In The Shadow of the Defences: Leicester Square, Sanvey Gate, Leicester. Excavations, 2004-2005

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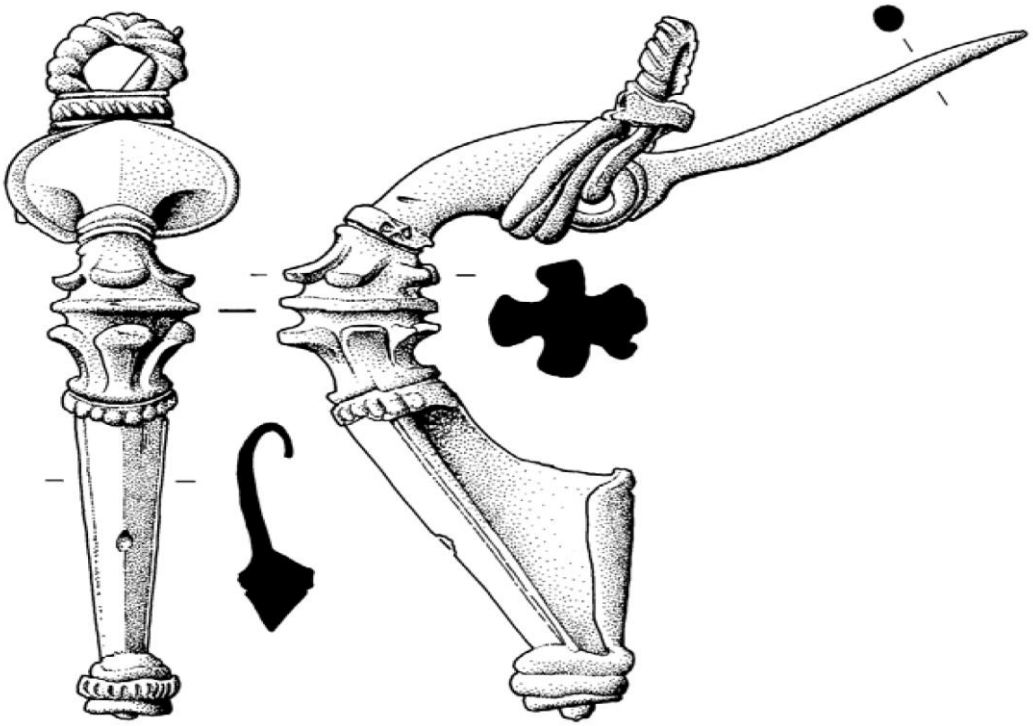

Volume 2: The Specialist Reports

Edited by Sophie Clarke and Wayne Jarvis

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In The Shadow of the Defences: Leicester Square, Sanvey Gate, Leicester. Excavations, 2004-2005

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Volume 2: The Specialist Reports

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THE PREHISTORIC POTTERY

Nicholas J. Cooper

Middle Neolithic Peterborough Ware Pottery

A single rim sherd (12g) from a bowl was recovered from (3221) [3222]. It was analysed under low power microscopy and recorded by fabric and form in accordance with the Leicestershire Prehistoric Pottery Fabric Series (Marsden 2011, 62, Table 1).

The flaring rim derives from the upper part of a bowl with an S-shaped profile, the external surface of the rim being flattened, the inner surface being bevelled in the style of Middle Neolithic Peterborough Ware bowls such as those from Willington in the Trent Valley (Marsden *et al*. 2009, 100, fig.46.13). The external surface is decorated with very narrow incised oblique slashes, formed into chevrons on the upper rim surface and then with two widely spaced but parallel slashes lower down towards the shoulder. Significantly, unlike most examples of Peterborough Ware bowls, the internal bevelled rim in undecorated. The obliquely incised decoration, which must have been executed with a flint knife, is similar to that on a number of vessels from Willington (Marsden *et al*. 2009, 101, fig.47.21 and fig.48.25)

The vessel is manufactured in a fabric with large and angular white 'pebble' quartz inclusions up to 5mm (fabric Q5) which appears characteristic of the Peterborough Ware found at Lodge Farm Rothley further down the Soar Valley and at other sites in the Trent Valley such as Lockington (Cooper 2011a) and Willington (Marsden *et al*. 2009, 85, fabrics Qu1 and Qu2). The radiocarbon dates for the material from Willington suggest a date range of *c*.3500-2900 cal BC (Marsden *et al*. 2009, 96).

THE SAMIAN WARE

Robert Hopkins

The Decorated Samian Ware

Abbreviations:

O. = Oswald 1936-1937

R. = Rogers 1999 (Annexe B)

A21.2003 (88) (Figure 1.1)

Lezoux Dr 37. Abraded on the decorated side only. Lower part of a panelled bowl demarcated by wavy line verticals ending in large rosettes or beaded circles on the basal ridge. The panels from the left are: (i) legs of a (?)running animal; (ii) Putto (O.420); (iii) Head and forelegs of a bear to the left (R.4026) within a double bordered medallion; part of a small ring above right of the medallion; (iv) Venus (O.281); (v) vestige of an unidentified poinçon. The maker of the bowl has defied positive identification, the bear has been recorded for Acaunissa, but not the other poinçons, although there is a suggestion that he used vertical wavy line panel borders (Bird *pers comm*. cf. Bird 1999 Fig.2.47, 774). The only Lezoux potter known to have used the Putto and Venus is Cinnamus, however the large rosette terminals are not his. Unidentified. Hadrianic – Antonine.

A21.2003 (667) (Figure 1.2)

SG Dr 29. The lower zone, with a panel scheme demarcated with a vertical bead row ending in a rosette partly obliterated by the bowl finisher. In the left hand panel, a saltire, with a bead row diagonal emanating from the rosette towards the top left. In the right hand triangle, a small inverted heart-shaped leaf. In the right hand panel, a tendril springing from the rosette and ending in a small heart-shaped leaf. To the right, an arc of a double bordered medallion. Early Flavian.

A21.2003 (955) (Figure 1.3)

CG Dr 37. 3 joining sherds from the same bowl, 2 joining; the joining sherds have an ovolo frieze (Rogers 1974 B45 with central core). The Panels are demarcated by coarse wavy lines, with beaded rosettes at the junctions (*ibid* C278). The panels, from the left, contain the following: (i) Vine scroll (*ibid* M2) with an extended tendril added in freehand; (ii) Venus (O.286) over a small ring; (iii) lower panel, a dolphin (probably O.2385), over 2 (or more, curved leaves (Rogers 1974 J177) set vertically.

The single sherd, from the left, contain the following (i) the Venus (O.286) over a small ring; (ii) lower panel, dolphin to the right (O.2394), over curved leaves (Rogers 1974 J177) also set vertically.

With the exception of the dolphin to the right (O.2394), all the poiņcons are recorded for Arcanus; curiously, Rogers does not list the vine scroll M2 amongst Arcanus' repertoire, despite illustrating two examples (Rogers 1999 Fig.5, 3 & 4). The freehand tail extension to the vine scroll occurs on a bowl attributed to Arcanus from Alcester (Hartley, Pengelly & Dickinson 1994 No:292). c. AD 120-140.

A21.2003 (958) (Figure 1.4)

SG Dr 37. The decoration consists of the lower part of a composite column with a rosette at its base. From the rosette, tendrils extend upwards and either side of the column. A horizontal wavy line divides the main decoration from the triple poppy headed basal wreath below. The composite column and tendrils is a style found on Dr 37's by (Sex. Iulius) Iucundus, MAS-, and Modestus (Mees 1995 Taf 92, 1; Taf 118, 1; Taf 142, 1 respectively). The wreath occurs on Dr 37's from the Cala Culip IV shipwreck (Nieto & Puig 2001 Eb.83a). Flavian – Trajanic.

A21.2003 (1143) (Figure 1.5)

SG Dr 37. From a worn mould; the ovolo frieze is not very clear. The panels appear to be bounded by twist borders; a rosette has been placed slightly below the extant junction. In the left hand panel, part of a tree associated with Hercules (O.786). In the right hand panel, a dog running to the left (O.1994); below, what could be strands of grass tufts. All the poiņcons are known on stamped vessels by Mercator; the Ovolo and the dog on a Dr 37 from London (Mees 1995,Taf 128,1) and the Hercules from the vicus at Hüfingen (*ibid* Taf 135,9). Flavian.

