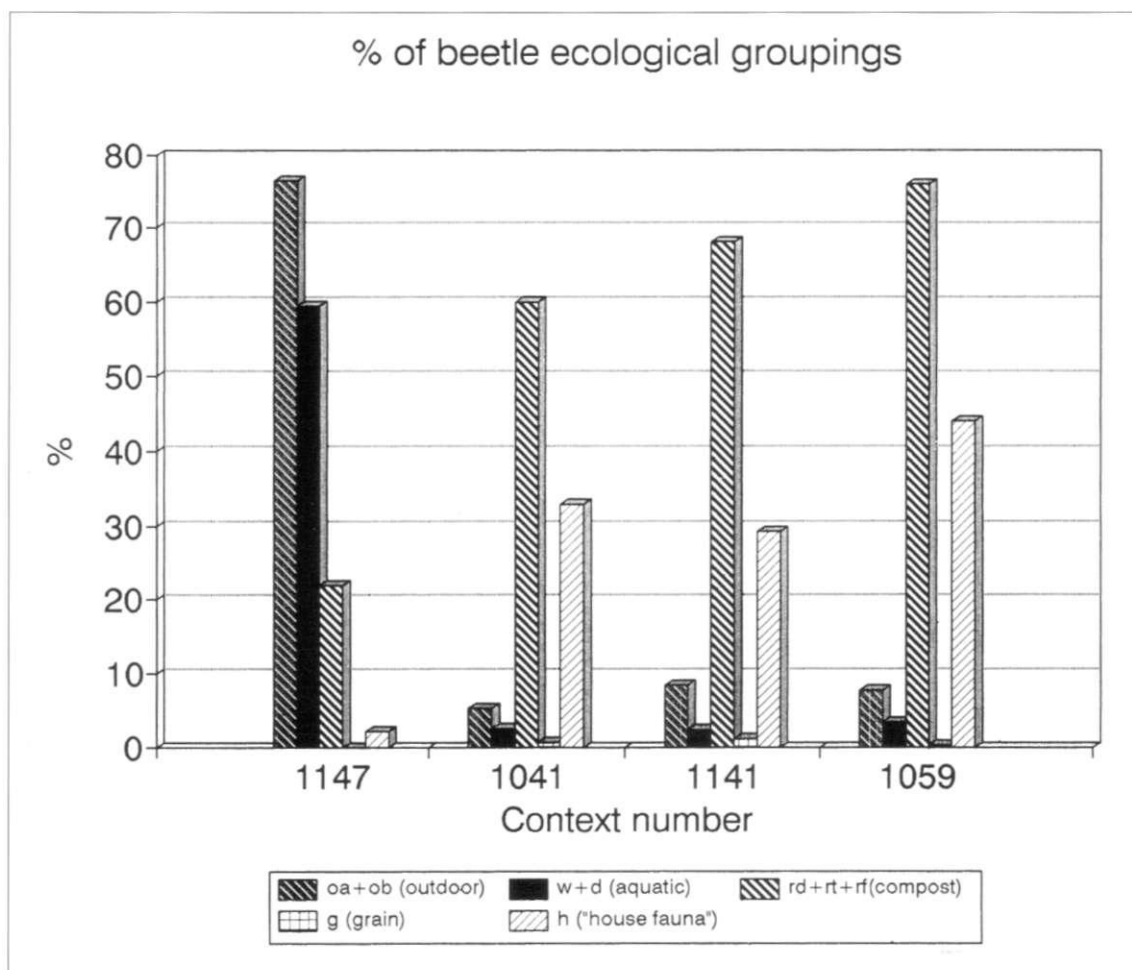


Fig. 10: The beetles: percentage of ecological groupings

Other species of beetle recorded from this phase occur in the detritus-filled muddy areas around the base of bankside vegetation. Most of the Hydrophilidae species favour this environment. In particular *Colestoma orbiculare*, *Cercyon tristis*, and the *Laccobius* and *Enochrus* species (Hansen 1987). Many of the species of Caradidae present are also associated with this habitat to some extent (Lindroth 1985, 1986). In addition, other beetles, in particular *Platystethus comutus* and the *Dryops* and *Heterocerus* species, suggest areas of open mud.

The nature of the stands of vegetation present is suggested by the plant-feeding species of beetles recovered from this deposit. The rather large numbers of *Donacia simplex* and *Plateumaris sericea* suggest the presence of a dense stand of emergent vegetation such as *Carex*, *Sparganium*, or *Typha*. In addition, *Donacia marginata* indicates the presence of *Sparganium erectum*, the branched bur-reed. Other plant species which formed part of this bankside community are indicated. *Prasocuris phellandrii* feeds as an adult on a range of aquatic Apiaceae. Both the larvae of this species and the adult of *Leiosoma deflexum* will also feed on *Caltha palustris*, the marsh marigold. *L. deflexum* and *Hydrothassa glabra* also feed on various *Ranunculus* species. *Brachypterus urticae*, as its name suggests, feeds only on the common stinging nettle. There is also an indication of willow in the area. This is commonly the food plant of the *Dorytomus* weevils. Many of the species indicated by the beetles were also found amongst the plant macrofossil remains from this sample (see above page 79).

Other species indicate the presence of plants from drier ground, perhaps from heathlands in the wider area. *Calluna vulgaris* is the food plant of *Micrelus ericae* (Koch 1992), and gorse and broom are the food plants of *Phloeophthorus rhododactylus* (Duffy 1952).

Although present in low numbers, the various species of elmid are significant. These occur only in the areas of exposed gravel and stone in fast flowing waters and in the littoral zone of lakes. Although

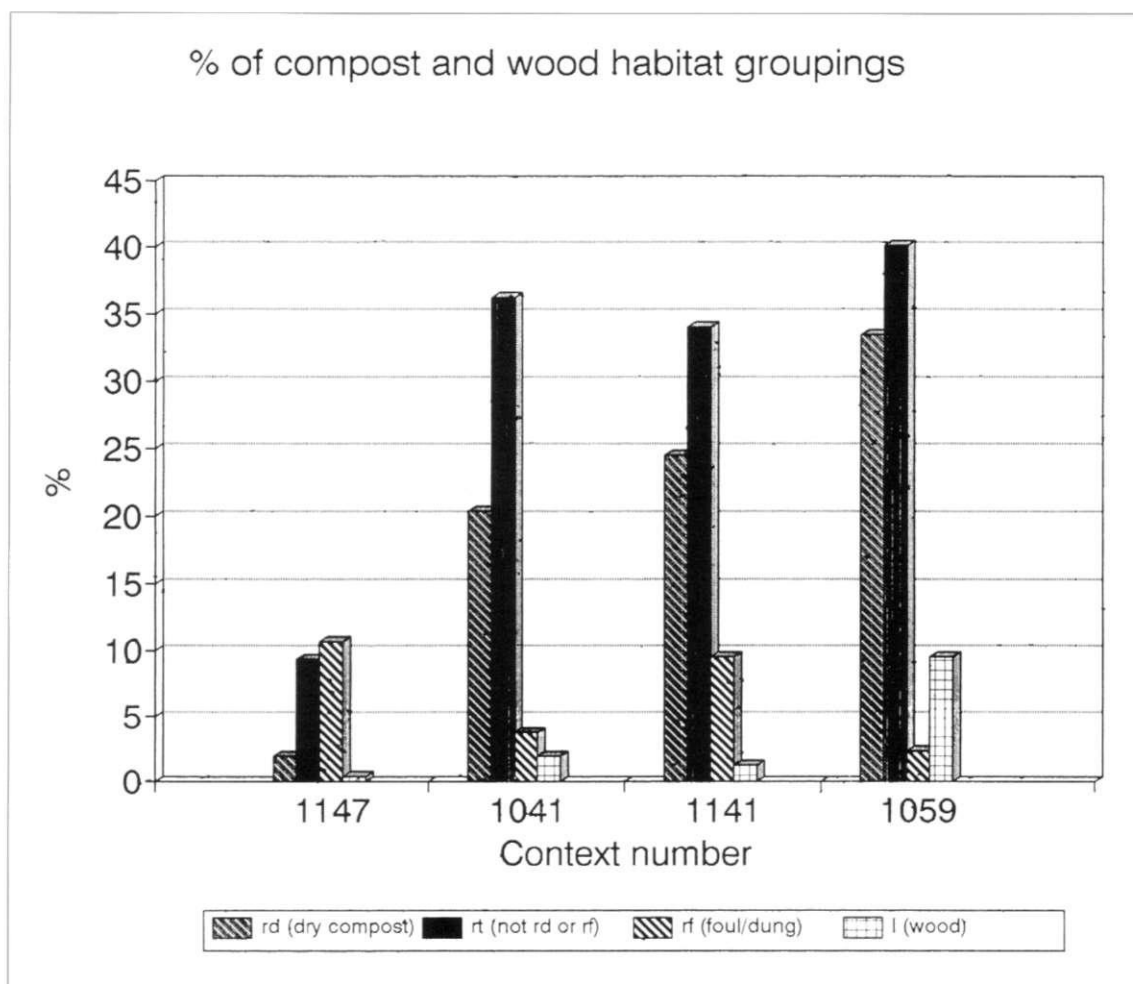


Fig. 11: The beetles: percentage of compost and wood habitat groupings

TABLE 11 Statistics for coleoptera faunas

	1147	1041	1141	1059
Sample weight (Kg.)		14	13	13.5
Sample volume (Lt.)	10	7	8	10
% (oa+ob)	76.5	5.3	8.4	5.9
% (w+d)	59.5	2.5	2.8	3.3
%rd	1.9	20.4	24.5	33.5
%rt	9.3	36.3	34.1	40.1
%rf	10.6	3.7	9.5	2.3
% l	0.3	1.9	1.2	9.5
% g		0.6	1.2	0.3
% 'h'	2.2	32.8	29.3	44.0

For ecological codes see Table 10 (at p. 89).

these fluvial conditions must have been present within the course of the Scotch Brook it is difficult to say how near this area of faster flowing water may have been to the present sampling location.

Phase 2 - late medieval (1041)

This is the deposit which overlays the earlier 'reed bed', represented by 1147. Unlike 1147, however, 1041 appears to have an origin within human settlement: A third of the beetle fauna present are species which appear to be commonly associated with human housing (Table 11 and fig. 10). Most of the 'house fauna' present breed in relatively dry mouldering plant and animal materials and today occur in dry materials such as hay. Among these are the Cryptophagidae, Lathridiidae, *Mycetaea hirta*, and two species of Ptinidae spider beetles, *Tipnus unicolor* and *Ptinus fur*. It is thought that all these species are able to exploit habitats in damp timber and wattle buildings. Many are also thought to breed in dryish plant debris on archaeological floor surfaces which result from either deliberate or accidental scattering of plant materials (Hall and Kenward 1990, Kenward and Hall 1995). It is therefore probable that part of the material that made up this archaeological deposit came from human housing.

Many of the remaining species of beetle in the fauna from 1041 are commonly associated with rather wet rotting plant remains. This is reflected in the high proportions of species from the rf and rt ecological groups which are present (Table 11), also these taxa account for the majority of the 10 most abundant species in this sample (Table 12). A modern analogue for this kind of material is the moist and blackened material around the base of hay ricks, compost heaps and to some extent stable manure. Beetle species which inhabit this unpleasant material are many of the Hydrophilidae, particularly *Cercyon analis*, *Megasternum boletophagum*, and *Cryptopleurum minutum* (Hansen 1987). Many of the species of Orthoperidae, Ptiliidae, and Staphylinidae also inhabit this type of material, as do the *Monotoma* and *Corticaria* or *Corticarina* species.

Several of the species of beetle present are associated with very foul material, in particular dung. These include many of the *Cercyon* species, *Platystethus arenarius* and the *Aphodius* dung beetles. The latter may indicate the presence of animal dung on site, although they are also occasionally found in very rotten plant materials (Jessop 1986).

Some species suggest the presence of other materials on site. Both *Anobium punctatum*, the 'furniture beetle', and *Lyctus brunneus*, the 'powder post beetle', live in domestic timbers. *Sitophilus granarius*, 'the granary weevil', is a stored product pest feeding only on grain.

There are a number of species present that have a biogeographical and historical interest. They are species which appear to have been more common in habitation deposits in the past than they are today (Hall *et al.* 1983; Hall and Kenward 1990). Although they are not as numerically dominant as in some of the Anglo-Scandinavian deposits from York (Hall *et al.* 1983, Kenward and Hall 1995) and medieval Beverley (Hall and Kenward 1980), their presence here is still significant. These species are the staphylinids *Trogophloeus bilineatus* and *Oxytelus nitidulus*. Although both are today inhabitants of wet bankside areas (Tottenham 1954), they are also thought to have been common in the urban environment in the past (Hall *et al.* 1983). The blind and flightless beetle *Aglenus brunneus* is relatively rare today but also seems to have been common in the urban environment in the past. It has been suggested that a combination of climatic change and the loss of spreads of warm decaying plant and animal matter in urban situations is responsible for the decline of this species (Kenward 1975; Kenward and Allison 1994).

It therefore seems probable that 1041 represents a mix of urban materials in differing stages of decay and is generally similar to many other early and later medieval insect assemblages from urban settlements. Noticeably, it is very similar to Anglo-Scandinavian York (Hall *et al.* 1983, Kenward and Hall 1995), Anglo-Norman Durham (Kenward 1979), and early medieval Beverley (Hall and Kenward 1980).

If 1041 is part of an internal floor, this material was probably collected on its surface during the building's abandonment as part of general urban build-up and rubbish disposal.

Late medieval (1141)

The species present and the relative proportions of the ecological group are essentially similar to those from 1041. Also similar is the 'top 10' table of occurrence of species (see Table 12). An interpretation similar to that given above is probable for this deposit.

TABLE 12 Species falling into the first ten ranks of abundance in the Stone samples

1147	1041	1041	1059.
1. <i>Helophoms</i> spp.	1. <i>Corticaria</i> / <i>Corticaria</i> spp.	1. <i>Corticaria</i> / <i>Corticaria</i> spp.	1. <i>Corticaria</i> / <i>Corticaria</i> spp.
2. <i>Donacia simplex</i>	2. <i>Enicmus minimus</i>	2. <i>Trogophloeus</i> spp.	2. <i>Ptinus fur</i>
3. <i>Stenus</i> spp.	3. <i>Trogophloeus</i> spp.	3. <i>Enicmus minimus</i>	3. <i>Anobium punctatum</i>
4. Aleocharinae	<i>Cryptophagus</i> spp.	4. <i>Oxytelus sculptus</i>	4. <i>Mycetaea hirta</i>
5. <i>Hydropoms</i> spp.	5. Aleocharinae	<i>Mycetaea hirta</i>	5. <i>Cryptophagus</i> spp.
<i>Hydraena</i> spp.	<i>Ptinus fur</i>	6. <i>Cryptophagus</i> spp.	6. <i>Omalium</i> spp.
<i>Heloporus grandis</i> or	7. <i>Cercyon analis</i>	<i>Tipnus unicolor</i>	<i>Enicmus minimus</i>
<i>aquaticus</i>	<i>Cercyon</i> spp.	<i>Ptinus fur</i>	8. <i>Cercyon</i> spp.
<i>Laccobius</i> spp.	9. <i>Neobisnius</i> spp.	9. <i>Cercyon</i> spp.	8. <i>Cercyon</i> spp.
9. <i>Scirtes hemisphaericus</i>	10. <i>Omalium</i> spp	Aleocharinae	<i>Cartodere filiformis</i>
10. <i>Enochrus</i> spp.			<i>Tipnus unicolor</i>

Phase 3 (1059)

The post-medieval fauna is also dominated by species which are characterised as 'house fauna', and this ecological grouping represents 46% of the fauna. However, there are noticeable differences when compared with 1041. This difference is best seen by the nature of the species in the 'top 10' occurrence table (Table 12). The majority of the post-medieval species come from the dry compost group. In particular, *Ptinus fur*, *Mycetaea hirta*, and various species of Lathridiidae and Cryptophagidae are more numerous than they are in 1041.

One noticeable feature of the plant remains from this layer is the occurrence of cereal straw and fragments of rye (see above page 84). Rye straw is thought to have been one of the most commonly used thatching materials from this period, and along with circumstantial evidence from the archaeology of the site itself this could suggest that the sample is derived from a collapsed thatch roof. The Coleoptera from the sample may also give some very tentative support for this conclusion. The species identified above as being the most frequently occurring in the fauna from Stone were also the most common in thatch from abandoned modern Hebridean blackhouses (Smith 1996a, 1996b). However, it must be remembered that, aside from thatch, there are likely to be other types of materials around archaeological sites that could contain such a combination of species.

CONCLUSION

From the insect remains it would seem that the earliest medieval buildings on the site were built on to the silted remains of a riverside swamp. It is possible that this body of water may survive in the form of the present Scotch Brook.

The medieval deposits from Stone generally suggest that the entomological fauna and environmental conditions were similar to those in other urban places during the medieval period as a whole.

THE POLLEN REMAINS by James Greig

METHODS

Pollen preparations have been made from sub-samples of organic material from contexts 1147, 1059, and 1041, using standard methods. Abundant and well preserved in all samples, the pollen has been counted and identified in sufficient quantity to give a representative idea of what is present. The information supplements that from the other biological remains.

RESULTS

Cultivated plants and associated weeds

The pollen counts and percentages are given in Table 13, where the taxa are presented in ecological groups and within each group are listed according to the order of the British flora (Stace 1991). All samples contain pollen of cereals (wheat, barley, or oats), and in 1041 some was from *Secale* (rye). In 1059 one third was rye and *Vicia faba* (bean) was also present.

Centaurea cyanus (cornflower) is a typical weed of autumn-sown cornfields. *Anthemis*-type pollen probably also represents cornfield weeds such as *Anthemis cotula* (stinking mayweed) and *Chrysanthemum segetum* (corn marigold).

TABLE 13 Pollen list

CONTEXT	1147		1059		1041		
<u>cultivated plants</u>	n	%	n	%	n	%	
<i>Viciafaba</i>	-		1	(1)	-		broad bean
Cerealia	8	(3)	43	26	32	(15)	cereals
<i>Secale-type</i>	-	-	23	(14)	6	(3)	rye-type
<u>weeds of disturbed ground</u>							
<i>Urtica</i>	2	(1)	-	-	1	(+)	nettles
Chenopodiaceae	1	(+)	1	(1)	1	(+)	fat hen,etc
Caryophyllaceae	1	(+)	-	-	-	-	stitchworts,etc
<i>Artemisia</i>	5	(2)	-	-	-		mugwort
<i>Centaurea cyanus</i>	-	-	1	(1)	4	(2)	cornflower
<i>Anthemis-type</i>	-		8	(5)	3	(1)	mayweeds,etc
<u>mainly grassland plants</u>							
<i>Ranunculus acris-type</i>	2	(1)	2	(1)	4	(2)	buttercups
Loto-type	2	(1)	-	-	2	-	bird's foot trefoils
<i>Trifolium repens-type</i>	.	.	.	.	4	(2)	white clover-type
<i>Trifolium pratense-type</i>	-	-	+	(+)	-	-	red clover-type
<i>Filipendula</i>	2	(1)	2	(1)	3	(1)	meadowsweet/dropwort
<i>Potentilla</i>	2	(1)	-	-	2	(1)	cinquefoils/tormentil
<i>Prunella-type</i>	1	(+)	-	-	-	-	self-heal, etc
<i>Plantago lanceolata</i>	18	(7)	2	(1)		(3)	ribwort plantain
<i>Centaurea nigra</i>	1	(+)	-	-	2	(1)	knawweed
Poaceae	86	(32)	41	(25)	119	(55)	grasses
<u>wet ground and aquatic</u>							
<i>ci.Nuphar</i>	1	(+)		-	-	-	?yellow water-lily
Dipsacaceae	1	(+)		-	-	-	scabious, etc
<i>Valeriana</i>	-	-	1	(1)	-	-	valerians
Cyperaceae	11	(4)	2	(1)	5	(2)	sedges, etc
<i>Potamogeton-type</i>	3	(1)	-	-	-	-	pondweeds
<i>Sparganium-type</i>	17	(6)	-	-	-	-	bur-reeds
<u>trees and shrubs</u>							
<i>Ulmus</i>	1	(+)	-				elm
<i>Quercus</i>	13	(5)	8	(5)	-	-	oak
<i>Betula</i>	7	(3)	1	(1)	1	(+)	birch
<i>Alnus</i>	41	(15)	3	(2)	1	(+)	alder
<i>Corylus</i>	17	(6)	3	(2)	-		hazel
<i>Tilia</i>	2	(1)	1	(1)	-	-	lime
<i>Salix</i>	1	(+)	1	(1)	-	-	willow
<i>Crataegus</i>	-		1	(1)	-		hawthorn
<i>Fraxinus</i>	-		1	(1)	-		ash
<i>Sambucus nigra</i>	-		1	(1)	-		elder
Ericales	4	(1)	3	(2)	1	(+)	heathers, etc
<u>spores</u>							
<i>Polypodium</i>	1	(+)	1	(1)	1	(+)	polypody
<i>Pteridium</i>	5	(2)	1	(1)	-	-	bracken
Filicales	5	(2)	-		-	-	ferns
<u>various habitats</u>							
<i>Rumex</i>	5	(2)	3	(2)	2	(1)	docks
<i>Aster type</i>	9	(3)	-	-	10	(5)	daisies, etc.
<i>Cirsium</i>	-	-	-	-	1	(+)	thistles
Cichorioidae	5	(2)	10	(6)	7	(3)	
Apiaceae	1	(1)	-	-	1	(+)	umbellifers
nr.1147 cum	1147		1059		1041		

The pollen is likely to have been contained in the remains of straw and cornfield weeds, the presence of which is clear from the macrofossil records. It therefore mainly represents what was contained in plant material rather than pollen blown in the wind from the cornfields themselves. Some of the pollen could also have been redistributed during threshing. It is a typical urban, medieval assemblage. The material does not seem to have a high faecal content as no intestinal parasite ova were seen, nor fragments of cereal bran, so the deposit is unlikely to contain remains of sewage. 1059 contains the most cereal evidence, 1147 the least.

A range of other pollen from weed taxa such as *Chenopodiaceae* (goosefoot) and *Urtica* (nettles) was present, but there is no evidence to indicate whether it represents part of the cornfield weed assemblage or had grown locally, or both.

