

STAFFORDSHIRE ARCHAEOLOGICAL AND HISTORICAL SOCIETY



TRANSACTIONS VOLUME LI

STAFFORDSHIRE
ARCHAEOLOGICAL AND HISTORICAL
SOCIETY

T R A N S A C T I O N S

VOLUME LI

Stafford
2020

FRONT COVER: Red-painted whiteware jug and piriform flask found in fill [505] of
Hearth [513] in Sandford Street, Lichfield. See drawings in Fig. 12: 29 and 30 of
‘Lichfield’s medieval urban growth’ article.

© Staffordshire Archaeological and Historical Society and the authors

ISBN 978 0 86061 031 1
ISSN 1479 6368

Typeset and printed in Great Britain by
4word Ltd, Bristol

CONTENTS

A ROMAN SETTLEMENT AT WINDMILL FARM, COTON LANE, TAMWORTH ANDREW SIMMONDS, KIRSTY SMITH, and CARL CHAMPNESS	1
LICHFIELD'S MEDIEVAL URBAN GROWTH: EXCAVATIONS AT 15 SANDFORD STREET AND IN BIRD STREET JOHN HUNT <i>incorporating</i> Excavation and watching brief on land to the rear of 15 Sandford Street, Lichfield, Staffordshire NICK TAVENER Archaeological Recording at the Arts Centre, Bird Street, Lichfield, 1999 RICHARD STONE Land adjacent to Minster Pool, Lichfield: a report on an archaeological watching brief JO WAINWRIGHT Watching Brief at 1 Bird Street, Lichfield, 1999 RICHARD STONE General Discussion JOHN HUNT and STEPHANIE RÁTKAI	21 22 95 109 110 115
JOHN LOUIS PETIT (1801–68) MARGARET O'SULLIVAN	141
<i>SHORT NOTICE</i>	
THE FORGERS OF FLASH FRANK PARKER, TIM KNEBEL, and MARK HENDERSON	163
INDEX: TRANSACTIONS, XLV–XLIX (2011–17) BETTY FOX	166
<i>ARCHAEOLOGY SUMMARY REPORTS</i>	
STAFFORDSHIRE; STOKE-ON-TRENT; and WOLVERHAMPTON and WALSALL	172
<i>BOOK REVIEWS</i>	
John Barnatt, <i>Reading the Peak District Landscape</i> (Mike Hodder) Rowan Patel, <i>The Lane End Plateway</i> (Peter Brown)	177
OFFICERS AND COMMITTEE	180

LIST OF FIGURES, TABLES AND PLATES

ROMAN SETTLEMENT, TAMWORTH

Fig. 1	Site location and geophysical survey	2
Fig. 2	Plan of archaeological features	4
Fig. 3	Sections of selected features	5
Fig. 4	Plan of aisled building	7
Fig. 5	Roman pottery	10
Table 1	Pottery by fabric	9
Table 2	Charred plan remains (ditch 50012)	14
Table 3	Charcoal summary	16

LICHFIELD'S MEDIEVAL URBAN GROWTH

15 Sandford Street

Fig. 1	Site location	23
Fig. 2	Standing buildings and extensions	24
Fig. 3	Main property detail	26
Fig. 4	Plan of phases 1 and 2 features	28
Fig. 5	Sections of ditches 416 and 348	32
Fig. 6	Eastern half of southern trench edge	34
Fig. 7	Plan of features in phases 3 and 4	36
Fig. 8	Sections of medieval cesspits	37
Fig. 9	Pit [506] section and plan	40
Fig. 10	Plan of features in phases 5 and 6	46
Fig. 11	Phases 2 and 3 pottery	51
Fig. 12	Phases 3 to 5 pottery	54
Fig. 13	Phases 5 and 6 pottery	55
Fig. 14	Post-medieval and unstratified pottery	73
Fig. 15	Cattle horncores	84
Table 1	Whitewares: percentage of vessel forms by fabric	53
Table 2	Quantification of pottery (sherd weight and count), Phases 2–4	56
Table 3	Quantification of pottery (sherd weight and count), Phases 5–6	58
Table 4	Quantification of pottery (rim count and eves), Phases 2–4	59
Table 5	Quantification of pottery (rim count and eves), Phases 5–6	59
Table 6	Form / function by phase	60
Table 7	Pottery from fills of pit re-cut [160]	62
Table 8	Vessel forms from fills of pit re-cut [160]	62
Table 9	Pottery from fills of pit re-cut [168]	63
Table 10	Vessel forms from fills of pit re-cut [168]	63
Table 11	Pottery from fills of pit [244]	64
Table 12	Vessel forms from fills of pit [244]	64
Table 13	Pottery from fills of pit [442]	67
Table 14	Vessel forms from fills of pit [442]	68
Table 15	Pottery from fills of pit [220]	71
Table 16	Vessel forms from fills of pit [220]	71
Table 17	Pottery from fills of pit [358]	72
Table 18	Vessel forms from fills of pit [358]	72
Table 19	List of environmental samples	77
Table 20	Plant remains from selected samples	78
Table 21	Plant remains from assessed samples	79

Table 22	Number of hand-collected mammal and bird bones	80
Table 23	Cattle horncores	82
Table 24	Metal objects from hand excavation	85
Table 25	Types of ironworking debris	87
Plate 1	Hearth [513]	41
Plate 2	Details of Hearth [513] under excavation	42
Plate 3	Red-painted whiteware baluster jug and iron horseshoe	65
<i>Arts Centre, Bird Street</i>		
Fig. 16	Site location	96
Fig. 17	Site of trenches	97
Fig. 18	Lichfield in 1781	100
Table 26	Pottery types	99
Table 27	Pottery spot dating	102
Table 28	Number of identifiable bone fragments	103
Table 29	Environmental samples	106
Table 30	Species list of plant remains	107
<i>Bird Street Watching Brief</i>		
Table 31	Graves by context	111
Table 32	Sex and age estimation	112
Table 33	Stature estimation	112
Table 34	Pottery spot dating	113
<i>General Discussion</i>		
Fig. 19	Location of principal archaeological investigations mentioned in text	116
Fig. 20	Location of principal archaeological investigations in context of medieval Lichfield	117
Fig. 21	Drawing of wax-melting jar from Greenhill	125
Table 35	Early medieval and modern pottery	130
Plate 4	Whiteware wax-melting jar from Greenhill	126
 JOHN LOUIS PETIT		
Fig. 1	Stafford St Mary before restoration	156
Fig. 2	Lichfield cathedral	156
Fig. 3	Stafford St Mary, west front	157
Fig. 4	Buildwas abbey	157
 FORGERS OF FLASH		
Fig. 1	Coiner's pit, Goldsitch Moss	163
Fig. 2	Alloy spillage, Broken Cross	164

NOTE ON AUTHORS

JOHN HUNT is a medievalist and Honorary Research Fellow in the Department of History at the University of Birmingham. He works primarily on regional history and archaeology, medieval lordship and community, and various aspects of medieval cultural history, in England and France, between the 10th and 14th centuries.

MARGARET O’SULLIVAN is a former County Archivist of Derbyshire who previously worked in archives in Surrey, Staffordshire, and Shropshire. Her doctoral thesis was on late medieval political poetry and, as well as contributing articles to the *Oxford Dictionary of National Biography*, she has written about a medieval Book of Hours, the suffragette artist Georgina Brackenbury, and a 20th-century political hostess, Ava Anderson.

KIRSTY SMITH has worked at Oxford Archaeology within the post-excavation department since 2014 and previously worked for English Heritage as an Assistant Curator. During her time at Oxford Archaeology, Kirsty has worked on a variety of projects including Crossrail, Thameslink, Torre Abbey, and a number of smaller excavation and evaluation reports throughout the Midlands and southern England.

ANDREW SIMMONS has worked for Oxford Archaeology since 1997, initially in the field, then in post-excavation from 2005. A Senior Project Manager responsible for managing post-excavation projects, Andrew has written or contributed to more than thirty published reports and articles, including a Roman villa on the outskirts of Cirencester and a late Roman cemetery at Lankhills School, Winchester.

STEPHANIE RÁTKAI, a graduate of the School of Classics, University of Birmingham, is a pottery specialist, archaeological consultant, and project manager. Since 2000 she has been a Director of Barbican Research Associates. Her work is focused on the West Midlands in the post-Roman to post-medieval period, on which she has published extensively.

After graduating in the early 1970s in History and Archaeology from the University of Reading, NICK TAVENER embarked upon a career as a professional digger, working on archaeological sites across the United Kingdom. The author of numerous excavation reports, he produced his discussion of 15 Sandford Street, Lichfield, while working with *Marches Archaeology*.

ROMAN SETTLEMENT AT WINDMILL FARM, COTON LANE, TAMWORTH

ANDREW SIMMONDS, KIRSTY SMITH and CARL CHAMPNESS

With contributions by

KATE BRADY, SHARON COOK, MICHAEL DONNELLY, JULIA MEEN,
CYNTHIA POOLE, IAN R SCOTT and RUTH SHAFFREY

SUMMARY

Excavation by Oxford Archaeology at the north-western edge of Tamworth revealed a substantial part of a Romano-British farmstead composed of a complex of rectilinear enclosures that was occupied during the 2nd and 3rd centuries. Two phases were identified, the settlement having been extended and additional enclosures added to the north and east around the middle of the 2nd century. The latter phase included construction of a post-built aisled building, and two discrete dumps of burnt crop-processing debris attested to the crops that the population cultivated.

INTRODUCTION

Background to the excavation

During April and May 2017, Oxford Archaeology (OA) undertook a programme of archaeological investigation in advance of a residential development at Windmill Farm, Coton Lane, Tamworth. The investigation was commissioned by CgMs Heritage (now RPS) on behalf of Persimmon Homes in accordance with a condition attached to planning permission (ref 0027/2017). The site lay on the north-western edge of Tamworth, in a former arable field at NGR SK 193 057 (fig. 1). Geophysical survey of the entire 7.9ha development area identified only limited evidence for archaeological features, comprising linear ditches and recent land drains and plough furrows (Sumo 2017). An evaluation (OA 2017) comprising 11 trenches demonstrated that most of the ditches were modern or absent, although two N–S aligned ditches in the northern part of the area were evidently archaeological in origin, albeit undated (203, 809, fig. 1). A ditch and pit in a trench at the south-western corner of the area, at the proposed location of the development compound, were Roman and this area was consequently targeted for archaeological excavation.

This report includes summaries of the analyses of the artefacts and environmental evidence. The full specialist reports and accompanying data can be downloaded from the OA Library (<https://library.thehumanjourney.net/5701>). The excavation archive will be deposited with Potteries Museum and Art Gallery under accession code 2017.LH.69.

Topography and geology

The site is situated within a westward loop of the River Tame, at the foot of the slope of boulder clay and marl that rises gently from the eastern edge of the gravel floodplain (BGS 1971). It lay at c. 68m above Ordnance Datum and was c. 1.4km from the river, which at this part of the valley flows along the far edge of the floodplain.

Archaeological background

The gravel floodplain between Coton and Comberford has produced cropmark evidence including ring ditches of probable Bronze Age date and enclosures and linear boundaries that are likely to represent Iron Age or Roman settlement (fig. 1). Of particular note are a possible rectilinear enclosure c. 700m south-west of the site (Staffordshire Historic Environment Record reference MST1543); a complex of at least four rectilinear enclosures and possible roundhouses c. 750m to the west (MST1538), a large rectilinear enclosure 1km to the north-west (MST1537); and a group of curvilinear enclosures and linear features 1km to the north (MST1540). The only excavation that has taken place within the area of the cropmarks was a small exposure during a pipeline diversion immediately adjacent to the railway, which was not co-located with any of the cropmark features and uncovered no archaeological features (Sims 2005).

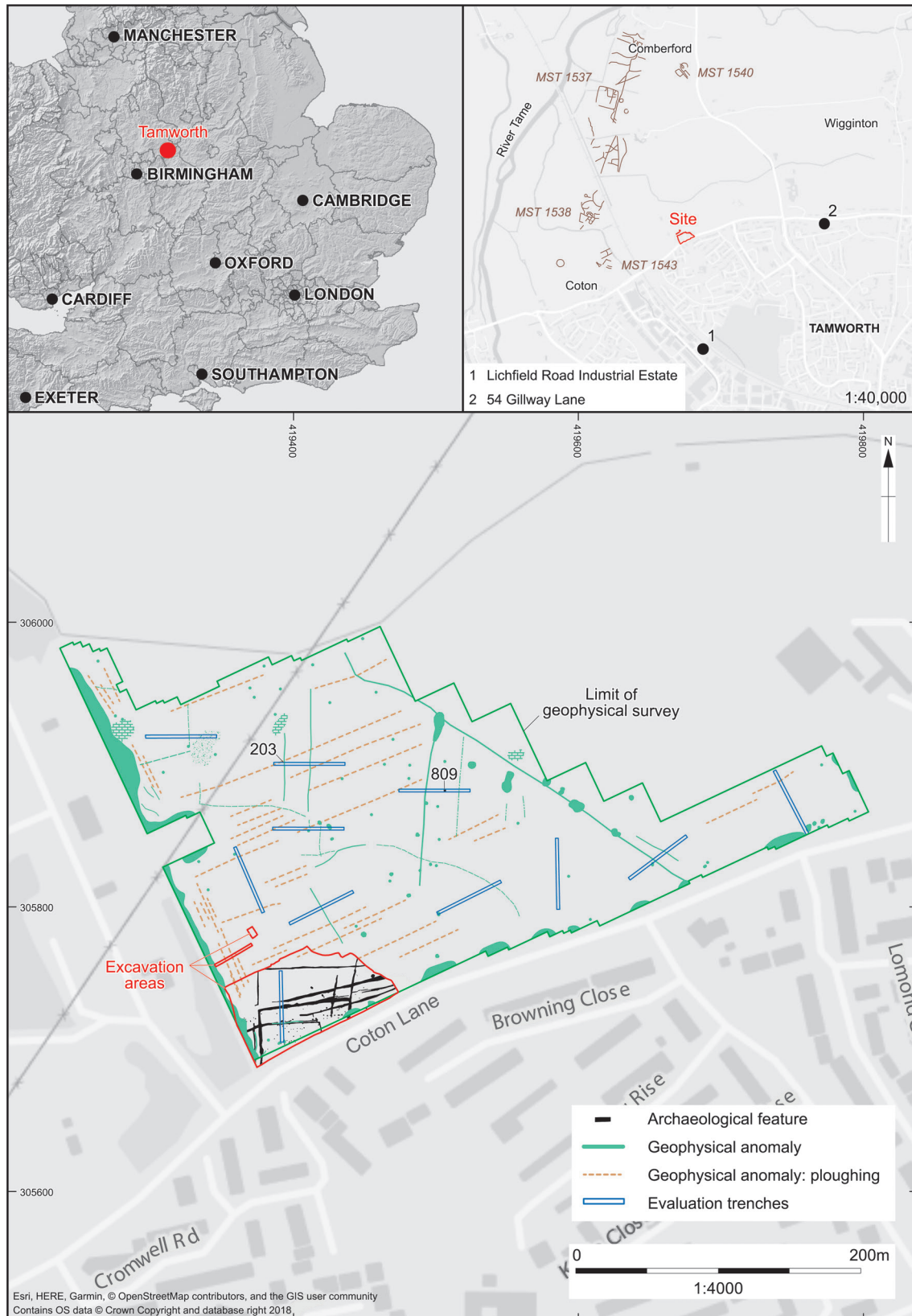


Fig. 1 Site location and results of the geophysical survey

Evidence for settlement of more certainly Roman date was recorded to the south at Lichfield Road Industrial Estate, where trial-trenching of a double-ditched enclosure originally identified from cropmark evidence showed that this was a farmstead dating from the 1st–3rd centuries (Simpson 1986). A 3rd-century coin has also been discovered in the rear garden of 54 Gillway Lane, c. 800m east of the site, although its archaeological context is unknown.

The site probably lay within farmland throughout the historic period, as indicated by ridge and furrow cultivation recorded by the geophysical survey, and the Roman features had clearly been substantially truncated by ploughing. The windmill from which the farm takes its name was situated to the east of the farm buildings. Its mound was recorded on a map of 1845 and was surveyed as being 0.3m high in 1950, but has since been ploughed away.

Excavation methodology

The footprint of the proposed compound at the south-western corner of the development area was stripped, an area of 0.55ha. The overburden, comprising topsoil and subsoil, was removed using a mechanical excavator fitted with a toothless bucket, working under close archaeological supervision. The exposed archaeological features were digitally mapped using a combination of EDM and GPS, and hand-excavation and recording then followed, as detailed in the OA Fieldwork Manual (Wilkinson 1992). Two small trenches were opened north of the main excavation area to investigate the projected lines of the Roman boundary ditches that continued in this direction, but no archaeological features were present.

STRATIGRAPHIC DESCRIPTION

The excavation uncovered part of a complex of ditched rectilinear enclosures (fig. 2). Two phases were identified on the basis of ceramic dating evidence and stratigraphic relationships, comprising a main enclosure (Phase 1; early 2nd century) that was subsequently extended and supplemented by additional enclosures to the north and east (Phase 2; mid 2nd to 3rd century). An aisled building was associated with the latter phase, and other discrete features located within the complex were certainly contemporary with the enclosures but could not be placed within a specific phase due to an absence of dating evidence.

Phase 1 (early 2nd century)

The principal element of the complex during this phase was a rectilinear enclosure in the southern part of the excavation area. Its full extent was not completely exposed, since it extended beyond the boundary of the site, but the north side and substantial parts of the west and east sides were seen. The enclosure had two sub-phases, the earlier of which was defined on the west side by ditch 50013 and to the north by ditches 50003, 50004, and 50005 (fig. 3, sections 2003 and 2045). The original east side did not survive, since it had been completely removed when the enclosure ditch was recut. This iteration of the enclosure measured 40m from east to west and at least 27m from north to south, and the segmented character of the ditches that formed its north side indicate that it was accessed via two entrances on this side, the western entrance measuring 4.8m wide and the eastern entrance measuring 3.6m. The enclosure ditch was quite slight, nowhere more than 0.32m deep. The pottery assemblage from the ditch was very small and comprised sherds that could be attributed only broadly to the Roman period.

Ditch 50002, which ran parallel to the western side of the enclosure, may have defined a trackway 2.6–2.9m wide alongside the enclosure. It was of similar dimensions to the enclosure ditch, measuring 0.1–0.4m deep.

The enclosure was subsequently extended to the west when the enclosure ditch was recut as ditch 50000. This was a more substantial feature, up to 0.55m deep, with a more steeply V-shaped profile. It was a continuous boundary, with no evidence for entrances within the excavation area, which slighted ditches 50002 and 50013 and extended beyond the western baulk, increasing the width of the enclosure to at least 55m.

Ditch 50011, which was situated north of the enclosure, was broadly co-aligned with it and is likely to represent a contemporary boundary. It was 27m long and 0.5m deep with steep sides and a concave base.

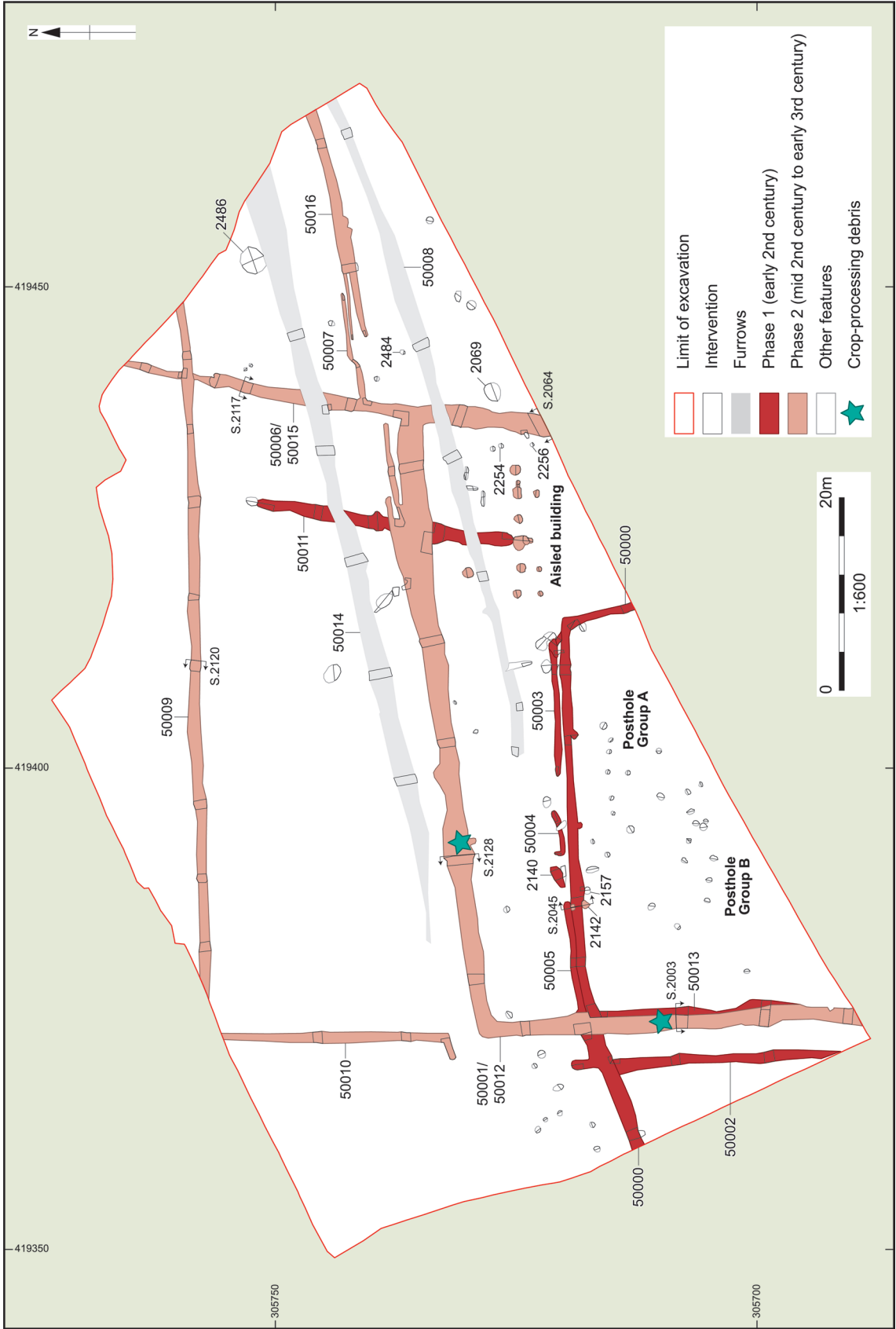


Fig. 2 Plan of archaeological features

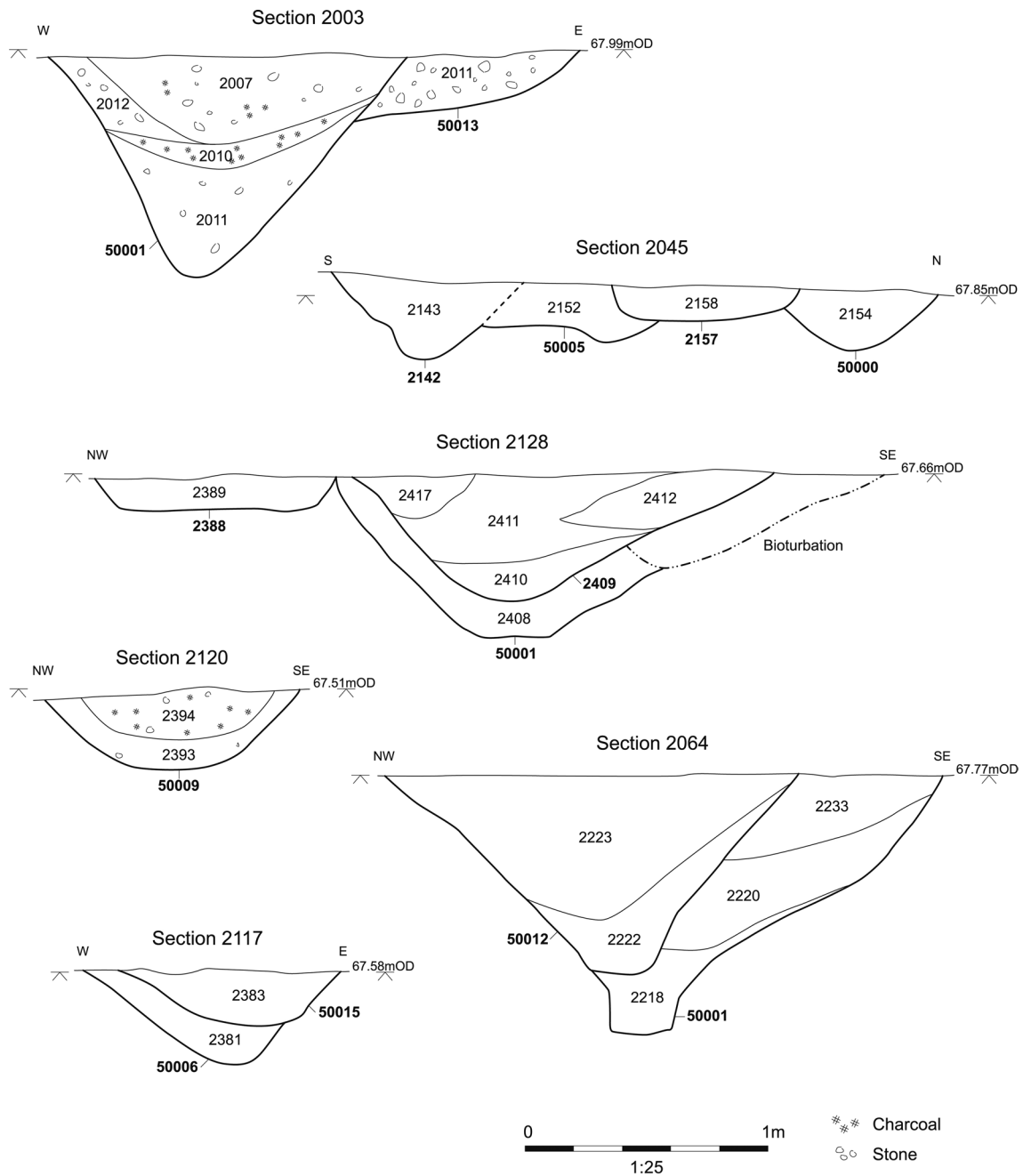


Fig. 3 Sections of selected features

Phase 2 (mid 2nd to 3rd century)

THE ENCLOSURES

Sometime after the middle of the 2nd century, the main enclosure was replaced by a larger enclosure that extended further to the north and east, with additional enclosures beyond. The new version of the main enclosure measured 62m E–W and at least 40m N–S. It was defined by a large, V-shaped ditch (50001) c. 1.6m wide and 0.80m deep, with no evidence for entrances (fig. 3, sections 2003, 2064, and 2128). The ditch was recut several times, including one recut (50012) that could be identified throughout the length of the feature and was of similar dimensions to the original ditch. The pottery from ditch 50001 represented the largest group from a single feature, amounting to c. 1.7kg, and included sherds from several jars in Dorset black-burnished ware from the bottom fill (2408) that suggest a date in the latter half of the 2nd century or the early part of the 3rd century. Two

deposits of burnt crop-processing waste (2010, 2411) were discovered within middle and upper fills of ditch 50012 at locations *c.* 25m apart near the north-west corner of the enclosure. The absence of similar material in intervening interventions indicates that they represent two discrete dumps of material rather than a continuous layer within the ditch.

The line of the eastern side of the enclosure was continued northward for at least a further 30m by a boundary defined by ditch 50006 (fig. 3, section 2117). This was a smaller feature, up to 0.45m deep, which branched off the north-east corner of the enclosure and extended beyond the northern edge of the site. It appears to have been dug at the same time as enclosure ditch 50001, and similarly exhibited evidence for a recut (50015), from which was recovered a significant portion of a samian bowl of Dragendorff form 37 (hereafter Drag. 37) decorated with a repeated erotic scene within a roundel. Ditch 50007/50016 branched off ditch 50006 and extended eastward, perhaps dividing further enclosures to the east of the main enclosure.

An enclosure was added to the north side of the main enclosure by the creation of ditches 50009 and 50010, which extended toward a probable intersection immediately beyond the limit of the excavation area and may have been a single feature (fig. 3, section 2120). The enclosure measured 67m E–W and 25m N–S and was accessed by an entrance, 3.1m wide, at the south-west corner, between the end of ditch 50010, which had a slight outward return, and the adjacent north-west corner of the main enclosure.

AISSLED BUILDING (fig. 4)

A post-built structure, probably of aisled form, was situated within the north-eastern corner of the main enclosure. A scatter of undated pits lay in this area, at least two of which (2073, 2241) predated the structure. The building was represented by postholes that defined the nave and part of the south wall, but no evidence survived for the north wall. The south side of the nave comprised an alignment of six postholes (2175, 2080, 2071, 2061, 2243, and 2065), four of which had a distinctive form, comprising a central socket 0.36–0.58m deep into which the post was set, represented by a post pipe 0.22–0.26m wide, with a packing of redeposited natural substrate inserted around it in a shallower cut that varied in depth from 0.15–0.23m. The other two post settings were represented by slightly larger pits without post pipes, pit 2071 measuring 1.5 x 1.25m and 0.36m deep and pit 2243 measuring 1.25 x 0.8m and 0.6m deep; it is uncertain whether these pits originally held posts or whether they had been dug later and removed the original postholes. Only one of the postholes of the north side of the nave survived (2087), but it clearly exhibited the same distinctive construction technique, the central socket measuring 0.49m deep and the surrounding cut being 0.35m deep. This posthole was the second from the western end of the northern alignment, the postholes to the east of it having been destroyed by a medieval furrow; it was not certain why the posthole at the western end did not survive. The line of the south wall was indicated by three postholes (2059, 2192, 2203), each of which was situated directly opposite the corresponding post of the nave. The postholes of the wall were less substantial than those supporting the nave, the deepest (2203) being 0.3m deep and posthole 2192 surviving to a depth of only 0.07m. The building was 12.5m long, with a nave *c.* 5.5m wide and a southern aisle 2.5m wide.

The southern side of posthole 2071 was cut by a smaller posthole (2075), although the latter feature was off-set from the line of the aisle posts and may have been a later feature that was not associated with the building, and similarly a smaller posthole (2245) was situated between the two postholes at the eastern end of the alignment.

A group of three short linear features (2276, 2468, 2479) situated at the north-eastern corner of the building may have formed part of it, although this was not certain. The features comprised elongated pits or beamslots, features 2276 and 2468 lying on east–west alignments that corresponded with the orientation of the building, while feature 2479 extended laterally between them. The features measured 1.1–1.5m long and 0.4m wide and were shallow with flat bases, none exceeding 0.24m in depth. The fill of feature 2468 contained a deposit of charred plant remains, but these comprised a number of species and therefore did not represent the remains of a timber burnt *in situ*.

The only artefactual evidence from the building consisted of a small sherd of Derbyshire coarse ware, dated AD 140–350, from posthole 2203 and the lower stone of a rotary quern from posthole 2243.

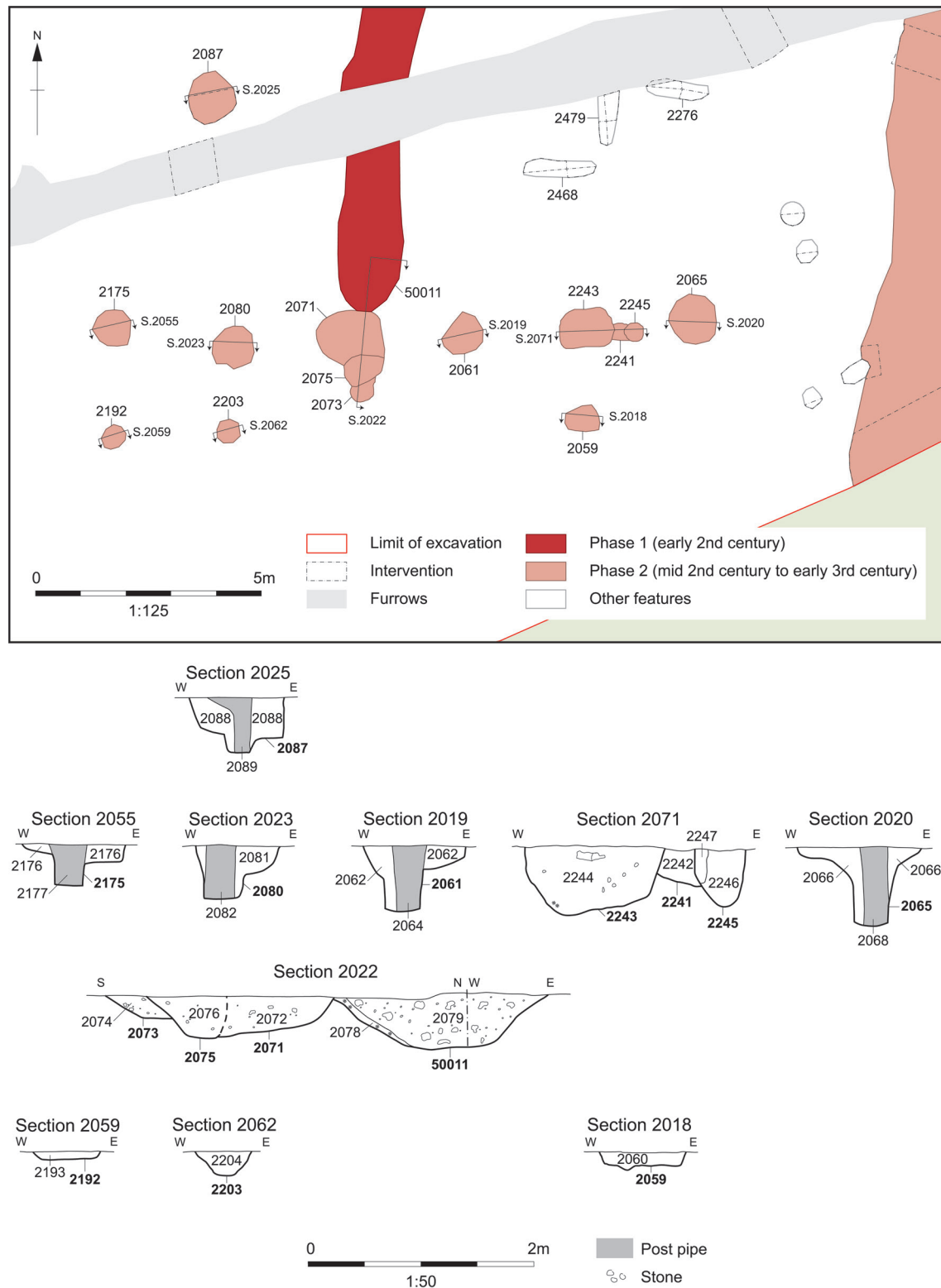


Fig. 4 Plan of aisled building

OTHER FEATURES

Other postholes and small pits were scattered around the enclosure complex; most lay within the main enclosure, with a notable absence within the northern and eastern enclosures, although there was a small concentration outside the enclosures near the western edge of the site. The features were almost completely devoid of artefactual material, although Roman sherds were recovered from pits 2069, 2140, and 2254, and a larger pit (2486) at the eastern edge of the site that was 0.54m deep contained a fragment from the upper stone of a rotary quern. Postholes 2142 and 2157, although lacking artefacts, cut the ditch of the Phase 1 enclosure and were therefore most probably contemporary with the Phase 2 arrangement of the enclosures. Two clusters of features within the main enclosure may have represented structures. The first was a rough alignment of at least five postholes that lay 3.5m from the northern boundary of the enclosure and may have held the posts of a fence line on a parallel alignment (A, fig. 2). The postholes were shallow, measuring 0.15–0.25m deep, and none exhibited evidence for post pipes or yielded artefactual material. The second group (B, fig. 2) was situated in the central part of the enclosure and comprised an ill-defined cluster with a broadly east–west trend. It likewise consisted of shallow postholes without post pipes and may have represented one or more ill-defined structures or fencelines.

Phase 3 (medieval to post-medieval)

Two furrows (50008 and 50014) extended across the site from east–north–east to west–south–west and truncated the Roman enclosure ditches. They correspond with anomalies identified by the geophysical survey.

POTTERY *by Kate Brady*

Some 278 sherds of Roman pottery, weighing *c.* 4.8 kg, were recovered (Table 1). They were recorded using codes set out in the OA recording system for Roman pottery (Booth 2016) and cross-referenced to the National Roman Fabric Reference Collection (Tomber and Dore 1998).

Assemblage composition and supply

REDUCED WARES AND OXIDISED WARES

The assemblage is dominated by reduced wares (R30, R20, R211, R10), making up 29.6% of the assemblage by weight and 28.8% by estimated vessel equivalent (EVE, which measures the surviving percentage of the circumference of a rim, i.e. a complete rim is recorded as 1 EVE, half a rim as 0.5 EVEs). Oxidised wares were rare and constituted only 1.3% of the assemblage by both weight and EVE. The reduced wares were mainly available as jars, including up to five wide-mouthed jars (CM), which were the most commonly identified vessels where enough of the rim and shoulder were present to determine form (fig. 5 nos 1 and 2). In contrast, only one vessel was identified as a narrow-mouthed jar (CC) and one as a medium-mouthed jar (CD). There was also a single small globular jar or beaker with everted rim in a fine reduced fabric with rouletted decoration (fig. 5 no. 3).

The reduced wares are likely to have been made locally or traded within the region. Reduced ware production has been identified at Shenstone, 9.3km (5.5 miles) to the west (Leary 2008), Sherifoot Lane, in Sutton Coldfield, 9.4km (5.5 miles) to the south-west (Evans *et al.* 2014) and Mancetter–Hartshill, 12km (7.5 miles) to the south-east (Hartley 1973). Although the reduced wares at Coton Lane may have originated from unknown local kilns, all of these sites are within a distance 15–20km (9–12 miles) that might be travelled to market (Peacock 1982, 85, 107, 112). No attempt has been made to match individual fabrics found to any of these individual sources, but very similar wide-mouthed jars were produced at Shenstone in the mid to late 2nd century and at Mancetter–Hartshill, and it is therefore a common form produced in the region, with local variations in form fulfilling a common need (Leary 2008).

A single small sherd of a reduced ware bowl or dish had a plain rim but too little was present to tell its full form. However, this is likely to have derived from a black-burnished ware form and dates to the mid 2nd century into the 4th century (Gillam 1976).

The paucity of oxidised wares is a phenomenon identified elsewhere in the region, including on sites along the M6 Toll (Leary 2008). Although this is a small assemblage, it appears to have also been a site where oxidised wares were not favoured. A single oxidised rim was identified as a

TABLE 1 Quantification of the pottery by fabric

Fabric	Description	Sherds	Weight (g)	MV	EVE
B11	Dorset black-burnished ware (DOR BB 1)	87	1254	8	124
B30	Black-burnished type/ imitation fabric	2	18		0
C10	Shell-tempered wares	65	560		0
M23	Mancetter-Hartshill mortaria (MAH WH)	8	880	2	73
M30	Oxidised mortaria with white slip	11	189	1	10
O10	Fine oxidised wares	1	2		0
O20	Sandy/gritty oxidised wares	1	7		0
O40	Severn Valley ware (SVW OX 2)	3	62	1	8
R10	Fine reduced wares	3	35	1	10
R20	Sandy/ gritty reduced wares	2	15		0
R211	Derbyshire coarse ware (DER CO)	7	65		0
R30	Medium sandy reduced wares	74	1566	13	163
S30	Central Gaulish samian ware	10	150	5	141
W10	Fine white wares	2	9		0
W13	Mancetter-Hartshill white ware (MAN WH)	1	4		0
W14	Nene Valley white ware (LNV WH)	1	3		0
	Total	278	4819	31	5.29

MV – minimum number of vessels, EVE – estimated vessel equivalent. Fabric codes from Booth (2016), NRFRC fabric codes in brackets (Tomber and Dore 1998)

curving-sided bowl with a bead rim in Severn Valley ware (O40). The site lies at the eastern limit of the distribution of the Severn Valley products.

BLACK-BURNISHED WARE

Dorset black-burnished ware vessels formed a significant part of the assemblage, comprising 22.1% by weight and 20.6% by EVE. The vessels identified by rims included six cooking pots (fig. 5 nos 4–6) and two straight-sided bowls. Several jars from the bottom fill (2408) of ditch 50001 had a moderately splayed neck with everted and slightly beaded rim tips consistent with a mid to late 2nd century date (Leary 2008) and one had a wavy burnished line on the neck (fig. 5, no. 5), something rare beyond the 2nd century (Gillam 1976). These vessels, combined with the presence of one chronologically significant right-angled lattice (fig. 5, no. 5) and one with a slightly wider obtuse burnished lattice (fig. 5, no. 4), suggests a date in the latter half of the 2nd century, possibly into the 3rd for this context.

The flat rims of two straight-sided bowls are consistent with a later 2nd century date (Gillam 1976), one of which again came from ditch 50001.

MORTARIA

At least three mortaria were present on the site, making up 18.8% of the assemblage by weight and 13.8% by EVE. The form is represented by two large rims from the Mancetter–Hartshill kilns (M23) and an oxidised white-slipped body sherd most probably from Wroxeter or an unidentified local source.

The Mancetter–Hartshill vessels span the period of production, with body sherds being characteristic of the ‘early type’ (c. AD 100–130, possibly continuing a little later) with a sandy fabric and pale trituration grits, and two large rims of ‘later type’ with smoother fabric and dark grey/ black grits produced from c. AD 130/140 onwards. One of these, from ditch 50009 (fig. 5, no. 7), is a form representative of the evolution between the earlier bead and flange forms and the later (post-AD 160) hammerhead rims and is paralleled in Catterick (form M75, AD 160–210, Hartley 2002). The other is from an even later form, with a more pronounced hammerhead rim and traces of red paint from a probable geometric pattern on the rim (fig. 5, no. 8), also paralleled at Catterick (form M84) and dating to AD 200–260.

A white-slipped mortarium body sherd was similar in appearance to Gloucester mortaria, with a soft very sandy fabric, moderate, well-sorted quartz and fine mica inclusions, but it is likely to have a more local source. Similar sherds were identified on the M6 Toll (fabric MWS1) and a possible source in Wroxeter was postulated (Leary 2008), which seems more likely.

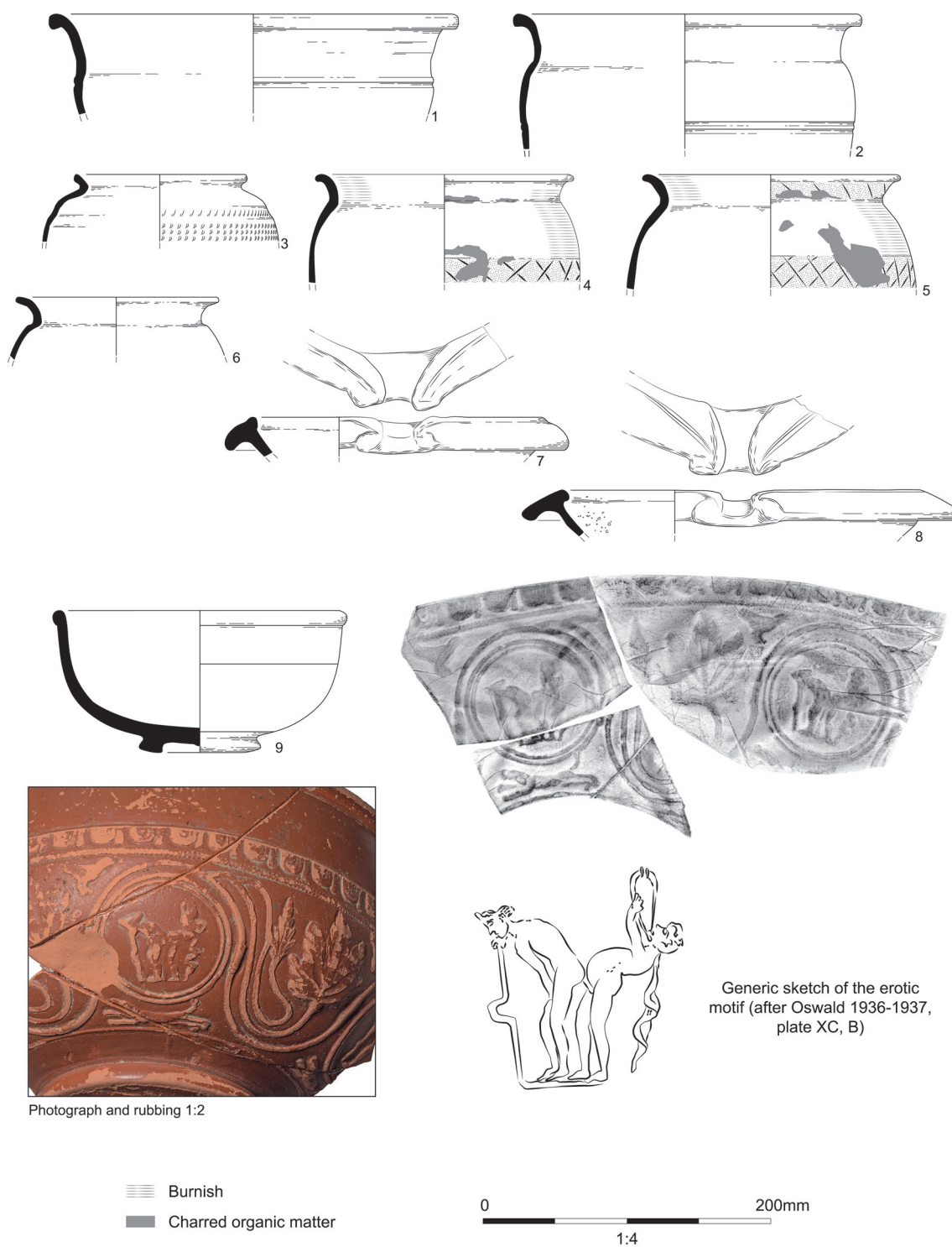


Fig. 5 Roman pottery

OTHER FABRICS

A small number of body sherds in the distinctive Derbyshire coarse ware fabric (included in the reduced ware quantifications above) date to AD 150–350. No rims conclusively in Derbyshire ware were present, but this does demonstrate supply from another regional industry. A rim sherd in a very similar pimply coarse ware fabric appeared to be from a cup-rimmed jar, which is a form common to Derbyshire ware, and if it is not actually a product of this industry it is likely to be a local or regional imitation.

Shelly wares were present and have not been identified to source, and although similar in appearance to South Midlands shell-tempered wares from Bedfordshire, the late date of that fabric would mean this would be the only material of 4th-century date from the assemblage. Given the chronology of the rest of the assemblage, a local source is more likely.

Two small sherds of white ware were recovered, one of which is most similar to products from the Mancetter–Hartshill kilns and one is most likely Nene Valley ware.

IMPORTED WARES

The only imported ware was Central Gaulish samian, which constituted 17.6% of the assemblage by weight and 26.6% of the assemblage by EVE. Forms included several plain vessels: a Drag. 18/31R dish/platter, a Drag. 31R dish/platter, and a Drag. 31R bowl. A complete, although fragmented rim and a significant portion of the body of a decorated Drag. 37 bowl was also found in ditch 50015 (fig. 5, no. 9). It was highly decorated, with, most strikingly, an erotic scene within a roundel, repeated around the body of the bowl, interspersed with vine leaves, birds, and running dogs around the base. There was no name stamp, but the design can be attributed to one of three potters using a mould of this type in Lezoux: Criciro (AD 135–170), Cinnamus (AD 135–180), or Divixtus (AD 145–175) (Oswald 1936; Stanfield and Simpson 1958).

SUPPLY OF POTTERY

Although the assemblage is rather too small to draw any conclusions about the supply to the area, the form of the wide-mouthed reduced ware jars (very similar to those produced at Shenstone) and the paucity of oxidised products fits the pattern observed on sites in the local area, as examined in more detail by Leary (2008) in relation to the M6 Toll sites.

CHRONOLOGY

The majority of the assemblage dated to the later 2nd century with some activity continuing into the early part of the 3rd. The earliest pottery was a sherd of an earlier Mancetter–Hartshill mortarium (AD 100–130), with its coarser fabric and pale trituration grits distinguishing it from the later fabric.

The frequency of black-burnished ware suggests a date after the wider distribution of the fabric (after AD 120), and this, combined with the presence of the earlier Mancetter–Hartshill mortarium, means that the earliest activity on the site may date to the second quarter of the 2nd century. The *floruit* of activity appears to be from the mid 2nd century, with the appearance of well-dated Central Gaulish samian ware forms, including the Drag. 37 decorated bowl, more closely dated by the decoration to AD 135–180, and a Drag. 31R bowl dated to AD 160–200 (Webster 1996). Despite samian table wares being more likely to be ‘curated’ and in use longer than coarse wares, this dating is supported by the likely date of the frequent occurrence of wide-mouthed jars (mid to late 2nd century) and the appearance of Derbyshire ware from around AD 150.

This dating is further supported by the presence of a straight-sided, flat-rimmed bowl in black-burnished ware and a similar vessel in reduced ware found in the same context as Central Gaulish samian ware, supporting a late 2nd-century date for these. The angles of the burnished lattice decoration and the splayed rims on several black-burnished ware cooking pots suggest a date of at least the very late 2nd century and probably into the early 3rd century (Gillam 1976).

The later Mancetter–Hartshill fabrics make up the majority of the mortarium sherds and date to AD 130 at the earliest. The earlier of the two rims dated to AD 160–210 and the later, in the smoother fabric with a painted hammerhead rim, to AD 200–260, further suggesting that the period of main activity took place in the late 2nd to early 3rd century.

Although the absence of material in such a small assemblage should never be considered a conclusive dating tool, there are some aspects of this assemblage that can be noted with caution. The absence of sherds in fabric group E wares of late Iron Age tradition may preclude a 1st-century date, although material of this type is fairly scarce in the area anyway (Leary 2008). However, there also

were no typically early forms such as platters or flagons and no Malvernian wares, which would have suggested activity in the 1st century. There were no regional fine wares from the Oxford or Nene Valley industries, underlining the lack of significant occupation activity in the later Roman period, when some of this material would be expected. No context groups were dated by pottery after *c.* AD 260, suggesting that pottery deposition ceased, and the settlement had been abandoned, before the late Roman period.

POTTERY USE AND SITE STATUS

One mortarium sherd in Mancetter–Hartshill fabric had a hole made after firing on the lower wall near the base. This may have been for a repair but no cleat remained. The black-burnished ware jars from context 2408 were all heavily concreted on the exterior with soot and this supports their use as cooking pots.

The assemblage is fairly small and in-depth analysis on status and inter-site comparison is not possible, but the character of the assemblage suggests food preparation, cooking and serving practices, supplemented by fine table wares and demonstrating some knowledge of dining in the Roman tradition. The site is located close to the NW–SE route of Watling Street and the NE–SW aligned Fosse Way, both of which would have provided good access to exotic and regionally traded goods. Amphorae were not present, but the assemblage is too small to suggest this meant that the settlement had no access to wine or olive oil. The decorated samian bowl is likely to have been a conversation piece, although not necessarily a high-status item, with erotic scenes being popular motifs along with hunting scenes, gladiatorial battles, and mythical scenes on highly decorated samian vessels. Internal wear restricted to a concentrated and well-defined area in the centre at the base, similar to wear patterns seen on mortaria, shows that the vessel was well used, probably for mixing, but also that it was presumably kept for a fairly long time. This highlights its function as a utilised vessel, not necessarily as ‘fine china’ or a decorative piece. A thumb print was present on the base of the bowl, which may have been accidentally made during manufacture, but its position inside the footring may mean that it was deliberate and a way of marking the pot in a similar way to a stamp.

POTTERY CONDITION AND PATTERN OF DEPOSITION

The mean sherd weight of 19.3g indicates a moderately to well preserved assemblage that is unlikely to have been deposited far from its point of use and it is unlikely that the sherds were redeposited many times prior to final deposition. Even without the larger and heavier mortarium sherds, the mean sherd weight is 16.7g and this is still a moderately well preserved assemblage.

The pottery was overwhelmingly recovered from ditches, a pattern which suggests that the primary method of deposition was to dump domestic waste into the ditches surrounding the settlement. The pattern of pottery deposition and condition also suggests that while deposition was concentrated in ditches, there was no significant difference in the condition of the pottery across feature types, suggesting that the pottery was subject to a similar process of waste management after breakage and initial discard. The preservation of such a large portion of the decorated samian bowl suggests it was not deposited far from its point of use and may have originated from one of the buildings on the site.

CATALOGUE OF ILLUSTRATED POTTERY (fig. 5)

1. Wide-mouthed necked reduced ware jar with everted rim *c.* AD 160–200. Context 2058, fill of ditch 50001.
2. Wide-mouthed necked reduced ware jar with everted rim. *c.* AD 160–200. Context 2223, fill of ditch 50015.
3. Fine reduced ware globular jar with everted rim and roulette decoration. *c.* AD 100–200. Context 2198, fill of ditch 50003.
4. Cooking pot, black-burnished ware with lattice decoration, everted rim with slightly beaded rim and heavily sooted exterior. *c.* AD 200–250. Context 2408, fill of ditch 50001.
5. Cooking pot, black-burnished ware with lattice decoration and heavily sooted exterior. *c.* AD 200–250. Context 2408, fill of ditch 50001.
6. Cooking pot, black-burnished ware with sooted exterior and everted rim. *c.* AD 200–250. Context 2408, fill of ditch 50001.
7. Mortarium, Mancetter–Hartshill with bead and flange transitioning to hammerhead rim. *c.* AD 160–210. Context 2394, fill of ditch 50009.

8. Mortarium, Mancetter–Hartshill later type with hammerhead rim and trace of red paint. *c.* AD 200–260. Context 2052, fill of ditch 50006.
9. Bowl (Drag. 37), Central Gaulish (Lezoux) samian ware showing repeated erotic scene separated by vine leaves. The erotic motif was used by Criciro, Divixtus, and Cinnamus ii, with the style being most reminiscent of the work of Cinnamus ii (eg Stanfield and Simpson 1958, plate 162), *c.* AD 135–180. Context 2233, fill of ditch 50006. 2408, fill of ditch 50001.

QUERNS *by Ruth Shaffrey*

Fragments from two rotary querns were found, both of probable Millstone Grit. A large fragment that was the only artefact from posthole 2243 is a typical lower stone of the Roman period, the complete perforation suggesting a middle or later Roman date. An upper stone found in pit 2486 is also of typical form, this time of disc type with flat faces. Millstone Grit was the preferred quern material in the Midlands during the Roman period. However, the difference in the petrology of the two querns suggests that they are not from the same source and it is not clear precisely where they were manufactured.

WORKED FLINT *by Michael Donnelly*

Two flint flakes were recovered, one of which was very large at 106 x 86 x 10mm. It is one of the largest flakes that this analyst has seen and similar flakes have been restricted to sites of upper Palaeolithic or Mesolithic date, although its full date range could extend into the Neolithic period or beyond. It is not inconceivable that it may have been struck from a core producing large tool blanks and is clearly from a nodule of very high quality flint, something that is lacking in the local area. This raises the possibility that it is not prehistoric and may have been lost by a modern flint knapper or perhaps even may have related to a gunflint industry, where large blade-like pieces were sought for the production of regular gunflint blanks, presumably fashioned from high-quality flint nodules.

OTHER FINDS *by Cynthia Poole and Ian R Scott*

The only metal object was a complete but heavily encrusted iron nail from ditch 50001. The Roman tile comprises fragments of two tegulae and an imbrex. One of the tegula fragments was recovered from enclosure ditch 50001, whilst the other two tiles were found in furrow 50008, which cut across the Roman enclosure.

CHARRED PLANT REMAINS *by Sharon Cook*

Thirteen bulk soil samples were taken during the excavation, and following an assessment of the flots, which determined that generally the charred plant remains from this site are in poor condition with heavy external encrustation as a result of mineral precipitation, two samples, both from ditch 50012, were selected for further analysis. Generally, despite the poor condition of charred remains elsewhere on this site, the two samples contained a substantial quantity of charred material, some of which is well preserved. Heavy external encrustation on the exteriors of the charred material, a slight metallic appearance to some of the charcoal, and evidence of vivianite staining, together with occasional extremely well preserved individual grains, indicates that this ditch was at least partially water-filled at the time of deposition. Unfortunately, while this has led in some cases to exceptional preservation, this encrustation has obscured many details.

Both flots include cereal grains and chaff, with glume base fragments and other chaff forming the majority of the charred assemblages and cereal grain forming the next most frequent component (Table 2). Uncultivated species form only a small part of the total number of identified items, possibly because smaller seeds had been removed by fine sieving. While oat awns are present, the fragments are extremely small and are likely to represent only a small number of complete specimens. The two samples differ slightly, with only small numbers of barley grains in sample 2001 and a much larger quantity in sample 2006. Wheat (*Triticum* sp.) grains are fairly frequent in both samples and on the basis of the glume base fragments are likely to be mainly, or entirely, glume wheat (*T. spelta/dicoccum*). Despite the large quantity of glume base fragments, due to extensive fragmentation and heavy external encrustation only a few could be identified to species and these are spelt

TABLE 2 Summary of charred plant remains from ditch 50012

Sample no.		2001	2006
Context no.		2010	2411
Processed soil volume (l.)		35	40
Flot volume (ml)		375	100
Flot analysed		25%	50%
Charcoal			
	>4mm	***	***
	2-4mm	****	****
Cereal grain			
<i>Triticum</i> sp.	wheat	24#	24#
cf <i>Triticum</i> sp.	cf. wheat	13#	12#
<i>Hordeum</i> sp.	barley		49#
cf <i>Hordeum</i> sp.	cf. barley	3#	27#
<i>Secale cereale</i>	rye	5#	6#
<i>Avena</i> sp.	oat	8#	28#
<i>Avena/Bromus</i>	oat/brome	13#	36#
Cerealial	indet cereal	114#	224#
Chaff			
<i>Triticum dicoccum/spelta</i>	emmer/spelt glume base	1422#	513#
<i>Triticum dicoccum/spelta</i>	spikelet forks	5#	3#
<i>Triticum spelta</i>	spikelet forks	6#	
<i>Triticum/Hordeum</i>	rachis fragments	188#	54#
<i>Hordeum</i> sp.	barley rachis fragments	6#	5#
<i>Avena</i> sp.	oat awns	***	***
<i>Avena</i> sp.	oat floret fragment	1#	1#
Cerealial	indet detached embryos	10#	27#
Wild Species			
<i>Vicia/Lathyrus</i> sp. <2 mm	vetch/vetchling/tare etc		2#
<i>Persicaria</i> sp.	knotweed	2#	1
<i>Rumex</i> sp.	docks	6#	9#
<i>Spergula arvensis</i>	corn spurrey	1	
<i>Chenopodium album</i>	fat hen	1#	12
<i>Veronica hederifolia</i>	ivy-leaved speedwell		1
Asteraceae	daisy family		5#
<i>Leucanthemum/Tripleurospermum</i> sp.	oxeye daisies/mayweed	2#	
<i>Tripleurospermum</i> sp.	mayweeds	3#	3#
<i>Juncus</i> sp.	rushes	3	
<i>Carex</i> sp.	sedges	1	5#
Poaceae	grass seeds (various)	8#	13#
Other			
<i>Raphanus raphanistrum</i>	wild radish seed capsules	9# + 1	8# + 1
Indet	tubers/rhizomes	3#	
Indet.	seed/fruit	16#	14#

Majority fragmented, vitrified or missing some external indicators. *1-5, **5-25, ***25-50, ****50-100, *****100+

wheat (*Triticum spelta*). Given the middle Roman date, it is likely that the majority of wheat was of this type, as this is typically the case for sites of this date in the West Midlands (Esmonde Cleary 2011). It is unclear whether the cereals were grown as separate crops or as maslins (van der Veen 1995). Rachis fragments are fairly abundant in both samples, but a large proportion of the cereal grains are too fragmented to fully identify so it is not possible to accurately assess the full make-up of the grain assemblage. A large proportion of the cereal grains are very small in size and appear to be tail grains, i.e. the small grains usually found towards the base of the ear.

The presence of a few rye (*Secale cereale*) grains is interesting, as in the past the general consensus was that rye from Roman contexts in Britain represented crop contaminants rather than a crop in its own right (Campbell 2016; Sencer and Hawkes 1980), but more recent research has concluded that it was probably a minor crop in areas of marginal soils (Lodwick 2017, 20–1). Rye chaff and grains discovered during excavation for the M6 Toll (Stevens 2008, 459) provide evidence for its use in the Tamworth region. It is possible that the paucity of rye in Roman assemblages is because the brittle floret of the rye grain makes them particularly prone to casual dispersal, or is a result of their preference for light sandy soils, which may affect preservation.

The small uncultivated plant assemblages are similar in both samples; the majority are common crop contaminants or found in field margins or waste places, such as grass seeds (Poaceae), fat hen (*Chenopodium album*), docks (*Rumex* sp.) and wild radish (*Raphanus raphanistrum*).

It would seem likely, based on the lack of charred remains within the other sampled contexts on this site, that samples 2001 and 2006 represent individual dumps of crop-processing waste.

CHARCOAL by Julia Meen

Following assessment of the 13 bulk samples, identification of charcoal was undertaken for samples 2001 and 2006 from ditch 50012 and sample 2008 from possible beamslot 2468 in order to characterise the wood taxa present (Table 3). There was only a small quantity of charcoal in sample 2008, and this was frequently of small size. Where pieces were large enough to attempt identification, a high proportion could be classed only as indeterminate. Similarly, the charcoal in sample 2006 was often poorly preserved, being friable and mineral encrusted, so that again many pieces could be classed only as indeterminate, or at best as diffuse porous (e.g. hazel) or ring porous (e.g. oak). For these reasons, identification of 50 pieces only was attempted for samples 2006 and 2008. In sample 2001, charcoal was more abundant and generally well preserved, and so a full 100 pieces were identified.

Samples 2001 and 2006 were both mixed but contain a similar range of wood taxa, with hazel (*Corylus avellana*) and oak (*Quercus* sp.) being the most common species. Although more than half the fragments from sample 2006 could not be identified to species, the majority of these could be seen to be diffuse porous, and at least some of these are presumably also hazel. Ash (*Fraxinus excelsior*) and *Prunus*-type wood was also present in lower quantity in both samples, with the *Prunus* in sample 2001 particularly common and sufficiently well preserved to be identified as blackthorn (*Prunus spinosa*). A single twig of leguminous wood in sample 2001 is most likely to be broom (*Cytisus scoparius*) or gorse (*Ulex europaeus*), suggesting the presence of heathland nearby. The mixed character of both assemblages, which include a similar range of wood taxa and some clear examples of roundwood in sample 2001, indicates that they are most likely to be dumped rakings from domestic hearths, with the types of wood used as fuel chosen from resources available locally with little sign of discriminate selection.

Sample 2008 was recovered from a charcoal-rich possible beamslot (2468). Identification of the charcoal shows that the burnt remains do not represent an original structural timber that lay in the slot, as they comprise a mixture of three taxa – oak, hazel, and blackthorn/cherry. The similarity of this assemblage to the other two samples suggests that it similarly represents a dump of mixed fuel material.

DISCUSSION

The investigation at Coton Lane is the first substantial excavation of a Romano-British settlement in the Tamworth area, the only previous excavation being limited trenching of a cropmark site at Lichfield Road Industrial Estate, 600m to the south (Simpson 1986). Indeed, understanding of the Roman period in Staffordshire as a whole has been hampered by a lack of large-scale excavations and a historic concentration on the few villas and on military sites or nucleated settlements rather

TABLE 3 Summary of the charcoal

	Sample no.	2001	2006	2008
	Context no.	2010	2411	2469
	Feature no.	50012	50012	2468
	Feature type	Ditch	Ditch	Beamslot
	Processed sample vol.	35L	40L	40L
Rosaceae				
<i>Prunus spinosa</i> L.	blackthorn	5		
<i>Prunus</i> cf <i>spinosa</i> L.	cf. blackthorn	3		
<i>Prunus</i> spp.	blackthorn/cherry	1	2	10
cf <i>Prunus</i>	cf. blackthorn/cherry	1		
Maloideae	hawthorn type	1 r		
Fagaceae				
<i>Quercus</i> spp.	oak	13	7	18
cf <i>Quercus</i>	cf. oak	6	6	3
Betulaceae				
<i>Corylus avellana</i> L.	hazel	21 (r)	1	6
cf <i>Corylus avellana</i> L.	cf. hazel	7 (r)	1	1
<i>Corylus/Alnus</i>	hazel/alder	6		2
cf <i>Corylus/Alnus</i>	cf. hazel/alder	2	3	
Salicaceae				
<i>Salix/Populus</i> sp.	willow/poplar	2		
cf <i>Salix/Populus</i>	cf. willow/poplar	4		
Sapindaceae				
cf <i>Acer campestre</i> L.	cf. field maple	1		
Oleaceae				
<i>Fraxinus excelsior</i> L.	ash	20 (r)	3	1
cf <i>Fraxinus excelsior</i> L.	cf. ash		1	
Fabaceae				
	legume wood	1 r		
indet diffuse porous			14	
indet ring porous			2	
Indet		6	7	9 (r)
Bark			3	
Total		100	50	50

r=roundwood

than rural farmsteads, although the evidence of cropmarks on the gravel terraces of the rivers Trent and Tame and earthworks on the limestone plateaux of the Peak District indicate that the latter are numerous (Blake *et al.* 2018). In addition to the site at Lichfield Road Industrial Estate, the cropmark evidence from the Tame Valley includes a complex of at least four rectilinear enclosures and possible roundhouses c. 400m west of the site and a possible discrete rectilinear enclosure c. 650m to the north-west, which, if contemporary, provide evidence for a densely settled landscape of which the Coton Lane farmstead formed a part. Further north along the valley, part of a farmstead adjoining a droveway has been excavated at Fisherwick and another farmstead has been investigated near the confluence with the Trent at Whitemoor Haye, further attesting to the agricultural exploitation of the valley gravels during this period (Miles 1969; Coates 2002).

The excavation yielded evidence for a farmstead composed of a complex of rectilinear enclosures, with evidence for an aisled building, crop processing, and a significant assemblage of pottery. The farmstead, or at least the part of it that lay within the excavation area, began as a single rectangular enclosure, which was subsequently extended and additional enclosures added to the north and east.

The dating of the initial arrangement was not certain, as it was associated with only a few sherds of pottery, which could be attributed only broadly to the Roman period, but in the absence of certainly earlier material a date early in the 2nd century seems likely. The expansion of the settlement occurred during the middle of the century, and occupation continued into the first half of the 3rd century.

The postholes that were scattered around the site, particularly within the main enclosure, indicate that structures were present, although many may have represented fence lines, pens for livestock, and small-scale or temporary structures. The best evidence for a more substantial structure was the aisled building near the north-eastern corner of the main enclosure. Although partly truncated by later ploughing, this was clearly a post-built structure composed of five roughly equal bays, with a length of 12.5m and comprising a nave *c.* 5.5m wide and a southern aisle 2.5m wide. No evidence survived for the northern aisle, but such structures are typically symmetrical so overall dimensions of 12.5 x 10.5 can be assumed, the northern side perhaps having been constructed differently, with wall posts resting on the ground or on pads, and having been completely truncated by ploughing. The roof tile fragments recovered were too few to represent the remains of a complete roof and are likely to have been brought to the site for use in smaller structures such as ovens, and it is therefore probable that the building was constructed entirely in timber, with a roof of thatch, turf, or shingle. The windows were evidently not glazed and so must have been shuttered. A sherd of Derbyshire coarse ware from one of the postholes indicated a date after AD 140 and the building was built over Phase 1 ditch 50011, which must have been infilled by this time. Buildings of any sort are rare on farmsteads in the region, and it is likely that most used materials and construction techniques that leave little or no archaeologically-detectable trace, such as timber-framing, sill beams or padstones, or walls of cob or turf (White and Hodder 2018a, 7). Evidence for roundhouses was recorded at two sites on the M6 Toll project (Powell and Ritchie 2008, 314; Simmonds 2008a, 238) and it seems likely that this remained the principal form of domestic building during the Roman period, in which case the adoption of a rectilinear form at Coton Lane may have represented a notable innovation for a settlement in this region. Aisled buildings are rare in the West Midlands compared to areas to the south, and are associated typically with villas or nucleated settlements rather than farmsteads such as Coton Lane (Smith 2016, fig. 3.18). A building similar to the Coton Lane example, albeit much damaged by ploughing, has been excavated 21km (13 miles) to the east on a farmstead at Normanton-le-Heath, Leicestershire (Trimble 1991, 8–12), and a more substantial building some 29.5m long was found at Site 34 of the M6 Toll, in an uncertain context that may be a villa complex (Simmonds 2008b, 64–6). Buildings of this type appear to have served a range of functions, sometimes domestic but in other instances agricultural or industrial (Smith 2016, 67–9). Commonly, as at Coton Lane, the evidence for the use of the building is slight. The presence of the lower stone of a rotary quern in posthole 2243 might hint at a domestic role for the Coton Lane building, although there was no evidence for a concentration of other domestic material in and around it to support this interpretation. Since the settlement extended beyond the limits of the excavation area, it is not possible to be certain whether the aisled building was the principal structure or whether other buildings lie undiscovered in the unexcavated area to the south of the site.

The daily lives of the population are likely to have revolved around agricultural activity, and it is therefore unfortunate that, owing to the acidic soil conditions, no animal bone survived, as this precludes any discussion of the balance between arable production and husbandry. It can be suggested, however, that the settlement's location at the edge of the floodplain may have been selected, at least in part, to allow ready access to the pastures alongside the river, and it is possible that the northern and eastern enclosures, which evidently did not contain domestic occupation, were paddocks for livestock. A broadly similar arrangement of conjoined rectilinear enclosures is evident at the cropmark site *c.* 400m to the west and at the excavated site at Fisherwick, indicating that the settlements may have had a similar form, associated with a common range of husbandry strategies. The dumps of burnt crop-processing waste in ditch 50012 provide some evidence for the crops that were grown, albeit these two discrete deposits are unlikely to contain the full range of cultivated crops. The main species represented in the deposits was wheat, all the identified specimens being spelt although the presence of emmer cannot be ruled out. Rye and oats were also present in small quantities. This range of crops, with the probable addition of barley, is typical of farmsteads of the period in the West Midlands, and in Britain more widely (Stevens 2008, 458–9; Lodwick 2017, 16–21). It is likely that the community's agricultural strategy was designed to exceed the production necessary for subsistence purposes, and to this end Lodwick (2017, 32–3) has suggested that the predominance of spelt represents an emphasis on one crop to create surplus for the market or supply food to the military and urban populations. The

location of the two dumps close to the north-eastern corner of the main enclosure may indicate that this part of the settlement was devoted to crop-processing activities.

The ceramic evidence indicates that occupation of the settlement did not extend long, if at all, beyond the middle of the 3rd century, the latest pottery being sherds from Mancetter–Hartshill mortaria that are unlikely to date after *c.* AD 260. A similar end date was indicated for the settlements at Lichfield Road Industrial Estate, Fisherwick, and Whitemoor Haye, and there is little evidence for occupation later than the third century on sites in the Tame Valley that have been investigated by fieldwalking, suggesting that there may have been widespread abandonment of settlements in the Tame Valley at this time (White and Hodder 2018a, 11). A similar phenomenon has been noted for rural farmsteads elsewhere in the West Midlands (*ibid.*), although the relatively blunt tool of ceramic dating is not able to demonstrate conclusively whether these abandonments were strictly contemporary and therefore likely to result from a common cause. It is difficult to see where the displaced population could have gone, since there is no evidence for a corresponding increase in occupation at the region's few villas and urban centres, and there may even have been a contemporary decline in activity at Wall, where the baths and *mansio* were probably abandoned and demolished during the 3rd century (Blake *et al.* 2018, 143). It may indeed be that the region experienced a significant episode of depopulation, and this is a question in need of regional research: if there was a population decline, what caused it? Is there evidence for economic setback or recession, and if so was it regional or more widespread? How does evidence of settlement abandonment compare with cemetery populations in the same period? Is it alternatively possible, as White and Hodder (2018a, 11) have proposed, that the population migrated to new locations that represent the genesis of the medieval settlement pattern and are hidden beneath present villages?

The excavation has provided valuable evidence for a rural farmstead, a type of settlement that has seen relatively little excavation in Staffordshire, despite their prevalence. The Coton Lane settlement had several attributes that indicate a greater adoption of Roman culture than is indicated by other sites in the county, such as the adoption of the aisled building and imported table wares that may have been used in dining in the Roman tradition, most notably the bowl with the erotic decoration. This suggests that both the appearance of the farmstead and the habits and values of its inhabitants differed significantly from contemporary settlements such as Site 29 on the M6 Toll Road, where roundhouses and limited ceramic assemblages were the norm. Elsewhere, however, as at the M6 Toll Site 34, a very limited ceramic assemblage was recovered from a site with a very substantial aisled building, so the correlation between architecture and widespread use of 'Roman' material culture was not always straightforward (Booth 2008, 527–8, 531–2). Viewed from a regional context, this contrast forms part of a clear difference that is evident between the north and north-western parts of the west midlands and the south and south-eastern parts (White and Hodder 2018a, 11). The latter area, broadly comprising the Cotswolds and the Avon Valley in southern Worcestershire and Warwickshire and including the Tame and Trent valleys, is more similar to the south of England, characterised by the adoption of Roman settlement types, architectural forms, and material culture, whereas the north-western area, consisting of north Worcestershire and most of Staffordshire, Herefordshire, and Shropshire away from the nucleated centres and the few villas, comprises simpler settlements with a very limited range of material culture. The contrast between the two areas presumably reflects a very real contrast in the lifestyles and values of the population, those in the south-eastern area being more thoroughly integrated into the wider economy and being engaged in the production of a surplus of produce for the market or to supply the military and urban sites in return for (relatively) exotic commodities, while their north-western neighbours pursued a more traditional lifestyle, presumably producing little above subsistence level. The settlement at Coton Lane forms part of the south-eastern group, and along with other sites in the Tame and Trent Valleys forms the limit of this distribution.

ACKNOWLEDGEMENTS

Oxford Archaeology would like to thank Michael Dawson, CgMs Heritage (now RPS), for commissioning this project on behalf of Persimmon Homes. Thanks are also extended to Debbie Taylor, Cultural Heritage Consultant, who monitored the work on behalf of Staffordshire County Council, for her advice, guidance, and patience. The project was managed for Oxford Archaeology by Carl Champness and the post-excavation analysis was managed by Andrew Simmonds. The fieldwork was directed by Robert McIntosh, who was supported by Peter Velleth, BJ Ware, Caroline Souday, Camille Guezennec, Benjamin Slader, and Jody Bloom. Survey and digitising was carried out by

Benjamin Brown and Matt Bradley. Charles Rousseaux and Matt Bradley drew the figures and Magdalena Wachnik took the photograph of the samian vessel for figure 5. Thanks are also extended to the teams of OA staff that cleaned and packaged the finds under the management of Leigh Allen, processed the environmental samples under the management of Rebecca Nicholson and prepared the archive under the management of Nicola Scott.

BIBLIOGRAPHY

- BGS 1971 Geological Survey of Great Britain, sheet 154 (Lichfield)
- Blake, S., Dean, S., and Wardle, C. 2018 'Staffordshire in the Roman period', in White and Hodder 2018b, 136–57
- Booth, P. 2008 'Romano-British period discussion', in Powell *et al.*, 516–35
- Booth, P. 2016 'Oxford Archaeology Roman pottery recording system: an introduction' (Oxford Archaeology unpublished document, updated November 2016)
- Campbell, G. 2016 'Market forces – a discussion of crop husbandry, horticulture and trade in plant resources in southern England', in D. Bird, *Agriculture and industry in south-eastern Roman Britain* (Oxbow Books, Oxford), 134–55
- Coates, G. 2002 *A prehistoric and Romano-British landscape: excavations at Whittemoor Haye Quarry, Staffordshire, 1997–1999* (Brit Archaeol Rep Brit Ser 340, Oxford)
- Esmonde Cleary, S. 2011 'The Romano-British period: an assessment', in S. Watt (ed.), *The archaeology of the West Midlands: a framework for research* (University of Birmingham)
- Evans, J. C., Booth, P. and Hodder, M. A. 2014 'A Romano-British pottery kiln at Sherifoot Lane, Sutton Coldfield', *Trans Birmingham and Warwicks Arch Soc* 117, 1–32
- Gillam, J. P. 1976 'Coarse fumed ware in northern Britain and beyond', *Glasgow Archaeol Jnl* 4, 57–89
- Hartley, K. F. 1973 'The kilns at Mancetter and Hartshill, Warwickshire', in A. Detsicas (ed.), *Current research in Romano-British coarse pottery: papers given at a C.B.A. Conference held at New College, Oxford, March 24 to 26, 1972* (CBA Research Report 10), 143–7
- Hartley, K. F. 2002 'Mortaria', in P. R. Wilson *Cataractonium: Roman Catterick and its hinterland. Excavations and research, 1958–1997* (CBA Research Report 128, York), 383–94
- Leary, R. 2008 'Romano-British pottery, industry and trade', in Powell *et al.*, 471–84
- Lodwick, L. 2017 'Arable farming, plant foods and resources', in M. Allen, L. Lodwick, T. Brindle, M. Fulford, and A. Smith, *New visions of the countryside of Roman Britain, vol 2: the rural economy of Roman Britain* (Britannia Monograph No. 30), 11–84
- Miles, H. 1969 'Excavations at Fisherwick, Staffs., 1968 – a Romano-British farmstead and a Neolithic occupation site', *Transactions of the South Staffordshire Archaeological and Historical Society* 10, 1–22
- OA 2017 Windmill Hill Farm, Coton Lane, Tamworth: archaeological evaluation report (Oxford Archaeology unpublished client report, <https://library.thehumanjourney.net/5701/>)
- Oswald, P. 1936 *Index of figure types on terra sigillata* (University Press, Liverpool)
- Peacock, D. P. S. 1982 *Pottery in the Roman world: an ethno-archaeological approach* (Longman, London)
- Powell, A. B. and Ritchie, K. 2008 'North of Langley Mill (Site 29)', in Powell *et al.*, 306–36
- Powell, A. B., Booth, P., Fitzpatrick, A. P. and Crockett, A. D. 2008 *The archaeology of the M6 Toll, 2000–2003* (Oxford Wessex Archaeology Monograph No. 2, Oxford and Salisbury)

- Sencer, H. A. and Hawkes, J. G. 1980 'On the origin of cultivated rye', *Biological Journal of the Linnean Society*, 13, 299–313
- Simmonds, A. 2008a 'East of Birmingham Road Nurseries (Site 15)', in Powell *et al.*, 230–289
- Simmonds, A. 2008b 'West of Crane Brook Cottage, Hammerwich (Site 34)', in Powell *et al.*, 62–79
- Simpson, A. 1986 'Tamworth, Romano-British enclosure', *West Midlands Archaeology* 29, 39–41
- Sims, M. 2005 West Coast Mainline, Coton Lane, Tamworth, Staffordshire: archaeological watching brief report (Oxford Archaeology client report, <https://library.thehumanjourney.net/545/>)
- Smith, A. 2016 'Buildings in the countryside', in A. Smith, M. Allen, T. Brindle, and M. Fulford, *New visions of the countryside of Roman Britain, vol 1: the rural settlement of Roman Britain* (Britannia Monograph No. 29), 44–74
- Stanfield, J. and Simpson, G. 1958 *Central Gaulish potters* (Oxford University Press, London)
- Stevens, C. 2008 'Environmental and agricultural economy', in Powell *et al.*, 457–60
- Sumo 2017 Geophysical survey report: Coton Lane, Tamworth, Staffordshire (Sumo Survey unpublished client report no. 11085)
- Tomber, R. and Dore, J. 1998 *The national Roman fabric reference collection: a handbook* (MoLAS Monograph 1, London)
- Trimble, R. 1991 The excavation of a Romano-British farmstead at Normanton-le-Heath, Leicestershire (Leicestershire Archaeological Unit, <https://doi.org/10.5284/1023672>)
- Van der Veen, M. 1995 'The identification of maslin crops', in H. Kroll and R. Pasternak (eds), *Res Archaeobotanicae* (Kiel), 335–43
- Webster, P. 1996 *Roman samian pottery in Britain* (CBA, York)
- White, R. and Hodder, M. 2018a 'The archaeology of the Romano-British West Midlands: overview and research priorities', in R. White and M. Hodder 2018b, 1–14
- White, R. and Hodder, M. (eds) 2018b *Clash of cultures? The Romano-British period in the West Midlands* (Oxbow Books, Oxford)
- Wilkinson, D. 1992 Oxford Archaeological Unit field manual (Oxford Archaeology unpublished document)

LICHFIELD'S MEDIEVAL URBAN GROWTH: EXCAVATIONS AT 15 SANDFORD STREET AND IN BIRD STREET

JOHN HUNT

comprising reports by
NICK TAVENER, RICHARD STONE, JO WAINWRIGHT,
and STEPHANIE RÁTKAI,

with contributions by
IAN BAXTER, ELIZABETH PEARSON, PHIL PARKES, MARIANNE COLE,
and LYNNE BEVAN

SUMMARY

Several sites in Lichfield have been the subject of significant excavations over the last three decades, but a number of these have not been fully published. This article presents reports on three excavations in Sandford Street and Bird Street which have contributed to our knowledge of the development of the north-western part of the town and the formation of the Minster Pool, shown to have been created or enlarged during the 12th century. The Sandford Street site has revealed phases of activity pre-dating the mid 12th century but is shown to have flourished in the 13th and 14th centuries, reflecting the growth of the medieval town. A number of burials excavated at No 1 Bird Street, thought to have been associated with the Franciscan friary, are also discussed. The results of the excavations are considered in the light of the topographical and morphological models proposed by Steven Bassett and Terry Slater, and are contextualised against the wider series of excavations across the town to consider what they as a whole have contributed to our understanding of Lichfield's medieval urban growth.

INTRODUCTION

This report differs from the usual format in that it actually comprises the accounts of three 'legacy' excavations carried out in Lichfield at the turn of the millennium. The work was undertaken by the highly-regarded *Marches Archaeology*, a small archaeological unit based in Shropshire, but when they ceased trading around 2006 their excavations in Bird Street and Sandford Street were among those projects that were left unpublished. However, the Sandford Street report was in an advanced state of preparation for publication, while 'grey literature' reports had been completed for the archaeological recording in Bird Street. The amount of unpublished work is a significant concern for archaeology in the west midlands region and therefore the opportunity has been taken to bring this work together in one report (cf. Hunt 2011, 184, 185, 203).

The publication of excavations within the confines of the medieval town has additional significance. In Volume 22 (1982) of these *Transactions*, a number of papers took stock of the then current state of knowledge on medieval Lichfield and its development, among which was an article by Steven Bassett that offered a topographical review of Lichfield's origins and subsequent growth. Bassett's model prompted much debate and was subsequently challenged in a critique by Terry Slater, published in Volume 26 (1985), which proposed alternative interpretations. Inevitably, excavations undertaken in Lichfield since the publication of these differing views have been mindful of the extent to which their discoveries might support either of the models outlined. Nick Tavener's excavations in Sandford Street were no exception.

Moreover, there have also been other excavations in Lichfield since 2000 that have engaged with this question and therefore the opportunity has been taken here not only to report the contributions to this debate arising from the work of *Marches Archaeology*, but also to set this into a wider context of work in Lichfield since c. 1985 and the impression that this currently provides on the medieval town's origins and development. In 2013 Andrew Sargent similarly reviewed an excavation by *Marches Archaeology* on the Cross Keys site, the results of which have contributed significantly to our understanding of the origins and development of early medieval Lichfield and have informed aspects of what follows (Sargent 2013). Therefore, this report falls into three sections. The first consists of Tavener's excavations in Sandford Street, based on a pre-publication draft report of

2005 which is published here, with some updates and amendments, as written by the excavator. The second section provides an edited account of the work undertaken in Bird Street by Richard Stone and Jo Wainwright, taking their exemplary 'grey literature' reports as its basis (Stone 1999c; Stone and Wainwright 1999; Stone 1999g). The third section brings the observations from these various reports into a synthesis and general discussion of the work undertaken in Lichfield over the last three decades or so with the intention of supplementing and updating the overviews of Lichfield's medieval development as published nearly forty years ago.

* * * * *

SECTION ONE

EXCAVATION AND WATCHING BRIEF ON LAND TO THE REAR OF 15 SANDFORD STREET, LICHFIELD, STAFFORDSHIRE

by NICK TAVENER

with contributions by

STEPHANIE RÁTKAI, IAN BAXTER, ELIZABETH PEARSON, and PHIL PARKES

SUMMARY

The earliest feature was a substantial ditch crossing the site roughly east–west. The ditch was subsequently re-cut. Neither phase could be dated but both almost certainly pre-date the formation of the medieval new town c. 1130.

Limited occupation of the site began sometime in the 12th or early 13th centuries but the formal creation of burgage plots did not occur until after c. 1250. From that time, the backlands became the focus of pit-digging activity until the end of the 14th century. Most were cesspits but there were also underground hearths. Historic maps indicate that the southern part of the excavation area probably formed the backlands of properties fronting onto Bird Street rather than Sandford Street. The spatial distribution of the various pits suggests that this was probably also the case in medieval times. The precinct of the Franciscan friary had clearly encroached upon the southernmost burgage in the late 13th century. To the north, the central property fronting onto Sandford Street had a stone hearth set nearly 2 metres below ground that may have been used for both primary production and secondary working of iron. The presence of a stone-lined well and a substantial stone-lined garderobe within the same property indicates that it was of higher status than its neighbours.