A21.2003 (1307) (Figure 1.6)

SG Dr 30. An ovolo frieze over a panel scheme divided by a vertical wavy line with a rosette terminal. A tendril emanates from the rosette into the right hand panel, and ends in a small 'blob'; to the right, a small bird. The left hand panel contains an (?)arc of a medallion. The ovolo has only so far been recorded on 9 other vessels (all Dr 30's), 8 from La Graufesenque, and 1 from Lyon. The nearest parallel are 2 bowls from La Graufesenque with the wavy line verticals ending in rosettes (Samian Research No:1000427 & 1001050). Neronian.

A21.2003 (1395) (Figure 1.7)

MdV Dr 37. Poorly moulded bowl, the ovolo has almost been obliterated by the bowl finisher. Below the ovolo, a panel scheme demarcated by wavy line borders; just below the extant border junction, a rosette. Only the left hand panel contains any decoration, a Hercules (O.785) only used by potters at Les Martres-de-Veyre, X-9, X-11 & X-12; Rogers erroneously cites Butrio (1999 p.75); of these, only X-9 uses wavy lines and rosette junction masks on his panelled bowls. *c*. AD 115-130.

A21.2003 (1781) (Figure 1.8)

(a) MdV Dr 37. An ovolo frieze (Rogers 1974 B44), over a horizontal wavy line. A bead vertical row border divides the sherd into 2 panels. In the left hand panel, a serrated festoon (*ibid* F69), within, the figure (R.3006) facing downwards. Nothing survives of the decoration in the right hand panel, however, part of an unidentified poiņcon does extend into the very top right hand corner of the panel on the left. The ''Potter of the Rosette'' used the ovolo and the festoon, and X-2 is the only potter to use the figure. The placing of figures at odd angles is characteristic of X-13. *c*. AD 100-120.

(b) CG Dr 37. An ovolo frieze (Rogers 1974 B17) over a horizontal wavy line; all that remains of the decoration is a Venus (O.281). Cinnamus and Criciro are recorded as using both poiņcons, but only Criciro used the wavy line. *c*. AD 135-165.

A21.2003 (1813) (Figure 1.9)

CG Dr 37. An ovolo frieze (Rogers 1974 B14) over a horizontal bead row. The decoration consists of a plain double bordered festoon on the left, with a horizontal astragal (*ibid* ?R20) probably acting as a tie between two festoons. Within, a bird (O.2252). A Dr 37 from Augst attributed to Sacer has the same design (Stanfield & Simpson 1958 Pl.82, 6). *c*. AD 125-145.

A21.2003 (1950) (Figure 1.10)

(a) SG Dr 30. Glossy slip. Two panels, separated by a vertical roped border, a horizontal wavy line acts as a base line. In the left hand panel, a looped tendril ending in an upright oval striated motif; in the

right hand panel, a female figure to the left (O.925). The figure is used by Neronian potters such as Masclus (Samian Research No:1001306) and Masclinus (Mees 1995 Taf.104, 3). *c*. AD. 50-70.

(b) SG Dr 29. Matt slip. Probably a winding scroll design; one tendril ends in a large (?)heart shaped leaf, the other, a small 6-leaved bud. Neronian – early Flavian.

A21.2003 (2056) (Figure 1.11)

SG Dr 37. 3 horizontal bands of decoration, divided by wavy line borders. At the top, a large winding scroll, the lobe open at the bottom contains a dog running to the right, (cf. O.1921), with single rosettes either side; above, the legs of what could be a second running animal. A wreath of trifid leaves occupies the middle zone (cf. Dzwiza 2004 F12.14 for similar). The lower zone has a pair of upright (?)leaves. Flavian.

A21.2003 (2108) (Figure 1.12)

(a) SG 37. A Horizontal wavy line over a 4-leaf basal wreath, which has been placed centrally over a horizontal bead row. A similar, but slightly different leaf was used by Germanus (Mees 1995 Taf. 79, 3). Flavian.

(b) SG 37. 3 sherds, 2 joining. An ovolo frieze over a horizontal wavy line over a winding scroll design. The depressed lobe contains a serrated leaf and the tips of a 5 pointed leaf spray; in the raised lobe, a vertical beaded column ending in a spray of 3 poppyheads, with tendril loops on either side. The ovolo has been recorded on bowls stamped by Mercator i, Patricius i and possibly Calvus i; two bowls from La Graufesenque with this ovolo has the small leaf spray and poppy heads (Samian Research No:1000229 & 2004104 respectively). Flavian.

A21.2003 (2120) (Figure 1.13)

MdV Dr 37. The panels are demarcated by very fine bead row borders; on the left, the upper panel contains a small ring and a small double bordered festoon tied to the vertical division by a horizontal roped bar. The centre panel contains a horizontal wreath of bifid motifs (Rogers 1974 ?G290). The right hand panel has a looped tendril ending in a serrated heart-shaped leaf (*ibid* J48-81 series), and what may be the arm of a figure. *c*. AD 100-120.

A21.2003 (2145) (Figure 1.14)

(a) SG Dr 37. From a reasonably fresh mould. On the left, the hind legs of an animal, to the right, probably a leaf spray on a horizontal (?)astragal. A horizontal wavy line divides the decoration from the trifid leaf basal wreath (cf. Nieto & Puig 2001 EB46a; Hermet 1979 Pl.14, 23). A similar style was employed by Mercator (cf. Mees 1995 Taf.136, 2). Flavian – Trajanic.

(b) SG Dr 37. Rear of a doe or stag facing left. Flavian-Trajanic.

A21.2003 (2153) (Figure 1.15)

(a) SG Dr 29. Fragment of the upper zone, part of a winding scroll decoration. Early Flavian.

(b) SG Dr 29. 2 sherds from the same bowl, which were slightly smudged after removal from the mould. Lower zone composed of upright gadroons. The fabric and rather matt slip would suggest an early Flavian date.

(c) SG Dr 29. Upper zone, three double bordered festoons tied at the top by a horizontal bar of bead rows. Between each festoon, a vertical wavy line, their terminals now missing. Within the central festoon, a spiral ending in a rosette. The design is typical of late Dr 29's, such as vessels from the Cala Culip IV shipwreck, c. AD 80-85 (e.g. Nieto & Puig 2001 No:248). Early Flavian.

(d) SG Dr 30. A (?)pair of vertical borders or tendrils ending in a rosette which has been doubly impressed. The fabric and thickness of the vessel would suggest a Flavian or Trajanic date.

A21.2003 (2162) (Figure 1.16)

SG Dr 29. Upper zone with a winding scroll, only the decoration in the downward facing lobe is clear, and consists of a small spiral, a stirrup leaf and a tendril terminating in a trifid leaf. The stirrup leaf is very close to one from the Cluzel 15 deposit at La Graufesenque (Dannell Cluzel 15 catalogue No:ACL 172). Similar trifid and stirrup leaves appear in a scroll on a Dr 29 stamped by Daribitus from Bonn, and on a Dr 29 stamped by Niger ii from La Graufesenque (Dannell *et al* 2003 Nos:0398 & 1532 respectively). Neronian.

A21.2003 (2189) (Figure 1.17)

(a) SG Dr 29. 3 joining sherds with a very glossy slip. Part of a winding scroll in the upper zone, only the decoration in the downward facing lobe is clear, two curling tendrils emanating from a bifid tendril binding with a (?)three beaded tail. The larger of the two tendrils ends in a very small rosette, similar to a bowl by Niger ii (Dannell *et al* 2003 No:1274). Neronian.

(b) SG Dr 29. Very glossy slip. The upper zone has a vestige of decoration, which appears to be a scroll. The decoration in the lower zone appears to be a serrated arcade or wreath to the right, within, a tip of a leaf. To the left, a tendril emanates from the arcade, and at the extreme left, a leaf tip set at an angle. A serrated festoon used as a winding wreath with a similarly placed tendril appears on a Dr 29 from La Graufesenque stamped by Regenus (Dannell *et al* 2003 No:1283). Neronian.

A21.2003 (2206) (Figure 1.18)

(a) SG Dr 30. Very glossy slip. An ovolo frieze with a horizontal wavy line above. The decoration appears to be a winding scroll, with one tendril ending in a striated baton. The ovolo and baton appear on a Dr 30 signed by Masclus (Samian Research No:1000384). *c*. AD 50-70.

(b) SG Dr 30. Slight wear to the footring; very glossy slip. The very bottom of the decorative scheme, which consists of a winding scroll over a horizontal wavy line. The only surviving poiņcon is a bifid tendril binding; at the far right, possibly the tip of a leaf. Neronian.