Grassland plants

The most recognisable grassland pollen types present are *Plantago lanceolata* (plantain), *Ranunculus acris* type (buttercup), *Trifolium repem* type (white clover), *Lotus* (bird's-foot trefoil), *Filipendula* (meadowsweet), *Prunella* type (self-heal), and *Centaurea nigra* (knapweed). There are corresponding macrofossil records of *Ranunculus*, *Filipendula* and *Prunella* (see Moffett, this article). The abundant Poaceae (grasses) can represent most habitats, grassland included. The presence of the grassland plants mentioned above suggests that some of the grass pollen also represents grassland rather than other grass communities. The presence of a significant number of grassland taxa among the macrofossils demonstrates the presence of whole plant material such as hay, which contains whole plants together with flowers and seed heads, all of which contain pollen. The pollen could also have come from by-products such as animal dung from animals which have either eaten hay or have been allowed to graze. Some grassland taxa such as plantain, clover, bird's-foot trefoil, and grasses do not produce very robust or abundant seeds, so they are often more evident from the pollen records, as here, than from macrofossils. Spores of *Pteridium aquilinum* (bracken) were present in small numbers on each sample, corresponding with macrofossil finds of bracken.

Trees, woodland and heath

All samples contained a small amount of Ericales (heather) pollen, although not enough to suggest that heather was present in more than small amounts. All samples also contained tree and shrub pollen, but 1147 contained substantial amounts of *Alnus* (alder), *Corylus* (hazel), and *Quercus* (oak), together with a range of other trees and shrubs. Tree pollen is more likely to have arrived at the site by natural dispersal than from plant materials deposited in the accumulating layer, because wood remains were not evident and timber products do not have as much chance of retaining large amounts of pollen as do the herbs discussed above. The large amounts of tree and shrub pollen in 1147 appear to represent the semi-natural surroundings of the site before or at the beginning of the deposition of the other organic material from occupation deposits.

Wetland and aquatic plants

These are present in traces in two samples, but 1147 contains more substantial amounts of *Sparganium* type (bur-reed) pollen, *Potamogeton* type (pondweed), and a possible record of *Nuphar* (yellow water-lily), together with Cyperaceae (sedges) (although some sedges grow on dry land). *Filipendula*, listed under grassland, might also count as a wetland plant. As the site is beside a stream, it seems likely that these plants represent part of the natural environment of the site with waterside plants and the trees discussed above, prior to deposition of the organic material.

CONCLUSION

The evidence from the pollen spectra supports most of the conclusions from the macrofossil results, regarding the presence of cereals in 1041 and 1059 and of rye in 1059; the latter also contained bean pollen. Pollen adds further significant evidence for the presence of grassy material especially in 1041, and of the semi-characteristics of deposit 1147.

ANIMAL BONES by S. Pinter-Bellows

MATERIAL AND METHODS

The excavation produced a total of 301 hand collected animal bones and bone fragments. No sieving or riddling was undertaken. Forty bones from Phase 2 are of medieval date, 117 bones from

Phase 3 are of early post-medieval date, and 144 bones from Phase 4 are of later post-medieval or early modern date. The following species were identified: horse (*Equus caballus*), cow (*Bos taurus*), pig (*Sus scrofa*), sheep (*Ovis aries*), dog (*Canis* sp. domestic), rabbit (*Oryctolagus cuniculus*), chicken (*Gallus* sp.), goose (*Anser* sp.), and cod (*Gadus morhua*). Bones which could not be identified to species were assigned to higher order categories: sheep/goat, small artiodactyl (sheep/goat- or pig-size), large mammal (horse- or cow-size) and gadiformes.

Dental eruption and attrition data were recorded using the wear stages defined by Grant (1982) for cattle and pig, and the stages defined by Payne (1973, 1987) for sheep/goat. Epiphysial union measurements follow Silver (1969). Measurements follow von den Driesch (1976), with additions as described by Davis (1992). Withers height was calculated following von den Driesch and Boessneck (1974).

The species identified from the phases are listed in Table 14, and measurements in Table 15.

TABLE 14 Species list

Species	Phase 2	Phase 3	Phase 4
Horse (<i>Equus caballus</i>)	-	-	1
Cow (<i>Bos taurus</i>)	4	40	17
Pig (<i>Sus scrofa</i>)	2	6	7
Sheep (<i>Ovis aries</i>)	-	3	7
Sheep/Goat	8	16	10
Dog (<i>Canis</i> sp. domestic)	-	4	
Rabbit (<i>Oryctolagus cuniculus</i>)	-	-	3
Domestic Fowl (<i>Gallus</i> sp.)	2	2	32
Goose (<i>Anser</i> sp.)	1	2	23
Cod (<i>Gadus morhua</i>)	1		
Small Artiodactyl	6	11	20
Large Mammal	8	28	17
Gadiformes	1		
Unidentified Bird	3		
Unidentified Mammal	6	5	5
Total	40	117	144

RESULTS

Condition

The bones are all in a generally good condition. The bones from several contexts show signs of having been in a waterlogged and fairly anoxic environment: the bones in contexts 1041, 1063, 1140, 1141, 1145 and 1161 from Phase 2 and in 1139 from Phase 4 are dark brown to tan in colour with a hard, shiny surface. There are small amounts of dog and rodent gnawing scattered throughout the phases. Only one burned bone was found from the site, a calcined large mammal shaft fragment from Phase 4 (1139).

Phase 2

The main species are sheep/goat, with a smaller number of cow and pig. A few bones are from chicken and domestic goose. Two mammal bones from this phase have been gnawed by dogs (1145).

Phase 3

The main species are sheep/goat and cow, with a smaller number of pig. A few bones from chicken and domestic goose were also found. The four dog bones come from the same individual, all from context 1044. While not all the epiphyses of the dog bones are fused, the material can be categorised

TABLE 15 Measurements

Species	Element	Phase	Context	Measurements
Cow				
	Tibia		4	1058 Bd - 52.8mm
	Calcaneus		4	1058GL - 111.7mm, GB - 39.9mm
	Astragalus		4	1058 GL1 - 58.0mm, GLm - 51.9mm, Dl - 32.6mm, Dm - 29.8mm, Bd - 37.3mm
	First Phalanx		3	1044 GLpe - 51.8mm, Bp - 26.2mm, SD - 23.0mm, Bd - 25.0mm
Pig				
	Third Molar		3	1044 L - 32.1mm, Wl - 17.1mm
Sheep				
	Scapula		4	1054 GLP - 35.0mm, LG - 27.2mm, BG - 20.6mm
	Humerus		4	1138 Bd - 31.8mm, BT - 29.7mm, HTC - 15.2mm
	Metacarpal		3	1044 B at F - 22.0mm, BFd - 21.3mm
			3	1043 GL - 110.9mm, Bp - 22.1mm, SD - 13.9mm, B at F - 24.9mm, BFd - 24.9mm
	Metatarsal		4	1040 GL - 128.0mm, Bp - 23.1mm, SD - 14.7mm, B at F - 27.1mm, BFd - 26.6mm
			4	1062 GL - 110.4mm, Bp - 19.1mm, SD - 10.9mm, B at F - 22.1mm, BFd - 23.0mm
Sheep/Goat				
	Tibia		2	1068 Bd - 21.8mm
			3	1087 Bd - 29.8mm
Dog				
	Scapula		3	1044 GLP - 37.7mm, LG - 33.0mm
Goose				
	Tibia		4	1040 Bd - 19/1mm

as coming from one of the larger dog breeds. Over half the cow bones (25 fragments) come from one individual (from context 1163). Approximately a third of the animal is present, the bones mainly coming from the four limbs and hip and shoulder girdles, with few axial bones present and none from the head. As none of the epiphyses, including the primary centres of the innominate, are fused, this individual was less than six to ten months old. Two bones from this phase have been gnawed by dogs (1044). A withers height of 54.23 cm was calculated from the one complete sheep metacarpal (1043).

Phase 4

The main species are sheep/goat and cow, with a smaller number of pig. One incompletely formed and unerupted horse permanent molar was identified (from context 1088). The three rabbit bones most probably come from the same individual (from context 1045). Aside from one chicken and two goose bones (from context 1045), all the chicken and domestic goose, representing a minimum of two individuals each, come from the same context (1054). It is also from this context that the only two fish bones were recovered, one identified as cod and the other as coming from the family (Gadidae) which includes cod. All the bird bones in context 1054 and some sheep/goat and small artiodactyl bones are very light in colour and very fresh looking and all are extensively gnawed by rodents. They differ in colour and texture from the other bones of that context and of the phase as a whole, and it is possible that they are intrusive. Two other bones, large mammal rib sections, have been severely gnawed by rodents (1045). It was possible to calculate two withers heights from the complete metatarsals, 50.12 cm (1062) and 58.11 cm (1040).

GENERAL DISCUSSION

PHASE 1 PRE-STRUCTURAL DEPOSITS

The environmental evidence from the waterlogged silts (1147), pre-dating the structural deposits, suggests that the subsequent buildings were built on the silted-up remains of a riverside swamp, possibly a predecessor of the present Scotch Brook. The clearest evidence for this supposition comes from the species of plant remains present and the suggested ecology of the various species of beetle found in the deposit. In addition, both the plant and insect remains suggest that there was little human activity in the area at this time. The plant remains, beetles remains, and pollen all suggest that the wider environment had both arable and pastoral aspects, as well as some woodland.

PHASE 2 (12TH TO 15TH CENTURIES)

The earliest structural evidence, in the central area of the site, suggests the presence of a timber building of late medieval date. It seems possible that the waterlogged deposits (1041, 1141, and 1145) represent the fragmentary remains of a floor surface and that the linear gully (F33) may have formed part of an associated structural element.

The presence of storage vessels and jugs and the scarcity of cooking pots and sooted sherds suggests that the possible building may have been a store room or buttery (see above page 65). Unfortunately, in the absence of any clear stratigraphic relationships, it is uncertain whether the various pits cutting the natural gravels were earlier or later than the structure. The animal bones recovered from this phase include representatives of a number of domestic species including sheep/goat, cow, pig, chicken, and domestic goose.

The identified remains of cultivated plants from the waterlogged deposits (1041 and 1141) included various cereals such as rye, rivet or macaroni wheat, bread wheat, and barley. Also present were hemp and flax which were probably cultivated for their fibres, and beet. Grape and fig may have been imports. Some species, such as hazel and bramble, may have been collected for food. Sedges or bracken may have been used as a floor covering, bedding, or thatch.

Both the plant and the insect remains from this level contain few of the aquatic and waterside species which were seen in the underlying layer (1147). A high proportion of the beetles present, moreover, are species commonly associated with human occupation. These include species which are thought to breed in mouldering plant and animal matter associated with damp timber and wattle structures. Alternatively, they may also be inhabitants of plant debris scattered on the surface of a floor. In general these biological remains suggest that the deposit (1041) represents a mix of waste material from urban occupation, in differing stages of decay. The plant and insect remains from these waterlogged silts suggest that similar environmental and living conditions developed in this small rural market town as in other early and later medieval communities.

During the medieval period, this area of Stone was dominated by an Augustinian Priory which had succeeded a church and a small priory and/or nunnery possibly dating from the 7th century (Hopgood *et al.* 1992, 2). The earliest pottery from the excavations at 9 High Street dates from the 12th to 13th centuries. This is perhaps the period at which the first real growth of the secular settlement at Stone occurred, before and after the granting of a market charter to the prior by Henry III in 1251 (Cope 1972, 17) and Edward I in 1292. The extent of the monastic precinct and the High Street at this time is uncertain. It has been suggested that the western edge of the precinct corresponds to Mill Street and Crown Street (Cope 1972, 18-19) and that the High Street did not continue to the south-east of Mill Street. If this was the case, then the suggested timber structure identified during the excavation would have lain well within the precinct and may have corresponded to one of the many buildings associated with the priory. However, the planned nature of the High Street and the market charter of 1251 suggest that the western boundary of the precinct may have been the Scotch Brook (Hopgood *et al.* 1992, 2). In that case, the site of the excavation would have lain within a burgage plot alongside the High Street and just outside the monastic area. The excavation provides little support for either hypothesis. However, it could be argued that the orientation of the possible timber structural element (F33), parallel to the High Street, is consistent with the second alternative.

The recovery of leather fragments (see above page 72), including the sole of a shoe, echoes the development of Stone as a centre for small-scale crafts and industry, in particular tanning and leather

working. The shoe manufacturing industry was later to develop into one of Stone's major employers (Hopgood *et al.* 1992, 3-4).

PHASE 3 (LATE 15TH CENTURY-EARLY 16TH CENTURY)

The sandstone wall foundation (F25) and its possible associated floor surfaces (1039/1079) suggest the former presence of a substantial building located between the Scotch Brook and ?? High Street (currently 'Changes' restaurant and formerly the Falcon Inn). It may be that this building corresponds with the structure suggested on a 1780 map of Stone. However, the recorded fragments of this building were not sufficient to provide any real indication of its original size or extent.

The pottery from the make-up layers (1044/1087) associated with the floor of this building suggests that it was constructed after the end of the 15th century (see above page 65). The character of the pottery was similar to that of Phase 2, although a number of sooted sherds were recovered as well as fragments from Cistercian Ware cups.

The plant remains from the upper horizon of the floor make-up (1059) include a very high proportion of cereal straw, much of which may have been rye. It is suggested above (page 85) that such straw is suitable for, and has a history of use as, thatching. It may therefore be possible that this material derives from a collapsed roof. However, both plant remains, and the insect fauna that developed within them, could have occurred in a number of other circumstances within an urban archaeological site such as animal bedding.

PHASE 4 (LATER POST-MEDIEVAL)

The various brick walls and structures indicate a period of continuous redevelopment during which much of the earlier evidence for activity has been destroyed. The majority of the features probably date to the 19th and early 20th century. However, the dump of late 17th-century pottery and associated clay pipes between the two earlier stone walls (F25 and F52) has provided an opportunity to examine in detail and to date an important group of early mottled wares from a domestic context.

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Plate 1: General view of southern half of excavation, looking north-east

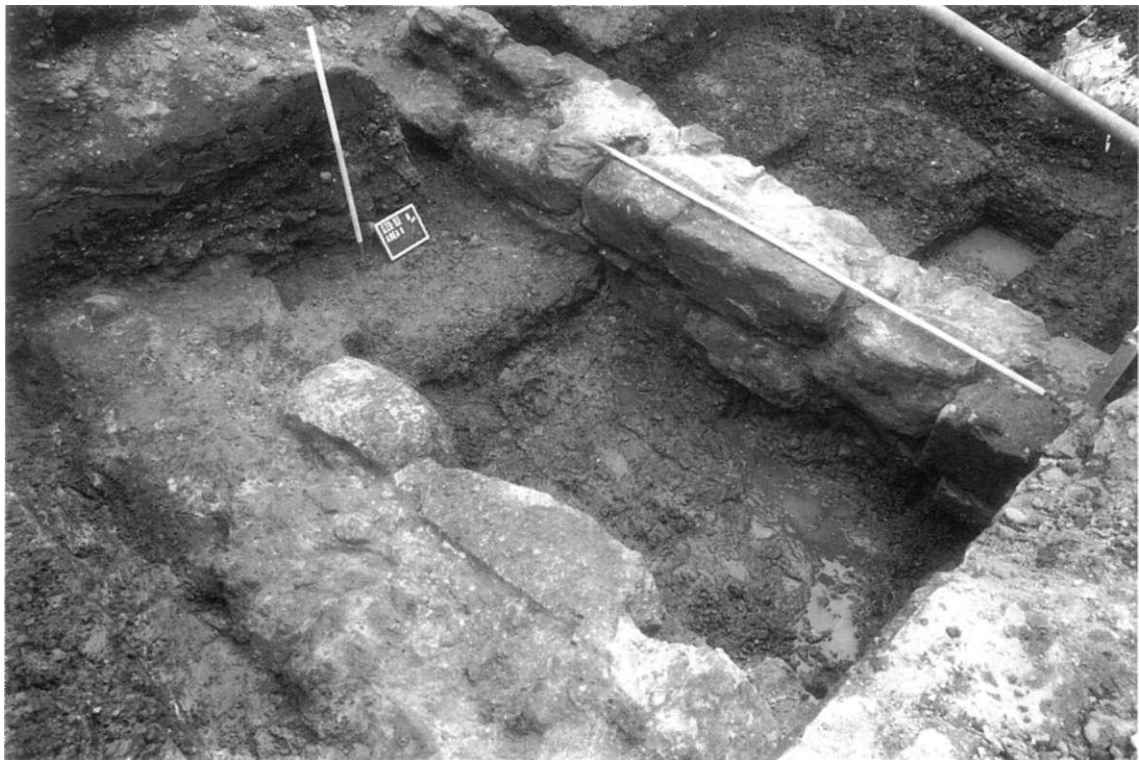


Plate 2: Detail of sandstone walls (F25 and F56), looking south



Plate 3: Recording the central area of the excavation



Plate 4: Sandstone wall (F3) incorporated into a later cellar in the southern part of the site

BURTON ABBEY CHURCH: A RECONSIDERATION OF ITS BUILT FORM

IAN ATHERTON

A forgery, a case of mistaken identity, and a notable example of poor draughtsmanship have, for a century and a half, hampered attempts to understand the built form and ground plan of Burton abbey. Yet, for all this time two plans of Burton parish church, the abbey's descendant, have lain unnoticed by scholars in the Bodleian Library, Oxford. These plans allow a reconstruction of the ground plan of the transepts and western arm of the abbey church, and provide an opportunity to re-examine other evidence for the form of its eastern arm.

Dissolved in 1539, the Benedictine abbey of St. Mary and St. Modwen, Burton-upon-Trent, was reconstituted two years later as the collegiate church of Christ and St. Mary, itself dissolved in 1545.¹ The site of the college and all its buildings, except for the church, were transferred immediately to Sir William Paget.² The church itself was used as the parish church of Burton until it was demolished in 1718 to make way for a new church.³ Little of the abbey precinct and nothing of the abbey church remain to guide the historian.⁴ Writing in the 1790s Stebbing Shaw remarked that traces of the old church were still to be found to the east of the new one, and that different coloured stones marked the westward extent of the abbey church.⁵ All those vestiges had disappeared a century later, when archaeological investigation was necessary to locate the foundations. Two excavations, in 1881-82 and in 1902, uncovered some remains, but the results satisfied few people except the excavators themselves. Moreover, the finds were poorly recorded and the investigations are therefore of limited use.⁶

In the absence of physical remains, scholars have turned to the historical record, and in particular three pieces of evidence: a drawing allegedly by the 17th-century engraver Wenceslaus Hollar, a plan published by the Staffordshire antiquary Stebbing Shaw, and a genuine etching by Hollar published in William Dugdale's *Monasticon Anglicanum*. All three have often led the unwitting astray.

An ink drawing in the William Salt Library, Stafford, signed 'WH 1643' and entitled 'A Picture of the Abbey Church of Burton on Trent' has seduced many. It purports to show the nave of the abbey church in ruins in 1643: the west end demolished, much of the vault gone.⁷ It is, in fact, not by Hollar at all but is a forgery by Peter Thompson (c. 1800-74), a London builder and architect. Rather than showing Burton abbey, it is an almost direct copy of an engraving of Hereford cathedral after the collapse of its west tower in 1786. Thompson produced a number of drawings and topographical manuscripts in the 1850s, claiming that they were hitherto undiscovered originals by Wenceslaus

1 U. C. Hannam and M. W. Greenslade, 'The Abbey of Burton', and U. C. Hannam, 'The College of Christ and St. Mary, Burton-upon-Trent', in *Victoria County History of Staffordshire* [hereafter *V.C.H. Staffs.*], iii (1970), ed. M. W. Greenslade, 210, 296.

2 Staffordshire Record Office [hereafter S.R.O.], D. 603/A/ADD/775-77.

3 Lichfield Record Office [hereafter L.R.O.], B/C/5/1718/Burton-upon-Trent, St. Modwen (faculty), [1] vicar general's mandate, 28 Nov. 1718, and [3a] William Browne's deposition, 23 Feb. 1718/19; S.R.O., D. 4219/3/1, pp. 101, 109, 130, 132, 153.

4 The most substantial standing remain is the Abbey Inn, comprising apparently a part of the monastic infirmary. The low wall between Lichfield Street and the war memorial marks the precinct boundary, while traces of the cloisters and chapter house survive behind the Market Hall and in the grounds of the Abbey Inn. The Manor House in the precinct retains a part of its medieval roof and may have been the abbot's private lodging: *Burton Mail*, 15 Jan. 1990; R. A. Meeson, 'Time and Place: Medieval Carpentry in Staffordshire', *Vernacular Architecture*, xxvii (1996), 16-17. The gate house was demolished in 1927: *Transactions of the Burton-on-Trent Natural History and Archaeological Society* [hereafter *T.B.N.H.A.S.*], viii (1927), frontispiece. Of the fabric of the pre-1718 church only the font, a few gravestones, some isolated fragments of carved masonry, and the arms of Charles I are known to have survived the rebuilding, and the royal arms which remained in 1869 had disappeared by 1962: W. Molyneux, *Burton-on-Trent: Its History, Its Waters* (1869), 74-75; S. A. Jeavons, 'Royal Arms in Staffordshire Churches', *Transactions of the Birmingham Archaeological Society*, lxxviii (1962), 89-91; Burton Library, lantern slides nos. 86, 188.

5 S. Shaw, *The History and Antiquities of Staffordshire* (2 vols., 1798, 1801), i. 9.

6 Burton-on-Trent Natural History and Archaeological Society, *Statement of Accounts . . . for Season 1882* (Birmingham, 1882), 5; *Seventh Annual Report of the Burton-on-Trent Natural History and Archaeological Society for Year Ending March 31, 1883* (Birmingham, 1883), 6-7, 10-11; H. A. Rye, 'The Ground-Plan of Burton Abbey', *T.B.N.H.A.S.* iii(3) (1897), 242-58; H. A. Rye, 'Some Further Notes on Burton Abbey Plan', *T.B.N.H.A.S.* v(1) (1903), 35-44. The Burton-upon-Trent Natural History and Archaeological Society retains no unpublished papers relating to the excavations; I am grateful to Mr. K. L. Neal of the society for this information.