The pit-digging activity declined in the later 14th and 15th centuries but did not cease. A range of walls and pits from later periods indicate that the site has been in continuous occupation from c.1250 to the present day.

INTRODUCTION

No. 15 Sandford Street lies on the southern side of the street some 300m to the south of the cathedral at NGR: SK 1157 0936 (Fig. 1). The frontage is largely occupied by a Grade II listed building. At the time of the redevelopment in 2000, this was set out as a single block but had formerly been a pair of 18th-century houses. On the east side of the frontage was a 6-metre wide open entry ('D' on Fig. 2) giving access to a complex of outbuildings that occupied around 60 per cent of the garden area to the rear of the listed building. The complex comprised a large two-storey extension and various smaller single-storey outbuildings erected and modified between c. 1910 and 1970.

The property was redeveloped in 2000 by Friel Homes Ltd to form fifteen apartments. This was achieved by converting the listed building and constructing a new extension in the garden area to the rear. The scheme also included provision of underground car parking below the new extension. This required the demolition of all the outbuildings, followed by a general reduction of the ground level to 1.2m below the top of the natural subsoil over virtually the whole of the garden area right up to the footings of the western, southern, and eastern property boundary walls.

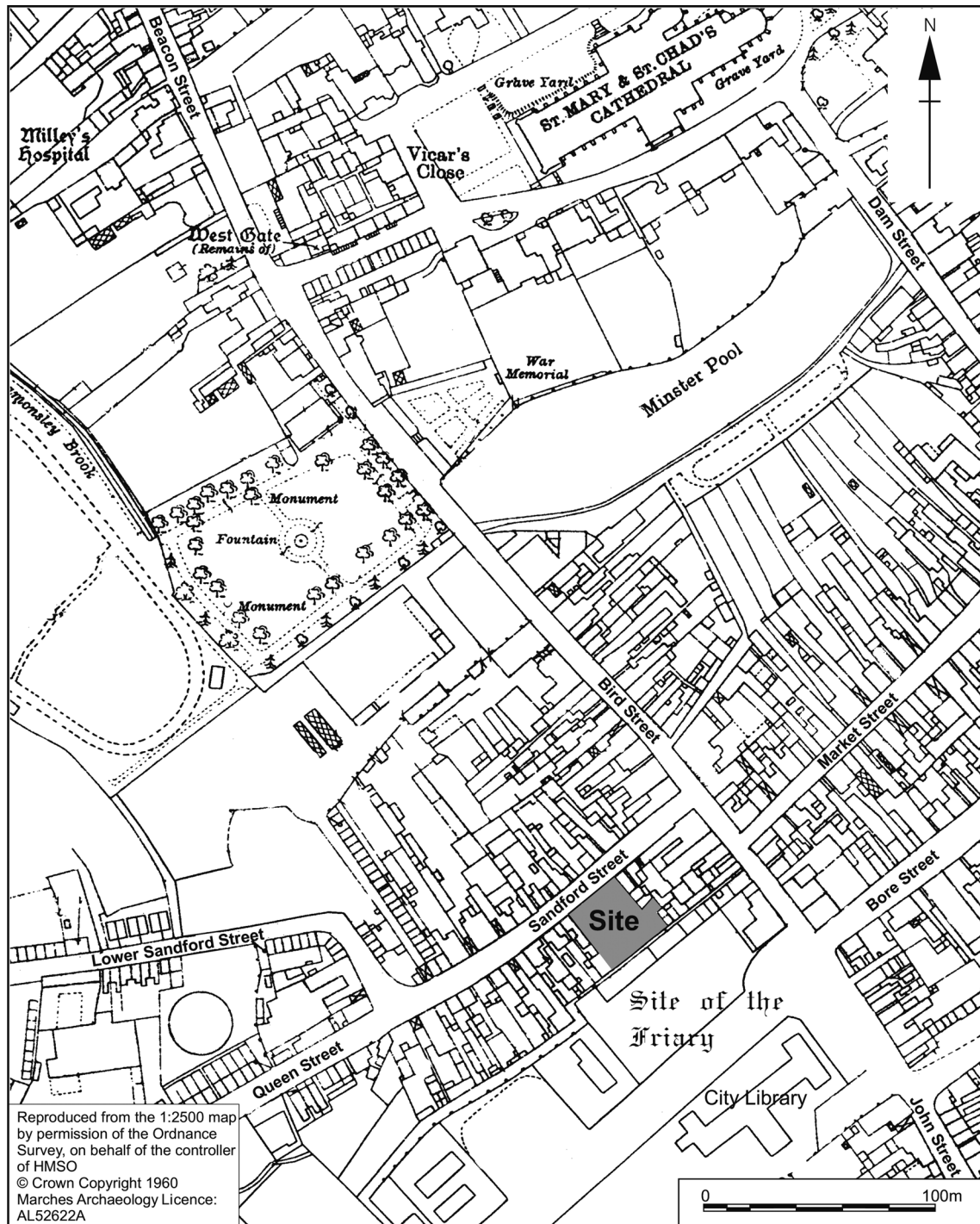


Fig. 1 Location of the 15 Sandford Street site (published by kind permission of the Ordnance Survey)

The entry in the north-east corner of the plot became a ramp leading downwards from the street to the new car park.

Marches Archaeology prepared a desk-based assessment for the property (Stone, 1999a). A subsequent evaluation was undertaken whilst the outbuildings in the garden area were still standing. Five trenches sited in the garden around the periphery of the outbuildings found intact medieval deposits and cut features. A sixth evaluation trench near the street frontage in the entry indicated some survival of archaeological deposits at that location (Stone *et al.* 1999b; cf. trench locations on Fig. 2). It was evident that the scale of the intended ground works would lead to the total destruction of the archaeological deposits and cut features and a condition was placed on the planning consent

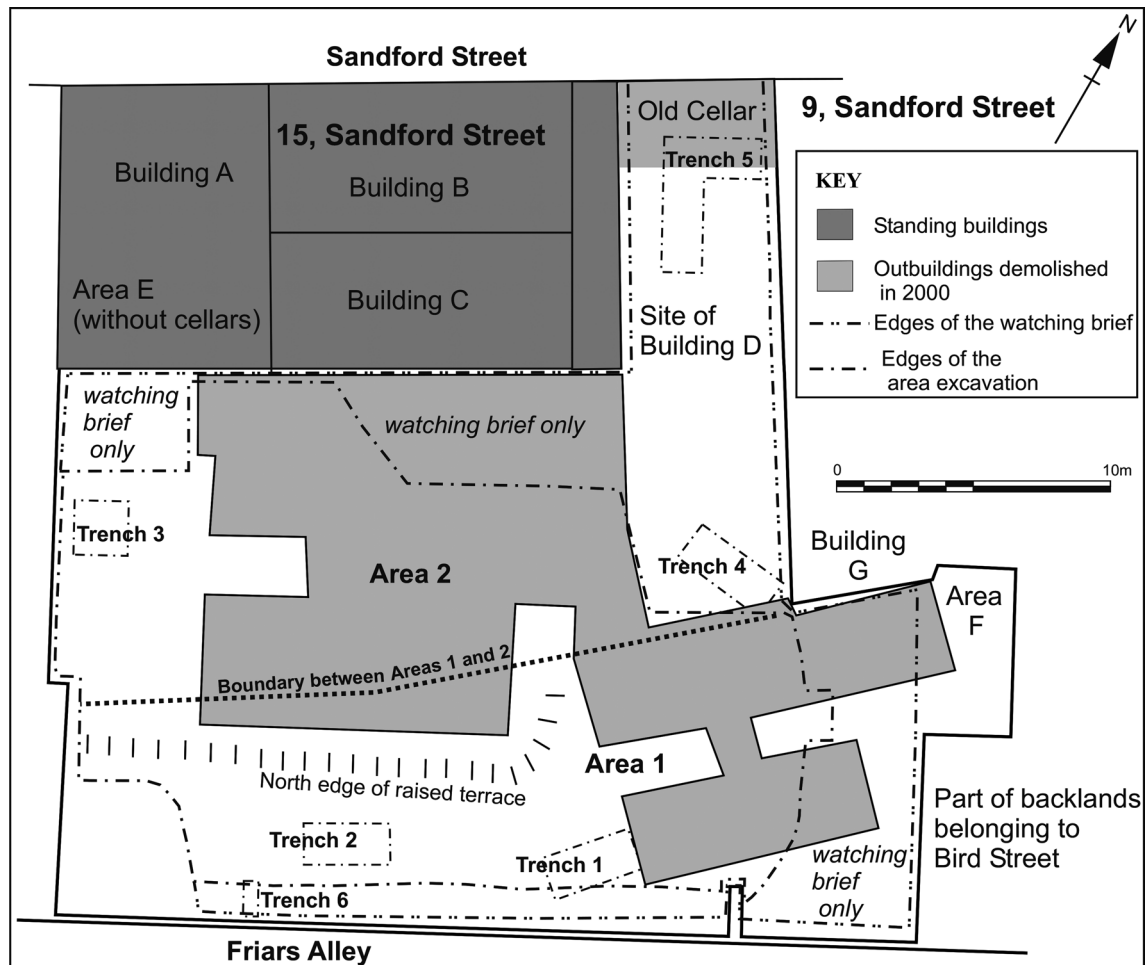


Fig. 2 The site showing the standing buildings and extensions, with the edges of the area excavation and watching brief

requiring the excavation of an area of 440m² with a further requirement for a watching brief on construction works in areas outside the excavation area (Fig. 2).

The fieldwork took place in May and June 2000. The site archive along with all finds have been deposited at the Potteries Museum in Hanley, Stoke-on-Trent.

HISTORICAL BACKGROUND

It is generally argued that medieval Lichfield was laid out as a 'new town' with a grid pattern of streets by Bishop Roger de Clinton (1129–1148). The development was probably continued by his successor Walter Durdent (1149–1159), giving a date range for the scheme from 1129 to 1159 (Taylor, 1969). The developmental sequence of the area around the friary and Sandford Street has generated much discussion. It has been proposed that Sandford Street was the western approach road to the medieval new town, entering at the north-west corner via the Sandford gate (Bassett 1982, 106) but there is some argument over the date at which that road was first developed for housing. The earliest documentary reference to the Sandford gate dates from c. 1198–1208 and also refers to burgages outside the gate (Greenslade 1990, 40), while the earliest documentary reference to Sandford Street dates to 1294 (ibid. 1990, 42), nearly a century later. The allusion to 'burgages outside the gate' in the earlier reference could be taken to indicate that pressure of space within this part of the town was such that development beyond its walls was necessary but an alternative explanation, perhaps less likely, is that the extra-mural development was preferred because it avoided the payment of dues to the town.

Sandford Street shares a common axis with the east–west 'grain' of the 'new town' grid but joins awkwardly to the north – west corner of the main body of the town. Sandford Street ran to what was

believed to be the location of the medieval Sandford gate via an awkward dog-leg that turned first to the north and then to the north-west as Lower Sandford Street (Fig. 1). This dog-leg was removed from the main highway system and subsumed within a new car park during road improvements *c.* 1990. Speed's map of 1610 shows that the southern side of Sandford Street was built up at that date and clearly shows the same road layout that existed until *c.* 1990 (Speed 1610).

Bassett (Bassett 1982, 106) proposed that the road originally led directly from the Sandford gate down the line of Lower Sandford Street (Fig. 1) and continued straight on to meet the west end of Market Street, that is, it ran at an oblique angle to the 'new town' grid. He argued that the more recent layout was a replacement, at an unknown date, of the eastern part of Lower Sandford Street with a 'new' Sandford Street to the south, but now on the existing alignment of the 'new town'. Any such movement would have profoundly altered the street frontage in the vicinity of the excavation area. The earlier frontage would have lain about 10–15m to the north of the existing street and the existing street frontage would have been occupied only by the rear parts of frontage buildings, or their extensions and outhouses. In addition, burgage plots set at a right angle to that proposed earlier street would be aligned much closer to true north-south rather than the NNW–SSE alignment of the present day plots. Slater proposed an alternative scheme, arguing that the plan-form of the suburb of Sandford suggests that a few crofts already existed before the laying out of the 'new town' and that the presence of these crofts had determined the subsequent laying out of the road (Slater 1986, 22). Slater dated the origins of Sandford Street to a time soon after the creation of the new town, but still within the 12th century. The awkward layout of Sandford Street does require some rational explanation and addressing this issue was one of the main research objectives for this project.

The excavation area virtually abuts the north side of the precinct of the Franciscan friary. Today, it is separated from the precinct by a narrow alleyway called Friars Alley but it is possible that the alleyway originally lay within the precinct. Excavations funded by the Manpower Services Commission in the 1980s found a substantial masonry wall of medieval date on the north side of the alleyway (i.e. directly under the southern boundary of the current study area) and it seemed likely that this was part of the precinct's northern wall (Chris Welch, *pers comm*).

It has been argued that the friary, which was founded *c.* 1237, was originally much smaller and laid out to the north of a street, now lost, which originally continued the line of Bore Street westwards (Bassett 1982, 104). Bassett further proposed that both Market Street and Wade Street originally continued further westwards but that the western ends of both streets were removed when the friary was extended northwards and southwards (see Fig. 1). This would have required major alterations to the plan of the town in this area. The effects upon individual properties would have been so far-reaching that the scheme would probably have required the personal intervention of the bishop as owner of the borough (*ibid.* 106). Documentary sources indicate that a disastrous fire in 1291 destroyed much of the town, including a large part of the friary. Bassett argued that the re-planning of Sandford Street probably took place after the fire but before his proposed date of 1329 for the extension of the friary northwards. The date of 1294 for the first documentary reference to Sandford Street fits neatly into Bassett's proposed window for the realignment of that street (*ibid.* 108) but the absence of documentary evidence for Sandford Street before that date is not proof of absence of the street at an earlier date.

Friars Alley runs more or less parallel to Sandford Street for its whole length but there is a rather awkward dog-leg in the alley some 20m to the south-west of the excavation area. The dog-leg formed part of Bassett's argument that the friary had been extended northwards. Speed's map shows that it existed before 1610, whilst the tithe map of 1848 shows a substantial fragment of the friary abutting the south side of Friars Alley at its northern part (Fig. 3). The presence of the building fragment almost certainly explains the layout of Friars Alley at that particular location. John Hill's map of the friary dated 1638 shows a landholding called 'Newports land' immediately to the west of the excavation area and also shows that the cathedral's vicars choral owned a large area immediately to the west of Newport's land. There is also a reference to Newport's land in Sandford Street in a rental dated 1535 (Hill 1638; Harwood 1806, 215). The holding belonging to the vicars choral was probably a garden given by Thomas Chesterfield, a cathedral canon, who died in 1452 (Harwood 1806, 502). The dog-leg in Friars Alley, with its sudden turn to the south, was probably necessary to take the alley around the north side of the friary building shown on the tithe map and then round the south side of the parcel of land owned by the vicars choral. Hill did not, unfortunately, give information for the excavation area or the plots to the east.

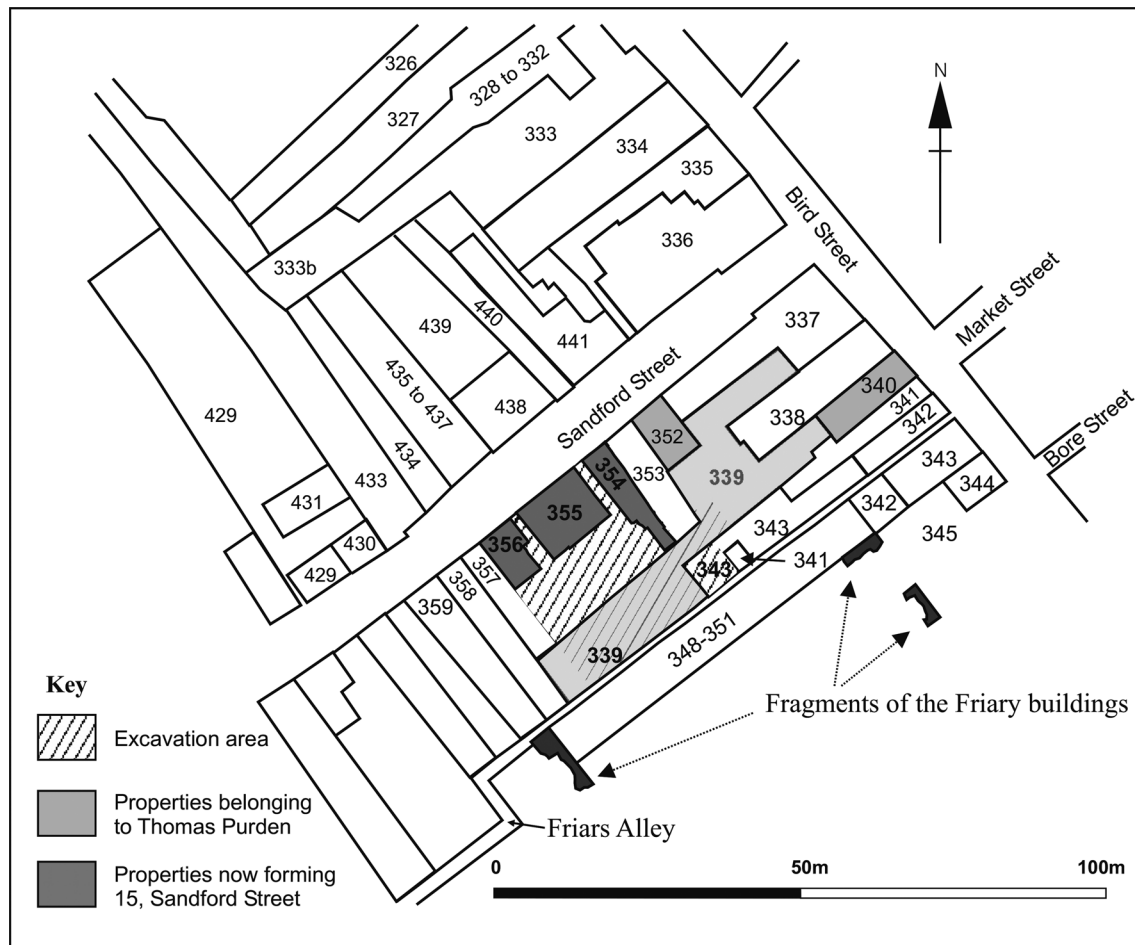


Fig. 3 Main property detail derived from the tithe map (internal subdivisions removed)

Documentary references to individuals and trades in Sandford Street are rare during the medieval period. A fuller was mentioned in 1298 and a glazier in the late 13th century (Greenslade 1990, 120). In 1532, the population was recorded as being 23 people but these were probably heads of households (Kettle 1976, 178–9). Linen manufacture is mentioned around 1691–6 and a tanner lived in the street in the early 18th century (Greenslade 1990, 121). There were weaving shops in the early 1800s, calico workers in 1804, and a dyehouse in 1814 (*ibid.* 123). In 1803 the parish workhouse was located in Sandford Street (*ibid.*). Although this would seem to indicate that the street was fairly run down at that time, slightly later directories list ‘gentlemen’ in the street.

The existing buildings and property boundaries

The building on the frontage of No. 15 was formed from three components. The earliest part of the structure lay at the west end. It was a two-bay brick house with its northern gable ‘end-on’ to the street (building ‘A’ on Fig. 2). This has a massive central brick chimney stack and probably dates to the late 17th or early 18th centuries. It was originally an entirely separate property.

The central part was an elegant three storey brick townhouse of mid 18th-century style (building ‘B’ on Fig. 2). It comprised three bays of single room depth set out along the street frontage and was referred to as Sandford House in the late 19th and early 20th centuries. It was extended to the rear later in the 18th century (building ‘C’ on Fig. 2). John Snape’s map of 1781 shows all three components with a narrow passageway down the east side giving access to the rear of the property and a large extension at right angles extending southwards from building C. The three building components dating to the 18th century have cellars cut at least 1.5 metres into the natural clays and sands and it is highly unlikely that any archaeological remains survive below them.

Sandford House was converted into the Lichfield Victoria Nursing Home in 1899 with two public wards. In 1910 it incorporated building 'A' and was also extended into the garden area. The hospital moved into new purpose-built premises nearby in the friary in 1933 and the Sandford Street premises were reopened as a clinic in 1934 (Greenslade 1990, 105–6).

Snape's map shows a fourth building at the eastern end of the frontage (marked 'Site of Building D' on Fig. 2) separated from Sandford House by its own passageway. Later maps show that the structure featured small extensions and outbuildings to the rear, the whole ensemble being roughly 6m wide and extending for some 20m to the south of Sandford Street. This property probably represents a surviving fragment of the old burgage plot system but was perhaps a part-burgage plot rather than a whole plot. An evaluation trench found part of a narrow cellar on the frontage but indicated that there had never been cellars further south (Stone *et al.* 1999b).

Snape's map also shows an east–west wall roughly 10 m. to the south of Sandford House. The area to the south of that wall-line formed the southern half of the excavation area. Snape showed the area to the south of the wall as gardens extending both eastwards and westwards, the layout strongly suggesting that the gardens lay at the rear of a property fronting onto Bird Street which lies some 60m to the east. This suggestion is strongly supported some 70 years later by the tithe map and apportionment of 1848. The map indicates that the wall separating the northern and southern parts of the modern property was at an oblique angle (Fig. 3). This oblique alignment is carried on to this day by the southern wall of an outhouse on the southern boundary of 9, Sandford Street (building 'G' on Fig. 2).

The tithe map and apportionment show that most of the southern half of the excavation area was part of a garden or yard to the rear of a house on Bird Street belonging to a Thomas Purden (tithe apportionment entry No. 339). No buildings are shown within the garden area. Purden's holdings in the area were quite extensive and included Nos 338, 340, and 352 (Fig. 3). He was stated as being the occupier of Nos 338 and 339, so his main holdings seem to have been on Bird Street. Although No. 339 was largely cut off from the street frontages, it had a possible entry route from Sandford Street through No. 352 as well as a narrow but easy access via Friars Alley.

The Ordnance Survey 1:500 'Town Series' map of 1882 shows two sets of steps against the eastern boundary of the modern property, one into the eastern part of No. 339 and the other into No. 340. The latter steps still survived in 2000 leading upwards to a blocked opening in the eastern boundary wall of the modern property, clearly demonstrating that there was physical access into the rear of property No. 340 on Bird Street. The 1882 map shows that Sandford House (15 Sandford Street) had encroached across the wall line into the old tithe enclosure No. 339 at some time before that date. It might be argued that No. 339 had been owned by various properties on Sandford Street, lost to Bird Street and subsequently regained by the Sandford Street properties after an interval of more than a century.

The original pattern of long, narrow medieval burgage plots survives quite well in the area to the north of the Friary. Both the tithe map of 1848 and the Ordnance Survey map of 1882 show a fair degree of uniformity in plot widths at around 6 metres (20 feet) in the vicinity of No. 15. Tithe plots Nos. 337 and 355 were 12m (39 ft) wide, so were probably double-width plots, whilst plots Nos 340 to 342 to the east of the excavation were between 4.4 and 5.5m (14–18 ft) wide and slightly narrower than the norm, possibly indicating a rearrangement in the area at some time in the past. The south-east corner of the excavation area, to the rear of plots Nos 341 and 342, was a small walled yard forming part of the holding of the 'Rose and Crown' public house (also on Bird Street) in 1848 (Fig. 2). Whilst none of the old Bird Street burgage plots extended as far westwards as the excavation area in 1848, all three may originally have done so; the southern part of the excavation area may have been a far flung part of the burgage plots fronting onto Bird Street in earlier times. If true, this leaves only very short plots of c. 20m (66 ft) in length north-south fronting onto Sandford Street in the medieval period.

Close examination of the pattern of property boundaries further eastwards on the tithe map also shows that the Sandford Street property No. 352 fits uncomfortably against the Bird Street properties 337 and 339 but that Nos 353 to 357 form a coherent block backing onto No. 339. This situation is mirrored on the north of Sandford Street where properties Nos 434 to 441 fronting onto Sandford Street fit awkwardly against properties Nos 333 to 336, which clearly ran off Bird Street (Fig. 3). The whole appearance is suggestive that blocks of properties have been 'shoe-horned' into the back of an existing layout. It is not entirely clear which were the earlier or later blocks of properties but the arrangement does suggest that Bird Street took precedence over Sandford Street in terms of layout.

The route of Sandford Street itself, with its possible origins as a simple road to the Sandford Gate without properties on either side, could still, nonetheless, be earlier than Bird Street.

Conclusions

In summary, the sparse documentary evidence indicates that Sandford Street was probably developed at some date during the 12th century, probably following the creation of the new town in its second quarter. Development along the road to Sandford Gate may have been prompted once Bird Street had become fully developed, but this remains unproven. The friary was founded around 1237 on land off Bird Street and was later probably extended westwards, southwards, and slightly northwards. The latter movement might explain the rather awkward dog-leg in Friars Alley just to the south-west of the study area. No documents or deeds have been traced that relate specifically to the excavation area or its immediate environs during the medieval period.

The tithe map of 1848 shows that the southern part of the excavation area belonged to properties on Bird Street at that date. The general layout of property boundaries in the vicinity is suggestive that the boundaries of 1848 were perhaps originally medieval burgrave plot boundaries. The southern part of the excavation area may have been part of the back-plots of two or more burgages fronting onto Bird Street in the medieval period. The northern half of the excavation area probably encompasses the back-half of either three or four much shorter burgrave plots fronting onto Sandford Street. The excavation area has thus been subdivided into two areas, Area 1 (Bird Street) and Area 2 (Sandford Street) partly for convenience but largely to test this observation (Figs 2 and 4).

Methodology and factors affecting preservation of deposits

The 'Brief and Specification' prepared by the local authority's Archaeological Advisor stipulated full archaeological excavation of an area of 440m² in the garden area to the rear of the 18th century frontage buildings. A watching brief was to be maintained on all subsequent ground works in areas not included within the archaeological excavation.

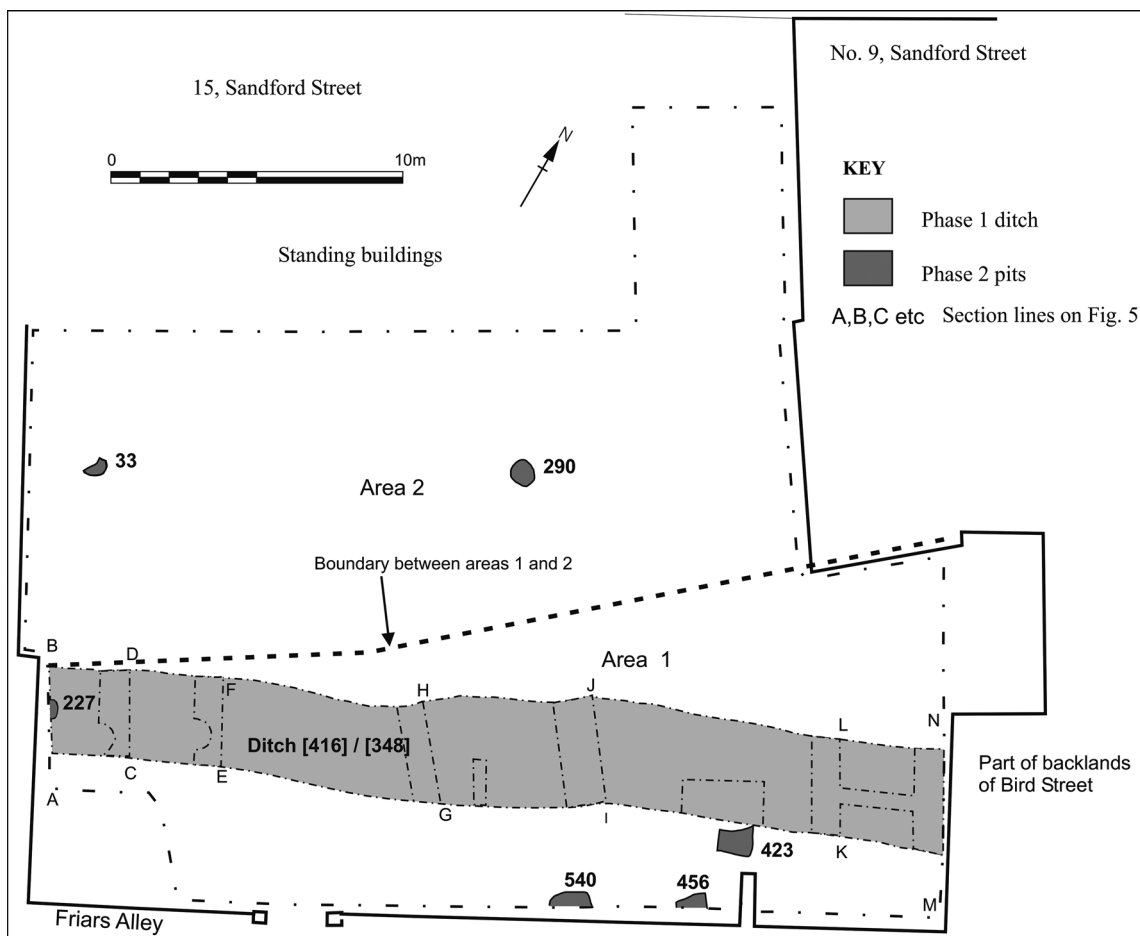


Fig. 4 Plan of features in phases 1 and 2, also showing the location of the sections in Figure 5

AREA 1

Most of area 1 was a raised terrace running the entire width of the property east–west. Three evaluation trenches had all encountered a similar deep sequence of humic topsoil layers including remnants of the medieval soil horizons at the base (Stone *et al.* 1999b).

The terrace was machined in spits to the top of the uppermost medieval soil horizon [149]. Several post-medieval features were exposed and recorded during the machine stripping. No medieval features could be discerned cutting the top of the medieval topsoil [149] and it was found to contain early post-medieval artefacts as well as medieval pottery. A further 0.3–0.4m depth was removed by machine in spits 0.1m deep to the top of a dirty ‘subsoil’ (context [7]) at which level medieval cut features were revealed. Despite its urban setting, soil [7] would appear to have been a natural ‘A/B’ horizon (Avery 1980).

AREA 2

Concrete floors and footings occupied most of area 2 and were removed, along with the underlying hardcore, by a tracked excavator under archaeological supervision. This exposed the natural subsoil [8] as a reasonably level surface over most of the area. The area occupied by the hospital outbuildings had been stripped to the top of the clean subsoil prior to their construction. This had removed any soil horizons or archaeological deposits overlying the subsoil, leaving the lower portions of deeper cut features. The footings for the outbuildings as well as the sewer system and the basement area of the lift shaft (context [197]) penetrated to varying depths below the top of subsoil inflicting deeper damage to cut features over around 10 per cent of the area.

Scaffolding had been erected all along the rear of the standing building prior to the excavation and was in use for works on the roof and walls during the excavation. A strip *c.* 2.5m wide running along the back of the standing building was excluded from the excavation area on safety grounds. In addition, the entry on the east side of the property was in constant use for the delivery and storage of building materials and could not be included in the main area of excavation. These areas were monitored during the later watching brief.

GENERAL

By the end of the main area excavation, all layers had been removed to the top of the subsoil [8] within the limits of the main excavation area shown on Figure 2. All cut features within that area were excavated to at least a half-section and recorded. Several features were completely excavated. Several slots were dug across each linear feature.

Following the excavation, the ground level was reduced by a further 1.2m across the whole garden area for the below ground parking. These ground works extended to within 0.5m of the boundary walls on the southern, eastern and western sides of the site and exposed the cellar wall all along the back of the standing building. The ground works along the entry rose to 0.25m below pavement level at the frontage. These ground works were monitored as a watching brief and resulted in the investigation of a further 240m² of archaeological deposits and features around the periphery of the main excavation area. The features were recorded rapidly, often under ‘salvage’ conditions, although an excellent working relationship with the contractors meant that most features were at least partially hand-dug and sections were drawn of all. These ground works removed all archaeological features and deposits within the development area except for the lower portions of wells. A small area on the east side of the garden area (marked ‘Area F’ on Fig. 2) remained virtually untouched and the archaeological deposits there almost certainly survive *in situ*.

THE EXCAVATION AND WATCHING BRIEF

The soil profile

The site is underlain by fluvio-glacial deposits formed over beds belonging to the Bunter Sandstone series (BGS, 1984). The deeper ground works revealed the top of the Bunter Beds, a soft weathered sandstone, the top lying at *c.* 82.4m O.D. The bedrock was overlain by a sequence *c.* 0.3–0.4m thick of thin layers of pale yellow and red sands that had almost certainly weathered from the bedrock.

The sterile coarse sands were sealed below a compacted red-mauve clay marl [8] that was fairly uniformly *c.* 0.8m thick across the site. The boundary between the clay marl and the top of the underlying sands was often wavy and uneven. The clay marl was often composed of a succession of very thin horizontal varves and lenses so the material was probably deposited in standing or very

slow moving water. A random pattern of narrow tapering fissures filled with clean sterile sand and gravel bisected the clay marl all across the site. The fissures may have been of slightly later glacial origin and had undoubtedly improved the natural drainage.

Clay marl [8] was overlain by a thin 'B' horizon (Avery 1980) of dirty beige, sterile sand [42] that was usually no more than 0.25m thick. It often featured a thin pebble scatter along the top that may have resulted from translocation of stones downwards from the overlying soil profile by worm action.

AREA 1

Most of area 1 was occupied by the deep soil profile forming the raised terrace. Here, the 'B' horizon [42] merged upwards into a mid-red brown sandy silt loam [121] containing frequent pottery dating to the period from the late 13th to the late 14th centuries. Soil [121] merged gently upwards into a very slightly more humic soil [149] of identical texture. The two layers in combination varied from 0.3–0.5m in thickness. The pottery recovered from soil [149] was largely medieval in date but also included a thin background scattering of early post-medieval material. The top of this soil represents the approximate level of the medieval ground surface. Soil [149] merged gently up into a deep dark grey-brown humic loam [120] that contained some medieval material but mainly pottery dating to the later 17th and early 18th centuries. This merged upwards into an almost black silty sand loam [119]. The finds recovered from this soil show that it developed from the late 18th century until fairly recent times.

AREA 2

The ground works for the various outbuildings in the early to mid 20th century had removed all soils and other deposits above the top of the subsoil from over 95 per cent of the area. There were small patches of survival of medieval soil deposits along the western periphery of the area and also in the extreme south-east corner.

THE RESULTS

The site was divided into eight broad chronological phases. These were based on spot-dates provided by the pottery assemblage and the spatial development of the burgage plots and refined by standard principles of archaeological stratigraphy.

Phase 1:	before the mid 12th century
Phase 2:	mid 12th to mid 13th centuries
Phase 3:	mid 13th to mid / late 14th centuries
Phase 4:	late 14th to late 15th centuries
Phase 5:	late 15th to late 16th centuries
Phase 6:	17th century
Phase 7:	early 18th to early 19th century
Phase 8:	mid 19th to mid 20th centuries

The medieval period was sub-divided into phases 1 to 4 in an effort to identify patterns of activity within the site. These phases were based to a very large degree on the perceived chronological sequence of the local or regional pottery styles and pottery styles were also important in the identification of features belonging to phases 5 and 6. This perceived sequence has, in broad outline, been established and tested, but is still open to some re-interpretation and fine-tuning, albeit probably largely of a fairly minor nature (e.g. see Rátkai below). Testing the pottery sequence was an integral part of the research programme for this excavation.

Many of the medieval pottery styles found at 15 Sandford Street were in use for a considerable period of time which obviously precludes precision in dating. There may therefore be some measure of overlap between the individual medieval phases, so features ascribed to a particular phase could, for example, be transitional between phases. The relatively imprecise nature of the dating imposed by the pottery means that features with a short period of usage may either be transitional between phases or not entirely contemporary with other features in that phase.

PHASE 1 BEFORE THE MID 12TH CENTURY

The earliest feature on the site was a substantial linear ditch [416] crossing the site east–west. The centre line of the ditch was roughly 5 metres to the north of Friars Alley and more or less parallel to it (Fig. 4). Six exploratory trenches, each 1m wide, were excavated across the ditch. During the watching brief, the lower fills of a further 10m length of the ditch were excavated by hand. The east and west edges of the site were also cut back and new profiles were created that were complete to the modern ground surface (Fig. 5, A–B and M–N).

Ditch [416] was *c.* 3 metres wide at the top with a fairly steep V-shaped profile. The surviving upper edge was eroded, presumably following prolonged exposure, so the ditch was probably slightly narrower when created. Where the relict topsoil [149] survived it could be seen that the ditch was originally *c.* 1.85m deep. The ditch was subsequently completely recut (as cut [348]) on almost exactly the same alignment but the centre line had been moved *c.* 0.4m to the north. The re-cut ditch [348] was *c.* 0.1–1.5m shallower than the original cut [416]. The edges of both phases of the ditch were fairly straight and neatly cut.

The earlier cut [416] was especially clear at the east edge of the site where the bottom of both phases of the ditch cut the top of the weathered sandstone bedrock (Fig. 5, profile M–N). The remnants of the lower fills in the base of the earlier ditch were invariably lenticular hard fine silts and clays. Because the recut had been moved northwards, the remnants of the fills of the earlier cut had survived as a narrow band of mid-grey brown silty loam along the southern edge of the feature. No finds or potential dating samples were recovered from fills associated with the primary ditch cut [416]. Many of the excavated profiles featured a substantial band of hard marl lying just above the southern edge of the secondary cut which usually extended down into the base of the cut (Fig. 5). The marl layer was undoubtedly the result of natural silting and slumping.

Where the marl layer had not filled the bottom of the channel of the recut [348], the fills were usually fairly soft silty sands much coarser than the silting in the base of the primary cut [416] and there were frequent rounded platy stones. The overlying fills were invariably soft mid-brown sandy silt loams based largely on material eroded from the sides mixed with material derived from the surrounding topsoil. Despite considerable hand-digging, the sole find from the recut ditch [348] was a single large fragment of Roman box flue tile recovered from fill [406] at the base of the ditch (Fig. 5, K–L). Small pockets of pea-grit were a common feature within the numerous worm burrows that penetrated down through the ditch profiles right to the very base of the fills. The pea-grit commonly included small and abraded fragments of charcoal, especially amongst the stony fill along the bottom of the ditch. No charcoal could be found that would allow a reliable radiocarbon date for either phase of the ditch.

There were no other features anywhere on the site probably associated with, or as early as, this ditch.

Interpretation

The fragment of Roman box flue tile in the base of ditch [348] demonstrates that the re-cut of the ditch cannot have been earlier than the Roman period. Both ditch cuts had been completely truncated in an area between 3m and 6m to the west of the find spot of the box flue tile by a complex of intersecting cesspits [358] of early post-medieval date. Two fragments of Roman *tegulae* were recovered from the lower fill of a late cut within that pit complex. It is possible, perhaps likely, that the *tegulae* had been removed from the ditch during the creation of cesspit [358] finding their way back into the cesspit at a slightly later date in amongst material excavated during the creation of the cesspit.

The fine particle size of the primary fills in the bottom channel of cut [416] probably indicates sedimentation in a regime of slow moving water. The hardness of these primary silts was possibly caused by compaction resulting from shrinking and swelling of the clays during alternate wetting and drying. The coarser nature of the bottom silts of the re-cut [348] suggests deposition in a regime of faster flowing water than had applied during the lifetime of the primary cut [416] or perhaps a period of rapid erosion. The ditch had clearly functioned as a watercourse in both phases, even if that were not its sole or intended principal function. Both cuts dropped by *c.* 0.1m over a linear distance of 30m from west to east. The direction of flow was thus eastwards towards the present town centre.

The band of loam along the southern edge of the primary cut [416] was presumably the remnants of a sequence of fills based largely on the prevailing topsoil and overlay the earlier waterborne fills

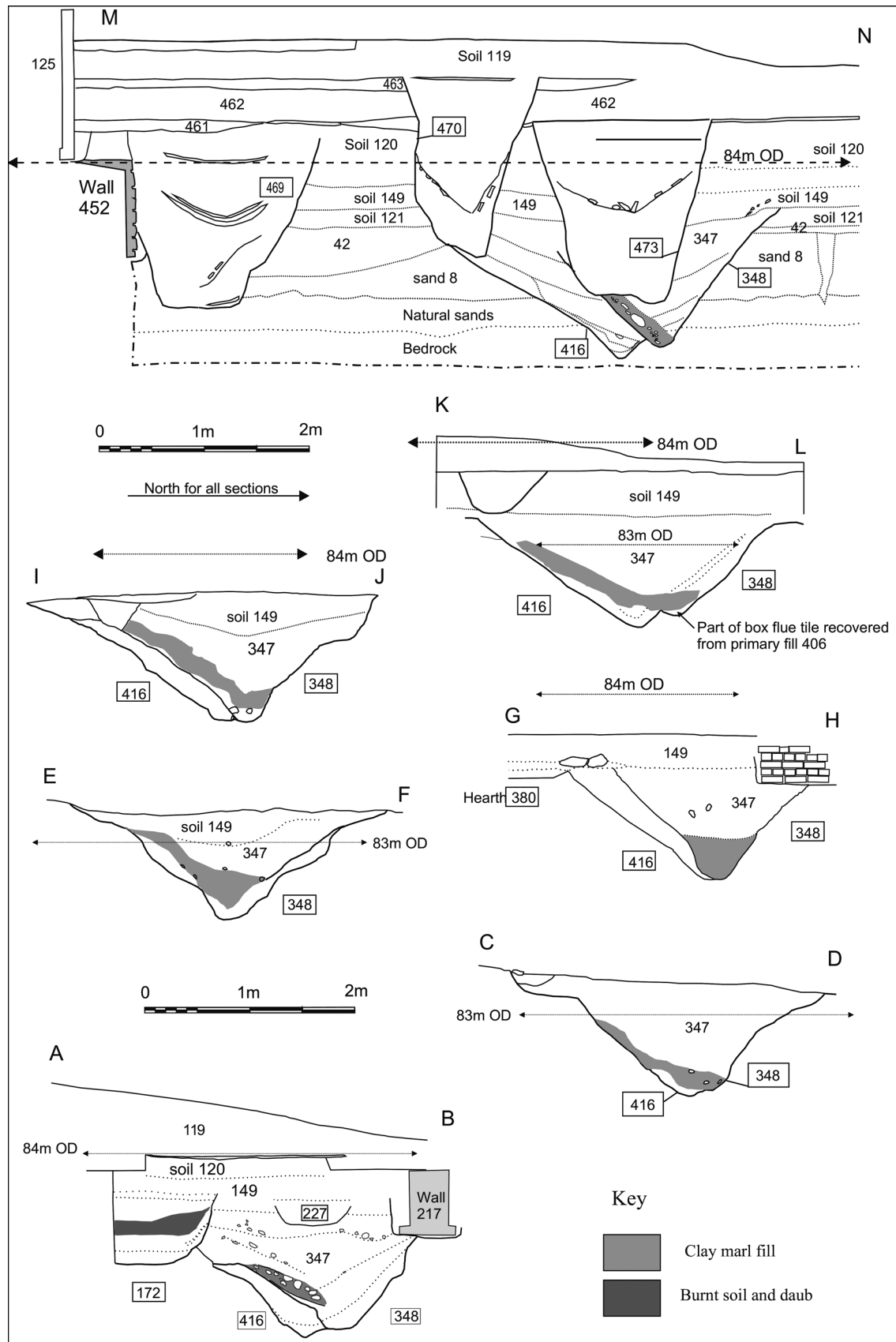


Fig. 5 Sections of ditches 416 and 348 (see Fig. 4 for locations)

in the base of the ditch. The presence of these soil-based fills indicates that the silting up of the ditch was probably fairly advanced before the fills were largely removed by the secondary cut. As erosion of the upper edge of the re-cut proceeded, the clay marl layer began to fall into the ditch. The amount of spoil resulting from the creation of the ditch would have been considerable and removal off-site would have required considerable labour. The presence of the redeposited natural marl fill along the southern edge of ditch [416] suggests that the spoil was mounded along that side, possibly as a deliberate bank. This might suggest that the owner or creator of the bank was situated on the southern side of the ditch. There were, however, no layers above soil [121] or [149] on either side of the ditch that might have represented a bank but the widespread preservation of the natural soil profile along the south side of the ditch through the medieval period might be explained by the protection offered by a bank, or at least the flattened remnants of one. The bank, if present, may finally have been removed by continued cultivation of soil [149] into the late 16th century and later, but this is speculative. It is, however, certain that the re-cut [348] had been moved slightly northwards and this might also indicate the presence of a bank on the southern side, for natural processes of erosion and slippage would lead to any bank associated with the primary ditch cut spreading back over the southern edge of that ditch. The second ditch would probably have been cut along the northern edge of the bank as it would have been perceived at that time.

PHASE 2 THE 12TH TO MID 13TH CENTURIES

AREA 1

A small bowl-shaped pit [227] cut the upper fills of ditch [348] near the western edge of the site (Fig. 4 and A–B on Fig. 5). The fill of pit [227] was a mid-reddish brown loam [226] similar in nature to the lower part of the surrounding relict topsoil [121] and the pit was of indeterminate function.

Two features in the south-eastern corner of the site extended southwards out of the excavated area under the boundary wall to Friars Alley (Fig. 6). The easternmost was a steep sided sub-rectangular pit [456] originally 1.2m deep. The lower fills, which contained pottery exclusively of 12th or 13th century date, featured several soft, thin pale grey lenses that were probably originally cess. The western side of pit [456] had been removed by a later pit [530]. A second cesspit [423] just to the north of cesspit [456] may have been broadly contemporary with that pit. Pit [423] had been considerably truncated by later features but was originally c.1m deep. A pit [540] further to the west was largely filled with very solid, clean red clay marl with c. 40 per cent small rounded gravel. The fill on the western edge was similar but gravel free, the boundary between the two fills being nearly vertical. The relationship between pits [530] and [540] had been destroyed by a later cut [538]. Neither of the fills of pit [540] contained finds, and even though the edges of the feature were very sharp and regular, it may have been a natural feature.

AREA 2

A pit [33] around 1 metre in diameter lay 8 metres to the north of pit [227]. It was probably no more than 0.4m deep originally and the whole of the west side of the feature had been removed by a later and slightly deeper pit [21]. The base of pit [33] was covered by a thin clay lining [118] which was covered by the main fill, a soft mid-brown silty sand [32]. This contained a substantial proportion of a single cooking pot of 12th- or 13th-century date. There were no indications of burning or heat in the pit so it would seem not to have been a hearth and its function remains obscure.

A small shallow bowl-shaped pit [290] was found some 20 metres to the east of pit [33]. The pit was of similar size and depth to pit [227]. The fill was likewise largely based on the contemporary topsoil and the function remains unclear.

Interpretation

Although the activity was sparse, the features are of considerable importance to the understanding of several aspects of the site. Pit [227] was securely dated by pottery and provides the best *terminus ante quem* for the ditch re-cut [348] for it proves that the ditch was abandoned and largely filled-in by the mid 13th century at the latest. The upper edges of pit [227] could not be discerned within the upper, topsoil-based fills of ditch [348] so the ditch may have still been a shallow linear hollow and pit [227] may have been sealed below some of the very highest fills of the ditch. It is, however, equally possible that the upper edges of pit [227] were destroyed during later medieval cultivation or by general soil processes acting within the top fill [347] / [149] of ditch [348].

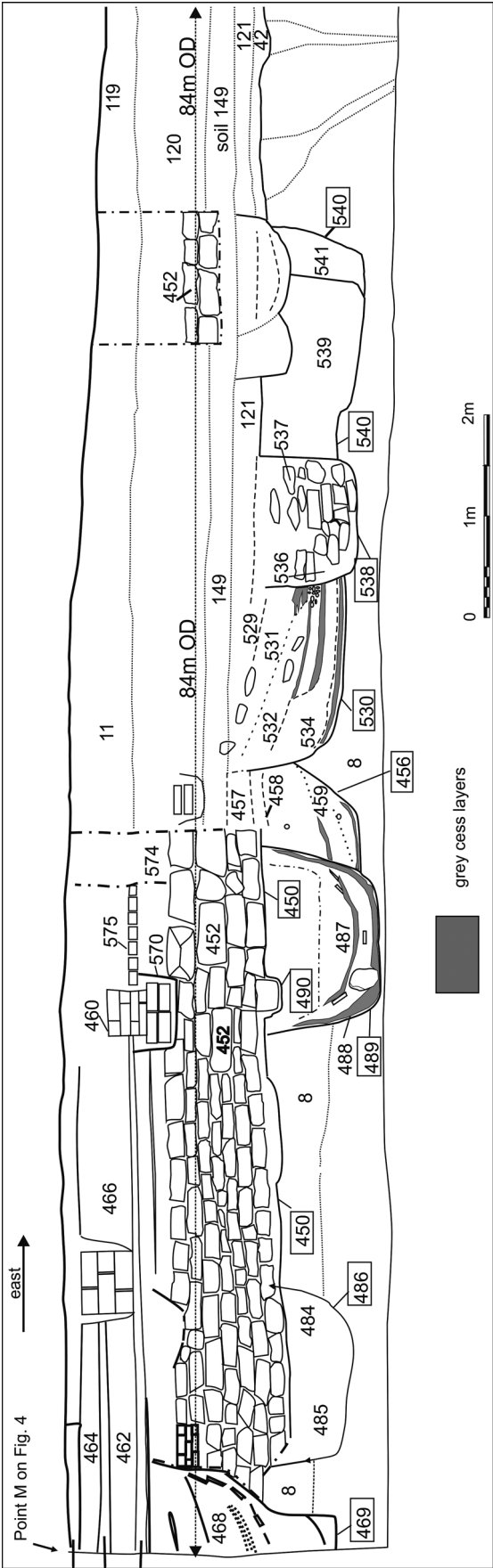


Fig. 6 The eastern half of the southern trench edge

The presence of cesspits [423] and [456] in area 1 indicate some form of domestic occupation on the southern part of the site in this phase. The hearth [33] at the west end of area 2 and single small pit [290] some 20m to the east likewise indicate some low level usage of the northern half of the site rather than intensive settlement on the Sandford Street frontage.

PHASE 3 THE MID 13TH TO MID 14TH CENTURIES

AREA 1

The earlier phase 2 cesspit [456] was completely silted up and abandoned before another cesspit [530] was dug cutting the west side of the older pit. Pottery recovered from pit [530] indicates a *terminus post quem* in the mid 13th century. The pit was completely silted up when it was cut by a linear trench [538] which destroyed the relationship between the two earlier features [530] and [540]. Cut [538] was 1 metre wide and 1 metre deep and probably a construction trench for it contained several courses of random drystone masonry [537] apparently forming a crude footing for a wall running roughly north-west to south-east. The wall footing was securely dated to the period between the mid 13th to later 14th centuries by pottery sealed beneath the masonry but no other structural features can be related to this wall. All of these features extended southwards out of the excavated area (Figs 6 and 7).

Wall [537] was truncated by the construction of a substantial masonry wall [452] beneath the present property boundary wall along the north side of Friars Alley. The intersection between construction trench [538] and wall [452] could not be fully exposed for safety reasons but limited hand excavation showed that masonry feature [537] was clearly truncated by the construction cut [450] for wall [452]. It was not clear whether wall [537] was already ruinous.

A 6-metre length of the north elevation of wall footing [452] was exposed during the watching brief. None of the stonework was removed so the width of the footing remains unknown. It was formed from random blocky sandstone brought to course with no obvious bonding material. There was a noticeable construction break in the masonry but this may simply reflect two separate 'lifts' rather than being an indication of two separate phases of construction. A similar and equally substantial masonry footing had already been found around 20 metres to the west in the 1999 evaluation (trench 6). The upper part of that wall (context [126]) had been rebuilt in sandstone in the 18th century but the lower part (context [135]) was medieval (Stone *et al.* 1999b). A small near circular pit [123] at the base of evaluation trench 6 had originally extended southwards out of the site but the southern portion of the pit had been removed by the construction trench [134] for medieval wall [135]. A further portion of the north face of a masonry wall about 1 metre in length was exposed between the two locations during the watching brief but safety considerations precluded further investigation and it is not known whether the exposed portion was medieval or later.

The northern end of masonry footing [537] was cut 1 metre to the north of wall [452] by a large sub-rectangular pit [244] measuring 4m by 2.3m. The east end of the pit cut the masonry footing but some of the masonry was left *in situ*, possibly being retained as a revetment [296] for the east end of the new pit. Some of the stones forming [296] were partially burnt but there was no other indication of burning *in situ* so the pit had probably not been used or re-used as a subterranean hearth. This pit also appeared to have thin areas of a clay lining along the cut to the west and the higher fills would be largely consistent with usage of the feature as a cess or rubbish pit. Pottery from these fills indicates that the feature silted up during the 14th century. A posthole [298] was found sealed beneath masonry [296]. There was no sign of a timber setting protruding through masonry [296] but the setting may have been disturbed during the cutting of pit [244]. The posthole was almost certainly associated with the masonry when it was part of wall [537], not with the usage of pit [244]. Another posthole [300] found 2.5m to the west high in the north-west edge of pit [244] was sealed below the fill of pit [244]. It may have been associated with posthole [298], but this could not be proved. Alternatively, it may have been a timber setting for some form of superstructure or canopy to pit [244].

Two postholes just to the north and another to the west were completely sealed below the cultivation of soil [149] and were thus probably medieval. None of the features contained finds so they cannot be proved to relate either to each other or to posthole [300]. Posthole [392] cut the southern edge fill of ditch [348]. The two packing stones of another posthole [596] to the west had been pulled flat, presumably by cultivation, whilst the three packing stones within posthole [236] remained

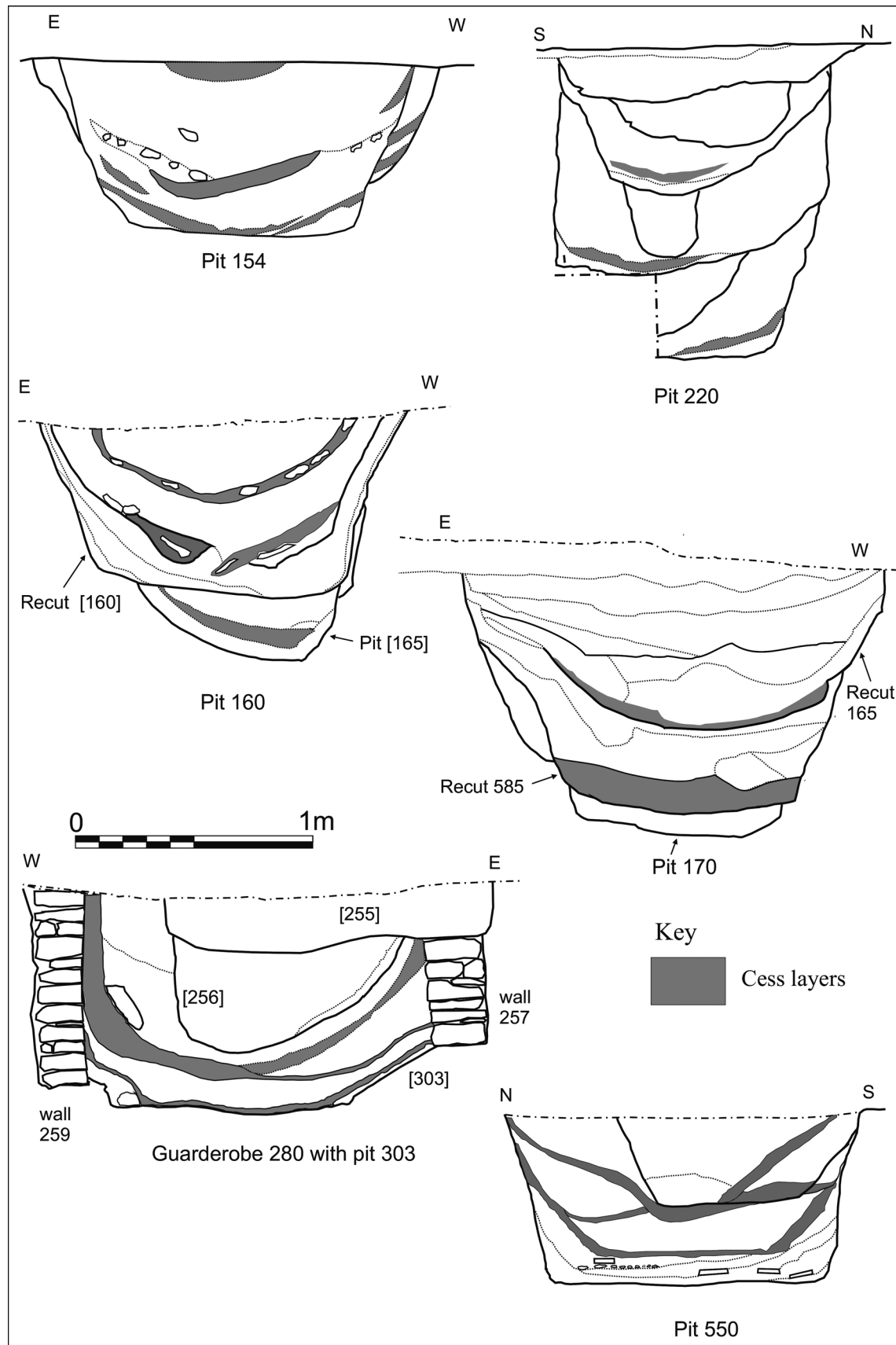


Fig. 8 Sections of selected medieval cesspits

to the mid 13th to late 14th centuries. This demonstrates that the period of usage of the underlying cesspit [154] was fairly short.

A group of three shallow pits lay towards the east side of the area. The westernmost was a small, shallow fire pit or hearth [315] that was cut by a similar hearth or fire pit [312]. A small post or stake hole [329] sealed below the basal fill [327] of pit [312] may have been associated with one of the hearths. Hearth [312] cut a small pit [310] lying on its east side whilst a further metre to the east, a shallow scoop [232] featured a sandstone slab occupying most of the base of the feature. The slab was burnt and heat fractured and was overlain by a mixed layer of soil with charcoal and small pieces of daub. These hearths seem to have been a series of replacements for each other. The relationship between hearths [232] and [312] was destroyed by a later cesspit so the exact sequence could not be established.

Two metres to the east lay a much larger pit [240] originally *c.* 0.9m deep that contained the complete articulated skeleton of a horse [239]. The pit was undoubtedly purpose dug for the burial. To the south, two small shallow bowl shaped pits [375] and [377] as well as a larger irregular scoop [234] contained fills based largely on soil [149] and the pits remain of indeterminate function.

Near the south edge of the site, a rubbish pit [366] originally *c.* 1m deep cut the north part of phase 2 pits [456] and [530]. The north part of pit [366] was subsequently removed by a slightly deeper medieval pit.

The remnants of a cesspit [384] lay 2 metres to the north-west of pit [234]. The feature appears to have been very narrow and originally over 2 metres deep. It was largely truncated by a deep early post-medieval cesspit but because pit [384] was so deep, the very lowest part of the feature survived. This part of the feature contained a sequence of grey yellow and grey soft silty sand lenses typical of the types found in cesspits elsewhere on site. No finds were recovered so the exact phase of the pit remains unknown.

AREA 2

All deposits above the subsoil had been removed from most of area 2 by previous ground works. As a result, many medieval and early post-medieval pits and other features survived as individual isolated features simply cutting the natural with no relationships to earlier or later events and dated solely by the pottery found in the fills.

Historic map evidence indicates that the frontage was probably divided into three plots by *c.* 1780. In the description of the features set out below, the area has been subdivided into a western plot based on the back-plot to the rear of building A (Fig. 2), a central plot to the rear of building C and an eastern plot behind building D. This was done partly for convenience but mainly to assess whether the excavated features support the subdivision of the area along these boundaries (Fig. 7).

WESTERN PLOT

A cesspit [270] at the south of the plot was partly truncated by the construction of the eastern boundary wall in the late 19th century. The cesspit was re-cut as a broader shallower cesspit [272] within this phase. To the north-east, a small scoop or pit [21] of irregular plan and profile cut the west edge of Phase 2 pit [33]. The top part of pit [21] (and also the upper part of pit [33]) had been removed by the cut for a brick footing [20]. The fill in the surviving basal part of scoop [21] was a charcoal spread [23] up to 0.07m deep below which the natural sand had been discoloured to a reddish orange by heat. Two sherds of pottery recovered from fill [23] were probably from the same cooking pot as the sherds recovered from the underlying pit [33]. The upper fill [22] contained no finds and the pit remains insecurely dated.

A group of four deep, sub-rectangular cesspits were found near the north-west corner of the site. The earliest feature was a large sub-rectangular pit [437] measuring 2.1m by 1.3m and probably originally *c.* 1.8m deep. Only the bottom part of the pit survived because the upper portion had been largely truncated by a slightly later cesspit [435] leaving just the basal fill, a very soft grey-yellow silty sand [436] of a type seen frequently around the site in more complete cesspits. The western side of the secondary cesspit [435] had been removed by two recent service trenches, whilst the upper eastern side was cut by a much shallower cesspit [433] which was in turn re-cut as cesspit [431]. The pits undoubtedly represent a series of cesspits being dug at very nearly the same location. Pottery recovered from pits [437] and [433] indicates that the whole sequence right up to the final abandonment of pit [431] took place within the 14th century, so the pits may have been replacements for cesspit [270] or [272] to the south. There was some survival of isolated

patches of medieval topsoil horizons (contexts [22] and [19]) and in a band *c.* 1 metre wide near the west side of this plot but no relationship could be established between cesspit [270] and the group of cesspits to the north because two post-medieval brick footings ran between the two locations, truncating the soils.

A narrow cesspit [316] to the north was truncated by the standing building. The pit would have been *c.* 2.5m deep originally but the upper part of the pit had been truncated within the excavation area by ground works for a lift shaft *c.* 1950. The surviving portion of pit [316] was 1 metre wide at the top and sub-rectangular with steeply sloping sides. The fills included several pale grey and yellow grey lenses and the pottery recovered indicates a *terminus post quem* of *c.* 1250.

CENTRAL PLOT

The southern extremity of the plot was occupied by a group of intersecting features that straddled the boundary between areas 1 and 2, i.e., the proposed boundary between the Bird Street and Sandford Street properties. The earliest feature was the bottom part of small sub-rectangular pit [374] originally *c.* 1.3m deep which was filled with a topsoil-based fill of dark red-brown silty loamy sand [373]. The sole find was a piece of ceramic roof tile so the feature remains insecurely dated. It is unlikely to have been significantly earlier than this phase but ceramic roof tile was found in the earlier Phase 2 pit [456]. The surviving portion of pit [374] lay more or less centrally below a much larger but shallower pit [372]. This was near circular with a bowl shaped profile and originally about 1m deep. It was filled with a homogenous greenish-grey brown silty sand [371], probably largely made up of re-deposited natural sands. This fill contained no finds suggesting that the feature was not a cesspit or rubbish pit. Pit [372] cut a slightly smaller pit [368] to the west filled with heavily charcoal-flecked dark brown sandy loam [367] containing pottery dating to the mid 13th–14th centuries. This feature was almost certainly not a cesspit. At the west end of the pit group, a broad but shallow pit [370] cut the west side of pit [368]. Pit [370] was near circular and filled with soft brown red clay silt [369] containing pottery dated to the second half of the 13th century. The fill did not contain any obvious cess layers and the function of this pit remains unknown. A small bowl shaped pit [248] lying immediately to the north of pit [370] contained merely a single charcoal-flecked soil fill identical in nature to the fill of pit [368].

Pit [372] was cut by the southern wall [260] of a garderobe structure [280] comprising four side-walls [257], [260], [264] and [340] in a common construction cut [259]. Three walls were more or less rectilinear but the eastern wall [257] was set at an oblique angle, giving the structure a distinctly trapezoidal shape. The structure contained a deep sequence of fills with frequent grey and yellow-grey soft silty lenses, probably originally cess, interspersed with darker soil layers. The lowest cess layers lay within a hollow [303] that occupied most of the bottom of the feature and was lower than the base of the walls around the pit (Fig. 7). The fills of this hollow contained only whitewares (see Rátkai below) but there were numerous recuts within the fills higher in the feature and the pottery recovered from these recuts indicate that the garderobe was in use through phase 3 and on into the early post-medieval period. Pit [303] may have originally been a large, open cesspit like pits [160] and [170] but was perhaps redefined and strengthened with sidewalls when the original sides eroded. Alternatively it may have been purpose built as a garderobe in phase 3 but multiple cleanings had taken the cut to below the base of the sidewalls. This garderobe was the earliest feature to abut the proposed boundary between areas 1 and 2.

A large very square pit [506] some 5 metres to the north was one of the more unusual features. It was 1.3m deep from the top of subsoil [8] so was probably *c.* 1.8m deep originally (Fig. 9). The sides on the south and east sides were truly vertical whilst the northern side was slightly undercut. The base of the feature contained a three-sided masonry structure [513] built from random masonry brought to course and bonded with mauve red clay [514] sourced from the adjacent natural, i.e. clay marl subsoil [8]. All three sidewalls were in bond. Two small sherds of whiteware recovered from bonding [514] indicate that the walled structure was built after *c.* 1250. The western ends of the northern and southern stub walls stopped abruptly as flush elevations, so there had obviously never been a west wall. Instead, the western side of the structure was open and facing a ramp sloping upwards towards the ground surface at *c.* 20 degrees off horizontal. The natural at the bottom of the pit had been affected by heat although not violently and several small pieces of burnt sandstone lay across the base of the feature. This had undoubtedly been a hearth or fireplace. The west part of the ramp was removed in the early 19th century by the construction of a set of steps leading down into the cellar below the existing building (Plate 1).

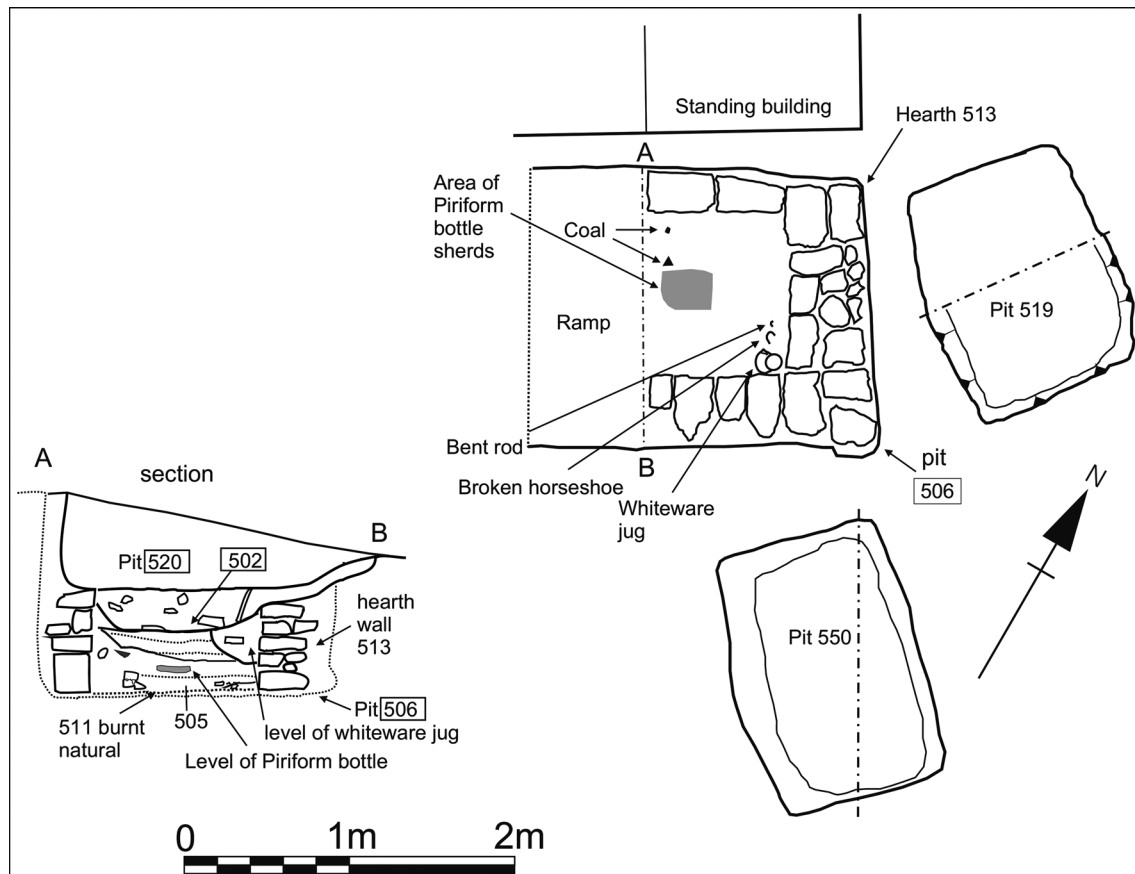


Fig. 9 Pit [506] section and plan

Following the abandonment of hearth [513] a humic soil [505] had developed or accumulated to a depth of *c.* 0.15m in the area between the walls. The soil featured a well-developed crumb structure of a type often found below pasture so the soil may have taken some time to develop. A near complete, unglazed red-painted whiteware baluster jug, missing only the upper part of the neck and the strap handle, was found lying inverted on top of soil [505] against the inner corner of wall [513] in the south-east corner of the feature, covered by further soil. An iron horseshoe and a small curved piece of brass rod lay immediately alongside the neck of the flagon. A piriform bottle, identified as a possible witch's bottle (Rátkai, below), was found crushed at the same level as the flagon some 0.3m to the north-west near the centre of the walled structure (Plate 2 a, b). Two chunks of partly burnt coal, a fairly rare find in the medieval pits on site, were found a few centimetres away from the piriform bottle. The pottery recovered from the soils that had accumulated after the structure was abandoned dates to the later 13th or 14th centuries. Unfortunately, a large pit [520] of 18th-century date had removed the upper part of wall structure [513] and also most of the post-abandonment fills of pit [506] down to a level some 0.2m above the piriform bottle (Fig. 9). The structural detail for the upper part of hearth [513] thus remains unknown.

Some 3 metres to the west lay a very large, near rectangular pit [442] measuring nearly 8 metres by 4 metres and 1.2m deep. Only the very southern part of the pit could be safely investigated during the main excavation. The full extent of the pit became apparent during the later watching brief and was, of necessity, recorded rapidly. The east edge was undercut at an angle of *c.* 10 degrees from the vertical. The angle of slope of the east edge remains unknown because that edge was removed by a slightly later well [440]. An upper fill within pit [442] contained modest quantities of iron working wastes whilst the lower fills contained frequent animal bone and pottery. The fills had largely been dumped into the feature from the east side, i.e. from the vicinity of the ramp on the west side of pit [506] and the pit would appear to have been used as a rubbish pit even if that were not its original function.



Plate 1 Hearth [513], a three-sided masonry structure of coursed rough masonry, located within a large square pit [506]

The creation of pit [442] had almost totally truncated a much smaller pit [448]. This must have been *c.* 1.3m deep originally, the last fragment surviving as a hollow *c.* 0.1m deep below the south-west corner of pit [442]. The western part of pit [448] had been removed by well [440]. The fill was a slightly loamy sand with no finds so the true age and function of feature [448] remain unknown.

Well [440] was the only well on the site which could be shown to date to the medieval period. It had been capped with a large flagstone in the 19th century. When this was lifted, it revealed an air void to a depth of 5.2m. The well had slightly less than *c.* 0.3m depth of silt in the bottom. Two 19th-century ceramic services had been led into the well to use the void as a soakaway and the silts dated entirely to that period. When these were removed, the well was found to be utterly dry. The uppermost part of the shaft cut through the clay marl and weathered sands and was square in plan. At 3 metres below the top of the subsoil, the shaft hit solid, bedded sandstone. At this level a shelf was created on the bedrock to support a circular lining [439] formed from very large rectangular blocks of sandstone weighing 40 kg or more. The earth-fast portion of each block was rough-hewn but the inner facing surface of each block had been carefully dressed to make a smooth and very nearly circular shaft extending from the rock ledge up to the ground surface that tapered slightly as it rose. The dressing probably took place after the blocks had been positioned. The space between the lining and the sides of the square shaft had been backfilled with sand and broken sandstone and this material contained several whiteware sherds but no later material. Below 3 metres depth, the well was simply a circular rock-cut shaft, belling out to make a conical bottle shape. The sides featured a herring-bone pattern of deep and close-spaced pick marks where the workmen had cut the sides to form an almost perfect circle.

A large, deep, sub-rectangular pit [550] lay *c.* 0.5m to the south of hearth [506]. The fills contained numerous pockets of soft yellow and yellow-grey silts and the feature was almost certainly a cesspit. To the south of pit [506], a much smaller and shallower pit [346] had been largely removed by a post-medieval well. The surviving fragment of the pit contained a reddish brown sandy loamy fill based largely on soil [149] but heavily flecked with charcoal. There were no finds but the size, shape and fill of the pit were similar to pits [248] and [352] to the south-west.



Plate 2a and 2b Details of Hearth [513] under excavation, showing location of the baluster jug and horseshoe found in fill [505], a humic soil that had developed or accumulated between the walls of the hearth

EASTERN PLOT

The ground works along the entry stopped 0.4m away from the walls of the existing buildings on each side.

A post-medieval cellar extended 2.5m southwards from the edge of the pavement, occupying the entire width of the plot. This had removed the northern part of a small shallow scoop [84] with a single soil fill. A small circular bowl-shaped feature [73] cut 0.4m into the subsoil on the southern

edge of scoop [84] contained pottery of 13th century date. This may have been a posthole but there were no packing stones. A deeper sub-rectangular pit [76] some 1.5m to the south contained a single fill based largely on soil [149] but no datable finds. It was cut by another small sub-rectangular pit [92] again with a single soil fill and no datable finds (Fig. 7). All four features were sealed below a topsoil [71] that produced only late medieval pottery in the vicinity of the pits. There were no other features of medieval date in the vicinity and soil [71] merged to the south into a dark black-brown very silty and muddy soil [454] that extended southwards to the line of the rear of Sandford House. There was no clear edge between soils [71] and [454] but the latter contained a range of pottery spanning the period from the later 13th to the later 16th or early 17th centuries and must represent later disturbance, perhaps of the local equivalent of cultivation soil [149]. Soil [454] became progressively cleaner towards the south end of the plot where it merged gradually into a red-brown silty clayey sandy loam [70] that overlay the subsoil and was 0.3m deep. This extended southwards to the edge of area 2 where it was indistinguishable from cultivation soil [149] at the north-east corner of area 1. Soil [70] was probably formed from the physical (i.e. mineral) materials from the medieval soil profile but was more disturbed by early post-medieval activity.

Soil [70] sealed a small oblong pit [127] that contained a considerable amount of small debris from iron working in a heavily charcoal-flecked loam [100]. The deposit is dated by pottery to the mid-13th to 14th centuries. Pit [127] cut a large sub-circular pit [130] of indeterminate function. The pit was 0.7m deep with near vertical sides. The lower fill [136] contained no finds but pottery of mid 13th- to late 14th-century date was recovered from the upper soil fill [129].

Interpretation

GENERAL

The main activity across both areas was the creation of several large, deep pits dated to this phase by pottery. The long-lived nature of many of the pottery styles in use in the medieval period, especially from the mid 13th to late 14th centuries, ostensibly the period of greatest pit digging activity, means that closer dating of the isolated features cannot be achieved using the available taxonomic sequence for the regional pottery styles.

The larger pits were usually sub-rectangular in shape and in many cases the fill sequences were largely the product of natural silting processes interspersed with very distinctive pale grey and grey-yellow silty muddy bands, usually no more than 0.1m thick and often much thinner. This material was presumably cess but the bleached colours possibly indicate alterations brought about either by acidity or the addition of lime. The shallower cesspits were probably 1.4m deep originally whilst the larger pits were perhaps nearer to 2.3m in depth. Virtually all the cesspits showed signs of having been re-cut at least once, sometimes within or nearly within the footprint of the original pit, whilst others were re-cut alongside, sometimes partly truncating the original cut. The pottery evidence indicates that most of the pits were eventually abandoned within this phase, although garderobe [280] continued functioning into the early post-medieval period.

The fills of two small shallow bowl-shaped scoops [368] and [248] were similar to the fills of two similar shallow scoops [352] and [354] dug at a later date slightly further southwards in area 1. All four pits contained a single fill based on charcoal-flecked topsoil but there were no signs of burning *in situ*. It is possible that these shallow scoops were dug to bury ashes.

AREA 1

Most of the linear extent of wall [452] was never exposed and the wall remains intact behind the new retaining wall. It almost certainly extended all along the southern edge of the site. The small amount of pottery recovered from the fill of the construction trench [450] for the wall dated to the mid 13th–14th century indicating that the wall post-dates the foundation of the friary *c.* 1237. The pottery is consistent with Bassett's suggested date of around 1330 for the northwards expansion of the friary.

The fact that the phase 2 cesspit [456] and phase 3 wall [537] and cesspit [530] extended not just up to, but under wall [452] and hence beyond the southern edge of the property clearly shows that there has been a later encroachment into area 1 from the south in the later part of phase 3 or early part of phase 4. The fact that cesspit [530] was created and abandoned before being cut by the construction trench for masonry wall [537] and then cut off and completely sealed by wall [452], all apparently within this phase, clearly demonstrates that there was more than one phase of activity

during this period. The only other structural features in the vicinity of masonry [537] were four postholes which cannot be related to each other and in any case form no coherent building plan or part of such. The pottery recovered from pit [244] indicates the fills date to the 14th century indicating that the pit, although broadly contemporary with wall [452], may have been a replacement, outside the newly extended friary precinct, for one of the phase 3 pits sealed below wall [452]. It was not possible to establish whether any of the other features further away from wall [452] were earlier or later than the wall.

AREA 2

Activity on the western plot was entirely confined to cesspits but in the central area was more diverse and appears to be less casually laid out. The carefully cut stone lining in well [440] would seem to indicate some care and expenditure and might indicate a property of status as might the underground hearth or fireplace [513]. The very large pit [442] was used as a rubbish pit even if that were not its original function. The base of well [440] lay considerably below the level of the Minster Pool some 180m to the north and yet the well was bone dry. There has obviously been a considerable drop in the water table in the vicinity since the well was created.

Garderobe [280], or more correctly the earliest cut within it (pit [303]), may have originally been a large, open cesspit, like pits [160] and [170], that was redefined and strengthened with four walls when the original sides eroded. Alternatively it may have been purpose built as a garderobe but periodic clearance of the contents led to the cut [303] being taken to below the base of the side-walls. Garderobe [280] appears to have been the first feature to sit against the proposed boundary between the Sandford Street and Bird Street plots but this could be coincidence. The cluster of four pits that straddled the proposed boundary, namely pits [372], [368], [370], and [374], show that the boundary was either fluid or non-existent before the garderobe was created. This in itself has major implications with regard to the layout of the burgrave plots.

No coherent structure can be reconstructed from the four features on the frontage at the eastern end of the site and there were no wells or cesspits within the area to the rear at this date. The existence of the late medieval soil layer [71] in the vicinity of these features indicates that there has been no serious truncation at the north end of the plot (with the exception of the area of cellar [44]) and that other features, if present, should have survived. The central part of this plot was either heavily disturbed or stripped to the subsoil in the 17th century. The two pits to the south appear to have been rubbish pits. It seems that there was no intensive occupation of this plot in this phase.

PHASE 4 THE LATER 14TH AND 15TH CENTURIES

AREA 1

Hearth [380] was cut by a slightly deeper but much more substantial hearth pit [250] (Fig. 7). This was lined along the north and south edges by large platy stones [251] set on edge. There was no stone lining at the east end of the hearth and the arrangement at the west end remains unknown because that end was removed during construction of a post-medieval brick structure. The fire deposits [237] between the two lines of stones [251] must have lain at c.0.8m below the original ground level and amounted to c. 0.2m depth of burnt red soil and charcoal lenses. There were no finds from these. The fill [249] above the fire ash deposits was indistinguishable from the surrounding topsoil [149] and many of the stones on the northern line had been laid flat whilst this fill accumulated. Pottery dating from as late as the 16th century was found in the upper part of fill [249] and it seems that the top part of the hearth had been badly disturbed, probably by late cultivation of the surrounding soil [149].

The south edge of hearth [250] was cut by a small hearth [396] comprising a simple ring of fist-sized stones set in the top fills of ditch [348]. There were only minor indications of burning and the hearth would appear to have been little used. It was sealed below a crude masonry wall [252] orientated east west and c. 0.3m wide. The wall appears to have been demolished in the early post-medieval period and only a 4-metre length of the basal course of masonry survived. The construction trench [144] was a mere 0.06m deep but could be traced for c.1 metre to the east and west of the masonry before being truncated at both ends by later disturbance, probably the same cultivation that had disturbed hearth [251]. Pottery recovered from the fill [143] of the construction cut below the masonry indicates a 14th- or 15th- century date for the wall.

The northern edge of hearth pit [250] was cut by a very shallow bowl-shaped pit [354]. A very similar pit [352] lay *c.* 1m to the east. Both pits contained fills based largely on topsoil with heavy charcoal flecking but there were no significant signs of burning *in situ*. Neither pit contained datable finds but both were sealed below a thin covering of soil [149] indicating that they were probably broadly contemporary with either hearth [396] or wall [252].

A pit [360] near the south-east corner of the site cut the northern part of phase 3 pit [366] whilst the north part of pit [360] was itself removed by a later feature. Pit [360] appears to have been roughly sub-rectangular before truncation and *c.* 1 metre deep originally. It contained no obvious cess layers and was of indeterminate function but may have been a rubbish pit after its abandonment.

AREA 2

WESTERN PLOT

A large, deep cesspit [494] near the north-west corner of the excavated area was cut by the rear wall of the standing building. The footings for the early 18th-century house had subsided into the very soft fill of the pit, requiring a relieving arch. The pottery indicates that the pit was filled in during the 14th or 15th centuries.

CENTRAL PLOT

Well [440] and garderobe [280] continued in use throughout this period. A large, shallow sub-rectangular scoop [334] was dug in the area to the immediate south of well [440]. It cut a small shallow pit [611] containing a soil fill with no finds. Scoop [334] was filled simply with a sandy loam [335] derived largely from topsoil and its function remains unclear. It was cut by a much smaller, shallower pit [331] of indeterminate function.

EASTERN PLOT

A cesspit [519] was dug *c.* 1 metre to the north-east of the earlier cesspit [550]. Both pits were set slightly obliquely to the frontage but pit [519] was the first cesspit to clearly lie completely within this plot. The earlier cesspit [550] probably belonged to the central plot although this would be hard to prove in the absence of any clear hard boundaries. Cesspit [519], which was very neatly rectangular, was sealed below soil [454]. It was slightly smaller than cesspit [550] but much shallower.

A small pit [99] first encountered at the rear of the property in the evaluation was further investigated. The pit had been dated to the 15th century and this date was confirmed. The pit was roughly circular and around 1m in diameter with a bowl-shaped profile *c.* 0.5m deep below the subsoil. It would appear to have been a small rubbish pit.

Interpretation

The longevity of the pottery styles means that there may be a degree of overlap between the features ascribed to this and the preceding phase.

Activity in area 1 was sparse and largely confined to a handful of features in the area of hearth pit [250]. The earlier cesspits were abandoned and filled either before this phase or within the opening part of it. There were no new cesspits. The short length of late medieval wall [252] may represent a fragment of a once longer wall orientated east-west marking a burgage boundary relating to Bird Street. Equally, it may simply relate to a structure near or around hearth [250].

Activity in area 2 was almost as sparse. Two cesspits were dug closer to the street frontage in the western plot but the plot still had no well, at least not in the back-plot, and there was no other provable activity. The garderobe [280] and well [440] in the central plot were still in use but new activity was confined to a series of shallow pits of indeterminate function in the central part of the plot. Activity on the proposed eastern plot was confined to the excavation towards the rear of the plot of the first cesspit and a probable rubbish pit. There were no new features on the street frontage.