A21.2003 (2224) (Figure 1.19)

CG Dr 37. An apparent freestyle scene, in the bottom left, the rear of a bear (?O.1617), above, an unidentified animal. To the right, an unidentified curved motif. Antonine.

A21.2003 (2234) (Figure 1.20)

SG Dr 30. The same vessel as (2334). The ovolo appears to be one recorded on only two other vessels from La Graufesenque (Samian Research Nos:1000495 & 1001057); the borders are demarcated by vertical wavy lines, topped with small rosettes. The panels from the left are (i) a saltire, the extant diagonal is a row of elongated beads, in the upper triangle, part of a leaf; in the right triangle, a tendril loop. (ii) A vertical wreath composed of trifid leaves. (iii) Upper panel, a double row of the trifid wreath placed horizontally, with a wavy line above and below. No decoration survives in the lower panel. Sherd (2334) has the ovolo over a horizontal wavy line and repeat of panel (iii). Neronian - Flavian

A21.2003 (2245) (Figure 1.21)

SG Dr 37. A horizontal wavy line over a pair of chevron festoons. Inbetween, a solid vertical bar, which terminates in a circular blob with a pointed tip. In the right hand wreath, a bird (O.2289). The bird within a chevron festoon is used by several late Southern Gaulish potters, such as Biragillus (Mees 1995 Taf.14, 1), Masculus, who also used the suspended motif (*ibid* Taf.120, 5), and L.Cosius Virilis (i*bid* Taf.196, 3). *c*. AD 80-120.

A21.2003 (2334) (Figure 1.22)

SG Dr 30. The same vessel as (2234). cf. (2234) for a discussion of this sherd. Neronian – Flavian.

A21.2003 (2349) (Figure 1.23)

(a) SG Dr 37. Little survives of the ovolo; below, a horizontal beaded border. The main scheme consists of a triple bordered medallion, within, a cupid (O.436). To the top left of the medallion, part of a heart-shaped or lanceolate leaf placed horizontally. The design is one would expect on late Dr 29's and early Dr 37's; a Dr 29 by Severus i, has the medallion, figure and the leaf (Mees 1995 Taf.189, 1). Flavian.

(b) MDV Dr 37. Seven decorated sherds (two join), and four flakes, presumably all from the same bowl, and badly chipped. (i) Three have an 'S' shaped motif with a bifid ends and slight striations (not in Rogers 1974 or 1999, but cf. Terrisse 1968 Pl. XXXVI, & Pl. XVIII,1013). (ii) The head of a boar facing left (?O.1668) . (iii) Lioness running to the left (?O.1542). (iv) cockerel to the left O.2350 and a horizontal beaded bar which could be the base of a (?)column. (v) A saltire with fine beaded diagonals, over a horizontal bead row. If these are from the same bowl, then there are similarities with the Potter of the Rosette (*ibid* pl.XVIII, 711, 344 etc). *c*. AD 100-120.

A21.2003 (2358) (Figure 2.24)

CG Dr 37. Lower part of the decoration; a dolphin (O.4015), with part of a spiral to the left (Rogers 1974 ?S37); below, a pair of horizontal basal ridges. The dolphin was used by several mouldmakers at Les Martres-de-Veyre, of which X-9 used both motifs; the fabric however does not look like Les Martres, and the triple basal ridge is more likely to be Hadrianic or early Antonine in date.

A21.2003 (2377) (Figure 2.25)

SG Dr 37. Panel decoration with wavy line borders, with rosettes at the junctions. The panels from the left are: (i) Upper: a sea monster (not in Oswald 1936-7 or Hermet 1979); Middle: a row of striated batons set at an angle; Lower: a dog to the right (?O.1921) facing a striated baton. (ii) An unidentified figure. Late Flavian – Trajanic.

A21.2003 (2557) (Figure 2.26)

SG Dr 37. Two horizontal zones divided by a wavy line; the upper zone has the forelegs of an animal running to the right. The lower zone has a chevron wreath with a horizontal tie at the top right. Descending from the tie, a vertical bead row, within the festoon, a (?)scroll. At the extreme right, what may be a similar arangement. The style is that of the later Southern Gaulish potters such as L. Cosius Virilis (Mees 1995 Taf.195, 3), and C. Cingius Senovir (*ibid* Taf.187, 4). *c*. AD 90-120/130.

A21.2003 (2649) (Figure 2.27)

SG Dr 29. Two joining sherds. The upper zone is a winding scroll design, with one tendril ending in a beaded rosette; another ends in a spray of 4 leaves. The lower zone appears to be a panel design with a vertical wavy line border to the right. To the left, a wreathed festoon, within, a pair of opposed heart-shaped leaves with curved stalks tied to the wreaths at the top; between the leaves, a Nile goose (O.2244) to the right.

The general style is that of the Cluzel 15 deposit at La Graufesenque (Haalebos 1979; e.g. Dannell Cluzel 15 catalogue ACL 5 & CL 99). What little there is of the upper zone appears to be identical in layout to a stamped Primus iii bowl from Cluzel 15, and a Murranus bowl from London, although the rosettes are different (Dannell *et al* No:0877; Mees 1995 Taf.148, 1 respectively). The leaf spray occurs on a bowl signed by Modestus and stamped by Crestio (Mees 1995 Taf.141, 1). The Goose and heart-shaped leaves are also recorded on Dr 29's in the deposit (Dannell Cluzel 15 catalogue CL 002 and CL 099 respectively), an almost exact wreath has also been recorded on a Dr 29 (*ibid* ACL 1023). The lower zone is not unlike a Dr 29 from Cirencester linked to Daribitus, dated c. AD 40-55 (Hartley & Dickinson 1982 Fig 46, 59), the wreath looks identical to Daribitus' (cf. Dannell *et al* Nos:0400 & 2896). Neronian.

A21.2003 (2660) (Figure 2.28)

(1) SG Dr 37. The ovolo frieze was used by Sabinus iv (Samian Research No:2000754), over a horizontal (?)bead row. The decoration has the helmet of a gladiator (O.1013F), on the left, and emanating from the right, a horizontal lanceolate leaf on a tendril. The vestige of two unidentified poinçons lie at the bottom. *c*. AD 90-120.

(2) CG Dr 37. Hole drilled for a wire. Lower part of the decoration; a vertical bead row panel division meeting a horizontal bead row, which replaces the basal ridge. A rosette (Rogers 1974 C278) is placed slightly away from the junction. The left hand panel may have a saltire, with bead row diagonal emanating from the junction rosette. The right hand panel contains a large rosette (*ibid* C87) used by Drusus II, X-12 and M-1; Drusus II also used the small rosette, saltires, and has been known to use a bead row instead of a basal ridge (Easson 1988 fig. 55). *c* .AD 125-150.

A21.2003 (2672) (Figure 2.29)

CG Dr 37. An ovolo frieze (Rogers 1974 B144) over a horizontal bead row; below, an inverted leaf (*ibid* H99). Only Cinnamus used both the leaf and ovolo. *c*. AD 135-150.

A21.2003 (2699) (Figure 2.30)

SG Dr 37. A triangular leaf (cf. Nieto & Puig 2001 Ca.76). Flavian.

A21.2003 (2775) (Figure 2.31)

MdV Dr 37. An ovolo frieze (Rogers 1974 B14) over a horizontal bead row; below, a lion to the left (O.1450). Both elements were used by potter X-13 and Sacer, which may be same individual (Pengelly, Hartley & Dickinson 2001 p.190). As the bowl was made at Les Martres-de-Veyre, it would be earlier than Sacer's output from Lezoux. *c*. AD 110-120+.

A21.2003 (2796) (Figure 2.32)

SG Dr 37. A Basal zone containing a dog (O.1931) chasing a hare (O.2079), with a small feathered rosette behind (cf. Dannell 1991, Fig 10, 9 for similar). Flavian.

A21.2003 (2820) (Figure 2.33)

(a) SG Dr 29. Part burnt. Upper zone with a pair of festoons tied by a horizontal bar, from which, a bottle bud is suspended by a vertical wavy line. The left hand festoon contains a spiral with the central tendril ends in a small rosette, the outer tendril ends in an arrowhead. The right hand panel appears to be a reverse of the one on the left, all that remains is a tendril ending in an arrowhead. Although no exact parallel has yet been found, the general design can be seen on various bowls from the Cala Culip IV shipwreck c. AD 80-85 (Nieto & Puig 2001 Nos:262 & 275). Early Flavian.