7 William Salt Library, Stafford, Eyre Forgeries, no. 4.

Hollar, Sutton Nicholls, or one Captain John Eyre. He was quickly exposed as a forger, but not before several gullible collectors, including William Salt, had parted with their money.⁸ Despite being soon exposed, this alleged drawing of Burton has several times been accepted as genuine: Henry Rye used it in his attempt to reconstruct the abbey's ground plan; an artist's impression of the interior of the abbey published in 1929 was based upon it; and it illustrates a history of St. Modwen's church published in the 1950s.⁹

More misleading has been the acceptance of the plan published by Stebbing Shaw in 1798. At Beaudesert, among the papers of the Paget family, inheritors of the possessions and papers of Burton abbey, Shaw found a drawing of an abbey, 'but rudely sketched', and he published a copy of it as the Ancient Ground Plan of Burton Abbey.¹⁰ The original drawing has since been lost. Shaw's plan has been widely accepted and has formed the basis of all subsequent study of Burton abbey.¹¹ The acceptance of Shaw has been important, for his plan shows a west transept, a rare feature in British churches.¹² A redrawn version of the plan by Henry Rye, a Burton local historian, with information from the excavations and an early 13th-century conventual seal (which Rye interpreted as showing a galilee, or large western narthex), superimposed upon a map of Burton, has become the standard presentation of the abbey church and precinct.¹³

Philip McAleer has, however, recently suggested that Shaw's plan is not of Burton abbey.¹⁴ It cannot be made to correspond to two surveys of the abbey precinct, one of 1545x46 and the other of 1562. The dimensions of the church given on Shaw's plan are quite different from those of the 1562 survey, while the lay-out and size of the claustral buildings on Shaw's plan differ greatly from what is suggested by both surveys.¹⁵ What the plan found by Shaw at Beaudesert actually represented is not clear, but it was not Burton.

The third standard source for Burton abbey is an etching by Wenceslaus Hollar of the abbey from the south (fig. 1), executed in 1661 for William Dugdale's *Monasticon*.¹⁶ Unlike the forged Hollar, it is not its authenticity that is in doubt but its veracity. The etching is poorly drawn and shows three elements to the church - south transept, nave, and west front - with no clear visual association between any of them. The connection between the nave and south transept is very problematic. Where one might reasonably expect to find the crossing, Hollar leaves a large void. Furthermore, a single-storey structure, like a slype or covered passageway, runs across the south front of the south transept to meet, on the same axis, an eastward projection of the nave. This is a physical impossibility, the depiction here being akin to one of M. C. Escher's trick fantasy drawings. The perspective of the west front is no clearer.

Hollar's confused depiction is puzzling for usually his work was detailed and accurate, and for these reasons he was employed by Dugdale and other antiquaries for a variety of topographical publications. Moreover, the circumstances surrounding the commission of the view of Burton abbey

8 I. Darlington, Thompson Fecit', *Architectural Review*, cxxiv, 740 (September 1958), 187-88; *Athenaeum*, 2461 (26 Dec. 1874), 881; *Notes & Queries*, vii (January-June 1853), 545; William Salt Library, Eyre Forgeries, James Bowker to Thomas Mazzinghi, 25 Jan. 1875.

9 Rye, 'Further Notes on Burton Abbey Plan', 40-42; *Burton Observer*, 10 Jan. 1929, 28 July 1938; Burton Library, Ancient Burton' scrapbook, pressmark SB 110, ff. [14, 22-23]; E. Aldington-Hunt, *A Brief History of St. Modwen's the Parish Church of Burton-upon-Trent* (Gloucester, [c. 1955]), cover and 19.

10 Shaw, *Staffordshire*, i. 8 and plate 3.

11 It is accepted in *VC.H. Staffs*, iii. 210-11 and plate facing p. 212, and C. Owen, *Burton upon Trent: The Illustrated History* (Derby, 1994), 21, and is used for a reconstruction of the abbey published in *Burton Observer*, 10 Jan. 1929. I am grateful to the marquis of Anglesey for confirming that the original of Shaw's plan does not remain with those Paget papers at Plas Newydd (pers. comm. 14 Feb. 1997).

12 J. P. McAleer, 'The Former Benedictine Abbey Church of St. Mary and St. Modwen (Modwenna), at Burton-on-Trent, Staffordshire, and the Problem of a West Transept there', *Staffordshire Studies*, v (1993), 35, 60, 64 n. 4.

13 Rye, 'Ground-Plan of Burton Abbey', 245 and plate facing p. 258; C. H. Underhill and H. H. Pitchford, *The Parish Church of Burton upon Trent (St. Modwen): A Short History of 250 Years* (Burton, [1976]), 4-5; D. Stuart, *An Illustrated History of Burton upon Trent to the 18th Century* ([Burton, 1993]), 11; C. O'Brien, 'Excavations at the Abbey, Burton upon Trent', *Transactions of the South Staffordshire Archaeological and Historical Society*, xix (1977-78), 12 (these excavations concerned the infirmary site only); D. Jackson, *77e Burton Story* (Burton, 1995); Burton Civic Society plaque outside Octagon Shopping Centre, High Street, Burton. The early 13th-century seal is too stylised to be used as evidence for the abbey's appearance.

14 McAleer, 'Former Benedictine Abbey Church', 35-70.

15 S.R.O., D. (W.) 1734/2/3/9, ff. 15-16, and D. (W.) 1734/2/3/29 (printed, with several slips of transcription, in McAleer, 'Former Benedictine Abbey Church', 61-62).

16 W. Dugdale, *Monasticon Anglicanum*, ii (1661), facing p. 870. All subsequent references to the *Monasticon* are to the edition by J. Caley, H. Ellis, and B. Bandinel (8 vols., 1846).

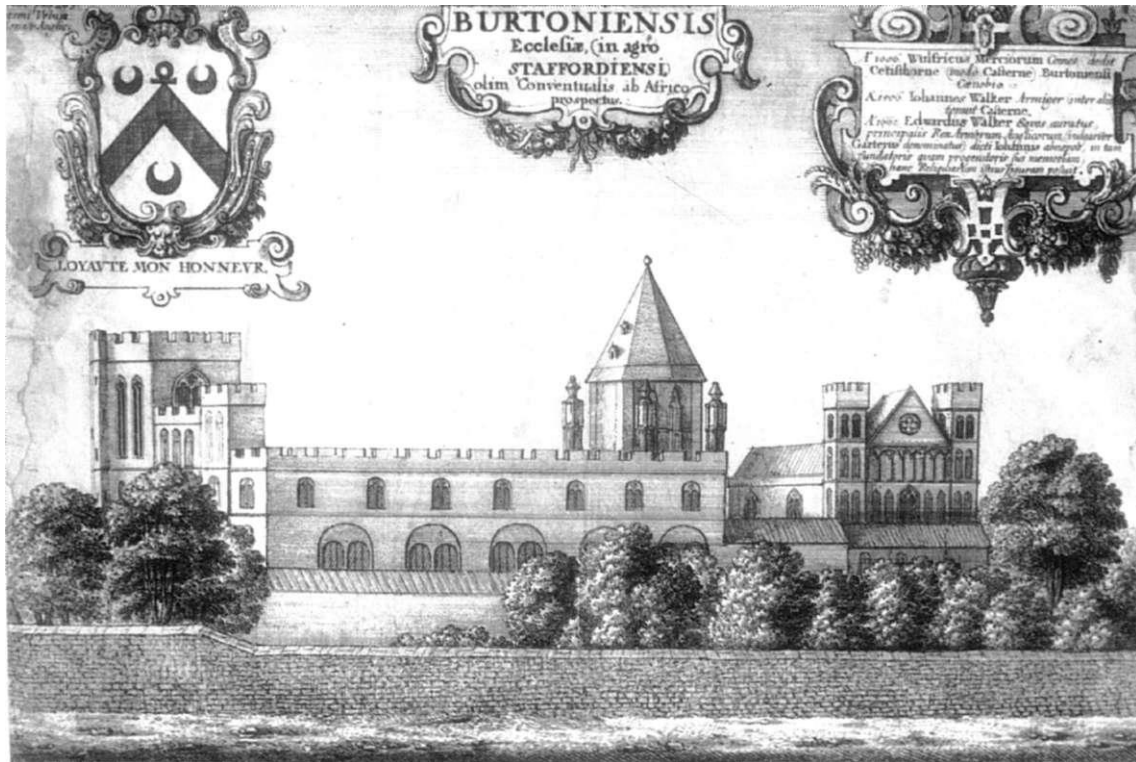


Fig. 1: View of Burton church from the south by Wenceslaus Hollar, 1661 (William Salt Library, Staffs. Views, ii. 174b, reproduced by courtesy of the Trustees of the William Salt Library).

suggest that Hollar should have produced an even more accurate drawing than normal. First of all, the plate was specially commissioned by his old friend Sir Edward Walker, whose ancestors had given property to the abbey. Second, he was paid more handsomely than usual for the drawing (£5 rather than the customary £3).¹⁷ Such considerations notwithstanding, Hollar turned in a very shoddy drawing. We know that Hollar worked fast, often making rapid, rough sketches on the spot without a clear compositional idea, only later (sometimes after a gap of several years) recomposing the drafts into a finished drawing, on which the etched plate was based.¹⁸ In the case of Burton abbey the plate was commissioned in 1655 and finished in 1661, and the west front, nave, and south transept are represented as three separate entities, as if drawn independently and only fitted together later in Hollar's studio. Many writers have suggested that Hollar was usually poorly paid by his employers.¹⁹ Perhaps the example of Burton suggests that, paradoxically, the quality of Hollar's drawing was inversely related to his fee, and when *over* paid he produced sub-standard work. While Hollar's view of Burton abbey has some value as evidence for the built form of the church, and certain features can be identified and verified, neither a three-dimensional form nor a ground plan can satisfactorily be derived from it.²⁰

Fortunately, two plans of the old parish church have survived, unnoticed by earlier writers, among the papers of the antiquary Browne Willis in the Bodleian. For ease of reference I shall distinguish them as plan A,²¹ and plan B.²² Plan A, which measures approximately 198 mm. by 325 mm., is a pencil drawing of the ground plan with most of the lines, but none of the measurements, gone over later in ink, sometimes a little roughly (fig. 2). Plan B is a more careful scale plan done in pencil, orientated with the liturgical east on the left and measuring 434 mm. by 598 mm.; it is too faint to

17 *The Life, Diary, and Correspondence of Sir William Dugdale* (1827), ed. W. Hamper, 108, 292-93; R. Pennington, *A Descriptive Catalogue of the Etched Work of Wenceslaus Hollar 1607-1677* (Cambridge, 1982), pp. xxxiv-xxxviii.

18 A. Griffiths and G. Kesnerova, *Wenceslaus Hollar Prints and Drawings from the Collections of the National Gallery, Prague, and the British Museum, London* (1983), 22; Pennington, *Hollar*, pp. xxi-xxiii.

19 A. M. Hind, *Wenceslaus Hollar and his Views of London and Windsor in the Seventeenth Century* (1922), 5.

20 McAleer, 'Former Benedictine Abbey Church', 41-42.

21 Bodleian Library, Oxford, MS. Willis 47, f. 99r.

22 Ibid. MS. Willis 44, f. 145.

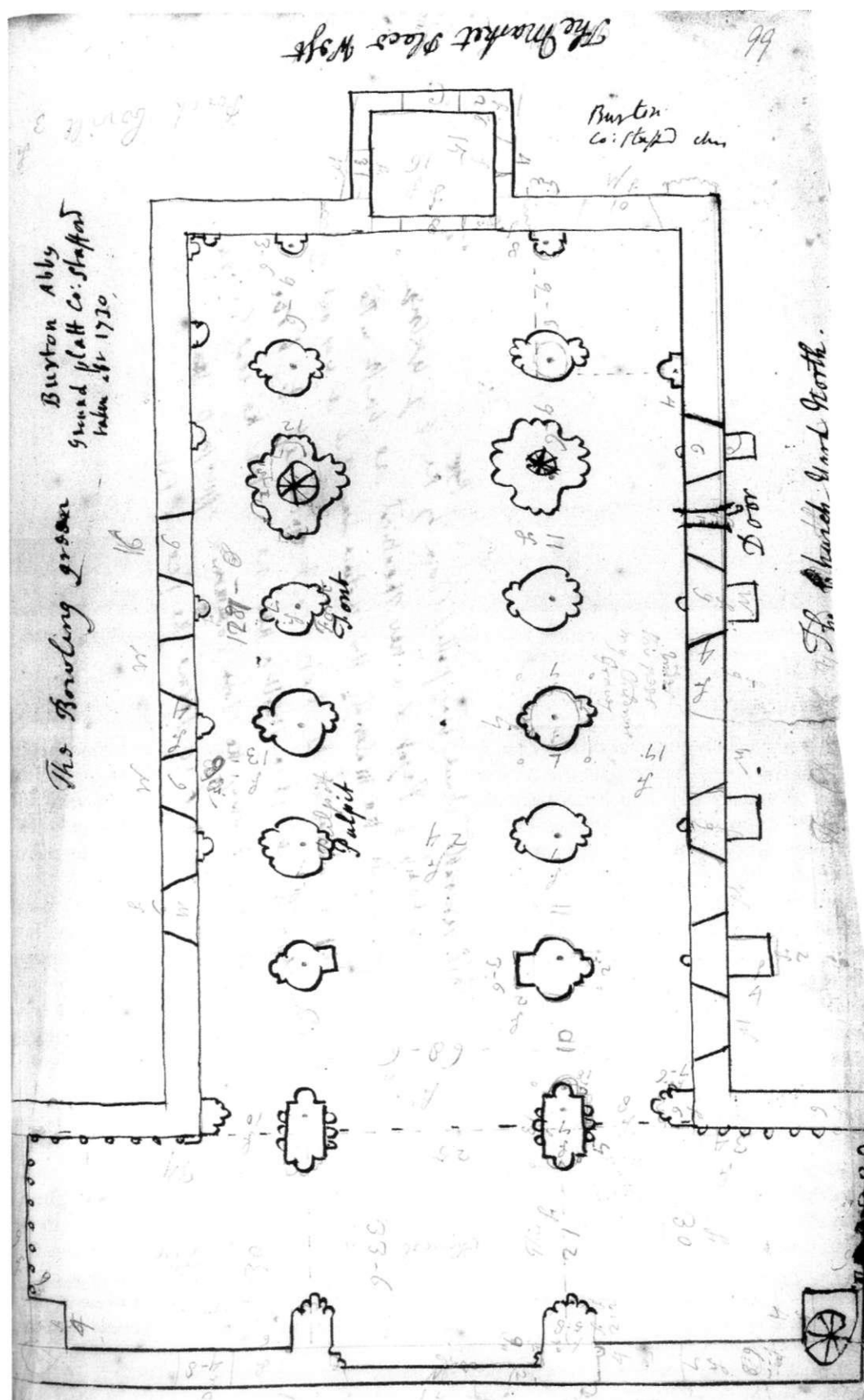


Fig. 2: Plan A: the ground plan of Burton church (Bodleian Library, MS. Willis 47, f. 99r, reproduced by courtesy of the Bodleian Library).

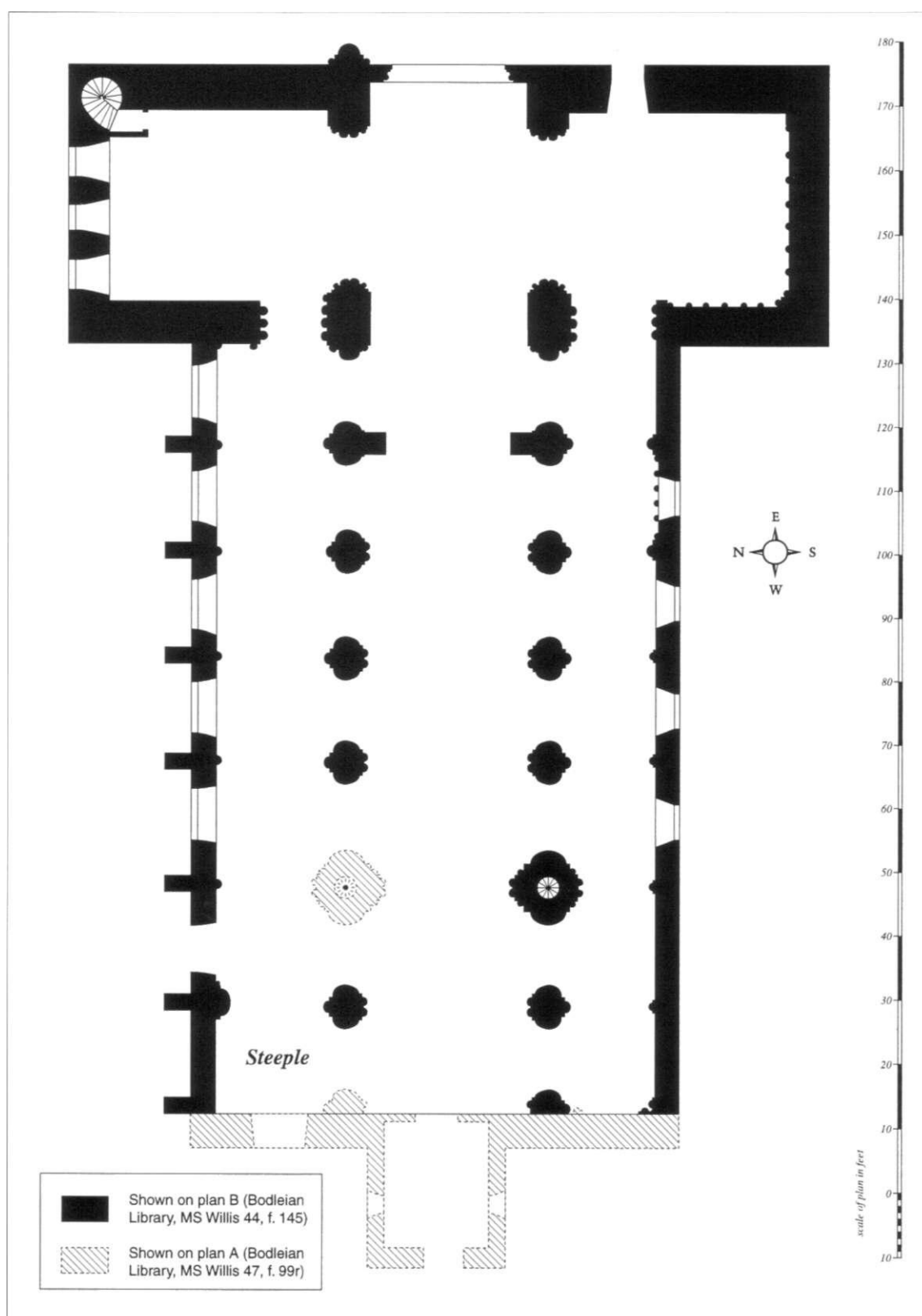


Fig. 3: The ground plan of Burton church, redrawn from plans A and B.

reproduce adequately, and has been redrawn for this article, incorporating some features from plan A (fig. 3). Willis has added two titles to plan A: 'Burton Co: Stafford chu[rch]' and 'Burton Abby ground platt Co: Stafford taken abt 1730'.²³ Plan B is endorsed in Willis's hand 'Ground platt of Burton Abby Church Co: Stafford' and 'Burton Abby'.²⁴

Willis's date for plan A presents some minor difficulties, as the old church was taken down in October 1718; the new church was in use for services by January 1722/3, and was complete by August 1728 when the architect was paid off.²⁵ The plan is presumably wrongly dated because it came into Willis's hands after 1730. By then Willis had finished most of his researches into cathedrals and abbeys: his *History of Mitred Parliamentary Abbies*, which includes Burton, was published in 1718-19, while his survey of Lichfield cathedral appeared in 1727.²⁶ The two plans passed to the Bodleian with the rest of Willis's papers on his death in 1760.²⁷

The provenance of both plans is unclear. Neither is associated with any correspondence which might reveal its origin or how it came into Willis's hands. Plan B is in a collection of papers relating to English monasteries and to Buckinghamshire; it is placed with an unconnected ground plan of Bury St. Edmunds abbey.²⁸ Plan A is bound with Willis's papers relating to the cathedral and diocese of Lichfield, most of which were collected in the 1720s.²⁹ Willis had several coadjutors in the diocese of Lichfield who could have sent him the plans: he thanked Dean William Walmisley (d. 1730), John Collins, 'several of the clergy and . . . other hands' for helping him.³⁰ Moreover, others were researching Burton abbey at about the same time: R. Minshull sent Thomas Hearne a manuscript collected from various charters in 1717, while Edward Arblaster was commissioned by Hearne in 1719 to unearth as much of the abbey's history as possible.³¹

The hand of both plans is late 17th- or early 18th-century, and they may date from occasions when emergency repairs and surveys were undertaken on the old church: in 1697, when Thomas Trimmer viewed the church and props were inserted into the chancel,³² and in 1710 when the church was measured and viewed 'by seuerall experienced able workmen' as part of the process of obtaining a church brief to raise money for its restoration.³³ The true identity of the draughtsman or draughtsmen remains unknown, although plan A was clearly drawn by a Burtonian: bay 4 of the north aisle is annotated 'Vnder this peer my Childrens Graves'.

There is no doubt that both plans represent St. Modwen's parish church, Burton. Willis's identification need not stand alone. Plan A carries a number of details which can be corroborated with other sources to confirm it as a plan of Burton parish church. The market place is said to lie to the west of the church, as is also shown on the first map of Burton, by Gregory King senior and dating from c. 1679, and as is still the case.³⁴ To the north of the church, as now, lay the churchyard. To the south was a bowling green. The vestry book confirms that a bowling green adjoined the church in 1729;³⁵ and it is shown on William Wyatt's map of 1760 and mentioned in other late 18th-century sources.³⁶ Finally, plan A shows 'The Mannor' lying to the east of the church. The house known as the Manor in fact lay south of the church but it did adjoin the church's grounds.³⁷

23 Ibid. MS. Willis 47, f. 99r. Compare Willis's hand-writing in William Salt Library, S. MS. 478W, Willis to Andrew Ducarel, 27 April 1754.

24 Bodleian Library, MS. Willis 44, f. 145.

25 L.R.O., B/C/5/1718/Burton-upon-Trent, St. Modwen (faculty), [3a] William Browne's deposition, 23 Feb. 1718/19; S.R.O., D. 4219/1/2, baptism of 14 Jan. 1722/3; D. 4219/3/1, p. 153.

26 B. Willis, *A Survey of the Cathedrals of York . . . Lichfield . . .* (1727); B. Willis, *An History of the Mitred Parliamentary Abbies and Conventual Cathedral Churches* (2 vols., 1718-19); the section relating to Burton (ii. 210-15) is lifted from Dugdale's *Monasticon*.