PHASES 5 AND 6 LATE 15TH TO LATE 17TH CENTURIES

A sandstone footing [200] ran roughly east-west for some 20 metres across the middle of the site (Fig. 10). Only the basal course of masonry survived and this indicated that the wall was *c.* 0.4m thick. Pottery recovered from the fill of the construction cut dates the wall to the 17th century. The wall was set at an oblique angle to all of the existing property boundaries and the alignment

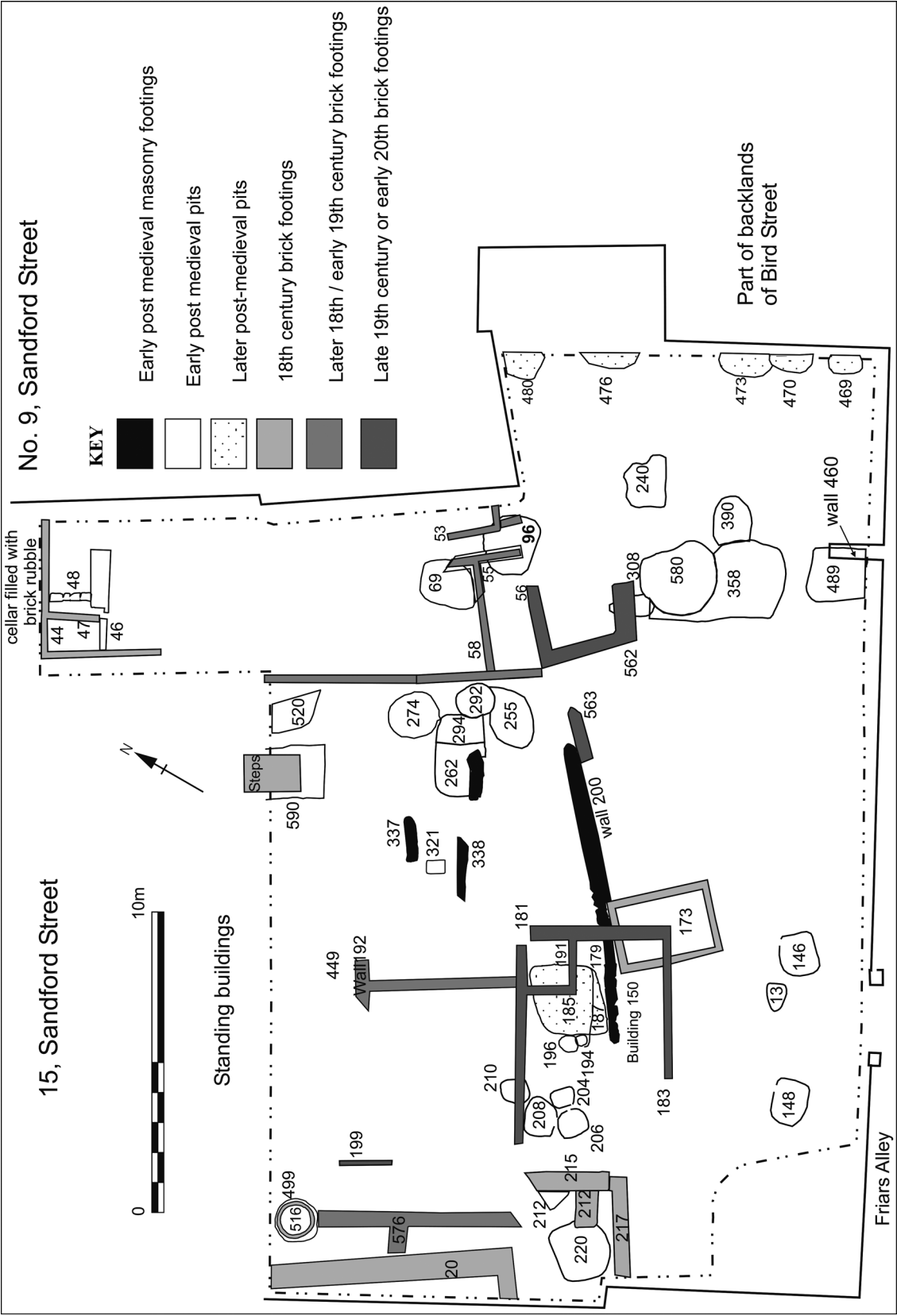


Fig. 10 Plan of features in phases 5 and 6

is continued eastwards to this day by the south wall of an outhouse of probable 18th century date that forms the southern boundary of 9, Sandford Street. Wall [200] formed the first clear physical boundary between areas 1 and 2.

AREA 1

A complex of deep, intersecting cesspits [308], [358], [580] in the south-east corner of the site that were a series of replacements for each other. The pottery recovered from these pits indicates a fairly narrow date range for the complex running from the early to late 16th century and also shows that a deep cesspit [489] less than 1 metre to the south lying against the site boundary was probably broadly contemporary. A shallow pit [390] cut by cesspit [358] was filled with mortar and loam with a large quantity of fragments of ceramic roof tile and brick. The pit was probably dug to dispose of demolition material. Three sub-rectangular pits [148], [146], and [13] of 17th-century date lying to the west also contained demolition debris and likewise appear to have been used solely for rubbish disposal. There was very little other early post-medieval activity in the remainder of the area to the south of wall [200].

AREA 2

WESTERN PLOT

In the extreme north-west corner of the site a steep-sided sub-rectangular cesspit [496] that was *c.* 1.2m deep and of 15th- or early 16th-century date was almost certainly a smaller replacement for cesspit [494].

A shaft [220] *c.* 1.2m in diameter and just over 3 metres deep was found near the western edge of the site. The sides were utterly vertical but it seems unlikely that it was deep enough to have ever functioned satisfactorily as a well. It may be that it was never completed having failed to find bedrock. Pottery and other materials recovered from the lowest fills indicate that the shaft was abandoned in the 16th century and probably used subsequently as a cesspit. It may have been a larger replacement further towards the rear of the property for cesspit [496].

A group of three intersecting and possibly related pits [204], [206], and [208] were found just to the east of pit [220]. Although fairly small and shallow they contained grey-yellow lenses interspersed within dark loamy fills and were almost certainly cesspits or rubbish pits of 16th- or 17th-century date. An even shallower scoop [210] with an identical soil fill nearby contained no diagnostic finds and remains undated.

CENTRAL PLOT

A broad shallow pit [262] filled with topsoil type material containing pottery of 16th- century date cut the western half of the north wall [340] of garderobe [280] to a depth of 0.4m below the top of the subsoil. The east side of pit [262] was subsequently cut by a sub-rectangular pit [294] that contained most of the rib cage of a pig. This was cut on the east side by a smaller oval pit [292] that contained part of a sheep carcass. Pottery recovered from both pits indicates that neither were significantly more recent than pit [262] and another pit, feature [255] of 16th-century date was dug in the top of garderobe [280]. All four pits would seem to have been rubbish pits and between them had served to remove the upper part of the north wall [340] of garderobe [280] (Figs 7 and 10).

At about the same time a short length of wall [263] was constructed running westwards from the north-west corner of the garderobe. The construction trench cut the southern edge of pit [262]. Less than 2 metres to the west, the construction trench for another wall [338] was cut along the southern edge of medieval scoop [334] on the same orientation to wall [263] but about 1 metre further northwards. A third and similar wall [337] was cut into the northern side of scoop [334]. All three walls survived merely as a single basal course of soft green sandstone and at less than 0.3m thick, none of these walls seem to have been very substantial. The gap between walls [263] and [338] was presumably an entrance. The three walls may have formed part of a larger structure for it is possible that the west side of the structure could have been removed by a recent sewer service, while early post-medieval pits to the east of pit [262] may have removed the eastern side of a shallow structure, if such ever existed, but this is unclear.

The upper fills of the garderobe were sealed below a thin layer of trample [253] with a high proportion of demolition materials or possibly construction waste of 17th-century date that extended

for around 1 metre to the north and west of the garderobe but not to the east. It was confined on the south side by wall [200].

EASTERN PLOT

On the frontage, a crude east–west stone footing [86] appears to have been a square plinth, perhaps a base for a timber setting associated with two rather insubstantial stone footings [47] and [48] although these appear to have post-dated [86].

To the south, the subsoil was directly overlain by very dark humic soil [454] to a depth of 0.4m which contained a range of pottery dating from the 13th to the later 16th or early 17th centuries. The layer was sealed directly below rubble laid in the late 20th century. The sharp and level nature of the boundary between soil [454] and the subsoil indicates that the central part of this plot had been either stripped to the subsoil before soil [454] was deposited or that the area was disturbed or cultivated over a long period. Soil [454] merged into medieval soil [71] to the north and soil [70] to the south. A large near circular rubbish pit [96] at the rear of the property cut soil [70]. The pit was dated by pottery to the 17th century.

Interpretation

Wall [200] was probably one of the most important features on the site for it forms the first substantial physical evidence of a division of the excavation area in the 17th century into northern and southern areas, i.e. between one or more back-plots belonging to Bird Street and those belonging to Sandford Street.

The extreme distance from Bird Street could explain the relative paucity of early post-medieval activity in area 1. The concentration of cesspits in the south-east corner of the area were confined within the footprint of the yard shown three centuries later on the tithe map as belonging to the Rose and Crown public house on Bird Street. This yard or enclosure may have existed from the early 16th century onwards. These pits form the bulk of the activity in the area, leaving just a small group of rubbish pits dug to the west in a landscape dominated by a rapid growth in depth of the topsoil profile.

Activity in the western plot was confined to a single cesspit and a small group of rubbish pits. In the central plot, the pottery recovered from the upper fills of the garderobe indicate that it was being cleaned out and still in use until fairly shortly before pit [255] was dug in the 16th century. The group of intersecting pits [292] [294], and [262] had truncated all of the upper part of the north wall of garderobe structure [280] at about the same time as pit [255] was dug, indicating that the old garderobe was now abandoned. Wall [200] ran along the top of the southern wall [260] of the medieval garderobe [280], although it did not follow the line of wall [260] exactly. The alignment of wall [200] may therefore be an old alignment first marked by the rather odd trapezoidal shape of the medieval garderobe [280] but the common alignment could just be a coincidence. In all likelihood, the wall of the old garderobe had stood less than a hundred years before wall [200] was constructed.

The three small stone footings on the frontage in the eastern plot would seem to indicate that a structure of some sort stood on the plot frontage in the 16th or 17th centuries. Any attempt to reconstruct a building on the fragmentary remains would be futile. It should be stressed that the ground works stopped 0.4–0.5m from the edges of the plot and there may be structural features in the unexcavated areas alongside the walls of the standing buildings.

PHASES 7 AND 8 THE EARLY 18TH TO LATE 20TH CENTURIES

AREA 1

The lower parts of a building [173] were found set into the southern side of wall [200] on the same oblique alignment as that wall. The building measured 3 metres by 3 metres internally and the floor was set c.1 metre below ground level. There had been a fireplace in the north-east corner that was an integral feature of the original structure.

The south-east corner of the area was occupied by a succession of large (and very deep) cesspits confined entirely to the east of an 18th century brick wall footing [460]. Wall [460] bonded into the existing brick wall [125] that forms the north side of Friars Alley and was almost certainly the west wall of tithe enclosure 343. The sequence of cesspits started with pit [469] then pit [473] and finally pit [470] (Fig. 6), the latter being in use in the later 18th and early 19th centuries. Two

other cesspits, [476] and [480] lay on the same line some 4–5m to the north. Wall [460] traversed northwards from Friars Alley completely over the top of the long abandoned 16th century cesspit complex [308] / [358] / [489] which might indicate that this boundary did not exist in the early post-medieval period, but the clustering of the earlier post-medieval cesspits in area 1 under the line of wall [460] suggests that an earlier boundary may have existed very slightly to the west. The area to the east of wall [460], i.e. within tithe plot 343, had a succession of ash and sand surfaces interspersed with ashy loam landfill deposits in the 18th and 19th century (contexts [461] to [464] on Fig. 6). The sequence to the west of wall [460] was completely different throughout this period comprising solely of a steady build-up of garden soils [11] and [119] (Fig. 6).

AREA 2

WESTERN PLOT

The alignment of a mid 18th-century brick wall footing [20] on the west side of the site was not matched anywhere else in the plot except by the rear boundary wall [217] which dated to the late 18th or early 19th centuries and probably formed a replacement for the west end of the old masonry wall [200]. The stubs of two walls footings to the north, [212] and [215], were slightly later additions abutting wall [217]. All of these walls undoubtedly relate to building A (Fig. 2). A well [499] just to the rear of the standing building at the extreme north-west corner of the plot had a brick lining, the bricks being of 18th-century hand-made type. The well was filled in using demolition rubble around 1900.

CENTRAL PLOT

A wall [192] on the west side of the plot was almost certainly part of the extension shown on Snape's map of 1781 and was the only part to have survived truncation by later ground works although a set of steps [590] leading downwards into the cellar below the standing building were probably broadly contemporary. It would appear that the extension shown by Snape lay entirely to the north of wall [200] confirming the detail shown on his map and also on the later tithe map. The 18th-century extension was modified at some time after the Ordnance Survey map of 1882 when a room [150] was added at the southern end, being built southwards through the line of wall [200] leading to the demolition of structure [173]. The walls [179] and [181] of the southern room abutted the south side of wall [192] but cut a large rubbish pit [185] dated securely by pottery to the late 19th century. The room was not shown on the Ordnance Survey map of 1882 and was probably built as part of the extension of the hospital c. 1910. These walls were demolished for later improvements to the hospital and most of the other footings for the remainder of the structure associated with room [150] had been removed by various ground works including sewer services in the mid to late 20th century.

A circular shaft [274] was found in the north-east corner of the plot. It was c. 1.3m across with vertical sides. This was observed during the later watching brief down to 1.4m below the main excavation surface. The backfill contained copious quantities of late 19th-century material. It seems likely that this was a well and that the lining, presumably either brick or stone, had been salvaged prior to the backfilling. It was presumably built to replace the medieval well [440] which was turned into a soakaway in the 19th century.

EASTERN PLOT

The area against the pavement was occupied by a cellar [44] filled with brick rubble [89] of Victorian date. An extension of the cellar running southwards towards wall [46] was probably the access stairway but this was not exposed. A brick wall on the west side of the entry was the east wall of the passageway for the building shown on historic maps from 1781 to c. 1965 but little indication remained of the rest of the building although these may lie in the unexcavated areas along the periphery of the standing buildings. A brick-lined well [68] was dug to the rear in the 18th century and in use until the mid 20th century when it was backfilled with demolition rubble. A rectangular arrangement of brick wall footings [58] in the vicinity of well [68] relate to the outbuildings to the rear of the house shown on 19th-century maps.

Interpretation

AREA 1

Building [173] was almost certainly the small building shown at this location on Snape's map of 1781. It abutted wall [200] but was demolished when the extension on the south side of Sandford House was extended southwards *c.* 1910 by the addition of room [150]. This marks the first time at which buildings attached to Sandford Street cross the line of wall [200] into area 1. The cluster of deep cesspits in the south-east corner of area 1 indicate that this part of the area, probably corresponding directly to tithe parcel 343, was probably the toilet facility for the Rose and Crown public house. The remainder of area 1 was obviously a garden during this period.

AREA 2

The alignment of wall [20] on the west side of the site was not matched anywhere else on site. The wall almost certainly formed part of an outbuilding for building A (Fig. 2). The remaining features can be seen to relate almost entirely to structures shown on historic maps. The walls forming room [150] cut a pit [185] dated by pottery to the late 19th century but the room was not shown on the Ordnance Survey map of 1882 so was probably built as part of the extension of the hospital *c.* 1910. The western plot was brought within the curtilage of Sandford House at that date and this almost certainly explains why room [150] crossed into the western plot. In all likelihood, other walls relating to wall [20] may have been removed to make way for room [150].

THE POTTERY *by Stephanie Rátkai*

Methodology

All stratified medieval pottery in phases 2–6 was examined under x20 magnification. Post-medieval pottery from these phases was divided into ware groups *e.g.* blackware, yellow ware etc. Midlands Purple was treated as a ware group although there were variations in the fabric. All pottery from phases 2–6 was quantified by sherd count, sherd weight, minimum rim count and estimated vessel equivalents (*eves*; rim %). Details of vessel form, decoration, glazing, sooting, and wear were noted.

The medieval pottery was fabric typed following the type series previously established for Sandford Street at Nos 18–28 (Nichol and Rátkai, 2004). Fabric descriptions are not given in this report unless the fabric did not appear amongst the material from the previous Sandford Street excavation.

Pottery Fabrics and Forms

The pottery fabrics identified on the north side of the street at 18–28 Sandford Street are not described here and the reader is referred to the report for that site (Nichol and Rátkai 2004). One interesting aspect of the two sites is that the pottery assemblage from 15 Sandford Street contained a small number of different fabrics to the assemblage from 18–28 Sandford Street. These additional fabrics fell into two main groups: fabrics that were early, of the 12th to early 13th centuries, and fabrics which belonged to the late medieval/early post-medieval period, that is, the 15th–16th centuries. The presence of the former group tends to confirm that there was a greater amount of earlier occupation at 15 Sandford Street on the south side of the street than at 18–28 (to the north) in the post-Conquest period. Developed Stamford Ware (Kilmurry 1980), Coventry D Ware (Redknap 1985), Deritend Ware (Sherlock 1957; Rátkai 2009a), and wheel-thrown, oxidised Malvernian Ware (Hurst 1992; Hurst and Rees 1992) are well known regional types and are also not described in this report.

Fabric cpj8a

Abundant rounded quartz *c.* 0.5mm, sparse iron oxide up to 2mm, sparse rounded mudstone *c.* 0.5mm, orange brown surfaces, grey core. Hand formed hard.

Jugs and a minimum of three cooking pots were represented. One cooking pot rim was too fragmentary for illustration, the second (Fig. 11: 20) had combed decoration on the rim and the third (Fig. 14: 65) had a simple everted rim and heavy external soot. A similar cooking pot (in fabric cpj4) was found on the north side of Sandford Street and others are illustrated by Ford (1995, Fig. 9: 28, 29). Jugs were represented by body sherds only. One had a thick opaque pale olive glaze. The margin below the glaze was pale grey. The second jug sherd had an olive glaze and was decorated with a line of applied scales.

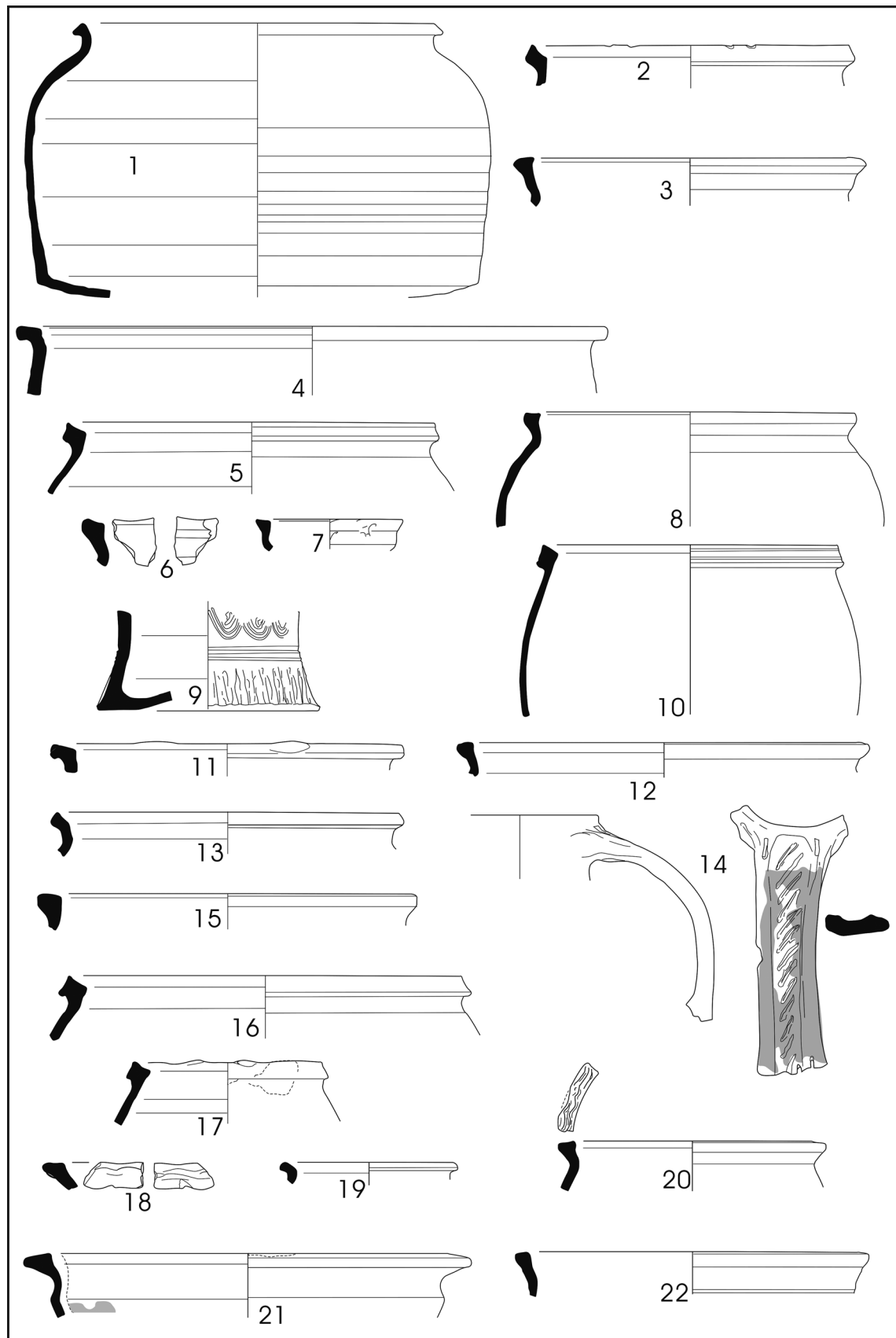


Fig. 11 Pottery from phases 2 and 3

Fabric cpj8b

Sparse-moderate, ill-sorted rounded quartz up to 0.5mm, sparse iron-oxide 0.25-0.5mm, pale brown-orange surfaces and dark blue-grey core. Hand-formed, hard.

This fabric was better represented than fabric cpj8a, all the sherds appearing to be from cooking pots, but only one rim sherd was present (Fig. 11: 13).

Fabric cpj9

Sparse-moderate, sub-angular granitic temper up to 2mm, sparse rounded quartz up to c.0.25mm, sparse golden mica. Hand-formed, hard.

The fabric is the same as Fabric J11 from Stafford Castle (Rátkai 2007) which is directly paralleled by granitic tempered sherds from Wolvey (Warwickshire) (Rátkai 1998a). Sherds from both Stafford Castle and Wolvey were examined petrologically by Dr David Williams who noted:

Only one of the Stafford sherds has a fabric which resembles the Wolvey material. This ... contains frequent inclusions of a quartz-diorite or granodiorite rock and closely resembles Wolvey (fabric A). Wolvey is situated a few miles to the south east of the Pre-Cambrian and Cambrian igneous formations around Nuneaton [Geological Survey 1" Map of England Sheet No. 169; Eastwood, 1923]. A local source in the Nuneaton area is suggested and it is worth noting that the nearby medieval kilns at Chilvers Coton produced pottery whose fabric contained diorite [Williams, 1984]. The remaining two sherds from Wolvey (fabrics B and C) also contained distinctive inclusions of shale. It is possible that these derive from the Stockingford Shales which outcrop around Nuneaton [ibid.]. Inclusions of shale were also a feature of some of the Chilvers Coton fabrics [Williams 1984].

Further examples of this fabric have been found at Coventry (Wright 1987), Bascote (Rátkai 2009b), and Coton Park, Rugby (Denham 2001). This fabric was represented by a single sherd from [458]. The sherd is from the base and lower body of a cooking pot with a sagging base and is sooted externally. There is a distinct ridge at the junction of the body and base, a feature seen on 12th century, mudstone-tempered ware cooking pots from Stafford Castle (Rátkai 2007).

Fabric medg2

Moderate-abundant rounded quartz c.0.5-1mm. Surfaces pale brown, core grey. The firing is variable so that some sherds are brown throughout. Hand-formed, hard.

Sherds in this fabric are characterised by the poor quality of the glazing. This varies from white slightly powdery residues, where the glaze has not properly fluxed, to a thick opaque cream glaze, to an olive splash glaze. Decoration seems to consist primarily of bands of combing. A sherd recovered from the evaluation of the north side of Sandford Street was decorated with an applied vertical thumbled strip over incised horizontal lines.

Fabric medg3

Sparse sub-angular quartz, sparse iron oxide, sparse brown possibly ferrous lumps, rare sandstone (coarse poorly cemented grains), rare mudstone/siltstone.

There was a single sherd in this fabric from a hand-formed pitcher. The glaze is of a similar poor quality to that found on fabric medg2 pitchers, being pale, opaque and powdery in patches. The occasional small lead globule adheres to the exterior of the pot. A small portion of the lower handle survives, with an applied central strip.

Fabric ww4

Fine sandy matrix, quartz grains <0.1mm, rare rounded quartz grains c.0.25mm, sparse burnt out organics.

There were only two jug sherds in this fabric. Both had an olive glaze. One sherd had part of an impressed design. Ridging within the depression suggests that a comb was used to form the impression. Something similar is illustrated by Ford (1995, Fig. 15: 93)

Fabric lmt2

Sparse-moderate, ill-sorted rounded quartz 0.1-0.5mm. Wheel-thrown, hard. Fabric colour varies from buff to orange to pale grey. The firing is inconsistent so that some of the sherds have reduced cores, whilst others are oxidised throughout.

Forms comprised jugs (Fig. 13: 41) and indeterminate jugs/jars/cisterns. Glazes were olive or brown.

Fabric lmt2a

Moderate quartz <0.1mm, rare larger rounded grains, sparse-moderate flecks of silver mica, rare sub-angular white inclusions (no reaction with HCl., possibly gypsum) Slightly powdery surface feel, wheel-thrown, hard.

There was only one sherd in this fabric and it may have been a variant of fabric lmt2.

A larger number of whiteware sherds were recovered from 15 Sandford Street than from the excavation at 18–28 Sandford Street. Fabric ww2 was the best represented on both sites, followed by ww1 and ww3 (Table 1). The majority of fabric ww1 sherds were from jugs, whilst on both sites roughly equal amounts of cooking pots and jugs were found in ww2. There was no observable preference for bowls in fabric ww3 at 15 Sandford Street. No pipkins, jars or cisterns were identified in any of the whiteware fabrics from 15 Sandford Street, but examples were found during excavation at 18–28 Sandford Street

The whiteware assemblage from No. 15 comprised about 6 per cent red painted sherds (often known as Red-Painted Whiteware) and this was also the case at 18–28 Sandford Street. Other types of decoration were limited at 15 Sandford Street, being confined on ww1 jugs to two examples of combing and an applied thumbled strip. Non-painted decoration on ww2 jug was limited to two examples of combing, an applied notched strip, an applied thumbled strip, a vestige of an applied strip and a row of lunate fingernail impressions. One fabric ww3 jug had combed decoration. The whiteware assemblage recovered from 15 Sandford Street indicates the local whiteware vessels were usually undecorated. The assemblage recovered from 18–28 Sandford Street confirms this observation. However, when decoration was present it could be quite elaborate. A fabric ww2 baluster jug base (Fig. 11: 9) had a band of horizontal combing below wavy combing and above a band of vertical slashing that resembles a frill or folds of material at the hem of a garment. A similar effect, taken from contemporary sources, is shown by Houston (1939, Figs 17 and 52a). Here an over-garment with an embroidered hem (in both cases a dalmatic) finishes a little above a full undergarment, resulting in decorated band above plain pleated material, very like the baluster jug base. Whether this aspect of the decoration was purely coincidental or reflects an element of anthropomorphism is arguable but worthy of comment.

The most common ww2 cooking pot form had a squared often undercut rim (Fig. 11: 5, 10, 16; Fig. 13: 47, 59). This form was paralleled on the north side of Sandford Street but the clubbed rims found there were not in evidence at 15 Sandford Street. In contrast the triangular rims (Fig. 12: 23, 25) and upright rims (Fig. 11: 8; Fig. 13: 38) were not found to the north at 18–28 Sandford Street.

There were very few substantial sections of cooking pots or jugs in the iron-rich fabrics cpj1-cpj8b and medg-medg3. Most of the cooking pot rim sherds had broken away at the neck or shoulder

TABLE 1 Whitewares: percentage (by sherd count / sherd weight (grams) of vessel forms by fabric

FABRIC	ww1		ww2		ww3	
Vessel Form	% count	% weight	% count	% weight	% count	% weight
unknown	23.9	6.9	47.6	31.1	45.5	60.0
<i>Cooking / food preparation</i>						
bowl	3.3	2.2	6.7	7.9	9.1	12.0
cpj	5.4	2.3	22.4	29.9	9.1	10.7
<i>Liquid storage / tableware</i>						
jug	30.4	53.4	23.3	31.1	36.4	17.3
bottle	36.9	35.1				
Total count/weight	92	2522	313	3445	11	75

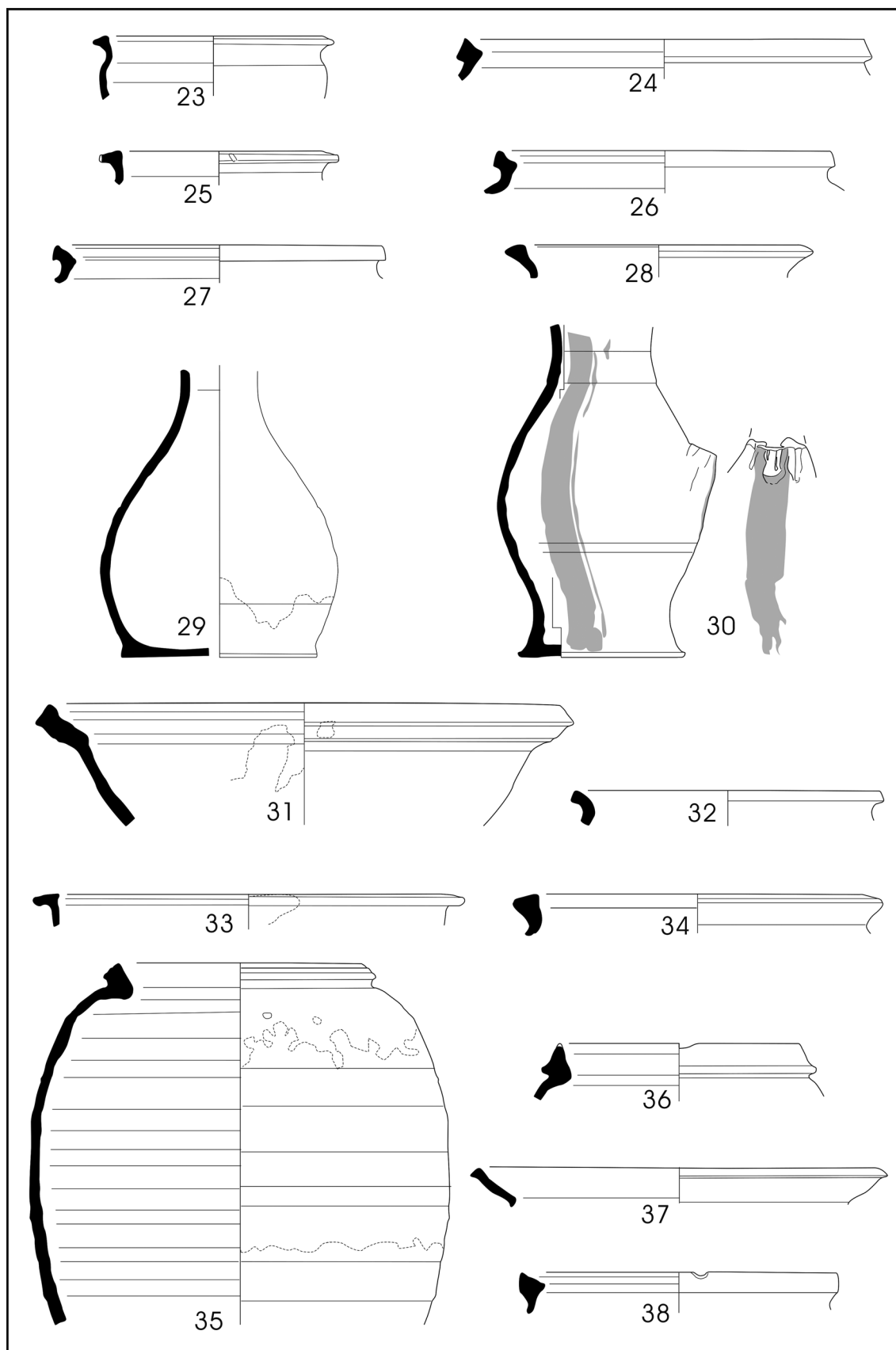


Fig. 12 Pottery from phases 3 to 5

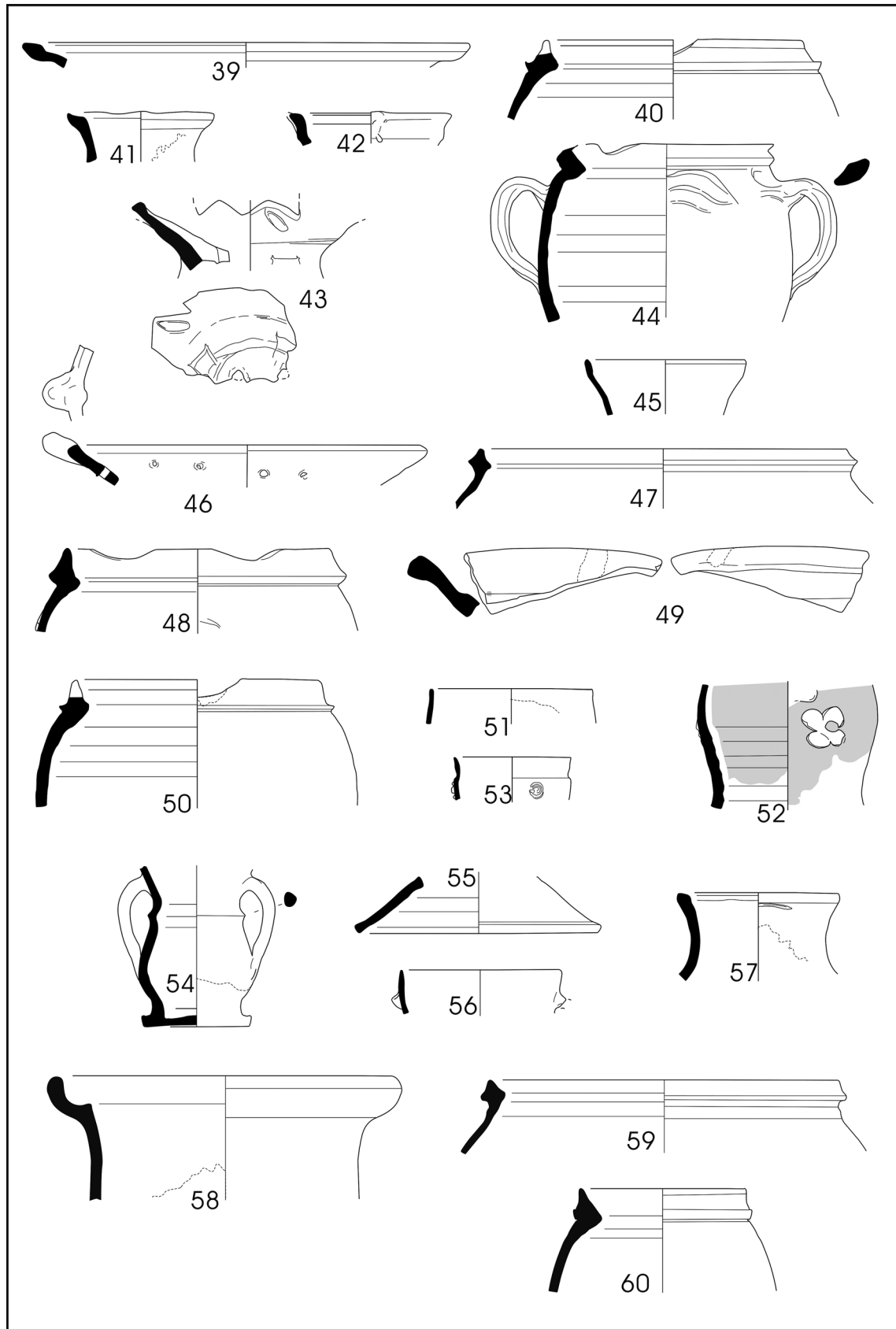


Fig. 13 Pottery from phases 5 and 6

TABLE 2 Quantification of pottery by percentage sherd weight and count, Phases 2–4

Fabric	Phase 2		Phase 3		Phase 4	
	% sherd count	% sherd weight	% sherd count	% sherd weight	% sherd count	% sherd weight
cpj1	25	6.8	6.6	5.1	3.2	2.1
cpj2	3.6	<1.0	3.6	4.0	3.2	6.3
cpj4	60.7	85.8	1.9	2.0		
cpj6g	10.7	6.6				
Cov D			<1.0	<1.0		
cpj3			1.7	1.0		
cpj5			<1.0	<1.0		
cpj5g			1.1	<1.0		
cpj6			<1.0	<1.0		
cpj7			<1.0	<1.0		
cpj8			1.1	<1.0		
cpj8a			1.5	1.1		
cpj8b			5.7	5.1		
cpj9			<1.0	<1.0		
Derit			<1.0	<1.0		
Dev Stam			<1.0	<1.0		
irp1			<1.0	<1.0		
irp2			<1.0	<1.0	19.4	21.1
shell			<1.0	<1.0		
medg			<1.0	<1.0		
medg2			1.7	<1.0		
medg3					3.2	29.8
ww1			16.3	31.8	9.7	6.5
ww2			50.5	35.7	42.0	23.0
ww3			1.3	<1.0		
ww4			<1.0	<1.0		
cm1			<1.0	6.4		
cm3			<1.0	<1.0		
lmt1			<1.0	1.2		
lmt2					6.5	3.9
rw1			<1.0	<1.0	3.2	3.0
rw2					3.2	<1.0
rw3			<1.0	<1.0		
rw4					6.5	3.3
rw6			<1.0	<1.0		
mp			<1.0	<1.0		
cist			<1.0	<1.0		
yw			<1.0	<1.0		
cw			<1.0	<1.0		
stw			<1.0	<1.0		
Total sherd count/weight	28	960	529	7685	31	430

junction making it difficult to determine the vessel form with any accuracy. There was however, roughly half of a fabric cpj4 shouldered cooking pot (Fig. 11:1) from [32] the fill of pit [33]. This vessel is discussed more fully below. Also worthy of note were two cooking pots with thumbled rims (Fig. 11: 11, 18) in fabric cpj2. One is similar to a vessel from Drayton Bassett, situated between Sutton Coldfield and Tamworth, illustrated by Ford (1995, Fig. 10: 38). Thumbled rims are not common in Staffordshire - there are, for example, only two illustrated in Ford's survey (Ford 1995) and both from Drayton Bassett. At Stafford Castle (Rátkai 2007) thumbled rims were associated with the early timber castle and date to the late 11th-12th centuries. It is therefore very likely that the examples from Lichfield date to the 12th century and are contemporary or near contemporary with the glazed pitchers found on Sandford Street.

Glazed pitchers were found in fabrics medg, medg2, medg3, Coventry D Ware, cpj5g and cpj6g. The latter two fabrics are glazed versions of fabrics more normally used for cooking pots. As stated above, the glazing was generally poor on these vessels. Sherds were usually small. A few seem to have been decorated with combing or incised horizontal lines but the material was so fragmentary that it was impossible to form a clear idea of how these vessels appeared when whole. However, the glazing, firing and manufacture of these vessels indicate that they were products of the mid 12th-early 13th centuries.

The average overall sherd weight of pottery from phases 2-6 was just under 20g. This was slightly lower than the figure recorded at 18-28 Sandford Street. This broke down by phase into 34.3g (Phase 2), 14.5g (Phase 3), 13.8g (Phase 4), 28.3g (Phase 5), and 37.9 (Phase 6). This suggests that pottery from the 13th and 14th centuries had been subjected to the most disturbance and that the residual component in Phases 3 and 4 was higher than in either Phase 2 or Phases 5-6. This is broadly the same pattern as that encountered on the north of Sandford Street, allowing for the differences in phasing between the two sites. The residual component in Phases 5-6 ran at about 15 per cent by sherd count or 7 per cent by sherd weight. The average sherd weight of the residual material in Phases 5-6 was *c.* 13.8g as compared to *c.* 32.3g for pottery contemporary with Phases 5-6. It appears that the earlier medieval material was much more heavily disturbed than that of the late medieval and early post-medieval periods. It may be significant in this respect that there was very little 17th- or 18th-century pottery and this area of Sandford Street may have been relatively neglected from the later 16th century through to the late 17th or early 18th centuries. This would account for the paucity of yellow ware on the site and may account for the relatively undisturbed nature of deposits containing 15th-16th century pottery. The near absence of 17th- or 18th-century pottery is in marked contrast to the north side of Sandford Street.

The proportion of fabrics by phase was much the same on both Sandford Street sites (see Nichol and Rátkai 2004). The 13th and 14th centuries were dominated by whitewares, particularly fabric ww2. By the 15th century whitewares occur residually although two sherds from a jug/cistern from the north of Sandford Street may indicate that there was a small amount of whiteware production in the 15th century. However, by and large, the 15th and 16th centuries on both sites were dominated largely by Midlands Purple Ware, the redwares (fabrics rw1-rw7) and the late medieval transitional wares (fabrics lmt1-lmt2a) with a smaller proportion belonging to fabrics cm1-3. On both sites, Cistercian Ware, Tudor Green and blackware form a significant part of the assemblage and suggest prosperous bourgeois occupants on Sandford Street.

The evidence from 15 Sandford Street did not help much in elucidating the relative chronology of the cooking pot fabrics. The uses of fabrics cpj1, cpj2 and cpj4 seem to pre-date the use of whitewares. Fabric cpj4 is however, over-represented since all of the Phase 1 sherds were from a single cooking pot (Fig. 11: 1) found in pit [33]. A date of earlier than the mid 13th century was suggested for fabrics cpj1, cpj2 and cpj5 on the north of Sandford Street but the suggestion that fabrics cpj3 and cpj6 were coeval with the whitewares could not be verified by the finds from 15 Sandford Street.

The suggestion that fabric cm1a was unlikely to date to before the later 14th-century finds some support from 15 Sandford Street since it was not found before Phase 5. However, the combined information from both Sandford Street sites suggests that some of the redwares must have been made in the 14th century, although as stated above, they became pre-eminent in the 15th and 16th centuries. In general, the proposed chronology of the pottery outlined by Rátkai (Nichol and Rátkai 2004) is supported by the evidence from 15 Sandford Street.

The small amount of clearly intrusive material in Phase 3 was almost certainly introduced into the fills of earlier features by the widespread cultivation or disturbance of the relict medieval top-soil [149] into the early post-medieval period. Stoneware was recovered from this soil. A Midlands

TABLE 3 Quantification of pottery by percentage sherd weight and count, Phases 5–6

Fabric	Phase 5		Phase 5 / 6		Phase 6	
	% sherd count	% sherd weight	% sherd count	% sherd weight	% sherd count	% sherd weight
cpj1	2.0	<1.0				
cpj2	<1.0	<1.0				
cpj4	2.0	1.1				
cpj8b	<1.0	<1.0	3.7	<1.0		
irp1	<1.0	<1.0	7.4	17.1		
ww1	<1.0	<1.0	3.7	1.0		
ww2	9.9	4.7	11.1	4.2	1.3	<1.0
ww3	<1.0	<1.0				
cm1	3.5	2.8				
cm1a	<1.0	<1.0	2.6	2.0		
cm2	<1.0	<1.0				
cm3	<1.0	<1.0				
lmt1	5.4	3.6				
lmt1a	<1.0	<1.0				
lmt2	3.9	4.2				
lmt2a	<1.0	<1.0				
rw1	5.9	7.3			1.3	1.3
rw2	1.5	1.2				
rw3	<1.0	2.0				
rw4	7.4	<1.0	4.0	8.6		
rw7	<1.0	7.2				
malv	<1.0	<1.0				
mp	27.6	46.8	3.7	55.7	9.3	15.6
tg	3.9	<1.0			1.3	<1.0
cist	9.9	7.8	22.2	8.7	2.3	2.2
cistblw	<1.0	<1.0				
blw	4.4	2.8	3.7	2.2	9.3	37.5
blwcw	<1.0	<1.0			2.3	23.8
yw					4.7	<1.0
cw	<1.0	<1.0			7.0	8.3
mpcw	<1.0	<1.0			2.3	<1.0
stw					2.3	<1.0
mang					4.7	2.3
porc					2.3	<1.0
slpw					7.0	1.8
wsg					9.3	1.3
intrusive	<1.0	<1.0			7.0	2.5
Total sherd count/weight	203	5737g	27	690g	43	1630g

Table 4 Quantification of pottery by percentage rim count and *eves*, Phases 2–4

Fabric	Phase 2		Phase 3		Phase 4	
	% rim count	% <i>eves</i>	% rim count	% <i>eves</i>	% rim count	% <i>eves</i>
cpj1			11.8	7.5	33.3	14.7
cpj2			5.9	6.6		
cpj4	100	100	4.0	3.6		
cpj3			4.0	2.1		
cpj6			2.0	2.1		
cpj7			1.8	<1.0		
cpj8a			5.9	6.9		
cpj8b			2.0	2.4		
ww1			11.8	16.7	33.3	64.7
ww2			45.1	20.5	33.3	20.6
ww3			2.0	<1.0		
rw1			2.0	1.8		
rw6			2.0	<1.0		
rim count / <i>eves</i>	1	37%	51	335%	3	34%

Table 5 Quantification of pottery by percentage rim count and *eves*, Phases 5–6

Fabric	Phase 5		Phase 5 / 6		Phase 6	
	% rim count	% <i>eves</i>	% rim count	% <i>eves</i>	% rim count	% <i>eves</i>
ww2	13.3	3.7	50.0	50.0	20.0	36.1
ww3						
cm1	3.3	3.2				
cm1a					20.0	18.1
lmt1	10.0	5.0				
lmt2	3.3	4.5				
rw1	6.6	5.2				
rw4	3.3	2.6				
rw7	3.3	3.7				
mp	23.3	49.4	50.0	50.0	20.0	18.1
tg	10.0	3.2			20.0	6.9
cist	20.0	15.1				
cw					20.0	20.8
rim count/<i>eves</i>	30	43%	2	18%	5	72%

Purple sherd was found within the fill of the horse burial [239] in pit [240], Cistercian Ware within the fill of pit [248] and a yellow ware sherd in the middle fill of pit [168]. All three features and their fills are discussed more fully below.

There were differences between the assemblages recovered from the two Sandford Street sites. In the 15th and 16th centuries Midlands Purple Ware was the major ware type at 15 Sandford Street and Cistercian Ware was better represented than Tudor Green Ware. Midlands Purple Ware formed nothing like the same proportion of the pottery on the north side of Sandford Street and Tudor Green seems to have been better represented. Differences in phasing on the two sites make direct comparisons difficult but there is probably a case to be made for the use of Tudor Green as a precursor

TABLE 6 Form / function by phase (quantification by sherd count and sherd weight) Bracketed figures denote intrusive sherds

	Phase 2		Phase 3		Phase 4		Phase 5		Phase 6	
Vessel Form	count	weight	count	weight	count	weight	count	weight	count	weight
unknown			162	1012	12	73	58	721	32	881
pancheon							1	126		
bowl/pancheon							1	72	2	36
Food preparation							2	198	2	36
bowl			28	491	2	28	10	347		
cpj	25	897	177	2292	5	69	9	134		
pipkin/skillet									1	38
Cooking / food preparation	25	897	205	2783	7	97	19	481	1	38
chafing dish							4	137		
Cooking / table							4	137		
cistern							31	2107		
jar /cistern							3	155		
jug/jar/cistern					2	22	31	881		
jar							1	76	1	100
Storage/brewing					2	22	66	3219	1	100
pitcher	3	63	15	548	1	128				
jug			111	2442	9	110	18	314	2	470
bottle			34	886						
Liquid storage/table	3	63	160	3876	10	238	18	314	2	470
drinking vessel			[2]	[9]			33	605	4	90
Consumption/table			[2]	[9]			33	605	4	90
lid							2	32		
industrial?							1	30		
chamber pot									1	15
Miscellaneous							3	62	1	15
Total count/weight	28	960	529	7680	31	430	203	5737	43	1630

to Cistercian Ware, which was suggested for 18–28 Sandford Street, but with some overlap of the two fabrics in the late 15th or early 16th centuries.

Vessel function figures were much the same for both Sandford Street sites in the earlier medieval period with roughly the same ratio of sherds associated with cooking/food preparation to liquid storage/table wares. By the late medieval and early post-medieval periods there is a greater functional divergence between the two sites. At 15 Sandford Street there is a much greater emphasis on vessels for storage/brewing and liquid consumption, that is, drinking vessels. There is a concomitant drop in vessels associated with cooking and food preparation. In fact even in the earlier medieval period there was a greater variety of cooking vessels at 18–28 Sandford Street with pipkins and dripping trays in evidence. It is interesting to note that the excavator considered that the site may have been an inn (Nichol and Rátkai 2004). The location, near the edge of town, and near Sandford gate, would certainly have been ideal. Such vessels were absent from 15 Sandford Street, apart from one possibly residual pipkin / skillet handle from Phase 6.

General remarks on the assemblage and discussion of selected feature fills

The earliest feature was ditch [416] and its re-cut [348]. The total absence of pottery in the lower fills and general paucity in the late fills is in marked contrast to the ditch at 18–28 Sandford Street where pottery was plentiful throughout all the fills. The difference apparent at 15 Sandford Street is consistent with the proposed early date for ditches [348] and [416]. The ditch was obviously important enough to warrant a re-cut. The absence of pottery but the presence of a Roman box flue tile is consistent with an early Saxon date since odd pieces of Roman detritus, particularly pottery and tile, are often found associated with sunken-featured buildings (*grubenhäuser*). Some of this material may have been deliberately brought to a site for talismanic, ritual, medicinal or cosmetic reasons although on other occasions it may have been accidentally incorporated into building materials, e.g. turves cut for walling or roofing (Dr J Evans, *pers comm*). The presence in the nearby vicinity of a residual chaff-tempered sherd at 18–28 Sandford Street in pit F403 as well as three further chaff-tempered sherds and a possible grano-dioritic sherd from Trench 21 adds further weight to the possibility of a Saxon date for the ditch.

Pit [227] which was cut into the upper ditch fills contained three joining pitcher sherds (fabric cpj6g) with a 'lumpy' external olive glaze and interior glaze dribbles and two, small, undiagnostic fabric cpj1 cooking pot sherds. The pitcher sherds weighed 63g, so there is a strong possibility that the pit was backfilled in the late 12th or early 13th centuries. Contexts [347], [349] and [404], all very late fills within ditch [348] affected by later cultivation, contained only whiteware sherds including a red-painted whiteware jug sherd from [349] (Fig. 11: 14) and a whiteware cooking pot from [347] (Fig. 11: 15). There was one exception, a fabric cpj1 sherd from fill [347].

The fill [241] from pit [242] contained single cooking pot sherds in fabrics cpj2, cpj6 and cpj8b and two fabric cpj4 sherds (Fig. 11: 2) and two whiteware sherds (fabric ww2). This small group has a *terminus post quem* of c. 1250.

The large cesspits dug within the footprint of ditch 348 appeared to be related both in form and by their location but the pottery from their fills was not consistent.

Cesspit [160] was a recut of pit [165]. The fills of both cuts contained whiteware sherds but the fill of the primary cut [165] contained roughly equal amounts of whiteware and iron-rich cooking pot sherds. This might just indicate that the primary pit [165] was backfilled in the 13th century, although the average sherd weight for the fill of [165] was very low at 5.2g, so all the material might be residual. However, the presence of two fabric medg pitcher sherds in [157] and a shelly ware sherd in fill [155], both fills of the recut, attest to further earlier material which may have been disturbed from an early fill of [165].

Two fabric cpj1 cooking pot rim sherds (e.g. Fig. 11: 6) were found in the fill of [165] together with a whiteware jug rim (Fig. 11: 7). Cooking pot (Fig. 11: 6) may have had a thumbled rim, another indication of an early date for some of the pottery. Two further fabric cpj1 cooking pots with the same expanded everted rim (eg Fig. 11: 3) were found in fills [155] and [157] together with a large diameter possible cooking pot sherd (Fig. 11: 4) from [158]. The form of the latter also looks as if it should pre-date c. 1250. A fabric cpj8a lid seated cooking pot rim and a whiteware (fabric ww2) cooking pot with an angular undercut rim (Fig. 11: 5) were also recovered from [158] and a fabric cpj3 cooking pot rim from [157]. A jug body sherd of fabric cpj8a decorated with a single vertical line of applied scales found in fill [157] dates stylistically to the late 13th or early 14th centuries.

Pit 170, was re-cut [585] and re-cut a second time [168]. The fill of the primary pit [170] contained 10 sherds from a whiteware cooking pot (Fig. 11: 10), a globular form with an angular rim, which is paralleled by a cooking pot from Drayton Bassett (Ford 1995, Fig. 14: 75). These joining sherds weighed 156g and are likely to be part of the original fill, giving a *terminus post quem* of c. 1250 for the disuse of pit [170]. The fill of re-cut [585] contained a thumbled rim sherd from a fabric cpj2 cooking pot (Fig. 11: 11), three sherds from a red-painted whiteware jug, a single sherd from a bowl with an internal copper coloured bright green glaze and a whiteware jug sherd decorated with an applied thumbled strip. A second similarly decorated whiteware sherd, probably from the same vessel, came from fill [166] of the second re-cut [168]. The lower half of a red-painted whiteware jug handle (Fig. 11: 14) was also found in [166]. The preponderance of whiteware sherds and the comparatively high average sherd weight of just under 22g suggests that the sherds were deposited in the 14th century.

The second re-cut [168] contained two fills [166] and [167]. Whitewares were dominant in both fills but [167] contained a post-medieval yellow ware cup sherd dating to the late 16th or 17th centuries which might be intrusive but the average sherd weights of 9.8g for [166] and 13g for [167]

TABLE 7 Pottery from the fills of pit re-cut [160]

Fill	155		157		158		All fills	
	sherd count	sherd weight (g)	sherd count	sherd weight (g)	sherd count(g)	sherd weight	total sherd count	total sherd weight
cpj1	2	51	1	8	1	47	4	106
cpj2			3	34			3	34
cpj3	1	6	2	15			3	21
cpj4			1	12			1	12
cpj5	1	5					1	5
cpj5g			1	4			1	4
cpj8			2	8			2	8
cpj8a			3	32	1	6	4	38
cpj8b	2	43	1	9	1	15	4	67
derit	1	6					1	6
medg					2	12	2	12
medg2	1	7					1	7
medg4			1	5			1	5
shell	1	2					1	2
ww1			1	6			1	6
ww2	6	100	6	30	8	154	20	284
ww2a			3	20			3	20
Total	15	220	25	183	13	234	53	637

TABLE 8 Vessel forms from the fills of pit re-cut [160]

Fill	155		157		158		All Fills	
	sherd count	rim count	sherd count	rim count	sherd count	rim count	total sherd count	total rim count
bowl			2	1	1	1	3	2
cooking pot	9	2	12	2	5	2	26	6
jug	4		5		2		11	
jug/pitcher	1				2		3	
unknown	1		6		3		10	
Total	15	2	25	3	13	3	53	8

might indicate that much of the material from these fills was residual. The three rim sherds from the fills of [168] consisted of a whiteware sherd with an angular undercut rim (like Fig. 13: 47), a very abraded fabric cpj7 cooking pot sherd from [167] and a whiteware globular cooking pot/jar sherd with an upright expanded rim (Fig. 11: 8) from [166].

The fill of [154] was rather different from those of the other pits cut into ditch [348]. Out of the twenty sherds from fill [153] only two were whiteware (fabric ww2). These comprised a sherd from a jug with a 'corrugated' neck and olive glaze with copper mottles, and a body sherd with heavy internal sooting. There were no rim sherds in the fill but the remaining material consisted of three cooking pot/jars in fabrics cpj1, cpj8a and cpj8b, a jug sherd in fabric cm3, four jug/pitcher sherds in fabrics cpj5g and medg4 with thin often 'decayed' glazes and a possible Coventry tripod pitcher sherd with a tan-olive splash glaze. A small fabric medg sherd, with traces of a thin decayed interior glaze could not be assigned to form. The jug/pitcher sherds could date to the second half of the 12th century and are unlikely to post-date c. 1200. The same is true of the Coventry D Ware pitcher

TABLE 9 Pottery from the fills of pit re-cut [168]

Fill	166		167		All fills	
	sherd count	sherd weight (g)	sherd count	sherd weight (g)	total sherd count	total sherd weight (g)
cpj4	1	28			1	28
cpj7			1	20	1	20
derit			1	6	1	6
irp1			1	2	1	2
cm1	1	4	1	5	2	9
ww1	8	75	7	117	15	192
ww2	21	194			21	194
ww3	1	4			1	4
yw			1	6	1	6
Total	31	305	12	156	44	461

TABLE 10 Vessel forms from the fills of pit re-cut [168]

Fill	166		167		All fills	
	sherd count	rim count	sherd count	rim count	total sherd count	total rim count
bowl	8				8	
cooking pot	9	2	1	1	10	3
jug	5		3		8	
cup			1		1	
unknown	9		8			
Total	31	2	13	1	44	3

sherd. However, although there is 12th-century material in [153] the average sherd weight of 6.55g is testimony to its residual nature. The dating of the fill rests on the whiteware sherds which give a *terminus post quem* of c. 1250 and the fabric cm3 sherd which may date to the late 14th century. Pit [172] which cut pit [154] contained four whiteware sherds (fabrics ww1 and ww2), four fabric cpj1 sherds and a fabric cpj8b sherd.

Pit [270] similar to the above three pits contained only two sherds in fabric ww2 and cpj4. This could indicate that it went out of use at the same time as pits [154] and [160] but the evidence is too slight to be certain.

Pit [244] to the south of the ditch, had a partial stone and clay lining and a possible canopy or superstructure and contained 68 sherds (see Tables 11 and 12). The average sherd weight was just over 11g suggesting that the pottery was not a primary deposition. In many ways the pottery group was similar to that recovered from pit [442]. The strong showing of whitewares again most probably indicates a backfill date in the 14th century. There were only three rim sherds, which highlights the rather fragmentary nature of the group and the likelihood of residuality. Two of the rim sherds were from whiteware cooking pots like (Fig. 11: 8). The third rim sherd was from a fabric cpj4 cooking pot with an angular everted rim very similar in form to reduced Deritend Ware cooking pots made in Birmingham (Rátkai 2009a). Pottery which pre-dated the whitewares was represented by three jug or pitcher sherds in fabric medg2, each with a decayed external glaze, and one decorated with horizontal combing.

Further south, the inter-cutting phase 2 pits, [456] and [530] contained only small amounts of pottery. Pit [540] contained no pottery. On the ceramic evidence the sequence of the pits began with [456] which contained three fabric cpj1 cooking pot sherds amongst which was (Fig. 13: 43; Fig. 12: 28) and probably pre-dated the mid-13th century, and which was followed by pit [530] which

TABLE 11 Pottery from the fills of pit [244]

Fill	243		295		All fills	
	sherd count	sherd weight (g)	sherd count	sherd weight (g)	total sherd count	total sherd weight (g)
cpj1	4	46			4	46
cpj2	2	40			2	40
cpj3	4	45			4	45
cpj4	3	34			3	34
cpj8	2	29			2	29
cpj8b	1	8			1	8
medg	1	6			1	6
medg2	3	20			3	20
ww1	8	89	1	2	9	91
ww2	36	412	3	23	39	435
Total	64	729	4	25	68	754

TABLE 12 Vessel forms from the fills of pit [244]

Fill	243		295		All fills	
	sherd count	rim count	sherd count	rim count	total sherd count	total rim count
cpj	19	3			19	3
jug	12		1		13	
jug/pitcher	3				3	
unknown	30		3		33	
Total	64	3	4		68	3

contained a residual early glazed pitcher (fabric cpj6g), a fabric cpj2 cooking pot sherd and three whiteware jug sherds with a thin olive glaze. The whiteware sherds indicate that pit [530] had a *terminus post quem* of c. 1250. The phase 3 construction cut [538] for masonry [537] was the latest in the sequence and contained 10 abraded and sooted whiteware sherds from the same vessel, two fabric rw3 sherds from a jug with a thumbled base and a fabric rw6 sherd, probably also from a jug. The redware sherds may date to the late 14th century but seem to be more common in the 15th and 16th centuries. The construction cut [450] for wall [452] clearly cut not just the phase 2 pits, but also masonry [537]. Cut [450] contained single sherds of fabrics cpj1, cpj8 and ww2 and must therefore have a *terminus post quem* of c. 1250.

The deep square pit [506] contained a masonry hearth structure [513]. The clay marl bonding [514] of the masonry contained two whiteware (fabric ww2) sherds. One was a small undiagnostic chip, whilst the second was cooking pot rim from a vessel similar to (Fig. 1: 15). The cooking pot was sooted internally and externally and was also burnt. The sherds show that the hearth was constructed after c. 1250. The hearth was later abandoned and the first fill [505] was noteworthy for two near complete whiteware (fabric ww2) vessels. An unglazed red-painted whiteware baluster jug (Fig. 12: 30) was found inverted in the south-east corner of the hearth leaning against the masonry wall. The jug was missing the rim, upper part of the neck and strap handle. There was little sign of abrasion apart from some chipping along the base edge. The second vessel (Fig. 12: 29), which was reconstructed from 34 sherds, was a piriform bottle, there being no evidence of a handle. The bottle had an olive glaze down to c. 50 mm above the base. There was heavy abrasion on the exterior of the vessel, resulting in patches of pitting and flaking on the glazed surface and complete removal of most of the exterior surface on the unglazed lower section and base of the bottle. The pattern of abrasion may suggest that this vessel had also been inverted, particularly as the base and lower section of the vessel were made up of numerous small sherds, whereas the upper portion of the vessel was made up of two or three large sherds. This is strongly suggestive of the vessel being smashed

whilst inverted. Photographs of the pit confirm the inverted position of the vessel but suggest that it was probably not deliberately smashed *in situ*.

Most of the upper part of the pit [506] for hearth [513] was removed by a later re-cut [520]. The fill [502] contained two small sherds from a Cistercian Ware cup and a Midlands Purple bowl sherd (Fig. 12: 31). These indicate that the disturbance of the backfilling of pit [506] must have occurred in the last two decades of the 15th century at the earliest.

Part of the lower section of a third whiteware vessel, probably a jug, lay within fill [505] c. 0.2m to the west of, and slightly above, the piriform bottle. It was not within the later re-cut [520] and seems to have been the only stray domestic detritus in the pit. Unfortunately, the sherd was lost before the pottery assessment and has therefore not been seen by this writer.

The ceramic evidence indicates that hearth [513] was a medieval construction. Although white-wares are difficult to date very precisely, the form of the red-painted whiteware jug and lack of glaze are more likely to date to the 14th century as is the form of the piriform bottle. The near complete nature of the two vessels indicates a primary deposition and suggests that the hearth went out of use in the 14th century. The curious inverted positioning of the two vessels appears deliberate and must indicate some functional factor to the deposition. Inversion of vessels is sometimes an attribute of a superstitious or ritual event, as is the smashing of *in situ* vessels, and there is an association between the burial of iron objects and pottery, usually in the form of iron nails within a ceramic vessel, to ward off witchcraft or the 'evil eye'. In this context, the presence of an iron horseshoe, a symbol of good fortune until modern times, adjacent to the red-painted whiteware jug may be significant (Plate 3). Merrifield (1987, 161) describes the belief in the post-medieval period that horseshoes were '*not merely "lucky" but quite specifically antidotes to witchcraft*'.

Cherry (1985, 6) noted:

It was difficult in the Middle Ages to provide a clear definition of the respective roles of magic and religion. The belief in the efficacy of appeals to the saints, the effect of relics in causing miracles, the power of holy water to achieve cures, and the protection from danger and disease afforded by the current and timely use of the appropriate words, spoken or written, afforded medieval people the impression that they could in some way alter or influence the natural course of events.

To this list of beliefs we could perhaps add the ritualistic burial or secretion of certain objects or groups of objects to act as charms, although such a practice is more commonly seen in post-medieval contexts.



Plate 3 Detail of red painted whiteware baluster jug and iron horseshoe found within the fill [505] of Hearth [513]

In Merrifield (1987) there is corroborating evidence for a 'ritual' interpretation of hearth [513]. Here the inversion of vessels, horseshoes and deliberate breakage are all cited as aspects of anti-witchcraft deposits, although they can also be associated with, for example, foundation deposits. Even religious establishments were not devoid of such deposits (Merrifield 1987, 120–1) and in this context the proximity of the friary at Sandford Street may be significant. However, there are no exact parallels for the deposit within hearth [513]. Most of the anti-witchcraft deposits occur in the post-medieval period, particularly in the 17th century. The usual vessels found in these are Rhenish stoneware *bartmänner* (or bellarmines). Merrifield suggests that the bearded face masks on these vessels may have added an element of sympathetic magic but as the vessels were often stoppered and usually contained iron nails, bronze pins, organic matter (hair, nail clippings, felt hearts) and urine (animal or human) the impermeable nature of stoneware may also have played a role in the choice of vessel. It is probably no coincidence that one of the vessels, the piriform bottle, from hearth [513], was a very similar shape to the later *bartmänner*, since there was evidently a preference for narrow-necked bulbous vessels, which is also apparent in the later use of wine bottles, for the same ritualistic use. In addition the large bottle form is very unusual in the whiteware tradition. There was no clear evidence that the jug or flask had a stopper. It is just possible that clay had been rammed into the mouth of the flask or both vessels may have been sealed or covered with something organic, now rotted away, although there were no remnants of such covers or staining around the vessels to suggest their erstwhile presence.

The broken and bent copper alloy rod in the pit may have formed part of the ritual deposit and it is a matter of conjecture whether the whiteware jug was deliberately chosen to accompany the bottle because of its decoration of vertical red slip stripes or whether its inclusion was purely coincidental.

Merrifield (1987) provides ample evidence of charms against, or deposits to ward off the 'evil eye', being placed in foundation deposits or in chimneys. Out of all the feature fills on the site, this was the only one that did not have a typical back-plot fill of mixed domestic rubbish. Could the deposit within [513] have been seen as a way of decontaminating the redundant hearth which might otherwise be the focus for future malevolent forces?

A second possible interpretation is that the fill within hearth [513] represents a type of foundation deposit. The feature virtually abuts the south wall of the cellar below the standing building. The cellar has undoubtedly obliterated an earlier building. Could pit [506] have fallen out of use (some time had certainly elapsed between the final use of the pit and its backfilling as evidenced by a c.10cm build-up of soil on the base of the pit) and been backfilled before the construction of a new building, and seen as a suitable place for a foundation deposit prior to its construction? In effect, it would have been a deposit to bring good fortune or, at any rate, avert ill-fortune, from the occupants of the building, particularly if the pit were near a threshold or entrance way.

Adjacent to pit [506] were pits [519] and [550]. The ceramic evidence from them suggests no connection with pit [506]. Pit [519] contained fabrics cpj4, lmt1, lmt2a, rw2, ww1, ww2, and Midlands Purple Ware. The average sherd weight of pottery from [519] was 15.25g. The cooking pot and whitewares formed a small residual component of the group. The remaining 15th – 16th century pottery was made up of a lid (Fig. 13: 55) and jug / cistern sherds. The lid was probably intended for use with a cistern. The absence of Cistercian Ware from the fill may indicate that [519] was backfilled before the last quarter of the 15th century.

Within pit [550] fills [553] contained fabrics cpj1 (Fig. 12: 32) and cpj2 and fill [558] contained fabrics irp2, rw1, rw2 and ww2. The average sherd weight was only 10.3g. The presence of redwares in [558] suggests that the pit was backfilled in the 15th century, although the absence of Cistercian Ware, Midlands Purple Ware and other late medieval/post-medieval transitional fabrics may indicate a date very early in the 15th century. However, there is such a paucity of information, only six sherds, that it is difficult to be certain, particularly as the low average sherd weight would suggest secondary deposition.

Pit [442] contained one of the larger pottery groups at 83 sherds (see Tables 13 and 14). The pottery weighed 839g. This gives an average sherd weight of just over 10g which suggests that the pottery cannot represent primary deposition. This is borne out by the range of fabrics found within the fills. The backfilling of pit [442], therefore, represents a very different but more normal depositional event from the disuse of pit [506].

The earliest pottery in the pit, from fill [443], was a developed Stamford Ware sherd with a bright green glaze (produced by the addition of copper filings to a lead glaze). Developed Stamford Ware is unlikely to have occurred in Lichfield after c. 1225 but the use of copper as a glaze colorant dates

from *c.* 1150 (Kilmurry 1980). The lowest fill [447] contained mainly whiteware sherds, providing a *terminus post quem* of *c.* 1250, although the fabric cpj2 thumbled rim sherd (Fig. 11: 18) from this fill is earlier than this and is most likely to date to the 13th century. A second cooking pot was represented by a small diameter (18cm) simple everted rim sherd (unillustrated) that could also be early.

The bulk of the pottery came from fill [445]. Here whitewares form just under 84 per cent of the group. Such a high proportion of whitewares probably indicates a 14th-century date for the abandonment of the feature. The whitewares comprised bowls (Fig. 11: 21), cooking pots (Fig. 12: 22-27) particularly with angular undercut rims (eg Fig. 12: 24, 26, 27) and jugs, including a slashed red-painted whiteware handle. There was an unusual sooting and wear pattern on (Fig. 11: 21). A narrow band of soot ran along the outer edge of the upper face of the rim, the remainder of the upper face being abraded. The interior of the vessel was glazed, with a narrow band of soot running horizontally across the interior just above the break.

Of the remaining pottery a hard-fired fabric rw3 sherd was the latest pottery in the fill. The sherd was almost fired to the point of being a Midlands Purple Ware. This sherd is most likely to belong to the 15th century but it is just possible that it dates to the end of the 14th century or is intrusive in this fill. However, the fill of well cut [440], which in turn cut [442], contained only whiteware sherds and is, therefore, unlikely to have been the source of any intrusive material. A very small diameter (14cm) sherd (fabric cpj2 – Figure 11: 19) and a cooking pot with a combed rim (Figure 11: 20), however, look early and must pre-date *c.*1250. The latter is very similar to cooking pots illustrated by (Ford 1995, 28–29 and Figure 9) from Drayton Bassett.

The preponderance of whitewares continued in the later fills [441] and [443] with a small amount of residual (e.g. Developed Stamford Ware) or possible residual sherds.

Pit [442] and [506] may have gone out of use at the same time but the pottery does not provide any incontrovertible evidence of this. There was nothing within the pottery group to indicate the use to which the pit had been put or to suggest that the pottery was anything other than normal domestic refuse. A small 'scoop' [331] originally interpreted as possibly connected with [442] contained three fabric rw4 chafing dish fragments (Fig. 13: 46) dating to the 15th–16th centuries and was therefore unlikely to be associated with [442]. A second 'scoop' [334] contained a fabric lmt2a sherd and two whiteware sherds and is likely to have been backfilled at about the same time as [331], unless the late medieval sherd was introduced at the time of the construction of wall [338] which partially cut [334].

The fill of horse burial [240] in contrast must contain pottery which was from a general ground surface scatter which was incorporated into the fill at the time of the burial. The fill contained

TABLE 13 Pottery from the fills of pit [442]

Fill	441		443		445		447		All fills	
	sherd count	sherd weight	sherd count	sherd weight	sherd count	sherd weight	sherd count	sherd weight	total sherd count	total sherd weight
cpj1							1	6	1	6
cpj2					5	72	1	15	6	87
cpj3					1	6			1	6
cpj4			1	10	1	18			2	28
cpj5g			1	5					1	5
cpj8a					1	13			1	13
cpj8b					1	8			1	8
dev										
stam			1	3					1	3
rw3					1	12			1	12
ww1			1	4	9	120			10	124
ww2	1	17	4	83	43	410	7	25	55	535
ww3	1	8	2	4					3	12
Total	2	25	10	109	62	659	9	46	83	839

TABLE 14 Vessel forms from the fills of pit [442]

Fill	441		443		445		447		All fills	
	sherd count	rim count	sherd count	rim count	sherd count	rim count	sherd count	rim count	total sherd count	total rim count
bowl					6	2			6	2
cooking pot	2	1	5	1	18	8	2	2	27	12
jug			2		18		2		22	
unknown			3		20		5		28	
Total	2	1	10	1	62	10	9	2	83	14

nine sherds, weighing 83g. These comprised fabrics cpj1, (3 sherds), cpj8a (one sherd), cpj8b (one sherd), ww1 (2 sherds), and ww2 (one sherd), giving a mid 13th- to mid 14th-century date at the earliest for the burial. However, there was also a small (6g) Midlands Purple sherd, dating to the 15th or 16th centuries. This sherd was almost certainly intrusive resulting from trample into the upper surface of the burial but there is a small possibility that it was contemporary with the burial. If so, the horse burial could be broadly contemporary with the burial of part of a cow in pit [292] and part of a sheep carcass in pit [294]. The single late medieval or early post-medieval sherd amongst otherwise earlier medieval material reflects the situation encountered in fill [445] of pit [442] (see above). It is therefore possible that the backfilling of pit [442] was contemporary with the animal burials.

To the east of the horse burial were a number of fire pits [232], [310], [312], and [315]. With the exception of [310] the other features contained pottery but in very small amounts. All of them contained at least one whiteware sherd giving a *terminus post quem* of c. 1250 for the pits but further refinement of the chronology was not possible. Pit 308 which post-dated [312] and [232] contained 15th- to 16th-century pottery (fabric lmt1 and Midlands Purple Ware) in fill [304] and some residual material probably derived from [312] and [232]. Fill [324] of the same pit, which was truncated by pit [190] contained blackware sherds (2 cups), Cistercian Ware (one cup Fig. 13: 45), and single sherds of fabrics rw1 (one small jug) and rw3, and Midlands Purple Ware. The fill material of [308] suggests a date of the mid to late 16th century.

The large pit [303] produced only 29 sherds with an average sherd weight of just under 33.5g. There were only two rim sherds (*eves* 32%). The earliest fills [279], [288] and [302] all contained only whiteware sherds, including a cooking pot/jar rim sherd (Fig. 12: 34) from [288]. Sherd weights were all well below the average at, 3g, 5g, 9g and 19g. As [288] and [302] could possibly have been part of a clay lining, the pottery within them may well be residual. Certainly the main fill [255] contained very much later material. The pottery from [255] dated to the 15th- to 16th-centuries with no residual earlier medieval material. The pottery consisted of fabrics lmt1, lmt1a, rw1, rw2, rw4, oxidised wheel-thrown Malvernian Ware and Midlands Purple Ware. Midlands Purple Ware was most frequent with 12 sherds, the other fabrics being represented by single sherds. In addition there were two burnt sherds with internal deposits which may have been part of an industrial process.

Vessel forms consisted, where assignable to form, of jugs or cisterns (bung-hole jars) (e.g. Fig. 12: 35), with one or two bowls (in fabric rw1) with a thin internal tan glaze, the only other form represented.

Features [254], [256], [262], [292] and [294] were adjacent to or cut [303]. The fill of [292], which cut the northern edge of [303] contained more 15th–16th-century pottery, i.e. fabrics lmt1, lmt2a, rw1, rw2, rw4, Midlands Purple Ware, and Tudor Green Ware. There was a residual whiteware sherd (weighing 4g) and a possible Chilvers Coton C fabric sherd (weighing 25g). The latter may or may not be residual. In total there were 13 sherds weighing 213g, giving an average sherd weight of c. 16.4g. There were three rim sherds (*eves* 38%). All the fabrics were represented by single sherds apart from Midlands Purple Ware (three sherds) and Tudor Green Ware (two sherds). The range of forms was broadly similar to that from [303] with jugs/jars/cisterns (Fig. 13: 40–41) dominant and bowls less well represented. The two redware bowls (fabrics rw2 and rw4) were both heavily sooted externally. Unfortunately the two Tudor Green sherds were too small for form identification. A fine

redware sherd, possibly from a cup, was burnt rendering further identification impossible, the glaze having turned into an opaque blistered, yellow-green coating.

Feature [294] contained part of a cow burial. The fill contained three sherds from a Cistercian Ware cup and a large undiagnostic Midlands Purple Ware sherd. It is possible that the pottery came from pit [303] since the burial pit just clips its edge.

Pit [262] contained fill material that was very much the same as that from [303] and associated features. Fabrics lmt1, rw4, Midlands Purple Ware made up the bulk of the 17 sherds (average sherd weight 27g) from the fill. In addition there were two Cistercian Ware cup sherds. Three residual sherds in fabric cm3, cpj8b, and ww2 were present. Vessel forms consisted of jugs and cisterns and two cups.

Pits [254] and [256] cut [303], from which the pottery in their fills may have derived. There were 10 sherds weighing 121g from [254] and 13 sherds weighing 188g from [256]. The general impression is that the pottery in the two pits did not represent primary deposition. The fill of [254] contained Cistercian Ware, Cistercian/blackware, Midlands Purple Ware, Tudor Green, a coarseware sherd and a residual whiteware sherd. The coarseware was in a well prepared oxidised fabric, similar to fabric lmt1 and as such could date to the later 16th century. A minimum of four cups, a cistern (Fig. 12: 36) and a bowl (Fig. 12: 37) was represented.

Pit [256] contained a slightly different range of fabrics but which were broadly contemporary with those found in [254]. These comprised fabrics cm2, rw1, rw4, ww2 and Midlands Purple Ware. Three redware bowl sherds, including (Fig. 13: 39), probably from different vessels, were found in the fill. All three sherds were heavily sooted on the exterior and had traces internally of possible limescale. A single jug/jar/cistern was represented in Midlands Purple Ware. There was also a residual whiteware cooking pot (Fig. 12: 38) and a possible jug sherd in fabric cm2, with external splashes of green-brown glaze.

To the south-west of pit [303] were a second series of pits [248], [368] and [370] that contained pottery and pits [372], [374], [352] and [354] which did not. Pit [368] contained single sherds of fabrics cpj1, cpj5g, cpj8, cpj8b, irp2 and ww1, and seven sherds of fabric ww2. Pit [370] contained sherds of fabric cpj5g (one sherd) and ww2 (seven sherds). The two fabric cpj5g sherds appeared to be from the same vessel, a pitcher with a lumpy opaque olive glaze and combed decoration. This vessel probably dates to the mid-12th–early 13th centuries. It was not possible to determine how many, if any, of the whiteware sherds were from the same vessels but it remains a possibility that the pottery from [370] was disturbed from pit [368]. The average sherd weight for pit [368] was 10.6g and for pit [370] 6.75g. This suggests that both fills contained disturbed or residual material, that from [370] being the more disturbed. On the available evidence the pits are unlikely to have been back-filled before the 14th century. Pit [248] to the north-west of [368] and [370], contained a small (4g) cpj1 sherd, five whiteware sherds and a small (3g) Cistercian Ware sherd. The average sherd weight was 8.2g. It is difficult to decide if the backfilling was contemporary with the Cistercian Ware sherd, that is, late 15th – mid-16th centuries, or whether the Cistercian Ware sherd was intrusive. However, like pits [368] and [370], pit [248] is unlikely to have been backfilled before the 14th century.

The relationship of [368] and [370] was uncertain and there was no direct dating evidence for [280]. However, layer [253] which sealed [280] contained a feathered slipware sherd and a yellow ware sherd, giving a *terminus ante quem* of c. 1675–1725 for the abandonment of [280].

At the far north-west of the site a small group of pits centred on pit [437]. Pits [433] and [437] contained only three and four whiteware sherds respectively, a bowl, a cooking pot and a jug being represented in both groups. A 14th-century date for their backfill is likely. Slightly to the south, pit [33] contained a substantial portion of a fabric cpj4 cooking pot (Figure 11: 1). The vessel is unlikely to be later than the 13th century on stylistic grounds. The vessel was sooted on the exterior. Only the very edge of the base, at the juncture with the body of the pot, survived. The base was very heavily abraded with no surviving external surface. This could have been caused by friction whilst the pot was in use but this seems unlikely given that the pot had originally had a sagging base and the central section of the base would therefore have been subjected to most wear, unless the pot had been placed on some sort of raised stand, when the edge of the base would have had most wear. Another possible explanation is that the abrasion reflects the pot ‘exploding’ whilst in use. Such an event was not unknown in the medieval period:

*The pot to breketh! Farewell al is go!
 ... In Helle, where that feend is Lord and sire
 Nis there more woe, nor more rancour ni ire
 Tan when our pot is broke ...
 Every man chit ... and halts him evil afraid -
 Some sayne, "It was too long on the fire making"
 Some seyde "Nay! It was on the blowing!"
 "Straw!" quoth the thridde, "Ye have been lewed and nyce!
 It was not tempered as it ought to be"
 "Nay!" quoth the fourth, "Stent and harken me,
 Because the fire was nat made of beech
 That is the cause....." (Chaucer, cited in Hartley 1985)*

The base of the pot would be the most vulnerable to repeated heating and particularly heating to a high temperature, which over time can destabilise the structure of the fired clay body and lead to shattering. It is also possible, as the above poem suggests, that the temper was inadequate or unsuitable, providing an intrinsic weakness in the pot. Whatever the cause of the abrasion, the cooking pot may have been subjected to some sort of unusual use which could have been culinary, medicinal or industrial.

Pit [19] which together with pit [33] was cut by pit [21] contained a single whiteware sherd. Pit [21] contained cooking pot sherds dated to the 12th or 13th centuries.

Shaft [220] to the south-west of the site had similar fill material to pit [303] (see Table 15). The earliest fill [286] contained a single small medieval jug sherd that was probably residual. A small amount of residual material (fabrics irp1, ww1 and ww2) was present in subsequent fills. The pair of fabric irp1 sherds from [225] was particularly heavily abraded and were also heavily sooted on the exterior with possible traces of internal limescale. The remaining fill material from [284], [225] and [222] comprised 15th–16th-century pottery with the exception of two 19th-century sherds from the highest fill [222]. These were intrusive and caused by disturbance of the top of the pit in the late 18th or early 19th centuries. The 15th–16th-century pottery from the lower fills is likely to represent primary deposition since the average sherd weight is high. Several examples of cross-joining sherds were found in fills [222] and [225].

The vessel function figures demonstrate again the predominance of vessels for storage and in particular liquid storage. Amongst this group was the upper part of a coarse Midlands Purple cistern (Fig. 13: 44) with two handles and three rim 'cut-outs', from fill [284]. There was only one vessel for liquid consumption, a Tudor Green cup and one example of a specialised form, a chafing dish in fabric rw3 (Fig. 13: 43), from the fill of well [220]. This was a quite well made-vessel, with an internal and external tan glaze, and may have been used at table.

To the east of well [220] were three intercutting cesspits, [204], [206], and [208], although the location of cesspits so close to a well seems rather odd. It is possible that the well was already redundant when the pits were dug. There was certainly nothing within the initial well fill that need post-date the fill from the earliest pit. The fill of [204] contained five sherds, comprising blackware, Midlands Purple Ware and a rim sherd from a coarseware jar with a buff fabric and an iron rich internal and external slip. The jar was heavily abraded on the interior. The fill could date to the late 16th or earlier 17th centuries and was the latest in the sequence.

Pit [208] contained the earliest material that consisted of three sherds, comprising a Cistercian Ware cup sherd and sherds in fabrics cm1a and lmt2b. This fill is dated by the Cistercian Ware to the late 15th–mid 16th centuries. Pit [206] contained seven sherds. The group was dominated by blackware with single sherds of blackware/Cistercian Ware, fabric lmt1 and fabric lmt2a. Forms represented were cups and jugs/cisterns. The fill would seem to date to the second half of the 16th century.

The fills of the above pits produces quite a nice sequence which could be dated as pit [208] c. 1500–1540; pit [206] c. 1540–1580; and pit [204] c. 1580–1620, giving a maximum lifespan of each pit of about 40 years. This sequence may well have been preceded by the infilling of well [220] in the late 15th century.

To the south-east of the site lay a complex of inter-cutting pits which must have been contemporary or near contemporary with [303], [220] etc. Pit [358] was the foremost of the inter-cutting pits and appeared to have had a wooden lining [357]. The fill material contained within [357] and [358] seems to have belonged to the late 15th or early 16th centuries (see Tables 17 and 18). There

TABLE 15 Pottery from the fills of pit [220]

Fill	222		225		284		286		All fills	
	sherds count	weight (g)	sherds count	weight (g)	total sherds count	total weight (g)	total sherds count	total weight (g)	total sherds count	total weight (g)
irp1	1	1	2	118			1	7	4	126
ww1			1	7					1	7
ww2	1	3	2	21	2	16			5	40
rw3	1	102							1	102
rw4	2	134	2	59					4	193
lmt1	1	42							1	42
lmt2	1	28							1	28
mp	3	160	8	258	13	722			24	1140
tg	1	2							1	2
mgw	2	12							2	12
Total	13	484	15	463	15	738	1	7	44	1692

TABLE 16 Vessel forms from the fills of pit [220]

Fill	222		225		284		286		All fills	
	sherds count	rim count	sherds count	rim count	sherds count	rim count	sherds count	rim count	total sherds count	total rim count
cpj			2		1	1			3	1
jug	1		2		1		1		5	
bung-hole jar	2		1		12	1			15	1
jug/bung-hole jar	1								1	
jar/bung-hole jar	1		7						8	
jug/jar/bung-hole jar	1				1				2	
cup	1	1							1	1
chafing dish	1								1	
unknown	5		3						8	
Total	13	1	15		15	2	1		44	3

was a blackware sherd, perhaps from a jug, with an applied triangular sectioned vertical strip from [355], part of the decayed timber lining [357], and a blackware possible jug sherd from [356], the fill of [358]. However the paucity of blackware sherds suggests that the fills are likely to date to 1530s or 1540s, a period of transition from Cistercian Wares to blackwares (see Woodfield 1981, and Rátkai 2005). Vessel forms associated with the decayed timber lining comprised cups, jugs and cisterns. A Cistercian Ware cup from [355] had a toffee brown glaze and an applied white clay floral motif (Fig. 13: 52). A similar design was found at Sandwell Priory in pre-Dissolution levels (Hodder 1991, Fig. 30, 3088) and at the Austin Friars, Leicester (Woodland 1981, 209 and Fig. 41). A Tudor Green cup (Fig. 13: 51) and a cistern in fabric cm1 (Fig. 13: 48) were also found associated with the timber lining. The cistern had rim 'cut outs' and was so highly fired that it was almost a Midlands Purple Ware. A more normally fired fabric cm1 sherd was found within [356] and was clearly of an earlier date since it was decorated with a horizontal applied 'crimped' strip which had been brushed with iron oxide before glazing. This sherd is unlikely to post-date the 14th century.

The vessel types found within [356] show the same range of forms, drinking vessels and jugs/jars/cisterns (Fig. 13: 50), as found in other deposits of the later 15th and 16th centuries. A wide-mouthed bowl in fabric rw7, with a distorted rim and internal run of brown glaze (Fig. 13: 49) was a more unusual functional component and must mark the beginnings of the later coarseware tradition. The vessel probably dates to the second quarter of the 16th century. A Cistercian Ware cup with white slip 'ring and dot' decoration (Fig. 13: 53) also came from [356]. This decoration may have formed part of an anthropomorphic or zoomorphic design.