(b) SG Dr 29. An upper zone with a panel or a raised lobe filled with arrowheads; there may be a horizontal wreath in the lower zone immediately below the division band. Early Flavian.

(c) SG Dr 37. A flaked sherd, with what may be a panelled bowl, with 2 horizontal zones divided by a wavy line. The upper contains a winding scroll, one tendril terminates in a leaf bud; the lower zone appears to have the upper part of a dog to the right. The left hand panel contains a vertical (?)chevron wreath. Possibly by Calvus or an associate. Flavian.

A21.2003 (2888) (Figure 2.34)

MdV Dr 37. Panel design divided by vertical bead row borders ending in rosettes (Rogers 1974 C278). The panels contain a gladiator (O.1059) and Vulcan (O.66) and an unidentified poinçon. Below the decoration, an illegible signature (G.B. Dannell & B. Dickinson pers. comm.) partially obscured by the footring. Both figures and rosette terminals were used by Arcanus, however he only used wavy line borders; Censorinus and Drusus II both used the Vulcan and rosettes, and bead row borders. The bowl remains unidentified, in view of the fabric, a Hadrianic – early Antonine date is proposed.

A21.2003 (2942) (Figure 2.35)

SG Dr 37. A (?)winding scroll scheme with a series of arrowheads in the raised lobe. Flavian.

A21.2003 (2961) (Figure 2.36)

SG Dr 37. A bowl from a worn mould. An ovolo frieze over a horizontal division, with a vestige of decoration below. Flavian - Trajanic.

A21.2003 (2979) (Figure 2.37)

CG (?MdV) Dr 30 or 37. A smoothed ovolo frieze (Rogers 1974 ?B15) over a horizontal bead row, with the vestige of decoration below. Hadrianic – early Antonine.

A21.2003 (3041) (Figure 2.38)

CG Dr 37. A panel scheme with a vertical squashed bead row terminating on the basal ridge in a rosette. The right hand panel contains a (?)helmet (Rogers 1974 U59). Paternus III used the helmet (Rogers 1999 Pl.80, 5) and squashed bead rows with rosette terminals. *c*. AD 135-170

A21.2003 (3101) (Figure 2.39)

SG Dr 37. 5 sherds, probably the same vessel as (3218). An ovolo frieze with a trident tip, over a decorative scheme of horizontal zones divided by (?)roped borders. The upper zone contains a bull (O.1884) charging a lion (O.1400) over grass tufts (cf. Hermet 1979 Pl.14, 87). Above, a pair of leaves attached to the horizontal band with junction rosettes. The lower zone contains a single rosette. The details can be found on two bowls stamped by Masc(u)lus from La Graufesenque (Samian Research Nos:2002506 & 2002452b). *c*. AD 80-120.

A21.2003 (3158) (Figure 2.40)

SG Dr 29. The upper zone containing a dolphin to the right (O.2388) facing a series of vertical wavy lines. The dolphin appears on an unstamped Dr 29 from Colchester (Hawkes &Hull 1947 Pl.XXXI, 2a) and a similar dolphin occurs on a number of Dr 29's in the Cala Culip IV shipwreck (e.g. Nieto & Puig 2001 Nos: 16 & 156). The slip would suggest a Neronian rather than early Flavian date.

A21.2003 (3195) (Figure 2.41)

(a) SG Dr 29. A lower zone with a winding scroll decoration, the depressed lobe contains part of a lobate leaf and a very small ring; the raised lobe has a serrated medallion, with a small rosette at the bottom left. The medallion appears on a Dr 29 stamped by Celadus (Dannell *et al* No:0300). Neronian.

(b) SG Dr 29. 2 joining sherds. A winding scroll in the lower zone; the depressed lobe contains a small heart-shaped leaf, and a larger, triangular leaf (cf. Nieto & Puig 2001 Ca.41 & Ca.77 for similar). The raised lobe has a double bordered medallion containing a dolphin (?O.2390); below a small 'dot' or infilled circle. Early Flavian.

A21.2003 (3200) (Figure 2.42)

SG Dr 30 or 37. Upper part of the ovolo frieze. Flavian – Trajanic.

A21.2003 (3218) (Figure 2.43)

SG Dr 37. 2 joining sherds. An ovolo frieze, probably the same vessel as (3101). *c*. AD 80-120.

A21.2003 (3219) (Figure 2.44)

SG Dr 29. The upper zone with a panelled scheme divided by a wavy line terminating in a small rosette. In the left hand panel, rows of horizontal 'arrowheads'; in the right hand panel, an animal to the left (?griffin). Above and below the division band, unusually large square-ish beads, with wide spacing between each. Early Flavian.

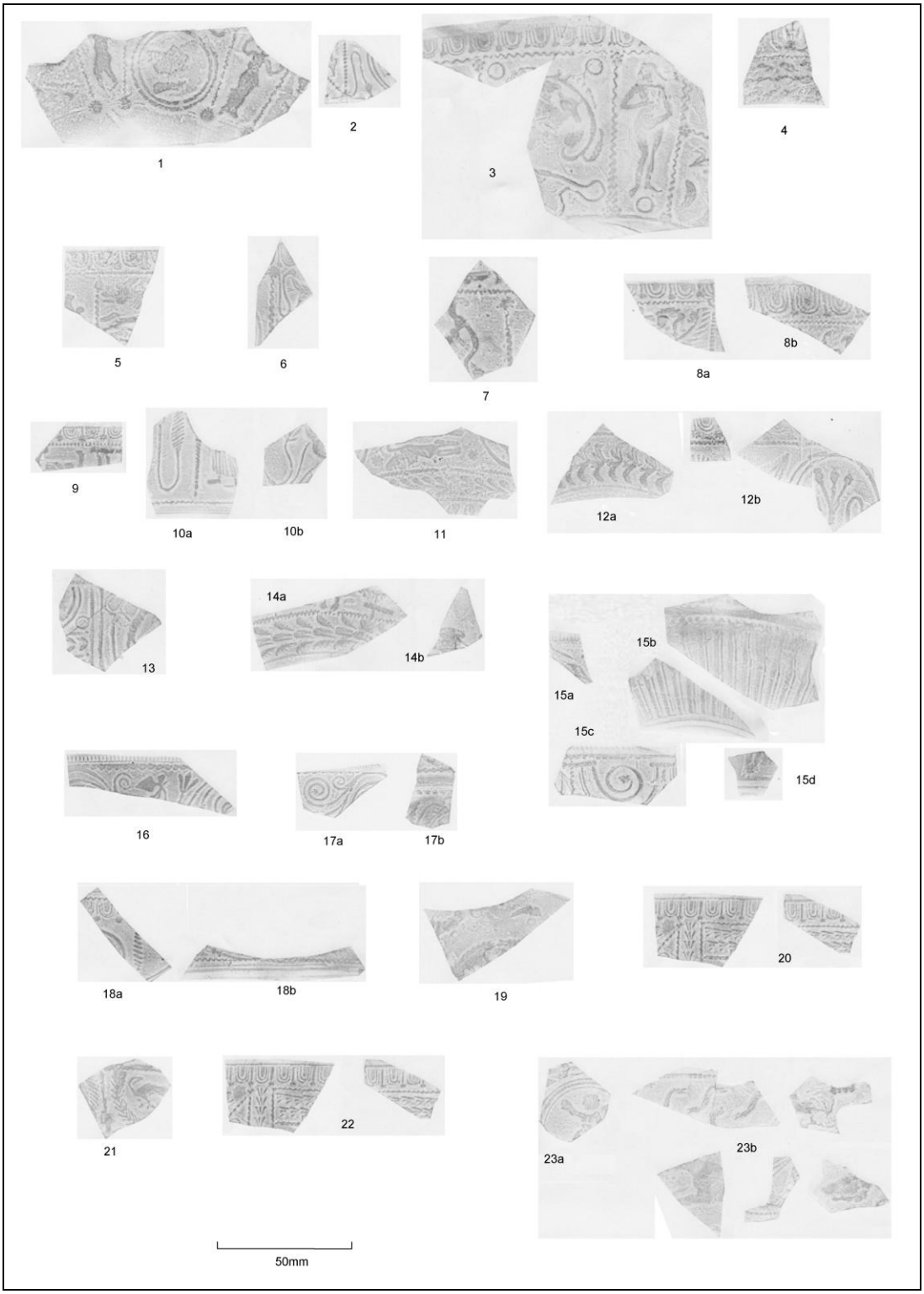

Figure 1 The decorated samian (1-23).