27 F. Madan *et al.* *A Summary Catalogue of the Western Manuscripts in the Bodleian Library at Oxford* (7 vols., Oxford, 1922-53), iii. 578.

28 Bodleian Library, MS. Willis 44, especially ff. 144-45.

29 Ibid. MS. Willis 47, ff. 30-45, 98-99.

30 Ibid. f. 1r.

31 T. Hearne, *Remarks and Collections*, ed. C. E. Doble *et al.* (11 vols., Oxford Historical Society, 1885-1921), vi. 76, 80; vii. 6, 8, 22, 116.

32 L.R.O., B/C/5/1699/Burton-upon-Trent, St. Modwen (churchwardens' accounts), 1697 account, ff. [1v.-2].

33 S.R.O., D. 4219/3/1, p. 72; S.R.O., Q/SO 11, Michaelmas 1710, certificate of the justices, 3 Oct. 1710.

34 Northampton Record Office, IL 3189.

35 S.R.O., D. 4219/3/1, p. 159.

36 Ibid. D. 603/E/1/483; D. 603/N/II/17(i); D. (W.) 1734/2/3/133; *Universal British Dictionary*, ii [1794], 415.

37 An inventory of the former collegiate precinct, 4 Sept. 1580, includes 'The newe corne chamber nexte the Church' (S.R.O., D. (W.) 1734/2/7/8, f. 15), and an 'entry to the church' is shown on one set of plans of 1563 for a proposed new house in the precinct (S.R.O., D. (W.) 1734/2/3/27, unendorsed plan).

Plan B agrees with plan A in most respects, and the pencilled measurements on plan A are mostly in line with the measurements that can be made from plan B. Nevertheless, there are some important differences between the two. Plan A shows a west porch which is entirely absent from plan B, although the extension of some of the pencil lines beyond the west end of the church on plan B suggests that the drawing is unfinished (as does the omission of pier 5 south: the word 'Peer' is written in to indicate its position).³⁸ The early 16th-century History of the Abbots of Burton confirms plan A on the existence of a porch: in 1493 Abbot Thomas Feld was buried near the porch.³⁹ Plan B marks a 'Steeple' at the north-west corner of the west end. No such structure is indicated on plan A, but Hollar's view indicates both a large north-west tower and a smaller south-west one. Documentary sources confirm at least one western belltower: in 1340 the abbot granted buildings in the market near 'our belfry'; during the abbacy of Thomas Southam (1366-1400) three great bells in the 'lower belfry' were recast; and under Abbot Ralph Henley (1433-55) the belltower of the lower church was completed.⁴⁰ Plan B shows seven buttresses against the north wall (corresponding to the seven bays of the nave), but plan A has only four. Plan A appears to show a spiral staircase in the south-east corner of the south transept (this is in pencil only, and has not been inked in). Plan B very clearly shows no such structure. Finally, both plans show a door from the churchyard to the north aisle, but they place it differently: plan A has it in bay 5 but it was in bay 6 according to plan B. Plan A is a sketch, plan B a scale drawing, and some of the differences can be accounted for thus, but other inconsistencies, particularly the north door, are harder to explain. Nevertheless, such difficulties of interpretation do not invalidate the usefulness of both plans.

References in the late 13th, mid 14th and early 15th centuries to the 'upper church' and the 'lower church', the latter also known as the 'parish church', show that part of the nave of the abbey church was used by the parish in the Middle Ages.⁴¹ There was no other church in Burton. After the Reformation, Burton parish church continued to occupy part of the former abbey church.⁴² These two plans of the parish church shortly before its demolition represent, therefore, a good source for partially reconstructing the form of the pre-Dissolution abbey church, especially when they are used alongside insights from other sources, particularly the early 16th-century History of the Abbots which contains several references to the fabric of the abbey.

The two plans suggest a church comprising the nave, north and south aisles, north-west tower, crossing, central tower, and north and south transepts of the abbey church. There were three doors into the church: a west door in the porch; a north door in the north aisle; and a door in the east wall of the south transept - this was the door into 'the Maner quire' which was ordered to be nailed shut in October 1710 'to prevent all danger'.⁴³ Together the two plans indicate that the church was approximately 182 ft. long from east wall to west porch, and 76 ft. 6 ins. wide (68 ft. 6 ins. measured internally) across the nave and aisles, 119 ft. 6 ins. wide (107 ft. measured internally) across the transepts. These measurements are in line with those given when application was made for a brief in 1710. The church was then said to be '188 foot in length from the west end ... to the east end of the chancel, 119 foot in breadth and about 60 foot in height'. The width of the nave and aisles also agrees with the survey of 1562, which gives a width of 70 ft.⁴⁴

The plans show no trace of the eastern arm. It was still in use in 1540 when Hugh Woodward requested burial in the Lady chapel.⁴⁵ When Burton college was dissolved in November 1545, Sir

38 The piers in the north and south arcades are counted westwards from the crossing.

39 Dugdale, *Monasticon*, iii. 50. The original manuscript, which differs in a few respects from the printed version, is S.R.O., D. 603/A/ADD, A List of the Several Abbots of Burton upon Trent'. It was probably written in the early 16th century, using earlier materials: M. W. Greenslade, *The Staffordshire Historians (Collections for a History of Staffordshire)*, Staffordshire Record Society, 4th series, vol. xi, 1982), 4, 165.

40 I. H. Jeayes, *Descriptive Catalogue of the Charters and Muniments belonging to the Marquis of Anglesey (Collections for a History of Staffordshire)*, Staffordshire Record Society, 1937), p. 131; Dugdale, *Monasticon*, iii. 49-50. There is a list of abbots in *V.C.H. Staffs*, iii. 213.

41 Dugdale, *Monasticon*, iii. 49. For the use of monastic naves as parish churches see McAleer, 'Former Benedictine Abbey Church', 66 n. 29.

42 S. Erdeswick, *Survey of Staffordshire*, ed. T. Harwood (1844), 474.

43 S.R.O., D. 4219/3/1, p. 72.

44 S.R.O., Q/SO 11, Michaelmas 1710, certificate of the justices, 3 Oct. 1710; D. (W.) 1734/2/3/29.

45 L.R.O., B/C/11/Hew Woodward (1540).

William Paget received 'the church[,] quere and chapelles', but when his possession of the former college and all its estates was confirmed by the Crown two months later, the church was reserved to the parish, suggesting that the eastern arm was retained by Paget as lay impropriator.⁴⁶ The length of the church given in the 1562 survey (300 ft.) implies that the eastern arm was still standing, although it may have been disused.⁴⁷ The eastern arm was in ruins by the time Erdeswick wrote his account of Staffordshire (c. 1593-1603) for he mentioned 'the new wall that now divides the church from the ruins'.⁴⁸ The wall is clearly shown on plans A and B as the east wall of the chancel, thinner than the other walls of the church. The two most likely dates for the demolition of the eastern arm of the abbey church are shortly after the 1562 survey, when the building of a new house in the former precinct was contemplated,⁴⁹ or when work was done to the church shortly before 1580.⁵⁰

That the crossing did survive, as the chancel of the parish church, shows the incompetence of Hollar's drawing. The suggestion, based on the drawing, that after the Dissolution the north transept was demolished and that there was no connection between the nave and south aisle, can be refuted.⁵¹ The plans point up other failings of Hollar's drawing and interpretations based thereon. Hollar shows the eastern tower and spire - the belltower of the upper church- placed over bays 1 and 2 of the nave, rather than over the crossing as might be expected. The tower was begun in 1475-76 to replace one which had collapsed the previous year, causing much damage to the roof, vault, walls, and choir.⁵² Neither plan shows the thickening of the piers in the nave which would have been needed to support the weight of the tower and spire had it been placed over the nave. Abbot Feld's belfry must therefore have been above the crossing, resting on the large crossing piers used to support the earlier tower built by Abbot Geoffrey (1114-50) and repaired in the early 15th century.⁵³ Hollar, unable to fit the south transept and the nave together on his page, placed the tower, erroneously, above the nave to save it floating above the void he had left where the crossing should have been.

The two plans show that Hollar was as confused about the nave as he was about the tower. His drawing shows seven clerestory windows but only five gallery bays. In addition, he drew a west front of four sections, the most southerly of which is exactly the same form as the clerestory from which it is distinguished only by shading. McAleer has suggested that this may have been the westernmost bay of the nave and not a part of the west facade at all.⁵⁴ Hollar's drawing, therefore, implied a nave of five, seven, or eight bays. The two plans show that the nave had seven bays. Moreover, where Hollar showed no windows in the south aisle, both plans agree that there were windows in bays 2, 3, 4, and 5.

Hollar's depiction of a north-west tower on the west front is confirmed by plan B, which marks a steeple at this point. This is the tower of the lower church finished under Abbot Ralph Henley (1433-55), but possibly already in existence by the early 14th century.⁵⁵ Its survival in the late 17th century is confirmed by two maps, one of the town by Gregory King senior, c. 1679, and the other of the county by Joseph Browne, dated 1682 but published 1684, in which Gregory King junior may have had a hand: both maps show a tower on the west front and a tower and spire above the crossing.⁵⁶ Hollar shows a lower tower at the south-west corner of the facade; on this both plans are silent.

The plans confirm what was already known about the problems of interpreting Hollar's drawing and point up further inaccuracies. It would, therefore, be extremely unwise to base any arguments

46 S.R.O., D. 603/A/ADD/775-77.

47 Ibid. D. (W.) 1734/2/3/29.

48 Erdeswick, *Staffordshire*, pp. xxxvii, xli, 474.

49 An estimate of the charge of two platts devised 18 augusti 1560' (S.R.O., D. (W.) 1734/2/3/27), includes 'for cariage of 2500 lode of stone from the manor to Shobnall'. The bundle also includes estimates and plans of 1559 and 1563, although none of them executed.

50 In the 1580 inventory of the former collegiate precinct there is mention in the coal house of a windlass 'that was lente to Griffin the mason to wynde up stones to the toppe of Burton Churche': S.R.O., D. (W.) 1734/2/7/8, f. 13v. A chapel on the north side of the church mentioned in a will of 1588 probably refers to the north transept: L.R.O., B/C/11/Henry Edyall (1588).

51 McAleer, 'Former Benedictine Abbey Church', 42, 49 fig. 7, 68 n. 43. McAleer did note, however, that Hollar's pictorial testimony for the collapse of the crossing might be questioned (p. 67 n. 42).

52 Dugdale, *Monasticon*, iii. 50.

53 Ibid. 48-49.

54 McAleer, 'Former Benedictine Abbey', 42.

55 Dugdale, *Monasticon*, iii. 49-50; *V.C.H. Staffs*, iii. 211.

56 Northampton R.O., IL 3189; Greenslade, *Staffordshire Historians*, 56-58. Browne's map was also issued in Robert Plot's *The Natural History of Staffordshire* (Oxford, 1686). A sketch map of the Outwoods in 1708 shows a conventional-looking church with a single tower in Burton, but this is a very stylized drawing: S.R.O., D. 603/L/71, no. 1, m. Id.

about the building history of the abbey on Hollar's depiction alone. For this reason McAleer's attempt to read off changes in the height of the roof of nave and south transept must remain unproven, although it is known that the roofs of the church were repaired or altered at least three times.⁵⁷

Analysis of measurements and pier forms from the two plans help to amplify many of the statements concerning the fabric made in the History of the Abbots, and help to interpret some of the scanty archaeological evidence. The History of the Abbots mentions that John Ibstock, either while almoner or as abbot (1347-66), rebuilt the north side of the parish church.⁵⁸ Plan B details some of the effects of his work. The north aisle was widened, making it approximately 3 ft. 6 ins. wider than the south aisle, the north wall buttressed, and a window inserted at the west end of the aisle. Plan B also shows the difference in pilaster type between the 12th-century south aisle and the 14th-century north aisle.

The Annals of Burton abbey record that the church was 'begun' (i.e. rebuilding of the pre-Conquest structure commenced) in 1114. The History of the Abbots states that 'new work' was begun at the west end of the church under Abbot Niel (1094-1114); it is unclear whether this represented the completion of a post-Conquest church begun, as was usual, at the east end, or the beginning of a new church begun, somewhat unusually, at the west end.⁵⁹ The early 16th-century History of the Abbots contains no further references to alterations to the western arm apart from work on the north aisle, roof, and west tower(s). In the early 1880s the remains of a Romanesque doorway were found, presumably from the south aisle, suggesting that the western arm retained some of its Romanesque features.⁶⁰ The two plans confirm that, barring the work to the north aisle, the Romanesque nave was never substantially altered before the demolition of the church. All the piers retain their distinctive Romanesque cross sections.⁶¹ Piers 2-4 and 6, south and north, are all the same type, composed of relatively-common early 12th-century forms: the aisle face, a pilaster with a half shaft, is found in the nave at Ely and in the south transept at Winchester; the pilaster with two half shafts on the nave face resembles elements of the nave piers at Norwich.⁶² Though apparently ovoid in cross section (if the plans are to be trusted in this point), the east-west elongation of the piers is much less pronounced than at nearby Tutbury priory. Since the 12th-century nave of Burton abbey was never substantially changed, it is not possible that Shaw's plan represents a different phase of the abbey's construction.⁶³ The pier forms reproduced in plan B are the final nail in the coffin for the already discredited theory that Shaw's plan represents Burton abbey. The History of the Abbots says that in his restorations after the collapse of the crossing tower in 1474-75, Abbot Feld 'rebuilt' the north-east crossing pier.⁶⁴ This is shown on plan B as having the same form as the other three crossing piers, making Feld's work an interesting late 15th-century example of rebuilding in Romanesque, rather than Gothic, style.

The plans help locate the division in the western arm between the upper (or monks') and lower (or parochial) churches. The History of the Abbots says that the east range of the cloisters adjoined the upper church and the west range adjoined the lower.⁶⁵ In the early 1880s the doorway from the upper

57 McAleer, 'Former Benedictine Abbey Church', 41, 48. The roof of the lower church was rebuilt under Abbot Sudbury (1400 - 24); the roof was rebuilt following the collapse of the crossing tower in 1474-75; and an explosion during the English Civil Wars destroyed the roof: Dugdale, *Monasticon*, iii. 49; Shaw, *Staffordshire*, i. 19; S.R.O., D. 649/1/2, Walter Chetwynd's notes from Sir Simon Degge's annotations to Sampson Erdeswick's 'View'.

58 Dugdale, *Monasticon*, iii. 49; *V.C.H. Staffs*, iii. 211.

59 McAleer, 'Former Benedictine Abbey Church', 44-45.

60 Ibid. 50-53.

61 The piers are carefully drawn in plan B; plan A is rougher and the cross section of the piers is more approximate.

62 B. Cherry, 'Romanesque Architecture in Eastern England', *Journal of the British Archaeological Association*, cxxxi (1978), 3, 9 fig. 4c; E. C. Fernie, 'The Grid System and the Design of the Norman Cathedral', in T. A. Heslop and V. A. Sekules, eds., *Medieval Art and Architecture at Winchester Cathedral* (British Archaeological Association Conference Transactions for 1980, no. vi, 1983), 16; I. J. Atherton et al., eds., *Norwich Cathedral: Church, City and Diocese, 1096-1996* (1996), 80. In view of the close links between Winchester and Burton from 1004 to 1150 (for which see *V.C.H. Staffs*, iii. 200), it is surprising that the plans suggest that Burton abbey owed little architectural debt to Winchester cathedral.

63 Nor is it credible that the plan Shaw found at Beaudesert, usually dated to the mid 16th century (*V.C.H. Staffs*, iii. 211), represents the pre-Conquest form of Burton abbey.

64 Dugdale, *Monasticon*, iii. 50: 'unam ex quatuor columnis juxta chorum, superiorem scilicet, versus aquilonem reaedificavit'.

65 Dugdale, *Monasticon*, iii. 47.

church into the east range was found and recorded.⁶⁶ Using the plans this can be located in bay 1 of the nave. The two surveys of 1545x46 and 1562 say that the north range of the cloisters was 72 ft. long; using the plans again, this puts the door from the lower church to the west range in bay 4 or bay 5.⁶⁷ The History of the Abbots and the plans allow the division between upper and lower churches to be located more precisely. The history says that Abbot Feld built the arch between the upper and lower church. Nave pier 1, north and south, are shown in the plans with a large pilaster, square in cross section, attached to their nave face. These pilasters would seem to be the supports for Feld's new arch, meaning that the monks' choir extended one bay into the western arm of the church, in typical Benedictine fashion.⁶⁸

The plans suggest a number of anomalies in the construction of the western arm. The 12th-century north aisle may have been narrower than its southern counterpart, but this may be an illusion caused by inaccuracies in the plans.⁶⁹ Pier 5, north and south, are shown as a complex compound form, larger than the other nave piers (11 ft. 6 ins. across compared to 7 ft.) so that they juttied out into the nave and aisles.⁷⁰ Moreover, to keep the distance between the pier faces reasonably constant, between 9 ft. 6 ins. and 11 ft., bays 5 and 6 were lengthened (table 1). Why pier 5 should differ from the other nave piers is not clear. Variations in pier type and alignment sometimes marked the site of the nave altar.⁷¹ However, as we have seen, the lower church occupied bays 2-7 of the nave, so the parochial altar of the Holy Cross (in existence by 1214) should have been in bay 2, nowhere near pier 5.⁷² Furthermore, the west towers were only one bay wide (as shown in Hollar's view) so the weight was borne by pier 6, not pier 5: both plans show the respond against the north wall, opposite pier 6 north, which supported the north-west tower. A spiral staircase appears to run up the inside of pier 5, north and south, an unusual architectural arrangement.⁷³ They probably gave access to the two galleries, the 'town loft' and the 'country loft', known to have existed by 1709.⁷⁴ The form of pier 5 north and south may simply derive from their enlargement to incorporate these stairs.

The archaeological investigations of 1881-82 and 1902 provide two fixed points: the foundations of the west end discovered approximately along the line of the west wall of the churchyard as rebuilt in 1727, and the footings of the doorway found under the south wall of the churchyard. Using these, the abbey plan can be superimposed on the ground (fig. 4).⁷⁵ The west porch extended into the market place and the north transept beyond the north wall of the 18th-century rebuild.⁷⁶ The smaller new church was built over the north-eastern portion of the old, its east end projecting beyond the east wall of the old.⁷⁷ Some of the features of the new church were clearly laid out along the foundations of part of the old. The new church appears to have been built so that the centre of the

66 Rye, 'Ground-plan of Burton Abbey', 248 and plan facing p. 258.

67 S.R.O., D. (W.) 1734/2/3/9, f. 15v.; D. (W.) 1734/2/3/29.

68 Dugdale, *Monasticon*, iii. 50: 'archam inter ecclesiam superiorem et inferiorem composuit'; E. C. Fernie, 'The Romanesque Church of Waltham Abbey', *Journal of the British Archaeological Association*, cxxxviii (1985), 61. The choir at Gloucester, for example, extends one bay west of the crossing.

69 Plan A gives a width of 10 ft. from the south-west crossing pier to the respond on the south wall, and 8 ft. from the north-west crossing pier to the respond on the north wall. Plan B, however, shows no respond against the south wall and suggests that the width from the north-west crossing pier to the northern respond was 10 ft. 6 ins.

70 Pier 5 north is not shown on plan B, but the sketch of it on plan A shows that it was the same as pier 5 south.

71 Atherton *et al*, *Norwich Cathedral*, 74, 79-80.

72 Jeayes, *Descriptive Catalogue*, p. 26. It is unlikely that the division between upper and lower churches could once have been at pier 4 and subsequently moved to pier 2, as the laity must always have had more than three bays of the nave.

73 Compare the indication of a spiral staircase in the north-east corner of the north transept shown in both plans.

74 L.R.O., B/C/5/1708/Burton-upon-Trent, St. Modwen (pew), depositions on articles presented by Christopher Cotton, 21 Jan. 1708/9, nos. 2 (deposition of Samuel Swan of Bond End) and 5 (deposition of William Higgs of Burton). The parish of Burton-upon-Trent was divided between the town of Burton and the country, or outlying hamlets. There was a third gallery, known as 'Sir Henry Every's loft', but this was probably small: L.R.O., B/C/5/1701/Burton-upon-Trent, St. Modwen (pew), deposition of Henry Blackwall, 14 Jan. 1701/2.

75 Rye, 'Ground-Plan of Burton Abbey', 245, plate II, figs. 1-2, plan facing 258; Rye, 'Further Notes on Burton Abbey Plan', 35-38; S.R.O., D. 4219/3/1, p. 146. The superimposition of the church ground plan on the map is, of course, only approximate.

76 The excavations of 1902 noted, but failed to record precisely, a small fragment of the foundations of the north transept outside the north wall of the parish church. There was also evidence of a wall continuing westward from the west front but, beguiled by Shaw's plan, Rye interpreted this as the foundations of a galilee: Rye, 'Further Notes on Burton Abbey Plan', 36, 38. It was probably part of the west porch, as suggested by the photographs of the excavation: Burton Library, lantern slide no. 147; and Rye, 'Further Notes on Burton Abbey Plan', 37 fig. 1.