The fills of pit [358] did contain a small amount of residual material but the overall average sherd weight for the fills suggests that they represent primary or near primary deposition for most of the material.

The fill [359] of pit [360] which was cut by [358], contained a very small amount of pottery, including a whiteware cooking pot (Fig. 11: 16). Later material was present in the form of a small sherd (7g) in fabric rw3 and a large bowl sherd (94g) in fabric lmt1 featuring opaque olive glaze internally. Fill [350] could date to the early 15th century. Pit [360] cut pit [366] that contained only 13th- and 14th-century pottery. The pottery from [366] had an average sherd weight of 18.75g whilst the pottery from [360] had an average sherd weight 37.75g. Neither assemblage would seem to be indicative of highly residual material. The fills of both pits contained different fabrics from each

TABLE 17 Pottery from the fills of pit [358]

Fill	356		357		All fills	
	sherd count	sherd weight (g)	sherd count	sherd weight (g)	total sherd count	total sherd weight (g)
cpj1	1	15			1	15
cpj2	2	26			2	26
ww1			1	19	1	19
ww2	2	37			2	37
ww3	2	12			2	12
cm1	1	17	2	84	3	101
rw4			1	9	1	9
rw7	1	126			1	126
lmt2a	1	18			1	18
mp	4	518	3	58	7	576
tg	1	2	1	4	2	6
cist	3	19	3	61	6	80
blw	1	9	1	14	2	23
Total	19	799	12	249	31	1048

TABLE 18 Vessel forms from the fills of pit [358]

Fill	356		357		All fills	
	sherd count	rim count	sherd count	rim count	total sherd count	total rim count
cpj						
jug	2		2		4	
cistern	1	1	1	1	2	2
jjc	3		2		5	
cup	3	1	4		7	1
bowl	1	1			1	1
unknown	9		3		12	
Total	19	3	12	1	31	4

other, so that material in [366] is unlikely to have derived from [360]. One possibility is that the latest pottery in [360], i.e. the sherds in fabrics rw3 and lmt1, may have been introduced into the fill when pit [358] was dug. This would then leave pits [366] and [360] dating to the 13th to 14th centuries.

A number of other features also appeared to date to the late 15th–mid 16th centuries, i.e. [65], the foundation trench for wall [58], and [363] the fill of [364] (Fig. 13: 56–58); or mid to late 16th century, i.e. [473] a pit/latrine (Fig. 13: 54), pits [146] and [148] (Fig. 13: 42). Feature (187), a large Phase 7 pit, contained pottery of mixed 15th–16th century date (Fig. 13: 60; Fig. 14: 61), a small amount of residual medieval pottery (Fig. 13: 59) and one tin glazed earthenware lid (Fig. 14: 62) of 17th- or 18th-century date, and one blue shell edge pearlware plate of probable late 18th-century date. The tin glazed earthenware lid was heavily worn along the interior of the rim. The sherds were generally large, suggesting primary deposition, and the absence of any definite 17th-century pottery, together with the strikingly similar composition of the group to those found in Phase 5 features (cisterns and drinking vessels), is oddly at variance with the given phasing, particularly since the 18th-century pottery can easily be explained as intrusion from the early 19th-century pit [185] which cut [187].

A series of layers across the site [6], [7], [11], [16], [41], [61], [62], [121], [149], and [454] contained predominantly medieval pottery, the greater part of which comprised whitewares. Layers [7], [149] and [454] contained 18th century pottery and the remaining two 17th-century pottery. Several vessels (Fig. 14: 64–67) from the soil layers are illustrated. A small, single-handled, cylindrical blackware cup (Fig. 14: 67) from [149] contained a thick internal deposit, which also partly covered the exterior of the cup. The deposit was *c.* 1mm thick, yellowish-cream in section but red-brown on the exposed inner surface. On the exterior the deposit was yellowish. There were patches of green (cuprous) discoloration on the deposit. The positioning of the deposit suggests that the cup may have been used as a 'dipper' or ladle, since most of the external deposit seems to be concentrated between 90 and 180 degrees from the handle but as the deposit has a tendency to flake away from the glazed body and the cup is incomplete, this impression might be misleading.

David Dungworth of English Heritage analysed the deposit and provided the following brief report:

... the residue is related to some deliberate activity and is not a post-depositional phenomenon. The residue is found on both internal and external surfaces but is not present on any of the breaks. The pot has a black glaze which would make it completely unsuitable for use as a crucible for melting copper alloys ... It would, however, have been possible to melt lead or tin alloys in such a vessel. The form, texture and distribution of the residue suggest that it had been present as a solution or suspension ... EDXRF analysis showed that the residue was rich in lead with small amounts of copper, calcium and silicon. XRD analysis showed the presence of cerussite (a lead carbonate) silica and calcite. The residue could represent the remains of a pigment.

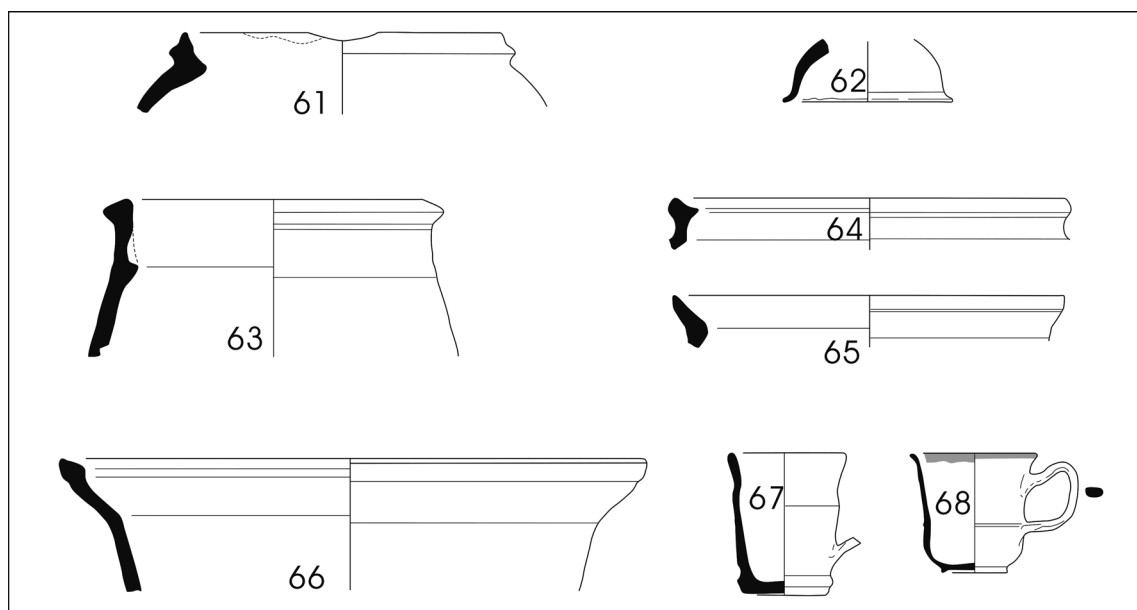


Fig. 14 Post-medieval and unstratified pottery

Lead carbonate could be a component of lead white paint, which was used from at least the 12th century (*pers comm* Robert Gowing). However, Professor Graham Martin (*pers comm*) suggests that the presence of silica may indicate that the deposit within the cup may have been the remains of some sort of enamel. More prosaically, Geoff Egan (*pers comm*) suggests that the residue may be the remains of a 17th-century 'do-it-yourself' kit for soldering or repairs to window glazing or suchlike. So, the exact nature of the deposit remains a mystery.

DISCUSSION OF THE POTTERY

The range of medieval pottery recovered from 15 Sandford Street was broadly similar to that recovered from the excavation at 18–28 Sandford Street to the north. Sources of supply were predominately local but the small amount of non-local pottery was of interest. Some of the early glazed pitcher sherds, particularly fabric medg3, resemble sherds recently found in Birmingham (Rátkai 2009a). If these were not manufactured at the same place, they certainly belong to the same regional tradition. Further links with Birmingham are also indicated by the presence of Deritend Ware at 15 Sandford Street although this was not found at Nos 18–28. Boarstall-Brill Ware was recovered from 18–28 Sandford Street but not from No. 15. Links with the Coventry area were provided by the presence of sherds of Coventry tripod pitcher ware and granitic fabric cpj9 and, given the ecclesiastical links between the two towns, perhaps a larger component of the pottery might be expected to emanate from Coventry. The presence of further shelly ware sherds on both Sandford Street sites seems to indicate a more than casual contact with the south-east Midlands. This contact could have been via Coventry since some shelly ware sherds have been recovered there and there was evidently regular contact between Coventry and the western fringes of Northamptonshire, where shelly wares were manufactured, a fact noted by both Blinkhorn (1996) and Rátkai (2003). The most surprising find was the wheel-thrown Malvernian sherd, which is not only well outside its normal distribution pattern but is the one indication of contact between Lichfield and the south-west, when the remaining ceramic evidence points only to contact to the south or south-east.

On both Sandford Street sites, the medieval pottery consisted largely of iron-poor wares (especially whitewares) and the earlier medieval assemblage is consistent with normal domestic occupation. However, the extensive pit cutting and unusual nature of some of the pits suggests that a different range of activities were taking place at 15 Sandford Street. The most striking aspect of this is the apparently ritual or magic deposit within hearth [506].

The earliest activity on the site seems to be the large, possibly Saxon, ditch [416] / [348]. There is enough evidence to suggest some occupation of parts of the site at 15 Sandford Street as early as the 12th century. This was not the case at Nos 18–28 (Nichol and Rátkai 2004). This activity must pre-date the construction of the friary. There is no obvious focus for the pottery dating to the 12th century. It occurs within pits cut through and to the south of the backfilled ditch [348], to the west of the site (e.g. pit [33]) and in the north (e.g. pit [442]) and central sections of the site (e.g. pits [368] and [370]).

During the 13th and 14th centuries both Sandford Street sites appear to have been flourishing. The late medieval and early post-medieval period appears to have witnessed a change or remodelling of the site with many of the pits falling into disuse and being backfilled. In addition some backfilled medieval features appeared to have been disturbed at the same time. This situation mirrors that seen on the north of Sandford Street and therefore may reflect general economic or socio-economic factors affecting the town in the Tudor period.

The function of many of the larger pits is not elucidated by the pottery found within them. The bias towards jars and cisterns in the 15th and 16th centuries may in some way be associated with the use of the pits but this is by no means certain. The interpretation of some of the pits as cesspits, poses several questions, not least, why are there so many of them? That cess was recovered from them may not be a matter for dispute but this does not necessarily indicate that they were specifically dug as latrines. A single large stone lined latrine was found on the north Sandford Street site which apparently went out of use in the 14th or 15th centuries but with a final backfilling episode in the 16th century. Another similar stone lined latrine but of earlier date was found at Harrison Street, Hereford (Rátkai unpublished report for Archenfield Archaeology). It contained a virtually complete late 12th- or early 13th-century pitcher. It seems to be the case that the provision of well-constructed sanitation was not unusual in urban back plots, although it may well have been a feature of affluent households. Documentary sources indicate that despite the modern view of vile, unsanitary conditions

prevailing in the past, people were not necessarily sanguine in the disposal of waste. For instance Andrew Boorde in the 16th century (quoted in Hartley 1985) wrote:

beware of pyssunge in draughts and permyt no common pyssing place be about the howse and let the common house of easement be ower some water or else elongated from the howse and beware of emptynge of pyssepots and pyssing in chimnes so that all euvle and contagious ayres may be expelled and clere ayre kept unputyfyed

So, even Andrew Boorde, a man who once had to have his beard cut off, it being so caked in vomit and filth after a night's debauch, had an interest in proper sanitary arrangements. Equally strange is the fact that many latrines appear to have been cleaned out and *then* abandoned. There must have been some reason for this practice, raising the possibility that the contents were either saleable or troubling in some way.

Pottery of 17th-century or later date was recovered in modest quantities from the evaluation trenches but very little was recovered during the excavation or watching brief, and then mainly from deep cesspits around the periphery of the excavation area. It should be remembered, however, that most of the post-medieval deposits were removed from the site during the extensive ground works for the expansion of the hospital. Much of the remaining post-medieval material was removed rapidly during the machining of the site, both for the excavation and in the subsequent watching brief. The range of forms and wares was rather limited, consisting mainly of coarsewares and blackwares, with a small amount of yellow ware, manganese mottled ware and slipware. Examples of white salt-glaze stoneware dating from the 1720s to the 1760s were also found. Modern glazed wares consisted primarily of creamware and pearlware. Fill [184] of pit [185] contained a dump of creamware and pearlware, containing creamware jelly mould fragments, plates and dishes and blue transfer printed pearlware cups and saucers, some of which appeared to be from matched sets. A small white salt-glazed stoneware coffee cup with an iron wash along the rim was recovered from layer [54] (Fig. 14: 68). The cup is an inverted bell shape on a low foot and not dissimilar in form, although the handle is different and better modelled, to a tin-glazed earthenware coffee cup made in Liverpool c. 1750–60 (Brown and Lockett, 1993). The stoneware example may be a little earlier but is likely to be associated with high status use. Similarly the presence of quantities of creamware dinner service pieces from pits at 18–28 Sandford Street and also within the fill of pit [185], mentioned above, suggest a certain amount of gentility persisted into the later 18th century and early 19th centuries. Trade directories for the first three decades of the 19th century indicate some rather higher status professions amongst the occupants of Sandford Street, e.g. attorney and gentleman (Stone 1999a), and this probably explains the presence of such fine pottery.

Drawing Catalogue

- 1 Phase 2. [32], pit 33, cpj4, cooking pot/jar, ext soot, heavy abrasion on ext base.
- 2 Phase 3. [241], ditch 416/348, cpj4, cooking pot/jar.
- 3 Phase 3. [155], pit 160, cpj1, cooking pot/jar, ext soot.
- 4 Phase 3. [158], pit 160, cpj1, cooking pot /jar, ext soot, heavy int soot.
- 5 Phase 3. [158], pit 160, ww2, cooking pot/jar, ext soot.
- 6 Phase 3. [162/3], pit 165, cpj1, jug.
- 7 Phase 3. [162/3], pit 165, ww1, cooking pot/jar.
- 8 Phase 3. [166], pit 168, ww2, cooking pot/jar
- 9 Phase 3. [167], pit 168, ww2 jug base, ext yellowish olive glaze.
- 10 Phase 3. [169], pit 170, ww2, cooking pot/jar
- 11 Phase 3. [584], pit 585/170, cpj2, cooking pot/jar
- 12 Phase 3. [228], pit 172, cpj6, cooking pot/jar
- 13 Phase 3. [228], pit 170, cpj8b, cooking pot/jar
- 14 Phase 3. [349], ditch 348, and [166], pit [168], ww1, jug, red slip decoration.
- 15 Phase 3. [349], ditch 348, ww1, cooking pot/jar, ext soot.
- 16 Phase 3. [359], pit 360, ww2, cooking pot/jar
- 17 Phase 3. [432], pit 433, ww2, cooking pot/jar or pipkin, ext glaze splashes.
- 18 Phase 3. [447], pit 442, cpj2, cooking pot/jar, thumbled rim, ext soot.
- 19 Phase 3. [445], pit 442, cpj2, small diameter, cooking pot/jar
- 20 Phase 3. [445], pit 442, cpj8a, cooking pot/jar, combed rim.
- 21 Phase 3. [445], pit 442, ww1, bowl, int green-brown glaze, ext soot, heavy int soot
- 22 Phase 3. [445], pit 442, ww1, cooking pot/jar, ext soot

- 23 Phase 3. [441], pit 442, ww2, ?cooking pot/jar, ext soot
- 24 Phase 3. [445], pit 442, ww2, cooking pot/jar.
- 25 Phase 3. [445], pit 442, ww2, cooking pot/jar.
- 26 Phase 3. [445], pit 442, ww2, cooking pot/jar,
- 27 Phase 3. [445], pit 442, ww2, cooking pot/jar.
- 28 Phase 3. [459], pit 456, cpj1, cooking pot/jar, heavy ext soot.
- 29 Phase 3. [505], pit 506, ww1, bottle, bright green glaze.
- 30 Phase 3. [505], pit 506, ww1, jug, vertical red slip stripes.
- 31 Phase 5. [502], pit 506, Midlands Purple, bowl, int black glaze, distorted rim.
- 32 Phase 4. [553], pit 550, cpj1, cooking pot jar, int and ext abrasion.
- 33 Phase 4. [143], pit 144, ww2, bowl, int copper green glaze, int soot.
- 34 Phase 3. [288], pit 303, ww1, cooking pot/jar.
- 35 Phase 5. [255] pit 303, Midlands Purple, cistern, ext olive-purple glaze.
- 36 Phase 5. [254] pit cut into 303 Midlands Purple, cistern, cut-outs on rim.
- 37 Phase 5. [254], pit cut into 303 Midlands Purple, bowl.
- 38 Phase 5. [256], pit ww2, cooking pot/jar.
- 39 Phase 5. [256], pit rw1, bowl, ext soot, int limescale.
- 40 Phase 5. [291], pit Midlands Purple, cistern, cut-outs on rim.
- 41 Phase 5. [291], pit lmt2, jug, trace of ext metallic brown glaze.
- 42 Phase 5. [147] pit 148, ww2, jug.
- 43 Phase 5 [222], well 220, fabric rw3, central section of chafing dish with cut-outs, int and ext tan glaze.
- 44 Phase 5. [284], well 220, Midlands Purple, cistern, coarse fabric, cut-outs on rim, trace of purple-olive glaze, soot on handle.
- 45 Phase 5. [324], pit 308, Cistercian Ware, cup, int and ext dark brown, metallic glaze.
- 46 Phase 5. [330], pit 331, rw4, chafing dish, int and ext tan glaze.
- 47 Phase 5. [356], pit 358, ww2, cooking pot/jar.
- 48 Phase 5. [357], pit 358, cm1, cistern, cut-outs on rim.
- 49 Phase 5. [358], pit 358, rw7, wide-mouthed bowl, distorted rim
- 50 Phase 5. [356], pit 358, Midlands Purple, cistern, cut-outs on rim.
- 51 Phase 5. [357], pit 358, Tudor Green, cup, int and ext copper green glaze.
- 52 Phase 5. [355], pit 358, Cistercian Ware, cup, applied white clay decoration, int and ext brown glaze (yellow over white clay).
- 53 Phase 5. [356], pit 358, Cistercian Ware, cup, applied white pad with ring and dot motif, int and ext olive-brown glaze.
- 54 Phase 5. [474], pit 473, Cistercian Ware, cup, int and ext brown glaze.
- 55 Phase 5. [517], pit 519, lmt1, lid, patch of ext soot.
- 56 Phase 5. [362], pit 363/4, Cistercian Ware, cup, int and ext brown glaze.
- 57 Phase 5. [362], pit 363/4, Midlands Purple, jug, trace of ext purple glaze.
- 58 Phase 5. [362], pit 363/4, rw1, bowl, olive glaze on lower part of interior.
- 59 Phase 6. [186], pit 187, ww2, cooking pot/jar
- 60 Phase 6. [186], pit 187, cm1a, cistern or jar, int limescale.
- 61 Phase 6. [186], pit 187, Midlands Purple, cistern, coarse fabric, cut-outs on rim, ext greenish brown glaze.
- 62 Phase 6. [186], pit 187, tin-glazed earthenware, ?lid, int and ext glaze, abrasion along int surface of rim.
- 63 Phase 6. [203], pit 204, coarseware, jar, int and ext heavy abrasion.
- 64 Phase 3. [16], layer, ww2, cooking pot, ext soot.
- 65 Phase 3. [16], layer, cpj8a, cooking pot, very heavy ext soot.
- 66 Phase 3. [121], soil, rw1, bowl, heavy ext soot.
- 67 Phase 5 [149], soil, blackware cup, heavy int deposit, possibly pigment.
- 68 Phase 6/7 [54], white stoneware coffee or chocolate cup, brown iron wash around the rim.

ENVIRONMENTAL REMAINS by Elizabeth Pearson*Fieldwork and sampling policy*

Samples were taken by the excavator from deposits considered to be of high potential for the recovery of environmental remains. A total of 36 samples were taken from medieval and early post-medieval pits, an undated ditch and other features. Of these, 22 samples were sent by the excavator for assessment (Table 19) as a result of which 4 samples were selected by the author for full post-excavation analysis, comprising three samples from medieval pits interpreted as tanning or cesspits (contexts 153, 295 and 269) and one sample from a medieval pit below the friary precinct wall (context 458/459) (Table 20).

The samples were processed by flotation followed by wet sieving using a Siraf tank. The flot was collected on a 300µm sieve and the residue retained on a 1mm mesh. This allowed for the recovery of items such as small animal bones, molluscs and seeds.

The residue was fully sorted by eye and the abundance of each category of environmental remains estimated. The flot was scanned using a low power EMT stereo light microscope and remains identified using modern reference collections maintained by the Worcestershire County's Archive Service.

Results

The assessment showed that charred plant remains were found in sparse quantities in many of the samples. These consisted mainly of possible oat grains (cf *Avena* sp), rye (*Secale cereale*) or grass (*Graminae sp indet*) grains, other unidentified cereal grains and vetch/vetchling seeds (*Vicia/Lathyrus* sp). However, four samples (contexts [153], [269], [295], and [458/459]), which contained more numerous cereal grains, grass grains and weed seeds such as legumes were selected for full analysis (Table 20).

TABLE 19 List of environmental samples assessed

Context	Sample	Context description	Period	Sample volume	Volume Processed (litres)	Residue assessed	Flot assessed
153	23	Fill of pit [154]	MED	10	10	Y	Y
158	3	Fill of pit recut [160]	MED	60	10	Y	Y
161	4	Fill of [160]	MED	20	10	Y	Y
166	19	Fill of pit [168]	MED	20	10	Y	N
169	20	Lowest fill of pit [168]	MED	20	10	Y	Y
229	13	Fill of hearth [230]	MED	20	10	Y	Y
269	29	Lower fill of pit [270]	MED	20	20	Y	Y
279	6	Fill of garderobe 280	MED	10	10	N	Y
287	8	Fill of garderobe 280	MED	10	10	Y	Y
295	25	Fill of pit [244]	MED	20	20	Y	Y
355	12	Fill of pit [358]	PMED	10	10	Y	Y
394	21	Fill of ditch	MED	30	10	Y	Y
409	22	Fill of ditch	MED	30	10	Y	Y
417	26	Ditch cut [416]	MED	30	10	Y	Y
434	27		MED	30	10	Y	Y
436	26		MED	30	10	Y	Y
458	32	pit	MED	10	10	Y	Y
459	33	pit	MED	20	20	Y	Y
505	36		MED	25	10	Y	Y
518	37		PMED	20	10	Y	Y
532/533	41	pit	MED	10	10	Y	Y

TABLE 20 Plant remains from selected samples

Latin name	Family	Common name	Habitat	153	269	295	459
<i>Triticum</i> sp (free-threshing) grain	Gramineae	free threshing bread wheat	F				9
<i>Triticum</i> sp grain	Gramineae	wheat	F		3		
<i>Triticum/Secale</i> sp grain	Gramineae	wheat/rye	F		9	4	
<i>Hordeum vulgare</i> grain (straight)	Gramineae	barley	F			5	
<i>Secale cereale</i> grain	Gramineae	rye	F				26
cf <i>Secale cereale</i> grain	Gramineae	rye	F	9			8
Cereal sp indet grain	Gramineae	cereal	F	7	14		23
Cereal sp indet grain (fragments)	Gramineae	cereal	F	4			
cf <i>Lolium/Festuca</i> sp	Gramineae	fescue/rye grass	A			4	
<i>Avena</i> sp grain	Gramineae	oat	AF			2	
cf <i>Avena</i> sp grain	Gramineae	oat	F				15
Gramineae sp indet grain	Gramineae	grass	AF	15	15	8	74
Gramineae sp indet grain (fragments)	Gramineae	grass	AF				20
Gramineae sp indet culm node	Gramineae	grasses	AF		1		1
<i>Vicia/Lathyrus</i> sp	Leguminosae	vetch/vetchling/pea	A		4		20
cf <i>Vicia/Lathyrus</i> sp	Leguminosae	vetch/vetchling/pea	A			2	
<i>Sambucus nigra</i>	Caprifoliaceae	Elder	BC			2	
<i>Chrysanthemum segetum</i>	Compositae	corn marigold	A		2	1	4
Unidentified seed	unidentified				4	1	

Pits beneath friary precinct wall (12th / 13th and 14th centuries)

Only occasional charred grass grains (oat size) and barley (*Hordeum vulgare*) were recovered from context [532/533]. However, context [458/459] contained the most abundant remains. In this assemblage, large grass grains (some of which are likely to be oat; *Avena* sp) were predominant. As there was no chaff associated with the oat grains it was not possible to distinguish with certainty between the cultivated *Avena sativa* and the wild oat (*Avena fatua*). Rye grains (*Secale cereale*) were moderately abundant and a smaller number of free-threshing wheat grains (*Triticum* sp free-threshing) were also recorded. Weed seeds which may have been charred with the crop or crops included vetch/vetchling and corn marigold (*Chrysanthemum segetum*). Small quantities of hammerscale was noted in the residues of all these samples suggesting that iron smithing was likely to have been a nearby activity.

Pits (13th / 14th century)

Similar remains to those above, but in smaller quantities, were also found in association with occasional fragments of unidentifiable large mammal bone in a single fill from each of three pits interpreted as cesspits. These were pit [154] (fill [153]), pit [270] (fill [269]) and pit [244] (fill [295]). However, no evidence characteristic of tanning or cess waste (phosphate concretions and mineralised fruit pips) was noted. Nevertheless, the lack of evidence does not necessarily counteract the archaeological interpretation as survival of these remains (particularly phosphate concretions) may vary greatly in different soil conditions. Small quantities of hammerscale were also noted in the most of the residues from these samples.

Garderobe 280 (early usage in mid 13th to mid 14th centuries)

Abundant phosphate concretions, occasional blackberry seeds (*Rubus fruticosus* agg), small mammal bone, fish bone and bird bone were noted during assessment in context 287. Phosphate concretions, fish bone and fruit pips are frequently associated with cesspits and therefore suggests that this type of waste was disposed of here.

Other medieval features (13th / 14th century)

Only small quantities of charred cereal crop waste, fragmented large mammal bone, small mammal, fish bone and hammerscale were noted in these samples.

Early post-medieval activity (15th / 16th century)

Only occasional large and small mammal bone and charred legume seeds (presumably from cereal crop waste) were noted in these samples.

DISCUSSION

Charred crop residues were most abundant in pits beneath the friary precinct wall and the possible tanning or cesspits. This waste was probably accidentally charred when parching grain prior to storage or milling, or because crop waste has been used as fuel for fires. Large grass grains and occasional legume contaminants are frequently found with cereal grain, because it would not have always been possible to fully separate them from the grain during processing.

Although charred crop residues were consistently found in most samples (Table 21), the quantity recovered is not sufficient to suggest crop processing on a particularly large scale in the immediate vicinity. Rather, it is more likely that this represents waste from small-scale domestic processing in the medieval city. Although one fragment of cereal straw was noted, only much larger concentrations of cereal chaff would suggest that the cereals were grown on the site and wholly processed there. However, it should be borne in mind that these remains may be somewhat under-represented as their survival may not have been good in the acid sandy soils on the site, and in particular, chaff remains do not survive charring as well as the grain.

The presence of rye in many of the samples is of interest. As this is the centre of a city, it can reasonably be assumed that it was grown elsewhere. Rye is renowned for its winter hardiness, resistance to drought, and its ability to grow on acid, sandy soils. Thus it succeeds under conditions in which wheat frequently fails (Zohary and Hopf 1994). Lichfield is surrounded by heaths and this explains the predominance of soils of the Bridgnorth Association (Ragg *et al.* 1984). These soils are sandy and acidic, so rye may well have been chosen to suit the local conditions or possibly have been simply the best viable crop. It was grown on Cannock Chase (Chris Welch, *pers comm*). Moreover, the presence of corn marigold (*Chrysanthemum segetum*), a weed presumably of the cereal crop, is also an indicator of acid arable ground (Clapham *et al.* 1987). Small quantities of charred rye were also found in a pond deposit of medieval date (possibly part of the Minster Pool) at the Arts Centre, Bird Street in Lichfield (Pearson 1999).

Rye, oat, and wheat may have been grown separately or as a mixed maslin or maincorn crop. As oat and rye grains are more numerous than wheat, which was usually the favoured crop for human

TABLE 21 Plant remains from assessed samples

Latin name	Family	Common name	Habitat	158	161	169	229	279	287	409	505	518	532 /533
Charred plant remains													
<i>Triticum</i> sp grain	Gramineae	wheat	F				+						
<i>Hordeum vulgare</i> grain	Gramineae	barley	F										+
cf <i>Secale cereale</i> grain	Gramineae	rye	F									+	
Cereal sp indet grain	Gramineae	cereal	F	+		+	+			+			
<i>Lolium/Festuca</i> sp	Gramineae	fescue/rye-grass	A										+
cf <i>Lolium/Festuca</i> sp	Gramineae	fescue/rye grass	A				+				+		
Gramineae sp indet grain	Gramineae	grass	AF		+								
Leguminosae sp indet	Leguminosae	legume	ABCD										+
<i>Centaurea</i> sp	Compositae	cornflower/ knapweed	ABD				+						
Waterlogged plant remains													
<i>Rubus fruticosus</i> agg	Rosaceae	blackberry/ bramble	CD						+	+			

consumption, they may also have been grown as fodder, although Jones (1998) states that distinguishing between crops grown for fodder or food is problematic. Rye was also one of the normal cereal crops of the medieval period, according to the Tudor farmer-writers and surviving account rolls (Greig 1988), so its presence here is characteristic of the period.

Acknowledgements

Elizabeth Pearson would like to thank Derek Hurst for editing this report.

THE MAMMAL AND BIRD BONES *by Ian L. Baxter*

Introduction

A total of 21½kg of animal bones were recovered from the site, amounting to 129 'countable' (see below) fragments (Table 22). This is a very small assemblage and there is insufficient information to accurately estimate the kill-off patterns and animal husbandry regimes for any period.

The recovery of a substantially complete horse skeleton and also significant quantities of cattle horncores associated with the larger pits does, however, add considerably to the intrinsic interest of the assemblage and its usefulness for the interpretation of the site.

The animal bone has been divided into five chronological periods:

1. Medieval (site phases 2 to 4)
2. Late Medieval / Post-Medieval transition (15th / 16th centuries – site phase 5)
3. Early Post-Medieval (late 16th to mid 17th centuries – site phase 6)
4. Later Post-Medieval (mid 17th to mid 18th centuries – site phase 7)
5. Recent (late 18th to late 19th centuries – site phase 8)

Most of the material recovered derives from the medieval period with a small but significant early post-medieval component. The bone is generally in fair to good condition, although often friable and suffering exfoliation. It mostly derives from pits and ditches, but also from layers, scoops, structural features, robber trenches and a well.

TABLE 22 Number of hand-collected mammal and bird bones (NISP) ¹eighty-one bones from a partial skeleton; ²three bones from a partial skeleton; ³four bones from a partial skeleton; ⁴three bones from a partial skeleton.

	Medieval (C12th-15th)	Medieval/ Post-Medieval transition (C15th/16th)	Early Post- Medieval (C16th/17th AD)	Later Post- Medieval (C17th-18th AD)	Recent (C18th-19th AD)	Total
Cattle (<i>Bos</i> f. domestic)	43	12	14	2	10	81
Sheep/Goat (<i>Ovis/Capra</i> f. domestic)	4	6	4	6	3	23
Sheep (<i>Ovis</i> f. domestic)	(-)	(-)	(1)	(3)	(-)	(4)
Pig (<i>Sus</i> f. domestic)	1	2	1	3	1	8
Horse (<i>Equus caballus</i>)	3 ¹	-	-	-	-	3
Dog (<i>Canis familiaris</i>)	2	-	-	-	-	2
Cat (<i>Felis catus</i>)	1 ²	-	1 ³	-	-	2
Rabbit (<i>Oryctolagus cuniculus</i>)	-	-	-	-	+	+
Domestic Fowl (<i>Gallus</i> f. domestic)	3 ⁴	1	-	+	3	7
Domestic Goose (<i>Anser</i> f. domestic)	1	+	-	+	2	3
Total	58	21	20	11	19	129

NOTE: 'Sheep/Goat' also includes the specimens identified to species. Numbers in parentheses are not included in the total of the period. '+' means that the taxon is present but no specimens could be 'counted' (see text). Skeletons counted as '1'.

Methods

All of the animal bones from 15 Sandford Street were hand-collected. Consequently, an under-representation of smaller species and body parts is to be expected from this site due to a recovery bias.

The mammal bones were recorded following a modified version of the method described in Davis (1992) and Albarella and Davis (1994). In brief, all teeth (lower and upper) and a restricted suite of parts of the skeleton was recorded and used in counts. These are: horncores (if measurable), skull (zygomaticus), atlas, axis, scapula (glenoid articulation), distal humerus, distal radius, proximal ulna, carpal 2+3, distal metacarpal, pelvis (ischial part of acetabulum), distal femur, distal tibia, calcaneum (sustenaculum), astragalus (lateral side), centrotarsal, distal metatarsal, proximal parts of the 1st, 2nd, and 3rd phalanges. At least 50 per cent of a given part had to be present for it to be counted. The presence of large (cattle/horse size), medium (sheep/pig size) and small (cat/dog size) vertebrae and ribs was recorded for each context, although these were not counted.

For birds the following were always recorded when present: scapula (articular end), proximal coracoid, distal humerus, proximal ulna, proximal carpometacarpus, distal femur, distal tibiotarsus.

'Non-countable' elements of particular interest were recorded but not included in the counts.

The separation of sheep and goat was attempted on the following elements (if present): dP_3 , dP_4 , distal humerus, distal metapodials, and distal tibia using the criteria described in Boessneck (1969), Kratochvil (1969), and Payne (1985). The shape of the enamel folds (Davis 1980; Eisenmann 1980 and 1981) was used for identifying equid teeth to species. Isolated equid postcrania were assigned to species using criteria summarised in Baxter (1998).

Wear stages were recorded for all P_4 s and dP_4 s as well as for the lower molars of cattle, sheep/goat and pig, both isolated and in mandibles except for the 19th-century material. Tooth wear stages follow Grant (1982). These are retained in the Access database.

Bone measurements are retained in the Access database. These in general follow von den Driesch (1976). Pig measurements follow Payne and Bull (1988). Humerus HTC and BT and tibia Bd measurements were taken for all species as suggested by Payne and Bull (1988) for pigs. Equid teeth have been measured using the method of Payne (1991). The postcrania of the horse skeleton were measured following the method of Eisenmann (1986) which also incorporates most of the von den Driesch measurements usually taken.

Cattle

A total of 30 countable cattle horncores were recovered from contexts dating from the late 12th or early 13th century to the 14th century. These are described in Table 23. All derived from short-horned beasts, i.e. animals with cores measuring less than 220mm in length along the outer curve (Armitage 1982). In most cases the horns faced forwards or downwards and then forwards. One straight core was seen, a less common variation previously described from other medieval sites, e.g. Hereford (Noddle 1985). Based on core surface morphology and the fusion state of the fronto-parietal suture (where present), 67 per cent derive from adults or old adults aged between seven to ten years or more, 13 per cent from young adults and 10 per cent from sub-adults. Based on criteria published by Armitage and Clutton-Brock (1976), 60 per cent belong to cows, 23 per cent to bulls, 10 per cent to bulls or bullocks, and 7 per cent to oxen (*castrates*). Plots of horncore measurements show only a slight suggestion of grouping of the medieval cores in terms of size but not of shape (Fig. 15). This may merely reflect the comparative shortage of ox cores, which are generally substantially larger than those of bulls and cows. Cranial shape could only be determined in a single case, an adult bull from fill [162] low in pit [165] which has a frontal profile with a slight boss and an intercornual ridge forming a high double arch, similar to modern Welsh cattle (Grigson 1976).

Three occipital fragments have perforations with rounded edges, currently believed to be congenital abnormalities as they have also been observed in the crania of prehistoric wild bovids (Manaseryan *et al.* 1999; Baxter 2002, 142–3). These occipital perforations are variable in size and are relatively frequent in archaeological domestic cattle.

Cattle postcranial remains were relatively scarce in the medieval features and appear to represent butchery or food waste. There are no accumulations of foot bones to match those of horncores.

Two medium-horned cattle horncores and fragments of a third were found in fill [520] of pit [520]. This pit had removed the upper part of the pit [502] for hearth [513] and dated to the late 15th century. The more complete cores belong to a cow and an ox. The cow horncore retains a substantial portion of the occipital region of the cranium and came from a beast with a flat frontal profile and a low double-arched intercornual ridge similar to a modern Ayrshire (Grigson 1976).

TABLE 23 Cattle horncores

Period	Context	Type	Sex	Age	Curvature	Comments
medieval	16	shorthorned	cow	adult	forward	
medieval	155	shorthorned	bull/bullock	?young adult	?	
“	155	shorthorned	ox	adult	?	
“	155	shorthorned	cow	adult/old adult	forward	occipital perforation
“	155	shorthorned	cow	adult	downward/forward	
“	155	shorthorned	bull	adult	downward/forward	
“	155	shorthorned	bull	old adult	?	
medieval	157/158	shorthorned	cow	adult	?	
“	158	shorthorned	ox	old adult	downward	
“	158	shorthorned	cow	adult	forward	
“	158	shorthorned	?bull/bullock	young adult	?	
“	158	shorthorned	?bull/bullock	young adult	?	
medieval	162	?	?cow	?	?	
“	162	?	?bull	?	?	
“	162	shorthorned	?cow	subadult	forward	
“	162	shorthorned	?cow	subadult	forward	occipital perforation
“	162	shorthorned	?cow	subadult	forward	
“	162	shorthorned	bull	old adult	forward	
“	162	shorthorned	cow	adult	downward/forward	
“	162	?	cow	adult	?	
“	162	shorthorned	cow	adult	straight	
“	162	shorthorned	cow	adult	forward	
“	162	shorthorned	cow	old adult	forward	
“	162	shorthorned	bull	young adult	forward	occipital perforation
“	162	shorthorned	cow	old adult	downward/forward	
“	162	shorthorned	cow	old adult	forward	
“	162	shorthorned	bull	adult	forward	Frontal profile) Slight boss; Intercornual ridge) High double arch
medieval	172	shorthorned	cow	old adult	downward/forward	
medieval	243	shorthorned	bull	old adult	downward/forward	
“	243	shorthorned	cow	old adult	forward	
EPMED	520	medium-horned	cow	adult	forward	Frontal profile) Flat; Intercornual ridge) Low double arch
EPMED	520	medium-horned	ox	adult	forward	
19th century	199	?medium-horned	?	old adult	?	

Based on Armitage and Clutton-Brock (1976), Armitage (1982), and Grigson (1976). Type is based on Armitage (1982). EPMED = Early Post-Medieval (C16th/17th century)

During the Tudor period, medium-horned cattle begin to replace the previously ubiquitous shorthorns. The only cattle bones sufficiently complete to provide withers height estimates came from features dating from the late 15th to the late 16th centuries and provide values of 109–110cm based on the multiplication factors of Matolcsi (1972). Most of the early post-medieval cattle remains derive from primary butchery.

Horse

The greater part of the skeleton of a horse was buried in pit [240] dating from the second half of the 13th century. The animal was male, either a stallion or a gelding, based on possession of canine

teeth in both jaws, their size and erupted state (Sisson and Grossman 1953, 399). The state of wear of the lower incisors indicates that this horse was approximately fifteen years old when it died (Barone 1980), and the mean of six long bone measurements suggests a withers height of around 14 hands based on the multiplication factors of Kiesewalter (1888). No injuries or butchery marks were seen on any of the bones although the lower feet (phalanx 2–3) were missing, presumably cut off to salvage the horseshoes. Slight alveolar osteoporosity in the region of the anterior lower premolars may be indicative of a dietary deficiency.

Fused (ankylosed) central and third tarsals recovered from late 13th century pit [530] ([532]) belong to a horse suffering from spavin, a non osteo-arthritic disease of the tarsus resulting in lameness frequent amongst draught and traction animals (Baker and Brothwell 1980; Baxter 1996).

Dog and cat

The mandible of a fairly large dog was found in mid 13th–14th century layer [16]. This animal appears to have possessed a small supernumerary 4th molar encroaching on the vertical ramus of the mandible. The baculum (*os penis*) of a male dog was found in foundation trench [144] below the masonry of wall [252] dating from the 14th or possibly the 15th century.

Partial skeletons of adult domestic cats were found in fill [304] of the 15th-century cesspit [308] and fill [254] of a 16th-century re-cut [255] into the top of garderobe [280]. No cut marks were seen on any of these bones. It is uncertain if these cats represent refuse from skinning, as suggested for the 15th-century remains of several individuals found on the Arts Centre site at Bird Street (Baxter 2000a). Formally linked with sorcery in the 13th century by Pope Gregory IX (MacDonogh 1999, 206), cats were often persecuted and hunted for their fur as ‘beasts of the warren’ (Luff and Moreno García 1995). Possession of a pet cat at this time could lead to accusations of witchcraft. In March 1643 parliamentary troops were accused, along with other things, of hunting cats with hounds in Lichfield cathedral (MacDonogh 1999, 207) but this may not have been typical behaviour amongst the populace at that time.

Other domestic species

The remains of other domestic species, sheep, pigs, geese and chickens, occur sporadically at much lower frequency than those of cattle throughout the stratigraphic sequence as food refuse. The few later post-medieval sheep bones show no signs of improvement over earlier stock. A large (uncounted) distal pig ulna from well [274] possibly dating from around 1850 may derive from an improved animal.

DISCUSSION

The cattle horncores found in the 13th–14th century pits might be refuse from tanning. The horns were generally left attached to the skins prior to processing. However, so were the feet (Serjeantson 1989), and as comparable accumulations of these were not recovered it is also possible that the horncores represent horners’ waste dumped in adjacent disused pits. The trades were allied, with the horns being passed on to the horners by both butchers and tanners. Most of the cores retain portions of the fronto-parietal and occipital regions of the cranium and all have been separated. The medieval cattle were short-horned with a cranial morphology similar to modern Welsh cattle. The horses were probably employed for carting and disposed of on-site when they died of overwork, malnutrition or old age. By the end of the 14th century the site had become the focus of domestic occupation with chickens raised, perhaps geese fattened and, possibly, some small scale cat skinning taking place on the back lots. The early post-medieval cattle were medium-horned with a different cranial morphology from those of the medieval period. From the available evidence, they stood around 110cm high at the shoulder. Most of the early post-medieval cattle remains are derived from primary butchery.

X-RAY OF OBJECTS *by Phil Parkes*

Methodology

A small number of metal objects were recovered from 10 medieval contexts and one early post-medieval context. These were x-rayed using a Faxitron 43855 x-ray system with an EZ320 digital x-ray scanner and iX-PECT software tools. The images were saved in 16 bit TIFF and JPEG formats and are held with the site archive.

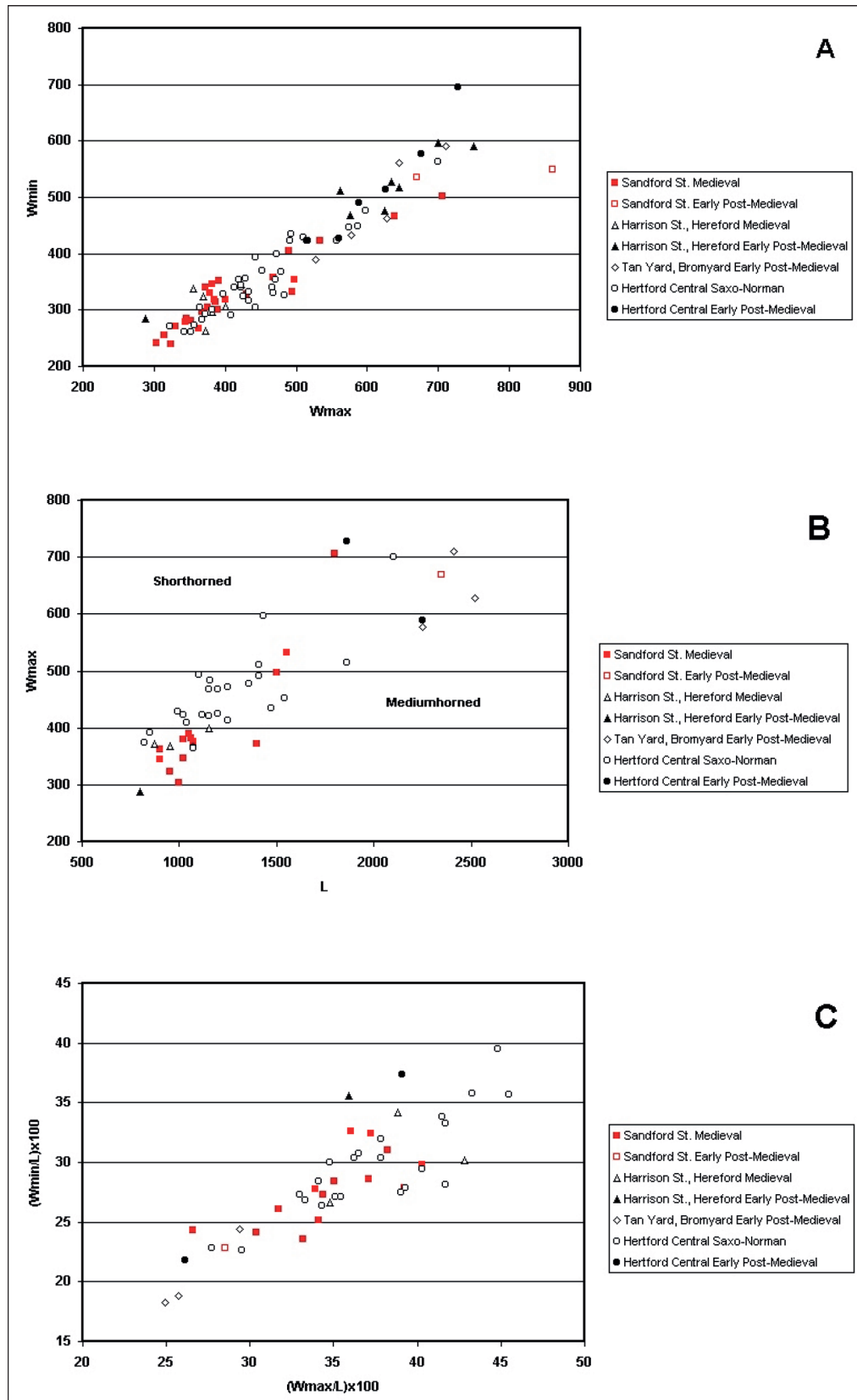


Fig. 15 Size (A and B) and shape (C) of cattle horncores at Sandford Street, Lichfield, compared with sites in Herefordshire and Hertfordshire

Sources: Harrison Street, Hereford (Baxter 2000b); Tan Yard, Bromyard (Baxter 2001a); Hertford Central sites (Baxter 2001b)
Measurements in tenths of mm L = Length; Wmax = maximum width of the base; Wmin = minimum width of the base.

TABLE 24 All metal objects recovered from hand excavation

Context	Feature No.	Period (Phase)	Notes
[155]	[160]	medieval (3)	nail shaft?
[157] / [158]	[160]	medieval (3 / 4)	2 nails and 1 nail shaft
[158]	[160]	medieval (3)	2 nail shafts – ?part of same object
[166]	[168]	medieval (3)	2 nails and 1 shaft
[238]	[240]	medieval (3/4)	nail
[247]	[248]	medieval (?4)	1 nail shaft
[255]	[255]	early post-medieval (5 / 6)	1 nail and 2 shafts
[287]	[303]	medieval (3)	penknife / ?folding knife, with copper alloy handle and iron blade
[324]	[308]	early post-medieval (5/?6)	1 nail and 1 roughly circular plate, possibly with a hole in the centre but more likely a circular plate
[376]	[375]	medieval (4)	nail shaft
[505]	[513]	medieval (3/4)	three-quarters of a horseshoe
[505]	[513]	medieval (3/4)	copper alloy rod – no distinguishing features

Metal objects appear to have been rare, or at least rarely discarded. The majority of the objects recovered during the medieval period were iron nails and most were simple discards into cesspits. The horseshoe and copper alloy rod from hearth [513] are discussed elsewhere in this report.

METALWORKING DEBRIS *by Nick Tavener*

Methodology

A total of 32.3kg of metalworking debris was recovered from a range of medieval and early post-medieval contexts. A very small amount of material totaling less than 0.5kg was recovered as individual pieces from contexts dating from the late 18th to the 20th centuries. This material was almost certainly residual and is not included in the table. Tiny quantities of hammerscale were extracted with a magnet from the residues of nineteen out of the twenty bulk soil samples sent for environmental analysis. All of the materials were examined visually and categorised largely according to Jackson (2000). Categories for blooms and billets (English Heritage 2001) have been omitted from the table as none were found. No chemical or petrographic analyses have been undertaken.

Results

The results of the examination are given in Table 25. A total of 4.36kg was recovered from area 1 and 27.95kg from area 2, largely from medieval contexts. One interesting aspect of the assemblage was the small proportion of undiagnostic material. The obvious disparity between the areas was caused by the recovery of a very large quantity of large pieces of tap slag and smithing waste dumped with fill [559] behind the lining of well [440] and also the recovery of thousands of small debris from fill [100] of pit [127], both features lying within area 2. The ironworking wastes recovered from contexts [559] and [100] account for 54 per cent and 15 per cent (4750g) of the assemblage respectively.

The make-up of the latter two assemblages was markedly different. The material found in context [559] comprised almost entirely of 34 very large lumps weighing 0.3–0.8kg. The context was largely re-deposited natural sand and bedrock presumably from the original digging of the well. Most of the lumps were concreted agglomerations of cinders, general ferrous (but undiagnostic) material and hammerscale. There were no obvious hearth bottoms and the lumps were probably ‘floor pan’ from smithing. The residue from flotation of the environmental sample contained some tiny hammerscale. There were also several similarly large pieces of tap slag. This was in stark contrast to the material from context [100] in pit [127]. There was a single piece of smithing debris weighing *c.* 100g and *c.* 100 pieces of tap slag, usually broken fragments weighing less than 50g. There was a similar quantity of small ferrous and cinder agglomerations that were probably smithing debris. The bulk

of the debris, however, passed through an Endicott sieve of 12mm mesh size and about 5 per cent passed through an Endicott sieve of 2mm mesh size. Most of this smaller material, which amounts to many thousands of tiny pieces, was hammer scale and strongly magnetic. Both deposits would seem to have been primary deposition from a smithing operation nearby. The presence of some tap slag in both contexts indicates a small amount of smelting was probably associated with the smithing.

The quantities of small hammer scale recovered from the flotation of the environmental samples range from less than 1g to less than 0.1g per context and include numerous tiny droplets. The small size of the debris meant that many pieces are present in each context. These contexts are mainly identified in Table 25. The excluded contexts are those that produced hammer scale from the environmental samples but which yielded no metalworking wastes during hand excavation. These were the early pits [456] and [530] sealed below the friary precinct wall, 13th- or 14th-century pits [168], [303], [244], [435], and [437], late medieval pit [519] and early post-medieval pit [358]. Small hammer scale could travel some distance when struck, especially if the operation were not conducted within a confined space. The presence of hammer scale low within the fills of pit [456], one of the earliest pits on site, may indicate that some of the tiny hammer scale could be residual from early smithing operations, perhaps a single operation, somewhere within or close to the site. The small piece of tap slag found in another phase 2 pit (pit [227]) may indicate iron working in that phase but there is a possibility that it was introduced by cultivation. There is a danger that some of the tiny material recovered from the environmental samples may have been material from a background scatter across soil [149] that was later moved down into features by worm sorting.

The presence of hammer scale in a sample from fill [394] of the phase 1 ditch [348] may be evidence of this mechanism.

Individual pieces or small quantities of smelting products in the form of tap slag or dense iron-working slag were found in the fills of medieval features across both areas. Smelting products form the bulk of the material in area 1 leading to the suspicion that primary working was undertaken on site or somewhere close-by in phase 2 or 3. None of the excavated features in that area would seem to be likely centres of production except for hearths [312] and [250]. The former was small and the latter probably post-dates many of the contexts in the area that produced metalworking debris. Much of the material from area 2 was found in features lying within a few metres of hearth [513]. The lower fill contained only a single piece of slag but the residue from the flotation of the environmental sample contains one of the larger assemblages of small hammer scale. It therefore seems likely that the hearth was the centre of much of the metalworking activity in the 13th or 14th centuries although the base of the pit appears not to have been seriously affected by heat. It is possible that the fire was suspended in some way. The quantities of material recovered would seem to indicate intermittent domestic production, perhaps refining and re-working rather than true smelting and intermittent smithing.

Conclusions

All of the metalworking debris relates to the working of iron; there was no evidence for the working of other metals or glass. The assemblage of wastes indicates that both primary production and secondary working of iron took place within the site or its immediate surroundings in medieval phase 3 and possibly 4. Most of the material occurred in features of 13th- or 14th-century date. A small piece of tap slag was found in phase 2 pit [227] but there is a danger that this was introduced by later cultivation of the area. The presence of the vast bulk of the material in pits of this period lying close to hearth [513] indicates that the hearth was probably used for smithing and possibly also for small-scale smelting or refining. The relatively small quantity of debris recovered probably indicates that the production and smithing was of an intermittent domestic nature rather than truly industrial. Much of the material recovered in small quantities from later medieval and early post-medieval features may be scattered residual material from this earlier production hearth.

GENERAL DISCUSSION

PHASE 1 DITCH [416] / [348] BEFORE THE LATER 12TH CENTURY

Some 20 cubic metres of the fills of the two phases of the ditch were excavated by hand. The sole find was the fragment of a Roman box flue tile in the bottom of the secondary cut, ditch [348]. This fragment at least demonstrates that the ditch cannot have been dug significantly earlier than

TABLE 25 Types of ironworking debris (ordered by area, then period, then context)

Context			Smelting		Smithing						
Context no.	fill of	area	period	tap slag	dense ironworking slag	iron rich cinder	hearth bottom	smithing floor pan	hammer scale	undiagnostic or Fe concretion	
226	227	1	12th	1 / 66							
162	165	1	13th						#19	1 / 42	
238	240	1	13th	1 / 2	2 / 1140						
153	154	1	13/14th	5 / 228					#23		
157	160	1	13/14th	1 / 40							
158	160	1	13/14th	1 / 184					#3 and #4		
155	160	1	13/14th	2 / 624							
171	170	1	13/14th							1 / 28	
172	172	1	13/14th	4 / 160							
311	312	1	13/14th	1 / 20							
305	308	1	15th	1 / 16							
356	358	1	16th		2 / 564						
389	390	1	epmed		1 / 46						
487	489	1	16th	2 / 306	1 / 358						
147	148	1	16/17th		2 / 458					1 / 76	
Area 1 totals				19 / 1646	8 / 2566		-	-	<1g	3 / 146	
100	127	2	13/14th	See text	See text				See text		
269	270	2	13/14th		1 / 422				#29		
441	442	2	13th	1 / 362						1 / 126	
447	442	2	13th							1 / 84	
453	440	2	13/14th	2 / 316				2 / 424			
505	513	2	13/14th	1 /					?		
559	440	2	13/14th	9 / 4720				25 / 12,796	#42		
335	334	2	14/15th	2 / 602						3 / 44	
558	550	2	14/15th		1 / 90						
332	334	2	15th	5 / 1355						1 / 28	
291	292	2	15/16th	1 / 136	1 / 82					2 / 644	
293	294	2	15/16th	1 / 156							
330	331	2	15/16th		1 / 230					1 / 96	
445	442	2	?15/16	2 / 58							
254	280	2	16th					2 / 408	#5		
Area 2 totals				23 / 7705	4 / 844		-	29 / 13,628	>100 / <1g	9 / 1022	

(No. of pieces / weight in grammes) # = environmental bulk soil sample containing hammerscale.

the Roman period. Two pieces of *tegulae* were found in the fill of cesspit [355]. This was cut down through both phases of the ditch and into the subsoil, the find spot being within 2-3 metres of the box flue tile. This may have been displaced and reburied during the creation of that cesspit in the early post-medieval period. Features of genuine Roman date usually contain broken pottery and other artefacts in modest or abundant quantities although this is not necessarily always the case. The utter lack of other finds of Roman date suggests that the ditch was not of Roman date, but obviously falls

short of proving the case. The overall lack of finds may indicate that the ditches were open during an aceramic period, possibly the sub-Roman or Mercian periods, but this remains speculative.

Bassett has suggested that medieval Lichfield grew up around a Roman or sub-Roman religious structure and that the layout of the 'new town' was aligned on, or decided by, a pre-existing field system that could have originated in Roman times (Bassett 1982, 98). The archaeological record for the Roman occupation of Lichfield is sparse, consisting of two possible burials and occasional stray finds of Roman artefacts (Carver 1982a). Another Roman flue tile was found in a Saxon context during archaeological excavation south of the cathedral but that flue tile could have been brought to Lichfield from a disused building in a nearby Roman settlement such as Wall (*Letocetum*) (Carver 1982b, 37). This seems an equally plausible explanation for the presence of the fragment of flue tile in the bottom of ditch [348].

Ditch [348] was a parallel replacement for [416] occupying very nearly the same footprint, the centre line being shifted perhaps 0.4m to the north. It seems likely that the original ditch was still visible when the re-cut was made. Both phases of the ditch were nearly 2 metres deep originally which might imply a common purpose. The width and depth of both phases of the ditch would have required a level of effort probably beyond that necessary for a simple field boundary ditch.

The re-cut ditch [348] was, beyond doubt, largely silted up and abandoned when pit [227] was dug in the later 12th or early 13th centuries, although the ditch was probably still visible as a slight linear hollow. The upper fills of the re-cut were largely derived from nearby topsoil and contained occasional sherds of phase 3 medieval pottery in an abraded condition probably introduced by cultivation. It is possible that the ditches date from the period of the formation of the new town but that would mean that the original cut [416] had silted up, been re-cut and silted up again to the point of being almost level with the surrounding ground surface all within roughly a hundred years. It seems likely that the earlier ditch [416], at least, pre-dates the establishment of the planned town c.1140. The results of experiments conducted at Overton Down on the post-abandonment development of a ditch are probably more applicable to ditches cutting chalk bedrock. Even so, the experiments indicated rapid erosion of the edges after five years (Limbrely 1975, 291 and Fig. 33). A similar experiment undertaken near Wareham in Dorset in a sandy clay subsoil perhaps not too dissimilar to subsoil [8] at Sandford Street, indicated equally serious erosion after nine years (*ibid*). Unfortunately neither experiment has had sufficient time to follow the ditches through their full silting sequence. Whilst the initial stages of silting of any ditch cut through the prevailing clay marl subsoil could be fairly rapid, the final stages of infill of a ditch of this size from a shallow linear hollow to being utterly invisible would probably take some time although the process would be hastened by agriculture. Most of the cultivation in the vicinity appears to have post-dated the abandonment of pit [227].

Any positive identification of the function of the ditch is hampered by the obvious problem that its course and extent remain totally unknown beyond the limits of the excavated area. The ditch is almost certainly not related to the ditch found in a recent excavation on the north side of Sandford Street (Nichol and Rátkai 2004; Stone 1999e, context [75]) for that ditch contained pottery ranging from the 13th to the 15th centuries, so was clearly much later than ditch [348].

It seems unlikely that ditches [416] / [348] had a defensive function. Early defensive sites would have been much better placed on the higher ground to the north of the pools or to the south, such as around Greenhill. Conversely, the medieval 'new town' was founded on the valley floor not far above the water table. The origins of street names such as Wade Street and Frog Lane further eastwards in the new town have been taken to indicate a fairly wet area (Greenslade 1990, 42). These streets lie two to three metres below the level of Sandford Street which occupies a slight natural ridge running east-west. The medieval ground surface within the excavation area lay 3.7 metres above the modern day level of the Minster Pool. If future fieldwork should show that the ditch was part of an enclosure or defensive system and if it is accepted that the marl layer low in the fills of the ditch indicates that a bank lay along the southern edge, then the enclosure probably lay to the south in the area later occupied by the friary.

The Minster Pool system was once far more extensive (Anon. 1840; Stone, this article). Deep peat deposits have been found at two locations 100–200 metres to the west of the site in an area which lies about one metre lower than Sandford Street. The western side of this low area is delimited by a gentle slope that rises two metres to the site of the old Trunkfield Conduit Lands. The peat deposits, which include materials of medieval date, lie in a hollow that could have been extensive and have been interpreted as having formed within another pool (Carver 1982a, 5–7). The horizontal banding in clay marl [8] probably indicates deposition in reasonably still water and the clay may have

formed as very fine silts along the eastern fringe of an early (and much larger) version of Carver's proposed pool.

The ditches obviously led water from west to east even if that was not the main or sole function. It is unlikely that the ditches were for drainage of the immediate locality for there were no drainage features on site in the medieval or later periods. It should, however, be noted that the water table has been lowered considerably in the area since medieval times. The water level of the Minster Pool some 200 metres to the north of the site lies at 80.12m O.D which is 1.5 metres above the base of medieval well [440] and yet that well was dry in 2000. Nonetheless, the ground conditions encountered at Sandford Street were such that the area has probably never required drainage. The source of water for the ditches must lie to the west, that is, the pool proposed by Carver or the Trunkfield Brook if that were slightly higher in the medieval period. In order to escape westwards, the water would need to climb the metre high slope and this probably explains why the ditches were nearly two metres deep. The direction of natural drainage in that lower area is also west to east. In more recent times this was provided by the Trunkfield Brook which turned northwards into the Minster Pool (Snape 1781).

Hill's plan of the friary dated 1638 noted 'A stile [stile] into Poole-furlonge' at the north-west corner of the friary precinct (his map item 'R'). This location would lie close to the peat deposits reported by Carver and probably refers to the pools and closely spaced water courses shown about 100 metres to the west of the friary on Snape's map of 1781. Water courses tend to silt up; these may have been more extensive in earlier times. Several ditches are referred to in the key to Hill's map including a water conduit leading from west to east, the western origin presumably being somewhere in the vicinity of the pools near the later Conduit Lands. It seems likely that a large part of the area to the west of Sandford Street, now drained by the Trunkfield Brook into the Minster Pool, may have been very wet until comparatively recently. The early layout of Sandford Street, particularly the odd dogleg, may have been dictated by the presence of a pool, albeit one that might have been reduced to marshy ground by the middle ages. Realistically, the issue as to whether the ditches drained water from a long vanished pool lying to the west will only be resolved by future fieldwork.

The impressive size of ditches [416] / [348] could indicate a territorial boundary. If so, this would seem to have become defunct by the medieval period. The alignment of the ditches differs by some 5 degrees from the alignment of Sandford Street and also the north wall [452] of the friary precinct. It fits even less well with proposed boundary between the medieval plots on Sandford Street and Bird Street (i.e. the boundary between excavation areas 1 and 2).

The presence of the high bank of post-medieval soil accumulation [149] over the top of the ditches led to a good level of preservation; it is highly unlikely that another complete profile of these ditches will be found elsewhere. The ground levels on the properties to the east and west are such that the bottom half of the ditch may survive within those areas.

PHASE 2 THE LATER 12TH TO MID 13TH CENTURIES

The pottery assemblage indicates that the earliest domestic activity of the site dates to this period but it would be hard to argue for either intensive occupation or the establishment of burgage plots in either area within this phase based on the small number of features.

Later maps indicate that area 1 would later encompass the far flung back-plot or plots of burgages running off Bird Street. The earliest cesspit [456] was cut and abandoned within this period. There was no direct stratigraphic relationship between this cesspit and cesspit [423] just to the north but it was probably broadly contemporary. A third feature [540] to the west was not provably man-made. The close proximity of the two provable features might indicate that the activity was focused within a single land holding. There were no wells within the area, which could have been part of either Bird Street or Sandford Street at this date; the evidence simply does not allow a conclusion. The wells would presumably have lain much closer to the relevant frontage, so the fact that no wells of this phase were found in area 2 may be significant. This phase almost certainly pre-dates the good supply of water piped to the town via the friary from around 1301 (Harwood 1806, 488).

Later maps indicate that area 2 should have lain across the back-plots of three burgages running off Sandford Street at some time in the medieval period. Pit [227] lay on the dividing line between areas 1 and 2 and could have been dug within the curtilage of either street. The ground works for buildings dating to the 18th to 20th centuries could potentially have removed all the shallower features such as floor surfaces, small pits, beam slots and post holes typically associated with settlement

from around 90 per cent of the area. The only activity in the area within this period was a small hearth [33] at the west end of the area and a small pit [290] towards the east end. The small and ephemeral nature of these features probably indicates that truncation by the recent buildings had not seriously penetrated the subsoil and that medium and large size features, if ever present, should have survived. It would be difficult to argue for any serious domestic occupation of the area based on these two features let alone any formal subdivision of the area into burgage plots.

PHASES 3 AND 4 THE MID 13TH TO THE LATE 15TH CENTURIES

General

The paucity of activity up to *c.* 1250 was followed by the digging of a plethora of pits as well as the creation of hearths in both areas in the later 13th century continuing on into the next century. There was no clear evidence of medieval buildings within either area. The deep cellars along the Sandford Street frontage precluded any possibility of survival of features along most of that frontage. Roughly half of the small area without cellars at the eastern end of the plot appears to have been cleared to subsoil at some time in the late 17th or early 18th centuries and the handful of features found near the frontage beneath soil [71] and cutting the natural form no coherent house plan.

There were no features directly interpretable as plot boundaries in the medieval period. This seems to be a common problem in Lichfield (Nichol and Rátkai 2004). Four slightly different alignments were detectable within the layout of features on site. Whilst none diverged greatly from the line of Sandford Street, two of the alignments were a few degrees off the alignment of that street. The first was the early ditch [416] / [348]. The second alignment was that followed by the 17th-century wall [200]. This may have been represented at an earlier date by a line of medieval cesspits ([154] etc) at the west end of the site. This alignment probably related to property boundaries running off Bird Street. The northern wall [452] of the friary precinct concurred fairly well with the alignment of Sandford Street, and, to the north of wall [200], most of the medieval features appeared to be set out in line more or less perpendicular to Sandford Street. The fourth alignment is represented merely by the slightly oblique setting of two adjacent cesspits, [519] and [550], at the east end of area 2 and may be of no great significance.

Bassett's proposal that the existing Sandford Street replaced an original road leading from the Sandford Gate straight down the line of Lower Sandford Street to meet the west end of Market Street would mean that there should be an early phase in which the property boundaries would lie some 25 degrees clockwise to the existing boundaries. It would not be unreasonable to assume that some or most of the associated features would reflect that orientation. Most of the sub-rectangular features on site can be seen to be fairly rectilinear to Sandford Street and none would indicate any such dramatic shift in orientation. Bassett also proposed that Market Street originally ran further westwards but was truncated by the extension northwards of the friary. This proposed earlier arrangement would have taken Market Street through the southern part of the garden of 15 Sandford Street. The hypothesis that Market Street ever ran as far westwards as the excavation area can be entirely discounted for two reasons. Firstly there was no trace of a road surface within the excavated area and, secondly, parts of the northern and southern street frontages would have lain along the area of the site with the best preserved stratigraphic sequences which included an extensive area of the medieval / early post-medieval topsoil [149]. There was no evidence of any such housing at any period in that area.

Many of the excavated pits were large, steep-sided, sub-rectangular features 1.5–2m deep. These had invariably continued in use through to the later 14th century being cleaned out and recut either within the same footprint or at close proximity. The thin silty clay deposits found on parts of the edges and base of many of these pits were interpreted at first as being deliberate clay linings applied to retain liquid. It was noted during the excavation that the clay subsoil did not impede drainage probably because of the numerous sand filled natural fissures bisecting the underlying clay marl. In a simple experiment, pit [165] was filled with water after being fully excavated by which time the 'clay lining' was incomplete following cleaning of the edges for photography. The pit held water for over three days even with an incomplete lining. This attribute would probably not be desirable in a cesspit and led to initial speculation that the features were some form of steeping pit, possibly for tanning. There was, however, no sign that any of the pits had ever had a wood lining. More provable examples of tanning pits found in archaeological excavations elsewhere in Britain seem to occur as very close spaced groups of contemporary pits and were often arranged in rows (e.g. at

Edgbaston Street in Birmingham: C. Mould, *pers comm*). None of the pit groups at Sandford Street would satisfactorily match this pattern. The interpretation of the pits, or at least some of them, as tanning pits was apparently supported by the presence of cattle horncores in the many of the pits (Baxter, above). The quantities involved were modest and do not indicate a large-scale operation. The presence of the horncores could equally be taken to indicate the existence of horn-working nearby (Schofield and Vince 1994, 111) and the possibility that the horns represent horners' waste rather than the by-products of tanning is supported by the general absence of foot bones (Baxter, above).

It is possible that the 'clay linings' observed at Sandford Street are a natural phenomenon, formed by the translocation of clay particles down through the fills, the particles being carried down in suspension after being disassociated from their neighbours by chemical reactions arising from the inherently mildly acidic nature of rain. The disaggregated particles would tend to accumulate at harder interfaces, in this case the natural at the edges of the features. This phenomenon has been observed and analysed in prehistoric pits where it was postulated that it was a natural process but that the addition of acidic potash derived from woodland clearance had accelerated the process (Slager and van der Wetering 1977). It is not known whether this phenomenon has been investigated in cesspits, but logic suggests that the process would probably be accelerated by the higher than normal acidity within a cesspit. The addition of lime to a cesspit could also alter the behaviour of clay particles within the pit. Slaked lime reacts violently with water in a fairly volatile exothermic reaction which would probably seriously unbalance the existing soil chemistry, possibly leading to the release of complex calcitic precipitates. Real clay linings in pits known to have had such linings seem to be highly susceptible to erosion within a very short time (unless fire-hardened) and would probably be unrecognizable today (Evans 1982, 173).

The issue as to whether some or all of the large sub-rectangular pits may have been used for tanning or some other steeping process must remain unresolved for there is, unfortunately, no known scientific test (Lisa Moffat, *pers comm*) and there are ethnographic parallels for a wide range of uses for pits (Evans 1982, *passim*). Schofield and Vince examined this problem (1994, 119) and concluded that the best way to identify tanning pits was probably to look for groups of pits backfilled at the same time which were set either within or just outside a structure instead of at a distance from it. The larger pits at Sandford Street cannot be shown to lie close to structures. Rubbish pits dating to the medieval period have been widely reported from archaeological excavations across Britain and there is no doubt that most holes in the ground ended up as convenient places to dump rubbish. It is likely, however, that the holes originally had other functions such as the storage or disposal of liquids (Schofield and Vince 1994, 119). In medieval towns, waste from food preparation and scraps from the table were regularly tipped into cesspits to join the human waste (*ibid.*).

Cesspits usually contain seeds and charred remains of fruits and other human foodstuffs and have been rich hunting ground for environmental archaeologists for decades. The interpretation of some layers as human faeces in pits interpreted as cesspits is often supported by the occurrence of human parasitic ova (Schofield and Vince 1994, 181) and 'lime' concretions (Pearson, above). The results of the analyses of environmental samples from two pits tested from this phase are largely inconclusive (*ibid.*) but much more conclusive from a lower fill of garderobe [280].

Many of the large pits were sited towards the rear of the proposed plots. This was a common position for cesspits in London (Schofield and Vince 1994, 68) and other towns for buildings gable-end onto the street in the 13th and 14th centuries such as Stamford and Southampton (*ibid.*). Excavations at Worcester found cesspits across small yards behind buildings on tenements dating from the 12th to 14th centuries (Carver 1980). Contemporary surveys of London houses in 1607–12 show privies across small yards behind houses, in the same block as the separate kitchen, an arrangement that may date from at least the 14th century (Schofield and Vince 1994, citing Schofield 1987). Together, these configurations suggest that cesspits dating to the 13th and 14th centuries were often located deep within properties and commonly towards the edge of those properties and that stone privies often replaced timber predecessors in the same location; this has been demonstrated on several London sites (Schofield and Vince 1994). This positioning might aid interpretation of the pits at Sandford Street but, unfortunately, tanning pits were probably also largely sited towards the back of properties because they were also fairly noxious (*ibid.*). Nonetheless, many of the numerous deep, steep-sided, sub-rectangular pits usually featured several thin light grey or grey-yellow layers, usually at the bottom of the cut or at the base of subsequent recuts and these soft layers may have once been cess. The replacement of one of these pits, pit [303], by the formal stone lined privy or garderobe [280] is probably significant. The most plausible interpretation for these pits is that they were cesspits.

In 15th-century Southampton, the better-off burgesses lived in comfortable timber-built houses with well-heated halls. The backyard cesspits of earlier centuries disappeared in the 15th century and were replaced by properly built latrines fitted internally and designed for regular cleaning. The night soil and refuse was carted away. There is good evidence that this was the trend elsewhere in England, for instance at Exeter where internal privies have been dated to this period: 'Both there and at every other centre of population in a countryside haunted by plague, the natural inclination of all wealthy men to keep their privies sweet was much reinforced by contemporary medical theory, identifying odour, not unreasonably, with disease' (Platt 1978, 196). There is evidence of this pattern of replacement within the central plot on Sandford Street where the earlier cesspit [303] was converted into the stone-lined garderobe [280]. The plots to each side featured cesspits through the 15th century and on into the 16th century and the presence of garderobe [280] as well as other earlier features nearby suggest that the central plot was of higher status than its neighbours from the later 13th century onwards.

Another type of pit common on the site was a much smaller shallow scoop usually filled fairly rapidly with topsoil that was often charcoal flecked and soot stained. The function of these pits remains unclear unless they were dug simply to bury ashes.

Area 1

The friary church was excavated in the 1930s (Laithwaite 1934, 53–55; Martin 1937). The evidence has been reviewed by limited excavation and shown to be broadly correct with regard to the extent of the church (Welch 1991). Hill's plan of the friary dated 1638 shows a stone wall on the northern side of Friars Alley as defining the north edge of the land once owned by the friars (as understood a century after the Dissolution). Part of a substantial masonry wall was found on the northern side of Friars Alley during a small excavation in 1986 (site code LFA86) and was interpreted as being probably the north wall of the precinct (Welch in Stone 1999a). That wall must equate to wall [452]. The fact that the masonry footing [537], dated by pottery to phase 3, extended southwards clean under the precinct wall for the friary clearly demonstrates that the friary had encroached upon an area which already had cesspits and probably part of a structure. This almost certainly confirms Bassett's proposed extension of the friary northwards and the pottery evidence indicates that this took place in either the later 13th or early 14th centuries. If it is accepted that the excavation area 2 originally belonged to Bird Street, as seems likely, then the cesspits, along with the continued cultivation of soil [149], indicate that the back-plot(s) were a garden area with a fairly low level of activity.

Area 2

There are early indications from the relatively limited fieldwork undertaken in Lichfield that there might be a 'standard pattern' in which burgrave plots were divided into a three-fold division of activities with distinct and separate zones for buildings, working activity and garden zones. This is perhaps best viewed as a useful working hypothesis to be tested across the city (Chris Welch, *pers comm*). It can be seen that if the area to the south of wall [220] formed the back of plots fronting onto Bird Street then the plots running off Sandford Street were much shorter and the space for these zones much more cramped. This zoning would seem to be fairly clear in the central plot in area 2 where well [440] and working 'activity' pits [506] and [442] (and slightly later pit [334]) lie in a narrow zone running east-west just to the rear of the existing buildings with the garderobe for the building lying further south against the putative boundary to the Bird Street back-plots. The group of hearths [380], [250], [396], and [312] in area 1 were either set further away from the Sandford Street frontage or belonged to Bird Street properties. In either case, the clustering of these hearths away from buildings would seem to support the idea of zoning. The survival of a relict garden soil along the southern margin (rear) of the plots might also support the idea of zoning but could be simply an accident of survival brought about by the far-flung nature of the area from its street frontage, whether on Sandford Street or Bird Street.

Hearth pit [506] and pit [442] were probably related although there was no remaining stratigraphic relationship. The fact that well [440] cut the very large pit [442] suggests that they lay in the same burgrave plot or that boundaries were moving in this period. The rather strange shape of garderobe [280] suggests that it was pushed rather uncomfortably into the corner of a plot set at a slightly oblique angle to Sandford Street. The first physical proof of the subdivision of the site into northern and southern areas was the 17th-century wall [200]. The alignment of that wall was similar to the alignment of the southern wall of the earlier garderobe but did not exactly match it and the wall

passed along the middle of the line of earlier pits at the south-west corner of garderobe [280]. This would seem to indicate that the boundary did not exist before the creation of garderobe [280]. The southern boundary line may have been created at about the time that garderobe [280] was built but the lack of firm corroboration by other medieval features elsewhere along the wall line must lead to the conclusion that there is no hard evidence that there was a formal boundary between areas 1 and 2 in the medieval period which means that there is no real proof that the southern part of the site was in separate ownership. It merely remains to point out that if area 1 were part of Sandford Street in the medieval period, then each building had a rather extraordinary number of cesspits scattered up and down its back-plot.

There were no boundary walls or other obvious subdivisions set at right angles to Sandford Street during the medieval period but well [440], hearth [513], and garderobe [280] hint at a building in the centre of the Sandford Street frontage of higher status than the buildings on the east and west sides. There was some smelting and secondary ironworking or smithing within hearth [513] in pit [506], the scale of the operation probably being domestic rather than truly industrial. Hearth [513] was abandoned, probably in the 14th century, before the well [440] and the garderobe. A witch's bottle was placed in the hearth following the abandonment of the structure. The bottle was accompanied by part burnt coal, an iron horseshoe and a bent copper alloy rod. These items all form part of a known set of objects that accompany witch's bottles elsewhere in Britain (Merrifield 1987), but the assemblage pre-dates the more common examples by some three centuries (Rátkai, above).

Activity in the plots to the east and west seems to have been confined to the creation and management of cesspits and occasional digging of the small pits of indeterminate function filled with charcoal flecked soil. Well [440] was the only well found in the excavation area that could be seen to date to the medieval period. It seems unlikely that the medieval occupants of the three or possibly four different burgrave plots shared a single well and other wells may lie nearer the frontage. There was a public well in Sandford Ward in the mid 17th century (Greenslade 1990, 99).

In the west part of area 2, the group of cesspits [431], [433], [435], and [437] were closer to the frontage than cesspit [270] whilst cesspit [316] was closer still. Later medieval cesspits [494] and [496] were sited even closer to the frontage but the early post-medieval cesspit [220] was moved further away, apparently reversing the trend. A late medieval pit [99] located in the east part of area 2 may have been a cesspit, this was unclear. If so, it was probably replaced by pit [550] and, later on, by pit [519], each replacement moving closer to the frontage. Until recently, archaeological evidence from excavations in Lichfield showed a distinct absence of material dating to the 13th and 14th centuries and it was argued that this perhaps indicated 'depression if not desertion' at this time (Carver 1982a, 4). What is clear at Sandford Street is that there was a much greater amount of pit digging activity from the mid 13th to mid 14th centuries than in the later medieval period. This may reflect the reduction of population resulting from the Black Death. Nonetheless, the presence of pits in the later medieval period indicates that the site was probably never actually deserted.

The presence of several cesspits on the site throughout this period and on into the later 14th and 15th centuries, ostensibly at least one for each of the proposed burgrave plots, would seem to argue against any abandonment of the site in the later 14th century, although the lower level of activity in phase 4 was much lower than in phase 3. This could indicate the results of famine, plague or economic decline but could just reflect a cleaner usage of the back-plots.

The opportunity to investigate an area covering several burgrave plots is fairly rare. This allows more questions to be addressed than would be the case in a single plot. Comparison has already been made between the pottery from 15 Sandford Street (Rátkai, above) and that recovered during archaeological investigations some 50–100 metres to the north-west at 18–28 Sandford Street (Nichol and Rátkai 2004). The proximity of the two sites invites comparison of the findings. On the north side of Sandford Street, a small amount of residual pottery of Saxon date was recovered, but there was apparently no other activity until the later 13th century when the town ditch was created, that is, no activity contemporary with phases 1 and 2 encountered at No. 15. On the site to the north, the 13th and 14th centuries were likewise characterised by pit digging, including similar cesspits and small pits with charcoal flecking and also a stone-lined garderobe. There were no ovens at No. 15 directly comparable with the keyhole shaped feature (F411, *ibid*); perhaps the subterranean hearth [513] intermittently served a similar purpose. It has already been noted that kitchens tended to be sited at a short distance from the house (*ibid.* 63) and this might explain the presence of several hearths in pits of varying depth at No. 15. The excavator at Nos 18–28 Sandford Street noted that the archaeological evidence for formal property boundaries within the town was scarce, but it can

be seen that the general distribution of features, especially the cesspits and wells, in the back-plots at No. 15 hint strongly at three subdivisions immediately to the rear of the Sandford Street frontage and that the later map evidence showing that the southern part of the excavation area was part of Bird Street probably had its origins with a line of cesspits in the 13th–14th century.

There seems to have been a relative paucity of sheep in comparison to cattle in the medieval period (Baxter, above, Table 22). It is difficult to be sure from such a small sample, but this situation seems to have evened out by the early post-medieval period. This may reflect the wider national trend of the rising importance of the wool trade from the 11th and 12th centuries onwards. This was, however, interrupted by slight crisis from the late 13th to the late 14th centuries before moving into continued growth through to the 16th century (Walton 1991).

POST-MEDIEVAL

The finds assemblage contains very little 17th- or 18th-century pottery. This, combined with the relatively undisturbed nature of features of 15th- or 16th-century date, might indicate that this area of Sandford Street was relatively neglected from the later 16th century through to the late 17th or early 18th centuries.

Area 1

The concentration of large deep cesspits of 18th- and 19th-century date at the east end of the area were confined to the east side of the 18th-century wall [460] where they were associated with various ash and brick surfaces. The pits obviously lay within a yard forming part of tithe parcel 343 and belonging to the Rose and Crown public house on Bird Street. Earlier post-medieval cesspits [358] were also confined to this end of the area but largely lay under the line of wall [460]. This arrangement might indicate that the yard or landholding was an ancient one encompassing the early post-medieval cesspit complex [358] etc. Activity to the west was confined to the occasional digging of pits for the disposal of rubbish and demolition rubble in an area otherwise characterised by the continuing development a deep soil profile.

Area 2

The brick footings within the excavated area date from the mid 18th to the early 20th centuries and largely correspond with the detail shown on historic maps. There were three late post-medieval wells, one for each of the houses shown on historic maps. All three post-medieval wells were a similar distance from the street frontage, indeed roughly the same distance as medieval well [440]. The post-medieval wells could not be investigated safely so no further attempt was made to dig them once their nature had been ascertained. It is possible that all the observed brick linings were later alterations or repairs to the tops of shafts that may have been considerably older. The pristine condition of the sides of the medieval well [440] demonstrated that the lower rock-cut portion of a well shaft could stand unaided for several centuries. The labour involved in creating a rock cut well would surely mean that the shaft, once created, would remain in use whilst serviceable.

The medieval well [440] dried up and was converted into a soakaway in the 19th century. Extensive tunnelling carried out by the South Staffordshire Waterworks Company from c. 1858 onwards drained many of the wells in the city (Greenslade 1990, 90). Water was also pumped in large amounts from shafts at Trunkfield Conduit Lands some 500 metres to the southwest of the site from c. 1875 onwards. It seems likely that the lowering of the water table evidenced by well [440] resulted from this water extraction.

* * * * *

SECTION TWO

[A] ARCHAEOLOGICAL RECORDING AT THE ARTS CENTRE, BIRD STREET, LICHFIELD, 1999

by RICHARD STONE

SUMMARY

Archaeological works found a 12th-century land surface, followed by the flooding of the area, which is interpreted as part of the creation or enlargement of Minster Pool when Lichfield new town was laid out in the mid 12th century. From the late medieval period the land was gradually reclaimed and there is ample evidence of dumping of material, including debris from ironworking, leather-working, butchery, industrial use of bone and perhaps of pottery manufacture, as well as the dumping of household refuse. Part of the site was raised in the mid to late 17th century. Several phases of brick buildings of 18th- and 19th-century date were present, which are not shown on historic maps.

INTRODUCTION

In March 1999, following the submission of a planning application by Lichfield District Council to demolish the Arts Centre in Bird Street and erect a new building with basement (Fig. 16), *Marches Archaeology* carried out a pre-evaluation assessment (site code ACL99A) consisting of observations of three trial pits dug for engineers. This indicated deep waterlogged organic deposits existing above the natural geological formations, although the limits of the waterlogging were not identified (Martin 1999). An evaluation excavation (site code ACL99B) consisting of three 3-metre-square trenches followed in April 1999. In two trenches small areas were excavated to the natural deposits, modern services obstructing excavation of the lower deposits in the third trench. A watching brief on a sewer repair to the north of the Arts Centre was also carried out in October 1999 (site code MPL99A). Specialist assessments were carried out only on material from the main evaluation excavation.

The proposed redevelopment did not proceed, but the results of the evaluation were considered of sufficient interest to warrant publication. This report is based on assessment of the material for the purposes of evaluation, rather than full analysis. Specialists' comments about future work on the assemblage are retained to indicate the unfinished nature of this project.