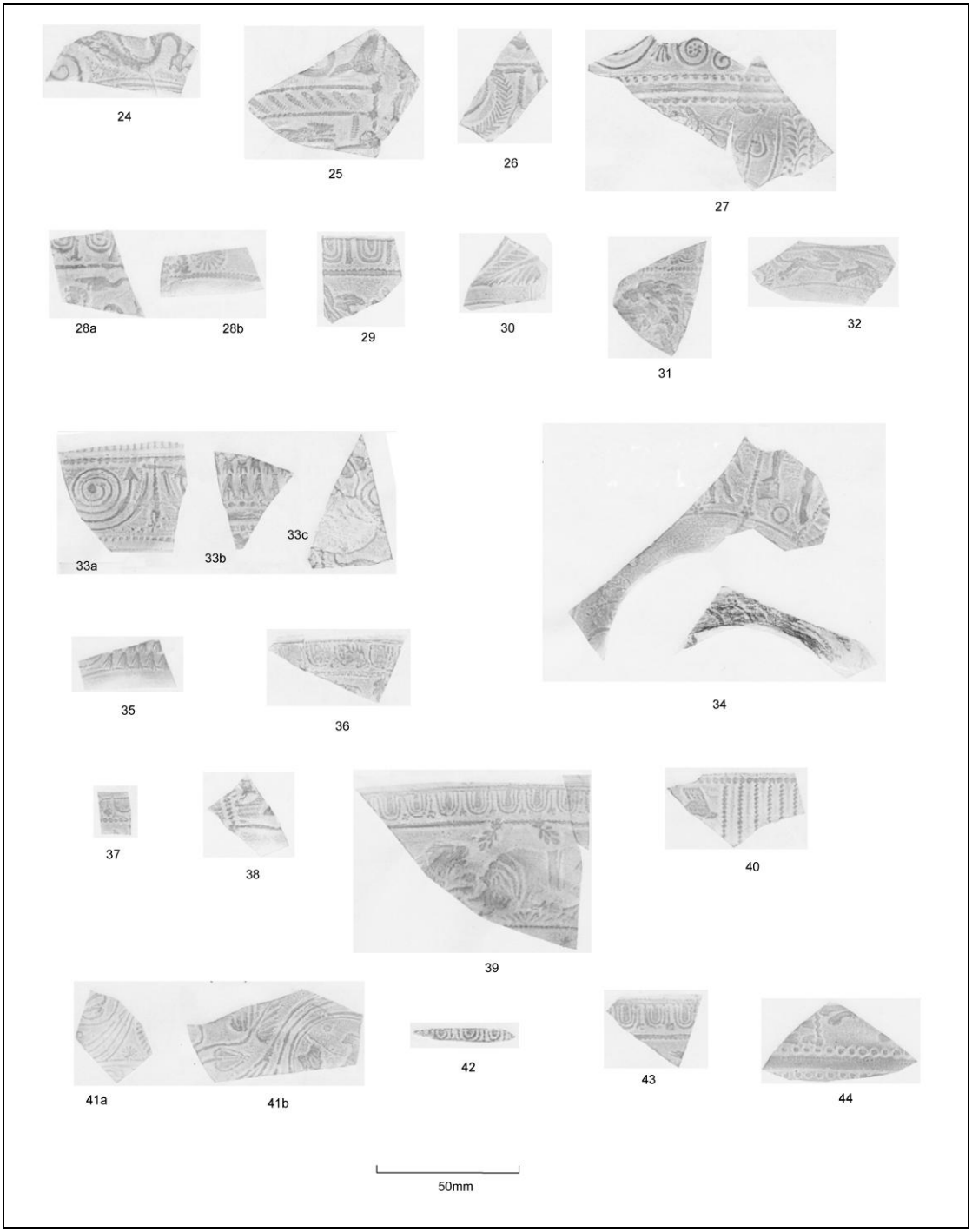

Figure 2 The decorated samian (24-44).

The Samian Potter's Stamps

Identifications (or otherwise) have been made by comparison with stamps in published samian reports, including the first three volumes of the corpus of samian stamps (Hartley & Dickinson 2008). Fourteen stamps and one signature (illegible) were in the assemblage. The identified stamp die 1a of Baccinus ii of La Graufesenque, on a Dr 29 (Figure 3.9) is only the third recorded example of this die, the other 2 were found at the kiln site. Sadly, no decoration was extant on the Leicester sherd.

A21.2003 (955) (Figure 3.1)

MdV Platter. The end of a poorly impressed stamp. Trajanic – Hadrianic.

A21.2003 (959) (Figure 3.2)

MdV Dr 18/31. (?)Roppus ii ROPPVSFE *c*. AD 105-130.

A21.2003 (1808) (Figure 3.3)

SG Dish. Unidentified [ ]ACIS 1st Century.

A21.2003 (1950) (Figure 3.4)

CG Dr 18/31 CRICIR[ ] (reading uncertain). The arrangement of the visible letters match die 7a of Criciro v, however the Leicester stamp is marginally smaller than die 7a (Hartley & Dickinson 2008c p.193) Early Antonine.

A21.2003 (2312) (Figure 3.5)

CG Dr 31. Cessius die 1a CESSIIIMA Cessius apparently only used one die, and only 15 stamps have previously been recorded away from the kiln site, 11 of those from Wroxeter. A Dr 31 with his stamp is already known from Leicester (2903.37; Hartley & Dickinson 2008c p.3-4). *c*.AD 160-190.

A21.2003 (2465) (Figure 3.6)

CG Dr 31R. Unidentified [ ]SIF or [ ]SIE Late Antonine.

A21.2003 (2496) (Figure 3.7)

CG Dr 18/31 Cinnamus ii die 4a CINNAMI·M Ligatured N & N and A & M. The die has only been recorded on 3 other vessels, one from Paris, and two from Colchester (Hartley & Dickinson 2008c p.22-31). *c*.AD 135-180.

A21.2003 (2797) (Figure 3.8)

SG Rouletted dish or platter. (?)Patricius i PATRICIVSF c. AD 65–100.

A21.2003 (2820) (Figure 3.9)

SG Dr 29. Baccinus ii of La Graufesenque, die 1a. BACC[INIMA] This is only the third example of the die, the other two vessels, both Dr 29's are from La Graufesenque (Hartley & Dickinson 2008b p.3). *c*. (?)AD 60-80.

A21.2003 (2888) (Figure 3.10)

MdV Dr 37. Below the decoration, an illegible signature (G.B. Dannell & B. Dickinson pers. comm.) partially obscured by the footring. Unless the signature can be read, or more research work is done on decorated ware from Les Martres-de-Veyre, the bowl remains identified; in view of the fabric, a Hadrianic – early Antonine date is proposed.

A21.2003 (3030) (Figure 3.11)

Lezoux dish. Unidentified MINI[ ] Pre-export Lezoux. 1st – early 2nd Century

A21.2003 (3045) (Figure 3.12)

MdV Dr 18/31. Unidentified TR[ ]VI L[ ] Clogged die. Trajanic.

A21.2003 /104\ (Figure 3.13)

CG Dr 18/31R. Unidentified. Early-mid Antonine.

A21.2003 /117\ (Figure 3.14)

Rheinzabern Ludowici Sc or Ta. Reginus REGINVS F[ ] (cf. Hofmann Pl.XVI,234.1). *c*. AD 150-190

A21.2003 /311\ (Figure 3.15)

CG Dr 18/31. (?)Sedatus iv SEDATVS F *c*. AD 125-150.

Figure 3 The Samian Potter's stamps 1-15.

Discussion

The samian from Sanvey Gate suggests that samian loss began in the Neronian period, increasing during the later quarter of the 1st century. During the Trajanic period, the samian loss is slightly higher than one would normally expect and could reflect an intensive period of occupation. The increased activity during the reign of Hadrian continues into the late Antonine period. The absence of East

Gaulish samian together with a decline in samian quantity could reflect a change in the sites status or use towards the end of the 2nd century.

The earliest South Gaulish samian is undoubtedly Neronian, with one vessel which could be earlier (contexts (2039) & (2218)); the decorated forms, Dr 29 and 30 are present, as are platters. However the predominantly pre-Flavian forms such as the Ritterling cups and the Dragendorff 24/25 cups are largely absent. The Flavian period saw an increase in samian use, continuing into the Trajanic period, albeit with a conservative range of forms.

The shortage of samian during the first two decades of the 2nd century is not so apparent here, with a slightly higher proportion of Les Martres products. The volume of post AD 120 Les Martres samian is not as great as some other sites in Leicester.