77 New vestries around the apse were added in 1901, extending the church eastward: S.R.O., D. 4219/1/48; D. 4379/1/11.

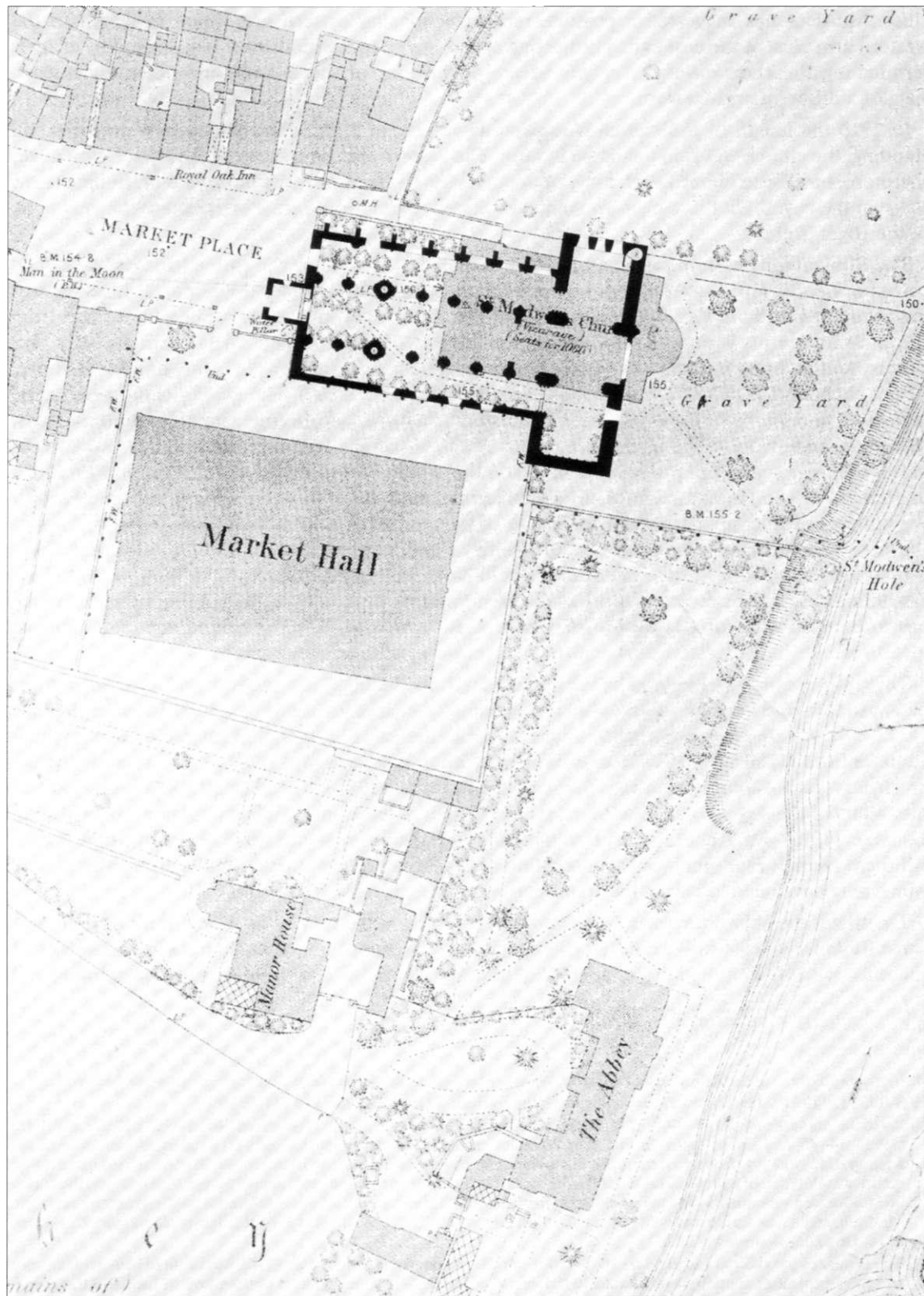


Fig. 4: The ground plan of Burton church superimposed upon the site of the church, using O.S. Map 1/500, Staffs. XL. 16. 10 (1884 edn.).

nave, from west door to chancel, ran along the north arcade of the old nave, and so that the south wall of the new church followed the line of the south arcade of the old nave.

The eastern arm of the abbey church can only be guessed at, but there are, nonetheless, some clues. McAleer has suggested a possible reconstruction: an eastern arm equal in length to the western arm plus, at the east end, a projecting axial Lady chapel with its west bay flanked by chapels terminating the choir aisles.⁷⁸ Analysis of the dimensions of the church, and other documents, suggest a different arrangement.

In 1710 the length of the church was given as 188 ft.; in 1562, when the eastern arm was still standing, the church was said to be 300 ft. long. The eastern arm on the eve of the Dissolution must, therefore, have been about 110 ft. long, or about 6 bays (if the presbytery bays were of similar size to those in the nave). On these measurements the abbey church would have extended to the very bank of the River Trent.⁷⁹

The Romanesque eastern arm contained the shrine of St. Modwen. The shrine had been despoiled by Abbot Leofric (1051-66) but was probably rebuilt soon afterwards, for the cult of St. Modwen was important in Burton in the 12th century: Abbot Geoffrey (1114-50) wrote a Life of the saint; from the mid 12th century the abbey's dedication, recorded as St. Benedict and All Saints in the early 11th century and St. Mary in Domesday Book, was most usually referred to as St. Mary and St. Modwen; Abbot Nicholas I (1187-97) was buried before St. Modwen's altar.⁸⁰ The monks' choir, presbytery, high altar, and saint's shrine would have demanded a Romanesque eastern arm of some size, at least three bays and an apse.⁸¹ An alternative means of estimating the length of the Romanesque eastern arm is the use a scheme of proportions based on the square root of two (1.4142), a proportion which lies behind the design of a number of Anglo-Norman churches.⁸² If such a system was employed by the builders of Burton abbey, then the length of the eastern arm from the crossing to the chord of the apse should have been equal to the length of the nave divided by 1.4142: employing these proportions, the 12th-century eastern arm would have been approximately 52 ft. long, or three bays (assuming bays similar in size to those in the western arm), plus an apse. Such a proportional system has to be used with care, however, for I have been unable to detect it behind any of the known measurements in the western arm, cloisters, or transepts of the abbey church.

The 13th century in England saw a mania for remodelling eastern arms and extending them eastward, and Burton was no exception. St. Edmund's chapel was built by Abbot Richard de Lisle (1222-29). A Lady chapel was begun under Abbot Laurence (1229-60) and completed under Abbot John Stafford (1260-81). His successor as abbot, Thomas Packington (1281-1305), remodelled the presbytery. Abbot John Burton *alias* Stapenhill *alias* Fisher (1305-16) dedicated a new high altar and new altars of the Apostles and the Martyrs. The chapel of the Confessors was built by Abbot Robert Longdon (1329-40). Abbot Robert Brykhull (1340-47) built a new east window over the high altar.⁸³ All these chapels (with the possible exception of St. Edmund's, where no burials are recorded, and which may have been in one of the transepts) were probably at the east end.

The site of the abbey, however, was somewhat confined to the east by the River Trent. If there was some room for an eastward extension (perhaps from 3 bays to 6), there would have been insufficient space for the 13th-century Lady chapel (doubtless a fairly substantial structure of at least three bays)

78 McAleer, 'Former Benedictine Abbey Church', 46-48. McAleer suggested western and eastern arms of 8 bays each.

79 S.R.O., Q/SO 11, Michaelmas 1710, certificate of the justices, 3 Oct. 1710; D. (W.) 1734/2/3/29.

80 Dugdale, *Monasticon*, iii. 47-48; *V.C.H. Staffs*, iii. 200. The statement in H. A. Rye, 'Saint Modwen', *T.B.N.H.A.S.* iv(2) (1901), 44-45, and *V.C.H. Staffs*, iii. 200, that William I visited St. Modwen's shrine rests on a mistranslation of her Life; I am grateful to Prof. Robert Bartlett for this point. The chapel on Andressey island in the Trent was dedicated to St. Andrew at the time of its rebuilding c. 1200. Although it was known as St. Modwen's chapel by the 15th century, the shrine of St. Modwen remained in the abbey church: from the later 13th century there is a reference to the greater altar of St. Modwen, and a new shrine was built in the early 15th century (*VCH. Staffs*, iii. 204 n. 6, 212; Jeayes, *Descriptive Catalogue*, p. 74; Dugdale, *Monasticon*, iii. 49).

81 The Romanesque choir at Lichfield (c. 1085-1100), which contained the shrine of St. Chad, was of three bays, with an apse and three projecting chapels, in all about 110 ft. long: W. Rodwell, 'The Development of the Choir of Lichfield Cathedral: Romanesque and Early English', in J. Maddison, ed., *Medieval Archaeology and Architecture at Lichfield* (British Archaeological Association Conference Transactions for 1987, no. xiii, 1993), 20-21.

82 E. C. Fernie, *An Architectural History of Norwich Cathedral* (Oxford, 1993), 94-100.

83 *V.C.H. Staffs*, iii. 211-12.

to be placed axially.⁸⁴ The constraints of the site suggest, therefore, that St. Mary's chapel was not axial but offset, possibly to the north, as at Ely. Adjoining the chapel was that of the Martyrs.⁸⁵ On the south side of the presbytery was the chapel of the Apostles and adjoining this was the Confessors' chapel.⁸⁶ Whatever the form of the Romanesque east end, it seems possible that by the middle of the 14th century, Burton abbey had a flat-ended eastern arm.

The form of the west front of the abbey church is nearly as problematic as the east end. Hollar's depiction is confused, and trees obscure the lower tiers. Plan A shows a west porch and a window at the west end of the north aisle (but no corresponding window in the south aisle). Plan B indicates a north-west tower. Hollar's view shows a large north-west tower and a smaller one at the south west, suggesting that the Romanesque west front may have been twin towered. This suggestion is strengthened by the earliest extant seal of the abbey, from the time of Abbot Geoffrey (1114-50).⁸⁷ The seal shows a church from the west with a central tower and two flanking west towers. The value of seals as architectural evidence is very limited, but there may here be a stylised but nevertheless faithful depiction of the 12th-century front of Burton abbey church: it agrees with Hollar's etching, and it would make Burton similar in outward form not only to the contemporary church of Melbourne (Derbyshire), only nine miles to the east of Burton, but also to what Richard Gem has called 'a standard Anglo-Norman tradition'.⁸⁸

The discovery of the two plans of Burton parish church drawn c. 1700, before its demolition, enable reconsideration of the form not only of the parish church but also of its predecessor, Burton abbey church. They cannot answer every question, particularly as the eastern arm was demolished long before the plans were made, but they allow for intelligent guesswork and speculation. What is certain is that three ghosts or canards can finally be laid to rest: those of Stebbing Shaw's plan, Henry Rye's derivation from it, and the hunt for a west transept at Burton. It is clear from plans A and B that Shaw's plan cannot relate to Burton: the measurements do not fit, neither does the number of bays in the nave. Burton abbey belongs not to the select category of churches with a west transept, but to the growing list of buildings where over-eager architectural historians have been misled into assuming there was a west transept when there was none.⁸⁹

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84 The Lady chapel had sedilia and enough room to accommodate a choir, possibly including boy singers: Dugdale, *Monasticon*, iii. 49; *V.C.H. Staffs*, iii. 208; S.R.O., D. (W.) 1734/3/3/28, f. 20. Compare the 13th-century Lady chapel at Norwich which had four bays: Atherton *et al*, *Norwich Cathedral*, 158-59.

85 Abbot Laurence was buried 'beneath the high arch between the altar of the Martyrs and the chapel of the Blessed Virgin Mary': Dugdale, *Monasticon*, iii. 48.

86 A grant of 1417 mentions that the altar of the Apostles was in the south part of Burton church; Abbot Longdon (d. 1340) was buried beneath the arch between the altars of the Apostles and Confessors, while the monk Robert Stapenhill (d. 1340s) was buried under the lower arch near these two altars: S.R.O., D. 603/A/ADD/675 (calendared in Jeayes, *Descriptive Catalogue*, p. 167); Dugdale, *Monasticon*, iii. 49.

87 William Salt Library, S. MS. S. D. Cornford, no. 1 (illustrated in M. E. Cornford and E. B. Miller, 'Calendar of the Manuscripts in the William Salt Library, Stafford', *Collections for a History of Staffordshire* (William Salt Archaeological Society, 1921), plate facing 1).

88 J. C. Cox, *Notes on the Churches of Derbyshire* (4 vols., 1875-79), iii. 395-408 and frontispiece; R. Gem, 'The Romanesque Cathedral of Winchester', in Heslop and Sekules, *Medieval Art and Architecture at Winchester*, 8. McAleer dismisses this seal: 'Former Benedictine Abbey Church', 63.

89 McAleer, 'Former Benedictine Abbey Church', 60. Only five churches in the British Isles had a west transept: Bury St. Edmunds, Ely, Peterborough, Kelso (Roxburghshire), and Kilwinning (Ayrshire). For the attempts to show that a western transept was proposed at Norwich cathedral, and for the refutation of such a theory, see J. P. McAleer, 'The Facade of Norwich Cathedral: The Nineteenth-Century Restorations', *Norfolk Archaeology*, xli (1993), 381, 401 n. 12; E. C. Fernie, 'Excavations at the Facade of Norwich Cathedral', *Norfolk Archaeology*, xxxvi (1974), 72-75. Winchester has also been credited with a west transept, but this is now doubted: J. P. McAleer, *The Romanesque Church Facade in Britain* (New York and London, 1984), 126-27.

TABLE 1: Bay width

Bay	Pier face to pier face. South arcade. Plan B	Pier face to pier face. North arcade. Plan B	Pier face to pier face. North arcade. Plan A	Centre of pier to centre of pier. South arcade. Plan B
1	9' 6"	9' 6"	10'	18'
2	10' 6"	10' 6"	11'	17'
3	10' 6"	10' 6"		16' 6"
4	10'	10' 6"		16' 6"
5	10'		11'	19' 6"
6	9' 6"		9' 6"	18' 6"
7	9' 6"		9' 6"	16' 6"

THE ESTATES OF JAMES LEVESON OF WOLVERHAMPTON (d. 1547)

R. F. WISKER

The Dissolution of the Monasteries permanently changed the pattern of landownership in England and Wales. A new class of landowners emerged to benefit from this great opportunity, whose families then had a vested interest in the Tudor Revolution in government. The life of James Leveson demonstrates how one man could become a great landowner. No better example could be given of the opportunities available to the successful merchant in the reign of Henry VIII, and no better case study exists of the great prospects opened to the discerning investor by the plundering of the church.

The Levesons were a family of minor gentry settled in Willenhall near Wolverhampton. When Richard Leveson married Margery, heiress of Henry son of Clement de Wolverhampton, before 1300, he acquired a considerable increase in his landed property. Richard and Margery had three sons upon each of whom they were able to settle small estates: John in Willenhall, Richard in Wolverhampton, and Geoffrey also in Willenhall.¹ Details of the grant to Richard in 1311 survive. His inheritance consisted of one messuage and at least 70 acres of land.² All three sons established their families and their descendants flourished into the 15th century. The heads of all three families were named in the grant under the Great Seal for the rebuilding of St. Peter's, Wolverhampton, dated 1 July 1439.³ James Leveson, Geoffrey's great-grandson, was elected M.P. for Newcastle-under-Lyme in 1432. His election by that borough is not easily explained for his lands were in Willenhall and he had no known connection with Newcastle. After a colourful life in which he engaged in litigation (he was accused of breaking and entering, of cattle theft, and finally of murder), and in which he went on pilgrimage to Rome, he finally retired with his wife to the hospital and convent of Burton Lazars in Leicestershire.⁴

Meanwhile the descendants of John, the eldest son, had acquired the estate of Prestwood in Willenhall, the home of Richard Leveson (d. 1503) and the birthplace of Richard's two sons, Nicholas and James.⁵ Richard had married Jane Bradbury, of the London family best known for Sir Thomas Bradbury, Lord Mayor of London, who died in office in 1510, and it was possibly as a result of that connexion that Nicholas established himself in London, where he became a wool merchant and a merchant of the Staple; he married Denise Bodley, stepdaughter of Sir Thomas Bradbury.⁶

Upon his father's death Nicholas lost no time in leasing out Prestwood Hall, with all the gardens in the moat, the Lady croft, and 12 other properties for 7 years to Richard Heylyn, also a merchant of the Staple. Although as the elder son Nicholas had inherited the family estate, he did not live in Wolverhampton. None the less he continued to add to the property there. When Prestwood was surveyed in 1661, the 'ould house' was a memory, but the Lady croft still existed and the area surveyed amounted to 265 acres.⁷ Nicholas, a benefactor of St. Peter's, continued to visit Wolverhampton, where his journey to the wedding of his niece Joan, James's daughter, in 1529 was long remembered.⁸

James remained in Wolverhampton. It is not known what provision had been made for him. He may have been named after the earlier James Leveson, still living in 1474, the last descendant of Geoffrey. The younger James certainly took the trouble to acquire some of the elder James's property in later years. Otherwise, he may merely have been born on St. James's day (25 July).⁹

James Leveson was apprenticed to the wool trade and became in turn a master and a merchant of

1 Staffordshire Record Office [hereafter S.R.O.], D. 593/B/1/26/6/9/6.

2 *Staffordshire Historical Collections* (Staffs. Record Society) [hereafter *S.H.C.*], 1911, 76-7.

3 *Cal. Pat. Rolls*, 1436-41, p. 321. For family trees, see Shrewsbury Public Library, Local Studies Collection, pedigrees compiled by J. J. Peele, and William Salt Library, Stafford, pedigrees compiled by R. F. Wisker.

4 S.R.O., D. 593/A/1/32/1 and 14 (1470 and 1474 letters of confraternity granted by Burton Lazars hospital) and 20 (1448 visit to Rome); *S.H.C.* n.s. iii.130, 136, 49, 157; n.s. xi. 55; *S.H.C.* 1917-18, 217..

5 Family tree (see above note 3); S.R.O., D. 593/E/3/10/2 (1610 deposition of Agnes Harrell, then aged 88).

6 Library of the Society of Genealogists, London, Boyd's collection of London families. *Medieval London Widows*, ed. C. M. Barron and A. F. Sutton (1994) has a chapter on Lady Joan Bradbury, Sir Thomas's wife.

7 S.R.O., D. 593/B/1/26/6/35/17; D. 593/H/3/405.

8 *Ibid.* D. 593/E/3/10/2. For Nicholas's grants to St. Peter's see S. Shaw, *History and Antiquities of Staffordshire*, ii. 161.

9 S.R.O., D. 593/B/1/26/6/39/10 (James the elder's former property).

the Staple. Based in Wolverhampton, he traded in London and Calais, as did his brother Nicholas. Both men had chambers in Lord Lisle's house in Calais.¹⁰ By 1515 James was already known as a man of substance, and was making purchases of property. Throughout his career he was to be an excellent manager of his profits from trade and a shrewd investor in property; once he had acquired property he made his assets work for him and reinvested the surplus income.

His first purchases were in Wolverhampton but he soon extended his activities to Walsall, Bushbury, and Tettenhall. In 1516 he and his father-in-law Richard Wrottesley took a lease of the manor of the Deanery of Wolverhampton for 10 years at £38 p.a. This lease was to be renewed many times at the same rent, remaining with James's family until 1602-05.¹¹

James bought a larger property, the manor of Seawell in Bushbury (860 acres) in 1519. A yet larger property was the manor of Perton, bought from Sir William Crompton in 1523. The Levesons held Perton manor until 1652, when by family agreement it went to the earl of Dorset, who sold it to Sir Walter Wrottesley in 1664. The manor then covered 1,895 acres.¹² In Wolverhampton, James acquired houses with their offices and gardens in Lichfield Street, Dudley Street, Berry Street, and Johns Lane. He bought smaller properties at Buckfoot or Buckford Meadow along the Graiseley brook by Merridale, at Chapel Ash, and at Gorsty Hill (near Blackheath, in Rowley Regis). He also bought holdings in the open fields of Wolverhampton parish: Horseley field, Ablow field, Wind field, Windmill field, and Broadmeadow field, the last-named field covering the area of the present West Park.¹³ A transaction of 1532 gives a picture of the rural Wolverhampton of that time. James bought from Nicholas Heylyn, merchant of the Staple, son of the Richard Heylyn who had leased Prestwood Hall from Nicholas, his house and property in Dudley Street for 100 marks £66 13s 4d.). It lay between the house, garden, and orchard of Nicholas Leveson occupied by Thomas Eyresmouth, and the house and garden of James Leveson. At the rear it was bounded by the orchard, garden, and back court of William Calicraft, approached through a back gate.¹⁴

James continued to add to his Wolverhampton holdings for the rest of his life. His most important purchase came in 1532, when he acquired the manor of Wolverhampton or Stowheath from Thomas, 3rd duke of Norfolk at a cost of 800 marks (£533 6s. 4d.). Next year, however, he sold half the manor to Sir John and Thomas Giffard, receiving £9 8s. 10d. for all the expenses he had been put to.¹⁵ James occupied a substantial house on High green, near the present statue of Prince Albert in Queen's Square. It boasted 8 hearths in 1666 and survived to be illustrated by the Wolverhampton artist Henry James Noyes before it was pulled down in 1841.¹⁶ When the high altar of St. Peter's was rebuilt at a cost of £95 in 1533, James contributed £3 6s. 8d., while his London brother Nicholas provided £42. James also bought St. George's chapel inside St. Peter's and, as will be seen, must have been responsible for the purchase in 1540 of 3 bells from Wenlock abbey and for the removal in 1544 of the choir stalls from Lilleshall abbey to Wolverhampton in 1544.¹⁷

In the first thirteen years of his purchases, James acquired only two major estates, Perton and Seawell. Then in 1528 he bought his first major estate outside the Wolverhampton area, the Shropshire manor of Leegomery, which included Wappenshall and Ketley. The vendor was Sir John Audley.¹⁸ Following the Wolverhampton manor purchase in 1532, James made another large addition to his estate when he bought the manors of Lower Penn, Upper Penn, Oxley, and Rowley Somery from Lord Dudley in 1533. The 40 messuages, 600 acres of land, 300 acres of meadow, 600 acres of pasture, 200 acres of woods, 100 acres of furze - 1,800 acres in all, with an annual rent of £12 - cost him £698 k Ad.¹⁹ James, therefore, became a substantial landowner with four considerable

10 *Letters and Papers Foreign and Domestic, Henry VIII*, 1540, p. 425.

11 Shaw, *Staffs*, ii. 154. For the gift of the lease by Sir Richard Leveson to Sir Walter Leveson see S.R.O., D. 593/E/6/12 (undated depositions by Michael Nicholls and John Terrick: Sir Richard held the estate 1602-05).

12 S.R.O., D. 593/A/2/17/12; *S.H.C.* 1928, 90; *V.C.H. Staffs*, xx. 25.

13 S.R.O., D. 593/B/1/26. For details of the 1614 sale by Sir John Leveson to settle the estate debts, see *ibid.* D. 593/H/14/1/15 A-C.

14 *Ibid.* D. 593/B/1/26/6/32/20.

15 *Ibid.* D. 593/B/1/26/1/3; D. 593/H/14/1/4 (survey by Rev. George Plaxton c. 1709), p. 3.

16 G.P. Mander, *Wolverhampton Antiquary*, i (4), p. 118; *S.H.C.* 1942-3, 251 (no. 3064); J. Roper, *Wolverhampton as it was*, i (1974), 6 (upper plate).