RESULTS OF THE INVESTIGATIONS

Engineers' Test Pits

In Pit A1 the lowest deposit was a fine sand [27], possibly natural. Above this was a sequence of humic organic silts [24, 25, 26] all of which were waterlogged. In Pit A2 the lowest deposit was again a fine sand [14] above which was humic silt and organic material [13] then a band of sand and gravel [12] finer at the base, and then organic material [5], overlain by a patch of decayed plant fibres [11]. This was sealed by another silty organic layer [4] from which a sherd of medieval pottery and some shoe leather were recovered.

Overlying these waterlogged medieval deposits, in Pit A1 was a demolition spread [23] of 18th- or 19th-century date. This was sealed by successive layers of cultivation and occupation debris [19, 20, 21, 22], over which there was a demolition spread [18] and then a further cultivation soil [17] sealed by modern make-up layers [15]. In Pit A2 the post-medieval deposits comprised a band of sandy silt with building debris [10] covering the medieval silty organic layer [4] and was itself overlain by a dark sandy organic material [3]. Above were yard surfaces, drains and the foundations of the Arts Centre.

Pit A3 was much shallower and encountered only post-medieval deposits, consisting of rubble used to level up the ground for the construction of Minster House, to the east. Above this were modern surfaces and foundations.

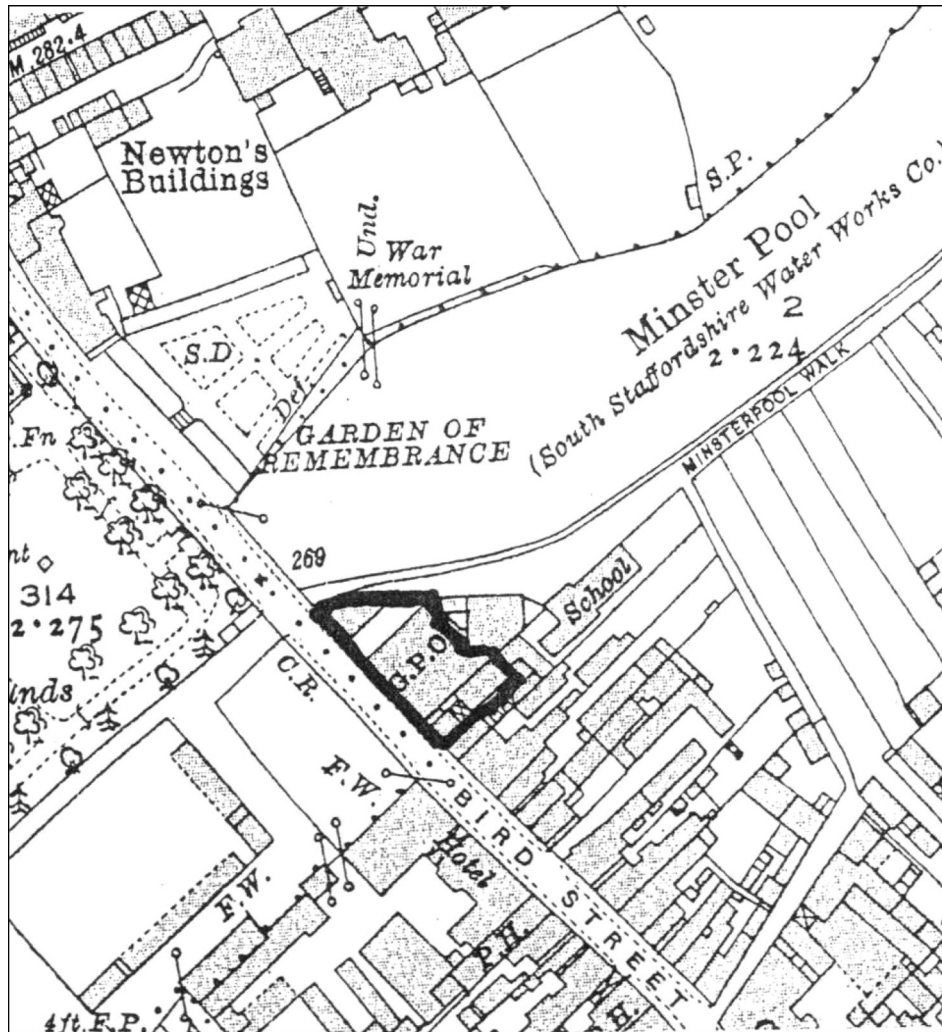


Fig. 16 Location of the Arts Centre site (1923 Ordnance Survey)

Minster Pool Walk watching brief

A watching brief carried out to the north in Minster Pool Walk (site code MPL) encountered the top of the pool deposits [12] but was not seen in detail because of trench shoring. These deposits may have continued into the post-medieval period. A sandy silt layer [11] containing post-medieval pottery and clay pipe overlay this. Above this was a dump or levelling deposit of sand 0.25m deep [10] including iron slag and brick and tile fragment, then a silty sand [8] with frequent iron slag, clinker and charcoal. A sherd of late 18th-century Staffordshire slipware pottery was recovered. A layer of concreted pebbles in a pinky-brown matrix [7] formed a pathway or other surface above this, with a 0.25m thick levelling dump [6] above. This was truncated by services and covered with modern deposits.

Evaluation Trenches

Further to the pre-evaluation assessment undertaken in March 1999 based on engineers' site investigation works, a fuller evaluation was carried out through the excavation of three trenches each 3m long and 3m wide (Fig. 17). Sufficient excavation was carried out to determine the level at which significant archaeological deposits survived. In trenches 1 and 2 smaller areas were excavated to the base of the archaeological deposits to test the nature of the stratification, but in trench 3 this proved impractical due to the presence of modern services.

Evaluation Trench B1

Medieval – the natural sands [69] were overlain by a former land surface [68] consisting of a layer of waterlogged brown material rich in plant remains. This was overlain by sequence of pool deposits consisting of waterlogged silts with varying proportions of organic material [65 – 67]. The uppermost layer also included iron slag, suggesting it was close to the pool edge. The layer above this [63] contained much bone and leather and a small amount of iron slag, and formed an interface of dumped material between the waterlogged layers and a further dump above [62], within which were areas of burnt clay and further large amounts of iron slag. Another layer rich in ironworking debris overlies this [56].

Post-medieval – a layer of humic soil [49] sealed the deposits of ironworking debris. This was itself sealed by a series of layers of dumped material [46, 45, 44, 43, 40], which raised the ground level by one metre. A much truncated brick structure [35, 36] was then built, with a spread of plaster [38] suggesting that the structure was internally plastered and probably was a dwelling rather than an outbuilding. A brick plinth [34] may have also been part of this structure, with a levelling layer [28] for a floor. Another brick structure [20] was built on the earlier foundations and had a brick floor [19] to its north. These were in turn superseded by building debris [17 and 22], services [8/9 and 10/11] and a new brick structure [2 and 5/6] which was founded on a single course of large sandstone blocks and had a brick floor, with a cobbled surface [4] beyond, presumed to be an outside area; these deposits were covered in building debris [12 and 3] from demolition.

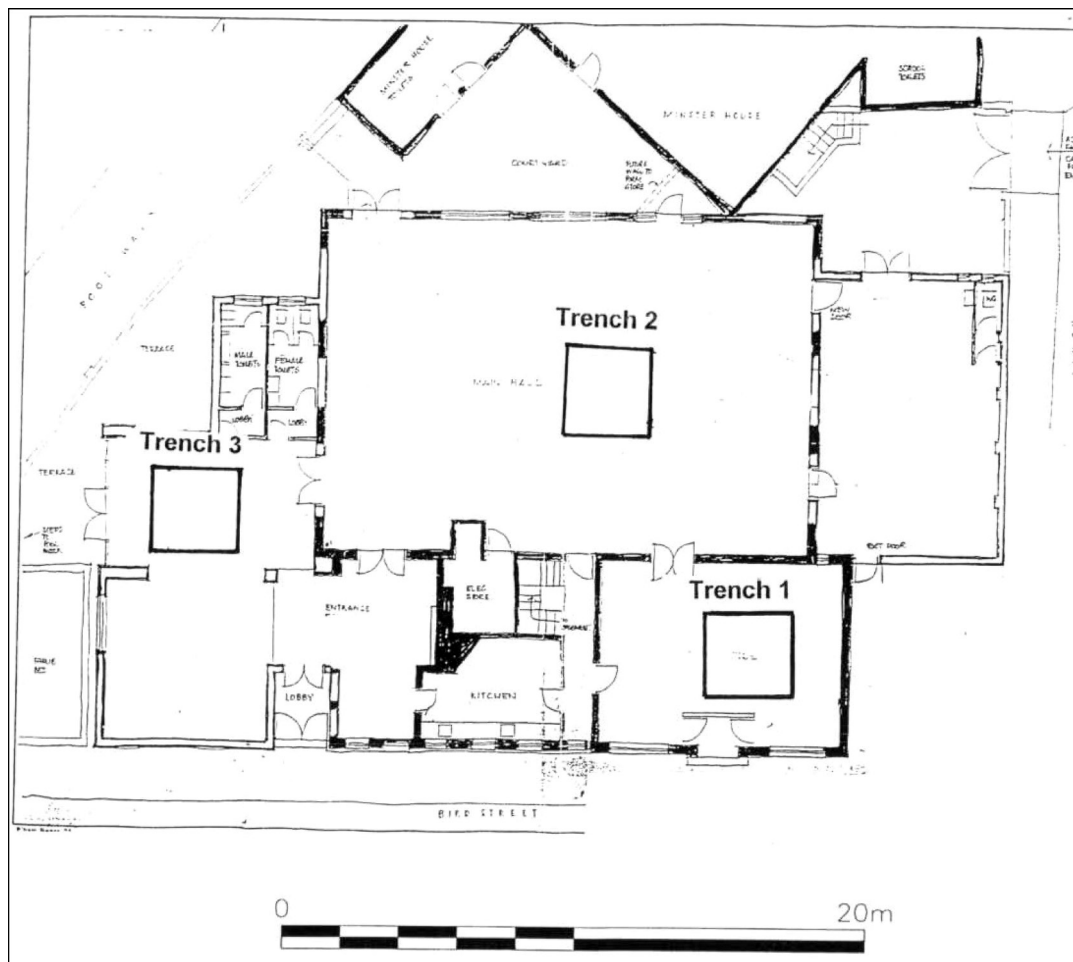


Fig. 17 Location of the trenches at the Arts Centre site

Evaluation Trench B2

Medieval – the natural sands and gravels [64] were tested for a depth of 0.2m. After a depth of 0.1m the water table was reached and further testing was abandoned. These deposits were overlain by a former land surface consisting of waterlogged medium coarse grey sandy silt [59] containing occasional rounded pebbles and twigs/roots. A shallow sub-circular flat-bottomed pit [60] was dug through this. A series of pieces of wood with cut marks were found around the edge of the pit. They were not standing but the cut marks give the impression of roughly sharpened ends, as though for stakes. The pit was filled with waterlogged dark grey-brown sand/silt [61] which also extended all over the trench [70] and may represent an initial flooding of the area.

The layers which accumulated above this consisted of a series of waterlogged grey silts dug as spits [48, 50, 51, 54, 55, 57, 58]. Throughout there were fragments of plant material and occasional pieces of oyster shell. The upper spits included occasional fragments of ceramic roof tile, which were absent from the lower spits which, conversely, included occasional cobbles. Fragments of coal were present in all but the bottom spit.

Post-medieval – a mottled layer [47] formed the interface between the waterlogged layers and later deposits, which consisted of a dumped layer of silts and brick and tile debris [41] perhaps laid as levelling. Above this was a cleaner layer of silts [39] followed by more silts and brick and tile debris [15, 16, 37, 42]. A humic loam [14] capped this accumulation before the Arts Centre was built.

Evaluation Trench B3

Medieval – the earliest deposit exposed was the top of waterlogged silts [53], which was not excavated. Above this was a thin band of grey sand [52], possibly water-laid.

Post-medieval – a light grey-brown sandy silt [31] overlay the pool deposits. It was cut by an irregular pit [33] which continued south beyond the area excavated. It was filled by a charcoal-rich brown silty soil [32]. A similar soil [29] 0.4m thick sealing this was covered by a dark grey-brown humic loam [27]. This was cut by service trenches associated with the present building and a concrete yard surface [25] superseded by the reinforced concrete surface for the extension to the Arts Centre.

THE POTTERY *by Stephanie Rátkai*

The medieval and early post-medieval pottery was examined macroscopically and divided into broad fabric groups following Ford (1995). The pottery was quantified by sherd count and by the minimum number of rims present (Table 26). Diagnostic sherds were sketched. The later post-medieval and modern pottery, of the 18th to 20th centuries, was quantified by sherd count only, under the general heading of 'modern glazed wares' (code MGW) or coarseware (code CW).

In total there were 313 sherds, representing a minimum of 36 medieval or early post-medieval vessels. The pottery was in good condition, with little sign of abrasion. There was also, surprisingly, no sign of waterlogging, such as metallic lustre to glazes or deposits of vivianite, on any of the sherds of any period.

Medieval pottery (12th to 14th centuries)

There was little diagnostic material from among the medieval sherds. There were two reduced grey rim sherds: one residual from [39] of 13th–14th century date, the other from [59]. The latter was in a well-made sandy fabric and was heavily sooted. The rim was a simple everted type with a slightly expanded terminal and may be 12th-century in date.

There were no whiteware rim sherds. There were, however, two unglazed handles, one a deep strap handle with a central scored groove along its length; the other a rod handle with a deep central scored groove. The latter was heavily sooted, particularly on the underside of the handle. The top of the handle had originally been attached to the vessel by a clay 'dowel' projecting from the handle into the body of the pot. Two base sherds were present. The first was from a baluster jug with shallow vertical grooves running from the lower part of the vessel to the base. The second base sherd was unglazed with a stubby projection at the base (similar to Ford 1995, fig. 18: 135). Most of the whiteware sherds were glazed which suggests that they were primarily from jugs and bowls. The hard fired buff ware, a fabric also found at 15 Sandford Street, contained the lower half of a squat jug. The exterior of the jug had two large patches of brownish material adhering to its surface. The

TABLE 26 Pottery types

Fabric	Date	Sherd count	Rim count
Reduced sandy cooking pot	?12th century	1	1
Iron-rich table ware	13th–14th century	1	
Iron-rich utilitarian sandy wares	12th–14th century	1	1
Midlands white wares	13th–14th century	23	
Hard-fired buff ware	14th–15th century	7	
Late medieval oxidised wares	15th–16th century	28	5
Proto-Midlands purple	15th century	9	1
Midlands purple	15th–16th century	9	2
Late redware/coarseware	16th century	1	
Cistercian ware	late 15th–mid 16th century	4	1
Cistercian/late red ware	late 15th–16th century	2	
Blackwares	mid 16th–early 18th century	38	5
Yellow ware	late 16th–early 18th century	8	3
Coarsewares	?mid 16th–18th century	74	12
German stoneware	17th century	4	
Slipwares	mid 17th–early 18th century	12	5
Manganese mottled ware	later 17th–early 18th century	14	
Tin glazed earthenware	18th century	2	
Modern glazed wares	mid 18th–20th century	76	
Total		313	36

jug was poorly made, the base particularly so, with deep gouges on the exterior and cracking on the inside. It is possible that this jug was a waster or it may have been sold as a second. However, the small piece of ceramic and slag debris found unstratified nearby (ACL99A) may also hint at pottery production in Lichfield, although not necessarily in the immediate area.

Late medieval/early post-medieval pottery (15th to 16th centuries)

The pottery in this group consisted of late medieval oxidised wares (Ford's late medieval orange ware), proto-Midlands purple ware, Midlands purple ware and Cistercian ware. A limited range of forms was identified, all mainly storage vessels (e.g. jars/cisterns or jugs). The late medieval oxidised wares were often heavily sooted (see below, Trench B1). In this fabric group there were, in addition, two bowl rim sherds and a lid. Table wares were represented by Cistercian ware cups and a late medieval oxidised ware chafing dish, with a red fabric and toffee-coloured glaze. There were two rims in Midland purple ware. One was from a burnt lid-seated jar, the other was from an unglazed jar with a pronounced internal projection at the junction of rim and body, with a smaller external bead or ridge at shoulder height. This latter vessel may possibly have served some 'industrial' purpose.

Early post-medieval pottery (later 16th to late 17th/early 18th centuries)

The pottery in this group was made up of coarseware, blackware, yellow ware, German stoneware, slipwares and manganese mottled ware. Hollow wares were found in the coarsewares, blackwares and manganese mottled ware. The yellow ware consisted mainly of flatware vessels, such as dishes or platters. All the yellow ware sherds had a pink fabric overlain with a white slip. The slipware vessels were made up of dishes or bowls. The dominant slipware was that with light-on-dark trailed decoration and looked, for the most part, to be a Staffordshire product. The German stoneware consisted of the base of a drinking jug and a face mask from a *Bartmänn* jug.

Chronology

Trench B1 – the deposits within the waterlogging, [56], [62], and [63], appeared to be of 14th- to 16th-century date (Table 27). The lowest of these deposits [63] contained Midlands white ware

and hard-fired buff ware and could therefore be dated to the 14th–15th centuries. The two deposits above this contained Midlands Purple ware and this therefore dates to the 15th century at the earliest. There was some residual whiteware in these two deposits, the remainder of the pottery being made up of red sandy ware which belongs to the late medieval oxidised ware group. These latest waterlogged deposits would therefore seem to date to the 15th or 16th centuries. All three of these deposits contained vessels with very heavy sooting. There was one lid-seated vessel, two bowls and a lid from [56]. All were heavily sooted and it may be significant that the context contained a lid, never a very common medieval find, and a lid-seated jar.

Above [56] was a layer of soil [49]. The presence of blackware and yellow ware in this layer suggested a 17th century date, probably the first half of that century. There was some residual pottery and a cross-joining sherd from [56].

Over [49] were a series of dump layers, [40], [43], [44], [45], and [46]. These were all very similar in character, containing a mixture of coarsewares, blackwares, yellow wares, trailed slipwares and German stoneware. The vessel forms and proportion of the various wares were very similar to Civil War destruction deposits from Dudley Castle and it therefore seems likely that this phase of dumping dates to the English Civil War.

There is some late 16th–17th century pottery associated with [28] and [22], presumably disturbed when building work was in progress. After this point most of the pottery is of 19th-century date, although there is a small quantity of residual late 18th-century pottery.

Trench B2 – A single sooted rim sherd was found in a layer [59] which pre-dated the construction of the pool. The rim sherd was in a fine grey sandy ware. The rim form was simple, being everted and slightly expanded at the end and could date to the 12th century. Closely dated early medieval contexts are infrequent in the county. In this case it seems most likely that the layer and the rim sherd are of 12th-century date.

At the bottom of waterlogging [57] were five red painted whiteware sherds from the same vessel, dating to the mid/late 13th–14th centuries. Above [57] were several layers containing pottery of the 15th to 17th century. The most striking find from these layers was a 16th-century chafing dish from [50]. Context [39], which lay above them, contained, amongst other pottery, two coarseware jars which can be paralleled by jars of Civil War date from Dudley Castle (Rátkai 1987). The remainder of the pottery from this context agrees with this date. Some late-17th century pottery was recovered from [16] and [37] above [39] after which the pottery, as in Trench 1 appeared to be of 19th-century date.

Trench B3 – The layers contained a mix of 16th- and 17th-century pottery. The latest pottery, dating to the late 17th or early 18th century, was to be found in [29] and [27] at the top of the sequence.

Discussion

The pottery from the site seems to encompass several occupation phases in the vicinity of the Minster Pool. The first of these is represented by the rim sherd from [59] and seems to date to the 12th century. There is comparatively little pottery thereafter until the 15th and 16th centuries. This late medieval/early post-medieval pottery appears to be associated with industrial activity in the area and provides useful data on vessel function and use. The next major period of activity appears to be in the 17th century, most probably at about the time of the English Civil War. Precisely how the pottery relates to the development of this area and to the three sieges known to have occurred at Lichfield in this period is unclear. However the group seems to be derived from normal domestic occupation, possibly, in view of the trailed slipware vessels, of fairly high status. There is then something of a hiatus until the end of the 18th century or beginning of the 19th century. This would be in accord with the development of 'New Walk' shown on Snape's map of 1781 (Fig. 18).

The assemblage forms a useful component in the understanding of the ceramic history of Lichfield. Nearby sites at Bird Street and Sandford Street have provided earlier sequences so that with the three sites together there is a continuous sequence from the 12th century until the late 17th to early 18th centuries.

TABLE 27 Pottery spot dating by context

Context	Date	Context	Date
2	19th century	40	mid 17th century
3	19th century	41	16th century
4	later 17th century	43	mid 17th century
5	19th century	44	mid 17th century
8	early–mid 19th century	45	mid 17th century
10	19th century	46	mid 17th century
12	late 18th–19th century	47	late 16th–early 17th century
14	19th century	48	16th–17th century
16	late 18th century	49	?early 17th century
17	?early 19th century	50	16th century
22	?17th century	51	16th century
27	?early 18th century	54	15th–16th century
28	?late 16th–mid 17th century	56	15th–16th century
29	late 17th–early 18th century	57	13th–14th century
31	late 16th–17th century	59	13th–14th century
37	late 17th–early 18th century	62	15th–16th century
39	mid 17th century	63	14th–15th century

ANIMAL BONE *by Ian L. Baxter*

This assessment is based on one box of animal bone with a weight of just under 6kg containing 114 fragments. All but 5 fragments, 96 per cent of the total, have been identified in general terms, and 80 fragments (70%) identified to species. Unstratified bone from the three trial pits (ACL99A) represents less than 8 per cent of the total and medieval bone 57 per cent. Most of the medieval bone was recovered in Trench 1. Post-medieval bone dating from the 18th and 20th centuries comprises the remainder of the assemblage. The number of identifiable fragments of bones of each species (NISP) is presented in Table 28. The condition of the bone in general is good and from the waterlogged deposits excellent.

Bone was identified by comparison with published descriptions (in particular Schmid 1972; Boessneck 1969; Sisson and Grossman 1953; Cohen and Serjeantson 1986; Prummel 1989), and reference material in the collection of the author. Long bone, rib and vertebra fragments without diagnostic features are recorded as Large Mammal and Medium Mammal. All those seen in the present assemblage are consistent with cattle and sheep/goat respectively.

Species representation

The following species were represented: horse (*Equus caballus* L.); cattle (*Bos* f. domestic); pig (*Sus* f. domestic); sheep (*Ovis* f. domestic); dog (*Canis familiaris* L.); cat (*Felis catus* L.); duck (*Anas platyrhynchos* L.); domestic fowl (*Gallus* f. domestic).

Horse

The cranium of a horse was found in waterlogged layer [65] in Trench 1. This is largely intact although the back of the cranium and most of the teeth are missing. The surviving teeth are exceedingly worn suggesting that the animal died of old age. Horses can live up to thirty years but rarely achieved such ages in the medieval period. The presence of canine sockets suggests that this individual was male, only 6 to 7 per cent of mares have canines in the upper jaw (Sisson and Grossman 1953, 399). The cranium is small and the muzzle short. In life the animal is unlikely to have stood much over 12 hands at the withers. Although the crown patterns of the surviving cheek teeth are obliterated, it was not a donkey but most probably a pony. However, the possibility that the cranium derives from a mule cannot be ruled out.

TABLE 28 Number of Identifiable fragments of bones of each Species (NISP)

Taxon		Medieval	Post-Medieval	U/S	Total
Horse	<i>Equus caballus</i> L.	1*	0	0	1*
Cattle	<i>Bos</i> f. domestic	26	12	4	42
Pig	<i>Sus</i> f. domestic	2	3	0	5
Sheep/Goat	<i>Ovis/Capra</i> f. domestic	0	9	2	11
Large Mammal		8	9	3	20
Medium Mammal		4	3	0	7
Dog	<i>Canis familiaris</i> L.	1	0	0	1
Cat	<i>Felis catus</i> L.	4 (17)*	0	0	4 (17)*
Duck	<i>Anas platyrhynchos</i> L.	1	0	0	1
Fowl	<i>Gallus</i> f. domestic	0	2	0	2
Indeterminate Bird		0	2	0	2
Indeterminate		5	0	0	5
Total		52(65)	40	9	101 (114)

* crania or associated post-crania

Cattle

The remains of cattle account for over 74 per cent of the fragments identified to species from the medieval deposits. Fragments of three horncores were recovered. All belonged to adult cows or oxen. A complete unstratified horncore from one of the test pits derives from a waterlogged deposit and may be medieval. This came from an old short-horned cow. There is a relatively high proportion of fragments from non-meat bearing elements of the skeleton, particularly the head, in the medieval layers. Butchery marks occur on the mandible, distal humerus, and vertebrae. A complete metacarpus III+IV from medieval occupation deposit [56] in Trench 1 came from a beast approximately 109.7cm at the withers based on the multiplication factors of Matolcsi (1970). A mandible from medieval layer [62] has the third pillar or hypoconulid missing from the lower third molar. This is a genetic anomaly which occurs frequently at some sites during various periods of occupation and is otherwise rare or absent (Davis 1997, 425). Cattle account for 46 per cent of post-medieval fragments.

Pig

The remains of pig are infrequent accounting for less than 6 per cent of medieval fragments identified to species and 11½ per cent of post-medieval fragments.

Sheep/Goat

No sheep/goat remains were recovered from the medieval deposits. Sheep/goat account for nearly 35 per cent of post-medieval fragments identified to species. Nothing identifiable as goat was seen. A radius, from demolition make-up layer [40], came from an animal 58.6cm high at the withers based on the multiplication factor of Teichert (1975). A horncore from a ewe found in waterlogged layer [54] had been chopped from the skull. Layer [39] contained fragments of three metapodials, including a metatarsus III+IV shaft from a neonate. Two mandibles from the Test Pits belonged to adult animals over two years old. These appear to be from a waterlogged deposit and may be medieval or early post-medieval.

Dog

The left maxilla of a small dog with P³-M² still in place was found in medieval layer [63] of Trench 1.

Cat

A posterior cranium and post-cranial bones belonging to at least four cats were found in medieval layer [63] of Trench 1. One individual, represented by an ulna, femur and tibia, was sub-adult but the others were adults. With such a concentration of bones from several individuals, where counted as skeletons, cats account for nearly 11½ per cent of the medieval fragments identified to species,

suggesting that these cats may have been skinned for their fur, a practice common in the medieval period (Gidney 1999, 327). No cut marks were seen on any of the bones, but these are frequently only found on the mandible, none of which were recovered from this deposit.

Birds

A humerus fragment of mallard or domestic duck (*Anas platyrhynchos* L.) was found in medieval layer [62]. Two bones of domestic fowl were found in post-medieval waterlogged Layer [55]. The two indeterminate shaft fragments in the same layer probably also derive from domestic fowl.

LEATHER ITEMS *by Lynne Bevan*

An assemblage of approximately 50 pieces of leather was assessed in order to identify any shoe fragments and waste from the manufacturing process. In view of the protective effects of adhering mud (see below), it was considered unwise to remove more than a small amount at the assessment stage, although its presence precluded the identification of stitching techniques.

Summary by context

CONTEXT 5

1. A waisted mid-section of a shoe sole, with finished outer edges, broken at both ends. Width at waist: 35mm, length: 90mm, thickness: 4mm.
2. Fragments from a leather patten with *in situ* iron nails. Length of longest piece: 170mm, thickness: 10mm.
- 3–11. Nine other small fragments of leather, five of which have sewn edges.

CONTEXT 51

12. Fragment of leather, with one finished edge and two torn edges, possibly part of a shoe. Length: 120mm, width: 36mm, thickness: 3mm.

CONTEXT 56

- 13–14. Two small leather offcuts, one of which is 'waisted' (but is not part of a sole), the other triangular. Dimensions of 'waisted' offcut: length: 32mm, width: 20mm, thickness: 2mm. Length of triangular piece: 30mm, thickness: 2mm.

CONTEXT 63

- 15–40. Approximately 26 possible offcuts, the largest of which measures 210mm x 120mm x 3mm. However at least one of the offcuts has a stitched edge. The bag also contains a burnt bone.

CONTEXT 65

41. One large, folded offcut. Length: 240mm, maximum width: 130mm, thickness: 1mm.

UNSTRATIFIED

42. Sole from an adult's shoe. Length: 250mm, maximum width: 90mm, thickness: 4–5mm.
- 43–45. Three curved fragments from two other, larger soles, the largest of which measures 180mm x 100mm x 2mm.
- 46–49. Four fragments of folded leather without stitching, the largest of which measures 290mm in length by 100mm at the widest part with a thickness of 2–5mm.
50. One small, stitched fragment (a rand) from the side of a sole. Length: 85mm, width: 7–10mm, thickness: 2mm.

Discussion of the leather assemblage

The collection comprised one complete sole from a small adult shoe (no. 42), fragments from at least three other soles (nos 1 and 43–45) and a number of fragments, several of which appear to be offcuts from small-scale cobbling activity, including stitched rands. Approximate measurements have been given for the largest fragments. The general shape of the complete, unstratified sole suggests a later medieval date, late 14th to early 15th century, which would accord with the dating of the leather patten (no. 2), a protective overshoe made from several layers of leather.

The sole fragment from Context 5 (no. 1) is exactly the same shape as the complete small, unstratified sole, which indicates a similarly late date for this piece. The off-cuts are not chronologically diagnostic but the general appearance and condition of the leather suggests contemporaneity between the shoe fragments and waste.

This is not a large assemblage, and the most diagnostic pieces come from horizons where they can be assumed to be residual. However, off-cuts in Contexts 56 (first half of 17th century) and 63 (medieval) suggest small-scale manufacture or repair of shoes and/or leather garments at this time. Nevertheless this is an interesting and locally/regionally important group of material which will repay further study after cleaning and targeted conservation of the leather. The exploration of small-scale craft and industrial activity in towns was highlighted by English Heritage (Pearson *et al.* 1991, 42–43) as a national research priority, and this included very specifically medieval leatherworking. Any further study will also require the material to be assessed against that in published corpora from, for example, London (Grew and de Neergaard 1988) and Coventry (Thomas 1986a and 1986b) and other sites.

ENVIRONMENTAL REMAINS *by Liz Pearson*

The samples (Table 29) were processed by the wash-over technique. A sub-sample of 500mls to 1 litre was broken up in a bowl of water to separate the light organic remains from the mineral fraction and heavier residue. The water, with the light organic fraction, was decanted onto a 300 μ m sieve and the residue washed through a 1mm sieve. The residues (consisting of a small quantity of sand) were briefly examined for the presence of finds or environmental remains. The flots were scanned using a low power EMT stereo-light microscope and remains identified using modern reference collections.

Organic remains were well preserved by waterlogging in all six samples, and were generally species rich. Insect remains were also present (not been identified here). Throughout the period of silting of the pond and dumping in the post-medieval period, the site appears to have been relatively open, although, at one time surrounded by neglected damp grassy vegetation (Table 30). The description and dating of these deposits are preliminary.

Context 68, sample 6: bottom of pond. This assemblage was dominated by seeds of plants that would have been growing at the muddy edges of the pond, for example celery-leaved crowfoot (*Ranunculus sceleratus*), lesser spearwort (*R. flammula*), water-plantain (*Alisma plantago-aquatica*), and sedges (*Carex* spp). There were some dry land species suggesting the presence of cultivated or disturbed ground (corn marigold and charlock/wild radish) and damp grassy areas (violet and hemlock).

Context 64, sample 5: possibly natural sand. There was less evidence for plants growing at the water's edge in this sample, although this may be a consequence of the smaller range of species overall. Weeds of disturbed or cultivated ground are represented by knotgrass (*Polygonum aviculare* agg), chickweed (*Stellaria media*) and fat hen (*Chenopodium album*).

Context 59, sample 4: medieval sand. Despite being very sandy, this sample was the richest in waterlogged plant remains. It was dominated by dry land species, particularly weeds of cultivated or disturbed ground. Seeds of corn spurrey (*Spergula arvensis*) and chickweed (*Stellaria media*) were particularly abundant. There was some evidence for undisturbed woody or grassy areas, suggested by hedge woundwort (*Stachys sylvatica*), blackberry (*Rubus fruticosus* agg), cowslip (*Primula veris*) and hemlock (*Conium maculatum*). The latter is common in damp areas. The only evidence that the location was close to the water's edge was the presence of crowfoot (*Ranunculus* sb gen *Batrachium*) and celery-leaved crowfoot (*Ranunculus sceleratus*). Charred cereal crop remains indicated the disposal of domestic or agricultural waste. These included charred grains of rye (*Secale cereale*), club wheat (*Triticum aestivum-compactum*), oat (cf *Avena* sp), other grasses (Gramineae sp indet) and one possible cultivated cherry stone (*Prunus* cf *cerasus*).

Context 61, sample 3: medieval or earlier silting. There was no evidence for debris from human activities in this sample. There was a smaller range of plant species which would have grown at the muddy edges of the pond and on surrounding dry land.

Context 58, sample 2: possible medieval silting. As described above, there was evidence for shallow water, although seeds of pondweed (*Potamogeton* sp) found in open water are moderately abundant. The abundance of corn spurrey (*Spergula arvensis*) suggests the presence of arable fields in the near vicinity, or that straw waste was dumped into the pond.

Context 48, sample 1, 16th–17th century silt. This assemblage suggests that the edge of the pond was nearby, although cultivated or disturbed ground lay in the near vicinity.

Discussion

The waterlogged organic remains from these samples demonstrate a change in conditions within the area of the pond and its surroundings from the earliest to latest phases. Silts at the bottom of the pond are likely to have formed in shallow water within its margins. Sands of a later phase are less dominated by marginal aquatic plants and possibly formed on or near the edge of the pond. Sample 4 shows particularly strong evidence for surrounding weedy disturbed or cultivated ground, while a small amount of domestic or agricultural waste was recovered. Moreover, the charred grains of club wheat and rye from this sample are characteristic of medieval deposits, and would tend to support the archaeological interpretation that the silt was of this date. The later deposits [61, 58, and 48] show evidence for marginal aquatic vegetation, although [58] may have been closer to open water colonised by pondweed. Here, the abundant corn spurrey may originate from nearby cornfields, or from straw waste deposited in the pond.

TABLE 29 List of environmental samples

Sample	Context	Description	Date	Sample size	Sub-sample
1	48	dark grey waterlogged silt	16th–17th century	20	0.5
2	58	dark-mid grey waterlogged silt	medieval?	20	1
3	61	dark-mid grey waterlogged silt	medieval or earlier	20	0.5
4	59	dark grey coarse sand	medieval / natural?	10	1
5	64	sand	natural?	10	1
6	68	fibrous waterlogged silt	natural?	10	0.5

METALWORK AND OTHER MATERIALS *by Phil Parkes*

Eight metal objects were x-rayed, seven being manufactured objects. They were two nails [16 and 40], a thimble [5], a pin [22], a brooch with flower and leaf-type decoration and a border of dots [5], a chain link [56], a copper alloy strip or disc [56].

Two small finds were not of metal: a post-medieval bone spoon handle (small find 2, context 5) and two fragments of undecorated medieval window glass (small find 6, context 63). Clay pipe, slag, vessel glass, window glass and wood have also been retained from the evaluation. Other finds (oyster shell, coal, clinker, brick and roof tile) were discarded after recording.

GENERAL DISCUSSION

Medieval

The earliest archaeological land surfaces encountered date from the 12th century but it is possible that the apparently natural sands and gravels seal prehistoric remains. As the sands were below the water table it was not possible to test this. The environmental evidence supports the contention that in the 12th century this area was dry land, with weeds of cultivated or disturbed ground and evidence for undisturbed woody or grassy areas. It is now apparent that the Minster Pool did not exist before the 12th century in the area of the Arts Centre and furthermore the presence of charred cereal grains suggests that the area was occupied at this time. The presence of a pit [60] in Trench B2 at this time is further evidence of this occupation. The plant remains did, however, suggest water nearby, perhaps either a marsh or stream.

TABLE 30 Species list of plant remains

Botanical name	Common name	Family	Habitat	1 48	2 58	3 61	4 59	5 64	6 68
Charred plant remains									
<i>Triticum aestivo-compactum</i> grain	club wheat	Gramineae	F				+		
<i>Secale cereale</i> grain	rye	Gramineae	F				+		
cf <i>Avena</i> sp	oat	Gramineae	AF				+		
Gramineae spp indet grain	grasses	Gramineae	AF				++		
Gramineae sp indet culm node	grasses	Gramineae	AF				+		
<i>Rumex acetosella</i> sgg	sheep's sorrel	Polygonaceae	A				+		
Waterlogged plant remains									
<i>Ranunculus acris/repens/bulbosus</i>	buttercup	Ranunculaceae	CD		+		+	+	+
<i>Ranunculus flammula</i>	lesser spearwort	Ranunculaceae	E	+					+
<i>Ranunculus scleratus</i>	celery-leaved crowfoot	Ranunculaceae	E	+			+		+
<i>Ranunculus</i> sb gen <i>Batrachius</i>	crowfoot	Ranunculaceae	E	+	+++	++	++		
<i>Brassica</i> sp	black mustard	Cruciferae	ABF				+		
<i>Sinapis/Raphanus</i> sp	wild radish/charlock	Cruciferae	ABF						+
<i>Viola</i> sp	violet	Violaceae	CDE						+
<i>Stellaria media</i>	chickweed	Caryophyllaceae	AB	+	+	+	+++	+	
<i>Spergula arvensis</i>	corn spurrey	Caryophyllaceae	AB		+++		+++		
<i>Chenopodium album</i>	fat hen	Chenopodiaceae	AB				+++	+	
<i>Atriplex</i> sp	orache	Chenopodiaceae	AB				+		
<i>Rubus fruticosus</i> agg	blackberry/bramble	Rosaceae	CD	+		+	+		
<i>Potentilla</i> sp	cinquefoil	Rosaceae	BCD	+					
<i>Prunus</i> cf <i>cerasus</i>	dwarf cherry	Rosaceae	CF				+		
<i>Conium maculatum</i>	hemlock	Umbelliferae	BC				++	+	
<i>Polygonum aviculare</i> agg	knotgrass	Polygonaceae	AB	+				+	
<i>Polygonum</i> cf <i>hydropiper</i>	water-pepper	Polygonaceae	E	+					
<i>Rumex acetosella</i> agg	sheep's sorrel	Polygonaceae	ABD	+			+		
<i>Rumex</i> sp	dock	Polygonaceae	ABCD		+		++		
<i>Urtica urens</i>	small nettle	Urticaceae	AB				++		
<i>Urtica dioica</i>	common nettle	Urticaceae	CD	+		++	++	+	
<i>Corylus avellana</i>	hazel, cob-nut.	Coryllaceae	C				+		
<i>Primula veris</i>	cowslip	Primulaceae	D				+		
<i>Hyoscyamus niger</i>	henbane	Solanaceae	AB			+			
<i>Prunella vulgaris</i>	selfheal	Labiatae	CD	+					
<i>Stachys sylvatica</i>	hedge woundwort	Labiatae	C				+		
<i>Sambucus nigra</i>	Elder	Caprifoliaceae	BC		+		+	+	
<i>Anthemis cotula</i>	stinking mayweed	Compositae	AB	+					
<i>Chrysanthemum segetum</i>	Corn Marigold	Compositae	AB	+	+		+		+
<i>Lapsana communis</i>	nipplewort	Compositae	ABC	+					
<i>Leontodon autumnalis</i>	autumnal hawkbit	Compositae	ABCD		+				
<i>Alisma plantago-aquatica</i>	water-plantain	Plantaginaceae	E			+		+	+
<i>Potamogeton</i> sp	pondweed	Potamogetonaceae	E	+	++	+			
<i>Zanichellia palustris</i>	horned pondweed	Zannichelliaceae	E		+				
<i>Juncus bufonius</i> gp	rush	Juncaceae	CDE					+	
<i>Eleocharis</i> sp	spike-rush	Cyperaceae	E			++		+	+
<i>Carex</i> spp	sedge	Cyperaceae	CDE		++	+		++	++
Graminaea sp indet	grass	Graminaeae	ABCDE	+			+	+	+

Key:

A = cultivated ground

B = disturbed ground

C = woodlands, hedgerows, scrub etc

D = grasslands, meadows and heathland

E = Aquatic/wet habitats

F = cultivar

+ = 1-10

++ = 11-50

+++ = 51-100

++++ = 100+

Excavations to the north of the Minster Pool by Martin Carver in 1976–77 revealed three successive banks 21–22 metres north of the present bank and approximately on the line of the parish boundary shown on Snape's map of Lichfield of 1781. The earliest dated to 'the first millennium' and was possibly pre-Saxon, the others to the 11th to 13th centuries (Carver 1982b, 37–8). These excavations encountered the early medieval (i.e. 'Norman') pool bed at a depth of approximately 79.3m O.D., and the medieval (i.e. '13th–15th century') pool bed at a depth of approximately 79.7m O.D. (Carver 1982b, Figs 3 and 6, between pages 60 and 61). The modern pool bed, that is, the level at the time of these observations, was found at 80.12m O.D. However, the 1999 work indicated the 12th-century pool bed to be at 78.6m O.D, significantly lower than on the northern side. Throughout the site waterlogged deposits survived to at least 79.3m O.D. and, where tested, were 1m to 1.5m deep.

The process by which Minster Pool was formed, as well as the date of its origin, remains debatable. Carver argued for a 12th-century origin as part of the layout of the new town, with the earlier banks pre-dating the formal creation of Minster Pool (Carver 1982b, 38). Bassett's detailed article on the topography of Lichfield was non-committal other than to accept its existence by the time the planned town had been laid out (Bassett 1982). Slater provided an alternative model that the pool existed by 1086 and was possibly 'much older still', although perhaps being enlarged in the later medieval period (Slater 1985, 15). The creation of the planned town constitutes a good background, both politically and economically, for the creation of a formal division between the cathedral and the town and the creation of the Minster Pool in an originally rectangular form, as shown on Speed's 1610 map, would fit topologically as well as politically in this period (Fig. 18). Although less likely, the possibility cannot be discounted that an earlier and smaller pool existed which was enlarged in the mid 12th century.

The environmental soil sample from the earliest pool deposits contained no evidence for human activities and had a smaller range of species, from both the edge of water features and dry land, suggesting a sudden change, presumably the flooding to create or enlarge Minster Pool. The evidence, admittedly scant, suggests a date in the 12th century, which tends to support the creation or enlargement of the pool as part of the planned town in the middle years of that century. The scarcity of pottery in the medieval period reflects the environmental evidence of both shallow and open water throughout this period, such as would be expected with the area being part of Minster Pool.

In the 15th century the area of Trench B1 was reclaimed, perhaps simply as silting up of the banks of the pool. Much archaeological information was retrieved from this area, and it is clear that the pool edge was used as a convenient dump for waste, both domestic and commercial. Debris from ironworking and leather manufacture are evidenced along with possible pottery production, although none of this appears to have been carried out on the site itself. Gould has also reported on leather found near Minster Pool, c. 1400–1550 (Gould 1973, 51). The animal bones suggest the use of cat fur for trimmings, butchery and industrial processing of the hides of cattle and fleeces of sheep. The dog maxilla is also conceivably of industrial origin as dog skins were used for glove making (Ian Baxter, *pers comm*). The presence of a small amount of window glass is of interest but is more likely to be from the dumping of household debris than industrial waste. The same is likely to be true of most of the pottery and perhaps some of the leather and bone.

Post-medieval

In the middle or later years of the 17th century there was a further change in the use of the site. The area of Trench 1 was reclaimed and structures appeared, and by this time the area of Trench 2 had been reclaimed, activity which it is tempting to see in association with the Civil War. Certainly the site would have been of strategic importance during the Civil War, controlling the end of a crossing of the Minster Pool and having clear firing lines into the cathedral close, which was besieged on three occasions. However, no military debris was identified and this hypothesis is speculative, based on chronological possibility alone. An alternative hypothesis may be that the reclamation came later, perhaps supported by an anonymous account of Lichfield's water courses and features which claimed that until a time 'towards the end of the 17th century' the south bank lay 'immediately opposite the Swan Inn' (Anon. 1840, 10). This account also refers to a 'more than ordinary cleansing' by 1693 and again in 1730 (Anon. 1840, 11–12). The reliability of this account is uncertain, but the same author also noted that the 'upper [i.e. western] corners' were not cleaned and that the silting up led to land being reclaimed on what became the site of the Arts Centre:

Now on the south side the 'land waste' was – from strictly natural causes – more than twice as large [as at the north] ...; but of so little worth was it considered, as not adjoining valuable property, that it was, for some time, allowed to remain an unenclosed space; since it is noticed that certain hawkers then held stalls there, for the purpose of avoiding the pickage – or toll for breaking up ground – levied on standings in the Market place (Anon. 1840, 12)

There is little evidence for any use of the site for at least a hundred years from the later 17th century until the end of the 18th century or beginning of the 19th. The brick buildings in Trench 1 are not shown on any maps and remain undated except in general terms. The earliest phase is presumably 18th century and the latest is of the later 19th century. The development may have been associated with the land holding of Minster House, although it remains puzzling that parts of the road frontage were built up at various times in the 18th and 19th centuries and yet maps failed to indicate this. The present building (i.e. in 1999, when this Report was written), initially the General Post Office, swept away all earlier structures on the site.

These investigations have justified Carver's observation that 'it seems likely that the strip to the south side of the Minster Pool, complementary to that to the north, will play an important part in the future successes of archaeology' (Carver 1982a, 4). The evaluation did not establish whether deposits earlier than the medieval period survived on the site, but if present they are likely to be below the water table and present great logistical difficulties for excavation.

In the early 12th century the site was land, albeit perhaps damp and even marshy rather than dry land. It has not been conclusively proved that the 12th-century flooding was part of a deliberate creation or extension of Minster Pool, but the weight of evidence suggests that this is more probable than an accidental occurrence. During the time that the area was part of the pool the only archaeological evidence (apart from natural silting) was dumping near the pool edge. The fact that most of the dumping was in Trench 1 and of the later medieval period may indicate that earlier remains were removed by periodic cleaning. The silting up of the pool from the end of the medieval period led to the reclaiming of the land and its reuse.

[B] LAND ADJACENT TO MINSTER POOL, LICHFIELD: A REPORT ON AN ARCHAEOLOGICAL WATCHING BRIEF

by JO WAINWRIGHT

SUMMARY

A watching brief revealed waterlogged deposits dating from the post-medieval period. These were presumably associated with the silting up of the Minster Pool during that period. The natural geological formations were not reached and it seems likely that medieval deposits exist beneath the excavated deposits.

INTRODUCTION

Repairs to the sewerage system on land to the south of Minster Pool, close to Bird Street (NGR: SK 116097) prompted an archaeological watching brief, undertaken by *Marches Archaeology* in October 1999 on behalf of Haswell Consulting Engineers. The repair to the sewerage system consisted of the excavation of a trench between the Minster Pool and the Arts Centre, the trench being approximately 3.00m in length and 2.50m wide, dug to a depth of about 2.60m below the current ground level. This ground had been previously disturbed by the insertion of the sewer and of electricity cables running east to west. The area of the Minster Pool was originally land but while it is known that there was occupation to the north in the Neolithic period, little is known of the area from the later prehistoric period through the Roman and Saxon periods.

Results of the watching brief

The earliest excavated deposit, 0.70m deep, was a dark brown, moderately compact, organic silt with occasional clay and charcoal fragments [12], possibly a series of waterlogged layers, but trench

shoring hindered detailed examination in the deepest part of the excavation. A fragment of tile from this deposit is probably post-medieval in date. Overlying [12] was a moderately compact dark brown-black organic sandy silt layer with frequent charcoal, coal, brick, tile and sandstone fragments [11]. This was 0.60m deep and contained post-medieval pottery and clay pipe. Above this deposit was a friable pinkish orange sand with frequent silt and sandstone fragments and was 0.25m deep [10]. This also contained occasional mortar, iron slag, brick and tile fragments and was interpreted as a possible dump of material. Another dump or levelling deposit was directly above [10]. This was a friable grey brown silty sand [8] with frequent iron slag, clinker and charcoal and was 0.40m deep. An 18th-century sherd of Staffordshire slipware pottery was recovered from this context. Overlying [8] and possibly associated with it was a 0.15m deep layer of loosely concreted clean sub-rounded pebbles in a pinky-brown matrix [7] interpreted as a pathway or similar external surface. Sealing this was a very mixed deposit, 0.25m thick, of mid-brown silty sand with frequent inclusions [6]. This was probably another levelling dump. Truncating [6] and the earlier deposits was the 1970s sewer trench [9] and the electricity cable trench [3]. Overlying these service trenches was a thin band of loose dark brown-black gritty silty sand with frequent clinker [5]. Above this was another thin layer consisting of brick and tile in a sandy matrix [4]. These were probably make-up layers for an earlier tarmac surface. Covering [5] was a layer of hardcore [2] as formation for the present tarmac surface [II].

DISCUSSION

The sequence of deposits was similar to those seen in earlier excavations to the south of the area (Stone, this article, above). The earliest waterlogged organic silty deposits excavated probably represent the silting up of the Minster Pool at the end of the medieval period. The later layers are likely to represent the gradual reclamation of the land during the post-medieval period and the pathway or surface seen in the excavation may be the path noted on John Snape's map in 1781 (Fig. 18).

[C] WATCHING BRIEF AT 1 BIRD STREET, LICHFIELD, 1999

by RICHARD STONE

SUMMARY

A watching brief at 1 Bird Street in Lichfield revealed nine burials and evidence for the burial of at least five other individuals. The site lies to the east of the Franciscan friary and it is assumed that the skeletons are of medieval date and are associated with the friary.

INTRODUCTION

A watching brief was carried out during works for an extension to the rear of 1 Bird Street on land at a height of approximately 83.5m O.D. that slopes 0.5m down to Bird Street on the east side. The site lies directly to the east of the church of the Franciscan friary, founded c. 1237, probably on an area of 3½ burgage plots thought to lie in the area of the friary church and to have fronted onto Bird Street (Greenslade 1970, 268). A 17th-century plan indicates that the precinct extended to the Bird Street frontage. It is likely that 1 Bird Street was part of the foundation grant. There are contemporary references to a disastrous fire in the friary in 1291 but the extent and impact of this event is unknown (Bassett 1982, 105). From the later 13th century onwards the friary was granted more land and continued to flourish until the 16th century, the surrender coming in August 1538. The church was partially excavated in the 1930s and again in the 1980s (Welch 1991), and an evaluation of this site in 1995 noted one medieval burial, but most remains then encountered were post-medieval (Langton 1995). Information regarding the use of the site as the cemetery of the Franciscan friary was a specific objective of the watching brief.

Description of the Watching Brief

An area 10.2m north–south by 8.7m east–west in size was reduced in level by a mechanical excavator and a 0.6m wide trench dug along the west and north sides. Three narrow slot sondages were excavated by hand to test the deeper stratification. This was intermittently observed by an archaeologist, but some significant deposits were removed without archaeological observation. Where excavation was deep enough, the natural sands [33] were encountered at between 82.4m and 82.7m O.D.

Above the natural sands was a layer of reddish-brown soft sand soil with root and animal holes [2, 4, 5, 6 and 15] which had accumulated during the medieval period and produced pottery ranging from the 12th to the 14th centuries.

Nine burials were identified cutting through this layer, as well as two further skulls [3] and [7] that may have been articulated burials (Table 31). In addition there were disarticulated remains, giving a minimum of 14 individuals in total. All defined burials were extended, supine inhumations, laid with the head at the west and the feet at the east. No obvious grave goods were found, although a single amorphous piece of corroded iron found below the left ribs of skeleton 21 may have been deliberately deposited. The only possible evidence for coffins or other receptacles was a single iron nail (fill 25). The same grave [26] had a 2mm thick layer of charcoal [27] below the body [24], with the backfilled material [25] above. In such ‘charcoal burials’ it is rare to have coffins.

The edges of six graves were positively identified and three other graves were identified only by the presence of skeletal material. In one case [29] this was as the bones were much disturbed by later truncation by [9] and [24]. Indeed, it is possible that [29] is in fact disarticulated rather than a partial skeleton. In the other two cases [12] and [13], the skeletal material was removed without archaeological supervision and recording was possible only in section, where sufficient remained to indicate the orientation and extent of the burials. Skeletons [14] and [24] were truncated by later burials. The backfill of both these graves included disarticulated human remains, presumably derived from the disturbance of yet earlier graves.

A brown sand [8] with frequent charcoal and frequent brick and tile fragments accumulated over the soil layer through which the burials had been cut and sealed the burials. The overlying material [1] was of the 18th century and later date and consisted of mixed deposits including sands, silts, brick rubble, foundation trenches and service trenches.

HUMAN REMAINS *by Marianne Cole**Introduction*

The sample consisted of remains from at least 14 individuals comprising 9 discrete individuals and a quantity of disarticulated bone. None of the skeletons were complete. A report on inhumations at Lichfield cthedral (Loe and Rogers 1994) has been used as a basis for comparison. The purpose of the analysis was to ascertain the age at death, sex and stature of the individuals, while the skeletons were also examined for any evidence of disease or trauma. Since the majority of the skeletons

Table 31 Graves by context

Skeleton	Backfill	Cut	Comments
3	not identified	not identified	
7	not identified	not identified	
9	10	11	
12	not identified	not identified	
13	not identified	not identified	
14	16	17	
18	19	20	
21	22	23	
24	25	26	laid on bed of charcoal 27
29	not identified	not identified	
30	31	32	

were represented by less than 15 per cent of bone, the amount of information that may be gained from them is limited. Estimations were made according to standards for osteological data set out in Buikstra and Ubelaker (1994). Any evidence of pathology or bony abnormality was also recorded.

Sex, age, and stature

Only four (44%) of discrete individuals could be assigned a sex. One individual was a juvenile and was not assigned a sex.

Dentition, fusion of the epiphyses and the morphology of the pubic symphysis were used to age this sample. Six were determined to be adult, one could be more accurately aged (Table 32). One individual was a sub-adult of eight years of age.

Stature (Table 33) was calculated taking long bone lengths and applying them to Trotter and Gleser's 1952 regression equation (in Bass 1995). No stature was estimated for the juvenile skeleton.

Dental health and pathology

Only skeleton 24 had surviving dentition with 26 of the 32 possible teeth still present. Five of the six missing teeth had been lost post-mortem and one, a mandibular third molar, had been lost ante-mortem. There was a slight calculus deposit on the dentition but no evidence for dental disease. The state of this skeleton's dentition is within the expected range for its sex and age.

Skeleton 14 showed evidence of Diffuse Idiopathic Skeletal Hyperostosis (DISH). This was seen in the thoracic vertebrae that had fused in the characteristic 'dripping candle wax' pattern (Rogers and Waldron 1994). A formal diagnosis would require at least four thoracic vertebrae to be fused. Here only two vertebrae were found intact, which were considered sufficient to support the diagnosis of DISH. Other fragments also displayed characteristic bone changes. DISH is more commonly found in males and in people over the age of 50 and is being increasingly found on monastic sites; there is a recognised connection with obesity or adult onset diabetes (Resnick and Niwayama 1995). This was the only manifestation of joint disease found in this assemblage but the apparent lack of joint disease in the Bird Street material may be due to the low quantity of bone recovered.

Skeleton 24 showed evidence of spina bifida occulta, an asymptomatic condition. The prevalence in modern populations is 5–25 per cent and it is likely that this is a good reflection of how common it was in the past. No ante-mortem trauma was noted in any of the material.

Disarticulated Bone

There were at least five individuals, including at least one male, one female and one juvenile. Several of the bone fragments showed pathology. Included here are second and third cervical vertebrae fused together showing eburnation to the odontoid peg of the second cervical vertebra. Other vertebral bodies showed prolific osteophyte growth. There were also 17 animal bone fragments of sheep, pig and possibly cow bone, representing a typical domestic assemblage.

TABLE 32 Sex and age estimation

Skeleton number	Percentage of bone present	Estimated sex	Estimated age
3	10%	possible female	adult
21	45%	female	adult
24	55%	male	33–45
29	3%	possible male	adult
30		-	8

TABLE 33 Stature estimation

Skeleton number	Formula used	Stature estimate (cm)	Margin of error
21	white females	160	3.72
24	white males	174	4.57

Conclusions and discussion

There were nine discrete burials and the disarticulated bone represents at least five further individuals. The state of preservation of these remains was poor and most skeletons had less than 15 per cent bone present. There were at least two females and two males and also at least one juvenile. Several sets of sub-adult remains were found at the cathedral site and the inclusion of children in a friary cemetery does not represent anything unusual. No comment can be made concerning the dental health of this sample as there are too few individuals with surviving dentition. Skeleton 24 showed characteristics of spina bifida occulta, an asymptomatic condition that is reasonably common in archaeological samples. Skeleton 14 had evidence of DISH, a type of joint disease that is being increasingly found in monastic sites.

The figures for age, sex and stature all correspond well with the sample from the cathedral and overall the two sites fit well together. The state of preservation is similar but this has unfortunately limited the amount that can be learned from this site.

THE POTTERY *by Stephanie Rátkai*

Methodology

All the pottery was examined macroscopically. Following Ford (1995) the pottery was divided into three groups: iron rich sandy utilitarian ware, Midlands white ware and iron rich sandy table ware. Within these groups there were variations in fabric which were noted. Pottery was quantified by sherd count and minimum number of rims present.

The pottery

A total of 63 sherds were recovered from Bird Street, of which 18 were post-medieval, the remainder being medieval (Table 34). The pottery attributed according to Ford's three groups was as follows:

- iron rich sandy utilitarian ware – 21 sherds (12th–14th centuries)
- iron rich sandy table ware – 6 sherds (12th–14th centuries)
- Midlands white ware – 13 sherds (13th–14th centuries)

In addition, there was a single Midlands purple ware sherd and a buff ware sherd which resembled Chilvers Coton C fabric (Mayes and Scott 1984). Two unusual non-local fabrics were represented. There were two sherds of Reduced Deritend ware (Rátkai 1990) a fabric made in Birmingham and dating from the late 12th century to the early 14th century. The second fabric was represented by a single sherd with volcanic rock inclusions. This fabric is paralleled by pottery from Wolvey in north Warwickshire (Rátkai 1998a), the inclusions for which derive from the Caldecote Volcanic Series, which runs from east Nuneaton in a north-westerly direction towards Atherstone. The fabric has not been commonly found in Warwickshire but the pottery from Wolvey suggests a 12th–13th century date.

There were few form sherds. These were limited to a bowl rim in buff ware (u/s), a squarish bowl rim in whiteware and a whiteware cooking pot/jar rim, both from context [25]. Some of the whiteware was glazed and there was one red-painted sherd.

Two of the utilitarian sandy ware fabrics resembled cooking pots from Stafford Castle (Rátkai 2007). Likewise some of the glazed iron rich sandy table ware fabrics resembled pitchers from the castle bailey. These fabrics seem to date to the 12th–13th centuries at the castle.

TABLE 34 Spot dating

Context	Date	Context	Date
1	18th century (residual 17th century)	16	13th–14th century
2	13th–14th century	19	13th–14th century
4	12th–13th century	22	13th–14th century
6	12th–13th century	25	13th–14th century

Discussion

At Drayton Bassett (Ford 1995) the iron-rich sandy utilitarian wares first occurred earlier than the whitewares although there was an overlap in the use of the two wares in the 13th–14th centuries. Clearly, with such a small group of pottery it is difficult to draw firm conclusions. However, the comparatively greater quantity of iron rich sandy utilitarian ware may indicate some earlier occupation in the 12th century prior to the foundation of the friary.

OTHER FINDS

Two iron small finds were registered from grave fills. One (SF 1, context 22) was an amorphous iron object 50mm x 50mm x 25mm. The other (SF2, context 25) was a flat headed nail, 53mm long, possibly from a coffin.

Clay pipe was found only in modern overburden [1] and in unstratified deposits. The only other category of material recovered was ceramic roof tile, which was recovered from modern overburden [1], unstratified deposits and grave fills [19] and [31].

DISCUSSION

The land use of the area before the foundation of the friary *c.* 1237 is unclear. No deposits or features from this period were found in the foundation trenches or the sondages and this may suggest that the area was not fully laid out with burgages at this time, although the pottery evidence could support occupation in the 12th century. The earliest deposit above the natural sands is dated by ceramics to the 13th or 14th century, by which time the friary occupied the site. No evidence was found in the friary of the disastrous fire of 1291. The only deposits and features relating to the land use during the friary's lifetime are from the cemetery. The shallowest human remains were only 400mm below the current ground surface (83.13m O.D.). The deepest remains revealed were some 1.15m lower than this and it is entirely possible that yet deeper burials could exist.

As far as can be ascertained from such a small sample these were standard Christian burials, with little evidence of coffins. The single charcoal burial [24] is of a type more common in the later Saxon period and into the 12th century (Schofield 1988, 28). However, the friary was founded in the later 1230s and there is no reason to suspect that any of the burials pre-date this period. The dating of the burials can only be broadly established as being of the 13th and 14th centuries from the ceramic evidence. Within this period there were at least three 'generations' of burials. There was no pottery later than the 14th-century associated with any of the burials but some of the latest grave fills [10] and [31] produced no pottery and this area may well have continued to be used as a cemetery until the Dissolution.

The assemblage is too small to be of great statistical significance but is sufficient to shed some light on the layout of the friary and to provide information on an understanding of the economic structure of the community. The presence of at least one juvenile and two females (as well as at least two males) in a friary cemetery is good evidence that burial within the precinct was not restricted to the members of the community. Friaries were in a position to receive the burials of wealthier members of society, including women and children, and the Lichfield friary was clearly no exception. The redirection of burial fees was a cause of contention with parish clergy, and in Norwich and the diocese of York the friaries received around 10 per cent of burial requests (Daniell 1997, 93).

The state of health of the population was relatively good, insofar as could be ascertained from such a limited sample. The absence of trauma is noted but cannot be considered as significant. The presence of one case of DISH, often considered indicative of a good diet, is not unusual in a friary cemetery. However, the sample is statistically insignificant and it is unknown whether the individual was a member of the friary community or a lay person.

The post-medieval evidence was not closely examined on site, but it appears that the site remained open land from the Dissolution until at least the 18th century. The documentary and cartographic sources do not give any further detail on the nature of the land use until the construction of the National Provincial Bank.

* * * * *

SECTION THREE GENERAL DISCUSSION

by JOHN HUNT and STEPHANIE RÁTKAI

By the late 14th century, in demographic terms, Lichfield ranked mid-way among England's leading eighty towns (40th in Dyer A, 2000, 273; 39th in Dyer C, 2002, 14), its 1,024 taxpayers in 1377 representing a population in the order of 2,000 (estimates of 1,950 and 2,100 in Dyer A, 2000, 273, and Dyer C, 2002, 12, respectively). Urban decline, particularly in the period following the Black Death, is a familiar theme in historical writing and may well have encouraged Carver's observation in 1982 that a perceived lack of 13th- and 14th-century material from archaeological excavations might reflect depression or desertion at this time in Lichfield, commenting that it was unclear 'from the archaeological evidence, that the town ever thrived' (Carver 1982a, 4). Although demographic trends are only one potential indicator of decline, in Lichfield's case they are consistent in suggesting an urban community that experienced underlying trends of continuing growth and prosperity: the population in 1327, reflected by 108 taxpayers (Wrottesley 1886, 235–6) perhaps numbered around 1,300, and by 1524 it has been estimated to have reached 2,350 people (Dyer A, 2000, 276; ranking Lichfield at 37th place). While noting both contraction and expansion in late medieval English towns, Alan Dyer's study found that the majority of places, like Lichfield, experienced growth (ibid. 281) and therefore suggests that changes in many towns might be better viewed as phases of 'restructuring' (ibid. 282). Similar conclusions were reached in Keith Lilley's discussion of urban landscapes in late medieval England in which he argued that urban decay, in a physical sense, most readily identifiable archaeologically, should not necessarily be taken as a sign of urban decline in demographic and economic terms. Urban landscapes were prone to transformation, and the abandonment and decay of tenements, the amalgamation of plots, and physical signs of decay did not necessarily reflect a town in decline (Lilley 2000). Such adjustments of perspective may be set alongside our expanding archaeological record, enriched by excavation reports like those above, to review our understanding of Lichfield's development during the medieval period (Figs 19 and 20).

In 1976 Jim Gould set out an archaeological and morphological summary of Lichfield's constituent features in his WEMRAC publication, *Lichfield: archaeology and development*, an important contribution that presented what was then known of the archaeology of the town and assessed the potential archaeological significance of various sites. It was subsequently eclipsed by a series of papers published in 1982 and 1986, although several of these were clearly informed by Gould's work. The articles published in 1982 discussed the outcome of excavations in medieval Lichfield's 'new town', in both St Michael's and St Mary's parishes, and to the south of Lichfield cathedral, running towards the Minster Pool (*Transactions* 1982). In addition, Steven Bassett's topographical study provided a model for the origins and development of Lichfield, a model and methodology that was subsequently challenged by Terry Slater in 1986 (Bassett 1982; Slater 1986).

Bassett analysed the morphology of Lichfield's streets and tenement blocks against the 'grain' of the wider landscape, most readily seen in field boundaries and roads, noting that features running at variance to this underlying and presumably earlier agrarian landscape were likely to be secondary features and developments. Bassett observed that the cathedral, together with the churches of St Michael and St Chad, sat coherently within this landscape, consistent with a settlement that might owe its origins to Roman or post-Roman occupation. He argued that the new borough of Lichfield, the planned town laid out in c. 1140 by Bishop Roger de Clinton and surrounded by a ditch, '*villam vallo vallando*' (Wharton 1691, 434), also sat within the 'grain' of the field system, suggesting that it had been laid out on previously agricultural land. This view is consistent with Tuck's observation from the 2016 excavations on the site of the Franciscan friary that the foundation, or at least a part of it, lay on former agricultural land (Tuck 2018, 56, 57). However, Bassett also proposed a more ambitious borough layout than is now evident, based on a rectilinear grid which he thought was subsequently remodelled by urban expansion and in the wake of a major fire in 1291.

Slater criticised Bassett's innovative proposals, as they overlooked the well-established and more familiar topographical scholarship applied to urban areas, a consequence of which was to produce a model for Lichfield's development that was subject to frequent and substantial change. Rather, Slater suggested that normally there was only a small probability of substantial changes to a town plan once established, noting that the frequency and character of the changes inherent in Bassett's model has

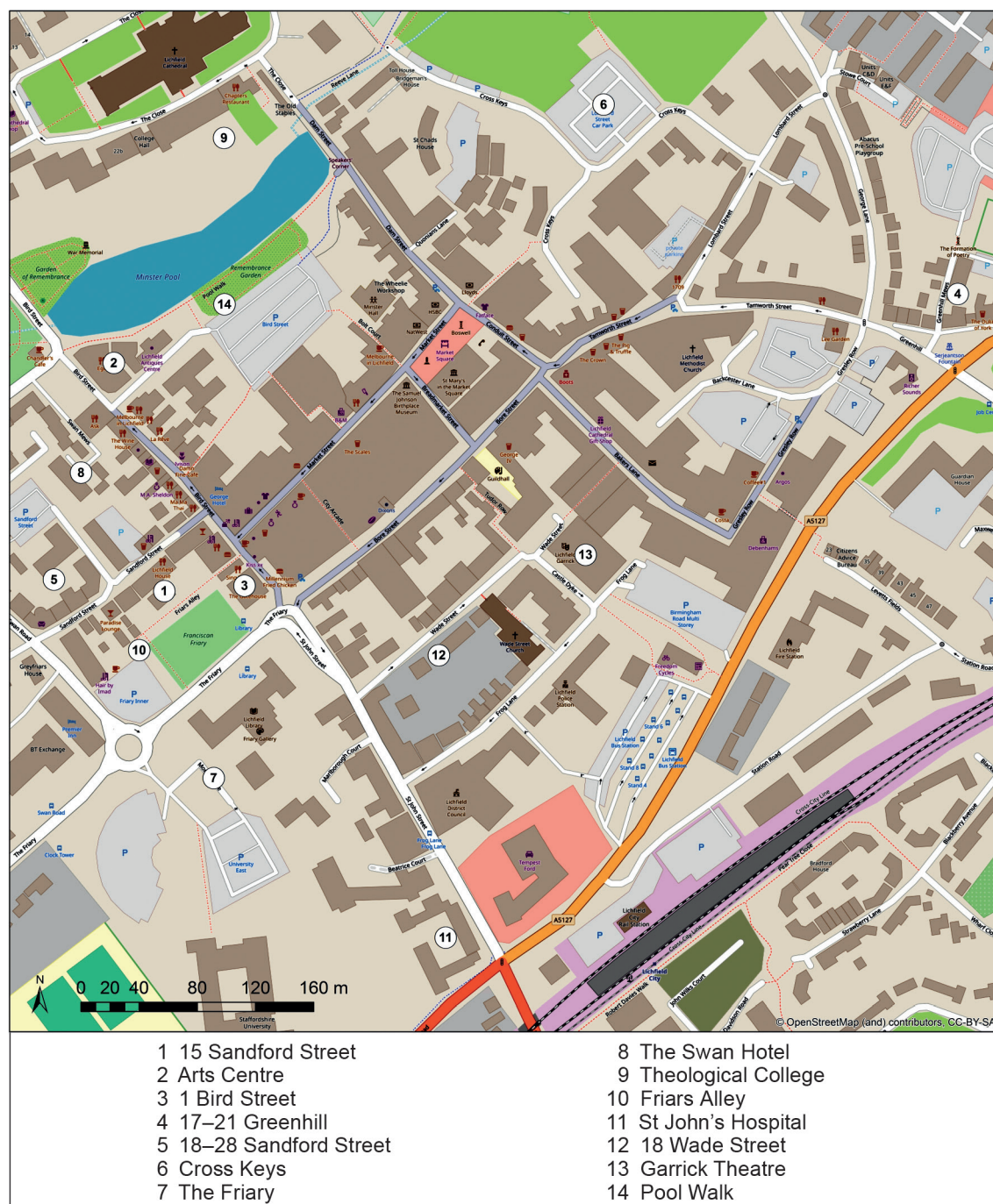


Fig. 19 Location of the principal archaeological investigations referred to in the text

few parallels elsewhere. Applying Conzen's concept of 'town plan-units', Slater argued that it was possible to show that Lichfield evolved conservatively, developing through small-scale incremental changes rather than periods of large-scale change in the town plan. He envisaged Lichfield before c. 1140 as an estate centre at the focus of several main routes, served by three churches of which two were pilgrimage centres. Indeed, Christopher Taylor had earlier argued for the presence of at least three pre-borough settlements which may have been known collectively as Lichfield, between which and the cathedral the 'new town' was laid out (Taylor 1969). Slater too argued that four of Lichfield's five medieval suburbs had tofts and crofts that preceded the planned development of the city, suggesting that the principal pre-urban settlement was at Stowe, rather than Greenhill or Beacon Hill as Taylor had thought. Thus, Clinton's urban project was seen by Slater as a probable

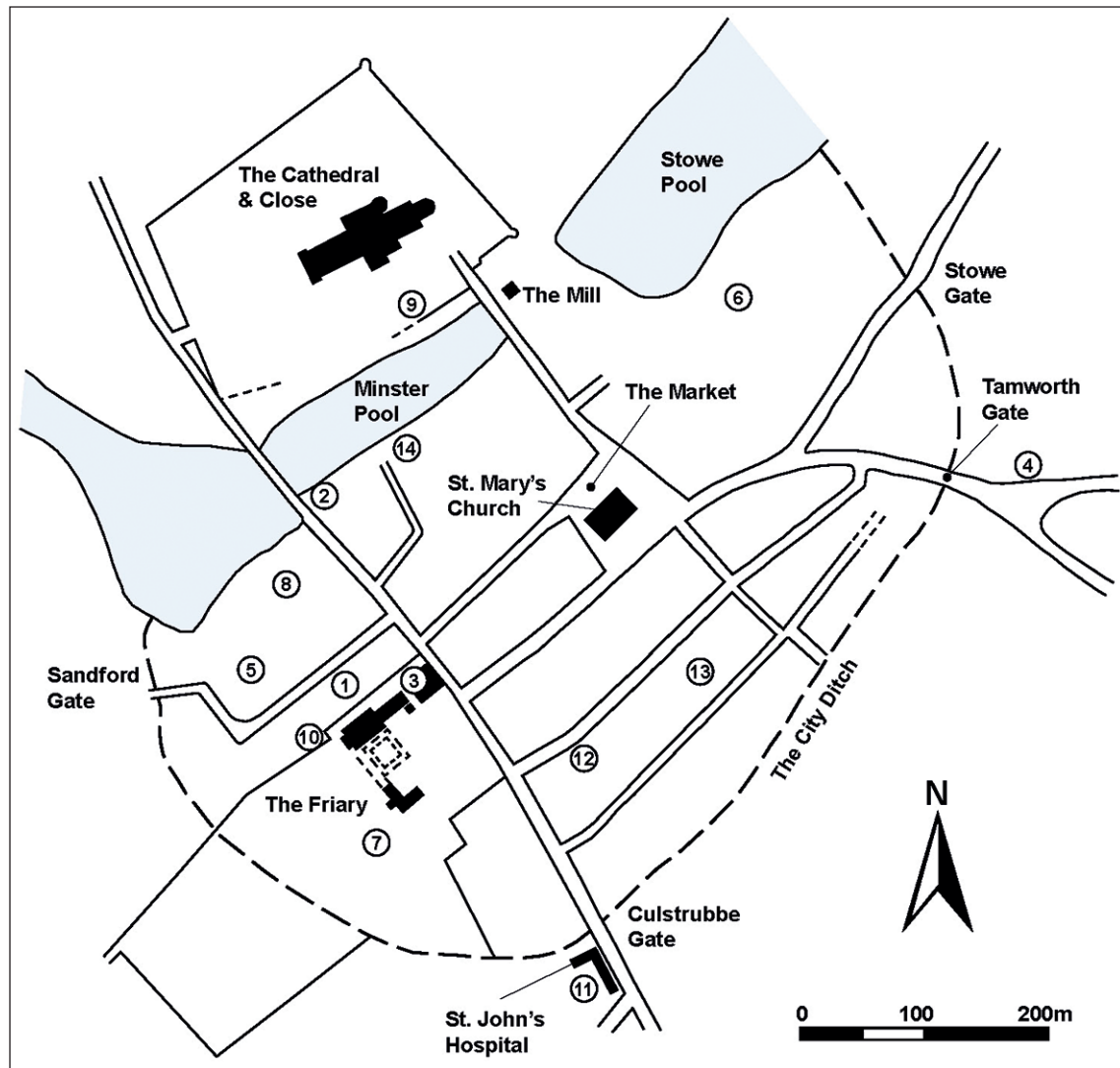


Fig. 20 Location of the principal archaeological investigations in the context of the layout of medieval Lichfield
See Fig. 19 for key

extension of an existing settlement that caused minimum disruption to the pre-existing settlement pattern, being intended to enhance the market functions of the place, but no doubt also to be seen within the context of the bishop's wider programme of reform and building aimed at promoting Lichfield as the re-established ecclesiastical centre of the diocese following its previous transfer first to Chester in 1075, and later to Coventry in 1102. Urban communities offered commercial advantage and perhaps enhanced prestige to their lord, but, in the foundation of his borough, Bishop Roger was surely also laying to rest any lingering qualms on Lichfield's urban status and its suitability to serve as the seat of a bishop.

Although Slater's model represents the current orthodoxy, the archaeological discourse on Lichfield has been largely dominated by assessing the relative merits of his and Bassett's proposals and their implications for the development and plan of different parts of the town, as the *Marches Archaeology* excavation reports well illustrate, while also comparing the results of individual excavations with the archaeological record outlined in 1982. The development and character of Minster Pool has been prominent in this work, to which two of the reports in Section Two of this paper have made contributions. Furthermore, in 2005 and 2006 the Cross Keys excavations at the south-west end of Stowe Street, also by *Marches Archaeology*, demonstrated beyond doubt the presence of settlement in Lichfield before the mid 7th century and provided an opportunity to examine the development of this early *locus* and the adjacent Stowe Pool, prompting Andrew Sargent to undertake a reassessment of the origins and development of early medieval Lichfield (Sargent 2013). This present discussion offers a further contribution.

Sandford Street

On the western side of the town there have now been several excavations, the most significant of which focused around Sandford Street, but which have also included Bird Street, St John's Street, and the former friary site. Sandford Street is a distinctive element in the plan of Lichfield for its marked dog-leg which Gould conjectured (Gould 1976a, 22, Fig. 6) might have turned with the town ditch, altering its earlier alignment running east–west, south of the cathedral and pools (ibid. 20, Fig. 2); this entrance into the town was marked by the Sandford Gate which was present by c. 1200 (Greenslade 1990, 40). The road appears inconsistent with the layout of the planned town, leading Bassett to suggest that it was laid out after the fire of 1291, whereas Slater thought it part of Clinton's original town plan, suggesting that the main east–west route to Walsall was re-routed when the town was formally laid out, creating the dog-leg. This arrangement, together with the nature and chronology of occupation in this part of Lichfield, has therefore attracted particular attention in the two significant excavations undertaken in Sandford Street, one on the north side of the road in 2000 (Nichol and Rátkai 2004) and the other on the south side of the street, at 15 Sandford Road, later in the same year.

The excavations at 18–28 Sandford Street revealed an unbroken sequence of occupation from the 13th century, in which a large ditch, thought to be a section of the town's boundary ditch, was located in the earliest phase. However, the pottery evidence suggests that this section of the ditch was not cut earlier than the mid 13th century, indicating that while the town ditch may have been commenced in the time of Bishop Clinton, this section at least was dug around a century later. The ditch was probably encountered again in excavations at the junction of Sandford Street and Swan Road where the steep-sided cut of a north–west / south–east aligned ditch was found and again contained fills of mid 13th- and 14th-century date (Ramsey 2002, 3, 6). Furthermore, the 2-metre deep, two-phase ditch encountered in the earliest phase of 15 Sandford Street, which pre-dated the mid 12th century, does not appear to have been related to the town ditch. The excavator thought it unlikely that this ditch was defensive in nature but that it might have represented an earlier boundary or enclosure that was defunct by the medieval period: it may have had a drainage function associated with the wetlands to the west of the site rather than its immediate locality. Sargent has postulated a possible early boundary running along Stowe Street, Lombard Street, and Market Street and suggested that this may provide the context for the Sandford Street ditch (although he refers to that found to the *north* of Sandford Street: Sargent 2013, 27).

It had previously been thought that the line of the town ditch and the boundary of St Mary's parish correlated with each other, but the excavations discussed here suggest that this was not so on the western side of the town, and that, initially at least, the marshland to the west defined the western limit of the town (cf. Langley 2011, 34). If so, what occasioned these changes by the mid 13th century? The construction of the ditch on the western flank of the town would have been a significant project, and once dug there is no suggestion that it was used for dumping refuse. It is possible that this work was associated with Lichfield's growing prosperity and expanding population. As far as the dog-leg in Sandford Street is concerned, there is nothing to suggest that this was not an original feature of Lichfield's plan, and Tavener's suggestion that it may have been aligned to avoid an earlier pool or marshy ground seems entirely credible. Bassett's argument for an earlier road that led from Sandford gate down the line of Lower Sandford Street to meet the west end of Market Street has not found any support from the archaeology along Sandford Street, where one might have expected a realignment of property boundaries to reflect the establishment of its proposed successor on a new orientation. Nor was any evidence found to support the contention that Market Street had originally extended further westwards until truncated by the northern extension of the friary (Bassett 1982, 106).

Although this western section of the town ditch cannot currently be archaeologically demonstrated to pre-date the mid 13th century, there was certainly occupation in the Sandford Street area before that date, particularly to the south. Residual pottery sherds of early or middle Saxon date were found to the north of Sandford Street but to the south the early ditch was followed by a phase of domestic activity between the late 12th and mid 13th centuries. This was not a period of intensive occupation or the laying-out of burgage plots, and the character of the settlement in this area before the mid 13th century is difficult to define, but since it lay within the bounds of the town, as marked by the Sandford Gate, it was not, strictly speaking, suburban. It may have been relatively informal in nature and represented either early population growth or the habitations of some of Lichfield's poorer residents; indeed, it has been suggested that the western part of the town with its associated

entrance was of relatively low importance by comparison with the other 12th-century approaches into the town (Langley 2011, 35). But this is all speculative, whereas what followed is not.

From the 13th and 14th centuries activity in the Sandford Street area became much more intensive and it was apparently in this period that burgages were laid out there. Although formal property boundaries appear to have been identified during excavations on the Cross Keys site on the eastern side of Lichfield, they have not otherwise been in evidence elsewhere in the town, so that they are inferred, as at 15 Sandford Street, by the alignments of features such as cesspits. The arrangement of Lichfield's burgrave plots was seemingly characterised by a three-fold division of activities, comprising, from the frontage backwards: distinct zones for buildings, working activity, and a garden. To the south of Sandford Street, where the excavations encountered burgrave back-plots but no buildings, the second half of the 13th century saw a spate of pit-digging and the creation of hearths. Many of these pits were large, steep-sided and sub-rectangular, and were thought to be cesspits, lasting in use into the later 14th century. That one of these was subsequently replaced by a stone-lined garderobe may suggest that from the later 13th century some residents enjoyed a higher status or prosperity than their neighbours.

Also in this period the north of Sandford Street showed a similar intensification of occupation on a site marked by the presence of a large stone-lined garderobe relating to the building whose frontage occupied a corner-plot next to the town ditch. It was associated with a stake-lined pit and a stone-built oven or kiln to the rear of the property. While such a garderobe might be thought high-status, its contents, pottery, plant species, and faunal evidence, were not out of the ordinary. If the suggestion that, located close to the western entrance into the town, the building with its garderobe may have been an inn, then a rather more high-status assemblage in the garderobe might have been expected. Most archaeological evidence for inns, taverns and alehouses comes from the post-medieval period, which is then applied, inevitably retrospectively, to sites of earlier periods. They often tend towards fairly distinctive assemblages (Christopher Jarrett, *pers comm*) reflecting good food and drink, with items such as specialised cooking equipment, drinking vessels, and jugs with which to draw ale and wine from the cask, such items being disproportionately represented against more utilitarian wares (cf. Jeffries *et al.* 2014; Watson and Pearce 2010). The absence of these characteristics in the assemblage from 18–28 Sandford Street casts significant doubt on the interpretation of the garderobe as reflecting the presence of an inn. Rather, it is more consistent with a higher-status residence on this site, which appears to have been abandoned in the late 14th century with a slight shift to the east.

The impression, prevalent in the 1970s and 1980s, that the paucity of archaeological material from the 13th and 14th centuries in Lichfield was suggestive of 'depression if not desertion', is no longer a tenable thesis. While Sandford Street is not alone in having demonstrated the need for a reassessment, it carries increased weight given its situation towards the western fringes of the town, as the margins of a town were where contraction of activity is traditionally expected in periods of depression. Rather, at Lichfield the reverse appears to be the case, as Sandford Street's pit-digging activity from the mid 13th to the late 14th century suggests an expansion of population and associated activity. Although the sites to the north and south of the street differ in the details of their history, together they indicate continuous occupation since at least the second half of the 12th century, if not earlier. Similarly, perceived lower levels of activity in the later 14th and 15th centuries, as at 15 Sandford Street, do not necessarily indicate population or economic decline, but rather changes of use and organisation, such as the 'cleaner' usage of back plots that produced or deposited less rubbish and waste.

Locations towards the edges of towns were also those most likely to be given over to the accommodation of noxious industrial activities, particularly where a ready supply of water might be had. However, this has not been much in evidence in Sandford Street. Some smelting and secondary iron-working was associated with a hearth in the presumed higher-status property at 15 Sandford Street, but this appears to be more domestic than industrial in character, and the hearth was abandoned in the 14th century. However, small metal or slag droplets were noted in the 13th- and 14th-century phases of the excavations at 18–28 Sandford Street, and have been taken as suggesting some industrial activity in the vicinity at this time (Nichol and Rátkai 2004, 63). Another archaeological evaluation, at the junction of Sandford Street and Swan Road, similarly found an unbroken sequence of occupation and activity, probably from the first half of the 13th century onwards, and recovered slag from the fill of the town boundary ditch that was consistent with possible metalworking in the area by the 13th or 14th century (Ramsey 2002). Documentary references to William the glazier, son of John

the glazier, living in the Sandford Street area in the late 13th century suggests that glass working may have been among the activities developing in the area at this time, although whether any of the metalworking evidence might have been associated with this cannot be determined; however, Tavener was clear that there was no evidence for working either glass or metals other than iron at 15 Sandford Street. A fuller was also recorded as holding land in the Sandford area in 1298, by which time wool and cloth were a significant part of the town's economy (Greenslade 1990, 120).

It has been argued that the nature of the Sandford Street occupation and activity had changed markedly by the 16th century. An area that was primarily 'residential' in character during the medieval period became increasingly industrial, or at least, more obviously so, in the post-medieval period, marked particularly by a complex of 16th-century tanning pits (Nichol and Rátkai 2004, 111; Ramsey 2002, 1, 6, 7). Sandford Street was certainly associated with tanners by the late 16th century (Greenslade 1990, 121), at which time tanning pits were also evident in the archaeological record (Nichol and Rátkai 2004, 68, 70). However, there is reason to question this characterisation. Of the four clay-lined pits excavated at 15 Sandford Street, three were within and aligned along ditch [348], which recut [416]. Both the primary cut and the re-cut had evidence that they had contained water, the earlier flowing water and the later fairly stagnant, with [416] largely silted up by the early 13th century. The clay-lined pits [154] and [160] contained significant numbers of horncores and had residual 12th century pottery, and similarly clay-lined pit [244] also contained 12th-century pottery. It is difficult to determine with absolute certainty the date of these pits. All of them contained whiteware but some of it could easily be trample into the upper surfaces of the pit fills, or be in the overlying layers that have slumped into the pits, while the recutting of these pits further confuses the situation. In fact, the recut fills did contain a greater proportion of whiteware sherds in their fills, while it also noticeable that horncores were always found in association with 12th-century pottery. In addition, the ditches [416] and [348] have only been sampled and pits [154] and [160] only partially excavated. It would certainly be contentious to unequivocally commit to a date for pits [154] and [160] on the basis of this evidence.