The samian covering the period AD 120-200 is almost all from Central Gaul. There is a slight drop in the loss of samian post AD 160, indeed the decorated ware has nothing that need be post AD 165-170. The range of forms is reasonably conservative, which could be either due to the nature of the site, or that the more exotic forms were not reaching Leicester.

East Gaulish samian is represented by a single sherd of a Rheinzabern dish. The near absence of Eastern samian is highly unusual even for Leicester, where there is a relative paucity of the ware. It is possible that the nature of the site changes in the last two or three decades of the 2nd Century, which would explain the presence of late Antonine forms and accounting for the dearth of East Gaulish samian, which was imported into the 3rd century.

The more prolific early and mid-2nd century Central Gaulish potters are represented, such as Cinnamus, Criciro and X-13 – Sacer, but not the later potters one would expect if there was intense late 2nd century occupation, such as Paternus II and Casurius. One sherd can be attributed to the potter Paternus III whose bowls are not that common, although several are already known from Leicester.

Six sherds showed signs of burning (Table 1); five vessels had been drilled to take lead staples or cleats (Table 2), three of them 1st-century Southern Gaulish. Cross-context joins, or sherds likely to be from the same vessel, are in Table 3.

Table 1 The burnt samian ware

Context	Source	Form
2805	CG	Large Bowl
2820	SG	29
2820	SG	18
2844	CG	18/31
2947	CG	W79
3090	SG	18

Table 2 The drilled samian ware

Context	Source	Form
2020	SG	29
2103	SG	18
2312	CG	31R
2660	CG	37
3218	SG	?Dish

Table 3 Sherds from a single vessel from separate contexts

Source	Form	Context	Context
MdV	Curle 11	653	955
SG	18	1921	1982
SG	30	2234	2334

SG	35 or 36	2363	2364
MdV	18/31	3037	3045
CG	37	3101	3218

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THE ROMAN POTTERY

Elizabeth Johnson

Introduction

The report begins with a methodological statement and an overview of the assemblage. This is followed by consideration of selected stratified groups by phase and a discussion of the assemblage as a whole.

Methodology

The archaeological excavations produced a stratified Romano-British pottery assemblage comprising 10,583 sherds weighing 169.228kg. The average sherd weight of 16g suggests a good level of preservation. The pottery from contexts associated with Roman phases of activity was separated from that found within later deposits, producing an assemblage of 8,035 sherds weighing 130.237kg, from which selected groups were chosen for detailed recording and analysis. The material was identified according to the Leicestershire Museums Fabric Series (Pollard 1994), in conjunction with the Leicester and Leicestershire Roman pottery reference collection. Individual sherds were examined in hand specimen and with the aid of a binocular microscope (x20) where appropriate. Within the archive database specific fabrics were assigned to all sherds wherever possible, however in this report the generic ware groups summarised in the table below are used for clarity of quantified data presentation.

Fabric Code:	Fabric Type:
Samian	Samian ware
C	Colour coated wares
WW	White wares
WS	White slipped wares
OW	Oxidised wares
MD	Mica dusted wares
AM	Amphora
MO	Mortaria

Fabric Code:	Fabric Type:
BB1/BB2	Black Burnished wares
DS	Derbyshire wares
CG	Calcite gritted (shelly)
GW	Grey wares
SW	Sandy wares
GT	Grog tempered wares
MG	Mixed gritted wares

Table 4: Summary of Leicestershire Museums Fabric Series (Pollard 1994, 112-114).

In addition, a single vessel in a rock tempered fabric previously unknown within Roman pottery assemblages in Leicester was found. The fabric is comparable to both the Iron Age R1 granitic rock fabric (Marsden 2011, 62) and the Saxon SX3 granitic rock fabric (Blinkhorn 1999, 165; Cooper and Forward 2009, 30-31), commonly found in Leicester and the surrounding county, however, as the vessel form suggests a Roman date, it has been labelled RT in order to distinguish it from other fabric types.

Quantification was by sherd count, weight (grams) and estimated vessel equivalents (EVEs) using rims only. Average sherd weights (ASW) have also been calculated to provide an indication of the condition of the material and levels of preservation within the assemblage. Samian ware has been included in the quantified data however, for a full discussion of the samian assemblage reference should be made to

the separate report by Robert Hopkins (this volume). Vessel forms were assigned where diagnostic sherds allowed, using the Leicestershire Form Series and other published typologies (Howe *et al* 1980; Holbrook and Bidwell 1991; Pollard 1994; Tyers 1996; Clark 1999; Perrin 1999). The complete dataset was recorded and analysed within an Access database and Excel workbook, which comprise the archive records.

Summary of Major Pottery Fabrics within the Assemblage

The table below details a summary of the major pottery fabrics within the assemblage as a whole. Figure 4 shows the percentage of fabrics present by EVEs as a measure of individual vessels identified, whilst sherd count is shown to enable comparison with other published sites. Percentages given in the text refer to sherd count unless otherwise stated.

Fabric	Sherds	% Sherds	Weight (g)	% Weight	EVEs	% EVEs	ASW (g)
AM	27	1.2%	3953	8.6%	1.00	2.3%	146.4
BB1	139	6.0%	1607	3.5%	4.18	9.4%	11.6
BB2	1	<0.0%	5	<0.0%	0.00	0.0%	5.0
C	75	3.2%	705	1.5%	0.66	1.5%	9.4
CG	442	19.0%	13592	29.4%	4.19	9.5%	30.8
DS	2	0.1%	30	0.1%	0.00	0.0%	15.0
GT	93	4.0%	2624	5.7%	1.25	2.8%	28.2
GW	868	37.3%	11931	25.8%	17.66	39.9%	13.7
MD	4	0.2%	44	0.1%	0.18	0.4%	11.0
MG	11	0.5%	362	0.8%	0.15	0.3%	32.9
MO	22	0.9%	2095	4.5%	0.80	1.8%	95.2
OW	115	4.9%	1805	3.9%	2.82	6.4%	15.7
RT	10	0.4%	617	1.3%	0.41	0.9%	61.7
SAMIAN	143	6.2%	1807	3.9%	4.68	10.6%	12.6
SW	123	5.3%	1797	3.9%	2.45	5.5%	14.6
WS	35	1.5%	580	1.3%	1.55	3.5%	16.6
WW	215	9.2%	2671	5.8%	2.30	5.2%	12.4
Total	2325	100.0%	46225	100.0%	44.26	100.0%	19.9

Table 5: Major pottery fabric groups present within the recorded assemblage.

Grey, shelly, sandy, mixed-gritted and grog-tempered coarse wares account for 66.1% (58% by EVEs), with grey wares dominant at 37.3% (39.9% by EVEs). The majority of these are most likely locally made and predominantly provide the utilitarian jars and bowls for general household use. The sandy, mixed-gritted and grog-tempered wares are sometimes known as “transitional” fabrics and date within the 1st century (Pollard 1994, 74-75). The grog-tempered and mixed-gritted wares are storage jars, including ledge rim and roll necked forms with combed or impressed decoration dating to the mid-1st century. The sandy wares are mostly jars including everted and ledge rimmed forms, alongside Belgic-style carinated jars or bowls dating to the mid-1st or mid-late 1st century. There is also a mid-1st century flask and a plain rimmed dish. Shelly wares account for 19%, almost all of which are storage jars dating to the mid-late 1st century or within the first half of the 2nd. The forms present include ledge rimmed and roll necked jars with combed decoration.