17 Shaw, *Staffs*, ii. 161.

18 S.R.O., D. 593/B/2/5/2.

19 *Ibid.* D. 593/B/1/17/15-27 (recording the total payment in 1533/34); B/1/17/20 (giving the acreage). Further payments may have been made, as Leveson took over a purchase started by Alan Perry (*ibid.* D. 593/B/1/17/2/6). See also *ibid.* D. 593/H/14/1/4, p. 37.

estates, Penn, Leegomery, Perton, and Seawell, valuable holdings of several hundred acres in Wolverhampton and about 300 acres in Walsall, and some smaller properties in Tettenhall and Darlaston.²⁰ A total holding of about 7,000 acres is suggested.

The death of his wife, Alice Wrottesley, in 1525 left James with three small sons under three - Richard, Walter, and Edward, together with an older daughter Joan and a younger daughter Anne.²¹ Some time later he married Margery, widow of William Michell, a rich London ironmonger, who had been negotiating for the purchase of a country estate, Whornes Place, Cuxton, in Kent. The Michells were childless and Margery was her husband's sole beneficiary. She was the third daughter of William Offley, sometime bailiff of Stafford and in 1517 sheriff of Chester, and it was on the advice of her elder brother, Thomas Offley, a Merchant Taylor and later Lord Mayor of London, that Margery married James Leveson, bringing her wealth with her. Nicholas, James's elder brother, took over the Whornes Place transaction and in 1528 acquired the estate on which his family were to be settled for over a century.²² James and Margery had two daughters, Elizabeth and Joyce.

It is convenient to summarise here the purchases of James Leveson, other than the monastic ones, to the end of his life. Just before he made his incursion into monastic lands, he acquired a new estate near Tamworth on the Staffordshire/Warwickshire border. First, in 1538 he bought the reversion to Perry Croft and other Warwickshire lands from Juliana Norris for £153 6s. 8d. The annual value was £21. He then acquired the reversion to the manors of Bolehill and Glascote in Warwickshire from Edward, Lord Clinton, for £133 6s. M. Those manors with other lands amounted to 630 acres, and were together worth £26 p.a.²³ The manor of Great Wyrley in Staffordshire (600 acres) was acquired for £220 in 1543.²⁴ In 1546 James purchased two major estates. From John de Vere, earl of Oxford, he bought for £600 the manor of Sheriffhales (2,600 acres), adjoining Lilleshall, and from Sir Thomas Pope he bought two messuages and lands amounting to 1,300 acres in Alsop en le Dale, Tissington, Ashbourne, and Thorpe in Derbyshire. Finally, in 1547, the last acquisition of all was a modest property of 37 acres in Handsworth, Aldridge, and Perry Barr, bought for £40.²⁵

In the last nine years of his life James Leveson became a notable purchaser of monastic property. There had been a pause in his estate buying after the Penn purchase of 1533 until that of Perry Croft in 1538 and his first major monastic purchase in 1539. His estate was then transformed from one of about 7,000 acres to one of between 35,000 and 37,000 acres. James continued to trade in wool, there were some minor sales of property, and there were considerable rents from the existing estates; all of which would account for the capital required for such massive purchases. The Dissolution first of the lesser monasteries and then of the greater monasteries in the years 1536-40 made available an enormous amount of land. By 1547, the year both of Henry VIII's and Leveson's own death, more than two thirds of all monastic lands in England and Wales had been alienated.²⁶ The main features of the work of the Court of Augmentations, set up in 1536 to deal with this new wealth acquired for the Crown, can be traced in Leveson's transactions, from the early period when the land was let on lease to the 1540s, when the demands of the king's wars led to an ever increasing volume of sales. James had nearly completed his major purchases before the peak year of 1544-45.

James first appeared as a purchaser in the sale of the sites of the Grey friars (Franciscans) and of the Austin friars at Stafford on 27 September 1538. 'Mr Leveson' bought first an alabaster table in the Grey friars church for 2s. 8d.; he then bought all the church buildings within the precinct with all the stone, timber, tiles, glass, and iron. The lead and the bells were exempted, as was the stone wall, next to the town wall, which was bought by Stafford borough. The purchase cost £29 Is. 8d. From the estate of the Austin friars he bought a vestment bordered with images of Our Lady and two ornamented copes. All the materials of the church and the buildings within the precinct were sold for £28 8s. Ad., of which James paid £25 8s. Ad. for the greater part.²⁷

20 Ibid. D. 593/A/2/20/4-20 (Walsall) and D. 593/B/1/7/3 (Darlaston).

21 Family tree (see above note 3). Richard was at least 24 in 1547 (S.R.O., D. 593/C/4/2).

22 Anon. *An Account of the Offley family in the days of James I* (Exeter, 1904), reprinted from *The Genealogist*, n.s. xix. 7.

For Whornes Place see S.R.O., D. 593/A/1/30/4 and 14.

23 S.R.O., D. 593/A/1/24/6, 7, 9, 10, and 12.

24 Ibid. D. 593/B/1/27/2; *S.H.C.* xi. 286.

25 S.R.O., D. 593/B/1/19 (Sheriffhales); *Letters and Papers Hen. VIII*, 1546, p. 355 (for Alsop en le Dale); *S.H.C.* xii. 198 (for Handsworth).

26 W. G. Hoskins, *The Age of Plunder* (1976), 131-36.

27 *Letters relating to the suppression of the monasteries*, ed. T. Wright (Camden Society, 1840), 269-73.

A year later on 24 December 1539 James paid £1,173 16s. 8d. for the grant of the reversions and rents due on the following Crown leases:

- (a) the house and site of Wombridge priory (Shropshire) with lands occupied by the late prior; a 21-year lease at £10 lis. 4d.;
- (b) the house and site of Lilleshall priory (Shropshire) with some of its lands leased to William Cavendish; a 21-year lease at £20 5s. Od.;
- (c) various other Lilleshall properties in Shropshire, including Cheswall Grange and Watling Street Grange (in Lilleshall parish), and the manor of Albrightlee, formerly held by Lilleshall but now belonging to St. Alkmund's, Shrewsbury;
- (d) Greyfriars, Stafford: church, steeple, churchyard, and orchard, and lands in the common fields of Stafford; value lis. 6d. p.a.;
- (e) manor of Rushton Grange, and other lands in Staffordshire in Wolstanton, Burslem, and Stoke, which had belonged to Hulton abbey; value £7 5s. Od. p.a.;
- (f) lands in Brewood (Staffordshire) formerly belonging to the priory of the Black Nuns; value 53s. 4d. p.a.²⁸

James promptly recouped some of his expenses by selling the Rushton Grange estate in 1540 to Richard Biddulph of Biddulph for £130 7s. Od. Also that year he sold various Walsall properties to Thomas Rudgeway for £83 6s. 8d.²⁹ At either this time or later he disposed of the Brewood property and the Stafford property acquired from John Offley.

It is not surprising to find such a major purchaser of monastic lands as James Leveson having dealings with Sir Richard Rich, chancellor of the Court of Augmentations, Sir Thomas Pope, the court's treasurer, and John Scudamore, receiver general of the dissolved religious houses in Shropshire. In a letter to Scudamore written on 6 December 1539, James sent a bill for the £50 debt which he had paid, followed by a request: 'help me to a suit of vestments or copes or any other thing fit for sellers of Bedys (beads) and I will deserve your pain'. He hoped to agree with Scudamore about his wool, 'for now we are both out of London we may bargain without danger'. He also wished to know when Scudamore would be in London. Could he have a reply by the bearer?³⁰ Without reading too much into one letter, it is plain that the two men traded with each other quite apart from any dealings in monastic property. Scudamore looked out for any items gratifying to the taste of his trading partner, a taste James had already demonstrated at the Stafford sales of 1538.

Other monastic spoils were obtained in 1540 when Leveson got Sir Richard Rich to request Scudamore to assign the five remaining bells at Wenlock priory to him, to be paid for either by exchange or at 20 shillings per hundredweight. It might have been prudent to get a letter from Rich or it could have been a way of putting pressure on Scudamore.³¹ Three of the bells, as has been shown, came to St. Peter's, Wolverhampton.

James Leveson is recorded in other ways in the State Papers. He was listed in 1536 as serving on the commission of the peace in Staffordshire, and three years later he was a commissioner for musters for the county, undertaking to provide 41 men himself. At the same date he was recorded among the sellers of wool at Calais, and on his brother Nicholas's death in 1539 he acted as executor with his sister-in-law, Denise.³²

In 1540 Sir Thomas Pope sold him the precinct of the priory of Trentham with the rectory of Trentham and its tithes. Also included were the church of Barlaston, Wall Grange farm in Leek, and the former possessions of Trentham priory in Blurton, Longton, Toft, Cocknage, Hanchurch, Newstead, Chorlton, Clayton Griffith, and Newcastle-under-Lyme. Thus, James acquired a North Staffordshire estate.³³ James paid 1,000 marks (£666 6s. 6d.), while Pope retained a ground rent of £105 p.a. As Pope promptly sold the rent to the king for £2,100 in 1541, it would appear that James was for once short of money, as he must have wished to buy that too.³⁴

28 *Letters and Papers Hen. VIII*, 1539 (2), p. 302.

29 *V.C.H. Staffs*, viii. 116 (Rushton Grange); S.R.O., D. 593/A/2/21/5 (Walsall).

30 Hoskins, *Age of Plunder*, 132; *Letters and Papers Hen. VIII*, 1539 (2), p. 233.

31 *Letters and Papers Hen. VIII*, 1540, p. 255.

32 *Ibid.* 1539 (1), pp. 289-91; (2), pp. 92-3, 146.

33 *Ibid.* 1540, pp. 284-5; S.R.O., D. 593 B 1 23 9/3.

34 *Letters and Papers Hen. VIII*, 1541, p. 360.

While no purchases by James are recorded in 1541, in 1542 he bought the rectory of Lilleshall with some lands for £395 3s. *Ad.*, and later the same year he acquired the village or grange of Longdon-upon-Tern (Shropshire) from Alice Bromley for £217 5s. *Od.*³⁵ Then, on 8 July 1543, he made his greatest purchase of all, paying £2,275 13s. 672*1 for:

- (a) the manor and lordship of Lilleshall formerly Lilleshall priory (Shropshire), comprising all appurtenances of the premises in Lilleshall, Honnington, Muxton, Donnington, Dinthill Grange in the parish of St. Alkmund's, Shrewsbury, 2 watermills in Longdon with fishing rights, Lyzard Grange, Tong with a watermill, the common or moor called the Wildmores in Lilleshall and all other lands in Lilleshall and Longdon belonging to Lilleshall, and Donnington and Lilleshall woods (640 acres); also, lands at Freasley and 4 acres of woods in Polesworth (Warwickshire), formerly belonging to Lilleshall;
- (b) the manor of Hounds Chedull, in Cheddleton (Staffordshire), with lands and 90 acres of woods in Chedull; a house called the Wych house in Middlewich (Cheshire), formerly belonging to Croxden abbey;
- (c) the manor of Sutton (Shropshire), with lands in Sutton and Colneham and 2 water mills, and lands in Deuxhill formerly belonging to Wenlock priory;
- (d) the manor and lordship of Dowles (Worcestershire and Shropshire), and the manors of Meaton magna and Meaton parva in Kinlet (Shropshire), formerly belonging to Malvern priory;
- (e) the manor of Brockton and lands in Sutton Maddock, Oakengates in Wombridge, Wrockwardine and Wellington, Tibberton in Edgmond, at Grindle in Ryton (all in Shropshire), formerly belonging to Wombridge priory;
- (f) lands in Claverley, Beobridge, and Broughton, a water mill in Beobridge, lands in Hiddisland in High Ercall (all in Shropshire), formerly belonging to Haughmond abbey;
- (g) lands in Asteley Abbots in Astley Ridge otherwise Astley Abbots and a messuage in Harpswood in Morville (all in Shropshire), formerly belonging to Shrewsbury abbey;
- (h) a messuage in Hart Street in St. Olave's parish, London, near the Tower of London and opposite the house of the Crossed Friars, formerly belonging to the Crossed Friars (Crutched Friars);
- (i) the advowsons of the rectories of Dowles, Newport, and Longdon (Shropshire).³⁶

Eight monastic houses, of which five have not previously been mentioned, appear in this grant, and by 1543 the lands of a total of 12 religious houses had been through James Leveson's hands. This great estate, formed from the spoils of the monasteries, was acquired between December 1539 and July 1543: a period of only three years and eight months.

It has been stated in the Victoria County History of Stafford, following the work of J. R. Wordie, that James also acquired lands formerly belonging to Stone priory, but there is no mention of Stone priory at any point in the three grants to James Leveson discussed above. The priory held almost all its land in Stone and Walton. Harwood in his edition of *Erdeswick* states that George Harper was the original purchaser; from him the priory lands went to the Cromptons and from them by purchase to 'the noble family of Gower who now possess it'. William Gower had inherited the estate of James Leveson in 1668, but as the estate papers show, it was his great-grandson, the second Earl Gower, who purchased the Stone priory estate from Thomas Hewitt in 1775 and Hewitt had derived the lands from the Cromptons.³⁷

With such a massive investment it was necessary to recoup some of the expenditure. The first property to be sold was the messuage opposite the Crossed or Crutched Friars in St. Olave's parish, London, four properties in all. The manor of Sutton, formerly Wenlock priory's, the lands of Haughmond abbey in Claverley, Beobridge, and Broughton, and Lilleshall's lands in Polesworth soon followed. A separate transaction disposed of Astley Abbots and Harpswood to William Billingsley on 10 January 1544.³⁸

In 1543 Richard, James's eldest son, married Mary Gratwood granddaughter of Sir Rowland Hill.

35 W.S.L. 356/40 (Plaxton MSS.), p. 4.

36 *Letters and Papers Hen. VIII*, 1543 (1), pp. 534-5.

37 *V.C.H. Staffs.*, iii. 242, 246; vi. 79; S. Erdeswick, *Survey of Staffordshire*, ed. T. Harwood (1844), 36 note. For the 1775 purchase see S.R.O., D. 593/B/1/21/6-11.

38 *Letters and Papers Hen. VIII*, 1543 (2), p. 240; 1544 (1), pp. 85, 355. For Astley Abbots see S.R.O., D. 593/B/2/12/5.

Sir Rowland endowed the young couple with the Shropshire manors of Sleaf, Kinnersley, Crudgington, Tern, and Cherrington, as well as other lands. For his part James settled on them Leegomery, Shirlowe Grange (Hiddisland) in High Ercall, and lands in Wappenshall and Ketley.³⁹

Two final transactions complete the account of James's monastic purchases. In February 1544 he sold the manor of Beobridge with other Haugmond abbey lands to Thomas Rugeway for £202, although his youngest son Edward bought it back in November 1546. As George Plaxton writing about 1710 remarked 'thus did the son repurchase what the father had sold'.⁴⁰ Also in 1544 James bought the manor and advowson of Little Wenlock (Shropshire), with 600 acres, from Antony Foster; it had once belonged to Wenlock priory.⁴¹

On 7 July 1547 James Leveson died and was succeeded by his eldest son Richard, then aged 24.⁴² The history of James's acquisitions, however, by no means finished with his death. While nearly all his lands went to Richard, the youngest son, Edward, was endowed with half the Perton estate and Brocton Grange in Sutton Maddock. As the narrative has shown he was already in possession of Beobridge.⁴³ The Warwickshire estate was settled on James's elder daughter by his second marriage, Elizabeth, on her marriage to Walter Aston of Tixall. The second son, Walter, already trading as a merchant of the Staple, received no land but £500 in money, as did Edward. Anne, James's younger daughter by his first marriage, was still unmarried when he made his will. He left her £200 'if she be ruled in marriage by my wife and Richard my sonne or else to have no penny'. Her marriage to Robert Eyton of Eyton, in Shropshire, presumably met her father's conditions. Joan the eldest daughter received various items, while Joyce, the younger daughter by the second marriage and still unmarried at his death was left 500 marks £333 13s. *Ad.* In all, family legacies amounted to £1,746 13s. *Ad.*⁴⁴

The transactions of James's sons do not call for special mention. The speculative purchase by Walter and Edward on 11 July 1550 of miscellaneous properties worth £39 6s. 9⁷/₈. a year cost £603 2s. 5d. The properties were mostly in Lichfield, but included two acres in Sheriffhales and, more interestingly, the chapel of the Hermitage in Wolverhampton with its burial ground and adjacent croft, probably identifiable as Chapel Leasowe, later Chapel Ash. Even if added to the main estate these two properties would have had little effect on its total acreage. Richard sold the Derbyshire estate in 1556, just ten years after its purchase, and he and Edward made a number of small additions to their estates. The anonymous author of the Offley manuscript, writing in the reign of James I, describes the three brothers - Richard, Walter, and Edward - as 'men of wisdom, gravity, and great substance', but none was to enjoy a long life. Walter was probably under 30 when he died in 1553, leaving only a daughter. His property was recorded as lying in London, Staffordshire, and Calais. Richard (later Sir Richard) died in 1560, aged 37 or 38, leaving a son Walter and a daughter Mary. Edward, who was childless, died in his mid forties in 1569, leaving all his estates to his nephew Walter (born in 1551), who thus reunited the estates of his father and his uncle before his nineteenth birthday.⁴⁵

On his deathbed in 1602, Walter, by then Sir Walter, told his son Sir Richard that he passed on to him his inheritance as his father had passed it on to him. While this was generally true, Walter had made some major changes. He had sold the Stafford properties and nearly all the Walsall and Bloxwich lands - a loss of about 460 acres (260 for Walsall and 200 for Stafford). He had also sold the Little Wenlock estate (706 acres) and the Shirlowe Grange property in High Ercall (590 acres). To compensate for this loss of 1,756 acres, Walter had bought the Hardwick estate in Shropshire (2,300 acres), still 'a manor of great extent' in Plaxton's day (1670-1720). He had also made extensive

39 *Letters and Papers Hen. VIII*, 1544 (2), p. 321.

40 S.R.O., D. 593/B/1/27/2; D. 593/B/2/2/2 and 3; W.S.L. 356/40, p. 19.

41 *Letters and Papers Hen. VIII*, 1545 (2), p. 546.

42 S.R.O., D. 593/C/4/2 (1547 inquisition post mortem of James Leveson).

43 *V.C.H. Staffs*, xx. 25; W.S.L. 356/40, pp. 17, 19.

44 Society of Genealogists, unbound documents on family history, copy of James Leveson's will; M. C. Hill, *The Wealdmores, 1550-1560* in *Trans. Shropshire Archaeological Society*, liv (1) [1951/2], p. 257, note 1.

45 *Cal. Pat. Rolls*, 1549-51, pp. 360-3; J. S. Roper, *Wolverhampton, the early town and its history* (1966), esp. pp. 8-9 for comments on the site of the 'Chappel'; family tree (see above note 3); *Account of the family of Offley*, 8. For Walter's death see Prerogative Court of Canterbury 1383-1558 25 Taske, and for Edward's death see S.R.O., D. 593/C/6/1. Walter Leveson came of age on 4 January 1572 (ibid. D. 593/C/8/1).

purchases on the Wildmores and had enclosed large parts of that area, and had acquired lands in Waters Upton and half of the manor of Newport.⁴⁶ His purchases were more than sufficient to counterbalance his sales.

How James Leveson had financed his massive programme of acquisition remains to some extent mysterious. He raised part of the capital by minor sales of his earliest purchases and by some resale of monastic estates. He evidently also paid some attention to the advantage of purchasing reversions. In 1517 he bought from John Walys the reversion of all the lands in Wolverhampton that ought to come to Walys on the death of his father James Walys. Similarly the transaction of 1518/1519 when Agnes Hull, the widow of Nicholas, released to James her interest in a shop in High Street, Wolverhampton, between the shops of Richard Bilston, chaplain, and Clement Sadler, was probably of a comparable nature. The more important reversions bought from Lord Clinton and Juliana Norris created the Warwickshire estate settled upon Elizabeth Leveson. The Great Wyrley estate was also acquired through a reversion.⁴⁷

While he was relatively inactive in the purchase of estates in the period from 1533 to 1537, James appears to have been financially overstretched only at one time. This was in 1541 after the purchase of Trentham, when Sir Thomas Pope sold his ground rent of £105 on the estate for £2,100 - 20 years' purchase. James would surely have bought the rent if he had been able to do so. In contrast, in 1544, James had a surplus of funds which enabled him to lend £500 to the king. He could have bought an estate worth £25 a year at the least with that money. He remained a wool trader to the end of his life, which meant there were always profits to reinvest. He must have husbanded his resources with great care: there is no evidence of borrowing on his part. All three of his sons had capital to invest in property after his death, and the eldest, Richard, sold only one of his many estates. It was not until the time of James's grandson, Sir Walter, forty years and more after James's death, that there was recourse to the various methods of borrowing money available in the Elizabethan period.⁴⁸

The estate built up by James Leveson in the period 1515 to 1547 was in the range of 35,000 to 38,000 acres as far as can be ascertained. It comprised much of the lands of twelve dissolved religious houses, in all about 24,000 to 27,000 acres. Despite the additions and the sales of Sir Walter Leveson, the estate retained its essential character into the 17th century.

The problems of succession in 1605 forced Sir John Leveson to sell extensive properties in Wolverhampton and reluctantly to cede the manor of Hounds Cheddull (in Cheddleton) to the earl of Shrewsbury. For family and personal reasons his son, Sir Richard Leveson, transferred Perton to the earl of Dorset, Oxley and Sutton in Chelmarsh to John Langley, and Bushbury to Robert Leveson. But he also made new purchases to set against the sales he had made.⁴⁹ The great estate which the Fowlers inherited on his death in 1661, and which the Gowers in their turn inherited in 1668 was recognisably that of James Leveson. In the period 1670 to 1720 when the Reverend George Plaxton worked for the estate, ultimately as chief agent, only relatively minor adjustments were made. After Plaxton's time there were major sales of South Staffordshire and outlying Shropshire estates counterbalanced by new purchases in North Staffordshire. When in 1812 James Loch undertook the management of the combined Staffordshire and Shropshire estate it remained, basically, the estate put together by James Leveson. There were some further additions in Loch's time and later, but the estate finally broken up in the sales of 1912 to 1919 derived its character and the greater part of its lands from the acquisitions made nearly four hundred years previously.⁵⁰

James Leveson acquired his great estate in the first period of monastic sales. From the beginning

46 S.R.O., D. 593/A/2/21/4 and 6 (Walsall); D. 593/A/2/27/17 (Stafford); *S.H.C.* xv. 146, 154, 177; Shropshire Record Office, Barnard Estate, Raby deeds, 1/6/2; 1/6/5 a and b; 1/6/2/28 (Shirlowe Grange); Hardwick Estate box 1, bundle 1, no. 102; *V.C.H. Shropshire* xi. 80 (Little Wenlock); W.S.L. 356/40, pp. 15-16, 22, 26, 29.