The impression is that these pits were used for horn-working, the horns being soaked in water so that the horn sheath could be removed. Although Tavener considered that the clay-lined pits which he excavated were the result of a natural phenomenon, a strong alternative case may be made for early industrial activity on the site associated with the processing of horn. Furthermore, there is a resonance between this site and the arrangements found at Park Street in Birmingham, where a nearby watercourse was associated with tanning pits and a scatter of horncores (Rátkai, in Thomson and Mould 2011, 131–52). This prompts the speculation that the horn-working pits at 15 Sandford Street may have been associated with a nearby tannery by the late 12th century, possibly located to the south, where the friary was subsequently established. In any case, there is sufficient reason to doubt the interpretation of the early phases of this site as being primarily 'residential' without much industrial activity.

Similarly, it seems remarkable that the site should have produced so many features identified as cesspits; they appear in a line along the southern edge of the site abutting each other. Why was there so much evidence of recutting if their purpose was to receive cess, particularly as there are cross-joining sherds in some of the fills? Although there does not appear to be any evidence for associated working surfaces around the pits, and an absence of environmental evidence that might have otherwise proven informative, it seems unwise to rule out the possibility that these cesspits, [540], [538], [530], and [456], might have originated for some other purpose.

Friary and Hospital

South of the Sandford Street area, the western side of Lichfield was dominated by the site of the Franciscan friary, and of the Hospital of St John the Baptist. The foundation of the former in the later 1230s is considered by some to indicate that this area was at that time an underdeveloped part of the town (cf. Nichol and Rátkai 2004, 58), although the friary was actually built on burgage plots on the west side of Bird Street and St John Street (Greenslade 1990, 10; Greenslade 1970, 268). In the early 14th century the Franciscan friary claimed relief on 3½ burgages, which are generally thought to have been a part of the endowment by which the friary was established (ibid. 1970, 268) and to lie in the area of the friary church. The friary subsequently acquired additional lands. The excavations on the south side of Sandford Street encountered the north wall of the friary precinct and confirmed that in the late 13th or early 14th century the friary had encroached upon an area with cesspits (see above) and a possible structure. Although the back plots revealed only fairly low

levels of activity, Bassett's supposition that the friary had extended northwards has been confirmed, and he further argued that it closed off an earlier east–west through route represented by Friars Alley (Bassett 1982, 104–6, 118).

No 1 Bird Street, at the junction of Bird Street with the friary, sat within the friary complex, to the east of the chancel of the friary church and impinging upon part of its cemetery. The pre-friary land-use is not clear but pottery from the area included reduced grey ware comparable with finds from Deritend in Birmingham, some the probable products of the Deritend kilns, and dated between the early 13th and mid 14th century, while the quantity of iron rich sandy utilitarian ware noted in 1999 may indicate some earlier, pre-friary, occupation in the 12th century; flat roof tiles from the site were also thought to date to the late 12th century or later (Langton 1995, Appendix 2; Stone 1999, above; cf. Tuck 2018, 54). However, in the southern part of the friary precinct, where the precinct ditch was encountered, nothing was found to indicate any occupation of the site before the 13th century, the prevalence of whitewares together with the absence of other cooking pot fabrics suggesting that full-scale occupation of this part of the site did not occur until after *c.* 1250 (Tuck 2018, 54, 56). The burials recorded from the rear of No 1 Bird Street were presumed to be associated with the friary, and included men, women, and children, the earliest dating to the 13th or 14th century and reflecting the acceptance of lay burials within the community.

Twelfth-century occupation and activity has also been archaeologically demonstrated at the southwestern extremity of the town, where beyond the town ditch and the Culstrubbe gate (cf. Greenslade 1990, 40) was located St John's hospital, probably founded by Bishop Clinton around 1135 and documented in a grant of 1208. It no doubt served to provide shelter for pilgrims to the shrine of St Chad and for visitors, who were not permitted to enter the town at night. The hospital, whose community was headed by a prior, had by the early 13th century become a place of public worship and in the mid 13th century a chantry was established by the heirs and executors of Ralph de Lacock (d. 1257), a cathedral canon. By the time that Lacock was buried there, it seems that burial rights belonging to the parish church (St Mary) had become more relaxed and burials were being made in a hospital cemetery (Greenslade 1970, 279). Pottery of the 12th and 13th centuries, some residual and some unstratified, has previously been recorded from the site (Meeson 2000) but more recently, in 2015, a part of the cemetery was investigated. This excavation, which is awaiting its final publication, revealed 46 burials of 14th-century date or later, male and female, adults and non-adults, and included at least four individuals of African or mixed ancestry. It appears that despite indicators of childhood stress, joint disease and dental plaque concretion, the incidence of trauma and disease was lower than medieval averages, suggesting a relatively healthy adult population or environment (Goacher, Coutts and Palmer 2016, 2, 23).

The hospital graves, which could have been cut at any point after *c.* 1300, had significant quantities of the same types of pottery, most of which came from the former topsoil through which the graves had been cut, with a smaller amount re-deposited in the grave fills. Fragments of slag were also, like the pottery, dumped before burials took place and are suggestive of nearby metalworking. The pottery dates mostly to the 12th and 13th century and forms an assemblage comparable with that found at 15 Sandford Street where it was considered suggestive of 12th-century occupation. It appears that the St John's hospital area of the town was occupied and material was accumulating for some time before 1200, no doubt since mid century, but this comprised the normal range of domestic items that does little to betray the religious character of the site. There were also some whitewares of the 14th century, together with some red-painted whiteware jugs that dated from the mid 13th to the 14th century (Goacher, Coutts and Palmer 2016, 14, 15, 19, 20, 22).

Minster Pool area

The dominant topographical feature in the layout of Lichfield is clearly Minster Pool, separating the cathedral and the close to the north from the planned town that was laid out to the south. A key question has been the point at which this expanse of water came into being, and the extent to which it may have been modified, matters which the Arts Centre excavations addressed. Carver's excavations to the south of the cathedral, on the northern edge of the pool, excavated a sequence of activity that extended from the Neolithic to the late medieval period, including structures and a cemetery beside the Pool that had been established by the mid to late Saxon period (Carver 1982b, 37–8). Carver found that the pool-bank was refurbished twice during the 11th–13th centuries (his Period 4) and which on the second occasion involved the dumping of large quantities of sand with retaining stakes to raise it. He concluded that this work, which was accompanied by the construction

of a dam at Dam Street to create the pool, may have been the work of Bishop Roger de Clinton as a part of his programme for a revitalization of the episcopal centre, in which the creation of the planned town was itself a fundamental aspect (ibid. 38). The two-phase bank was subsequently confirmed in further excavations to the east of Carver's site, dated between the 12th and 14th century and overlying an earlier ground surface; water-lain silt deposits against this bank contained pottery of the 13th and 14th century (Sargent 2013, 5). Bassett's discussion of the layout of the new town accepted that the pool was by then in existence, while Slater thought it was already present by 1086 but was enlarged in the later medieval period (Bassett 1982; Slater 1986, 15).

The Arts Centre site, which particularly complements Carver's excavations by its situation to the south of the pool, found that the earliest archaeological land surface dated to the 12th century, at which time it was dry land and characterized by weeds associated with cultivated or disturbed ground, although the plant remains did suggest that a marsh or stream lay nearby. The presence of a pit and of charred cereal grains suggest that the land was at this time occupied, but that it was subsequently flooded, as indicated by the presence of plant species indicative of water edges and dry land. Thus, Minster Pool did not exist before the 12th century although there appears to have then been a sudden change, presumably flooding the area to create it, or to enlarge an originally smaller pool.

Thereafter, it was not until the late medieval period that further evidence for sustained activity occurred, at which time the land was being reclaimed. In the 15th century the pool edge was being used to dump waste, both domestic and industrial. Debris from ironworking and possible small-scale cobbling was found, and although these activities cannot be demonstrated on the site itself, it seems reasonable to suppose that such material was unlikely to have been transported over great distances from their points of origin. The excavator suggested activities such as the processing of cattle hides and sheep fleeces, and glove-making (Stone 1999 in this article, above).

Opposite the Arts Centre, on the west side of Bird Street, stood the former Swan Hotel, where excavations have suggested that two burgrave plots were in existence by the 13th and 14th centuries (Wainwright 2002; Langley 2011, 33). However, three sherds of residual Saxon pottery found in excavations to the rear of the site may suggest earlier activity, consistent with Slater's proposed pre-urban development in this part of Lichfield, characterized by tenement plots with irregular boundaries (Christopher Wardle, *pers comm*, August 2003; Sargent 2013, 5; Slater 1986, fig. 1, 23, 24). However, the dominant pottery from the site were whitewares of mid 13th- to 14th-century date, together with iron rich sandy utilitarian wares, an assemblage similar to that found elsewhere in Sandford Street and Bird Street (Wainwright 2002, section 6).

Pit-digging associated with domestic occupation marked one of the plots, while in the other there seems to have been little medieval activity beyond probable cultivation and the build-up of soils. However, a later phase of activity in the first plot saw the digging of a series of six clay-lined pits, some with 15th- and 16th-century fills. If these represented tanning pits, or some other industrial purpose, then this is another instance where the evidence for industrial processes is more readily detected in the later medieval period. Of course, this does not mean that industrial activity was absent from these tenements in the earlier period. In fact, the possible presence of a medieval building in one plot prompted speculation that it might reflect industrial activity, while subsequent excavations on the site showed that tanning was present in Bird Street in the late 13th and early 14th centuries (Wainwright 2002, section 8; Langley 2011, 33). There were clearly tenements at no great distance from the edge of Minster Pool which would have found it a convenient place to dump their waste, whether domestic or industrial in nature, and might also have been used for activities such as defleshing, although lime deposits and animal hair, the usual evidence for this, were not detected.

It is now clear that Minster Pool was created, or enlarged, by an episode of flooding during the 12th century. Less clear is the context for this, but it remains a persuasive hypothesis that this was a deliberate act associated with Bishop Clinton's reorganisation of his episcopal centre. Although recent years have been marked by a more cautious approach to the matter of planned medieval landscapes, particularly in association with castle sites, there seems little doubt that watery settings were regarded as high-status features. Clinton would have been well aware of this but, should he have needed it, he could have taken inspiration from the large pool that surrounded the castle at Newcastle-under-Lyme, if indeed that feature was present by the 1140s. Or alternatively, perhaps from his uncle's castle at Kenilworth, particularly relevant if Clinton also fortified the close (cf. Hunt 2007, 16–19; Greenslade 1990, 9, 60). The Minster Pool scheme would therefore have added considerable dignity to Lichfield, the new cathedral and its bishop; all the more so given that the pool also extended to

the west of the present line of Bird Street / Beacon Street, and that the 12th century also saw the creation or enlargement of Stowe Pool to the east (Sargent 2013, 21–22). Furthermore, the pools created a clear demarcation between the space reserved to the cathedral and its close and to the newly planned town laid out to the south, and with the town ditch serving to define the territory and jurisdictions of the 12th-century town. There can be no doubt that Clinton's episcopate and the 12th century saw a massive re-arrangement of the landscape of Lichfield, of which the planned town was only a part. This expanse of water was traversed at the east end via Dam Street, the principal crossing point that pre-dated the planned town, while the west end was served by a ferry crossing, a stone causeway only being added at the time of Bishop Langton (1296–1321) (cf. Bassett 1982, 106–8; Slater 1986, 15, 22).

Town centre

There have been fewer opportunities to investigate archaeologically at the heart of the planned town laid out in the 1140s, but it was Madeleine Hummler's excavations at 18 Wade Street that conveyed the impression of a down-turn in Lichfield's fortunes after the 13th century (Carver 1982a, 4; Hummler 1982, 87). Although three residual sherds of 'Stafford Ware' were found there, no structures earlier than the 12th century were located, and after a period of intensive pit-digging in the 12th and 13th centuries, seemingly associated with rubbish disposal, clay extraction, and a hearth, the nature of any occupation between the 14th and 17th centuries was very unclear (*ibid.*). While excavations elsewhere in Lichfield have now refuted the notion of depression and desertion, the results at Wade Street were consistent with the supposition that the planned town had before c. 1200 taken in land that was previously unoccupied, or not intensively so, and was given over to domestic occupation, in this case a timber-framed building, with a hearth, fronting onto Wade Street. An obvious caveat here, however, is the fact that late Saxon occupation is difficult to detect on the basis of pottery sherds alone.

Subsequent excavations in 2003 on land between Wade Street and Frog Lane provided a corrective to the Wade Street work with further evidence of 12th- and 13th-century occupation, marked by cesspits, one of which continued in use into the 13th and 14th century, together with evidence of occupation throughout the medieval and into the post-medieval period (Langley 2011, 32). However, these excavations have also posed questions about how this part of the town developed, as it was found that the alignment of medieval features, generally interpreted as indicative of medieval tenement alignments and sometimes of the position of actual boundaries, were at variance to 19th-century property boundaries. This suggested a different alignment in the 12th to 14th centuries, raising the possibility that these tenements were outside the planned town or that this part of the town was treated differently to Bore Street and Market (Sadler) Street. However, it was also noted that the limitations of the excavation undermined the certainty of these conclusions and the extent to which the observations made on the Garrick theatre site could be applied more widely (*ibid.*). Tavener, however, also noted that there was nothing to suggest that Frog Lane was ever of particular importance and that the very names of Wade Street and Frog Lane, both recorded by 1297, suggests that they were associated with waterlogged land, and that Speed's 1610 map of Lichfield gives the impression that Frog Lane was underdeveloped. Both Wade Street and Frog Lane had unoccupied burgage plots up to the 1960s (Tavener 2000, section 4).

Cross Keys and Greenhill

On the eastern side of the town significant excavations were undertaken in 2006 on the site of the Cross Keys car park, a site within the line of the town ditch and adjacent to Stowe Pool; and between 1999 and 2001 at Greenhill, situated outside of the town ditch, to the east of the presumed site of the Tamworth gate, and therefore within an extra-mural suburb of Lichfield.

The Cross Keys site has also produced residual late Anglo-Saxon pottery, albeit not in great quantities, and the site's implications for our understanding of early medieval Lichfield has recently been reviewed by Andrew Sargent (Sargent 2013). The site produced a sequence of activity that extended from the 5th to the 16th centuries, the earlier phases of which need not be reiterated here beyond the obvious observation that the south-west end of Stowe Street is the earliest settlement focus so far demonstrated in Lichfield. While not conforming in detail to the sequence that Slater suggested for this part of the town, this observation nonetheless remains consistent with his suggestion that the line of Stowe Street, continued along Lombard Street, represented an early focus and routeway (Slater 1986, 19, 20, 24; Sargent 2013, 27).

Given its location towards the edge of the town, the presence of industrial activity at Cross Keys does not occasion surprise, with metalworking debris and a pit that was probably associated with retting or tanning between the 10th and 12th centuries (Phase 3), although the ironworking may not have amounted to much more than utilitarian activity at this point (Sargent 2013, 20). However, by the first half of the 13th century this was an area of small-scale industry possibly associated with tanning, and where, uniquely in the archaeology of Lichfield to date, probable property boundaries were observed rather than inferred. Three probable fence-lines, aligned north-west / south-east, one running from the south-east edge of the site to the edge of Stowe Pool, shows the division of the land here into plots. The fact that they respected the edge of Stowe Pool suggests that the arrangement is unlikely to have pre-dated the mid 12th century and they may have been mostly removed towards the end of the 13th century. In the absence of any evidence that these replicated earlier boundaries, it seems that these plots were laid out for the first time in the late 12th or early 13th century, certainly later than the foundation of the planned town (*ibid.* 6, fig. 2, 22, 23, 26). Horncores were found in pool silts and taken as evidence of tanning in the vicinity during the late 13th or 14th centuries, an interpretation supported by the 14th-century pit [507] whose lenses of lime within the fill are consistent with the process of defleshing and dehairing hides before tanning (*ibid.* 23; Patrick and Rátkai 2009).

Excavations within Lichfield's eastern suburb, on land to the rear of 17–21 Greenhill, found significant archaeological remains that were primarily domestic in nature, of the 12th century and later (Stone 1999f). However, the 12th-century pottery was residual, whereas the dominance of whitewares and sandy utilitarian and table wares suggested that the focus of occupation here was in the 13th and 14th centuries. The absence of sherds typical of the late 14th to 16th centuries, generally interpreted as representing a break in occupation, may alternatively indicate some changing patterns of use (*ibid.* sections 6.1, 7). Nonetheless, the pottery assemblage, which was strongly local in nature, is significant for the presence of the 12th-century material that reflects the growth and development of Lichfield during this period. Likewise, the presence of vessel glass from [162], the fill of pit [163], suggests that in the early post-medieval period this area of Lichfield included relatively high-status residents, an impression already evident by the later medieval period (see below). The glass was pale green with some iridescence and of early post-medieval date. The pottery from [162] suggests a 17th-century date but the glass may well be earlier.

Wax-melting jar

The most significant feature on the Greenhill site was the cesspit to the rear of 17 Greenhill, perhaps located within a structure serving as a privy, from which were recovered fragments of at least two glass urinals, a complete whiteware pottery jug of late 14th-century date, and part of a candle-makers trough, perhaps better described as a 'wax melting jar', emphasising the vessel's use rather than the putative occupation of its owner (Dr Michiel Bartels, *pers comm*). This latter whiteware item is a rare form in Britain and therefore deserving of some discussion (Fig. 21 and Plate 4). A brief note and illustration of the vessel first appeared in Newsletter 36 of the *Medieval Pottery Research Group* (April 2000), at which time the only parallels were two Dutch vessels in the Van Beuningen Collection, illustrated in Hurst *et al.* (Hurst 1986, plate 22 and fig. 65: 223). These were later than the 14th-century date suggested for the Lichfield example and not particularly close in form. The MPRG publication elicited a number of very helpful responses from medieval ceramicists at home and abroad which informs the following reappraisal of the Lichfield vessel.

The Lichfield whiteware vessel is a narrow, elongated ovoid in plan view, some 31cm in length and *c.* 7cm in width. The base sits on four stubby feet, two of which were stabbed. The original height of the vessel is estimated to have been *c.* 30cm, giving a candle length of *c.* 20–25cm. One curved end section, a substantial amount of which survived, had a horizontal strap handle *c.* 4cm below the rim and it is likely that there was the same arrangement at the other end of the vessel. The body of the vessel was evidently made of clay coils which had been smoothed on the exterior but left in a somewhat 'rugged' state on the interior. A patchy green glaze covered the exterior and part of the interior. In places the glaze was discoloured to a dull brown which is likely to have been caused by the proximity of cess.

Bartels confirmed that vessels of this sort are known from the Netherlands in red- and grey-firing clays where they date from *c.* 1250–1500, exactly the period in which whitewares were in use in Lichfield. After *c.* 1550 they seem to disappear from the archaeological record or at least the ceramic record, Bartels suggesting that from the 16th century onwards the wax melting jars were

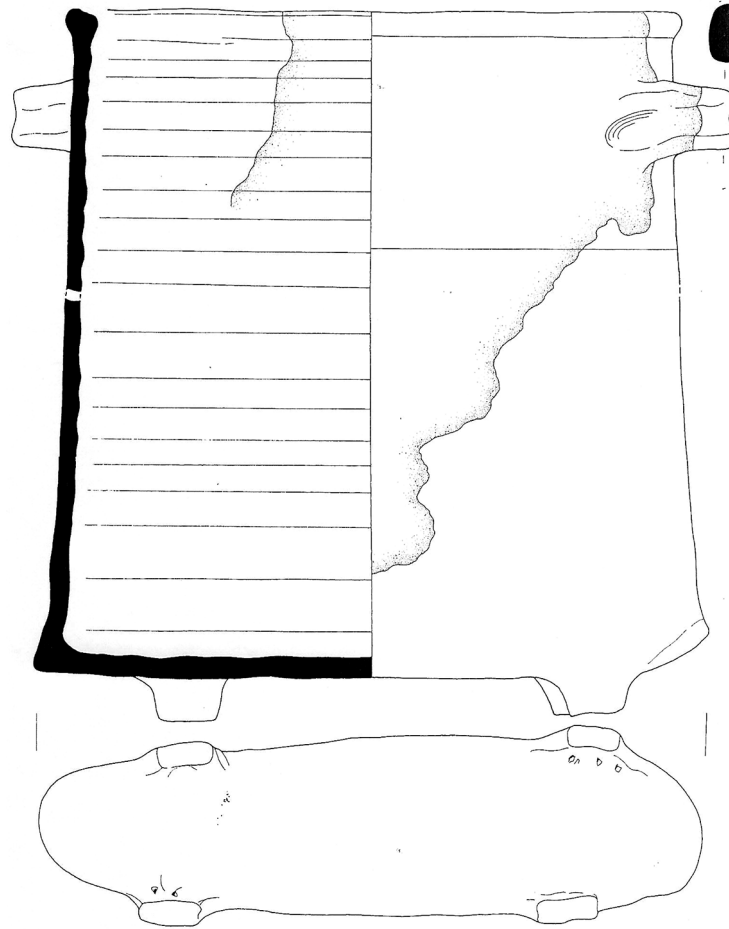


Fig. 21 Drawing of the wax-melting jar found at Greenhill, Lichfield

more likely to have been made of metal. The four stubby feet on the Lichfield example can also be paralleled in the Netherlands, although other base forms are known, but Lichfield's horizontal handles are unknown, vertical handles being the norm. These vessels were made in Utrecht, Delft, and possibly Haarlem, Bartels listing several findspots for such wax-melting jars in the Netherlands: Dordrecht (Bartels 1999), Haarlem, Delft, Bergen op Zoom, and Utrecht, together with Antwerp, Brugge, and Ghent in Flanders.

The numerous and often complete or near complete examples from the Netherlands and Flanders provide a useful backdrop from which to view examples from England. Stephen Moorhouse (*pers comm*) knew of over twenty examples, mostly 'very small pieces' which would have been difficult to identify had he not seen Continental examples, and 'mostly complete examples' in Surrey white ware. Over half of these examples date to the 13th–14th centuries. Similarly, John Cotter (then of the Canterbury Archaeological Trust) had seen two examples in Colchester, Essex (in Colchester-type ware), and one from Ospringe near Faversham (Kent), all dating to the 15th–early 16th century.

Subsequent research, however, has revealed that a number of the suggested parallels noted above were not wax-melting jars but holders for what is known as *kienhout* in Dutch, making them the equivalent of taper- or spill-holders. They are much smaller than the true wax-melting jars, being some 12–15cm in length — less than half the size of the Lichfield example. This rules out proposed parallels from Yarm (North Yorkshire) (Evans 1985, 72–3), Farnham (Surrey) (Moorhouse 1970, 4–5), and the two examples illustrated in Hurst *et al.* (1986). Jacqui Pearce (*pers comm*) knew of no examples in Surrey whiteware other than the taper-holders. One of the Colchester examples (Cotter 2000, 156–9 and fig. 105, no. 240) and the one from Ospringe (Thorn 1979, fig. 44, 107) are the right size for wax-melting jars and comparable to the Lichfield vessel, although like the Dutch examples the Colchester jar has vertical handles and it is also rather later in date. The closest parallels in terms of form, size, manufacturing technique, and date appear to be the wax-melting jars from Dordrecht,



Plate 4 Whiteware wax-melting jar from a cesspit at the rear of 17 Greenhill, Lichfield

despite the difference in handle alignment. In fact, the date of the Dordrecht vessels of c. 1225–75 opens up the possibility that the Lichfield example could pre-date the 14th century.

There is no doubt that the Lichfield vessel was made locally in the white-firing clay associated with the Coal Measures of south Staffordshire and north Warwickshire. The identification of the vessel's function is also quite clear, although there was no sign of sooting or blackening on the vessel, which either indicates that it was never used as a wax-melting jar or that the jar was heated in seething water.

Is it possible that the jar was used for some other purpose in Lichfield? It seems unlikely. Assuming that candles were being made, did the jar belong to a chandler? That there were guilds for wax- and tallow-candle makers strengthens the case for the jar being part of a 'professional kit' rather than representing some random household venture. Professor Arno Verhoeven, who has researched late medieval artisanal production in the Netherlands, comments (*pers comm.*): 'Small household production seems unlikely..., since candles were expensive.' However, Verhoeven also highlights the difficulties in identifying 'professional' candle making since it is difficult to link any utensils directly to the craft. A kiln or oven to melt the wax would be horseshoe-shaped but indistinguishable from hearths used for dyeing, soap-making or brewing, and other crafts. He concludes 'We looked for candle making in many Dutch towns, but there is not a single workshop associated with the making of candles.' The evidence, therefore, for what the wax-melting jar from Lichfield means, is evasive. It is the case that the churches of Lichfield would have generated plenty of demand for beeswax candles, but one wax-melting jar is scant evidence on which to base a back-plot industry, even allowing for the paucity of remains from this vessel form generally. In addition, there is no very obvious way to interpret the occurrence of the jar with at least two glass urinals, but speculation apart, the two classes of finds need not necessarily have been in use at the same time.

Occupations and suburban development in Greenhill

The whitewares suggest that the cesspit was in use by the mid 13th to 14th century. Physicians must have been among Lichfield's medieval inhabitants but glass vessels for uroscopy, available from at least the mid 13th century, are not uncommon finds. Although the club-shaped urinal known as a 'matula' became the guild symbol of physicians, by the early 14th century the practice of uroscopy

had spread to charlatans and the unlearned. It cannot be assumed therefore that a physician was among the residents of Greenhill, but the wax-making jar is perhaps more indicative of an occupational activity, while three small fragments of ironworking slag may point to some metalworking in the vicinity (Stone 1999d, section 6.3). However, there was nothing to suggest any major industrial activity of any period at Greenhill (Tavener and Stone 2001, 30). Small quantities of slag and a few horncores were the only materials arising from manufacturing processes, but they appeared to be casual or accidental discards that had fallen into the backfill of the wells and cesspits of the tenements. A hearth or oven [190] of uncertain function, which fell into disuse during the 13th or 14th century, may signal some more substantial activity, but there were no associated structures of an obvious industrial character, although the excavators commented that the loss of horizontal stratigraphy may have accounted for the paucity of industry-related artefacts (*ibid.* 11, 27, 32, 33). One can now do no more than speculate as to any possible associations of hearth / oven [190] with candle-making. The similarities between the competent square-cut well [202], which spanned the boundary between 19 and 21 Greenhill, and the well [440] at 15 Sandford Street was striking and prompts speculation that they may have been the work of the same man: perhaps a cesspit digger? The Greenhill hearth [190] also had a close parallel at 15 Sandford Street (*ibid.* 35). The arrangement of the wells and cesspits, with a relict garden soil further to the rear, suggests the same threefold division of the tenement plots into buildings, activity, and garden zones as found in Sandford Street.

The 12th-century pottery may indicate some sporadic activity at that date, but the excavations at 9–21 Greenhill uniformly suggested that the medieval plots represented by the gardens of 17 and 19 Greenhill developed during the 13th century. There was nothing to suggest that settlement at Greenhill predated the establishment of the planned town, but rather that the first serious occupation of the site came several decades later as suburban development during the 13th century (Tavener and Stone 2001, 38). This occupation, here at least largely domestic in nature, continued into the 14th century but all features, apart from pit [161], were abandoned and filled in before the later 14th century (*ibid.*). Alongside the relative paucity of sandy oxidised wares (typically later 14th–15th century), of Midlands purple wares (15th–16th century), and of Cistercian wares (typically late 15th- and 16th-century), this might be taken to suggest that occupation of the site declined after the 14th century, but changes in the pattern of use rather than abandonment seems more probable, particularly as by the mid 15th century a hall and solar of some pretension had been constructed across the site. A ‘cleaner site’ of higher status, therefore, seems to have followed on (*ibid.* 33, 38; Stone 1999d, section 3.0).

Steven Bassett supposed that a number of roads in the vicinity of St Michael’s church were successively redirected to concentrate traffic on Lichfield’s Tamworth gate, outside of which a trapezoidal open space was created to form a second market place, itself stimulating the growth of Greenhill with large tenements laid out on either side of it. A considerable replanning of the area is envisaged, completed no later than the mid 13th century and bringing changes that impacted upon the property boundaries on the north side of Greenhill, causing a realignment of their frontage (Bassett 1982, 110, 111, 118). Tavener and Stone pointed out that their work at Greenhill had not endorsed Bassett’s thinking on the area, noting that although the frontage had no medieval deposits, recording of the late medieval solar at 21 Greenhill indicates that the street frontage had not altered since that time; while to the rear of the frontages, the excavated features demonstrated that these areas were back-plots in the 13th and 14th centuries. Furthermore, if the street frontage had lain further northwards, the shift would have prompted a considerable re-digging of cesspits, something which was not in evidence (Tavener and Stone 2001, 31, 37). Equally significant is the fact that the excavations were unable to demonstrate any significant occupation of the site prior to the 13th century, although the fact that St Michael’s church at Greenhill was recorded in *c.* 1190 and that it stands on an earlier religious site, in association with a large graveyard that was the main burial ground for the people of Lichfield, suggests that this will not be the last word to be written on this part of the town (Greenslade 1990, 135; Stone 1999d, section 4.2; cf. Sargent 2013, 28).

CONCLUSIONS

By the early 14th century Lichfield was one of the two leading towns in Staffordshire, this prominence being shared in the shire’s urban hierarchy with Stafford, the county town. Slater has pointed out that although Staffordshire’s successful towns were based on ancient ‘central places’, Stafford and Lichfield can be regarded only as second order towns’ (Slater 2005, 26). However, the ecclesiastical

role of Lichfield since at least the 7th century, its ancient cult and attraction of pilgrims, and the ambitious schemes of Bishop Roger de Clinton in the mid 12th century all contributed to Lichfield's emergence, arguably, as the most prominent of Staffordshire's towns, although the county's mercantile community was divided between this place and Stafford, and to a lesser extent with Newcastle-under-Lyme and Tamworth (Slater 1985, 134).

Lichfield was an expanding and prosperous town, whose market charter granted to Bishop Walter Durdent by King Stephen (1149–54; Cronne and Davis 1968, no. 456) most probably confirmed what was already in place and no doubt with pre-Conquest antecedents. The urban community that subsequently emerged was diverse economically, and perhaps ethnically. The occupational diversity of Lichfield's population has been noted on numerous occasions (Gould 1976a, 8–9; Slater 1985, Table 6; Greenslade 1990, 119–20; Dyer 2002, Fig. 4), giving the impression that by comparison with its neighbours this diversity became increasingly pronounced over time. However, the town's principal trades were retailing and victualling, wool, and the production of leather goods. Similarly, the range of commodities coming into the town appear to have been diverse, if represented by the list of goods on which tolls were to be levied as laid out in 1299, comprising horses, cattle, pigs, sheep and goats; corn, meal, onions, garlic, honey and oil; meat, cheese, butter and some fish; salt, hides, skins, fleeces and wool; cloth and silk; web, canvas and hemp; dyestuffs, tallow; coal, millstones; timber and tan bark; and iron and metal products. Even if intended as a 'catch all' list, a vibrant and varied market place and trading community is suggested, and one which by the mid 13th century may have had commercial links reaching as far as France (Greenslade 1990, 120). Furthermore, the presence of tan bark on this list would suggest that tanning was already present in Lichfield before 1300.

One outcome of the archaeological work in Lichfield since the publication in 1982 of the *Transactions* that focused on the then current understanding of Lichfield's development has been to provide some material evidence for the medieval town's commercial activity and growth. That most excavation opportunities have occurred in the peripheral areas of the medieval town, generally in back-plots without access to medieval frontages, urges some caution; but the impression is nonetheless one of significant expansion, particularly during the 13th century. Industrial activity was clearly integral to this, although the archaeological evidence is often relatively slight and open to differing interpretations. Leather was inevitably in high demand, required by both an increasing population, and to service the needs of other industrial activities. Tanning appears to be prominent in Lichfield, but this may be a reflection of where the excavations have mostly taken place, towards the edges of the town and near water. This activity was present by the 13th and 14th centuries at the Swan Hotel and Cross Keys sites, indeed earlier at the latter site. Although Tavener discounted the similarly dated clay-lined pits at 15 Sandford Street as being related to tanning, seeing this industry rather as a late medieval and post-medieval phenomenon, it has been argued above that they may have been related to the processing of horncores, and associated with tanning activity nearby by the late 12th century. Several excavators have previously concluded that there was a late medieval transition in the character of these sites, moving from primarily 'residential' profiles to ones of a more overtly industrial nature, but this review argues that this transition has been overstated.

It is a moot point as to what extent a medieval burgh might ever be regarded as purely residential in nature, and it seems improbable that medieval industrial activity, particularly craft activity, was entirely absent from most areas of the town. Perhaps the frequent but small-scale occurrences of evidence for metalworking, sometimes interpreted as 'domestic' or 'utilitarian' in complexion, represents such artisanal activity. The perceived transitions in the character of some of these plots at the margins of the town otherwise reflect the kind of reorganisation that Lilley has pointed to in late medieval and post-medieval towns generally (discussed above).

The emergence of a formal suburb at Greenhill further reflects the growth of the town and its population, particularly if it was driven by the creation of a second market place. Bassett suggested that Lichfield's population was insufficient to occupy all of the plots created when the town was laid out, as a consequence of which some were left unoccupied; that is, that while the main streets were occupied, the more peripheral *insulae* in the mid 13th century were not intensively settled, hence there was scope for the foundation and subsequent expansion of the Franciscan friary (Bassett 1982, 118). Excavations in these peripheral areas have tended to show that even though occupation might be present in the 12th century, it was generally not intensive in nature until after c. 1250. Bassett, of course, had in mind a particularly ambitious town plan which perhaps exaggerated this sense of vacant plots, but certainly during the 13th century there was 'growing room' available within the

town which seems to have been readily taken up. The estimated population of 1,300 people in 1327 accords well with the 286½ burgages recorded in 1298 and does not point to an obvious shortage of residents by this date. The practice of laying out tenement plots that were never fully integrated has been encountered elsewhere, as in Birmingham, where Moor Street and Park Street were added to the medieval town plan but neither is thought to have been fully urbanised during the medieval period (Baker, in Rátkai and Forster 2017, 66–7). Nonetheless, such instances may offer testimony of the unfulfilled ambitions of either some urban communities, or of their lords seeking to enhance their capacity to create new rents.

There were clearly sufficient people, and opportunity, to move into the more peripheral areas of the town and, indeed, to create suburban settlements as at Greenhill, although the motivations behind such developments were often more complex than simply the pressure of population. Enhanced trading opportunities and greater freedoms were often also factors of importance. That there was space for the friary and the hospital, and for expansion and reorganisation on plots within the delimited area of the town within its ditch and bar-gates should not occasion surprise. The particularly ambitious town plan that Bassett envisaged is unlikely and the town within its ditch included cultivated, or recently cultivated land, some of which may have been difficult to fully utilise because of its situation or character.

Andrew Sargent has provided the most recent review of Lichfield's polyfocal origins and a reassessment of the nature of early medieval Lichfield, themes which therefore need not be taken up again here in detail (Sargent 2013). The relatively widespread albeit minimal occurrence of residual Saxon pottery is very probably indicative of pre-Conquest activity across the area, which would in any case be suspected, but as of yet the only firm evidence of a focus for Anglo-Saxon settlement and activity is associated with the cathedral close and the area of Stowe, where Chad's oratory was situated. However, successful towns could be developed only where certain pre-conditions were in evidence, among the most important of which was a population ready to take up the opportunities presented in sufficient numbers. Bishop Clinton must have had such expectations, although these are details of which we know little. Certainly, the manor of Lichfield had a large population, approaching perhaps some 300 people in 1086, with a number of linked berewicks in addition, and this had most probably increased by the first half of the 12th century. This was clearly a sufficient population upon which to draw for the foundation of the town, and it seems reasonable to suppose that there was already some kind of mercantile presence beforehand, although this is a matter of speculation. However, the real growth of Lichfield came some fifty to a hundred years after the creation of the new town.

The focus of the 12th-century settlement is presumed to have lain at the heart of the planned town, around Market Street, Bore Street, and Wade Street, but occupation and activity certainly extended beyond this core area. Apart from on the Cross Keys site, the nature of this activity, as revealed in the excavations to date, is not clear, but in most cases it appears not to have been intensive in nature. Rather, beyond the core of the town there is an impression of more scattered tenements. However, in the 13th century, and more particularly from the mid century onwards, these areas begin to be exploited more fully, and perhaps by the late 13th century with burgages being laid out, while to the west of the town this growth and intensification of activity warranted the decision to formalise a boundary previously provided merely by marshland; thus, a continuation of the town ditch was cut. To the east and the west the town grew, while the foundation and subsequent expansion of the friary was effectively a phase of infilling on former burgages and agricultural land. This 13th- and 14th-century growth provided the basis of Lichfield's late medieval prosperity.

The fortunes of towns were obviously closely associated with those of their hinterlands, although the question of how these are best defined has become more complex than it once was, as the methodology arising from the 'theory of urban fields' acknowledges (Perring 2002, 11). From their hinterlands towns attracted migrants and merchants, obtained commodities and raw materials, and the consumers upon which their markets relied. Archaeologically the most visible aspect of this consumer culture, often providing an insight into a town's presumed hinterland, is the pottery by which the dating of a site may also be determined. The excavations of the last two decades or so have considerably expanded our understanding of Lichfield's ceramic series. During this period of growth in medieval Lichfield, while some links to such as Northamptonshire look further afield, the overwhelming preponderance of fabrics point to local sources of production for the pottery reaching the town. For instance, sites such as Sandford Street, the friary, and St John's hospital have high-lighted fabrics originating in north Warwickshire and south Staffordshire, or on their borders, among

them the Coventry area, Chilvers Coton in Nuneaton, and Deritend in Birmingham. Whitewares were particularly common in this period, marking the mid 13th to 14th centuries, whereas the 12th century is generally represented by iron-rich sandy utilitarian and table wares. A good example of the range and local links is the pottery assemblage recently studied by Stephanie Rátkai from St John's hospital cemetery (Goacher, Coutts and Palmer 2016, 13–20). This was dominated by whitewares and iron-rich cooking pots, jars and jugs, among them early 'pitcher-type' vessels of late 12th- and early 13th-century date. Some of the cooking pots could be paralleled directly by vessels from elsewhere in south Staffordshire, such as Drayton Bassett and 15 Sandford Street. Comparisons with Drayton Bassett, as well as with Warwickshire sites like Minworth Greaves and Wishaw, have been

Table 35 Early medieval and medieval pottery fabrics found on Lichfield sites

Fabric	CKL05	CHL02	18-28 SS	15 SS	SLA15	LH-30	Fabric	CKL05	CHL02	18-28 SS	15 SS	SLA15	LH-30
chaff tempered			x				irp2	x	x	x	x		
Stafford ware	x						ww1	x	x	x	x	x	x
Stamford ware	x	x			x		ww2 (and variants)	x	x	x	x	x	x
Developed Stamford	x			x			ww3	x	x	x	x	x	
shell 1	x	x	x	x			ww4	x	x		x	x	x
shell 2	x						ww5	x					
cpj1	x	x	x	x	x		ww6	x					
cpj2	x	x	x	x	x		Deritend	x			x		x
cpj3	x	x	x	x	x		Deritend reduced	x				x	
cpj4	x	x	x	x		x	Brill			x			
cpj4a	x		x	x			Malverian				x		
cpj5	x		x	x	x		cm1	x	x	x	x		
cpj5g	x		x	x			cm1a	x	x	x	x		
cpj6	x	x	x	x			cm2			x	x		
cpj7	x		x	x			cm3	x		x	x		
cpj8	x	x	x	x	x		gritty ware	x					
cpj8a	x	x		x			Midlands	x	x	x	x		
cpj8b	x	x		x	x		Purple						
cpj9	x			x			rw1	x	x	x	x		
cpj10	x	x					rw2	x	x	x	x		
cpj11	x	x					rw3	x	x	x	x		x
cpj12	x						rw4	x		x	x		
cpj13	x						rw6	x		x	x		
medg1	x	x	x	x			rw7				x		
medg2	x	x		x			Tudor Green	x		x	x		
medg3	x	x		x	x		Cistercian ware	x	x	x	x		
medg4				x			lmt1	x		x	x		
medg5	x	x					lmt1a				x		
medg6	x						lmt2	x	x		x		x
medg7	x						lmt2a				x		x
irp1	x	x	x	x		x	lmt2b				x		
							lmt3	x					

SITE CODES: CKL Cross Keys; CHL02 Civic Hall; 18–28SS 18–28 Sandford Street; 15 SS 15 Sandford Street; SLA 15 St John's Hospital; LH-30 Lichfield Friary

FABRIC CODES: cpj cooking pot; medg medieval glazed ware (mainly local); irp iron-poor wares; ww whitewares; cm Coal Measure Clay derived; rw redware (usually later medieval); lmt late medieval/post-medieval transitional

noted elsewhere in Lichfield. The St John's hospital site also produced a small diameter cooking pot similar to finds from Stafford castle and Cross Keys, Lichfield, while an earlier set of jugs used at St John's, known as 'Stafford green-glazed pitchers', have known parallels from Stafford town and Stafford castle dating to the second half of the 12th to the early 13th century. The point is that the St John's assemblage is comparable to pottery found in Sandford Street, and at the Civic Hall and Cross Keys sites, located across the town.

Although this pottery might be thought unremarkable, its dominance on sites across the town reflects the local networks within which Lichfield and its residents traded. Rátkai has further observed in the context of the St John's hospital site that there was no persuasive evidence that episcopal links between Lichfield and Coventry, or of pilgrimage traffic, influenced the pottery supply; this observation may be extended across the town as a whole between the 12th and 15th centuries. It has been suggested that such wares do not necessarily reflect the improving standards of living, or higher status, as it is often difficult to ascertain status from the pottery evidence alone, but there is no reason to think that standards of living did not improve, as the presence of imported items such as figs alongside locally grown and collected fruits from gardens and orchards, and perhaps the need for a comprehensive toll list in 1299, surely hints.

In the broadest terms, assemblages from castles, even quite grand castles, differ little from those of adjacent towns. In the west midlands in particular, the relative rarity of Continental imports such as Saintonge ware compared with the greater numbers of imports found at coastal and riverine ports (and their immediate hinterlands) makes it harder to characterise one group or another as standing out from its neighbours. Furthermore, there is the question of how Continental imports in the west midlands should be perceived. Some idea of status can sometimes be gleaned from vessel function; less common vessel forms such as pipkins, skillets, and dripping trays, not in themselves particularly expensive items, confer status by inference. These vessels suggest either meat cookery and, in the case of dripping dishes, meat roasting, or a rather more sophisticated cuisine than simply a daily pottage. These more specialised cooking vessels were found on the Sandford Street sites (and on other Lichfield sites) but not in significant quantities. Whiteware pipkins were the most common, but dripping trays in a red fabric, of a later date, were also found. It is also the case that the more disposable income was available to a household, the more likely it was to purchase metal cooking pots, and these are the type of item that once broken tended to be recycled. The better pointer to a wealthier household is often the diet as shown by the faunal remains and preserved seeds. This is particularly true of early castle sites where, were it not for the information on diet, it would often be difficult to differentiate on the pottery evidence alone the lord's life from that of the meanest peasant. At both of the Sandford Street sites the faunal evidence does suggest a better diet with goose, duck, domestic fowl, and rabbit being consumed. This is the sort of fare that is rarely seen on rural sites. Further evidence of the consumption of fowl and fish was found in the latrine pit from 18–28 Sandford Street but it is unfortunate that this faunal material was not studied in detail. Nevertheless these remains and those of a variety of fruit and vegetables indicate a wholesome diet of someone averagely prosperous, as indeed the possession of a garderobe would suggest. The absence of fish bone at 15 Sandford Street could be interpreted in different ways; either fish was not consumed, which seems unlikely given the religious dietary requirement of the time, or the conditions for fish bone survival were not present. However, given that fish bone survived in the north Sandford Street garderobe it would be odd if of all the putative cesspits not one contained remains of this kind or indeed contained any fruit stones and pips. The conclusion would have to be, therefore, that the pits on 15 Sandford Street were neither dug for the disposal of cess nor contained cess in any great quantity, although that is not to say that no human waste was ever disposed of in them.

The scale and impact of Bishop Clinton's ambitions for the community of Lichfield and the landscape that they inhabited is perhaps not always appreciated. Terry Slater emphasised the minimal disruption of Clinton's project, but thereby perhaps overestimated its inferred integration into an existing settlement pattern. For instance, Sargent has shown that the division of land into plots on the Cross Keys site most probably post-dated the foundation of the planned town, contrary to what Slater had thought (Sargent 2013, 26). Rather, the Stowe Street and Lombard Street frontages saw the development of their burgrave plots in the later 12th and 13th centuries. On the other hand, Slater's postulated pre-urban settlement on Bird Street need not have been directly affected by the changes made before the 13th century. However, the flooding that created or enlarged Minster Pool appears to have intruded upon previously occupied land. The transformation of the landscape, with the formation of the pools, laying out of a town, promotion of commerce and revitalisation of the

cathedral and close reflects not only the seignorial aspirations and commercial opportunities of the 12th century, but arguably was also integral to Roger de Clinton's possible diocesan ambitions, that is, a programme aimed at re-establishing Lichfield as the main seat of the bishopric (cf. Lewis 2011, 75, for similar conclusions). It cannot be determined to what extent the bishop might have negotiated his urbanisation scheme with his tenants, the future burgesses, although analogy suggests that they would have been alive to the possibilities and could have been active participants in taking the project forward. If not in the 12th century, the expansion across Lichfield in the 13th and 14th centuries suggests that its inhabitants readily responded to the opportunities presented. Our understanding of Lichfield's development has greatly improved through archaeological excavations over the last three decades, such that we are now able to correct Carver's observations of 1982 and note that the town clearly did thrive in the later medieval period.

ACKNOWLEDGEMENTS

The archaeological recording at the Arts Centre in Bird Street was commissioned by Lichfield District Council (LDC) and carried out by staff of *Marches Archaeology*. Richard Stone extended his thanks to Sue Smith of LDC for her assistance throughout the project. The present authors would like to convey their thanks to several colleagues. We are grateful to Stuart Palmer of *Archaeology Warwickshire* for his kindness in making available the Post-Excavation Assessment following the 2015 investigations at the Hospital of St John the Baptist; the final report has not yet been published. Our thanks are also due to Professor Arno Verhoeven (University of Amsterdam), Jacqui Pearce (Museum of London), Dr Michiel Bartels, Stephen Moorhouse, John Cotter, and the late Sarah Jennings for their assistance. However, particular thanks are extended to Nick Tavener who has so generously shared his knowledge of the excavations and made a copy of his draft report available to the authors; and to Christopher Welch whose assistance in providing the information needed to bring these sites to publication has been invaluable. We are also grateful to Suzy Blake and Jon Goodwin for their generous assistance in producing figures 19 and 20.

BIBLIOGRAPHY

- | | | |
|---------------------------------------|------|---|
| Albarella, U. and Davis, S. J. M. | 1994 | <i>The Saxon and Medieval animal bones excavated 1985–1989 from West Cotton, Northamptonshire</i> (London: English Heritage, AML Report 17/94) |
| Anderson, S. (ed.) | 1998 | <i>Current and Recent Research in Osteoarchaeology</i> (Proceedings of the Third Meeting of the Osteoarchaeological Research Group) |
| Anon. | 1840 | <i>An enquiry into the history and influence of the Lichfield Waters – intended to shew the necessity of an immediate and final drainage of the Pools</i> (Lomax, Lichfield) |
| Armitage, P. L. | 1982 | <i>A System for ageing and sexing the Horncores of Cattle from British post-medieval sites (17th to early 18th century) with special reference to unimproved British Longhorn Cattle</i> , in Wilson, Grigson and Payne (eds) |
| Armitage, P. L. and Clutton-Brock, J. | 1976 | 'A System for Classification and Description of the Horncores of Cattle from Archaeological Sites', <i>Journal of Archaeological Science</i> , 3, 329–48. |
| Astill, G. and Grant, A. (eds) | 1988 | <i>The countryside of medieval England</i> (Blackwell) |
| Avery, B. W. | 1980 | <i>Soil Classification for England and Wales [Higher Categories]</i> (Soil Survey of England and Wales, Harpenden) |
| Baker, J. and Brothwell, D. | 1980 | <i>Animal diseases in archaeology</i> (London, Academic Press) |
| Baker, N. | 2017 | 'Town Plan Analysis of Birmingham Before 1800', Chapter 4 in Rátkai and Forster, 2017 |
| Barone, R. | 1980 | <i>Anatomia Comparata dei Mammiferi Domestici</i> , III: Splanchnologia (Bologna) |
| Bartels, M. | 1999 | <i>Steden in scherven: Vondsten uit beerputten in Deventer, Dordrecht, Nijmegen en Tiel (1250–1900)</i> , <i>Cities in sherds : finds from cesspits</i> |

- in Deventer, Dordrecht, Nijmegen and Tiel (1250–1900)*, Stichting Promotie Archeologie en de Rijksdienst voor het Oudheidkundig Bodemonderzoek (Volume 2, Catalogue)
- Bass, W. M. 1995 *Human Osteology: a laboratory and field manual* (4th edn, Missouri Archaeological Society, Missouri)
- Bassett, S. 1982 'Medieval Lichfield: A Topographical Review', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 93–121
- Bateman, J. and Redknap, M. 1986 *Coventry: Excavations on the Town Wall 1976–78* (Coventry Museums Monograph Series, no. 2)
- Baxter, I. L. 1996 'Medieval and early post-medieval horse bones from Market Harborough, Leicestershire, England, U K', *Circaea*, 11/2 (1996 for 1993), 65–79
- Baxter, I. L. 1998 'Species identification of equids from Western European archaeological deposits: methodologies, techniques and problems', in Anderson, S. (ed.), 3–17
- Baxter, I. L. 2000a 'The Animal Bones from The Arts Centre, Bird Street, Lichfield' (ACL 99A/B). Rreport prepared for *Marches Archaeology* (see Stone 1999c)
- Baxter, I. L. 2000b *The Animal Bones from 16–18 Harrison Street, Hereford* (unpublished report prepared for Archenfield Archaeology)
- Baxter, I. L. 2001a *The Animal Bones from Tan Yard, Bromyard, Herefordshire* (unpublished report prepared for Archenfield Archaeology)
- Baxter, I. L. 2001b *Hertford Central Part VI: Comparative Synthesis of the Animal Bones* (unpublished report prepared for Hertfordshire Archaeological Trust)
- Baxter, I. L. 2002 'Occipital Perforations in a Late Neolithic probable Aurochs (*Bos primigenius* Bojanus) Cranium from Letchworth, Hertfordshire, U. K.', *International Journal of Osteoarchaeology*, 12, 142–3
- BGS, 1984 British Geological Survey, *Solid and Drift sheet 154* (scale 1:50,000; Leicester)
- Blair, J. and Ramsay, N. 1991 *English Medieval Industries. Craftsmen, Techniques, Products* (London)
- Blinkhorn, P. W. 1996 *Policy report on Saxon and Medieval Ceramics in Northamptonshire* (internal report for Northamptonshire Heritage: January 1996)
- Boessneck, J. 1969 'Osteological Differences between Sheep (*Ovis aries* Linne) and Goat (*Capra hircus* Linne)', in Brothwell and Higgs (eds.) 1969, 331–59
- Brothwell, D. R. 1969 *Science in Archaeology* (London, Thames and Hudson)
- and Higgs, E. (eds)
- Brown, E. M. and Lockett, T. A. (eds) 1993 *Made in Liverpool: Liverpool pottery and porcelain 1700–1850* (Catalogue for the Seventh Exhibition from the Northern Ceramic Society, 27 June–19 September 1993, Walker Art Gallery, Liverpool, National Museums and Galleries on Merseyside)
- Buikstra, J. and Ubelaker, D. 1994 *Standard for data collection from human skeletal remains* (Arkansas Archaeological Survey Research Series no.44, Arkansas)
- Carver, M. O. H. (ed.) 1980 *Medieval Worcester: An Archaeological Framework – Reports, Surveys, Texts and Essays* (being *Transactions of the Worcestershire Archaeological Society*, 3rd series, 7)
- Carver, M. O. H. 1982a 'The Archaeology of Early Lichfield: an Inventory and Some Recent Results', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 1–12
- Carver, M. O. H. 1982b 'Excavations South of Lichfield Cathedral, 1976–77', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 35–69
- Cherry, J. 1985 'The fourth Gerald Dunning Memorial Lecture: Sex, Magic and Dr Gerald Dunning', *Medieval Ceramics*, 9, 5–20

- Clapham, A. R., Tutin, T. G. and Moore D. M. 1987 *Flora of the British Isles* (3rd edition, Cambridge University Press)
- Clason, A. T. (ed.) 1975 *Archaeozoological studies* (Amsterdam and Oxford: North-Holland/ New York: Elsevier)
- Cohen, A. and Serjeantson, D. 1986 *A Manual for the Identification of Bird Bones from Archaeological Sites* (London, A. Cohen)
- Connor, A. and Buckley R. 1999 *Roman and Medieval Occupation in Causeway Lane, Leicester: Excavations 1980 and 1991* (Leicester Archaeology Monographs no.5, Leicester University Press)
- Cotter, J. P. 2000 *Colchester Archaeological Report 7: The post-Roman pottery from excavations in Colchester 1971–85* (Colchester Archaeological Trust Ltd and English Heritage)
- Coutts, C. and Jones, C. 1998 *Archaeological Evaluation at the Church of St John the Baptist, Wolvey, Warwickshire* (unnumbered Warwickshire Museum Archive Report, May 1998)
- Cracknell, S. 1990 'Bridge End, Warwick: Archaeological excavation of a medieval street frontage', *Transactions of the Birmingham and Warwickshire Archaeological Society*, 95 (for 1987–8), 17–72
- Cronne, H. A. and Davis, R. H. C. (eds) 1968 *Regesta Regum Anglo-Normannorum 1066–1154*, III
- Dalton, P., Insley, C. and Wilkinson, P. J. (eds) 2011 *Cathedrals, Communities and Conflict in the Anglo-Norman World* (Woodbridge)
- Daniell, C. 1997 *Death and Burial in Medieval England* (Routledge, London)
- Davis, S. J. M. 1980 'Late Pleistocene and Holocene equid remains from Israel', *Zoological Journal of the Linnean Society*, 70/3, 289–312
- Davis, S. J. M. 1992 *A rapid method for recording information about mammal bones from archaeological sites* (London, English Heritage AML Report 19/92)
- Davis, S. J. M. 1997 'The Agricultural Revolution in England: some zoo-archaeological evidence', *Anthropozoologica*, 25-26, 413–28
- Denham, V. 2001 'The Saxon and Medieval Pottery' in *Excavation of the deserted medieval village of Coton at Coton Park, Rugby, Warwickshire 1998* (unpublished typescript prepared for Northamptonshire Archaeology)
- Driesch, A. von den 1976 *A guide to the measurement of animal bones from archaeological sites* (Peabody Museum Bulletin 1, Cambridge Mass., Harvard University)
- Dyer, A. 2000 'Urban decline' in England, 1377–1525', in Slater (ed) 2000, 266–288
- Dyer, C. 2002 'The urbanizing of Staffordshire: the first phases', *Staffordshire Studies* 14, 1–31 (Keele University)
- Eastwood, T., Cantrill, T. C., and Whitehead, T. H. 1923 *The Geology of the Country Around Coventry* (Memoirs of the British Geological Survey; HMSO, London)
- Eisenmann, V. 1980 *Les Chevaux (Equus sensu lato) fossiles et actuels: crânes et dents jugales supérieures* (Cahiers de Paléontologie, Paris, Éditions du CNRS)
- Eisenmann, V. 1981 *Etude des dents jugales inférieures des Equus (Mammalia, Perissodactyla) actuels et fossiles* : Palaeovertebrata 10, 127–226
- Eisenmann, V. 1986 'Comparative anatomy of modern and fossil horses, half-asses and asses', in Meadow and Uerpmann (eds), 67–116
- English Heritage 2001 *Archaeometallurgy* (Centre for Archaeology Guidelines, 01)
- Evans, C. 1982 'Whether Pits be Vats: some further interpretations of subterranean features', *Bulletin of the Institute of Archaeology*, 19, 171–6
- Evans, D. H. 1985 'The Post-Medieval Pottery' in Evans, D. H. and Heslop, D.H. 1985, 72–3
- Evans, D. H. and Heslop, D. H. 1985 'Two Medieval Sites at Yarm', *Yorkshire Archaeological Journal*, 57, 43–77

- Ford, D. A. 1995 *Medieval Pottery in Staffordshire, AD800–1600: A Review* (Staffordshire Archaeological Studies, no. 7)
- Gidney, L. 1999 'The Animal Bones', in Connor, A. and Buckley R., 1999, 310–29
- Giles, K. and Dyer C. (eds) 2005 *Town and Country in the Middle Ages: Contrasts, Contacts and Interconnections, 1100–1500* (Society for Medieval Archaeology, Monograph Series 22)
- Goacher, H., Coutts, C., and Palmer, S. 2016 *The Hospital of St John the Baptist, Lichfield, Staffordshire. Post-Excavation Assessment* (Archaeology Warwickshire Report no. 1675)
- Gould, J. 1973 'Finds of medieval leather and pottery from near Minster Pool, Lichfield, Staffs', *Transactions of the South Staffordshire Archaeological and Historical Society*, XIV, 51–60
- Gould, J. 1976a *Lichfield: Archaeology and Development* (WEMRAC)
- Gould, J. 1976b 'The Twelfth Century Water Supply to Lichfield Close', *Antiquaries Journal*, 56, Issue 1, 73 – 9
- Grant, A. 1982 'The Use of Tooth Wear as a Guide to the Age of Domestic Ungulates', 91–108, in Wilson, Grigson, and Payne (eds)
- Greenslade, M. W. (ed.) 1970 *A History of the County of Stafford*, III (Victoria History of the Counties of England, London)
- Greenslade, M. W. (ed.) 1990 *A History of the County of Staffordshire*, XIV: *Lichfield*, (Victoria History of the Counties of England, London)
- Greig, J. 1988 'Plant resources', in Astill and Grant (eds)
- Grew F. and de Neergaard, M. 1988 *Medieval Finds from Excavations in London: 2. Shoes and Pattens* (HMSO, London)
- Grigson, C. 1976 'The Craniology and Relationships of Four Species of Bos. 3. Basic Craniology: Bos taurus L. Sagittal profiles and other Non-measurable Characters', *Journal of Archaeological Science*, 3, 115–136
- Hartley, D. 1985 *Food in England* (Futura)
- Harwood, T. 1806 *The History and Antiquities of the Church and City of Lichfield* (London)
- Hill, J. 1638 'A true and perfect platforme of the lands ad possessions commonly called the Friars of Lichfield', in Harwood, 1806.
- Hodder, M. A. 1991 'Excavation at Sandwell Priory and Hall, 1982–88', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXXI
- Houston, M. A. 1939 *Medieval Costume on England and France* (3rd impression, 1965; Adam and Charles Black, London)
- Hummler, M. R. 1982 'An Excavation in Medieval Lichfield New Town', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 85–92
- Hunt, J. 2007 *Newcastle-under-Lyme. Historic Character Assessment Report, Staffordshire Extensive Urban Survey* (unpublished report for Staffordshire County Council)
- Hunt, J. 2011 'The medieval period', in Watt (ed.)
- Hurst, J. D. 1992 'Pottery', in Woodiwiss, S. (ed.), 132–157
- Hurst, J. D. and Rees, H. 1992 'Pottery fabrics; a multi-period series for the County of Hereford and Worcester', in Woodiwiss, S. (ed.), 200–209
- Hurst, J. G. 1986 *Pottery produced and traded in north-west Europe 1350–1650*.
- Neal, D. S. and van Beuningen, H. J. E. [1987] *Rotterdam papers VI: a contribution to medieval archaeology* (Rotterdam, Museum Boymans-van Beuningen)
- Jackson, R. 2000 *The Roman settlement of 'Ariconium' near Weston-under-Penyard, Herefordshire. An assessment and synthesis of the Evidence* (Archaeological Service, Worcestershire County Council, Report 833)

- Jeffries, N. 2014 'Would I were in an alehouse in London!': a finds assemblage sealed by the Great Fire from Rood Lane, City of London', *Post-Medieval Archaeology*, 48/2, 261–84
- Featherby, R. and Wroe-Brown, R. 1998 'Distinguishing food from fodder in the archaeobotanical record', *Environmental Archaeology*, 1, 95–98
- Kiesewalter, L. 1888 *Skelettmessungen an Pferden als Beitrag zur theoretischen Grundlage der Beurteilungslehre des Pferdes* (dissertation, Leipzig)
- Kettle, A. J. (ed.) 1976 *A List of Families in the Archdeaconry of Stafford, 1532–3* (Collections for a History of Staffordshire, 4th series, 8)
- Kilmurry, K. 1980 *The Pottery Industry of Stamford, Lincs. c. AD 850–1250* (BAR British Series 84, British Archaeological Reports, Oxford)
- Kratochvil, Z. 1969 'Species criteria on the distal section of the tibia in *Ovis ammon* F. aries L. and *Capra aegagrus* F. hircus L', *Acta Veterinaria* (Brno), 38, 483–90.
- Laithwaite, P. 1934 'The Lichfield Friary', *Transactions of the Birmingham Archaeological Society*, 58, 53–5
- Langley, D. 2011 *Lichfield Historic Character Assessment, Staffordshire Extensive Urban Survey* (Staffordshire County Council, document no. EC4609. R06)
- Langton, B. 1995 *No. 1 Bird Street, Lichfield, Staffordshire: Archaeological Evaluation* (Cotswold Archaeological Trust, Report 95277)
- Lewis, C. P. 2011 'Communities, Conflict and Episcopal Policy in the Diocese of Lichfield, 1050–1150', in Dalton, Insley and Wilkinson (eds)
- Lilley, K. D. 2000 'Decline or decay? Urban landscapes in late-medieval England', in Slater (ed.) 2000, 235–65
- Limbrey, S. 1975 *Soil Science and Archaeology* (Studies in Archaeological Science; London, Academic Press)
- Litherland, S., Ramsey, E. and Ellis, P. 2009 'The archaeology of the Severn Trent Southam Area Rationalisation Scheme', *Transactions of the Birmingham and Warwickshire Archaeological Society*, 112 (for 2008)
- Loe, L. and Rogers, J. 1994 *Report on the Human bones from Lichfield Cathedral, South Quire Aisle and North Quire Aisle* (Bristol, Palaeopathology Study Group)
- Luff, R. M. and Moreno García, M. 1995 'Killing Cats in the Medieval Period: An unusual episode in the history of Cambridge, England', *Archaeofauna*, 4, 93–114
- Martin, A. R. 1937 *Franciscan Architecture in England* (British Society of Franciscan Studies, XVIII)
- Martin, C. 1999 *Unpublished site notes on observation pits at Lichfield Arts Centre* (Ove Arup and Partners)
- MacDonogh, K. 1999 *Reigning Cats and Dogs* (London, Fourth Estate)
- Manaseryan, N. H., Dobney, K., and Ervynck, A. 1999 'On the Causes of Perforations in Archaeological Domestic Cattle Skulls: New Evidence', *International Journal of Osteoarchaeology*, 9, 74–5
- Matolcsi, J. 1970 *Historische Erforschung der Körpergröße des Rindes auf Grund von ungarischem Knochenmaterial* (Zeitschr. f. Tierzüchtg. u. Züchtungsbiol., Hamburg 87), 89–137
- Mayes, P. and Scott, K. 1984 *Pottery Kilns at Chilvers Coton, Nuneaton*. (Society for Medieval Archaeology, Monograph Series, no. 10)
- Mays, S. 1998 *The Archaeology of Human Bones* (London, Routledge)
- Meadow, R. H. and Uerpmann, H-P. (eds) 1986 *Equids in the Ancient World*, vol. I (Beihefte zum Tübinger Atlas des Vorderen Orients, Reihe A 19/1, Wiesbaden: Dr. Ludwig Reichart Verlag)
- Meadow, R. H. and Uerpmann, H-P. (eds) 1991 *Equids in the Ancient World*, vol. 2 (Beihefte zum Tübinger Atlas des Vorderen Orients, Reihe A 19/2, Wiesbaden: Dr. Ludwig Reichart Verlag)
- Meeson, R. A. 2000 *St John's Hospital, Lichfield. Archaeological watching brief* (Report no. 00/18)

- Merrifield, R. 1987 *The Archaeology of Ritual and Magic* (New Amsterdam, New York)
- Moorhouse S. 1970 'Notes on three medieval pottery curios from Farnham Castle Keep, Surrey', *Farnham Museum Society Quarterly Newsletter*, II/no. 8 (December), 4–5
- Nichol, K. and Rátkai, S. 2004 'Excavations on the north side of Sandford Street, Lichfield, Staffordshire 2000', *Transactions of the Staffordshire Archaeological and Historical Society*, XL, 58–121
- Noddle, B. A. 1985 'The animal bones', 84–95, in Shoesmith 1985
- Ordnance Survey 1882 Staffordshire sheet 52.15.12 (1st edition, scale 1:500)
- Palmer, S. C. 2003 *Cawston, Dunchurch, Warwickshire: Excavations at a Medieval Grange on the Rugby Western Ring Main (Phase 1) in 1999 for Severn Trent Water* (Warwickshire Museum Field Services Report 0300, December 2003: full report unpublished)
- Patrick, C. and Rátkai, S. 2009 *The Bull Ring Uncovered. Excavations at Edgbaston Street, Moor Street, Park Street and The Row, Birmingham, 1997–2001* (Oxbow)
- Payne, S. 1985 'Morphological distinctions between the mandibular teeth of young sheep, Ovis, and goats, Capra', *Journal of Archaeological Science*, 12, 139–47
- Payne, S. 1991 'Early Holocene Equids from Tall-I-Mushki (Iran) and Can Hasan III (Turkey)', in Meadow and Uerpmann (eds), 132–64
- Payne, S. and Bull, G. 1988 'Components of variation in measurements of pig bones and teeth, and the use of measurements to distinguish wild from domestic pig remains', *Archaeozoologia*, 2, 27–65
- Pearson, M. P., Andrews, G. and Wainwright, G. 1991 *Exploring Our Past: Strategies for the Archaeology of England* (English Heritage)
- Pearson, E. 1999 *Environmental remains from Salvage Recording at The Arts Centre, Lichfield, Staffordshire* (Worcestershire County Council Archaeological Service, internal report 747)
- Perring, D. 2002 *Town and Country in England: frameworks for archaeological research* (Council for British Archaeology Research Report 134)
- Platt, C. 1978 *Medieval England. A Social History and Archaeology from the Conquest to 1600 AD* (London, Routledge; reprinted 1988)
- Prummel, W. 1989 'Appendix to Atlas for identification of foetal skeletal elements of Cattle, Horse, Sheep and Pig', *Archaeozoologia*, 3 (1/2), 71–8
- Ragg, J. M. *et al.* 1984 *Soils and their use in midland and western England* (Soil Survey of England and Wales, 12)
- Ramsey, E. 2002 *Junction of Sandford Street and Swan Road, Lichfield, Staffordshire. An Archaeological Evaluation 2002* (Birmingham University Field Archaeology Unit Project no. 986)
- Rátkai, S. 1990 'The Medieval Pottery', in Cracknell, S.
- Rátkai, S. 1998 'The pottery', in Coutts, C. and Jones, C.
- Rátkai, S. 2000 'The pottery' (unpublished report for Archenfield Archaeology in Sherlock, H. 2000)
- Rátkai, S. 2003 'The pottery', in Palmer, S. C. 2003
- Rátkai, S. 2005 'The medieval and post-medieval pottery', in Woodfield, C., 315–25
- Rátkai, S. 2007 'The Pottery', in Soden, I. (ed.)
- Rátkai, S. 2009a 'The medieval and post-medieval pottery', in Patrick, C. and Rátkai, S. 2009
- Rátkai, S. 2009b 'The medieval and post-medieval pottery', in Litherland, S., Ramsey, E. and Ellis, P. 2009, 73–124 (pp. 91–103)
- Rátkai, S. and Forster, A. 2017 *Archaeology and Development in Birmingham City Centre, AD1100–1900* (unpublished project report (May 2007–August 2008), York: Archaeology Data Service [distributor] <https://doi.org/10.5284/1046277>)
- Redknap, M. 1985 'Twelfth and Thirteenth Century Coventry Wares', *Medieval Ceramics*, 9, 65–78

- Resnick, D. and Niwayama, G. 1995 *Diagnosis of Bone and Joint Disorders* (3rd edn, W. B. Saunders, Philadelphia)
- Roberts, R. 2000 'Ironworking residues' (draft), in Jackson, R. 2000
- Rogers, J. and Waldron, T. 1994 *A Field Guide to Joint Disease in Archaeology* (Wiley and Sons, New York)
- Rylatt, M. and Stokes, M. A. 1986 *The Excavations on Broadgate East, Coventry* (Coventry Museums Monograph Series, no. 5)
- Sargent, A. 2013 'Early Medieval Lichfield: A Reassessment', *Transactions of the Staffordshire Archaeological and Historical Society*, XLVI, 1–32
- Schmid, E. 1972 *Atlas of Animal Bones for Prehistorians, Archaeologists and Quaternary Geologists* (Amsterdam, London and New York, Elsevier)
- Schofield, J. 1988 'Burial types and burial practices', in White, W.
- Schofield, J. and Vince, A. 1994 *Medieval Towns* (Leicester University Press)
- Serjeantson, D. 1989 'Animal Remains and the Tanning Trade', in Serjeantson and Waldron (eds), 1989, 129–46.
- Serjeantson, D. and Waldron, T. (eds) 1989 *Diet and Crafts in Towns* (British Archaeological Reports, British Series 199, Oxford)
- Sherlock, R. J. 1957 'Excavations at Deritend', *Transactions of the Birmingham and Warwickshire Archaeological Society*, 73, 109–114
- Sherlock, H. 2000 *Excavations at Harrison Street, Hereford* (unpublished Hereford City Excavations, V)
- Shoesmith, R. 1985 *Hereford City Excavations. Volume 3. The Finds* (Council for British Archaeology Research Report no. 56, London)
- Sisson, S. and Grossman, J. D. 1953 *The Anatomy of the Domestic Animals* (W. B. Saunders, Philadelphia and London)
- Slager, S. and van der Wetering, H. T. J. 1977 'Soil Formation in Archaeological Pits and Adjacent Loess Soils in Southern Germany', *Journal of Archaeological Science*, 4, 259–67
- Slater, T. R. 1985 'The urban hierarchy in medieval Staffordshire', *Journal of Historical Geography*, 11/2, 115–37
- Slater, T. R. 1986 'Topography and Planning of Medieval Lichfield: A critique', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXVI, 11–35
- Slater, T. R. (ed.) 2000 *Towns in Decline AD 100–1600* (London)
- Slater, T. R. 2005 'Plan Characteristics of Small Boroughs and Market Settlements: Evidence from the Midlands', in Giles and Dyer 2005
- Smith G. H. 1979 'The excavation of the Hospital of St Mary of Ospringe, commonly called Maison Dieu', *Archaeologia Cantiana*, XCV, 81–184
- Snape, J. 1781 *A plan of the Close and City of Lichfield from actual survey*
- Soden, I. (ed.) 2007 *Stafford Castle: Survey, Excavation and Research, 1978–98, Volume 2: Excavations* (Stafford Borough Council)
- Speed, J. 1610 *Stafford Countie and Towne with the ancient Citie Lichfield described*, in *The theatre of the empire of Great Britaine: presenting an exact geography of the kingdoms of England, Scotland, Ireland* (London 1611/1612)
- Stone, R. 1999a *15, Sandford Street, Lichfield, Staffordshire. Report on a Desk-based Assessment* (Marches Archaeology Series, Report 058, February 1999)
- Stone, R. *et al.* 1999b *15, Sandford Street, Lichfield, Staffordshire. Report on an evaluation excavation* (Marches Archaeology Series, Report 064, April 1999)
- Stone, R. 1999c *The Arts Centre, Bird Street, Lichfield, Staffordshire. Report on an evaluation excavation* (Marches Archaeology Series, Report 066)

- Stone, R. 1999d *Report on a Desk-based Assessment at Land to the rear of 17–21 Greenhill, Lichfield, Staffordshire* (Marches Archaeology Series, Report 067)
- Stone, R. 1999e *Land on the northern side of Sandford Street, Lichfield, Staffordshire. Report on an evaluation excavation* (Marches Archaeology Series, Report 083, August 1999)
- Stone, R. 1999f *Land to the rear of 17–21 Greenhill, Lichfield, Staffordshire. NGR: SK 121.096. Report on an evaluation excavation* (Marches Archaeology Series, Report 093)
- Stone, R. 1999g *1 Bird Street, Lichfield, Staffordshire. NGR: SK 1162 0940. Report on a Watching Brief. November 1999* (Marches Archaeology Series, Report 103)
- Stone, R. and Wainwright, J. 1999 *The Arts Centre, Bird Street, Lichfield, Staffordshire. Report on salvage recording* (Marches Archaeology Series, Report 062)
- Tavener, N. 2000 *The Civic Hall, Castle Dyke, Lichfield, Staffordshire. A report on a desk-based archaeological assessment* (Marches Archaeology Series, Report 156)
- Tavener, N. and Stone, R. 2001 *9–21 Greenhill, Lichfield, Staffordshire. Assessment report on the excavation, watching brief and building recording. NGR: SK 121.096* (Marches Archaeology Series, Report 178)
- Taylor, C. C. 1969 'The Origins of Lichfield, Staffordshire', *Transactions of the South Staffordshire Archaeological and Historical Society*, X, 43–52
- Teichert, M. 1975 'Osteometrische Untersuchungen zur Berechnung der Widerristhöhe bei Schafen', in Clason 1975, 51–69
- Thomas, S. 1986a 'Leather Report', in Bateman and Redknap 1986, 78–91
- Thomas, S. 1986b 'Leather', in Rylatt and Stokes 1986, 115–121
- Thomson, R. and Mould, Q. (eds) 2011 *Leather Tanneries: The Archaeological Evidence* (Archaeotype, Exeter)
- Thorn, J. 1979 'The Pottery', in Smith G. H., 154–83
- Tuck, A. 2018 'A Medieval Boundary of the Former Franciscan Friary, Lichfield, Staffs', *Transactions of the Staffordshire Archaeological and Historical Society*, L, 47–57
- Wainwright, J. 2002 *The Swan Hotel, Lichfield, Staffordshire. A Report on an Archaeological Evaluation* (Marches Archaeology Series, Report 228)
- Walton, P. 1991 'Textiles', in Blair and Ramsay (eds), 319–54
- Watson, S. and Pearce, J. 2010 'Taverns and other entertainments in the City of London? Seventeenth and 18th-century finds from excavations at Paternoster Square', *Post-Medieval Archaeology*, 44/1, 172–208
- Watt, S. (ed.) 2011 *The Archaeology of the West Midlands. A Framework for Research* (Oxbow, Oxford)
- Welch, C. 1991 *The Franciscan Friary, Lichfield: A Reassessment* (Department of planning and Economic Development, Staffordshire County Council)
- Wharton, H. 1691 *Anglia Sacra*, volume I (London)
- White, W. 1988 *The Cemetery of St Nicholas Shambles* (London and Middlesex Archaeological Society)
- Williams, D. F. 1984 'Petrological examination of pottery fabric', in Mayes and Scott, 196–7
- Wilson, R., Grigson, C., and Payne, S. (eds) 1982 *Ageing and Sexing Animal Bones from Archaeological Sites* (British Archaeological Reports, British Series 109, Oxford), 37–54
- Woodfield, C. 1981 'Finds from the Free Grammar School at the Whitefriars, Coventry c. 1545–1557/58', *Post-Medieval Archaeology*, 15, 81–159
- Woodfield, C. 2005 *The Church of Our Lady of Mount Carmel and some conventual buildings at the Whitefriars, Coventry* (British Archaeological Reports, British Series 389, Oxford)

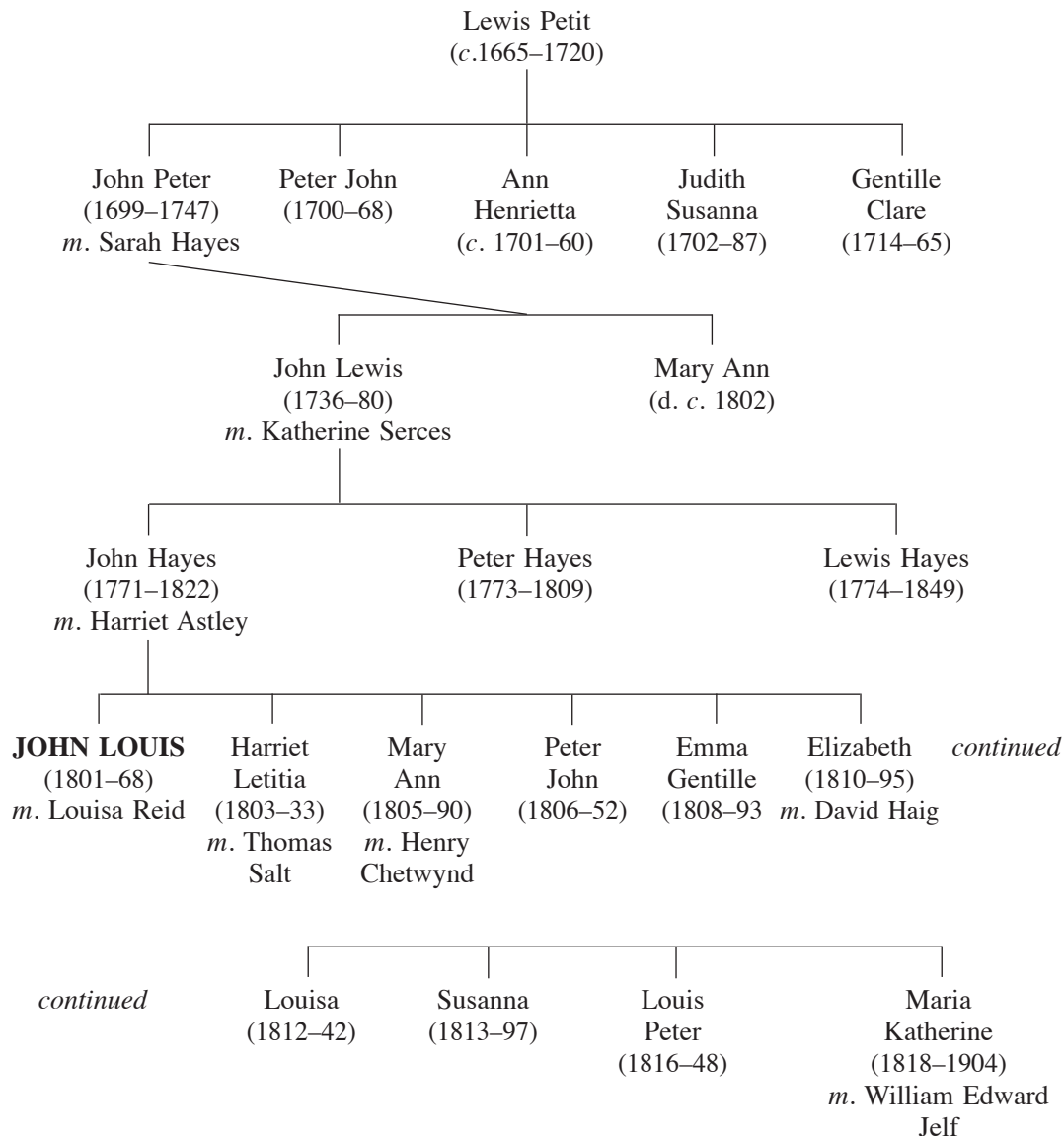
- Woodiwiss, S. (ed.) 1992 *Iron Age and Roman salt production and the medieval town of Droitwich* (Council for British Archaeology Research Report no. 81)
- Woodland, R. R. 1981 'The Pottery', in Mellor, J. E. and Pearce, T. *The Austin Friars, Leicester* (Council for British Archaeology Research Report no. 35), 81–129
- Wright, S. M. 1987 'Much Park Street, Coventry: the development of a medieval street. Excavations 1970–74', *Transactions of the Birmingham and Warwickshire Archaeological Society*, 92, 1–132
- Wrottesley, G. (ed.) 1886 'Staffordshire Lay Subsidy, 1327', *Staffordshire Historical Collections*, VII (i), 195–255
- Zohary, D. and Hopf, M. 1994 *Domestication of plants in the Old World* (2nd edition, Clarendon Press, Oxford), 64–5

JOHN LOUIS PETIT (1801–68) ARCHITECTURAL WRITER AND ARTIST

MARGARET O'SULLIVAN*

The Petits, originally from near Caen in Normandy, were significant figures in Staffordshire from the early 18th until the late 19th century, the best known member of the family being the Reverend John Louis Petit,¹ an architectural commentator and topographical artist representative of the 'Church Artistic', a term used for amateur painters from about 1750 to 1900 who were also Anglican clergymen.² Many clerics at this time had both the level of education and the financial independence to pursue interests such as drawing and painting as well as historical enquiry, and in doing so they made a distinctive contribution beyond that of their calling. John Louis Petit was not the only example in Staffordshire; others included Stebbing Shaw (1762–1802),³ whose history of the county was illustrated in part with engravings taken from his own drawings,⁴ and Thomas Gisborne (1758–1846), curate of Barton-under-Needwood from 1783. Gisborne, a friend of the artist Joseph Wright (1734–97), was the subject with his wife of a portrait by Wright in 1786, showing him holding his portfolio and pointing to a rural scene he was drawing. Gisborne also accompanied Wright on a sketching party to the Lake District in 1794.⁵ Moreover, Petit's friend and collaborator, John Morewood Gresley (1816–66), served as curate and rector in the family living of Seal in South Derbyshire and was a leading light in the Anastatic Drawing Society to whose journal Petit contributed illustrations from 1855.⁶ Petit was most similar to Stebbing Shaw in that his drawings primarily served a practical purpose as records of architectural details, especially of church buildings, and as *aides mémoires* for illustrations for his lectures and published works. On one research trip he explained 'I fairly attack some churches with a view to either a paper or a few drawings to lie about the table of the meeting',⁷ and his colleague Philip Henry Delamotte commented that 'it must be remembered that [Petit's] object was the collecting of a large number of subjects for the purpose of having them before him when writing'.⁸ Petit's approach resembled that of John Ruskin (1819–1900), who 'never considered himself an artist, emphasizing always that he drew in order to gain certain facts'.⁹

- 1 *An earlier version of this article was deposited in the William Salt Library [hereafter WSL], Stafford, in 2016. My interest in the Petit family and John Louis Petit came initially from a painting by a still unidentified artist of St Mary's church, Stafford before its restoration by George Gilbert Scott, and then in Petit's disagreement with Scott's proposals; this led to further research. Guy Braithwaite, 'John Louis Petit, 1801–68' (under revision), *Oxford Dictionary of National Biography* [hereafter *ODNB*] (using the online version, as in all further *ODNB* references). A photograph of Petit in old age is in the WSL, Petit/John/L.
- 2 H. L. Mallalieu, *Understanding Watercolours* (Antique Collectors' Club, 1985), 106. See also see Kim Sloan, 'A Noble Art': *Amateur Artists and Drawing Masters, c.1600–1800* (British Museum, 2000) [hereafter Sloan, 'Noble Art'], 171–211.
- 3 *History and Antiquities of Staffordshire* (2 vols, 1798 and 1801; repr. 1976). With his friend Samuel Egerton Brydges, Shaw also published *The Topographer* (4 vols, 1789–92) and *Topographical Miscellanies* (7 issues, 1792). The probate of Stebbing Shaw's will is in The National Archives [hereafter TNA], PROB 11/1383/72; most of Shaw's papers were collected by the antiquary William Salt (1808–63) and are now in the WSL. See also M. W. Greenslade, 'Staffordshire', in *English County Histories: a Guide* ed. C. R. J. Currie and C. P. Lewis (Alan Sutton, 1994) [hereafter *County Histories*], 359–61.
- 4 See WSL, *Staffordshire Views* [hereafter SV], viewable on the Staffordshire Past Track website: www.staffspasttrack.org.uk
- 5 See Clergy of Church of England database [hereafter CoCEd] (previously available online at theclergydatabase.org.uk). For Thomas Gisborne as an artist, see Sloan, 'Noble Art', 175–6, 196–7, and Stephen Daniels, *Joseph Wright* (Princeton University Press, 1999) [hereafter Daniels, *Wright*], 4, 72–5, 78. A painting by Gisborne of 'Darley Oaks in Needwood Forest' was sold by Sotheby's in 1997. The Gisbornes were connected by marriage with the Astleys of Dukinfield Lodge, the family of J. L. Petit's mother, Harriet Astley: see landedfamilies.blogspot.com (under Astley).
- 6 William White, *History, Gazetteer and Directory of Leicestershire, etc.* (1846), 356. John Morewood Gresley, a founder member from 1855–60 of the Leicestershire Archaeological and Architectural Society, published *A Collection of Sermons and Writings, Upon Archaeological, Architectural, and Other Subjects* in 1866, and edited the prints published by the Anastatic Drawing Society, 1855–63. Anastatic copies were cheaply produced facsimiles of drawings or text, the process being promoted from the 1840s by the scientist Michael Faraday, among others. The Ilam Anastatic Drawing Society was a similar later group, one of whose editors was the antiquary Llewellynn Jewitt (1816–86). The WSL has several examples of anastatic copies of Petit's drawings: e.g. Leigh church: SV V.1356b, and Pattingham church: SV VII.156. J. M. Gresley's family history papers are in the Bodleian Library, Oxford, GB.161 MSS. Eng. Hist.b.153–70. See also Falconer Madan, 'The Gresleys of Drakelow', *Collections for a History of Staffordshire* (William Salt Archaeological Society, later Staffordshire Record Society), new series, I (1898), 1–355 (esp. 122–3), and *The Gresleys of Drakelow* (privately printed, 1899).
- 7 Northamptonshire Archives [hereafter NA], Hartshorne papers E/242, letter from J. L. Petit, 1844.
- 8 P. H. Delamotte, *The Art of Sketching from Nature* (1871; 2nd edn 1888) [hereafter *Sketching*], 6. See also illustrations of Petit's sketches: *Sketching*, 46 and plate XV.
- 9 Robert Hewison, 'John Ruskin, 1819–1900', *ODNB*.