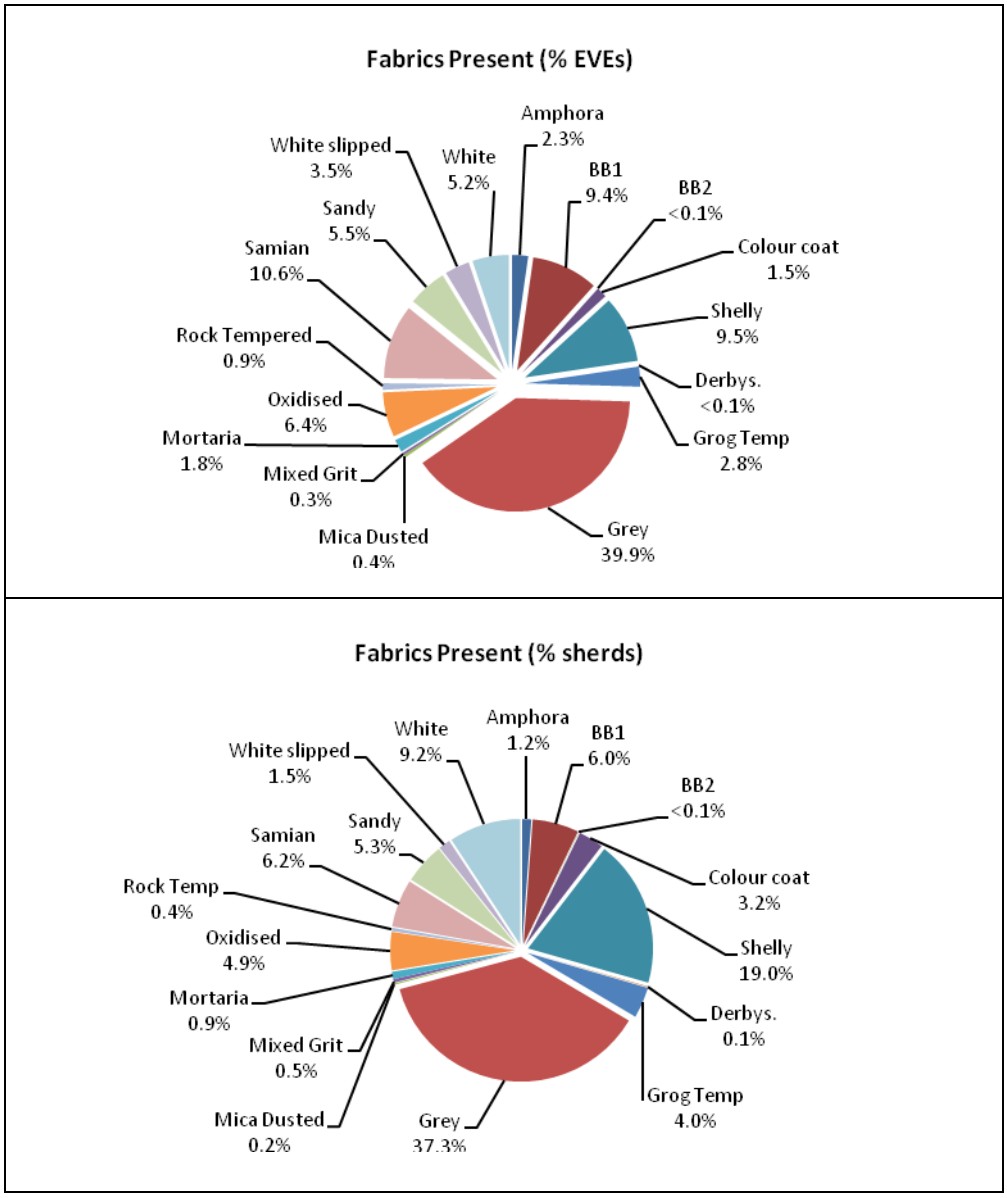


Figure 4 Pottery fabrics present by % EVEs and sherd count.

The range of grey wares present includes jars, dishes and bowls, along with a few less common forms such as flagons, beakers, flasks and lids. Jars form approximately 70% (% EVEs) of the grey wares including everted, lid-seated, rounded and cupped rimmed forms. Decorative styles present include rustication, barbotine dots, roulette bands, lattice and burnishing, ranging in date from the mid-late 1st century to at least the 3rd century (Pollard 1994, 72-79). The latest datable vessels are hard fired and highly burnished comparable to East Midlands Burnished type wares dating from the 3rd century onwards (Todd 1968). The bowls and dishes span a similar date range, including Belgic-style carinated cylindrical bowls and reeded rimmed forms dating from the later 1st to the middle of the 2nd century, copies of 2nd century Black Burnished wares, and a bead and flanged bowl dating from the mid-3rd to the mid-4th century (Pollard 1986, 5). The rest of the grey wares comprise beakers, lids, a platter, flasks and flagons, with most material dating to either the 1st or 2nd centuries.

The remaining coarse wares indicate regional pottery supply to the site. The Black Burnished wares comprise a range of jars, bowls and dishes dating to the mid-late 2nd and 3rd centuries. A handled beaker with acute lattice decoration dates from the middle of the 2nd century onwards, whilst the latest datable vessel is a bead and flanged bowl dating to the later 3rd and 4th centuries (Holbrook and Bidwell 1991). One sherd of wheel-thrown Black Burnished ware 2 dates to the mid-late 2nd century, whilst two sherds of Derbyshire ware date from the later 2nd century onwards. Non-local grey and shelly wares each account for 0.3% of the total assemblage. The grey wares are from the Nene Valley and date to the later 2nd or 3rd century (Pollard 1994, 114; Tyres 1996, 186-187; Perrin 1999, 78). A

Bourne-Greetham shelly ware jar dates to the later 2nd or 3rd century, whilst two jars and a bowl are comparable to the South Midlands industries such as those at Harrold in Bedfordshire, dating from the later 3rd through to the mid-4th century (Brown 1994).

Oxidised, white and white-slipped wares account for 15.6% (15.1% by EVEs). The oxidised wares comprise a wide range of vessel forms including beakers, bowls, dishes, flagons and lids as well as jars. The jars and bowls include Belgic-style carinated and cordoned forms, as well as lid seated and rounded rims. Decoration includes rustication, burnishing, grooves and roulette bands, suggesting a date range from the middle of the 1st century and through the 2nd. The beakers have cornice rims with clay roughcast or white painted barbotine dot decoration, indicating a date within the 2nd century (Pollard 1994, 77-79). All the white-slipped wares and most of the white wares are flagons dating to the late-1st or 2nd centuries. The rim forms present include ring-necked, everted, collared and disc rims dating from the late 1st to the middle of the 2nd century (Davies *et al* 1994, 143-145, Clark 1999, 114; 123). In addition, there are four fine white ware butt beakers with roulette decoration dating to the mid-1st century and two bowls with painted decoration dating from the later 1st to the middle of the 2nd century. There are also five or six white grog-tempered jars produced in Northamptonshire from the late 1st century to the middle of the 2nd (Timby 2009, 155-156). Likely sources for the oxidised, white and white slipped wares are Mancetter-Hartshill and Northamptonshire, with some from the Verulamium region (Swan 1984, 98-101; Pollard 1994, 113-114).

Fine wares account for 9.6% of the assemblage (12.5% by % EVEs), the majority of which is imported Gaulish samian ware, (6.2% and 10.6% by sherd count and EVEs respectively). The forms present represent tableware (dishes, platters, cups, beakers and bowls), typical of the 1st and 2nd centuries, with an emphasis on forms dating up to *c.*AD150 such as the Drag.18/31 dish (Webster 1996). There are also mica dusted wares, probably from a Midlands source, dating from the late-1st to the early/mid-2nd century (Pollard 1994, 54). Almost all the colour-coated fine wares are Nene Valley colour-coated wares, with only two imported vessels from Gaul and a platter of unknown origin. Beakers are the predominant form, including the imported wares dating from the late 1st to the mid-2nd century (Tyres 1996, 139-140). The Nene Valley colour-coated beakers date to the later 2nd and 3rd centuries, including folded forms with lustrous surfaces derived from 3rd century "Rhenish" wares. There are also bowls, dishes and flagons common in Nene Valley colour-coated ware during the 3rd and 4th centuries (Howe *et al* 1980, 16-25).

The specialist wares account for 2.2% of the assemblage (4% by EVEs), with a fairly even split between amphorae and mortaria. Three types of amphora were identified comprising Baetican Dressel 20 olive oil amphorae, Gauloise 4 wine amphorae and a Cam 189 "carrot" amphora, believed to be associated with the importation of fruit such as dates (Peacock and Williams 1986). The Cam 189 is the earliest type, dating to the 1st century, whilst the other two appear in Britain from the mid-1st century through to the 3rd. The Dressel 20 is the most common type found on Romano-British sites and accounts for just over three-quarters of the amphora assemblage here. Unusually, a complete Dressel 20 rim was found, the form suggesting a date between the mid-1st and early 2nd centuries (*ibid*). A second type of Dressel 20 fabric, associated with later vessels dating from the middle of the 2nd century onwards, is also present (Pollard 1994, 113). Mortaria from a variety of Romano-British sources are present ranging from Verulamium wares dating to the late 1st-early 2nd century, through to Swanpool mortaria dating to the late 3rd-4th. Most are from the Mancetter-Hartshill industries and date to the 2nd and 3rd centuries (Swan 1984, 95-104; Pollard 1986, 4; Tyres 1996, 117-133).