47 S.R.O., D. 593/B/1/26/6/28/11; D. 593/B/1/26/6/29/17; D. 593/B/1/26/6/30/14; D. 593/J/5/8/2 (for Wolverhampton); D. 593/B/1/27/2; *S.H.C.* xi. 286 (Great Wyrley).

48 S.R.O., D. 593/E/3/6/1-2 and 5 (Sir Walter Leveson's debts).

49 *Ibid.* D. 593/C/14/4 (Perton). For the other transactions see Appendix I, note X.

50 W.S.L. 356/40; S.R.O., D. 593/H/14/1/4. For the main estate changes before 1800 see J. R. Wordie, 'A Great Landed Estate in the Eighteenth Century' (unpublished Ph.D. thesis, Reading University, 1967), pp. 40-50; for the main estate changes after 1800 see R. F. Wisker, 'The Dukes of Sutherland and Staffordshire' (unpublished M.A. thesis, Birmingham University, 1974), 126-30, 230. For James Loch see S.R.O., D. 593/K71/5/1, Jas. Loch to Geo. Bishton, 16 Nov. 1812. For the sales at Lilleshall in 1912, 1914, and 1917 see W.S.L., Sale Catalogues, and for those at Wolverhampton and Penn in 1917 see S.R.O., D. 593/D/2/5/6.

the Commissioners for the Court of Augmentations adopted the 20-year formula for the sale of estates: the purchaser paid for 20 years of income. By 1543, the year of the great Lilleshall purchase, the Commissioners, concerned at the discount the buyers were getting, began to take greater care over sales. Even so, in only a few cases was more than 20 years' purchase charged. One adjustment made by the Commissioners was that urban property, originally sold at 15 years' purchase, was later sold at 10 years' purchase.⁵¹ As has been shown James made one purchase of urban property in London in 1543, which was promptly resold.

Another complication was that many existing leases on monastic property had a long time to run, which meant that the purchaser had to wait before he could exact the full value from his newly acquired property. This does not seem to have been significant with the Leveson estate. Apart from the leases which James himself took out, the only important one was that of Lilleshall held in 1539 by William Cavendish, which James took over with his 1543 purchase of Lilleshall. The rapid rise in prices in the 1540s benefited all investors in monastic property: by the reign of Mary I monastic lands were selling at 24 years' purchase and in the 1560s at 30 years' purchase. The benefit to those who had bought early and retained their holdings is evident.⁵²

With such a great flood of land on the market there was considerable speculation. James resold some purchases, for example, Rushton Grange in Staffordshire, Sutton manor and farm in Shropshire, and the London property. This would appear to be for the purpose of financing the very large deals he was engaged in. Otherwise he cannot, properly, be described as a speculator in monastic property.

Both Sir Richard Rich, who acquired forty-two manors, and Sir Thomas Pope, who gained thirty manors from the spoils of the monasteries, were courtiers who received gifts direct from the Crown and used their positions in the Court of Augmentations to feather their own nests.⁵³ James Leveson was not a courtier and he received no gifts, although because of the size of the transactions he may well have wrung concessions from those he knew in the Court, as the letter to Scudamore implies.

To have acquired an estate of 35,000 to 38,000 acres, of which 24,000 to 27,000 represented the spoils of the monasteries, was a remarkable achievement for a merchant of the Staple who had neither an hereditary estate nor the bonus of gifts from the Crown. James Leveson died in 1547 when the benefits of his purchases were beginning to show themselves. It was to be his successors who reaped the real benefit in the centuries to come.

APPENDIX I

The extent of James Leveson's estate

The reader is warned that all figures relating to the acquisitions of James Leveson must remain uncertain. His inquisition post mortem admitted to 3,298 acres in Staffordshire and to only 706 acres (Little Wenlock) in Shropshire. His grandson, Sir Walter Leveson, had a much more impressive total of 5,714 acres in Staffordshire and 32,427 acres in Shropshire, or 38,141 acres in all. The acreages given in post mortem inquisitions, however, are notoriously unreliable. James's figures are far too low. In contrast, Walter's figures, though more realistic, are hardly more reliable. For example, his inquisition gives the huge total of 20,530 acres for Lilleshall, Muxton, Donnington, Cherrington, Longdon-upon-Tern, Little Wenlock, Petton, Lyzard Grange in Tong, and part of Sheriffhales, while Wolverhampton, Upper and Lower Penn, Wyrley, Rowley Somery, and the rest of Sheriffhales is given the ludicrously low figure of 524 acres. Again in Walter's inquisition, Darlaston, Wednesbury, Codsall, Wergs, and Tettenhall were listed as 10 acres only, while Darlaston alone (48 acres in James's inquisition) was recorded as 42 acres in 1750 and 47 acres in 1812. In fact, the actual holding would appear to have remained unchanged from the 16th century.⁵⁴

51 H. J. Habbakuk, 'The market for monastic property, 1539-1603', *Economic History Review*, 2nd ser. x (3) [1958], 364-78, *Letters and Papers Hen. VIII*, 1544 (2), p. 321.

52 Habbakuk, 'Market for monastic property', 366.

53 Hoskins, *ylge of Plunder*, 132-3.

54 S.R.O., D. 593/C/4/2 (Jas. Leveson's inquisition post mortem, 1547); D. 593/C/8/2 (Sir Walter Leveson's inquisition post mortem, 1603); D. 593/T/2/8 (valuation by W. Tibbetts, 1750). See also an 1834 atlas: *ibid.* D. 4092/C/2/1.

To obtain accurate figures for the whole estate it is necessary to go forward to the early 19th century, when regular surveys were made. The 1812 survey records 19,409 acres for Shropshire, 7,574 acres for Trentham and North Staffordshire, and 1,614 acres for Wolverhampton and South Staffordshire - an overall total of 28,597 acres. (The Newcastle property, purchased mostly since 1803, is ignored as the original holding was quite small, 21 acres in 1797.)⁵⁵

The 1812 survey is two and a half centuries after James's time, but much nearer to him was the agreement in 1652 between Sir Richard Leveson and Richard, earl of Dorset. Then, Sir Richard's Staffordshire properties were listed as 10,000 acres precisely and his Shropshire estate at 16,120 acres.⁵⁶ The direct line of James had ended in 1605 with the death of his great-grandson Sir Richard, the Admiral, whose heir was his third cousin, Richard Leveson, a descendant of James's elder brother Nicholas. The succession, however, was disputed by Sir Richard's aunt, Mary, Lady Curzon.⁵⁷ Eventually an agreement was reached between her grandson, the earl of Dorset, and the heir (by then Sir Richard), by which it was agreed that Perton manor, valued at £10,000, was to be ceded to the earl of Dorset on Sir Richard's death. Adding back Perton at 1,895 acres, therefore, gives a total for the estate of 28,015 acres.⁵⁸

In spite of the closeness of that figure to that of 1812, much had happened to the estate in the meantime. Already in 1652 it had suffered considerable losses since James's day. At the time of his death the sale of the site of Wombridge priory was proceeding, and it was completed by his son Richard. Later, in 1556, Sir Richard Leveson sold the Derbyshire estate of 1,300 acres.⁵⁹ Sir Walter Leveson, his son and successor, in turn sold lands in Stafford (200 acres), Walsall (260 acres), Shirlowe Grange in High Ercall (590 acres), and Little Wenlock (706 acres). He also disposed of the manor of Petton.⁶⁰ Yet this loss of at least 1,756 acres was more than outweighed by his acquisitions of the manor of Hardwick in Shropshire with 2,300 acres, of Lord Shrewsbury's estate on the Wildmores (1,040 a.), and of smaller purchases in Newport and elsewhere. On his death in 1602 Sir Walter was positive that what he passed on to his son was comparable with what his father, Sir Richard the elder, had bequeathed to him in 1560.⁶¹ Sir Richard, the Admiral (d. 1605), gave the lease of the Deanery manor in Wolverhampton to his very distant cousin Sir Walter Leveson of the Wolverhampton family.

On the Admiral's death in 1605, his executor, Sir John Leveson, had to put the estate's affairs in order for the benefit of John's second son Richard and settle all Sir Walter's and Sir Richard's debts. He was unable to regain the manor of Hounds Chedull, pledged by Sir Walter to the earl of Shrewsbury, and that meant that 1,160 acres were lost. Obligated to sell extensive lands in Wolverhampton, he defined the loss as follows: '[Of] my antient inheritance in Staffordshire sold to Sir Walter Leveson £250 p.a., there remains only one house and one cottage worth £40 p.a.'⁶²

In fact, the situation was not as bad as he thought. Not only was the original Leveson estate of Prestwood farm (265 acres) retained, which was also his 'antient inheritance', but there was in addition a holding in Wolverhampton which in reduced form still amounted to 249 acres in 1750.⁶³ The losses, however, were serious. First came the lease of the Deanery Manor in which James had purchased 19 properties in Wolverhampton, Wednesfield, and Codsall. One of the Wolverhampton messuages was 'Le Cocke', acquired from James Byng and situated in Tunwall Street, with a cottage attached.⁶⁴ Secondly, there were the sales in 1614 of some 21874 acres in and around Wolverhampton. Also in 1614 there was the sale of properties near Wolverhampton amounting to

55 Ibid. D. 593/G/1/10; D. 593/H/14/3/32 (survey of Newcastle, 1797).

56 Ibid. D. 593/C/14/4.

57 For details of the claims made against the estate on behalf of Mary, Lady Curzon, and her daughter Mary Sackville, see *ibid.* D. 593/E/3/6/1-3; D. 593/E/3/10/1.

58 Ibid. D. 593/C/14/4; *V.C.H. Staffs*, xx, 25.

59 S.R.O., D. 593/B/2/12/25 (demise of house and site of Wombridge priory to Richard Leveson and Willam Charlton, 1547); *V.C.H. Shropshire*, xi, 290. For Sir Richard Leveson's sale of Alsop en le Dale in 1556, see *Cal. Pat. Rolls*, 1555-57, p. 134.

60 S.R.O., D. 593/A/2/21/4 and 6 (Walsall); D. 593/A/2/27/17 (Stafford); D. 593/B/2/12/18 (Petton); *S.H.C.* xv, 146, 154, 177; Shropshire Record Office, Barnard Estate, Raby deeds, 1/6/2; 1/6/5 a and b (Shirlowe Grange); *V.C.H. Shropshire*, xi, 80 (Little Wenlock).

61 Shropshire Record Office, Hardwick Estate box 1, bundle 1, no. 102; W.S.L. 356/40, pp. 16, 21. For an account of Sir Walter's last statement see S.R.O., D. 593/E/3/10/3.

62 For the gift of the lease of the Deanery manor see S.R.O., D. 593/E/6/12. For the loss of the Hounds Chedull estate to the earl of Shrewsbury see *ibid.* D. 593/E/3/6/2 and 3. For an account of lands sold see *ibid.* D. 868/1/67.

63 Ibid. D. 593/H/3/405 (survey by W. Fowler, 1661). Most of Prestwood farm had been sold by 1764: *ibid.* D. 593/H/3/92.

64 Ibid. D. 593/B/1/26/6/8/1-9 ('Le Cocke'); D. 593/J/5/8/2 (James Leveson's copyholds).

248'A acres.⁶⁵ Taking all three groups of properties into account, 1,000 acres could be allowed for the Wolverhampton losses.

Sir John had sold the lands for the benefit of the heir of his young son Richard. After his succession Sir Richard Leveson was to sell Dinthill (640 acres), in Shropshire, in 1627 and dispose of Bushbury (860 acres), Oxley (377 acres), and Sutton in Chelmarsh in Shropshire either by gift or under the terms of his will. This was in addition to his transfer of Perton. Against this disposal of perhaps 4,000 acres, he added a major purchase at Waters Upton and other smaller properties to the estate.⁶⁶ After Sir Richard's death in 1661, minor additions were made by Sir William Leveson-Gower, whilst the first Lord Gower purchased the Normacot and Stallington estate of 829 acres by 1709.⁶⁷

Further losses from James's original estate were to come in the 18th century. The sale of Oldington farm, Patshull (140 acres), was the first, followed by the salthouse at Middlewich, in Cheshire.⁶⁸ By 1750, when a survey records a total of 2,995 acres for the South Staffordshire estate, most of the original Leveson estate of Prestwood farm had been disposed of, and that meant that virtually all the surviving estate was derived from James's purchases. Deducting a later purchase of 30 acres at Shipley and allowing 100 acres for any survivals from Nicholas's estate, not less than 2,865 acres can be traced back to James.⁶⁹ By 1812 the total for South Staffordshire was 1,614 acres. The difference from the 1750 figure can be accounted for by the sales of the first marquess of Stafford, together with Lyzard Grange, Tong (317 acres), nearly all Brocton Grange (125 acres), and the manors of Hardwick and Whixall.⁷⁰ Whixall, which was sold to Sir Rowland Hill in 1765, had originally been 280 acres in extent.⁷¹

To summarise, by 1812 the alienated parts of James's estate were as follows:

pre 1600	1,300 acres	sold by Sir Richard Leveson
	1,756 "	" Sir Walter Leveson
total	3,056	
1600-1700	1,160 acres	disposed of by Sir John Leveson
	1,000	sold by Sir John Leveson
	2,000	disposed of or sold by Sir Richard Leveson
	1,895	
	6,055	
1700-1812	140 acres	sold by the first Lord Gower
	2,101	sold by the first Lord Stafford
	2,101	
grand total	11,352	

No acreage figures can be given for the Worcestershire properties at Kidderminster, Hagley, Churchill, Wannerton, and 'Dunkley' (possibly Cookley) sold by Sir Walter Leveson in 1585. That estate included three watermills, a meadow, and pasture with several ponds and fishponds, and must have been of some extent. The same was true of the manor of Petton (Shropshire), which he disposed

65 Ibid. D. 593/H/14/4/15 A - C (with A listing 218 1/4 acres). For the 1614 sales see *S.H.C.* n.s. iv. 68, 70-72, 81-82.

66 S.R.O., D. 593/B/2/12/8 (Dinthill); *S.H.C.* 1928, 105(Bushbury); Shaw. *Staffs.* ii. 186 (Oxley). For the area of Oxley see A. D. M. Phillips, 'The Staffordshire Maps of William Fowler', *Trans. South Staffordshire Archaeological and Historical Society*, xxi. 16, 23. For Sutton in Chelmarsh see A. F. C. Langley, 'The family of Langley of Shropshire', *Trans. Shropshire Arch. Soc.* v. 119-22. For Sir Richard Leveson's purchases see S.R.O., D. 593/H/14/1/4, p. 30 and W.S.L. 356/40, p. 24.

67 S.R.O., D. 593/H/14/1/4, after p. 61 (Normacot and Stallington).

68 Ibid. D. 593/K/1/1/4, Wm. Cheyne, Viscount Newhaven, to Geo. Plaxton, 24 Mar. 1716; *V.C.H. Staffs.* xx. 167 (for the Oldington sale in 1718).

69 S.R.O., D. 593/B/2/10/6 (Shipley); D. 593/G/1/10; D. 593/T/2/8. The Middlewich sale probably took place some time after Plaxton's death in 1720.

70 Ibid. D. 593/C/23/2 (Lord Stafford's sale of Lyzard Grange, Hilton and Crackley Bank, and Brocton Grange).

71 For a reference in a 1766 lease to the purchase of Whixall from Earl Gower see Shropshire Record Office, Hardwick Estate, box 1, bundle 1, no. 105. For the Whixall acreage see S.R.O., D. 593/A/1/20/1.

of in 1588 and of the Sutton in Chelmarsh property given by Sir Richard Leveson to John Langley in 1653.⁷² The salt house at Middlewich, though valuable, would not have been of any great extent.

It remains to consider how much of James Leveson's estate survived in 1812. The South Staffordshire estate of 1,614 acres has been traced to him. Making a generous allowance for later additions, 1,500 acres would seem a reasonable figure for James's purchases. The North Staffordshire total of 7,514 acres, exclusive of Newcastle, which did, however, contain some properties originating with James Leveson, may be contrasted with the total of 8,177 acres given in Thomas Burton's surveys of about 1714. Since that time there had been some sales and some additions, as at Hanchurch. Most properties, however, like Wall Grange, had remained unchanged.⁷³ From the 1714 total it is necessary to deduct the Normacot and Stallington figure of 829 acres. Allowing for minor additions a figure of 7,000 acres is suggested for North Staffordshire.

The Shropshire estate of 19,409 acres was also derived principally from James Leveson. Later additions may be noted in Cherrington and Tibberton, where 11 messuages had been purchased at later dates; 300 acres could be allowed for them out of the 1812 figure of 2,555 acres. At Crudginton and Sleaf, 1,412 acres in 1812, fewer additions suggest a figure of 1,300 acres. The most marked change on the Shropshire estate was at Cold Hatton, where James had owned merely Podford farm (60 acres) out of the 1812 total of 560 acres. The situation was very different at Lilleshall, where James had acquired virtually the entire parish, leaving only a further 100 acres to be added to make the 1812 total of 6,086 acres. Sheriffhales was more complicated. Later additions there were included in the 1812 total of 4,654 acres. Against this could be set the sale of Crackley Bank farm at 185 acres. The notional total of 3,500 acres could be allowed for James's acquisitions. Kinnersley (1,726 acres in 1719 and 1,703 acres in 1812), Team, Longdon, Ketley, Leegomery, and Wappenshall had little recorded change.⁷⁴ The suggested later additions make a total of 2,146 acres. An allowance must be made for enclosure on the Wildmores. In 1650 it was declared that Sir Richard Leveson and his tenants had enclosed a total of 2,180 acres there. If one half of the additions are attributed to the estate bought from the earl of Shrewsbury by Sir Walter Leveson, a further deduction of 1,040 acres should be made.⁷⁵

The two deductions of 3,206 acres give a revised total of 16,203 acres for the Shropshire estate.

The final figures read:

11,352 acres	for lands alienated
1,500	for South Staffordshire estate
7,000	for North Staffordshire estate
16,203	for Shropshire estate
36,055 ⁷⁶	

The estimate of 35,000 to 37,000 acres for the extent of James Leveson's estate seems a conservative one. No account is taken of the Warwickshire estate settled upon his daughter Elizabeth on her marriage, nor of the properties of unknown acreage mentioned in the text.⁷⁷

72 S.R.O., D. 593/B/1/16 (Worcestershire).

73 Ibid. D. 593/H/3/340—1 (Trentham). For the rest of the North Staffordshire estate, surveyed about 1714 by Thomas Burton, see *ibid.* D. 593/H/3/30, 66, 72, 304, and 380.

74 Ibid. D. 593/G/1/10; D. 593/H/14/2/7 (survey of Kinnersley, 1719).

75 P. Edwards, 'Disputes in the Wealdmores in the late sixteenth and early seventeenth centuries', *Trans. Shropshire Arch. Soc.* lxxiii, 1-10.

76 The figure of 11,352 acres is that given above at p. 128; the other 1812 figures are taken from S.R.O., D. 593/G/1/10.

77 Ibid. D. 593/A/1/24/7, 9, 10, and 12 (Warwickshire estate). No acreage is available for Petton.

APPENDIX II

Estates in the possession of James Leveson
this death on 7 July 1547
(based mainly on his post-mortem inquisition)

STAFFORDSHIRE

<i>Property</i>	<i>Date of acquisition</i>	<i>Remarks</i>
Wolverhampton: many properties; houses in Berry St., Dudley St., High Green, Johns Lane, Tunwall St., gardens, closes, orchards, lands at Chapel Leasowe, Merridale, and in all the main fields	1515-1547	many transactions
Wolverhampton: Deanery Manor, including 19 copyholds	1516	leaseholder, first jointly, then solely
Wolverhampton: Stowheath Manor	1531/32	one moiety, the other held by Sir John and Thomas Giffard
Willenhall and Wednesfield: various properties	from 1515	
Walsall: several properties	from 1516	upwards of 260 acres
Bushbury: Seawell Manor	1519	860 acres
Tettenhall: Barnhurst Farm	1521	150 acres, with additions
Compton	unknown	
Perton: manor	1523 and 1524	two purchases
Penn, Upper and Lower, Oxley, and Rowley Somery: 4 manors	1533	1,800 acres bought from Lord Dudley
Patshull: Oldington farm	1537	140 acres
Codsall: Moor Hall	1538	

Great Wyrley	1543	600 acres
Handsworth, Aldridge, Perry Barr	1547	37 acres
Stafford: 2 messuages, 10 gardens, 12 orchards, and 200 acres	1538/39	formerly Grey Friars
Trentham: manor with Toft, Cocknage, Hanchurch, Chorlton, Clayton Griffith, Trentham advowson, and Barlaston advowson	1540	formerly Trentham priory
Newcastle-under-Lyme, Blurton, and Longton: lands	1540	Trentham priory
Leek: Wall Grange farm and lands	1540	Trentham priory
Cheddleton: Hounds Chedull abbey	1543	formerly Croxden

SHROPSHIRE

<i>Property</i>	<i>Date of acquisition</i>	<i>Remarks</i>
Leegomery: manor, Wappenshall and Ketley	1528	formerly Sir John Audley
Lilleshall: manor, rectory, and lands in Honnington, Muxton, Donnington, Cheswell, and Watling Street granges; also, the Wildmores and Lilleshall and Donnington woods	1539 and 1543	formerly Lilleshall priory
Wombridge: priory Brocton grange in Sutton Maddock; lands in Oakengates, Wrock- wardine, Wellington, Tibberton, and Grindle in Ryton	1539 and 1543	formerly Wombridge priory
Longdon: grange, two water mills, and advowson	1542 and 1543	Alice Bromley and Lilleshall priory

Tong: Lyzard grange	1543	Lilleshall priory
Dinthill: grange, St. Alkmund's parish	1543	Lilleshall priory
High Ercall: Shirlowe grange	1543	Haughmond abbey
Claverley, Beobridge, Broughton	1543	Haughmond abbey
Sutton in Chelmarsh	1543	Wenlock priory
Little Wenlock: manor and advowson	1545	Wenlock priory
Sheriffhales: manor	1546	earl of Oxford
Petton: manor	unknown	
Whixall	unknown	

(Note that by Richard's marriage settlement of 1543, Sleap, Kinnersley, Tern, Cherrington, Crudgington, and many other properties were settled on him by Sir Rowland Hill.)