PETIT FAMILY TREE

Family and early life

Petit's background was not typical. While clerical painters were sometimes younger sons of gentry or county families, Petit — as his name suggests — was not of English descent, as his family were Huguenot immigrants and refugees who had left France after the Revocation of the Edict of Nantes in 1685, fearing persecution for their Protestant faith. In England they chose professions in which able men could rise — the military, medicine, and the law. John Louis's great-great-grandfather Lewis Petit (c.1665–1720)¹⁰ enlisted in the British army as a military engineer, becoming a Brigadier General and in 1708 Lieutenant Governor of Minorca. His eldest son John Peter (1699–1747), John

¹⁰ He died at Naples where he is buried; his will, dated 4 May and proved 9 November 1720, is TNA, PROB 11/576/378. The family were said to have originated in Etans near Caen in Normandy. Lewis Petit's widow, Mariana, died at Wolverhampton in 1743 and was buried at Shareshill; her will, dated 6 May 1737, was proved on 22 July 1743: TNA, PROB 11/728/97. Lewis and Mariana had five children: two sons, John Peter and Peter John, and three daughters, Ann Henrietta (d. 1760, will proved 25 November 1760); Judith Susanna (d. 1787, buried at St Anne's church, Soho, wife of John Robert de Blaguy of Dean St., Soho); and Gentile Clare (1714–1765), also buried at St Anne's (her will, proved on 1 October 1766, is TNA, PROB/11/923/18). Soho Square is the location of the French Protestant Church which welcomed Huguenot refugees. See also WSL, Petit pedigree, 1728–1849 (S.MS 292/1).

Louis's great-grandfather, also joined the army, reaching the rank of captain, as did his younger son Peter John (1700–68).¹¹ John Louis's grandfather, John Lewis Petit (1736–80), qualified as a physician, became a successful doctor at St George's and St Bartholomew's Hospitals in London and a fellow of the Royal Society.¹² John Louis's father, John Hayes Petit (1771–1822), began by studying law,¹³ but was the first of the family to opt to be a Church of England clergyman,¹⁴ while his younger brothers (John Louis's uncles) Peter Hayes Petit (1773–1809) and Louis Hayes Petit (1774–1849) were, respectively, an army colonel (35th Regiment of Infantry) who died of wounds following the siege of Flushing during the Walcheren campaign in 1809,¹⁵ and a successful London barrister who gave up his legal practice to become Member of Parliament for Ripon in Yorkshire from 1827 to 1832.¹⁶

By the time of John Louis's birth in 1801, the family were solidly middle-class. An important turning-point, both in their connection with the West Midlands and in their fortunes, was the advantageous marriage in 1727 of John Peter Petit to Sarah Hayes of Wolverhampton (Staffs.), daughter of an attorney, John Hayes.¹⁷ From about 1743 John Peter lived at Little Aston Hall in Shenstone (Staffs.),¹⁸ and, among other property in the locality, he owned the Angel Inn in Wolverhampton and Saredon Hall Farm in Shareshill (Staffs.);¹⁹ the family's long association with Shareshill began with the purchase of this farm.²⁰ More importantly, the Staffordshire Petits were well placed when the local iron industry was transformed following the innovations from the late 1750s onwards of John Wilkinson (1728–1808), the great ironmaster of Bradley near Bilston.²¹ 'Soon the district around Bilston, Wolverhampton, Dudley, Darlaston and Wednesbury ... was bristling with mines, forges, slitting-mills, foundries, naileries and other workshops'.²² The family possessed a sizeable estate in Ettingshall between Sedgley and Bilston which produced large revenues from coal, iron

11 Both John Peter and Peter John Petit served at Minorca during their father's lifetime and afterwards. John Peter Petit died at Little Aston and was buried at Shareshill; his will, proved on 27 August 1747, is TNA, PROB 11/756/281; property bequeathed included Saredon Hall Farm, Shareshill; Acton Farm, Acton Trussell; other lands at Saredon purchased from Christopher Sanders; and Culwell Close in Wolverhampton (all Staffs.). After his death, his widow Sarah moved to London where she died in 1766, but she too was buried at Shareshill. Her will, proved on 24 April 1766, is TNA, PROB 11/918/165 and includes a bequest of £1000 to her daughter Mary Ann Petit whose own will, proved on 1 February 1803, is TNA, PROB 11/1387/3. Among other bequests, Mary Ann left £100 to her 'dear little godson [and great-nephew] John Louis Petit'. Peter John Petit also died in London and was buried at St Anne's, Soho; his will, proved on 27 September 1768, is TNA, PROB 11/942/232.

12 John Lewis Petit was born in Wolverhampton and died in London; he too was buried at St Anne's, Soho. His will, proved on 3 June 1780, is TNA, PROB 11/1066/134 and specifies 'the family vault at Shareshill' as his burial place should he die in Staffordshire, a proviso repeated in the will of his sister Mary Ann Petit. As well as a moiety of his estate in 'Etensor' [Ettingshall] Park (Staffs.), bequeathed in succession to his three sons, lands in Herefordshire and in Radnorshire and Brecknockshire (Breconshire) in Wales were left in trust to benefit his wife, with remainder to his sister Mary Ann. John Lewis had in 1769 married Katherine Letitia Serces who died at Donington (Shrops.) in 1810 and was buried at Shareshill; her will, proved on 9 May 1810 (TNA, PROB 11/1511/151), comprises legacies of money and personal property to her sons Louis Hayes Petit and John Hayes Petit and to the latter's son (her eldest grandson) John Louis Petit.

13 J. H. Petit was admitted to Lincoln's Inn in June 1789.

14 CoCEd. He was ordained on 23 September 1798.

15 Peter Hayes Petit was born in Westminster and was buried at Deal (Kent); his will, proved on 14 September 1809, is TNA, PROB 11/1503/147; bequests of canal navigation shares (including for the Staffs. and Worcs. Canal) are made to his mother Katherine Letitia Petit and his brothers John Hayes Petit and Louis Hayes Petit.

16 See www.historyofparliamentonline.org. L. H. Petit's death was reported in the *Wolverhampton Chronicle*, 9 January 1850; elsewhere an obituary noted 'his blameless private character, his unostentatious benevolence, his sound judgement, his extreme consideration for the feelings of others [and] his uniform kindness': *Gentleman's Magazine*, ser. 2, vol. 33 (1850), 90–2. His will, proved 7 December 1749, is TNA, PROB 11/2105/21 and there is an abstract in Wolverhampton City Archives [hereafter WCA], Deed/J71/6. He was buried in Highgate cemetery and there is a memorial tablet to him in St Michael's church, Lichfield. The National Portrait Gallery has a portrait print: NPG D40173. L. H. Petit is listed as a subscriber to William Pitt, *Topographical History of Staffordshire* (1817) [hereafter Pitt, *History*], xviii.

17 The marriage settlement of 2 January 1727 is noted in WSL, D1716, bundle 17. A pedigree of the Hayes family is in Gerald Mander's notes on Staffordshire families c.1900: WCA, D-MAN/6, and copy wills and probates, 1736–69, are in Staffordshire Record Office [hereafter SRO], D. 1164/3/3.

18 For a view of the old Little Aston Hall by Stebbing Shaw, see WSL, SV 1.97

19 For later deeds of the Angel Inn, 1749–1831, see WCA, D-BRA 11/1.

20 In Pitt, *History* (p. 258) the Revd J. H. Petit is said to have 'a good estate' in Shareshill parish and to be its minister, but to reside at Hilton Hall; he also owned property in the nearby hamlets of Great and Little Saredon (ibid. 259). Pitt was born in Tettenhall and lived at Pendeford (both Staffs.): see W. A. S. Hewins, rev. by Anne Pimlott Baker, 'William Pitt, 1749–1823', *ODNB*. John Louis Petit is described in William White, *History, Gazetteer and Directory of Staffordshire* (1851 edn) [hereafter White, *Directory*], 479, as being one of the largest proprietors in Shareshill parish after the Rt Hon. E. J. Littleton, the lord of the manor. Saredon Hall Farm is now a grade II listed building.

21 J. R. Harris, 'John Wilkinson, 1728–1808', *ODNB*.

22 *Victoria County History of Staffordshire* [hereafter VCH Staffs.], II (1967), 121.

ore, and limestone,²³ and were also the first known owners of the 18th-century New Merridale Farm, the present Bantock House, in Wolverhampton, now a local history and decorative arts museum.²⁴ The Petits never lived in the house but leased it to a series of tenants before selling it to a Gnosall (Staffs.) businessman in 1840. The family properties were managed for them by local men: John Louis's mining agent was Matthew Frost of Bilston,²⁵ while his land agent was Joseph Tarratt of Bushbury (Staffs.).

John Louis Petit was born on 31 May 1801 in Ashton-under-Lyne (Lancs.), where his father John Hayes Petit had been curate of St Michael's church from 1798 and where on 31 July 1800 he had married Harriet Astley (1778–1858), a daughter of John Astley (1724–87) of Dukinfield Lodge, near Stockport (Ches.).²⁶ John Louis was the first of ten children and the eldest of three sons. After some years the family moved back to the Midlands, first to Shropshire and then to Staffordshire,²⁷ where John Hayes Petit became perpetual curate of Shreshill in 1811.²⁸ He remained curate there, as well as a Justice of the Peace for the county, until his death in 1822 and this eleven-year appointment strengthened the family's links with the parish.²⁹ There was no parsonage house in Shreshill at the time and the Petits lived at Hilton Hall (Staffs.) which they rented from the Vernon family.³⁰ Educated at Eton, John Louis attended Trinity College, Cambridge from 1819, graduating as BA in 1823 and MA in 1826, and he followed his father into the church, becoming a deacon and then on 21 May 1826 being ordained as a priest. Having served at Derby St Michael from 1825 to 1826, he moved to Essex where he was curate at Bradfield St Lawrence and Mistley near Manningtree from 1828, but parish work was uncongenial and in 1834 he seems to have resigned from official church positions.³¹ By then he had on 17 June 1828 married in Wye (Kent), Louisa Elizabeth Reid (1804–88), a daughter of a West India merchant George Reid of Trelawny, Jamaica and of Shrewsbury (Shrops.).³²

23 Pitt, *History* (p.191) notes 'a considerable estate belonging to the Petit family, called Ettingsal (*sic*) Park, which contains great quantities of lime-stone and iron-stone; it is occupied by Samuel Fereday, Esq.' For plans of J. L. Petit's lands in Ettingshall in 1840, see Dudley Archives, DE/16/11/66 and in 1841, see WCA, D-NAJ/E/2/36.

24 A summary history of Bantock House is on Wolverhampton City Council's website: www.wolverhampton.gov.uk. The Petits also owned Old Merridale Farm, demolished c.1961: see WCA, D-JDR/44/51; and the Record Office for Leicestershire, Leicester and Rutland (ROLLR) has a lease of Merridale Upper Farm from John Hayes Petit to Thomas Herrick dated 20 March 1801: ROLLR, DR 9/1800. The Herricks owned property in Merridale until 1832 when William Perry Herrick (1794–1876) inherited Beaumanor estate (Leics.) and relocated there: White, *Directory* (1851), 25. W. P. Herrick authenticated the pedigree of John Hayes Petit on 24 March 1870: WCA, Deed/116/2 and of the Petit family on 16 May 1870: WCA, Deed/121/10.

25 Matthew Frost the elder (1798–1881); see WCA, DX-264/37 for a map of lands owned by him c.1862. For the history of the Tarratt family, see Bushbury families at www.historywebsite.co.uk.

26 CoEd. John Astley was a well-known portrait painter and amateur architect. Parish registers of St Michael's Ashton-under-Lyne are held in Manchester Central Library and some copy marriage, baptism, and burial certificates are in WCA, DW-35/2/1. In 1801 J. H. Petit reported on local political unrest in a letter to the 4th Earl Fitzwilliam (1748–1833), Lord Lieutenant of the West Riding of Yorkshire: Sheffield City Archives, WWM/F/45/39.

27 CoEd. J. H. Petit became stipendiary curate of Donington near Shifnal (Shrops.) in January 1811 and perpetual curate of Shreshill in February of the same year; he seems to have held both positions in plurality, but the Petits appear to have been living at Donington before 1811 since two of J. H. Petit's daughters, Emma (b.1808) and Elizabeth (b.1810), were born there and it was where his widowed mother Katherine Letitia Petit died in 1810. From 1819 (and perhaps before), J. H. Petit employed Thomas Walker as stipendiary curate at Shreshill at £60 a year, plus surplice fees. Petit is listed as a subscriber to Thomas Harwood's 1844 edition of Sampson Erdeswick's *Survey of Staffordshire* (1820; new edn 1844).

28 Thomas Peploe Wood painted Shreshill church in 1837 and in 1843: WSL, SV VIII.163b and 164.

29 Four family members were buried at Shreshill between 1743 and 1810 and John Louis's youngest brother, Louis Peter Petit, was baptised there on 5 May 1816. John Hayes Petit was described in his will, proved 23 August 1822 (TNA, PROB 11/1661), as of 'the Old Wharf, Hafford' [probably Plas Hafod, Llangollen, Denbighshire].

30 Leasing country houses was common at this period: see Howard Colvin, 'Lease or Demolish? The Problem of the Redundant Country House in Georgian England', in H. Colvin, *Essays in English Architectural History* (Yale University Press, 1999), 276–91 (esp. 287–9). The Hilton estate was mortgaged during the lifetime of Henry Vernon (1748–1814), but finances improved under his son Henry Charles Edward Vernon (1779–1861), a career soldier who rose to the rank of major-general and who altered the Hall substantially in about 1830. For views of Hilton Hall in the early 19th century, see a watercolour by J. R. Fernyhough: WSL, SV IV.345 and a print of c.1820: WSL, SV IV.112a. Hilton Hall (now Grade I listed and a business centre and wedding venue) was Vernon family property until the mid 20th century. For Vernon family papers, including early deeds, see SRO, D (W) 1790 and for other Shreshill deeds, see SRO, 7435. For the parsonage, see *VCH Staffs.* V, 180 and fn. 34; built in 1845 it was described by Nikolaus Pevsner as 'rural Tudor': N. Pevsner, *Buildings of England* [hereafter *BOE*]: *Staffordshire* (1974; repr.1996), 234. Pitt, *History* (p. xviii) gives Hilton Hall as John Hayes Petit's address and elsewhere (p. 259) he notes that 'the inhabitants of Hilton Hall go to Shreshill church as their place of worship, and bury their dead in the church or church-yard'.

31 CoEd.

32 For an extract from J. L. Petit's marriage settlement, see WCA, Deed/121/2. The Reid family are said to have had connections in Kent and Essex. One of Louisa's sisters, Georgina, married in 1831 William Nigel Gresley (1806–47) of Barton-under-Needwood, who in due course inherited the Gresley baronetcy in 1837. She and her sister Amelia Maria Reid were administratrixes of Louisa's estate after her death in 1888.

After his father's death, John Louis Petit had inherited his estate and, with this financial security,³³ was able to embark on a long scholarly and artistic career characterised by intensive fieldwork at home and abroad, apparently beginning in the early 1830s with visits to the Low Countries.

The architect and writer Thomas Rickman (1776–1841) informed Petit's understanding of medieval buildings through his *Attempt to Discriminate the Styles of English Architecture from the Conquest to the Reformation* — first published in 1817 and reprinted as late as 1881 — in which he recommended the descriptive terms Norman, Early English, Decorated, and Perpendicular. Its usefulness as 'a grammar of the Gothic' and 'the first accurate account of the history of medieval architecture in the British Isles' ensured the book's lasting popularity.³⁴ Petit acknowledged Rickman's guidance and recognised that his book was the product of long study. Rickman had made sketching trips to churches in England and these were followed in 1830 and 1832 by research tours to learn more about examples of Gothic architecture in France from where he reported his findings in letters to the president of the Society of Antiquaries.³⁵ After Rickman moved to Birmingham in 1820, he built between 1833 and 1836 Tettenhall Wood House (Staffs.) in Gothic style for Theodosia Hinckes (1792–1874) who was a friend and relative by marriage of the Petits.³⁶ John Louis Petit is not known to have had any instruction in art, but his style evolved with constant practice, perhaps improved by using handbooks on drawing. Two artists who may have influenced him were Samuel Prout (1783–1852),³⁷ well-known as a topographical painter, and William Alfred Delamotte (1775–1863),³⁸ whom Petit resembled in treatment of architectural details. Petit admired Prout whose works such as *Picturesque Buildings in Normandy* (1821), *Facsimiles of Sketches Made in Flanders and Germany* (1833), and *Facsimiles of Sketches Made in France, Switzerland and Italy* (1839), encouraged sketching tours on the continent.³⁹ William Delamotte, the father of Petit's friend Philip Henry Delamotte, was described as 'an excellent architectural draughtsman and sympathetic recorder of the landscape'.⁴⁰ An established teacher of drawing, the elder Delamotte made journeys throughout France, Belgium, Germany, and Switzerland, and in 1816 he published thirty-three *Etchings of Rural Subjects* including one of an ancient oak in Needwood Forest (Staffs.).⁴¹

33 For title deeds and associated documents relating to Petit properties in the Black Country, see WCA, Deed/121/1–4; Deed/116/3; D-BRA-6/23; D-NAJ/E/236; D-JSR/44/312; Deed/J77/58 and Deed/J71/6. Experience of living in leased houses in his youth may have encouraged Petit to follow a similar practice until he inherited the estates of his uncle, Louis Hayes Petit (d. 1849) and brother, Peter John Petit (d. 1852).

34 Megan Aldrich, 'Thomas Rickman, 1776–1841', *ODNB*. See also www.thomasrickman.org and *Thomas Rickman and the Victorians* [hereafter *Rickman*], ed. Megan Aldrich and Alexandrina Buchanan (The Victorian Society, Studies in Art and Design), vol. 7 (2019). The antiquary and publisher John Henry Parker bought many of Rickman's sketchbooks and papers from his widow and subsequently presented them to The Oxford Architectural Society: *Rickman*, 26. For dissemination of Rickman's book, see Alexandrina Buchanan, 'Attempting to Discriminate Thomas Rickman's Readers', in *Rickman*, 75–91.

35 Rickman's letters to the Society of Antiquaries were published as 'Four Letters on the Ecclesiastical Architecture of France and England', *Archaeologia*, 25 (1833), 159–97 and 'Further Observations on the Ecclesiastical Architecture of France and England', *Archaeologia*, 26 (1836), 26–46.

36 Theodosia Hinckes was a wealthy heiress, local philanthropist, and amateur artist whose mother, Theodosia (née Hayes), was a granddaughter of Thomas Hayes of the Nechells (Staffs.). She was a friend especially of Emma Petit; in the 1871 census both women were visitors with William Perry Herrick at Beaumanor (Leics.). Tettenhall Wood House was demolished in 1969: see Keith Cattell, 'Tettenhall Wood House': www.historywebsite.co.uk. See also Megan Aldrich, 'Thomas Rickman and the Victorians', in *Rickman*, 36 and fig. 2.8.

37 Richard Lockett, 'Samuel Prout, 1783–1852', *ODNB*. J. L. Petit owned a sketch of Dover by Prout which his sisters lent to P. H. Delamotte for his *Sketching*: preface, vi. Between 1803 and 1813 Prout produced 23 views for Britton's *The Beauties of England and Wales* (1801–1815), but from about 1817–18 he specialised in continental subjects, particularly Gothic-style buildings. Elected a member of the Old Watercolour Society in 1819, Prout established his reputation as a leading watercolourist by producing for it a total of 560 drawings: Iolo Williams, *Early English Watercolours* (Kingsmead, Bath, 1952; repr. 1970), 182. Drawing handbooks by Prout include *Rudiments of Landscape in Progressive Studies* (1813), *A Series of Easy Lessons in Landscape Drawing* (1820), *Hints on Light and Shadow, Composition, etc.* (1836), and *Microcosm, An Artist's Sketchbook* (1841). Among his clients was George Leveson Gower (1758–1833), 2nd marquess of Stafford and later 1st duke of Sutherland, for whom Prout provided drawing lessons for the Leveson Gower children.

38 Luke Herrmann, 'William Alfred Delamotte, 1775–1863', *ODNB*. Like the Petits, the Delamottes were of Huguenot heritage. W. A. Delamotte had a long career as a drawing master, firstly at Oxford in the late 1790s and then from 1803 for almost forty years at the Royal Military College at Sandhurst. He painted many topographical subjects — such as a view of Dresden offered for sale in June 2019 — and his friends included Thomas Girtin (1775–1802) and J. M. W. Turner (1775–1851). As well as Philip Henry, two of his other sons were also successful artists.

39 See Petit, *Remarks* (1841), II, 163, about the Stadhuis in Ghent, a painting of which by Petit was offered for sale in May 2019. After reading Prout's *Flanders and Germany*, John Ruskin's father decided to visit the Rhine in 1833 and Ruskin himself said of Prout in 1844: 'Sometimes I tire of Turner, but never of Prout'.

40 *ODNB* article on W. A. Delamotte.

41 See WSL, SV I.138a. The ancient oaks in Needwood Forest were a popular Staffordshire subject: see, for example, WSL, SV IV.112a for a watercolour by J. R. Fernyhough and text on note 5 above concerning a painting by Thomas Gisborne.

Local links

John Louis Petit had many Staffordshire connections. In 1827 one of his sisters, Mary Ann (1805–90) became the wife of Henry Chetwynd (1791–1870) of Brocton Lodge, a son of Sir George Chetwynd, 1st baronet,⁴² and in August 1829 John Louis himself officiated at the marriage of another sister, Harriet Letitia (1803–33), to Thomas Salt (1802–71) of Weeping Cross near Stafford,⁴³ a member of the banking family Stevenson, Salt & Co. Indeed, Petit later became guide and mentor to Salt's rather formidable daughter Sarah (1831–1914).⁴⁴ The Chetwynds and the solicitor Thomas Salt of Shrewsbury, a member of the Rugeley (Staffs.) branch of the Salt family and a relative of Thomas Salt of Weeping Cross, received legal advice from Petit's uncle, Louis Hayes Petit, himself a considerable property owner.⁴⁵ When Louis Hayes died unmarried on 13 November 1849, John Louis was his sole executor. After monetary legacies had been paid,⁴⁶ Petit inherited the bulk of his uncle's estate,⁴⁷ including the mineral rights to the Merridale property in Ettingshall and the reversion of Redcourt House in Tamworth Street, Lichfield (Staffs.),⁴⁸ which was to remain the home for their lives of John Louis's widowed mother Harriet (who died on 5 April 1858) and his sisters, Emma Gentile Petit (1808–93),⁴⁹ Mrs Elizabeth Haig (1810–95),⁵⁰ Louisa Petit (1812–42), and Susanna Petit (1813–97). In 1848 John Louis's youngest brother, Louis Peter, born in 1816 and a barrister, had died unmarried,⁵¹ and four years later came the death aged forty-five of his other brother, Lieutenant Colonel Peter John Petit CB [Companion of the Order of the Bath] of the 50th Regiment (Queen's Own). Also a bachelor, Peter John had a distinguished military career, especially in India where he fought in the battles of Ferozeshah (1845) and Sobraon (1846), and he bequeathed John Louis the manor and manor house of Yeading (Mdx).⁵² By 1853, therefore, John Louis, whose

42 J. L. Petit was a frequent visitor to Brocton: see, for instance, a letter to Charles Hartshorne in 1855: NA, Hartshorne E/262. Brocton Lodge is now (2019) part of Brocton Golf Club.

43 In about 1850 Thomas Salt the elder (1802–71) built Baswich House as a new family home. Augustus Hare described Baswich House in 1862 as 'a moderate sized house, simply furnished, but with the luxury of a cedar-wood ceiling which smells delicious': A. J. C. Hare, *The Story of My Life* (2 vols, 1896 and 1900), 1188 (using online edition). After J. L. Petit's death the family added a gallery to display his drawings: see *VCH Staffs.* V (1959), 4 and fn. 47; Berkswich History Society, *The Story of Berkswich re-told* (2008), 2 and *They Pulled Our House Down: the Story of Baswich House and its People* (2009), 45. Baswich House was sold in 1908 by Sir Thomas Anderdon Salt (1863–1940), 2nd baronet, and after various uses, latterly as Staffordshire police headquarters, it was demolished in March 2009. The Salt family moved to Standon (Staffs.) and then in 1920 to Dorset.

44 There are several references to her in Petit's letters to C. H. Hartshorne, e.g. NA, Hartshorne E/265. A portrait of Sarah aged seven, with her brother Thomas and sister Harriet, is reproduced on the cover of *They Pulled Our House Down* (cited above), which also has at p. 42 a photograph of her in later life. Sarah married the Revd Percy Brent in 1873 and died on 5 April 1914 in Kempsey (Worcs.).

45 For L. H. Petit's advice to the Chetwynd family, see SRO, D240/F/1/4. For his legal business in Shropshire advising clients of Thomas Salt, solicitor, of Shrewsbury, see Shropshire Archives [hereafter SA], Salt Collection, D. 3651 e.g. case re River Perry, 1816: D. 3651/D/16/7 and D. 3651/F/6/5/5. L. H. Petit may be the 'Mr Petit' who was paid five guineas in 1815 for acting as assessor at the contested election in Shrewsbury in 1814: SA, D. 3365/676/4. In 1815 Thomas Salt, the eldest son of a solicitor of the same name in Rugeley, was made a partner in the Shrewsbury firm of Pemberton, Coupland and Dukes. When his sons George Moultrie Salt and William Salt joined the practice, it was renamed Salt & Sons; some of their records are deposited with Powys County Archives Service in Llandrindod Wells.

46 £500 was left to William Salt, £2000 to L. H. Petit's nephew Peter John Petit, £200 each to Thomas Salt the elder and his sisters, and £100 each to L. H. Petit's eight great-nephews and great-nieces, including Thomas Salt the younger.

47 L. H. Petit was, *inter alia*, a Fellow of the Society of Antiquaries, a Fellow of the Royal Society, a Vice-President of the Royal Society of Literature and he served on the Record Commission set up under William IV to consider arrangements for Public Records: TNA, PRO 36.

48 Redcourt House was bought by Louis Hayes Petit from Dr Sir Francis Sacheverel Darwin (1786–1859), a son of Erasmus Darwin (1731–1802) who in 1761 had been sponsored for Fellowship of the Royal Society by Louis Hayes's father, Dr John Lewis Petit. Originally built in 1766 for Lucy Porter, Samuel Johnson's step-daughter, with a £10,000 legacy from her brother, Redcourt House was demolished in 1929 or 1930: *VCH Staffs.* XIV (1990), 21 (with a line drawing of the house reproduced at p. 19). Mrs Harriet Petit, John Louis's widowed mother, was living there in 1834 (White, *Directory* (1834 edn), 155, and the 1841 census lists the house's occupants as Mrs Harriet Petit and four of her daughters, Emma, Elizabeth, Louisa, and Susanna. In the 1851 census, only two daughters are listed, Elizabeth and Susanna, Louisa having died in 1842. See also White, *Directory* (1851 edn), 520. After the death in 1897 of the youngest Petit sister (Susanna), the house was sold by Louis William Jelf (later Jelf-Petit), to whom it had been bequeathed in remainder by Emma Petit and who eventually moved to Haslemere (Surrey) where he died in 1934. For Redcourt House sale catalogue, May 1897, see Samuel Johnson Birthplace Museum, Lichfield (hereafter SJBM), collections ref. 2012.23

49 Emma's middle name, Gentile, came from Gentile Clare Petit, the youngest daughter of her great-great-grandfather Lewis Petit.

50 Elizabeth married at Shifnal (Shrops.) on 25 July 1844, as his third wife, David Haig who died in 1848. Their marriage licence, dated 24 July 1844, is among Shifnal parish records: SA, P246/A/9/1/166.

51 Louis Peter Petit, who had occupied his uncle's chambers in Lincoln's Inn, was buried at St. Michael's Lichfield.

52 Purchased by Louis Hayes Petit in 1813; title deeds, 1714–1846, are noted in WSL, D. 1716 bundle 4, and bundle 23 item 65 refers to an undated plan of Yeading Manor Farm. A portrait print of Peter John Petit is in the WSL, Portraits/Petit/Peter/1.

own marriage was also childless, was the only surviving male in his branch of the Petit family. In the 1840s his home was at The Uplands, a newly-built ‘Tudor Gothic’ villa (now demolished)⁵³ in Shifnal (Shrops.) where the vicar, Revd John Brooke of Haughton Hall, was another member of the ‘Church Artistic’. From 1856 Petit lived partly at Longdon Ridge near Lichfield, in a house, informally called Bumblekite, which he built there,⁵⁴ whilst retaining the barrister’s chambers in Lincoln’s Inn of his late uncle Louis.⁵⁵

Petit’s research interests

John Louis Petit wrote and lectured extensively on architecture, especially ecclesiastical buildings, and is now recognised as an early advocate of understanding the characteristics of the Gothic style and of sympathetic restoration, not rebuilding, of historic churches. In particular, he encouraged architects not to copy earlier buildings slavishly, but to develop their own individual interpretation.⁵⁶ Among his contemporaries Petit’s reputation was chiefly as an architectural writer who illustrated his own works. He did also paint for pleasure, but the thread that runs through all his activities is a wish for his sketches to be seen as records and as prompts to further enquiry. His objective was to inform contemporary practice by promoting a thorough knowledge of earlier styles, using his drawings as examples. In the preface to his *Remarks on Church Architecture* (1841), he was typically modest about the quality of his sketches, while defining his aim as ‘to induce the reader to take a comprehensive, instead of a limited, view of the subject and obviate those evils which result from the laying down of arbitrary rules upon insufficient data’. ‘My end will be more fully answered if I can urge [the reader] to the actual examination of a building’.⁵⁷ Professional artists who shared Petit’s intention to influence new building projects and ensure the preservation of original or early features included John Buckler (1770–1851) and his son John Chessell Buckler (1793–1894), both active in Staffordshire.⁵⁸ John Louis Petit was one of the founders at Cambridge in 1844 of the British (later Royal) Archaeological Institute as well as being a Fellow of the Society of Antiquaries, an honorary member of the Royal Institute of British Architects (RIBA), a member of the British Archaeological Association (BAA), and author of important works including *Architectural Studies in France* (1854; repr.1890),⁵⁹ as well as *Remarks* (noted above). In 1850 he was awarded an Oxford degree *ad eundem*, possibly a mark of his friendship with Edward A. Freeman, a leading member of the Oxford Society for Promoting the Study of Gothic Architecture (hereafter Oxford Architectural Society), whose 1846 pamphlet *Principles of Church Restoration* was similar in approach to Petit’s *Remarks*.⁶⁰ The influence Petit gained from his books was increased by his many lectures;⁶¹ he gave

53 Shropshire Archives has a watercolour of The Uplands c.1840 by John Homes Smith (1797–1868): SA, 6009/322. The house, said to date from about 1840, was Grade II listed: see Shropshire Historic Environment record (HER) Number (PRN) 17629 on the SA website: www.shropshirearchives.org.uk. The 1841 census for Shifnal notes The Uplands as the house of Mrs Gilbert Brown, occupied at that time by younger members of the Brown family, but it is given as J. L. Petit’s address in deeds later in the 1840s to which he was a party with his uncle L. H. Petit: see, for example, WCA, D-BRA-6/12 dated 29 Dec. 1848. By 29 Sept. 1849 J. L. Petit is ‘late of The Uplands’: WCA, Deed/338/14, although Slater’s *Midland Directory* published in 1850 (p. 37) still gives it as his address.

54 NA, Hartshorne E/261: ‘Bumblekite increases in beauty and stature’, 1 Dec.1855; and E/263 *re* water supply, March 1856. For illustrations see P. Modiano, *Petit’s Tours of Old Staffordshire* (Reverend Petit Society Publications, 2019), [hereafter *Petit’s Tours*] 33–4 and the Rev. J. L. Petit Society website (www.revpetit.com); these two recent resources have helped to raise awareness of J. L. Petit.

55 L. H. Petit had two sets of chambers, 2 Stone Buildings and 9 New Square, Lincoln’s Inn.

56 In his preface to *Architectural Studies* (p. xxiii), Petit stated ‘our object is not, or ought not to be, to produce a building which might be mistaken by the antiquary for a specimen of a particular period or country but one fitted in every respect, in reality as well as appearance, for its purposes, sound and correct in its design, its construction and its ornamentation’. He also considered that ‘more architectural character is destroyed by additions than by dilapidation’ and devoted a chapter in *Remarks* to discussion of ‘modern repairs and adaptations’ of churches: *Remarks*, II, chapter 4, 125–56. See also Simon Bradley, ‘The Englishness of Gothic: theories and interpretations from William Gilpin to J. H. Parker’, *Architectural History*, vol. 45 (2002), 326–46.

57 *Remarks*, I, preface, pp. v, vii–viii.

58 See Joshua Mardell, ‘The Buckler Topographical Collection: a Dynastical Reading’ at www.bl.uk/picturingplaces.

59 ‘Illustrated with many woodcuts and facsimiles of anastatic drawings by J. L. Petit, as well as drawings by Philip Henry Delamotte’ and reprinted, slightly amended, in 1890. In his preface Petit refers to Delamotte’s skill as a photographer and regrets the impracticability at that time of including photographs in his book: ‘I hope on some future occasion I may be able to avail myself of Mr De La Motte’s well-known skill in photography’: *Architectural Studies*, p. xxx.

60 See Jonathan Conlin, ‘Development or Destruction? E. A. Freeman and the Debate on Church Restoration, 1839–51’, *Oxoniensia*, LXXVII (2012), 139–51.

61 Petit’s lectures are noted in *The Builder* which also prints texts of several, including ‘On the Use of Ancient Architectural Examples’: 24 January 1857, 47–9; ‘On Architectural Refinement’, 22 October 1859, 215–18; and ‘On the Revival of Styles’, 25 May 1861, 350–2 and 1 June 1861, 369–72.

five papers to the Architectural Exhibition Society,⁶² spoke three times at the RIBA⁶³ and nine times at the Archaeological Institute, in addition to contributing articles to the latter's journal,⁶⁴ as well as to other publications.⁶⁵

Over a period of at least fifteen years, Petit engaged with many different audiences, local as well as national; for instance, he gave a paper entitled 'Remarks on Architectural Character' to the Lichfield Architectural Society in 1846,⁶⁶ and in the same year lectured to the Oxford Architectural Society.⁶⁷ Subsequently, on 21 December 1853 he gave a presentation to the Northampton Mechanics' Institute on 'Architectural Principles and Prejudices'.⁶⁸ Moreover, he was an early collaborator with the Shropshire (and Staffordshire) historian the Revd Robert William Eyton (1815–81),⁶⁹ providing architectural information and illustrations of churches for the first two volumes of Eyton's twelve-part *The Antiquities of Shropshire* (1853–60). Eyton commended Petit as 'a well-known authority in [architectural] matters', thanked him for his special visits to report on, for example, 'earlier ecclesiastical remains at Morville, Quatford and Upton Cressett' (all Shrops.), and for supplying, among others, an account of 'the old church at Morville'.⁷⁰ As well as undertaking research trips for Eyton, Petit enjoyed a wide range of contacts with like-minded scholars and writers; leading antiquaries and historians who feature in his correspondence include the architectural historian and engineer Professor the Revd Robert Willis (1800–1875),⁷¹ the antiquary and barrister Albert Way (1805–74),⁷²

62 The Architectural Exhibition Society merged with the RIBA in 1842 and the Institute moved to 9 Conduit St. off Regent St., London in 1859. See Susan Pugh, 'From Pugin to Voysey: collecting and preserving nineteenth-century drawings and archives', *Victorians Revalued* (The Victorian Society, Studies in Victorian Architecture and Design), vol. 2 (2010), 63–73 (esp. 63–4).

63 Including a lecture 'A Few Remarks on Italian Architecture', given on 4 June 1855 and published in *Transactions* of the RIBA, 1st series, vol. 5 (1854–5), 93–102.

64 See, for example, J. L. Petit, 'Southwell Minster', *Memoirs ... of the Annual Meeting of the Archaeological Institute*, July 1848, 197–214. Petit had an article published every year in the first seven years of the *Archaeological Journal* [hereafter *AJ*], 1844–1850, and later contributed to issues for 1852, 1858, 1861, 1866 and, posthumously, for 1868, 1870, and 1887 (viewable on the website: archaeologydataservice.ac.uk). He is said to have donated many of his illustrations for his *AJ* articles to the Institute, but their present whereabouts are unknown.

65 J. L. Petit's letters to Charles Hartshorne include many references to lectures he was planning to give: NA, Hartshorne E, *passim*.

66 In existence by 1841, the Lichfield Society for the Encouragement of Ecclesiastical Architecture was modelled on the Cambridge Camden Society; its founder members included the architect Thomas Johnson (d. 1853): see *VCH Staffs.* XIV, 169, and Petit was for a time joint secretary of the Society. Lectures were important aspects of its activities and the inclusion of sketches of Pattingham church, Acton Trussell church, and the tower of Rugeley (old) church in Petit's paper added to its local appeal. In 1846 J. L. Petit published a lavishly illustrated folio, also titled '*Remarks on Architectural Character*' (J. H. Parker, Oxford).

67 The Oxford Society for Promoting the Study of Gothic Architecture, founded in February 1839 and similar in remit to the Cambridge Camden Society founded later in the same year, was re-named in 1848 the Oxford Architectural Society and in 1860 the Oxford Architectural and Historical Society; John Ruskin was an attendee at early meetings. Petit is also included in Rupert Simms' (1854–1937) *Bibliotheca Staffordiensis*, eventually published in 1894: see WSL for questionnaire: 300/3/186/98 and for printer's proof of the Petit entries: 300/1/40/98; and Greenslade, 'Staffordshire', in *County Histories*, 364.

68 A copy is in the John Rylands University Library [hereafter JRUL], Manchester: JRUL Special Collections, R14736.

69 George C. Baugh, 'Robert William Eyton, 1815–81', *ODNB*. See also G. C. Baugh, 'Shropshire', in *County Histories*, 341–2. A founder member in 1879 of the William Salt Archaeological Society, now the Staffordshire Record Society, Eyton was an early contributor to its *Collections*. Some of Eyton's notebooks and transcripts are in the British Library: Add. MSS 31923–46 and 33226 and in the Bodleian Library: MSS Top. Salop. d. 2–3.

70 R. W. Eyton, *Antiquities of Shropshire*, I (1853), preface p.12 and fn.13: 'The Rev J. L. Petit — who already favours me in a way I must acknowledge both gratefully and openly' and 'his notice of earlier ecclesiastical remains ... are the result of a recent visit ... undertaken expressly for my assistance'. Petit supplied architectural information including details of Morville church with illustrations (I, 42–3), Quatford church with illustrations (ibid. 116–17), Upton Cressett church with illustrations (ibid. 146–7), Albrighton church with illustration (Eyton, *Shropshire*, II (1855), 161–2), Whiteladies, Brewood with illustration (ibid. 190), Tong church with illustrations (ibid. 252) and Shifnal church (ibid. 337–8). An illustration of a corbel in the south aisle of Tong church is by 'E. Petit' [probably Emma Petit]: *Shropshire*, II, facing p. 252. See also Baugh, 'Shropshire', in *County Histories*, 342.

71 Ben Marsden, 'Robert Willis, 1800–75', *ODNB*. See also NA, Hartshorne E/242. Willis published *Remarks on the Architecture of the Middle Ages, especially of Italy* (1835); see also Alexandrina Buchanan, *Robert Willis and the Foundation of Architectural History* (Boydell Press, 2013). Willis was ordained as a priest in 1827, became dean and steward of his *alma mater*, Gonville and Caius College, Cambridge, from 1827–31 and from 1837 was Jacksonian professor of natural and experimental philosophy in the university. A founder member in 1840 of the Cambridge Antiquarian Society, he was briefly a member of the Cambridge Camden Society, but resigned in 1841 because he disapproved of its 'polemical theology'. His papers are in Cambridge University Library: GB 12 MSS. Add. 5022–45, etc.

72 Bernard Nurse, 'Albert Way, 1805–74', *ODNB*. Way was elected Fellow of the Society of Antiquaries in 1839, served as its director from 1842–46 and was Honorary Secretary of the Archaeological Institute from 1845–68, publishing many articles in the *AJ*. Most of his papers are in the British Library: BL, Add. MSS 39325, 41749, etc. and in the Society of Antiquaries Library; his letters to Edward A. Freeman are in the latter's papers in JRUL.

the historian Edward A. Freeman (1823–92),⁷³ and the barrister and writer on glass painting, Charles Winston (1814–64),⁷⁴ who advised on restoration of stained glass at St Mary's church, Bushbury (as well as at St Paul's cathedral) and acted as deputy, especially in Staffordshire, to Serjeant-at-law Nathaniel Clarke (1785–1880), Recorder at Walsall (Staffs.) and elsewhere. As already noted, Petit was a friend and long-time collaborator with the artist, academic and pioneering photographer Philip Henry Delamotte (1821–89),⁷⁵ who accompanied Petit on some of his overseas journeys and provided illustrations to Petit's articles and publications, particularly forty-four of the 210 drawings in *Architectural Studies*; Delamotte also referred to him in his own *Art of Sketching from Nature*.

Another friend was the Revd Charles Henry Hartshorne (1802–65),⁷⁶ the son of John Hartshorne of Broseley (Shrops.), a coal owner and ironmaster. Hartshorne took holy orders and served as a curate elsewhere in Shropshire, at Benthall from 1827 to 1828 and at Little Wenlock from 1828 to 1836. After failing to get a civil service or museum position, he eventually moved in 1838 to Cogenhoe (Northants.) and subsequently became honorary chaplain to the 7th and 8th dukes of Bedford at Woburn (Beds.). Through these Russell family connections, Hartshorne was appointed in 1850 to the crown living of Holdenby (Northants.), where he died in 1865.⁷⁷ Like Petit, Hartshorne was a prolific writer on many architectural and archaeological topics including medieval towns and castles,⁷⁸ and he became a Fellow of the Society of Antiquaries in 1839 and a member of the Roxburghe Club in 1861. More importantly for the present study, however, is that we owe much of our knowledge of John Louis Petit's travels and activities as a topographical artist to Charles Hartshorne's son Albert (1839–1910),⁷⁹ twice Secretary to the Royal Archaeological Institute and himself an accomplished draughtsman who illustrated his own studies of church monuments. It is through his efforts that many of Petit's letters were preserved and Albert also wrote his obituary for *The Builder*.⁸⁰ Albert Hartshorne donated thirty-three volumes of his father's drawings and sketches, plus much other material, to what became Northamptonshire Record Society and whose archives are now in Northamptonshire Archives.⁸¹

Travels at home and abroad, 1844–65

Among these papers is a group of about thirty letters from John Louis Petit spanning the years 1844 to 1865 and full of vivid insights, such as comments from Petit to Charles Hartshorne about his anxiety

73 Frank Barlow, 'Edward Augustus Freeman, 1823–92', *ODNB*. See also JRUL: correspondence from John Louis Petit to E. A. Freeman, 1846–49 and undated: EAF/1/1. Freeman, who commented favourably on Petit, published *Principles of Church Restoration* (1846), *A History of Architecture* (1848), and *An Essay on the Origins and Development of Window Tracery in England* (1850–51); the last two were based on lectures given at the Oxford Architectural Society. Freeman was born at Metchley Abbey in Harborne (then Staffs.) and his family also owned Pedmore Hall in Hagley (Worcs.), as well as having interests in a local coal mine, but lost money in legal disputes over inheritance. He was twice secretary of the Oxford Architectural Society, in 1845 and again in 1846–7, and in 1884 he was appointed Regius professor of modern history at Oxford. After his death his papers were purchased by trustees of the engineer and philanthropist Joseph Whitworth (1803–87), presented to Owens College (founded 1851) in Manchester and they are now part of collections in the JRUL.

74 G. Le G. Norgate, revised Stanley A. Shepherd, 'Charles Winston, 1814–64', *ODNB*. Petit admired Winston: see NA, Hartshorne E/257, E/266 (noting his death in 1864), and E/271 (memorial window to him in Norwich). Winston and Petit were both members of the St Paul's cathedral committee planning a new stained glass east window (*The Builder*, 9 March 1867, 166) and a report on its subsequent installation regretted the loss by both their deaths to the committee and to the art world: *The Builder*, 20 February 1869, 142. P. H. Delamotte produced engravings from Winston's original drawings for the latter's *Memoirs Illustrative of the Art of Glass Painting* (London, 1865; 2nd edn 1867) and noted that 700 of Winston's drawings were in the British Museum (*Sketching*, 11, fn); these are now BL, Add. MSS. 33846–33849. The Society of Antiquaries has a catalogue of Winston's drawings with later notes on his collection.

75 A. J. Stirling, 'Philip Henry Delamotte, 1821–89', *ODNB*.

76 George C. Baugh, 'Charles Henry Hartshorne, 1802–65', *ODNB*.

77 J. L. Petit was godfather to Hartshorne's son Bertram, born in 1844.

78 In 1844 Charles Hartshorne published *Salopia Antiqua*, a study of his native county described by G. C. Baugh as 'a genuinely original archaeological synopsis with appendices on place names and Shropshire dialect': 'Shropshire', in *County Histories*, 343. His correspondence (1838–48) with Sir Thomas Phillpotts is in the Bodleian Library, MSS Phillpotts-Robinson, and the British Library has some of his rubbings of monumental brasses: Add. MSS 34806, A–C.

79 *ODNB* article on Charles Henry Hartshorne.

80 *The Builder*, 19 December 1868, 926. Albert Hartshorne also provided a description of alterations at St James' church, Longdon (Staffs.) to *Building News*, vol. 20, 9 June 1871, 460. Nikolaus Pevsner believed that he was responsible in 1870 for the north transept: Pevsner, *BOE, Staffs.* 197. See also Brian Dix, 'Albert Hartshorne, 1839–1910', *ODNB*.

81 NA, papers of Charles Henry Hartshorne, especially Section E. The archivist Joan Wake (1885–1974) rescued documents at risk and founded Northamptonshire Record Society as a collecting as well as a publishing body; its acquisitions, including the Hartshorne papers, now comprise major collections in Northamptonshire Archives Office: see P. Stamper, 'Northamptonshire', in *County Histories*, 300–1.

in 1844 that All Saints church in Leigh (Staffs.) would be altered when rebuilt,⁸² and descriptions of his tour of Shropshire churches in the 1840s,⁸³ the latter including a rubbing of the monument in Tong church commemorating Sir Fulk Pembridge (1363–1409) and his second wife Isabel (d.1446), the building's founder.⁸⁴ Petit also reported spending a week sketching Romsey abbey (Hants.) and perhaps adding an appeal for money for its repair to his proposed paper.⁸⁵ Likewise in Hampshire, Petit remarked on the church at Portchester castle. Elsewhere, he regretted that Hartshorne could not save one old hall — a reference to the removal between 1854 and 1865 of Robert Adam's Gothic-style features from Alnwick Castle (Northumberland) by Anthony Salvin⁸⁶ — although he praised Salvin as 'unquestionably the man' to make alterations.⁸⁷ Accounts of Petit's travels undertaken and planned included excursions in England to Leicester (where he recommended a visit to the Roman site at Jewry Wall), to Thirsk, Lasingham and Helmsley in North Yorkshire, to the Isle of Man and to Brinkburn Priory in Northumberland, and he hoped to visit 'Pugin's church at Nottingham'.⁸⁸ Petit also referred to his plan for a tour of the Continent with his sister and brother-in-law, Mary Ann and Henry Chetwynd of Brocton and with his sister-in-law Amelia Maria Reid (1821–96) and his hopes of meeting Hartshorne in Normandy.⁸⁹ Abroad, there are references to expeditions to Rome and Naples in 1854,⁹⁰ to Venice in the same year, when Petit spent all day long 'seeing and sketching' including painting the Grand Canal by moonlight using a lantern, and to Ravenna (which he described as a 'commonplace looking town'), Perugia, and Bologna.⁹¹ Naples was 'most uninteresting', though the Petits enjoyed their excursion to Baiae, Lake Avernus, and Paestum. Amalfi was 'too picturesque and wants repose'.⁹² Among watercolours which survive from this 1854 tour are sketches of scenes in less well-known places such as Gorgonzola near Milan and Chanceaux near Tours. Not all trips were uneventful: in Ancona Petit was 'sorely handled by the military authorities in sketching [a church] from the only practicable point'.⁹³ On his next tour during the autumn of 1855 Petit noted places visited in a journey through France, Germany, Holland, and Belgium,⁹⁴ and in 1856 he described a tour from Paris to Prague via Dresden with appreciative accounts of Romanesque and Gothic buildings, commenting that Treves (modern Trier) is 'just the place [I] would choose to live'.⁹⁵ He also made several drawings in the hilly country in eastern Germany known as Sachsische Schweiz

82 By the architect Thomas Johnson of Lichfield and completed in 1846 with funds mainly supplied by Revd Richard Bagot (1782–1854) of Blithfield (Staffs.) who remained rector of Leigh while bishop of Oxford (1829–46), and was also a patron of the Oxford Architectural Society. The floor tiles are said to have been designed by A. W. N. Pugin and donated by Herbert Minton, who is also reported to have given the reredos: see M. J. Fisher, *Pugin-Land* (privately published, 2002), 160–1 and colour plate 7. Some of Petit's drawings of the exterior and interior of Leigh church are reproduced in *Petit's Tours*, 93–5.

83 NA, Hartshorne E/242. J. L. Petit's article on Shifnal church, first given as a paper at the British Archaeological Association (BAA) conference in Shrewsbury in August 1860 and illustrated with his sketches, was published in 1861 in the BAA's *Collectanea Archaeologica* vol.1, pt.1, 90–98: WSL, bs 245/1. The church was worth study 'having been very little subjected to the modern process called restoration' (p. 91), a comment repeated in Petit's concluding remarks that 'freedom from unnecessary restoration make it a valuable study to the antiquary, the architect and the artist' (p. 98).

84 Sir Fulk Pembridge (1363–1409): see www.historyofparliamentonline.org. Petit's article on Tong church was published in *AJ*, vol. 2 (1845–6), 1–13 and some of Petit's drawings are reproduced in *Petit's Tours*, 84–6. The *Transactions of the Shropshire Archaeological Society* (hereafter *TSAS*) also include articles by Petit on Tong church: *TSAS*, 1st series, vol. V (1882), 299–312 and on Buildwas abbey church, *TSAS*, 1st series, vol. XI (1888), 131–41.

85 NA, Hartshorne E/243.

86 Richard Holder, 'Anthony Salvin, 1799–1881', *ODNB*. The 4th duke of Northumberland disliked what he considered 'fairytale Gothick' in the 18th-century alterations to Alnwick and commissioned Salvin to make the castle appear more like a medieval border fortress.

87 NA, Hartshorne E/258, 24 March 1855.

88 St Barnabas's Roman Catholic cathedral built between 1842 and 1844: NA, Hartshorne E/242. See also R. O'Donnell, *The Pugins and the Catholic Midlands* (Gracewing, Birmingham, 2002), 102–3. Commenting on Pugin's *Contrasts* in his printed letter to the Lichfield Architectural Society, Petit said that he could not 'impugn the fairness of his [Pugin's] arguments or the justice of his conclusions': WSL, pbox/Lichfield/33, p. 12.

89 'Mr and Mrs Chetwynd and one of their girls would much like a run to Paris. Amelia Reid seems to jump at the chance': NA, Hartshorne E/264.

90 NA, Hartshorne E/256.

91 Ibid. E/257.

92 Ibid. E/256.

93 Ibid. E/265.

94 Ibid. E/260, 31 October 1855. Places visited included Rheims, Épernay, Chalons in Champagne, Nancy, Strasbourg, Sélestat, Rouffach (all in France), Schwarzbach am Main, Baden, Heidelberg, Worms, Mayence (Mainz), Coblenz, Cologne and Aix la Chapelle (all in Germany), Maastricht (Holland), Liège and Mons (both in Belgium), Lille, Valenciennes and Calais (all in France).

95 NA, Hartshorne E/265. Petit thought that the porch of Erfurt cathedral was 'the most Proutish bit' (a reference to the painting style of Samuel Prout).

(or Saxon Switzerland), now a National Park.⁹⁶ While visiting the Adriatic in 1857 Petit painted a dramatic stormy seascape, as well as a view between Trieste and Pola. Toward the end of this correspondence with Charles Hartshorne in 1865, Petit recorded his visits to Alexandria, Cairo, and in particular Giza to see the Sphinx, whose face he says resembled William Whewell.⁹⁷

All his adult life John Louis travelled widely and indefatigably in the course of his research both in England⁹⁸ and on the Continent.⁹⁹ Wherever he went, study of ecclesiastical buildings appealed to his religious sensibilities as well as his aesthetic interests.¹⁰⁰ He was not a proselytiser, but aimed to raise awareness of how different architectural styles could strengthen or demonstrate faith and spirituality. Unlike some writers, especially those associated with the Cambridge Camden Society, Petit did not dismiss ‘pagan’ — that is, non-Gothic or non-Christian — buildings,¹⁰¹ and he admired, for instance, mosque architecture, Mamluk tombs, and Byzantine styles, the latter being the theme of a lecture to the RIBA in 1858.¹⁰² His subjects were not necessarily the magnificent structures shown in the work of many Victorian travellers, but sometimes less familiar edifices: in Padua, for instance, he painted the basilica of St Anthony.¹⁰³ As noted above, he first toured Europe in the 1830s,¹⁰⁴ and the countries he visited later included France (most frequently), Holland, Belgium, Germany, Bohemia (modern Czech Republic), Italy, Austria, Spain, Greece, Mediterranean islands including Corfu, Turkey, and Ireland,¹⁰⁵ while among his late expeditions was an extended trip from 1864 to 1865 to important sites in the Holy Land and Middle East,¹⁰⁶ where Petit made sketches of Jerusalem and the Mount of Olives, together with scenes in Beirut and other sites in Lebanon including Baalbek, the ancient Greek Heliopolis. He also depicted the interior of the 12th-Dynasty rock-cut tomb of Baqet III at Beni Hasan in Egypt,¹⁰⁷ and in 1866 published a wide-ranging two-part study ‘Remarks on Medieval Architecture in the East’.¹⁰⁸ Indeed, it is these articles and artworks that distinguish Petit’s reputation as a topographer today.

96 NA, Hartshorne E/265. William Callow also painted views in Saxon Switzerland: see, for example, Tennants auctioneers, lot 1051, 27 April 2019, and also Jan Reynolds, ‘William Callow, 1812–1908’, *ODNB*.

97 Richard Yeo, ‘William Whewell, 1794–1866’, *ODNB*. William Whewell (1794–1866), Master of Trinity College Cambridge and a major influence on the Cambridge Camden Society, published *Architectural Notes on German Churches, with Remarks on the Origin of Gothic Architecture* in 1830 (enlarged edn 1842) and ‘Remarks on the Complete Gothic and After-Gothic Styles in Germany’ in *AJ*, vol. 7 (1850), 217–36. See also William J. Ashworth, ‘William Whewell, Fundamental Ideas and Gothic Architecture’, *Rickman*, 63–71.

98 One sketching trip undertaken by Petit between March and May 1838 was to Ashbourne (Derbys.) and the Dove Valley (Derbys./Staffs.) during which he made drawings of the ruins of Croxden abbey (Staffs.) and other sites: see Staffordshire Heritage and Arts Service, G92.018.0001; P. Modiano, ‘The Rev’d Petit (1801–68) and the Beauty of Churches’ [hereafter ‘Beauty of Churches’], *British Art Journal* [hereafter BAJ], XVIII, no. 2 (Autumn, 2017), 43, and *Petit’s Tours*, 105–27.

99 Drawings by Petit survive from various locations in France and of various dates from the 1830s to the 1850s, with some from 1862; from Italy in 1854, 1856–7, and 1861; from Germany and Austria in 1856; from Greece and Constantinople (Turkey) in 1857, from Spain and the Mediterranean islands in 1858–9; from Ireland in 1862, and from the Middle East in 1864–5. These places and dates are indicative only; Petit’s drawings are widely dispersed because of many sales, past and present, of his artwork at auctions and by dealers.

100 See *Remarks*, *passim*.

101 J. L. Petit asked rhetorically ‘does a building which is not Gothic place its congregation beyond the pale of the Christian Church?’: letter to Lichfield Architectural Society, 1843: WSL, pbbox/Lichfield/33, p. 9.

102 In Cairo Petit admired ‘mosque architecture and Mameluke [Mamluk] tombs’: NA, Hartshorne E/268. See also Petit’s double article on Middle Eastern architecture: *AJ*, vol. 23 (1866), 1–20, 243–60. Petit gave a lecture titled ‘Remarks on Byzantine Churches’ to the RIBA on 8 March 1858 which was published in its *Transactions*, 1st series, vol. 8 (1857–8), 123–36.

103 Private collection. In his 1843 letter to the Lichfield Architectural Society, Petit remarked that ‘calling attention to those [churches] of a humbler description, might be opening up a new field to some of my readers’: WSL, pbbox/Lichfield/33, p. 7.

104 Many artists who toured Europe drew to illustrate their publications; others include John Ruskin (see *ODNB* article on John Ruskin cited above) and John Coney: see L. A. Fagan, rev. Dennis Harrington, ‘John Coney, 1786–1833’, *ODNB*.

105 J. L. Petit’s paper ‘On the Abbeys of Ireland’, illustrated with 14 plates, was published in the *Transactions* of the RIBA, 1st series, vol. 13 (1862–3), 191–208. P. H. Delamotte reproduced a sketch of a ruins at Clonmines (Co. Wexford, Ireland) by Petit said to have been drawn in 1867: *Sketching*, 56 and plate XV.

106 NA, Hartshorne E/268. Pugin also toured and sketched in Europe: see Alexandra Wedgwood, ‘A. W. Pugin’s Tours in Northern Europe’, in *Gothic Revival, Religion, Architecture and Style in Western Europe 1815–1914* (Proceedings of the Leuven Colloquium, 7–10 November 1997), ed. Jan de Meyer and Luc Verpoest (Leuven, 2000).

107 This drawing was offered for sale in 1990 by Rupert Wace Ancient Art, London (now closed).

108 *AJ*, vol. 23 (1866), 1–20, 243–60.

Petit's artistic activities

Petit was an assiduous and almost compulsive watercolourist, seemingly sketching wherever he went.¹⁰⁹ Churches feature largely in his very many drawings, but as an amateur and a clergyman his motivation was different from that of contemporary professional artists who were commissioned to depict similar views;¹¹⁰ such practitioners in Staffordshire in Petit's time included John Buckler and his son John Chessell Buckler, Robert Noyes (c.1780–1843), and Thomas Peplow Wood (1817–45),¹¹¹ all of whom are well represented in local collections.¹¹² Aesthetic effect was not Petit's main objective, but he was sometimes adept at rendering buildings in their setting. So, a view of Dunster (Somerset) shows the former medieval priory, now the parish church, in a relatively inconspicuous location in a broad river valley with Exmoor rising in the background;¹¹³ although the castle is depicted only in part, the drawing conveys the impression of a small, still basically medieval, town in its particular setting. Of Staffordshire relevance is one of his many views of Lichfield.¹¹⁴ With the cathedral in the background, the foreground shows rather bleak houses on a damp winter's day and this atmospheric painting is different from images of the city and its cathedral by some other 19th-century artists who preferred to emphasise the picturesque. As well as maritime subjects from the 1830s in Essex and Kent,¹¹⁵ many landscape sketches survive in Petit's oeuvre; some examples include the [royal] oak at Boscobel, woodland at Shifnal (both Shrops.),¹¹⁶ a view towards Lichfield from Elford (Staffs.),¹¹⁷ as well as views in and around Dovedale (Derbys./Staffs.).¹¹⁸ Moreover, he followed painters such as George Robertson (1724–88), Joseph Wright of Derby (1734–97), Philip James de Loutherbourg (1740–1812), J. M. W. Turner (1775–1851), and Robert Noyes (c.1780–1843) in recording Midlands industrial scenes,¹¹⁹ and he praised 'utilitarian' buildings like the furnaces he saw near Wolverhampton.¹²⁰

The Petit sisters and female relatives

Petit's sister Emma, seven years his junior, was herself a skilled watercolourist in the opinion of the writer and diarist Augustus J. C. Hare. She shared these artistic interests with her friend Theodosia Hinckes who, with Mrs Rebecca Moore, between 1855 and 1861 painted watercolours of all the

109 In Italy Petit said 'I can take a sketch at any hour of the day': NA, Hartshorne E/256, 26 June 1854, and P. H. Delamotte commented on how prolific he was: *Sketching*, p. vi. Petit did not sign his sketches but sometimes titled or annotated them with the location, usually on the reverse or on appended labels, while drawings made abroad are sometimes dated. Together with his sister Emma, Petit organised his drawings into albums, identified alphabetically and numerically, or stored them in portfolios: see J. L. Petit's will and also Modiano, 'Beauty of Churches', *BAJ*, 40–9.

110 Petit was at pains to avoid theological contentiousness; in the preface to his paper on Tewkesbury abbey he stated: 'I have purposely abstained from every topic bordering on religious controversy and I have done so the more willingly as I am convinced that the introduction of this element in discussions on church architecture is not only unnecessary, but injurious to art': J. L. Petit, *The Abbey Church of Tewkesbury* (Henry Davies, Cheltenham, 1848).

111 See R. Knight, *Thomas Peplow Wood: Staffordshire Artist* (Staffordshire Arts and Museum Service, 2009) and R. W. Knight (ed.), *The Diaries of Thomas Peplow Wood, Staffordshire Artist, 1839–44* (Staffordshire Record Society, Occasional Paper no. 4, 2015).

112 Important series of drawings by John Buckler and John Chessell Buckler, Robert Noyes, and Thomas Peplow Wood are to be found in WSL, *Staffordshire Views* and with Staffordshire Heritage and Arts Service and are viewable on the Staffordshire Past Track website: www.staffspastrack.org.uk.

113 Private collection.

114 Private collection. (illustration attached)

115 P. H. Delamotte commented that 'all [Petit's] early sketchbooks prove that he thoroughly understood all the minutest detail in both architecture and shipping': *Sketching*, 6 and fn.

116 Private collection.

117 Staffordshire Heritage and Arts Service, G92.012.0001.

118 See www.staffspastrack.org, the SJBM collections: 20001.974.21, and *Petit's Tours*, 129–41.

119 Turner painted a view of Dudley from the Tipton canal c.1830 showing furnaces and canal barges: Dudley Museum Service acc.no.1947/2 (viewable on blackcountryhistory.org). A watercolour dated 1836 of Bradley ironworks, Bilston, by Robert Noyes is in Staffordshire Views: SV II.31 (viewable on www.staffspastrack). Views of ironworks in Coalbrookdale (Shrops.) by Robertson and de Loutherbourg are viewable on artuk.org. A Black Country colliery scene by Petit is reproduced in *Petit's Tours*, 73. Industrial scenes including factories were common subjects in prints and illustrations and Joseph Wright of Derby was well known for his paintings of iron forges, cotton mills, and smithies: Daniels, *Joseph Wright*, esp. 48–60.

120 J. L. Petit's lecture, printed in *The Builder*, 26 January 1856, 37–9 and 2 February 1856, 58–60, prompted George Gilbert Scott's riposte that 'Mr Petit takes more interest in a railway shed than in the best modern churches': *The Builder*, 16 February 1856, 82–4. Petit observed 'the most picturesque objects I have seen are buildings of the most strictly utilitarian character. I speak of the furnaces in the neighbourhood of Wolverhampton. Some of these, taken as buildings ... are absolutely grand': *The Builder*, 26 January 1856, 37. The appeal of Petit's industrial sketches should be seen in the context of a remark by the art historian John Harris about 'the growing interest ... in particular in the art forms generated by the Industrial Revolution', made in his 1988 exhibition catalogue of topographical drawings, *Prospects of Town and Park* (P. and D. Colnaghi & Co.), 9–10.

churches in the diocese of Lichfield.¹²¹ As John Louis's constant companion on tours and visits, Emma was his amanuensis and assistant artist, while also helping to organise and safeguard his sketches. His principal heiress, she looked after John Louis in his later years and published posthumously in his memory some of his articles,¹²² together with his poem 'The Lesser and the Greater Light'; throughout she was the guardian of his archive, and herself died unmarried at Lichfield on 30 January 1893.¹²³ Augustus Hare,¹²⁴ who sometimes accompanied the Petits on their sketching expeditions at home and abroad, records one frightening incident when they were travelling along a mountain road in the South of France.

'Mr. Petit, the famous ecclesiologist, spent some time at Mentone afterwards, and was very kind in taking me on sketching excursions, as a fourth in the carriage with his sister, Miss Emma Petit, and his niece, Miss Salt [Sarah Salt (1831–1914) of Baswich]. Mr. Petit was extraordinarily clever, especially as an artist, but most eccentric. He covered the backs of his pictures with caricatures of goblins, &c., representing the events of each day on which the pictures were done. When they travelled, this extraordinary family used to keep what they called "the Petit count:" if they met a cat, it counted for so much – a black goat for so much more, and so on but if they met a royal prince, it annihilated the whole of the Petit count, and the party would consequently go a whole day's journey out of their way to evade a royal prince. Mr. Petit was most striking in appearance, with a great deal of colour and snow-white hair and beard. I remember the start which our donkey-boy François gave when he first saw him, and his exclaiming, "Je crois, Monsieur, que c'est le frère du Père Éternel!" [I believe, Sir, that he is the brother of our Eternal Father!]. One day I had gone with Mr. Petit and Miss Salt to Ventimiglia, and we were returning at a most alarming speed (with their horses, from Toulon, unaccustomed to the road) along the edge of an almost unguarded and perpendicular precipice. Suddenly the horses made a great dash, and I felt, rather than saw, that they were leaving the road. I threw myself out instantly over the side of the carriage. As I picked myself up, I had the horror of seeing the horses over, hanging in the branches of an olive-tree which overhung the sea at a tremendous height, and on the tiny plateau on which it grew. The carriage was swaying to and fro on the wall, which it had broken down, and which was rapidly giving way altogether. "Uncle, shall I get out?" said Miss Salt, as coolly as if nothing was going on. "Yes," he said – and they both got out. A crowd of men came and rescued the horses with ropes from their perilous position, and we walked home'.¹²⁵

In 1849 another sister, Maria Katherine (1818–1904) became the wife of the Revd William Edward Jelf (1811–75),¹²⁶ who was characterised by one biographer as 'famously irascible'.¹²⁷ Jelf was a classical scholar and tutor of Christ Church College, Oxford from 1836 until his marriage when he became vicar of Carleton, a college living near Skipton in Yorkshire, where he stayed until 1854. Jelf and his family then moved to Cae'rdeon Hall, near Barmouth in Wales, where John Louis and Emma Petit made several visits. Jelf held no church position there, but officiated in a building he commissioned to a design by Petit who had himself been impressed by the architecture of the Basque churches in South-West France. Surviving as the nave of the present St Philip's church, Cae'rdeon (a Grade I listed building), Petit's chapel was a simple rectangular structure of rough stone with plain windows and a loggia over the entrance supported on square pillars; its broad eaves ensured that rainwater fell clear of the building. Unfortunately, although built of local materials, its style attracted adverse criticism on the grounds that it resembled 'an alpine-style stone hut' and so was considered to be inappropriate for an Anglican church in Wales.¹²⁸ The chapel at Cae'rdeon is the

121 Viewable on www.staffspasttrack.org.uk. Rebecca Moore was the wife of the Revd Henry Moore (1795–1876), archdeacon of Stafford (from 1856).

122 In the *AJ*: on Howden minster (Yorks.): vol. 25 (1868), 179–91; on Cartmel priory church (Cumbria): vol. 27 (1870), 81–91; and on the church of St Radegonde near Tours (France): vol. 46 (1887), 157–63. The article on St Radegonde was a paper given in 1852 to the Society of Antiquaries, accompanied by Petit's sketches of the church. Petit's paper on Cartmel priory church was presented at the Archaeological Institute meeting at Lancaster (Lancs.) in 1868: *The Builder*, 8 August 1868, 582.

123 By her will proved on 21 March 1893 Emma Petit left The Brambles, Longdon, in remainder to her nephew Thomas Salt the younger and the house in Tamworth St., Lichfield in remainder to her nephew Louis William Jelf, both bequests to take effect after the deaths of her sisters Elizabeth and Susanna. Monetary legacies included £2,000 to Louis William Jelf (who was asked to add Petit to his name) and £1,000 to each of her other five Jelf nephews and nieces. The Revd Percy Brent, husband of her niece Sarah (née Salt), was a witness to her will.

124 Elizabeth Baigent, 'Augustus John Cuthbert Hare, 1834–1903', *ODNB*. Hare, himself a skilled watercolourist, gives an entertaining account of an excursion to Cannock Chase on 22 August 1862 in the company of Petit's niece, Sarah Salt, while he was staying at Baswich House: A. J. C. Hare, *Story of My Life*, 1188 (using online version). Hare was an anecdotalist, not an historian: G. C. Baugh describes his *Salop* (published in 1895) as 'bad': 'Shropshire', in *County Histories*, 347 and fn. 20.

125 Hare, *Story of My Life*, 611–13 (using online version).

126 Maria Katherine Petit was born at Alveley (Shrops.), married in Lichfield cathedral and died on 7 October 1904 at Hastings (Sussex); her will was proved on 15 November 1904.

127 W. A. Greenhill, rev. M. C. Curthoys, 'William Edward Jelf, 1811–75', *ODNB*.

128 *ODNB* article on J. L. Petit.

only ecclesiastical building known to have been constructed to John Louis Petit's designs and within the entrance loggia there is a memorial tablet erected in 1896 to Petit and to Jelf and his wife. Upon completion in 1862, St Philip's was licensed by the bishop of Bangor as a private chapel for the use of Jelf and his friends. Services were to be conducted according to the rites of the Church of England and in the English language only, even though Cae'rdeon lay in a purely Welsh-speaking district, but the local incumbent, the rector of Llanaber, refused to provide services in English. The rector took Jelf to the Court of Arches and, in support of his position, cited a law of the time of Queen Elizabeth I according to which services in predominately Welsh areas had to be conducted in Welsh; as a direct result, the bishop of Bangor introduced into the House of Lords the English Services in Wales Act (1863), legalising English services in Welsh-speaking areas. After the Disestablishment of the Church in Wales Act (1914) took effect in 1920, private patronage ceased and St Philip's church became subject to the governing body of the Church in Wales.¹²⁹

Because Petit regarded his drawings as a means to an end, he left them unsigned and his sisters followed this practice by rarely signing sketches. In later life, Petit frequently used a palette with shades of terracotta, green, and brown and, together with his vigorous, informal style, this has been asserted as a way of identifying his work, but there is a difficulty. The watercolours of several of John Louis's female relatives were heavily influenced by his choice of subject, technique, and colour preferences, and consequently attribution is not straightforward. Petit himself acknowledged his sisters' skill when he described their output as 'more than mere picturesque sketching'.¹³⁰ Emma, in particular, acted as his aide: in 1845 Petit said 'one of my sisters will help me in sketching' Romsey abbey.¹³¹ Other sisters with artistic interests were Maria Katherine Jelf, Mary Ann Chetwynd, and Elizabeth Haig.¹³² His niece Sarah Salt was also an energetic practitioner: when exploring Dresden, Petit observed that Emma and Sarah 'sketch so furiously it is no easy matter to keep up with them'.¹³³ And in about 1850 another niece, Harriet Salt (1830–1934), produced watercolours of St Thomas's church, Walton on the Hill, near Stafford, built in 1842 at the suggestion of her father Thomas Salt the elder.¹³⁴ Petit's sister-in-law Amelia Maria Reid was likewise a watercolourist and contributed two illustrations to his article on Tewkesbury abbey (Gloucs.).¹³⁵ Emma Petit painted at least two drawings of Cae'rdeon, whilst watercolours by one or other of the group made during visits to Wales depict Valle Crucis abbey near Llangollen in June 1862 and Tenby in May 1872. Drawings in England featured Stokesay castle (Shrops.) in 1860 and Kenilworth castle (Warws.) in 1868, and Staffordshire watercolours include a watermill near Brereton, a scene in the park near Beaudesert, and a distant view of the Trent Valley with Lichfield cathedral in the background.¹³⁶ Augustus Hare's journal when he visited the Petits in Lichfield in 1862 shows how important family life was to John Louis.¹³⁷ With Petit were 'his three sisters and seven cats, who appeared at all meals as part of the family, and rejoiced in the names of "Bug, Woodlouse, Nebuchadnezzar, Ezekiel, Bezor, Rabshakeh, and Eva – 'the mother of all the cats.'"

Mr. Petit was most extraordinary, but a very interesting companion. I had a capital sight of the cathedral with him, beautiful still, though sadly "jemmyfied" by Scott [George Gilbert Scott], who has added some immense statues in the choir which put everything out of proportion, and has put up a bastard-Gothic metal screen. At the end of an aisle is Chantrey's monument of the two Robinson children. One of them was burnt to death in reaching to get from the chimney-piece the snowdrops represented in her hand; the other died of consumption caused by too much rowing.¹³⁸ When I was at Lichfield their mother was still living there with her third

129 Petit's drawings for the chapel, 1861–2, are in the collections of the National Library of Wales; another drawing is reproduced in *Petit's Tours*, 169. The chapel closed in 2014 and the Friends of Friendless Churches are currently (2019) fundraising for the £120,000 needed for its restoration. A view of the chapel today is on the website www.geograph.org.uk; in the present building, the chancel and south transept, together with the bell-cote, are later additions.

130 NA, Hartshorne E/243

131 The SJBM has an album of watercolours marked 'E. G. Petit' (SJBM, 2001.974). Elsewhere, other watercolours are annotated on the reverse 'Miss Petit' for Emma as the eldest sister. A painting by Emma Petit of Freiburg in Breisgau (Germany) in 1856 is reproduced in *Petit's Tours*, 171.

132 A drawing of Stafford castle seen through trees signed 'E. Petit' is probably by Emma Petit: WSL, SV III.26.

133 NA, Hartshorne E/265, 14 October 1856.

134 WSL, 45/1–7/2007. See also letters c.1850: WSL, 45/8–9/2007. Thomas Salt's involvement is noted in *VCH Staffs.* V, 9 and fn. 99.

135 Amelia Maria Reid later became a member of the Ipswich (Suffolk) Fine Art Club and exhibited with this group in 1888: see www.suffolkartists.co.uk for details.

136 All in private collections.

137 Hare, *Story of My Life*, 1192–4. See also NA, Hartshorne E/265, 14 Oct. 1856.

138 This is the 'Sleeping Children' monument by Francis Chantrey in the south choir aisle of Lichfield cathedral. George Gilbert Scott was involved in restoration work at the cathedral from 1857: *VCH Staffs.* XIV, 53; Fisher, *Pugin-Land*, 158.

husband. We went up Borrow Copp, a charming mound near the town, crowned by a chapel-like summer-house.¹³⁹ Here the three Saxon kings are supposed to be buried whose bodies are represented in the arms of Lichfield. The Petits are Petits des Etampes [Etans, near Caen], and were refugees from Caen. They had a valuable miniature of Mary Queen of Scots by Bernard Lens from their family connection with the Guises.¹⁴⁰ Far more extraordinary than any other house I have ever seen was their country place of – “Bumblekite Hall!”¹⁴¹

‘Bumblekite’, a dialect term for ‘bramble’ or ‘blackberry’, was the Petits’ nickname for the house on Longdon Ridge, on a site purchased by John Louis in 1854 and built during 1855 and 1856 to his own design which was displayed by the Architectural Exhibition Society in London in the latter year.¹⁴² A single-storey structure topped by a square lantern with circular windows on all sides, it was known later as The Brambles and, after John Louis’s death, seems to have been the main home of his widowed sister Elizabeth Haig, shared jointly with Susanna and Emma Petit who lived mostly in Lichfield. In a bequest to take effect when Susanna died, Emma left the house to Thomas Salt the younger, but it was later sold, altered, re-named The Grange, and eventually demolished.¹⁴³

Petit’s architectural interests and campaigns

Petit was also important as a pioneer in the campaign to preserve historic buildings and was vocal in his opposition to some of the alterations proposed in the early 1840s by George Gilbert Scott (1811–78)¹⁴⁴ for the collegiate church of St Mary in Stafford.¹⁴⁵ The building was in urgent need of attention: Jesse Watts Russell of Ilam (Staffs.) contributed £5,000 for its repair and the remainder (about £3,000) was to be raised by public subscription, supported by, among others, William Salt,¹⁴⁶ Thomas Salt the elder, and the ecclesiologist A. J. (Beresford) Hope (1820–87).¹⁴⁷ Scott had offered to survey the church and his proposals for its restoration were displayed in it during 1841. Petit agreed with some — those for the chancel — but did not endorse others; in particular, he thought rebuilding the south transept ‘a waste of money’. St Mary’s was a familiar landmark in the middle of Stafford and major changes were of concern to local people, including the Salt family. Lengthy correspondence ensued,¹⁴⁸ and the dispute was referred for arbitration to the Oxford Architectural Society and the Cambridge Camden Society, which both found in favour of Scott. Among other work between 1841 and 1844, Scott ‘rebuilt the chancel roof with one of high pitch and replaced a large Perpendicular window with Early English lancets while retaining the low-pitched roof and Perpendicular clerestory of the nave’.¹⁴⁹ Petit had recognised the need for restoration, but did not want to see the replacement of elements dating from the 16th century;¹⁵⁰ one commentator has noted that in the south transept Scott ‘added an array of features which signal the medieval character of

139 Borrowcop Gazebo, built about 1804: *VCH Staffs.* XIV, 163. Pitt, *History* (p. 99) describes the extensive views from Borrowcop.

140 Bernard Lens (1682–1740), miniaturist.

141 Hare, *Story of My Life*, 1192–4.

142 *The Builder*, 9 February 1856, 70: ‘The interior ... belongs to a lover of art; as equally manifestly does the exterior stand forth as that of Mr Petit’s own home’.

143 NA, Hartshorne E/261 and E/263, in which Petit refers to the progress of building work in 1855 and ‘finding water at last at Bumblekyte’ in 1856. See also Longdon entries in Post Office *Directories* (1872 and 1876) and Kelly’s *Directories*, Staffs. (1880 and 1884). For illustrations, see *Petit’s Tours*, 34.

144 Gavin Stamp, ‘George Gilbert Scott, 1811–78’, *ODNB*. See also *George Gilbert Scott: Personal and Professional Recollections: a facsimile of the original edition (1879) with new material and a critical introduction* by Gavin Stamp (Paul Watkins, Stamford, 1995) [hereafter Stamp, *Recollections*].

145 M. J. Fisher, *Staffordshire and the Gothic Revival* (Landmark Publishing, 2006) [hereafter Fisher, *Gothic Revival*], 44–62. See also C. Miele, ‘Re-presenting the Church Militant’, in *A Church as it should be: the Cambridge Camden Society and its Influence* ed. C. Webster and J. Elliott (Paul Watkins, Stamford, 2000) [hereafter *A Church as it should be*], esp. 274–6.

146 See R. W. Knight, *William Salt and His Library* (Staffordshire Record Society, Occasional Paper no. 3, 2002).

147 J. Mordaunt Crook, ‘Alexander James Beresford Beresford Hope, 1820–87’, *ODNB*. A financial benefactor and advocate for Gothic Revival churches, A. J. Beresford Hope was chairman (from 1846) and president (from 1859) of the Cambridge Camden Society and afterwards president of the RIBA from 1865 to 1867. In Staffordshire he inherited the Beresford estate in Alstonefield and Sheen in about 1850, rebuilding the church, school, and incumbent’s house in the latter village, and complementing these in 1856 with a parish library and reading room, in order to promote his objective of making Sheen ‘the Athens of the moorlands’: quoted in *VCH Staffs.* VII (1996), 241. From 1865–67, he served as MP for Stoke-on-Trent. See also Michael Hall, ‘Our Own: Thomas Hope, A. J. Beresford Hope and the creation of the High Victorian Style’, *The 1840s* (The Victorian Society, Studies in Victorian Architecture and Design), vol. 1 (2008), 60–75.

148 SRO, D. 834/4/1/2. See also J. Masfen, *Views of the Church of S. Mary at Stafford* (1852), 22–31.

149 Scott described the timber-framed roof of the nave clerestory as ‘a very fine work of its age’ and wanted to bring the chancel ‘as near as I could to its original state, but [restore] the nave rather to its condition at the end of the fifteenth century’: Masfen, *St Mary’s*, 19, 23 (quoted in Fisher, *Gothic Revival*, 58–9).

150 See, for example, one of Petit’s drawings of St Mary’s before restoration.



Fig. 1 Stafford St Mary before restoration. Artist unknown. Oil on panel. Private collection. © The Author



Fig. 2 Lichfield cathedral from the town, with St Chad in the background. John Louis Petit c. 1842. Watercolour. Private collection. © The Author

the structure but at the expense of the literal antiquity of the stones' and his additions meant that this part of St Mary's could appear to have 'an even and machine-like finish' at odds with the real effects of age.¹⁵¹ Scott's ideas reflected the *zeitgeist* of the 1840s, articulated principally by A. W. N. Pugin, and echoed in great part by the Cambridge Camden Society and publicised in its journal *The Ecclesiologist*,¹⁵² although not all comments by the Camdenians were unsympathetic to Petit's

151 M. J. Fisher, *A Vision of Splendour: The Gothic Revival in Staffordshire 1840-90* (privately published by the author, 1995), 45–6 and footnotes; Fisher, *Gothic Revival*, 44–62; and Fisher, *Pugin-Land*, 158–60. Archaeological evidence suggests Scott's proposals may have had some historical justification.

152 See A. W. N. Pugin, *Contrasts, or, A parallel between the noble edifices of the fourteenth and fifteenth centuries, and similar buildings of the present day; shewing the present decay of taste: accompanied by appropriate text* (1836; enlarged 2nd edn 1841) and *The True Principles of Pointed or Christian Architecture* (1841), together with the statements from 1839 of the Cambridge Camden Society and from 1841 in its journal *The Ecclesiologist*. See also the Cambridge Camden Society's *A Few Words to Churchwardens on Churches and Church Ornamentation* (1842) and Simon Bradley, 'The Roots of Ecclesiology: Late Hanoverian Attitudes to Medieval Churches' in *A Church as it should be*, 22–44. The Cambridge Camden Society changed its name to the Ecclesiological Society when it moved to London in 1845.

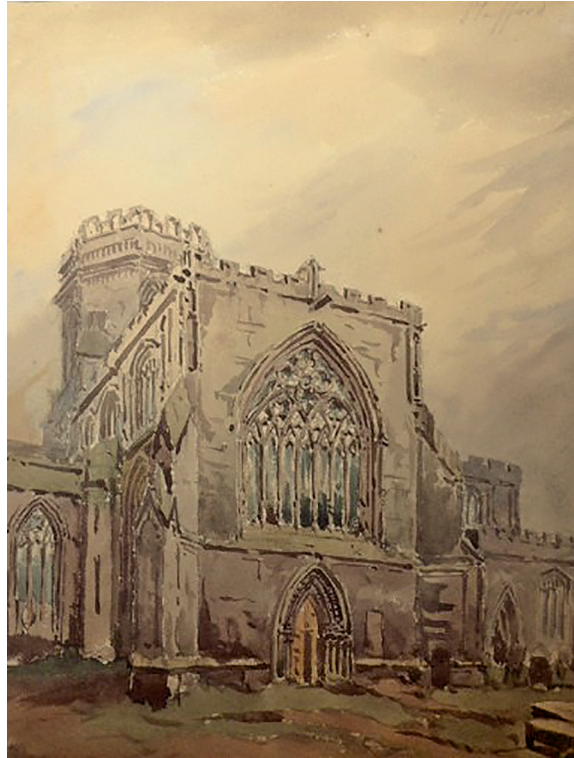


Fig. 3 Stafford St Mary, west front. John Louis Petit c. 1840. Watercolour. Private collection.© The Author



Fig. 4 Buildwas abbey, with farm buildings in the background. John Louis Petit c. 1835. Watercolour. Private collection.© The Author

views.¹⁵³ Despite the suggestion that Petit influenced Scott, then at the beginning of his career, to adopt a more consensual approach in later undertakings, at times Scott was less kind, writing in 1856 what Petit called ‘a most venomous article’ in *The Builder* about the latter’s lecture on ‘Utilitarianism in Architecture’.¹⁵⁴

¹⁵³ One reviewer agreed with Petit, stating ‘we must either ... recover the original scheme as it is conceived by the first builder ... or on the other hand must retain the additions or alterations of subsequent ages, repairing them when needing it’: quoted in Fisher, *Gothic Revival*, 58.