OTHER AREAS

<i>Property</i>	<i>Date of acquisition</i>	<i>Remarks</i>
<i>Warwickshire:</i> Bolehill, Glascote, Amington etc.	1537	formerly Lord Clinton
Shustoke, Coleshill, Tamworth etc.	1539	
(Both these estates were settled on Elizabeth Leveson when she married in 1544.)		
<i>Cheshire:</i> Middlewich: salthouse	1543	formerly Croxden abbey
<i>Worcestershire:</i> Kidderminster	1543	Dowles purchase
<i>Derbyshire:</i> Alsop en le Dale	1546	formerly Sir Thomas Pope

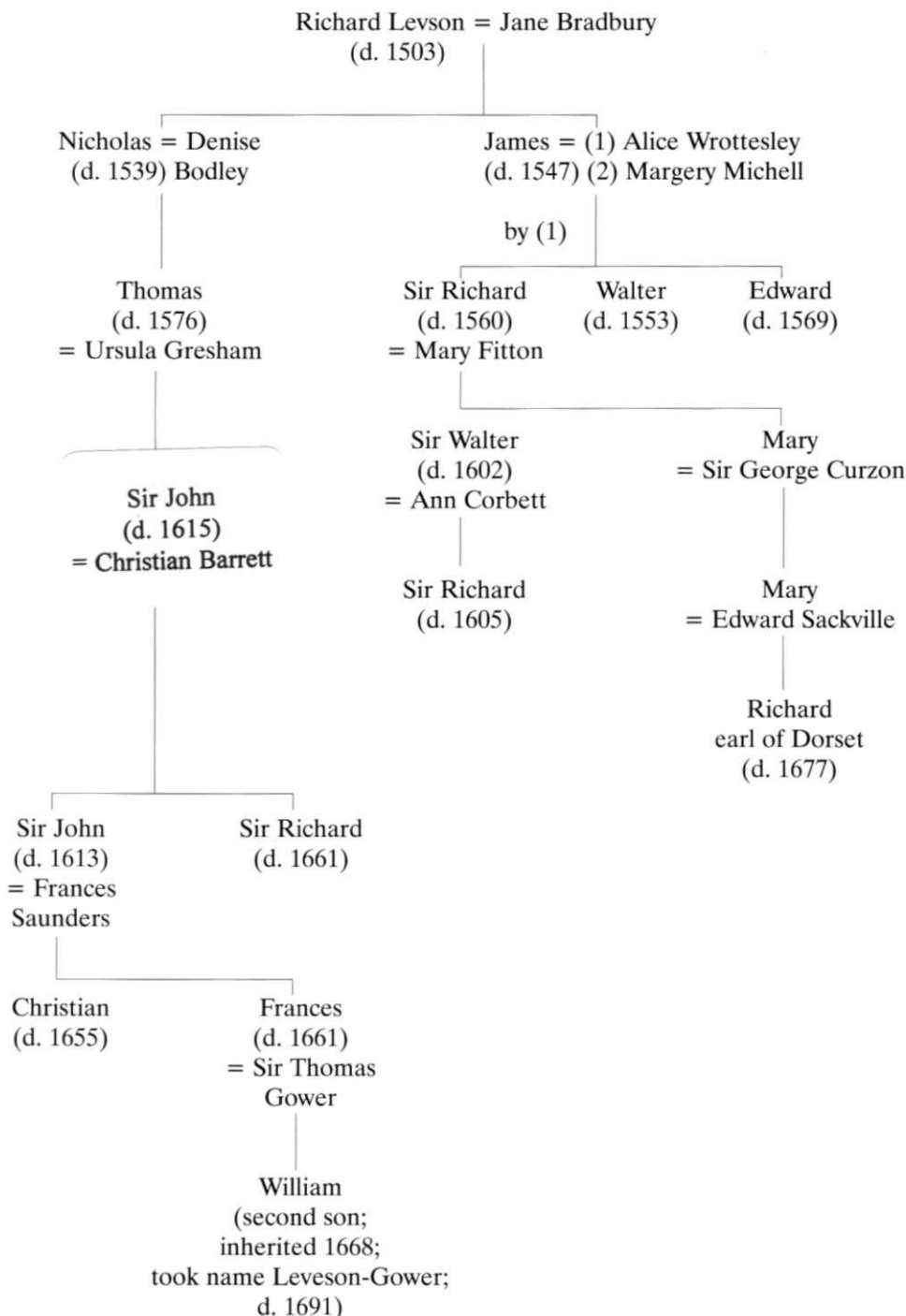
APPENDIX C

Lands alienated by James Leveson

<i>Property</i>	<i>Date of acquisition</i>	<i>Remarks</i>
<i>Staffordshire:</i>		
Walsall: several properties	various dates	sold 1540
Stafford: 12 properties	1537	formerly John Offley; sold by 1547
Rushton grange	1539	formerly Hulton abbey; sold to Biddulph 1541
Brewood	1539	formerly Black Ladies priory
<i>Shropshire:</i>		
Astley Abbots: Astley Ridge farm	1543	formerly Shrewsbury abbey; sold to Billingsley 1544
Claverley, Beobridge etc.	1543	sold 1544
Grindle in Ryton	1543	formerly Wombridge priory; sold 1543
Kinlet (including Meaton and Little Meaton)	1543	formerly Malvern priory; sold 1544
Sutton manor	1543	formerly Wenlock priory; sold 1544
<i>Warwickshire:</i>		
Polesworth	1543	formerly Lillieshall priory
<i>Worcestershire:</i>		
Dowles manor and advowson	1543	formerly Malvern priory; sold to Grey 1544
<i>London:</i>		
St. Olave's parish: 4 messuages opposite Crutched friars	1543	formerly Lillieshall priory; sold 1543

APPENDIX III

Skeleton genealogy



In order to simplify the table, no mention is made of the 2nd Sir Richard's wife, Lady Margaret Howard, or of the 3rd Sir Richard's wife, Lady Katherine Dudley, as both marriages were childless. Christian, the elder sister of Frances, married Sir Peter Temple and became ancestress of the dukes of Buckingham and viscounts Cobham. When Sir Richard Leveson died in 1661, his first heir was Francis Fowler, the grandson of his sister Rachel (not given in the table) by her fourth daughter and so Sir Richard's great-nephew. When Francis's male line died out in 1668, William Gower, another of Sir Richard's great-nephews succeeded under the terms of Sir Richard's will. William's descendants became barons Gower (1703), earls Gower (1746), marquesses of Stafford (1786), and

dukes of Sutherland (1833). It was the 4th and 5th dukes of Sutherland who between 1912 and 1919 sold the estates discussed in Appendix I.

NOTES ON THE PLATES

Plate 1 (from S.R.O., D. 593/H/2/7): the South Staffordshire estate in 1808.

The scattered holdings around Wolverhampton are fragments of James Leveson's estate. He owned much more land in Wolverhampton, and his holdings in Bushbury and Perton were comparable to those shown in Penn. Note that the Lichfield estate is a later purchase.

Plate 2 (from S.R.O., D. 593/H/2/7): the Trentham estate in 1808

The Trentham estate, with detached properties near Newcastle and Leek, is James Leveson's original estate, except for Normacot and Stallington; some parts of the Newcastle and Tittensor lands were purchased at a later date.

Plate 3 (from S.R.O., D. 593/H/2/5): the Lilleshall estate in 1808

The great Lilleshall estate built up by James Leveson is clearly shown. The detached portion at Cold Hatton is a later purchase, and some additions to the main holding were counterbalanced by sales of lands originally acquired by Leveson.

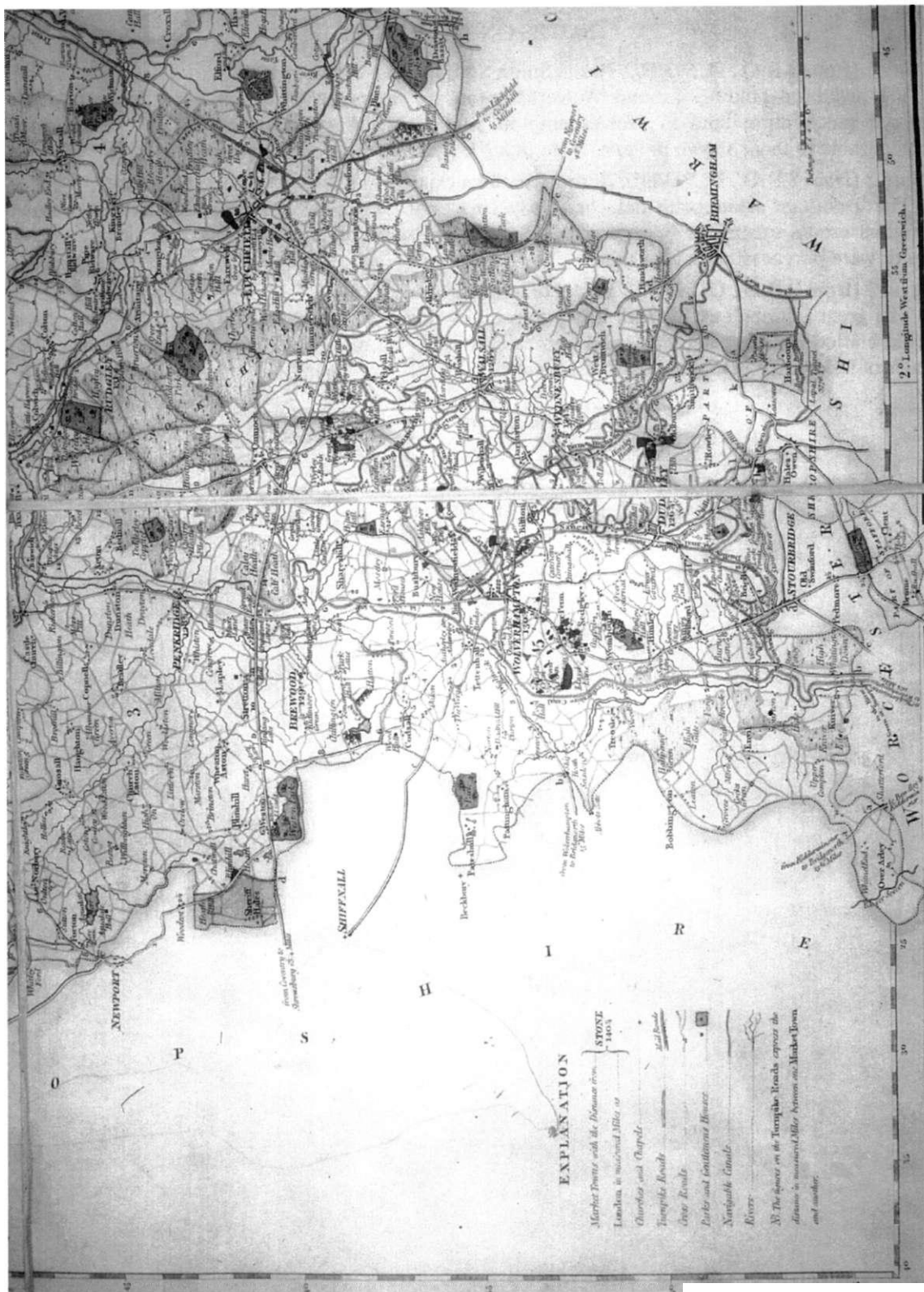


Plate 1: the South Staffordshire estate in 1808.

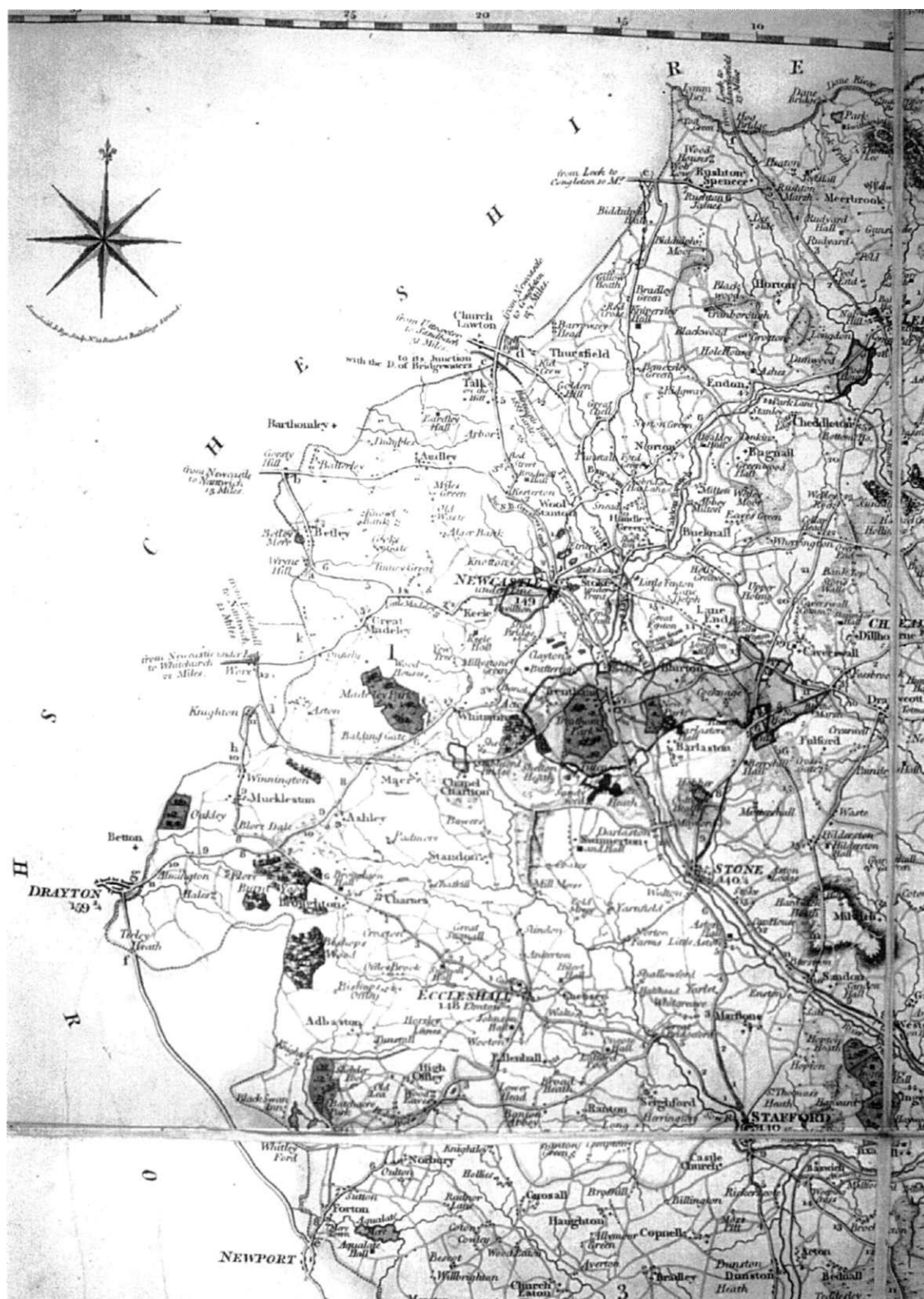


Plate 2: the Trentham estate in 1808.



Plate 3: the Lilleshall estate in 1808.

THE PLACE-NAME *ONN* AT HIGH ONN AND LITTLE ONN

ANDREW BREEZE

High Onn and Little Onn are neighbouring and somewhat isolated hamlets in the west of Staffordshire, 7 miles WSW of Stafford (grid references respectively SJ 827162 and 840161). They lie on a featureless plain of many canals, including the Shropshire Union canal, which formerly had a wharf at High Onn.

The name *Onn* has long been considered a Celtic one. Eilert Ekwall thought that it perhaps derived from a form represented by Welsh *odyn* (kiln), and what follows confirms this derivation, with a slight modification.

The name is recorded as *Otne* and *Anne* in Domesday Book; as *Onna* and *Othna* in c. 1130 (in the work of the Shropshire-born Norman monk, Orderic Vitalis); and as *Onne* in 1221 and *Onna* in 1230.¹ What may not have been previously pointed out is that these forms represent not a singular word (like Welsh *odyn*) but a plural one (like Middle Welsh *odyneu*, Modern Welsh *odynau*).² The word would probably have been borrowed as Primitive Welsh **Odenou*, after the loss of British final endings, subsequently undergoing loss of internal *e* through syncope and weakening of final *-ou* to Old English *-a* or *-e*?

Once this formation is recognized, there would seem to be no problem in seeing *Onn* as the Celtic name it is. Welsh *odyn* is a well-attested form, especially in the early Welsh laws, which refer to rights and duties concerning kilns and distinguish between those with flues and those without.³ Like the Irish *dith* (kiln), a word sharing the same root as *odyn*, the Welsh kiln had a vital role in drying corn, as well as in the production of lime.⁴ The importance of the kiln in Celtic society is confirmed by the Devon place-name *Odencole* (from Old Cornish for 'lime-kiln'), recorded in 846 in a grant of land close to Thurlestone, near Salcombe.

The Staffordshire place-name *Onn* must have been borrowed from Brittonic in the late 6th century, when the English occupied the region.⁵ The plural form would explain why the name appears twice, at High Onn and at Little Onn. It seems likely that there were only two kilns, one at each place, and not a group at both sites.

One wonders if archaeological research might find traces of the kilns, or of the fuel used to fire them, or of the lime, dried corn, or (perhaps the most likely) brick which they produced. In short, interpretation of the place-name *Onn* as 'kilns' provides some suggestive evidence for the economy of Celtic society in post-Roman Staffordshire. It means we can also reject the explanation 'ash trees' (cf. Welsh *Onn*) offered by Mills.⁶

1 E. Ekwall, *The Concise Oxford Dictionary of English Place-Names* (4th edn, 1960), 350.

2 Cf. *Geiriadur Prifysgol Cymru: A Dictionary of the Welsh Language* (Caerdydd, 1950-), 2618.

3 Cf. J. Morris-Jones, *A Welsh Grammar* (Oxford, 1913), 198; K. H. Jackson, *Language and History in Early Britain* (Edinburgh, 1953), 694-6.

4 *Cyfreithiau Hywel Dda*, ed. S. J. Williams and Enoch Powell (Caerdydd, 1942), 50; *The Laws of Hywel Dda*, tr. Melville Richards (Liverpool, 1954), 59.

5 Joseph Vendryes, *Lexique étymologique de l'irlandais ancien: Lettre A* (Paris, 1959), 54; Donncha O Corrain, *Ireland before the Normans* (Dublin, 1972), 51.

6 *English Historical Documents c. 500-1042*, ed. Dorothy Whitelock (2nd edn, 1979), 523.

7 Jackson, *Language and History*, 209.

8 A. D. Mills, *A Dictionary of English Place-Names* (Oxford, 1991), 248.

NOTICES

Earlier this year (1998) the society published an Index to all its transactions upto and including volume xxxiv, the last to be published (in 1995) by Society before its most recent change of name. The index was compiled to the highest standard by the society's membership secretary, Mrs. Betty Fox, and the committee wishes to record its thanks to her for undertaking such an arduous task.

* * *

It is with the deepest regret that the Society records the death in March 1998 of Bert Round, president from 1973 to 1978 and subsequently a vice-president. The following appreciation is by Jim Gould.

ALBERT ARTHUR ROUND, B.Sc, F.S.A.

One Saturday in 1961, a smartly dressed, middle-aged gentleman presented himself at the excavations then taking place at Wall. He asked permission to join in. He did not look like an archaeologist and was certainly not dressed like one, and we expected that he would soon tire of the work; we could not have been more wrong. Bert Round stayed the course, got as dirty as ourselves, and eventually directed excavations himself as well as serving the Society as treasurer and president. He often laughed at our first assessment of him.

He was almost immediately welcomed on to the committee, and when two years later our then treasurer, Mr. P. R. Sheppard, retired to the Isle of Man, Bert took over. Our finances were then in a rather perilous state, but Bert was able to steer us to financial safety, and he continued as treasurer until he was elected President in 1973. He held that post until 1978, when he moved to Lyme Regis. His interest in the Society continued, however, and he was elected vice-president. Eventually he returned to Lichfield.

For some years Bert attended winter lectures given by Graham Webster, and he joined training courses at Wroxeter. His first excavation as director was in 1965, when (having by then retired from the Adhesives Division of Dunlops) he worked on a cropmark site at Hilton; he worked without assistance, for no other member of the excavation team was free during the day. The following year he became director of the Society's excavations at Wall, and he continued as such for the next thirteen years. He issued a series of excavation reports, especially on the *mansio* site, where he worked at the request of the Department of the Environment.

Meanwhile he was elected a Fellow of the Society of Antiquaries of London, and he served on the committee of the Council for British Archaeology Group 8, to which he was eventually accorded honorary membership.

All Bert's excavations were conscientiously written up and published, and his lectures on his work were interesting and well-delivered. As director he was popular with his assistants for he was invariably cheerful and sociable. Whilst he and I differed on some archaeological interpretations, that was only to be expected: archaeology is like that and the voicing of different opinions adds spice to the activities.

Bert died on 11 March 1998 and is mourned by the many who worked with him.

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PROGRAMME

1995

- 13 Oct. Annual General Meeting
Lockington Gold barrow: burial mounds in the Midlands - Gwilym Hughes
- 20 Oct. Archaeology in Birmingham - Mike Hodder
- 10 Nov. The Tomb of Christ: recent research in Jerusalem - Prof. Martin Biddle
(special lecture in Lichfield cathedral)
- 24 Nov. Excavations at Wortley villa - David Wilson
- 8 Dec. Rome's North-West frontier: how was Britain defended in the late Roman period? -
Andrew Fear

1996

- 26 Jan. Drayton Bassett re-considered - Bob Meeson
- 9 Feb. Three faces of Peak District history and archaeology - Faith Cleverdon
- 23 Feb. Midlands Railways - Frank Farr
- 8 Mar. Early history of Burton-upon-Trent — Denis Stuart
- 22 Mar. Presenting Roman Germany - Colin Baddeley
- 5 Apr. Calke Abbey, Derbyshire, and the Harpur-Crewe family - Philip Heath