¹⁵⁴ NA, Hartshorne E/263, March 1856. Scott’s comments are in *The Builder*, 16 February 1856, 82–84 to which Petit

Petit was not passive in the face of criticism, commenting to Hartshorne that ‘these fellows must be kept in order’, but he understood the need to put forward alternative views and was open-minded rather than prescriptive or hectoring.¹⁵⁵ Scott, who was for some years the architect of choice for church restoration, undertook a great number of commissions throughout the country,¹⁵⁶ while also publishing well-received studies,¹⁵⁷ and the ubiquity of his work diminished attention given to Petit’s arguments which, with one exception, were not realised in new church buildings.¹⁵⁸ Scott, however, did acknowledge the value of Petit’s pragmatism and quoted him favourably in his *Plea for the Faithful Restoration of Our Ancient Churches* (1850);¹⁵⁹ he prefaced subsequent critical comments by noting ‘his [Petit’s] remarks are replete with good sense and rich in useful practical hints, as indeed are all Mr Petit’s writings’,¹⁶⁰ and later described him in his *Recollections* (1879) as ‘a highly gifted gentleman’.¹⁶¹ Characteristically, John Louis Petit did not miss the opportunity to record the work at St Mary’s Stafford while it was in progress and one watercolour view is now in Staffordshire Heritage and Arts Service collection.¹⁶² Petit also produced a drawing of the second phase of restoration of St Chad’s church, Stafford,¹⁶³ another George Gilbert Scott project undertaken as a memorial to Thomas Salt the elder.¹⁶⁴

Petit was not a reactionary and, where appropriate, supported the re-use of historic buildings. One example is when he told Charles Hartshorne that in his opinion widespread and uninformed popular opposition to ‘Dr Prichard’s proposal’ was unfair. This refers to the plan in 1845 by Dr Thomas O. Prichard (1808–47) of Northampton to adapt the Tudor Abington Manor, the former home of Shakespeare’s granddaughter Elizabeth (Lady) Barnard (née Hall), on the outskirts of the town, into a private hospital for mentally ill patients, an undertaking which was in due course successfully completed. The new hospital, later named ‘Abington Abbey Retreat’, remained in use until 1892 and is now a museum called Abington Park.¹⁶⁵ Petit’s involvement was personal: his wife, Louisa Elizabeth, was a resident in Abington Manor where she died on 30 November 1888.¹⁶⁶ In his views on historic structures John Louis Petit could be said to have anticipated those of William Morris, one of whose main influences was John Ruskin, particularly through statements in the latter’s *Seven Lamps of Architecture*, first published in May 1849. In 1877, nine years after Petit’s death, Morris, Philip Webb, and others founded the Society for the Protection of Ancient Buildings (SPAB),¹⁶⁷ one of the incentives for its formation being Morris’s campaign against over-restoration of Lichfield cathedral. He and his colleagues considered the ‘interest, habit and ignorance of professional architects and the clergy’ were often the reasons for unsympathetic alterations to churches. ‘Speculative reconstruction and large-scale rebuilding’ which destroyed ‘weathered surfaces and irregular appearance’ were anathema to both Petit and Morris; Petit’s criteria for the architectural success of a building were

responded in the issue for 1 March 1856, at p.120 expressing concern that his views, which had developed over time, should not be misrepresented, especially by Scott. See also Stamp, *Recollections*, 98; G. Stamp, *Gothic for the Steam Age: an illustrated biography of George Gilbert Scott* (2015) and P. Modiano, ‘Rev’d Petit Standing up to the Neo-Gothicists’, *Ecclesiology Today*, vol. 55–56 (May 2019), 75–98.

155 NA, Hartshorne, E/263. Petit’s detailed comments throughout his *Remarks*, as well as in his other writings, show his broad knowledge and appreciation of different styles.

156 Scott felt he was sometimes caught between two opposing camps: ‘those who would treat old buildings destructively, and ... those who accuse me of the principles against which I contend, and who oppose one’s doing anything at all’ (Stamp, *Recollections*, 360). John Ruskin shared scepticism about the results of some of Scott’s restorations and is said to have refused the RIBA Gold Medal in 1873, while Scott was president, because the RIBA had failed to protect buildings from excessive changes.

157 George Gilbert Scott, *A Plea for the Faithful Restoration of Our Ancient Churches* (1850), *Remarks on Secular and Domestic Architecture, Present and Future* (1857; 2nd edn 1858) and *Lectures on the Rise and Development of Medieval Architecture* (2 vols, 1879).

158 The exception was Cae’rdeon chapel in Merionethshire (now Gwynedd), Wales.

159 Fisher, *Gothic Revival*, 58.

160 *The Builder*, 16 February 1856, 82.

161 Stamp, *Recollections*, 358.

162 Staffs. Heritage and Arts Service, G94.019.0001. Petit painted several views of St Mary’s; some are reproduced in Modiano, ‘Beauty of Churches’, *BAJ*, 42, plate 10 and in *Petit’s Tours*, 11, 38, 41, 42, 44, 45, and 46. John Buckler also depicted the progress in 1842 of Scott’s changes to St Mary’s Stafford: see WSL, SV IX.43. Building activities appear in other J. L. Petit watercolours including one showing work at Trentham: Staffs. Heritage and Arts Service, G92.021.0001, reproduced in *Petit’s Tours*, 51.

163 SRO, D. 5713/2. See also a print of Petit’s drawing: Staffs. Heritage and Arts Service, P86.024.1752 and a copy c.1928: WSL, topog. Stafford 232c.

164 Fisher, *Gothic Revival*, 58.

165 NA, Hartshorne E/243. See also the history of Abington manor at www.waymarking.com.

166 Her personal estate amounted to £13,625 and letters of administration were granted to her sisters Dame Georgina Anne Gresley of Barton-under-Needwood, widow, and Amelia Maria Reid of Cheltenham, spinster.

167 For the SPAB manifesto, see www.spab.org.uk.

its fitness for purpose — whether its use was sacred or secular or whether it was elaborate or just a simple practical structure — and the effectiveness of the proportions in its design. In his opinion, stylistic specifics or historical antecedents were less important. Petit favoured ‘a living progressive style’ rather than ‘the ruthless tide of restoration’, and observed in relation to churches that ‘there are good reasons why we should rather make the best of our old ... than materially alter them to build others in their room.’¹⁶⁸

John Louis Petit’s writings are still admired. Not only was he a significant figure in research and debate from the 1840s until his death, but as recently as 2011 his *Architectural Studies* (reprinted in 1890, twenty-two years after his death) was described as ‘an excellent resource for the medievalist and for those who delight in directed travel literature’.¹⁶⁹ Primarily an examination of styles preceding the Gothic, the book begins with a discussion of French architecture as it relates to Petit’s observation of buildings in England and this comparative framework enables him to analyse a variety of different elements. He emphasises his viewpoint as a visitor to the country, suggesting that the outsider could see significances more easily than a native. Indeed, Petit’s drawings are often worth notice when they document buildings before modernisation or adaptation. One instance is his watercolour of the ruins of Buildwas abbey (Shrops.) when they formed part of the home farm of the Mosley family.¹⁷⁰ When Walter Mosley married, he rebuilt the farm as a dower house for his widowed mother, spending ‘a considerable sum of money ... in altering, extending and improving the Abbey or rather the Abbot’s House’.¹⁷¹ These changes took more than a year and were so drastic that it was said that all that remained of the original structure were the ceilings. Other paintings by Petit include one of the ruins of Lilleshall abbey (Shrops.), possibly dating from the 1840s, and showing it before the remains were badly affected by subsidence resulting from coal mining.¹⁷² He also produced views of Trentham Park [Hall] (Staffs.) in the late 1830s while it was being rebuilt to the designs of (Sir) Charles Barry.¹⁷³

Petit’s death and legacy

John Louis Petit died in Lichfield on 1 December 1868, reputedly from a cold caught while out sketching, and was buried beside some of his siblings in the family vault in St Michael’s churchyard. His will of 1852, with its codicils of 1864,¹⁷⁴ is largely concerned with establishing a trust to manage his real estate and its income for the benefit of his immediate dependants, specifically his wife, his widowed sister Elizabeth Haig, and his two unmarried sisters, Emma and Susanna. The estate in Yeading (Mdx.) was left to his nephew Thomas Salt the younger. The remaining provisions chiefly relate to arrangements for his personal property, with legacies to his wife and several family members: Amelia Maria Reid (his sister-in-law);¹⁷⁵ his five surviving sisters (including Mary Ann Chetwynd and Maria Katherine Jelf); his nephews including Thomas Salt the younger;¹⁷⁶ his nieces including Harriet and Sarah Salt; and his brothers-in-law Thomas Salt the elder (1802–71), Henry Chetwynd (1791–1870), and the Revd William E. Jelf (1811–75). There were also bequests to William Salt (who, in fact, predeceased Petit in 1863); his mining agent Matthew Frost and land agent Joseph Tarratt; his ‘faithful servant’ Walter Gough, who had previously been employed by his late uncle Louis Hayes Petit; and, lastly, his godsons, Bertram, son of Charles Henry Hartshorne, and Arthur, son of his sister-in-law Georgina, widow of the Revd William Nigel Gresley. Petit also

168 *The Builder*, 28 June 1856, 350.

169 Ashley Chadwick, University of Texas Architecture and Planning Library: blogs.lib.utexas.edu. See also the Victorian Web’s listing of architectural historians and theorists which includes J. L. Petit: <http://victorianweb.org/art/architecture>.

170 Petit’s article on Buildwas abbey was published in *AJ*, vol. 15 (1857), 335–44.

171 Notes on history of Buildwas by H. R. Mosley, nephew of Walter Mosley, 1917: SA, 6001/4353, 14.

172 Private collection.

173 Staffs. Heritage and Arts Service, G92.021.0001. See also *Petit’s Tours*, 51. Fourteen architectural drawings of Trentham by Barry, 1834–37, are in the collections of the Potteries Museum and Art Gallery, Hanley.

174 Petit’s will (dated 11 March 1852) with two codicils (added 19 November 1864) was proved on 2 March 1869 by Thomas Salt the elder and Thomas Salt the younger and his estate was valued at under £16,000. Petit left his real estate in trust to Thomas Salt the elder and Thomas Salt the younger to benefit his wife and dependant sisters with reversion to Mary Ann Chetwynd and Maria Katherine Jelf; schedules of deeds include Petit property in Wolverhampton, Willenhall and Wednesfield; Ettingshall Park; Shareshill; lands at Merridale, Wolverhampton; Great Saredon, and Berry Hill, Lichfield (all Staffs.), and in Yeading (Mdx.). See also abstract of title to Wolverhampton estate, 1780–1869: SRO, D. (W.) 1857; lands in Great Saredon: SRO, D. 802/51; property in Lichfield, 1844–1907: SRO, D. (W.) 1851/8/56; exchange of lands in Merridale and Blakenhall, Wolverhampton, 1814: SRO, D. 593/1/26/23.

175 Amelia Reid was to choose for Louisa Elizabeth Petit if she were unable to do so herself.

176 MP for Stafford, 1859–65 and 1869–92 and created 1st baronet, 1899.

left books to the value of £30 to the Working Men's Association in Lichfield.¹⁷⁷ The disposition of his drawings gives a very clear indication of how prolific Petit was.¹⁷⁸ Apart from his paintings in the house of his three sisters in Lichfield, plus two portfolios also given to these women,¹⁷⁹ the remainder comprises bulk bequests: 300 sketches to his wife; 200 each to his five sisters; 200 each to his Salt nephew and nieces; 100 to Amelia Maria Reid; and 20 to Philip Delamotte. Up to 100 drawings were offered to Petit's other friends in his memory. Petit's wide range of interests is shown in the bequests of his illustrated books: Owen Jones's *The Grammar of Ornament* was left to Maria Katherine Jelf; studies of French architecture in the medieval and Renaissance periods, together with four volumes on Scottish antiquities, to Mary Ann Chetwynd; David Roberts's *Egypt and the Holy Land*, A. H. Layard's *Nineveh* and Paul-Émile Botta's *Letters on the Discoveries at Nineveh* to 'my sisters residing in Lichfield'; and volumes of views in Normandy and Brittany, together with a book on costumes of the Pyrenees and a study of Yorkshire abbeys, to his wife. Much of John Louis Petit's property in the Wolverhampton area was sold after his death and purchasers in 1869 included Theodosia Hinckes.¹⁸⁰

At the memorial exhibition in London in 1869 of about 300 of Petit's drawings, the unchronological display, together with his sisters' claim to have 15,000 of his sketches, led reviewers to comment on his productivity rather than his artistic skill.¹⁸¹ His reputation might have been better served if the principle 'peu des choses, mais des roses' had been followed, but criticism of his 'uniformity of colouring' would still have been pertinent. Petit's heirs regarded his drawings as an archive to be kept in accordance with his wishes; their primary importance was within the family. Moreover, at the time he died there were no appropriate local repositories and, since he himself had not taken the initiative in bequeathing them outside his immediate circle, they did not do so either. Therefore his artworks mostly remained in private ownership and for a long time were not generally appreciated. Now they are better known than during the century following his death because from the 1980s his watercolours have become widely available from dealers or at auction; this dissemination through new commercial outlets has increased interest in Petit and his paintings, helped by the consistency of his output and the enduring popularity of topographical subjects.¹⁸² Easier access for research and exhibition, especially online, has also raised awareness of Petit's watercolours in public collections, notably in the William Salt Library and Staffordshire Heritage and Arts Service which hold a good quantity of his Staffordshire views, together with some of buildings and landscapes in Derbyshire;¹⁸³

177 Founded in 1854 and eventually possessing a library of about 350 books: *VCH Staffs.* XIV, 179. J. L. Petit supported the Association and has been said to have been its president.

178 *The Builder* (8 May 1869, 361) reported a statement by Petit's sisters that they had 15,000 of his drawings, but Petit's productivity was not wholly exceptional. The historian Edward A. Freeman left 6,200 sketches of European churches, now part of JRUL collections, and P. H. Delamotte notes other amateur artists who were notably prolific: 'Perhaps there are few [professional] artists who have kept in their possession such a numerous collection of faithful studies as have been accumulated in the hands of many well-known amateurs; such indefatigable sketchers, for instance as Mr Gambier Parry (1816–88), the late Rev. J. L. Petit, the late Dean Alford (1810–71) or Mrs Robertson Blaine': *Sketching*, vi. In 1938 'some 1500 or 2000 drawings' by Moses Griffith (1747–1819) — who painted views of Shugborough (Staffs.) such as WSL, SV IV.309b — were sold in one auction at Christie's: Williams, *Early English Watercolours*, 46. John Buckler left at least 13,000 drawings and the British Library (BL) has forty-two volumes of Buckler family works, whilst Samuel Hieronymus Grimm (1733–94) produced in about twenty-two weeks 900 watercolours, also now in the BL, for his patron Sir William Burrell. Some 2,500 of Grimm's finished watercolours for another patron, Sir Richard Kaye, are also in BL collections. Samuel Prout between 1811 and 1816 sold more than 1,330 watercolours to two clients: *ODNB* article on Prout.

179 Including 'portfolio of Irish sketches by me, 1862' and 'portfolio marked J'. All other sketches 'whether pasted in books or loose in portfolios' were left to these three sisters.

180 For a map of J. L. Petit's lands sold to Theodosia Hinckes, see WCA, D-NAJ/E/3/1. Notes on the Hinckes family are to be found in WCA, D-CHA/12, at www.historywebsite.co.uk/articles/bushbury/families and in WSL, CB/HINCKES/2.

181 *The Builder*, 8 May 1869, 361–2 (noting display of 294 sketches) and 15 May 1869, 392. Comments included the 'astonishing number' of Petit's sketches and his 'characteristic treatment' (p. 361), together with his 'great uniformity of colouring' (p. 392). See also Architectural Exhibition Society catalogue of sketches (1869) in the Victoria and Albert Museum's National Art Library catalogues collection, shelfmark 200.B.6.

182 After the death of Emma Petit and her sisters in the 1890s, a sizeable series was apparently inherited by J. L. Petit's nephew, Louis William Jelf (1853–1934), later Jelf-Petit, son of Maria Katherine and William Edward Jelf. In 1877 Louis William married Helen Vincent and it was their daughter Elsie Louisa Vincent Jelf, later Tate (1881–1957), who had the collection at her home, Chaleshurst, in Chiddingfold (Surrey) at the time of her death. Elsie married on 31 March 1910 Alfred Herbert Tate (1872–1930), a son of Sir William Henry Tate (1842–1921), 2nd baronet, and a grandson of Sir Henry Tate (1819–99), 1st baronet, founder of the Tate Gallery. There were three sons of the marriage, Louis William (1911–86), Francis Herbert (1913–98), and John Frederick Peter (1923–89). During the late 1980s and 1990s large numbers of J. L. Petit's drawings were sold at auction in several parts of the country; some are still (2019) being offered for sale online or by dealers, especially in London. Watercolours attributed to Petit but more probably by one or other of his relatives have also been on sale.

183 See Staffordshire Past Track: www.staffspasttrack.org. A number of these Petit drawings are reproduced in *Petit's Tours*

in the Samuel Johnson Birthplace Museum in Lichfield which has a number of his paintings of the cathedral, the city, and the nearby countryside;¹⁸⁴ in the archives of Historic England, including his article on Howden minster (Yorks.) and copies of engravings of his drawings of Sherborne School (Dorset) refectory roof, 1850;¹⁸⁵ and in the National Library of Wales which has his Cae'rdeon drawings.¹⁸⁶

Conclusion

Petit had been active at an opportune time; groups were being formed nationally and locally to foster research into archaeology and architecture and to publish outcomes.¹⁸⁷ Both as records and as stimuli to enquiry, illustrations were becoming the norm in historical publications, a trend shown in the output of the Anastatic Drawing Society, and there was often little distinction between architectural and topographical artists.¹⁸⁸ When Robert Eyton gathered material for his *Antiquities of Shropshire*, Petit's sketches and information enhanced the content of a scholarly study focusing on the medieval period in a locality he knew well. New organisations provided new audiences for speakers such as Petit and their journals enabled his articles to reach a wider public than the membership of traditional learned societies.¹⁸⁹ His investigative energy and enthusiasm meant that he had a wide range of reference with which to sustain a long writing and speaking career and these resources were based on personal observation; as he said in *Remarks*, his sketches were rough because they had been drawn on the spot.¹⁹⁰

The term 'antiquarian', apposite to John Louis Petit, is often now pejorative, suggesting somebody 'of broad knowledge and shallow understanding' but such a definition fails to recognise the importance of the research and recording work of 19th-century individuals such as Petit. Perhaps he did not systematically analyse his findings, as would be expected of a 21st-century researcher, but his commitment and drive led him to seek out details which enhance understanding of architectural heritage and he always emphasised the need for an enquirer to 'think and observe for himself'.¹⁹¹ Because his motivation was personal and not professional, Petit did not see himself as primarily a painter and so in both letters and formal documents referred to his artworks as 'sketches'. Nor did he develop new critical theories; his enthusiastic interest in a wide range of buildings and techniques caused Pevsner to describe him as 'eclectic in tolerating all available [architectural] styles',¹⁹² but this broad scope is what makes his writings and his topographical drawings merit attention. Well-informed and with an easy manner in both art and prose, Petit's purpose was to develop his audience's visual knowledge and historical perceptions. A member of the 'Church Artistic', his published works add

including views of Eccleshall church (p. 50), Gnosall church (p.48), Hamstall Ridware gateway (p. 26), and Ingestre Hall (p. 25).

184 See SJBM collections website: collections.samueljohnsonbirthplace.org.uk. J. L. Petit's watercolours in SJBM include Lichfield from the Windmill House on Grange Lane (SJBM 2008.596, reproduced in *Petit's Tours*, 37), Lichfield from the Minster Pool (SJBM 2001.528), the west front of Lichfield Cathedral from the rear of Darwin House (SJBM 2001.499), plus a drawing of the tower of St Peter's church, Wolverhampton (SJBM 2001.974.20) and a view of Ilam Rock in Dovedale (Derbys.) (SJBM 20001.974.21).

185 Historic England, ALO118/008/01. As already noted, Petit's article on Howden minster was published posthumously in *AJ*, vol. 25 (1868), 179–91. The copies of Sherborne School refectory roof engravings are Historic England, DP 137201 and 137202.

186 See www.library.wales. There is no online catalogue at present.

187 J. L. Petit had links with the Northampton Mechanics' Institute, established in 1832 and described in 1849 as 'more flourishing than most in the kingdom' (*VCH Northants*. III, 39, fn.146); the Cheltenham Literary and Philosophical Institution founded in 1833; the (Royal) Institute of British Architects founded in 1834; the Shropshire and North Wales Natural History and Antiquarian Society founded in 1835; the Cambridge Camden Society founded in 1839; the Oxford Society for Promoting the Study of Gothic Architecture, also founded in 1839; the Lichfield Architectural Society established by 1841; the British Archaeological Association founded in 1843; the (Royal) Archaeological Institute founded in 1844; and the St. Albans and Hertfordshire Architectural and Archaeological Society founded in 1845.

188 Giles Worsley, *Architectural Drawings of the Regency Period, 1790–1837* (Andre Deutsch, 1991), 73.

189 Papers on Shropshire churches by J. L. Petit were published in the *Transactions* of the Shropshire and North Wales Antiquarian Society; his lecture on Tewkesbury Abbey church, given to the Cheltenham Literary and Philosophical Institution, was published in 1848: J. L. Petit, *The Abbey Church of Tewkesbury* (Henry Davies, Cheltenham); his paper to the Northampton Mechanics' Institute was printed in 1853, and in 1859 he gave a paper on 'The Architecture of the South of Europe' to the St Albans and Hertfordshire Architectural and Archaeological Society. Moreover, Petit contributed a study of Boxgrove Priory (Sussex) to a collaborative collection titled *The Architectural History of Chichester Cathedral* (W. H. Mason, Chichester, 1861), comprising papers given to the Archaeological Institute meeting in 1853. A selective bibliography of Petit's writings is on the website revpetit.com.

190 'My wish is rather to excite than to indulge [the reader's] curiosity': *Remarks*, I, preface, p. viii.

191 See NA, Hartshorne E/244 in reference to Edward A. Freeman. Petit declared 'my knowledge [is] derived from personal observation and not from what [has] been said or written by anyone': *The Builder*, 9 February 1856, 73.

192 See N. Pevsner, *Some Architectural Writers of the Nineteenth Century* (Clarendon Press, 1972), 100.

to our understanding of the built environment at home and abroad. Importantly, Petit participated actively in high-profile debates about contemporary architectural issues; he energetically supported scholarly initiatives through research, publishing and lecturing; and he was part of a wide network of friends and collaborators including other amateur artists, innovative academics such as Edward A. Freeman and Philip Delamotte, and eminent figures among antiquaries of his time like Robert Eyton, Albert Way, and Charles and Albert Hartshorne.

There is also the local dimension to consider, as it was income from late 18th- and early 19th-century exploitation of Black Country mineral resources that provided the Petit family with the standard of living that enabled them to develop successful careers and offered opportunities for broadening their experience, notably by extensive travel. Indeed, the family's links with Wolverhampton were perpetuated until the early 20th century in the name of Petit Street in the centre of the town (now re-named Thomas Street).¹⁹³ Moreover, John Louis Petit's personal associations in the West Midlands, particularly Staffordshire, contribute to knowledge of the lives of local families such as the Chetwynds of Brocton and the Salts of Baswich. The Chetwynds were frequent companions on the Petits' European travels and both William Salt and Thomas Salt the elder were associated with Petit in the discussions over repairs to St Mary's church, Stafford in the early 1840s and joined the Cambridge Camden Society, the leading group concerned with architectural restoration, especially of churches, during that decade. The Salt family built a special gallery, punningly called 'Le Petit Salon', at Baswich House for Petit's drawings after his death.¹⁹⁴ Both the elder and the younger Thomas received legacies under John Louis's will, as did other Salt and Chetwynd family members, and the Salts acted in an official capacity for the Petits: William Salt was an executor for Louis Hayes Petit and the Thomas Salts, father and son, were John Louis Petit's trustees and executors. Thomas Salt the younger was also named as executor in the wills of Emma Petit and Elizabeth Haig; Emma bequeathed The Brambles in Longdon in remainder to him and the Salts offered hospitality at Baswich House to mutual friends such as Augustus Hare. The continuing regard in which the Petit connection was held was shown by Thomas Salt the younger when he gave Petit as a middle name to one of his sons, Walter Petit Salt (1872–1918) and by John Louis's nephew, Louis William Jelf (1853–1934) who added Petit to his surname and who preserved in his family Petit's drawings inherited from the latter's sisters, thus keeping them in the care of the next generation until 1957 at least.

Throughout the 19th century the Petits' activities showed the importance of family ties, friendship, cultural awareness, and openness to new experiences. John Louis Petit himself was a kind and generous man who accepted criticism without rancour and, though forceful in his opinions, avoided acrimony in the disputes which disfigured some contemporary discussion of ecclesiastical building conservation and restoration. Although he lapsed into obscurity after his death in 1868, many more people now appreciate his legacy of interesting topographical drawings and informative publications. Controversies over principles of church restoration are matters of history, while his appeal has increased because of the consistency and integrity of his endeavours. With this greater public awareness, appreciation of the role of the Petit family in 19th-century Staffordshire and of John Louis Petit's significance as an independent architectural commentator and a talented amateur artist with strong local connections now seem more assured.

193 Re-named by about 1915: see WCA, DEED/968-308/28.

194 A photograph of (Sir) Thomas Salt in 'Le Petit Salon' with J. L. Petit's paintings in the background is reproduced in *They Pulled Our House Down* (at p. 46).

THE FORGERS OF FLASH

FRANK PARKER, TIM KNEBEL, and MARK HENDERSON

The area around Flash in the north-eastern corner of Staffordshire, particularly Three Shires Head, is well-known as a haunt of forgers into the 19th century. This part of the Staffordshire Moorlands had several advantages for such miscreants: pockets of land out-of-sight of roads, local sources of metals (the Ecton and Mixon mines), proximity to an ancient trading route that led westwards through Macclesfield (Ches.),¹ and the ease with which authorities could be evaded. As Byron Machin and others have observed, pursuers from one of the three contiguous counties (Cheshire, Derbyshire, and Staffordshire) could not legally chase their quarry over a county boundary, so the forgers could escape arrest by simply jumping over a stream.

Forgers were active in the 18th century at Bottom House on the Leek–Ashbourne road, in Sutton (Meg Lane), and at Broken Cross near Macclesfield, and gang members from all three locations were hanged at different times.² Flash was allegedly notorious not only for counterfeit coins and jewellery but also for forged banknotes, although the allegation was probably unfounded.³ As late as 1888 traders at Macclesfield cattle fair refused to accept notes from Flashmen – although they did accept gold! No resident of Flash was ever hanged for forging, and the belief that Britain's highest village gave rise to the Regency slang term 'flash money' probably owes more to the coincidence of the name than to historical fact.



Fig. 1 A coiner's pit on Goldsitch Moss, where metal splashes have been found

1 F. H. Parker, *Solstice Trackways* (2013; enlarged 3rd edn, 2017); B. Machin, *The Folklore of the Staffordshire Moorlands* (Seven Stones Publishing, 2018), 53–6.

2 See, for example, Chester Assizes, proceedings for May 1784, at which John Orme of Rainow and John Oakes and William Lowe of Sutton were tried and convicted for coining silver.

3 N. J. Tringham, 'Alstonefield: Quarnford', in M. W. Greenslade (ed.), *Victoria County History of Staffordshire, VII: Leek and the Moorlands* (1996), 51.

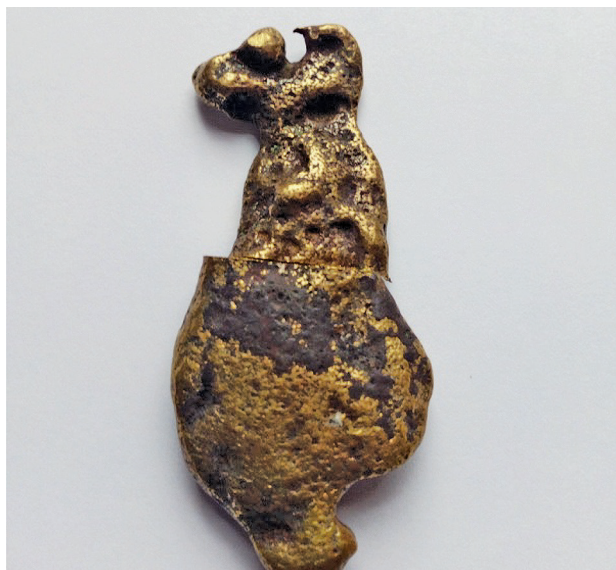


Fig. 2 The alloy spillage found at Broken Cross, presumably intended to resemble gold

One putative coiners' pit is located on Goldsitch Moss below Flash, where molten tin splashes have been found in the ground. This is a secluded place, hidden from view by the contours of the land, with the Roaches rising up to the south. The authorities would find no incriminating evidence if they chanced upon it while it was unoccupied, whilst the forgers would be at home with no counterfeiting materials visible.

To replicate the density, colour, and softness of gold convincingly, the production of counterfeit-gold goods — there is no evidence that gold *coins* were forged in the Flash area, only such items as rings and bracelets — must have been technically more demanding than that of fake silver. So what metals were used for the purpose? To answer this question, a sample from the Broken Cross trade route was examined: a sample that appears to have solidified from a spillage of molten alloy, abandoned as not worth reclaiming.

It was kindly analysed by Thomas Robertson and his colleagues at Arconic Forgings and Extrusions – Metals (Glossop), using glow discharge mass spectrometry and X-ray fluorescence, standard methods for investigating the composition of alloys, including the detection of non-metal contaminants. The results are summarised in the following table.

What do these data tell us?

First, the amount of real gold in the sample is negligible, as the alloy is essentially brass: a roughly 2:1 mixture of copper and zinc, ores of which were obtainable from the Ecton and Mixon mines.

Second, unlike normal brass, the sample is almost 20% lead. Adding lead would have had three main advantages for the forgers: lowering the melting temperature of the mixture; increasing the density of the product, so the brass-based items could be passed off as gold; and making the alloy softer and more malleable, again resembling gold and making it easier to impress the mark of the dies and punches used to produce 'Flash' goods.

Third, most of the other components occur in the local copper and zinc ores. The zinc ore (sphalerite) contains small amounts of iron, manganese, cadmium, indium, and gallium,⁴ but is primarily zinc sulphide, with most of the sulphur being lost as gas during the smelting process. Sulphur often contains traces of selenium. The copper ore (chalcopyrite) is a mixed sulphide of copper and iron, and because there is relatively little iron in the Broken Cross sample, the copper used by the forgers must have been at least semi-refined. Trace elements in chalcopyrite include silver, arsenic, nickel, tin, and sometimes bismuth, all of them present in the sample.⁵

4 M. Frenzel, T. Hirsch, and J. Gutzmer, 'Gallium, germanium, indium and other trace and minor elements in sphalerite as a function of deposit type – a meta-analysis', *Ore Geology Reviews* **76** (2016), 52–78.

5 S.A.S. Dare, S.-J. Barnes, H. M. Prichard, and P.C. Fisher, 'Chalcophile and platinum-group element (PGE) concentrations in the sulfide minerals from the McCreedy East deposit, Sudbury, Canada, and the origin of PGE in pyrite', *Mineralium Deposita* **46/4** (2011), 381–407.

Element	Concentration
Copper	55%
Zinc	25%
Lead	19.47%
Iron	0.32%
Arsenic	1257 ppm
Silver	673 ppm
Nickel	381 ppm
Germanium	7314 ppm
Palladium	648 ppm
Rhenium	481 ppm
Sulphur	430 ppm
Selenium	32 ppm
Antimony	325 ppm
Carbon	100 ppm
Tin	98 ppm
Bismuth	72 ppm
Gallium	50 ppm
Manganese	34 ppm
Phosphorus	33 ppm
Cadmium	28 ppm
Nitrogen	26 ppm
Indium	7 ppm
Gold	1 ppm

(ppm = parts per million)

Finally, the high contents of germanium and palladium are surprising. Germanium is another trace element often found in sphalerite, but an amount in excess of 7000 ppm (0.7%) seems improbable. The palladium is even harder to explain. Palladium, a noble metal, is found in crude platinum ore and can occur as the native metal in some copper or nickel deposits, but it is not recorded as a component of chalcopyrite. Thomas Robertson pointed out that since the metals with which they normally work at Arconic contain in the order of 1 ppm of both germanium and palladium, the glow discharge mass spectrometry measurement standards they use are designed for small traces; if a sample contains significantly higher levels, large errors could creep into the analysis. That could partly account for our high values, but only partly. It is inconceivable that the forgers would deliberately have added a component as expensive as palladium. At least one aspect of the coiners' work therefore remains mysterious.

The information revealed by this small-scale investigation is interesting, but independent studies of similar samples would be welcomed. They might or might not corroborate the findings; in either event they would add to our understanding of the forgers of Flash and their operations.

THE AUTHORS

Frank Parker (d. 2019), a chemist prior to his retirement, was a long-term resident of Flash and the author of *Ancient Pathways* (2008) as well as *Solstice Trackways*; Tim Knebel is an archivist who runs the Peak in the Past website (www.peakinthepast.co.uk); and Mark Henderson is a collector and teller of Peak District folktales and the author of *Folktales of the Peak District* (Amberley Publishing, 2011). Tim and Mark are grateful to South West Peak for a grant enabling them to make films of folktales emanating from that part of the Peak District National Park. The present study is in part a spin-off from that grant-aided work.

INDEX, *TRANSACTIONS* XLV–XLIX (2011–17)

compiled by BETTY FOX

INDEX OF AUTHORS

- Barclay, Alistair J. A Bronze Age flat grave at The Roaches, Staffordshire: bone toggle, xlix. 18–19, fig., pl.
- Barnatt, John A Bronze Age flat grave at The Roaches, Staffordshire, xlix. 1–27, figs., pl., table; radio-carbon dating, xlix. 9; flint and pebbles, xlix. 19
- Bates, Andy Excavations at Tipping Street, Stafford, 2009–2010: animal bone, xlvii. 64–5, table
- Batt, Cathy Excavations at Tipping Street, Stafford, 2009–2010: analysis of chronometric results, xlvii. 79–85, tables
- Beswick, Pauline A Bronze Age flat grave at The Roaches, Staffordshire: the collared urn, xlix. 10–13, fig.
- Breeze, Andrew Britons at Morfe, xlv. 107–8
- Breeze, Paul and others ‘Opening the floodgates’ on Staffordshire’s water meadows: the Staffordshire Water Meadows Survey, 2008, xlv. 85–106, figs., pl.
- Brown, Lisa Excavations at Tipping Street, Stafford, 2009–2010: Prehistoric evidence, xlvii. 94–7; the Anglo-Saxon period, xlvii. 97–103; the medieval period, xlvii. 103–5; post-medieval period, xlvii. 105–6
- Capon, Les and Goodwin, Jonathan Excavations at three Hanley (Stoke-on-Trent) pottery factories: Broad Street/Mason’s Ironstone Works, Kensington Pottery and St James’ Street Pottery, xlviii. 55–86, figs., pl.
- Challinor, Dana A Bronze Age flat grave at The Roaches, Staffordshire: the charcoal, xlix. 8–9, table
- Challis, Keith and others ‘Opening the floodgates’ on Staffordshire’s water meadows: the Staffordshire Water Meadows Survey, 2008, xlv. 85–106, figs., pl.
- Clelland, Sarah Jane Excavations at Tipping Street, Stafford, 2009–10: analysis of chronometric results, xlvii. 79–85, tables
- Collinge, Peter Chinese tea, Turkish coffee and Scottish tobacco: image and meaning in Uttoxeter’s Poor Law Vouchers, xlix. 80–89, figs.
- Cook, Gordon Excavations at Tipping Street, Stafford, 2009–10: analysis of chronometric results, xlvii. 79–85, tables
- Cootes, Kevin V.E. A Bronze Age flat grave at The Roaches, Staffordshire: petrographic analysis, xlix. 13–15, pl.
- Cuttler, Richard and Ramsey, Eleanor Excavations at Church Hill, Walsall, xlv. 62–84, figs., pl.
- Dodd, Anne and others Excavations at Tipping Street, Stafford, 2009–10: possible Iron Age roundhouses, three Stafford-type ware kilns, and medieval and post-medieval urban remains, xlvii. 1–114, figs., tables;
- Druce, Denise Excavations at Tipping Street, Stafford, 2009–10: charred plant remains, xlvii. 65–75, tables; charcoal, xlvii. 77–9, table
- Fox, Betty Jim Gould: a bibliography, xlix. 90–91
- Fradley, Michael Field survey at the Romano-British villa site at Hales, xlviii. 1–5, fig.
- Gale, Rowena Manor Farm, Wall, Staffordshire: an archaeological watching brief, 2003: charcoal sample, xlv. 18–20, fig.
- Goodwin, Jon Summary of archaeological fieldwork in Stoke-on-Trent in 2016, xlix. 92–3
- Goodwin, Jonathan and others Excavations at three Hanley (Stoke-on-Trent) pottery factories: Broad Street/Mason’s Ironstone Works, Kensington Pottery and St. James’ Street Pottery, xlviii. 55–86, figs., pl.

- Grieg, James Archaeological recording at Shugborough Park, Staffordshire, 2005: charred plant remains, xlv. 34
- Griffiths, Seren and Linford, Paul Chronological context of Tipping Street in late Saxon Stafford and the currency of Stafford ware, xlvii. 85–94, tables
- Griffiths, Seren and others Excavations at Tipping Street, Stafford, 2009–10: possible Iron Age roundhouses, three Stafford-type ware kilns, and medieval and post-medieval urban remains, xlvii. 1–114, figs., tables;
- Halstead, John Manor Farm, Wall, Staffordshire: an archaeological watching brief, 2003, xlv. 13–23, figs., pl.
Archaeological recording at Shugborough Park, Staffordshire, 2005, xlv. 24–40, figs., pl.
- Healey, R.M. review of John Martin Robinson, *James Wyatt, architect to George III*, xlvii. 98–100
- Hislop, Malcolm and Kelleher, Shane Beaudesert Hall, Staffordshire: a house of the Bishops of Coventry and Lichfield, xlv. 41–61, figs., pl.
- Hooke, Della The landscape of the Staffordshire Hoard, xlv. 1–12, figs.
The forest landscape of the Staffordshire Hoard region: II, the later landscape, xlviii. 41–54, figs.
- Horovitz, David Knave's Castle: a lost monument on Ogley Hay near the site of the Staffordshire Hoard with some thoughts on the name Ogley Hay, xlv. 33–71, figs.
Ogley Hay revisited: further reflections on a swine of a name, xlviii. 6–14
- Hunt, John Lordship and monastic patronage in twelfth- and thirteenth-century Staffordshire: the Honor of Tutbury and its neighbours, xlix. 48–67
review of Martin Carver, *The birth of a Borough, Anglo-Saxon Stafford*, xlv. 109–10
review of Christopher Hewitson and others, *The Great Hall, Wolverhampton*, xlv. 110–112
review of Malcolm Hislop and others, *Tutbury: a castle firmly built*, xlix. 94–7
- Hunter, Kath Excavations at Tipping Street, Stafford, 2009–10: waterlogged plant remains, xlvii. 75–7, table
- Ixer, Rob Archaeological recording at Shugborough Park, Staffordshire, 2005: Bronze Age pottery petrography, xlv. 37–40
- Kelleher, Shane and Hislop, Malcolm Beaudesert Hall, Staffordshire: a house of the Bishops of Coventry and Lichfield, xlv. 41–61, figs., pl.
- Kincey, Mark and others 'Opening the floodgates' on Staffordshire's water meadows: the Staffordshire Water Meadows Survey, 2008, xlv. 85–106, figs., pl.
- Linford, Paul and Griffiths, Seren Excavations at Tipping Street, Stafford, 2009–2010: chronological context of Tipping Street in late Saxon Stafford and the currency of Stafford ware, xlvii. 85–94, tables
- Litherland, Steve Excavations at Church Hill, Walsall: historical background, xlv. 62–67, figs.
- McKinley, Jaqueline I. A Bronze Age flat grave at The Roaches, Staffordshire: cremated bone and aspects of the mortuary rite, xlix. 6–8, pl.
- Meeson, Bob The origin and early development of St Editha's church, Tamworth, xlviii. 15–40, figs.
- Nicholson, Rebecca Excavations at Tipping Street, Stafford, 2009–10: analysis of chronometric results, xlvii. 79–85, tables; waterlogged plant remains, xlvii. 75–77, table
- Northover, Peter A Bronze Age flat grave at The Roaches, Staffordshire: microscopy and analysis of awl, xlix. 16–18, fig., pl.
- Norton, Andrew and others Excavations at Tipping Street, Stafford, 2009–10: possible Iron Age roundhouses, three Stafford-type ware kilns, and medieval and post-medieval urban remains, xlvii. 1–114, figs., tables

- Poole, Cynthia and others Excavations at Tipping Street, Stafford, 2009–10: possible Iron Age roundhouses, three Stafford-type ware kilns, and medieval and post-medieval urban remains, xlvii. 1–114, figs., tables; fired clay, xlvii. 60–61, fig.
- Quinn, Patrick S. and Cootes, Kevin V.E. A Bronze Age flat grave at The Roaches, Staffordshire: petrographic analysis, xlix. 13–15, pl.
- Ramsey, Eleanor and Cuttler, Richard Excavations at Church hill, Walsall, xlv. 62–84, figs., pl.
- Rátkai, Stephanie Excavations at Church Hill, Walsall: the pottery, xlv. 78–9, pl., table
- Sargent, Andrew Early medieval Lichfield: a reassessment, xlvii. 1–32, figs.
- Scott, Ian Excavations at Tipping Street, Stafford, 2009–10: metal and glass finds, xlvii. 61–2, fig.
- Shaffrey, Ruth Excavations at Tipping Street, Stafford, 2009–10: worked stone, xlvii. 62–4, figs.
- Smith, Wendy Manor Farm, Wall, Staffordshire: an archaeological watching brief, 2003: environmental sampling results, xlv. 16–18, table
- Steele, Val A Bronze Age flat grave at The Roaches, Staffordshire: lipid analysis of sherds from the collared urn, xlix. 15–16
- Teague, Stephen and others Excavations at Tipping street, Stafford, 2009–10: possible Iron Age roundhouses, three Stafford-type ware kilns, and medieval and post-medieval urban remains, xlvii. 1–114, figs., tables; analysis of chronometric results, xlvii. 79–85, tables
- Tringham, Nigel The 1655 petition against the inclosure of Needwood Forest, xlvii. 72–96, figs.
The abortive inclosure of Needwood Forest in the 1650s, xlix. 68–79, fig., pl.
- Wood, Rita The Romanesque font at St Mary's church, Stafford, xlix. 28–47, figs.
- Woodward, Ann Archaeological recording at Shugborough Park, Staffordshire, 2005: Prehistoric pottery, xlv. 32–4, fig

INDEX OF SUBJECTS

- Aethelflaed, xlviii. 17
- Aethelred, xlviii. 15–17
- Agardsley Lodge, xlix. 71
- Anglo-Saxon period
burials, xlv. 57–9
folk-groups: Pencersæte, Tomsæte, xlv. 3, 5
Lichfield, xlv. 7–20, figs.; 23–26
quern stones, xlvii. 62–3, fig.
Stafford, xlvii. 97–103
Staffordshire Hoard, xlv. 1–12, figs.
- architecture
Beaudesert Hall, xlv. 41–61, figs., pl.
- awl, xlix. 16–18, pl.
- Babington, Zachary, of Curborough, xlv. 73 *et seq.*; xlix. 72–4
- Bagshaw, Ralph, grocer, xlix. 82–9, figs.
- balance, xlvii. 61, fig.
- Bartmann jug, xlvii. 41, 58–9, fig., 105
- Bassett family, xlix. 56–7
- Beaudesert Hall, xlv. 41–61, figs., pl.
- Bellarmino *see* Bartmann
- Beowulf (Anglo-Saxon poem), xlv. 3
- bone
animal, xlvii. 64–5, table
human, xlix. 6–8, pl.
- bone objects
toggle, xlix. 18–19, fig., pl.
- bounds
Cannock Forest, xlviii. 41–3, fig.
Ogley Hay (*Ogintune*), xlv. 11–12
- brick, xlv. 41–61, figs., pl.; 78, pl.
- Brindley, Thomas, grocer, xlix. 82–9, figs.
- Britons, xlv. 107–8
- Broadstreet/Mason's Ironstone Works,
Hanley, xlviii. 61–3, 67, 72–86, figs., pl.
- Bronze Age
burial, xlviii. 1
cropmark, xlv. 35
flat grave, xlix. 1–27, figs., pl., table
pit, xlv. 26–7, fig., pl.
pottery, xlv. 32–4, 37–40
- bronze objects
awl, xlix. 16–18, pl.
- buildings
post-built structures, xlvii. 31–3, 35–8, figs.

- burials, xlv. 57–9; xlviii. 1
 burnt stone *see* stone
- canals
 Wyrley & Essington canal, xlv. 45
 Cannock forest, xlviii. 41–54, figs.
 Catshill, xlv. 3, 11
 cattle
 brands, xlix. 71, pl.
 pasturing, xlix. 70
 Chad, St, xlv. 1–4
 charcoal, xlvii. 77–9, table; xlix. 8–9, table
 radio-carbon dating, xlv. 18–19, fig.; xlvii. 79–85, figs., table; xlix. 9
 charters
 Ogley Hay, xlv. 11–12
 Tamworth, xlviii. 16–17
 churches
 Anglo-Saxon, xlviii. 20–21
 St Editha's, Tamworth, xlviii. 15–40, figs.
 St Mary's, Stafford, xlix. 28–47, figs.
 Tutbury priory, xlix. 50–53
 clay objects
 fired clay, xlvii. 60–61
 spindle whorl, xlvii. 61
 Coal Brook, xlviii. 1
 coal mining, xlv. 45
 Occamsley Pits, xlv. 46, 48
 coins
 silver-cut farthing, xlvii. 61, fig.
 commoners' rights, xlix. 68–79, fig., pl.
 cremations, xlix. 6–8, pl.; xlix. 1–27, figs., pl., table
 crypt
 St Editha's, Tamworth, xlviii. 23–37, figs.
- ditches, xlv. 31–2, 35; xlvii. 10–12, figs., 35, 72–3
 drumbles (water channels), xlviii. 2, fig.
- earthworks, xlv. 46–50, figs.; xlviii. 2–5, fig.
 Editha, St, xlviii. 18–19, table
 enclosures *see* inclosures
 excavations
 Hanley, xlviii. 55–86, figs., pl.
 Lichfield, Cross Keys, xlv. 5–32, figs.
 The Roaches, xlix. 1–27, figs., pl., table
 Shugborough Park, xlv. 24–40, figs., pl.
 Stoke-on-Trent, xlix. 92–3
 Wall, Manor Farm, xlv. 13–23, figs., pl.
 Walsall, Church Hill, xlv. 62–84, figs., pl.
- Ferrers family, xlix. 49–67; 68
 fieldwork
 Stoke-on-Trent, xlix. 92–3
 flint, xlix. 19
 flooding, xlv. 85–106, figs., pl.
- fonts
 St Mary's, Stafford, xlix. 28–47, figs.
- forests, xlv. 9–10, fig.
 Cannock, xlviii. 41–54, figs.
 Needwood, xlv. 72–96, figs.; xlix. 68–79, fig., pl.
 Frog Hall/Frog-Homer, xlv. 46
- garden soils, xlvii. 41
 glass objects
 bead, xlvii. 61, fig.
 gold objects
 Staffordshire Hoard, xlv. 1–5
 Gould, Jim, bibliography, xlix. 90–91
- Hales, Romano-British villa, xlviii. 1–5, fig.
 Hammerwich, xlv. 4, 10; xlviii. 47, 49
 Hanley
 pottery factories, xlviii. 55–86, figs.
- hill forts
 Berry Ring, xlvii. 4, 96, 102
 holloway
 Stafford, xlvii. 30, fig.
 Hugh of Eynsham, forester, xlviii. 45
 Hulton abbey, xlix. 93
 human remains, xlvii. 103
 hunting, xlv. 9, fig.
- inclosures
 Cannock forest, xlviii. 46–50
 Needwood forest, xlv. 72–96, figs.; xlix. 68–79, fig., pl.
 inscriptions, xlix. 33–4
 Iron Age
 burnt stones, xlv. 14, 18–20
 hill forts, xlv. 2
 pit, xlv. 28–30, figs.
 settlement, xlviii. 1
 Stafford, xlvii. 8–10, figs.
- Keele and Newcastle Archaeological Society, xlviii. 1–2
 Kensington Pottery, Hanley, xlviii. 59–61, 68–71, figs., pl.
 kilns, xlvii. 10, 12–25, figs., table; 97–103; xlviii. 58–9, 61–2, 64–77, 82–3, figs., pl.
 furniture, xlviii. 78
 Knaves Castle, xlv. 33–71, figs.
 on maps, xlv. 39–42, figs.
 knives, xlvii. 61, fig.
- landscape, xlv. 1–12, figs.; xlviii. 41–54, figs.
 Langton, Bishop Walter, xlv. 41
Letocetum, xlv. 4, 6 *see also* Wall
 Lichfield, xlv. 1–32, figs.
 Cross Keys excavation, xlv. 5–32, figs.
 medieval, xlv. 1–5, fig.

- Minster Pool, xlv. 5, fig.
 Stowe, xlv. 1–3, fig.
 town plans, xlv. 2, 21
- limestone
 buildings, xlv. 69, 81–2, figs., pl.
 lime-burning pits, xlv. 80–81
 lime production, xlv. 64–5, 80
- lordship
 Tutbury, xlix. 48–67
- Manor Farm, Wall, xlv. 13–23, figs., pl.
 Marwnad Cynddylan (Welsh poem) xlv. 4; xlv. 3; xlv. 56
- medieval period
 Lichfield, xlv. 1–32, figs.
 Stafford, xlvii. 103–5
 Tutbury, xlix. 48–67
- Mercia, xlv. 4
- metal objects
 awl, xlix. 16–18, pl.
 farthing, xlvii. 61, fig.
 folding balance, xlvii. 61, fig.
 knife, xlvii. 61, fig.
 pin, xlviii. 4
- metal working
 waste, xlv. 20
- microscopy, xlix. 16–18, pl.
- monastic foundations, xlix. 48–67
- Morfe, xlv. 107–8
- Muckley Corner, xlv. 3
- Needwood forest, xlv. 72–96, figs; xlix. 68–79, fig., pl.
- Ocgintun / Ogintune *see* Ogley Hay
- Ogley Hay, xlv. 1–12, figs.; xlv. 59–63; xlviii. 6–14; 41–54, figs.
- ovens, xlvii. 5
- Paget, Sir William, xlv. 41–2
 Henry, xlv. 43
- Pape, Thomas, archaeologist, xlviii. 1
- Penda (Mercian king), xlv. 3, 4
- petrographic analysis, xlix. 13–16
- pig farming (medieval), xlviii. 8–11
- pin, silvergilt, xlviii. 4
- pits
 Bronze Age, xlv. 26–7, fig., pl.
 Iron Age, xlv. 28–30, figs.
 pit alignment, xlv. 25–32, figs., pl.
 Stafford, xlvii. 26–31, 33–5, 38–40, figs.
- place-names, xlv. 1–12, figs.
 Hales, xlviii. 4
 Longslow, xlviii. 4
 Morfe, xlv. 107–8
 Ogley Hay, xlv. 59–63; xlviii. 6–14
 Tamworth, xlviii. 16
- plant remains, xlv. 16–18, table; xlvii. 65–77, tables; fuel analysis, xlvii. 77–79, table
- poor law, xlix. 80–89, figs.
 Staffordshire Poor Law Vouchers Project, xlix. 80–81
- post-built structures, xlvii. 31–3, 35–8, figs.
- post-medieval period
 sandstone walls, xlv. 32, fig.
 Stafford, xlvii. 105–6
- pottery
 Bronze Age, xlv. 32–4, 37–40, fig.
 Cistercian wares, xlvii. 58
 collared urn, xlix. 10–18, figs., pl.
 creamware, xlviii. 78, pl.
 Deritend ware, xlvii. 56–7
 factories, xlviii. 55–86, figs., pl.; xlix. 92
 hard-paste porcelain, xlviii. 78, pl.
 iron-rich sandy ware, xlvii. 56, fig.
 late medieval orange ware, xlvii. 57–8
 medieval, xlvii. 55–8, fig.
 Midlands purpleware, xlvii. 57–8
 Midlands whiteware, xlvii. 56, fig.
 post-medieval, xlv. 78–80, pl., table; xlvii. 55, 58–60, fig.
 redware, xlviii. 78, pl.
 Romano-British, xlv. 31–2, 33
 salt-glazed stoneware, xlviii. 78, pl.
 Stafford-type ware, xlv. 5–6; xlvii. 44–56, figs., table
 stoneware jug, Bartmann, xlvii. 58–9, fig.
 Tudor green, xlvii. 58
- pottery manufacturers
 Ashworth Brothers, xlviii. 79
 Baddeley, John & Reid, William, xlviii. 67, 79
 Copeland & Garrett, xlviii. 78
 Kensington Pottery Works, xlviii. 59–61, figs., 71
 Mason's Ironstone Works, xlviii. 61–3, 83
 Morley, Francis, xlviii. 79
 Ridgway, William, xlviii. 79
 Spode works, xlviii. 78
 St James Street Works, xlviii. 56–61, 63–7, figs.
- prehistoric period
 pottery, xlv. 32–4, fig.
 Stafford, xlvii. 94–7, figs.
- quarry, limestone, xlv. 68
- querns, xlvii. 62–3, fig.
- rabbit warrens, xlv. 10
- radiocarbon dating, xlvii. 79–85, tables
- rivers
 Blithe, xlv. 95, fig., pl.
 Dove, xlv. 95, fig., pl.
 Penk, xlv. 95, fig., pl.

- Sow, xlv. 95, fig., pl.
 Tame, xlv. 96, fig., pl.; xlviii. 21
 Trent, xlv. 92–5, pl.
 (The) Roaches, xlix. 1–27, figs., pl., table
 roads
 road changes, Ogley Hay, Hammerwich, xlviii. 49–50, fig.
 Watling Street, xlv. 1, 3, 6–9, figs.; xlv. 42–46, figs.
- Roman
 forts, xlv. 13, 15, fig.
 pit, xlv. 30–32, fig.
 pottery, xlv. 31–2
 signal towers, xlv. 53–5, 63–5, figs.
- Romano-British
 ditch, xlv. 30–32, fig.
 villa, Hales, xlviii. 1–5, fig.
- Rous, William le, xlv. 62
- Sampson, Bishop Richard, xlv. 41
- Saxon period
 querns, xlvii. 62–3, fig.
- sculpture
 Romanesque, xlix. 28–47, figs.
- Sergeant, George, xlix. 74, 77
- Shaw, John, grocer, xlix. 82–9, figs.
- sheep pasturing, xlix. 70
- Shugborough Park, xlv. 24–40, figs., pl.
- signal towers, xlv. 53–5, 63–5, figs.
- silver objects
 pin, xlviii. 4
- Simms, Rupert, xlviii. 1
- spindle whorl, xlvii. 61, fig.
- Stafford
 Anglo-Saxon period, xlvii. 97–103
 early history, xlvii. 4–7, fig.
 family, xlix. 54–5
 forge, xlvii. 5
 geology, xlvii. 3
 kilns, xlvii. 12–25, figs., table
 map (Speed), xlvii. 7, fig.
 market, xlvii. 6
 medieval period, xlvii. 103–5
 mint, xlvii. 4
 post-medieval period, xlvii. 105–6
 pottery, xlviii. 44–60, figs., table
 Stafford-type ware, xlvii. 44–55, 93, figs., tables
 St Bertelin's chapel, xlvii. 4–5
 St Mary's church font, xlix. 28–47, figs.
 Tipping Street excavations, xlvii. 1–114, figs., tables
 Turks Head Inn, xlvii. 41–3, figs.
- Staffordshire Hoard, xlv. 1–12, figs.; xlviii. 41
- Staffordshire Water Meadows Survey 2008, xlv. 85–106, figs., pl.
- Stoke-on-Trent
 archaeological fieldwork, xlix. 92–3
 chapels, xlix. 92–3
 churches, xlix. 92–3
 Hulton abbey, xlix. 93
 Minton pottery, xlix. 92
 Spode pottery works, xlix. 92
- stone
 alabaster, xlix. 52
 heat-fractured, xlv. 14, 18–19, pl.
 sandstone walls, xlv. 35–6
 worked stone, xlvii. 63
- stone objects
 flint, xlix. 19
 font, xlix. 28–47, figs.
 pebbles, xlix. 19
 querns, xlvii. 62–3, fig.
 slate pencil, xlvii. 62
- Tamworth
 St Editha's church, xlviii. 15–40, figs.
- trees, analysis of wood used as fuel, xlvii. 77–99, table
- Tutbury, xlix. 48–67; 68–79, fig., pl.
 castle, xlix. 71
- urns, xlix. 10–16, fig., pl.
- Uttoxeter
 Bagshaw, Ralph, grocer, xlix. 82–6, fig.
 Brindley, Thomas, grocer, xlix. 82–6, fig.
 Shaw, John, grocer, xlix. 82–9, fig.
 poor law, xlix. 80–89, figs.
- Verdun family, xlix. 56
- Wall *see also* Letocetum
 Manor Farm, xlv. 13–23, figs., pl.
- Walsall
 Church Hill, xlv. 62–84, figs., pl.
 Rous, William le, xlv. 62
 Rushall Street, xlv. 62–78, 81–2, figs., pl.
- warrens, xlviii. 47
- water meadows, xlv. 85–106, figs., pl.
 sluice housings, xlv. 99–104, pl.
- Watling Street, xlv. 1, 3, 6–9, figs.; xlv. 42–46, figs.
- wells, xlvii. 25–7, fig.
- Whitemoor Haye, xlv. 20, 35
- Wolverhampton, xlv. 5
- workhouse
 Uttoxeter, xlix. 81–82, figs.
- Wyatt family, architects and builders, xlv. 43

ARCHAEOLOGICAL FIELDWORK IN STAFFORDSHIRE 2018–19

SHANE KELLEHER

The past few years have been characterised by archaeological works carried out in advance of housing developments, many of which have produced negative or negligible archaeological results. Some such sites, however, in addition to archaeological works carried out in advance of commercial/industrial developments, mineral extraction, and the conversion/alteration of historic buildings have proved particularly interesting, and a selection of these are summarised below. A brief summary of archaeological work carried out in advance of HS2 is also given, in addition to an update on heritage/historic environment projects that Staffordshire County Council has been involved with in recent years.

An archaeological watching brief carried out by Worcestershire Archaeology at Alrewas Quarry, Alrewas, as part of the extension of mineral extraction works at the quarry, identified a scatter of prehistoric activity, including a large waterhole and trough representing the third burnt mound to be excavated within the southern extension of the quarry. This is anticipated to be Bronze Age in date and along with a cremation deposit encountered as part of this watching brief further contributes to our understanding of Bronze Age funerary landscape present along the banks of the Rivers Trent and Tame in this area (subject to further analysis and dating work).

An excavation by Oxford Archaeology in advance of a residential development at Windmill Farm, Coton Lane, Tamworth, revealed a substantial part of a Romano-British farmstead, comprising a complex of rectilinear enclosures, which was occupied during the 2nd and 3rd centuries. Two phases were identified, the settlement having been extended and additional enclosures added to the north and east around the middle of the 2nd century; the latter phase included the construction of a post-built aisled building, and two discrete dumps of burnt crop-processing debris attested to the crops that the population cultivated such as spelt wheat, and possibly oat, barley, and rye. This investigation represented the first substantial excavation of a Romano-British settlement in the Tamworth area, and yielded a significant assemblage of pottery, including imported table wares, most notably a Samian ware bowl with erotic decoration. The work has provided us with an interesting insight into a rural farmstead of this period, where the pottery assemblage and building types suggest that the occupants were clearly adopting elements of Roman culture. [The final report on this excavation is published in the present issue of the *Transactions*.]

An archaeological strip, map, and sample exercise in advance of mineral extraction at Saredon Hill Quarry, Saredon, by University of Leicester Archaeological Services encountered a number of dispersed pit and post-hole features which had dating evidence indicating some occupation in the later prehistoric and Romano-British periods. These included two ditches of the latter period, and several pits containing fire-cracked stones. One pit was associated with a bracelet of 4th-century AD Romano-British date, and a shallow pit was found to be rich in charred grains. These grains, which include emmer wheat and barley, have been radiocarbon dated to the late Bronze Age, and it was noted that such a deposit is of regional significance as large deposits of cereal grain from this period are rare.

Archaeological trial trenching in advance of a residential development at Pendeford Mill Lane, Bilbrook, undertaken by Worcestershire Archaeology revealed what appears to be the remains of a Romano-British enclosure of 2nd- to mid 3rd-century date. A possible droveway was also encountered, and hammerscale was found to be present, suggesting some level of metal working in the vicinity. Further work being carried out at this site may help further the understanding of the hinterlands of nearby urban centres and the relationship between rural settlement and the Roman road network.

Archaeological trial trenching by University of Leicester Archaeological Services at Graycar Business Park, Barton-under-Needwood, in advance of the construction of a proposed new industrial unit, has revealed part of a Scheduled ring ditch and an Anglo-Saxon Sunken-featured Building. Further work being carried out at this site is hoped to further characterise and provide a better understanding of the excavated features.

Remediation work involving ground reduction works to remove contaminated soil within the southern walled garden at the Shugborough Estate near Stafford required an archaeological watching brief during ground-works in order to develop and improved understanding of the historic layout and function of various structures within the area. The archaeological work was led by SLR Consulting and confirmed much of the expected historic layout (based on the adjacent northern walled garden

and archive research), but also revealed previously unknown elements such as the boiler/furnace houses along the southern (heated) wall. The work also added a much better understanding of the construction method for paths, the central dipping pond, and the apricot house. Information was also uncovered relating to changes to gateways and horticultural trenches. Any plans for future reconstruction of the elements of the walled garden will be informed by this recent work.

In addition to below-ground interventions, the proposed demolition, conversion, or alteration of historic buildings has necessitated recording to be carried out in advance of during such works. Two recent Historic Building Recording projects have served to illustrate the large differences, in terms of scale, need, and resources that such projects can comprise. The first of these was the creation of a record of Rugeley 'B' Power Station in advance of its demolition and the regeneration of the site. This recording work was carried out by Ric Tyler, an historic buildings consultant, who produced a highly comprehensive record of the surviving buildings of the power station which was constructed between 1965 and 1970. Rugeley 'B' was one of 13 oil and coal fired 'super-stations' built as a joint venture by the Central Electricity Generating Board (CEGB) and the National Coal Board (NCB), and it comprised a standard grouping of structures based around the generating core of boiler house and turbine hall with attached control room, served by a single chimney windshield, and a massive, open 400kV switch yard. The four iconic natural-draught, hyperbolic cooling towers, which were arranged in a 'lozenge' formation, also formed part of the recording works, which were informed by an exhaustive site drawing archive.

In stark contrast in terms of scale, the piggery at Betley Court Farm, Betley, was recorded by Stoke-on-Trent Archaeology Service in advance of its conversion into holiday accommodation. Forming part of the grounds of the Grade II* listed Betley Court (built 1716), and located within the Betley Conservation Area, it was found that the piggery had stood on its current site since at least 1875 and was probably built as part of an ongoing programme of estate rationalisation and improvement in line with the agricultural boom of the 1860s–1880s, and was originally was larger than it is presently. Estate records from the 1820s indicate that pigs were an important element of the farm's economy from an early date and it was noted by the report's authors that a privy located next to the pigsties was quite common in such buildings as the pigs provided warmth and the waste could be mixed with straw and manure from the pigsty to create fertiliser.

Other recent historic building recording projects in the county included the recording of Parks Farm, Uttoxeter by West Yorkshire Archaeological Services in advance of the demolition of this late 18th-century farmstead to facilitate a residential development. Of particular interest there were possible winter storage bee boles located within the pantry of the farmhouse. A former school building was recorded in the grounds of Kingsfield First School in Biddulph prior to its demolition. This building was found to be a HORSAs (Hutting Operation for the Raising of School-Leaving Age) hut built in the late 1940s and was recorded by Claire Henshaw (Archaeological Consultant). A survey of the Grade II listed 25 John Street, Lichfield by Midland Archaeological Services in advance of the change of use of the building identified the primary phase of the structure as being of the mid 18th century, and that this retains much of its historic structure, including its box-timber framing, brick nogging and wattle and daub infill panels. A gallery area comprising splat ballusters, which are of an 18th-century design, has raised questions regarding the gallery's date and function, and it has been suggested that this building was potentially a single structure along with its neighbour before they subsequently became separate properties.

Separate from the standard development control sphere is the archaeological work carried out in advance of the construction of the High Speed 2 (HS2) railway line. All three phases (1, 2a, and 2b) will run through Staffordshire, and a great deal of planning, research, and non-intrusive archaeological work, such as LiDAR analysis and geophysical survey, has been carried out to date by HS2 and their historic environment contractors. Preliminary/early construction activity, such as ecological mitigation works, has necessitated a number of archaeological interventions, and these have yielded some interesting and significant results, including the discovery of the remains of an Iron Age settlement near Handsacre, comprising a round house and pit alignment. Initial investigations near Streethay, to the north of Ryknield Street, have revealed the remains of a Romano-British farm settlement including a series of large enclosure ditches, a number of round houses, a kiln, and evidence for possible metal working. In addition, recent works to the east of Lichfield have encountered evidence of Bronze Age activity in the area.

More work is due to be carried out on the above sites and it is anticipated that a great deal more archaeological intervention will be required as part of the development of the HS2 route over the

coming years. All archaeological work carried out on behalf of HS2 will be appropriately reported upon and archived, and significant discoveries will be published in relevant publications such as *Transactions*.

Away from development control and major infrastructure projects, Staffordshire County Council's Historic Environment Team (SCCHET) has developed and run/supported some interesting historic environment-related projects over the past few years. The most significant of these was the *Chase Through Time Project*, which was a historic landscape survey and research project with the aim of unravelling over 2000 years of human activity across Cannock Chase. This project, which was funded by the Heritage Lottery Fund (HLF) and received significant 'in-kind' support from Historic England, utilised LiDAR analysis, aerial photography, geophysical survey, and archival research to significantly enhance our understanding of the archaeology within the woods and heaths of Cannock Chase. Over 400 'new' archaeological sites were identified, many of which were related to historic industrial and Great War training activity in the area. Outputs included a comprehensive report produced by Historic England, a summary report on the archival research carried out by project volunteers produced by Keele University, an online interactive mapping and data interrogation tool, various events, and interpretation material including leaflets, a pop-up exhibition, and a smart-phone app providing a tour of key Great War sites on the Chase.

SCCHET has also developed two cultural heritage projects which form part of the Transforming the Trent Valley Landscape Partnership Project. The project, the lead partner for which is Staffordshire Wildlife Trust, aims to restore and enhance the natural and cultural heritage of the Trent Valley, and is funded by the National Lottery Heritage Fund. The cultural heritage projects focus on the military history of the Trent Valley, more specifically the iconic Second World War 'Stop Line no. 5' and on heritage at risk within this landscape. The work will include the recording and condition surveying of pillboxes and the creation of examples of reversible and sustainable re-use of these structures, including as wildlife refuges, bird hides, and interpretation spaces, and working with local communities, volunteers, and landowners to record and improve the condition of vulnerable heritage assets and achieve sustainable management for them.

More detailed summaries of the sites mentioned here, and more, will be included in *West Midlands Archaeology*, published annually by the Council for British Archaeology, West Midlands, and full reports on some of them will be published in the Society's *Transactions* in due course.

SUMMARY OF ARCHAEOLOGY AND HERITAGE IN STOKE-ON-TRENT 2018–19

JON GOODWIN

The Stoke-on-Trent Ceramic Heritage Action Zone (HAZ) project commenced in May 2018, with early phases concentrating on recording (or more typically re-recording) each of the city's 50 extant bottle ovens. As indicated in previous summaries, a key aim of the HAZ is to generate a more detailed, consistent understanding of these significant but extremely vulnerable structures. The initial forays have targeted sites with better preserved ovens (including the Gladstone Pottery Museum), where ease of access has facilitated the application of 3D photography and LiDAR (provided with the support of Staffordshire, Liverpool John Moores, and Keele Universities) in support of more traditional survey methods. It is anticipated that the oven surveys will be completed in 2020.

Historical firing technology within the local pottery industry was also investigated via a number of development control schemes. In April 2018, AOC Archaeology commenced the excavation of the former Borough Pottery, Longton in advance of the redevelopment of the site for retail purposes. The Borough Pottery was constructed in 1869 as a 'model' potworks, which, unusually for the period, featured *down-* rather than *up-*draught ovens. The evaluation succeeded in identifying the remains of at least three such down-draught ovens, with additional structures suggested by a complex network of unrelated flues. Although each of the ovens had suffered some degree of truncation, the survival of key features, such as sliding flue regulators, and their potentially early date elevates the structures' evidential value significantly.

In contrast, traditional 19th- and early 20th-century *up*-draught pottery ovens were investigated at three former production sites during 2018 and 2019. Well-preserved examples were uncovered at the Brownhills Pottery, Tunstall (Stoke-on-Trent Archaeology Service), and the Stanley Potteries and Royal Doulton Works, Burslem (Oxford Archaeology). The latter site represents one of the largest factory excavations within Stoke-on-Trent in recent years and, aside from revealing multi-phased evidence of coal-fired ovens, also identified the foundations of a sizeable, continuous, circular gas-fired biscuit kiln, erected in the 1930s. This is the first excavation of such a structure to have taken place within the Potteries and so the final report on the project (currently in production) is eagerly awaited.

Away from the investigation of the pottery industry, Stoke-on-Trent Archaeology Service evaluated the findspot of a Bronze Age sword fragment in Hanford. The fragment, constituting part of the blade and hilt of a late Bronze Age Ewart Park-type sword, was discovered by a metal detectorist in 1995 and, upon submission to The Potteries Museum, Hanley, was found to conjoin with another piece unearthed in 1982 on a hill top at Trentham Park, Swynnerton, approximately three miles to the south west of Hanford. Much speculation followed the sword's discovery, much of which focused on the possibility that earthworks close to the findspot could represent features that were somehow related to the sword's deposition. A geophysical survey of the area in 2012 identified a number of anomalies, but it was not until the submission of redevelopment proposals for the site in 2018 that an opportunity for intrusive investigations presented itself. A comprehensive evaluation was undertaken across the site in summer 2018, but revealed only post-medieval (chiefly 18th and 19th century in date) drainage features and made-ground deposits. As such, contextual evidence for the sword's deposition remains elusive and, if it did once exist, has apparently been lost to post-medieval landscaping activity.

In 2018 proposals for the partial demolition and residential redevelopment of the former Fenton Workshops for Blind facility initiated a programme of historic building recording. The complex was opened in 1934 by the Stoke-on-Trent & North Staffordshire Committee for the Care of the Blind and continued to provide employment for the blind and partially sighted until 2013. It initially operated with the assistance of the Staffordshire County Council Education Committee, which under the 1920 Blind Persons Act was empowered to contribute towards the provision of workshops, hostels etc. for the visually impaired. Employees were engaged in the production of goods such as mats, brushes, bedding, and upholstery, alongside the provision of ware baskets for the local pottery industry. The complex was situated in landscaped grounds and originally comprised a principal rectangular workshop block, incorporating a two-storey Art Deco reception building, supplemented by flanking warehouse and storage ranges. Original plans indicate that the core of the workshop building was sub-divided into several departments, each devoted to a different product and overseen by a (presumably) sighted supervisor. A corridor bounded the production area on all sides and also provided access to cloakrooms, toilets, washing and mess facilities. Staff rooms also featured in this area, including dedicated offices for sighted guides. A detached caretaker's house was situated to the south of the main workshop. The building survey was conducted by Stoke-on-Trent Archaeology Service and identified that most internal spaces allocated for administration, welfare, and circulation had remained largely unchanged over time, whereas the production areas had undergone significant alteration. Features specifically designed to aid the visually impaired were also recorded, including guide rails within the main corridor and safety gates positioned across stairwells.

Finally, in 2018 Stoke-on-Trent Archaeology Service and Avalon Heritage recorded a Methodist chapel built in 1934 on Sandon Old Road, Meir. The work was carried out as a condition of planning consent for the demolition of the chapel, which closed in 2004. Designed by a Stafford-based architect C. W. Porter, the chapel was built specifically to serve the residents of the newly constructed Meir municipal housing estate. Limited funding ensured that the building was of strikingly plain design and could, if necessary, be utilised for a variety of functions. It comprised an L-shaped brick structure, most of which was occupied by a large hall, originally used as both a chapel and Sunday school classroom, and an adjacent smaller meeting room. A small entrance lobby, flanked by cloakrooms (one of which may have functioned as a vestry), WCs, a kitchen and a basement also featured.

WOLVERHAMPTON AND WALSALL 2018–19

ELEANOR RAMSEY

As with 2017, there have been no major infrastructure works within the Wolverhampton and Walsall areas, and so archaeological work is characterised mainly by small-scale work. A number of Heritage Impact and Desk-Based Assessments have been submitted to the Historic Environment Record in advance of forthcoming work, whilst Historic Landscape Characterisation work on the evidence base of the Black Country Plan (the predecessor of the Black Country Core Strategy) and Green Belt Review is giving us a region-wide opportunity to identify new heritage assets, and to learn more about existing ones.

For below-ground archaeology, sites within Wolverhampton city centre that have retained archaeological remains include an evaluation beneath the Civic and Wulfrun Halls that found walls, surfaces, and deposits in the area of the former Prebendal House and Old Mitre Inn, with the potential for earlier deposits to be also present. A watching brief on the site of the new market uncovered a number of burials associated with an 18th-century non-conformist chapel.

Further afield, a watching brief at Bilston Urban Village found significant remains of the former iron foundry, and amateur archaeological work is on-going at Northcote, including a community excavation run during the Festival of Archaeology period.

Work in Walsall this period has been less successful, however; a watching brief near the mill pond at Great Barr Park did not identify any below-ground remains, and an evaluation at Green Lane, looking for pre-canal settlement, did not find anything that pre-dated the mid 19th century.

BOOK REVIEWS

John Barnatt, *Reading the Peak District Landscape* (Historic England: Swindon, 2019); pp viii+272, £30. ISBN 978-1-84802-379-6

The Peak District is easily accessible from nearby conurbations and some parts of it will be familiar to many people, including individual sites such as Arbor Low and Chatsworth and its landscape of moorlands and drystone walls. But this wide-ranging book goes well beyond the familiar and draws on archaeological and historical sources to explain how the landscape we see now has developed over time. It reflects a lifetime of the author's own fieldwork and desk-based research, both in his post in the Peak District National Park Authority and independently. The successor to an earlier, much shorter, book which had a traditional chronological arrangement, this book in contrast has a thematic approach, with chapters on landscapes; settlements; agriculture; mineral extraction; communications; past landscapes of prehistoric and Roman and medieval settlement, agriculture and ritual; designed landscapes; remains of military installations; and settlement patterns. The area considered in the book is almost all within with the Peak District National Park, whose Staffordshire part corresponds to the north-east half of Staffordshire Moorlands District, lying between Leek and Buxton, and includes Alstonefield, Longnor, Wetton, Flash, and Ecton.

The Peak landscape has evolved over time through human management to the form that we now cherish, respect, and protect. The author reminds us of the importance of the retention, for grouse-shooting, of moorlands that would otherwise have been enclosed and 'improved' and draws attention to the effects of ecological management and the potential impact of changes in agricultural practices, including a reduction in stock-keeping and therefore also in grazing, resulting in increased tree growth. Field barns, built from the 17th to the 19th centuries (examples near Alstonefield and Wetton are illustrated) no longer have an agricultural use but the Peak District National Park as local planning authority has thankfully resisted residential conversion.

The book is extremely well-illustrated with many high quality and relevant colour images (mostly the author's own), line drawings (including extracts from the author's own detailed archaeological surveys such as at Chatsworth), and coloured maps. The abundance of illustrations is emphasised by the subtitle 'Snapshots in Time' on the title page, which also refers to the book's use of the Historic Landscape Character Analysis of the National Park undertaken in the 1990s. An appendix explains how tracing the land-use history of each individual field, facilitated by extensive historic maps, enables the creation of 'time slices' of the landscape at 50-year intervals from AD1600. Throughout the book, gaps in our knowledge and pointers for future research are identified, such as the reasons for the low occurrence of deer parks. A 'Postscript' highlights the often under-rated importance of local knowledge.

The detailed but well-written and easily digestible text inevitably contains some generalisations and statements that require further discussion, but numerous endnotes refer to the extensive bibliography of books and articles that the enquiring reader can follow up. Text boxes discuss particular places in more detail, including Alstonefield and Longnor. These are accompanied by maps that are derived from historic landscape character analysis and show fossilised open fields (with later drystone walls following strips, or ridge and furrow earthworks); post-medieval private enclosures; Parliamentary enclosures; other enclosures of unknown date (which tend to be irregular in shape); and common, daleside, or moorland. Further maps in an appendix, arranged thematically and corresponding to chapters, usefully indicate the location of all places and sites mentioned in the text.

The book rightly emphasises how administrative divisions cut across real landscape divisions, particularly that between limestone, where medieval settlements were predominantly villages, including planned villages and villages with planned additions, and millstone grit, where settlements were and still are mainly hamlets and farmsteads. This contrast is particularly apparent within the Staffordshire part of the Peak. On limestone, Alstonefield is a polyfocal village, possibly concealing an earlier planned layout. Its minster church, serving a large parish, was dedicated in 892 and contains pieces of Anglo-Saxon sculpture. The planned layout of Wetton, also on limestone, cuts across an earlier road alignment but was never fully occupied. The rest of the Staffordshire Peak lies mainly on Millstone Grit and shale and sandstone uplands. Its settlements are mainly scattered hamlets, cottages, and farmsteads, some of which are mentioned in medieval documents but may be even earlier in origin, while others are post-medieval farmsteads in enclosed former common

land. The exception is Longnor, a village which was granted a market charter in 1293. Enclosure here and at Warslow was predominantly piecemeal and of an uncertain date. At Warslow alteration of the road system through turnpiking affected the subsequent settlement pattern.

Some farmsteads originated as monastic granges. Those on gritstone in Staffordshire include Onecote, a grange of Croxden Abbey, and Roche Grange near the Roaches, a grange of Dieulacres. Leek Frith (a name perhaps better known for the early Iron Age gold torcs found there, and described in these *Transactions*) and Alstonefield Frith were both medieval hunting forests which existed by the 12th century south-west of the royal forest of the Peak itself.

The agricultural economy on gritstone is predominantly low-quality upland grazing, but there are important mineral and wood resources. One type of exploitation of the latter is represented by charcoal-burning platforms on valley sides near the Roaches. In nearby valley bottoms there are mounds of slag from iron-bloomery smelting, showing how iron ore, which does not occur in the locality, was brought here to take advantage of the fuel. The discussion of mining lead and copper ore contains several underground photographs taken within former mines. Ecton is one of only two locations in England where Bronze Age copper-ore mining has been identified (the other is Alderley Edge in Cheshire). Developed as a deep mine in the 18th century, there was an underground water-powered pumping engine and horse-powered winding machine, whilst above ground what is described as 'the oldest well-preserved mining engine house in the world' contained a Boulton and Watt steam pumping engine of 1788. By contrast, the Clayton lead mine at Ecton had its 19th-century steam pumping engines underground.

Coal mining took place at Orchard Common and at Flash, which, despite its famous high altitude and heavy rainfall, has more farmsteads than other parts of the Peak at a comparable altitude, possibly because of the many small coal mines. Mining began here in the Middle Ages and continued to the 19th century, accompanying grazing in a dual economy. Flash, in its remote location, was also notorious for lawlessness including the money forgers described in a paper in this volume of *Transactions*.

Remains of prehistoric and Roman date, discussed in later chapters, include extensive earthworks of settlements and field systems, many of them recorded in detail in the author's own surveys. Neolithic funerary monuments include Long Low near Wetton, which is a distinctive bank barrow with a chamber at one end, and Pea Low above Alstonefield, which, the author suggests, contains the best-preserved burial chambers in the Peak. In addition to the use of caves such as Thor's Cave and Elderbush Cave, the book draws attention to the importance of natural places such as boulders and rock outcrops, which influenced the siting of the Bronze Age cremation burial which was found a few years ago near The Roaches and reported on in these *Transactions*.

The thematic arrangement of the book is a little off-putting at first, but on further reading it is clearly a logical approach. I made much use of the index to locate topics and places in different parts of the text. Although some recent and potential future impacts on the landscape are mentioned in 'Perspectives' at the beginning of the book, I would have liked to read more about present and future management to address its vulnerability to, for example, the visual impact of residential development within and around the National Park. A stronger editorial hand might have avoided some repetition in the text and removed some awkward wording, and colours used on the maps are not always distinct from each other, but these are minor quibbles. This book does great credit to the author and to Historic England, and it will encourage you to visit the Peak District armed with new understanding and appreciation.

MIKE HODDER
University of Birmingham

Rowan Patel, *The Lane End Plateway* (Oakwood Press, 54–58 Mill Square, Catrine, KA5 6RD, 2019); 84pp (A4 softback, 49 pictures, 7 maps, 7 other illustrations), £13.95. ISBN 978-0-85361-538-5

The Lane End Plateway in the Staffordshire Potteries was one of three short lines built by the Trent & Mersey Canal mainly to serve potworks. Originally known as the Lane End Railway and later as the Longton Tramway, the author prefers the term 'plateway' because the other names now suggest different types of transport systems. A plateway had the flange on the rail, that is, the rail had an L-shaped cross-section, whereas a (modern) railway has flanges on the wheels; also the wagons on

plateways were invariably horse-drawn. Plateways were usually in rural areas, serving one industry, and built and operated by the owners of that industry. Atypically, the Lane End Plateway had sidings into potteries and factories, a wide variety of loads being conveyed by toll-paying carriers.

Opened in 1804, the 3 feet 6 inches gauge line went from Stoke Basin (a quarter of a mile south of the junction with the Newcastle Canal) through Fenton to what was then known as Lane End but became the centre of Longton. It had a length of 2 miles 1,100 yards with a rise of 152 feet, with a branch of 550 yards rising 25 feet. The Trent & Mersey Canal together with its plateways was purchased by the North Staffordshire Railway in 1847 but this had little effect on the operation of the Lane End line. The last date for which evidence of use has been found is 1883. The Act for its abandonment was passed in 1891, but prior to this in the 1880s the ascent from the wharf to the turnpike (now City Road) was relaid with longer and wider steel plate rails at a wider gauge to make it easier for horses hauling wagons up the incline. Some of this track was still visible in the early 1970s.

The book outlines the history, describes the route and the few physical remains, explains the method of operation, and assesses its economic effect. The author has coped well with the paucity of surviving Trent & Mersey Canal records, calling on a wide range of alternative sources, appropriately referenced. The maps reproduced from 1800, 1816 and 1832 show a rural area with industry and housing becoming established adjacent to the turnpike and the plateway; by the time of the 1877–8 Ordnance Survey map, the process of industrialisation had become almost complete. (This latter map could usefully have been reproduced earlier in the book, as it would have made it much easier for the reader who is not totally familiar with the area to locate the plateway's exact route.) Although no pictures of the plateway have been found, many high-quality photographs from the 1950s to the 1970s show where it went. There are also several of the section relaid in the 1880s including (somewhat misleadingly) the front cover picture.

Little has previously been published about the Lane End Plateway, though it was a significant factor in the development of Fenton and Longton in the first half of the 19th century. Mention is made in several places of two other shorter (and shorter-lived) plateways built by the Trent & Mersey Canal: to Hanley and to Burslem. The book would have been an even better contribution to the history of the Potteries if chapters had been added to deal with these lines.

PETER BROWN

STAFFORDSHIRE
ARCHAEOLOGICAL and HISTORICAL SOCIETY

OFFICERS and COMMITTEE

President: Dr JOHN HUNT B.A., Ph.D., F.S.A., F.R.Hist.Soc., P.G.C.E.

Vice-Presidents:

K. J. BILLINGTON A.C.I.B.
Mrs F. E. FOX
Mrs D. M. WILKES

Hon. General Secretary

S. M. LEWITT M.A., P.G.C.E., P.G.C.R.M., F.R.S.A., F.C.I.P.D.

Hon. Treasurer and Institutional Subscriptions Officer

K. J. BILLINGTON A.C.I.B.

Hon. Membership Secretary

K. J. BILLINGTON A.C.I.B.

Hon. Editor of Transactions

Dr N. J. TRINGHAM B.A., M.Litt., Ph.D., F.R.Hist.Soc.

Other Hon. Officers

B. BULL (lecture meetings)
Dr R. N. TOTTY B.Sc., Ph.D., M.R.S.C., C.Chem. (newsletter editor)
L. V. WATSON (website developer)
P. J. CHARLES (refreshments) (not elected nor co-opted)

Other Committee Members

Dr M. A. HODDER BA., Ph.D., M.C.If.A.
R. J. KNOWLES M.A., F.S.A. (Scot), A.M.A.R.A.
P. M. NORRIS (*co-opted*)

Transactions Editorial Advisory Committee

K. J. BILLINGTON
M.A. HODDER
J. R. HUNT
S. M. LEWITT
N. J. TRINGHAM

Hon. Auditor: M. S. HORTON A.C.I.B.

Website: www.sahs.uk.net

Email: sahs@sahs.uk.net

The Transactions' archive is available on the Society's website,
and also on disc on application to the Hon. Treasurer at:
kjbouthere@yahoo.co.uk

Institutional Membership enquiries should also be directed to the Hon. Treasurer.