Selected Groups from Phase 2 (mid-1st to mid-2nd century AD)

Phase 2a (mid-late 1st century AD)

The earliest features recorded on the site comprise a possible roundhouse (**Building A**), a series of ditches and gullies, pits and a layer. The selected assemblage from Phase 2a comprises 631 sherds of pottery weighing 11.761kg with an EVEs value of 8.98. The average sherd weight of 18.6g shows a good level of preservation.

*Roundhouse (**Building A**)*

Context: [2956] (2955).

Three sherds (22g) were recovered from the gully of **Building A**, comprising a shelly ware jar, a grey ware jar and a strap handle from a white ware flagon. The shelly ware fabric could easily date to the mid-late 1st century, although it does continue into the 2nd. The grey and white wares are not

particularly closely datable, but could date within the latter part of the 1st century. Unfortunately the quantity and quality of the pottery prevents any closer dating.

Intercutting Ditches

Contexts: [3095] (3091); [3107] (3101)(3102)(3104)(3106); [3185](3186).

A series of three intercutting ditches, [3095], [3107] and [3185], were found to the west of **Building A** on a north-west/south-east alignment. Only 38 sherds (588g) of pottery were recovered, most of which came from [3107].

The earliest ditch in the sequence is [3095] (3091), from which two sherds (70g) were recovered. The pottery comprises a sandy ware jar base dating to the mid-late 1st century and a white ware flagon base which could date from the later 1st century onwards.

Thirty-one sherds weighing 422g were recovered from a sequence of four fills in ditch [3107], the middle ditch in the sequence. The earliest fabrics present comprise a shelly ware jar base, two grog-tempered jars including one with traces of fine vertical combing and a sandy ware lid, all of which date to the middle or mid-late 1st century. These were found in fills (3101), (3102) and (3106). One sherd of coarse oxidised ware, probably from a jar, was recovered from (3101). This most likely dates to the later 1st century or early 2nd century, but could be as early as AD60/70 (Pollard 1994, 78-79). A single sherd of white ware from the Verulamium region, probably from a flagon or bowl, was found in (3104), again probably dating to the later 1st century or the early 2nd century. Five sherds from a South Gaulish samian ware decorated bowl (form Drag.37) were recovered from (3101), dating to the later 1st or very early 2nd century (Webster 1996, 78-79). Grey wares were found in all fills and, apart from an everted rim beaker from (3101) and a cordoned bowl/jar from (3106), are all jars. The only rim present was a lid-seated form dating to the later 1st or early 2nd century found in (3101). Decorative styles present include a rusticated jar dating to the mid-late 1st century from (3101). A vessel with barbotine ring and dot pattern found in (3104), most likely dates to the later 1st or possibly early 2nd century (Pollard 1994, 77).

The primary fill (3106) contained the earliest material comprising a grog-tempered jar dating to the mid-late 1st century and a grey ware cordoned bowl/jar dating from c.AD60/70 onwards but probably within the 1st century. The remaining fills are more likely to date to the later 1st or early 2nd century. The upper fill (3101) provided the widest variety of fabrics, with the oxidised, sandy, shelly and samian ware all recovered from this layer along with grey wares. Some of the material, such as the sandy ware and decorated grey wares, date within the first century, whilst some is more likely to be later 1st or early 2nd century.

Five sherds (66g) of grey ware were recovered from ditch [3185] (3186), the uppermost ditch in the sequence. A lid-seated necked jar dating to the late 1st or early 2nd century is comparable to a group found at the Vaughan Way excavations in Leicester (Johnson 2009a, 27). The remaining body sherds are also most likely from jars, including some with grooved decoration. These are not closely datable and could date to the later 1st or 2nd century.

Large Ditch

Contexts: [2621] (2650) (2651) (2695).

West of the series of intercutting ditches, a large ditch, [2621], was discovered on the same alignment. Although this is a substantial ditch, with three separate fills, only 16 sherds (173g) of pottery were recovered. The earliest material comprises two sherds (85g) of shelly ware representing two separate jars recovered from the primary fill (2651). Both have combed decoration and date to the mid-late 1st century. A white ware flagon and very fragmentary oxidised ware vessel (nine sherds weighing only 12g) were found in the secondary fill (2650). The flagon most likely dates from at least the later 1st century, whilst the oxidised ware fabric is early and could date within the 1st century. A sandy ware jar dating to the mid-late 1st century was retrieved from (2695), along with a grey ware jar and beaker probably dating to the later 1st century. A white ware collared flagon from the Verulamium region dates to the late 1st-early 2nd century (Davies *et al* 1994, 41-43, fig.34.143-145).

Gully

Context: [2926] (2915).

Gully [2926] is a short linear feature adjacent to [2621]. A single sherd (13g) of Verulamium region white ware dating to the late 1st-early 2nd century was recovered from (2915). The sherd did show signs of sooting or burning after breakage, perhaps suggesting re-deposited material.

Timber Slot(?)

Contexts: [1919] (1918) (1925) (1932); [2010] (2013); [2209] (2605) (2636);

[2311] (2312) (2314) (2344) (2413); [2675] (2674); [2685] (2628); [2802] (2801).

A probable timber slot was found on the same north-west/south-east alignment as the ditches. In total, 150 sherds (2.946kg) of pottery were recovered from a number of sections along the length of this interrupted gully, providing the most substantial assemblage from a linear feature in this phase. The fills from sections [1919] and [2311] produced the most material accounting for approximately three quarters of the assemblage between them.

Fifty-seven sherds (1.267kg) of pottery were recovered from the three fills of [1919]. The primary fill (1932) produced the most material (49 sherds weighing 1.166kg), most of which (26 sherds, 522g) came from shelly ware jars with combed decoration dating to the mid-late 1st century. Other early fabrics present include a grog-tempered carinated jar and three sandy ware vessels comprising a burnished carinated "Belgic" style dish and two cylindrical bowls, including one comparable to a vessel found at Vine Street in Leicester, all dating to the mid-1st century (Johnson 2009b, 38-41, fig.16.16). The oxidised wares are also early examples, comprising a ledge-rim jar in a soft fired fabric with some form of argillaceous material apparent (possibly grog or clay pellets) and three "Belgic" style vessels, including a carinated bowl with an orange/red coloured slip on the outer surface. The fabrics and forms indicate a date within the 1st century, possibly *c.*AD50-70. The remaining pottery comprises three grey ware vessels and a white ware flagon or bowl. The grey wares are all probably jars, including one with a ribbed body. Again, these could date within the 1st century, although it is not possible to say how early, and a date after AD70 is more likely than earlier. Six sherds (78g) were recovered from the secondary fill (1925), comprising a shelly ware combed decorated jar and sandy ware necked jar with outcurved rim dating to the mid-late 1st century, along with an oxidised ware carinated and cordoned jar with burnishing dating within the 1st century, possibly *c.*AD60/70 The upper fill (1918) revealed two sherds (23g) of pottery comprising a shelly ware jar with combed decoration dating to the mid-late 1st century, and a grey ware body sherd, probably from a jar. The latter is not closely datable however a date within the 1st century is likely, given the nature of the rest of the pottery in this group.

A single sherd (31g) from a grey ware domed lid was found in [2010] (2013). The sherd is not particularly closely datable but could be within the later part of the 1st century.

Fifteen sherds (162g) of pottery were recovered from [2209]. A sandy ware burnished jar dating to the mid-1st century was found in the secondary fill (2636), along with a Verulamium region white ware flagon base dating to the later 1st or early 2nd century. The pottery from upper fill (2605) includes two very small fragments of 1st century South Gaulish samian ware (3g and 5g) representing two dishes. The earliest fabric is a grog-tempered jar dating to the mid-late 1st century. The grey wares include a flask with an everted rim and two jars dating from the later 1st century onwards.

Three sherds (15g) of grey ware were recovered from [2675] (2674), including a burnished jar. The pottery is not closely datable and a date from the later 1st century onwards is all that can be given. Three sherds (28g) from a sandy ware everted rimmed jar with burnished outer surface dating to the mid-late 1st century were retrieved from [2685] (2628).

Seventeen sherds (439g) of pottery were found in [2802] (2801). A grog-tempered combed storage jar, mixed-gritted neckless ledge rim jar and mixed-gritted combed storage jar all date to the mid-1st century. An oxidised ware jar/bowl and possibly a cup most likely date within the 1st century. The grey ware bowl with a rolled everted neck could date within the later 1st century, (though it could also be slightly later). A white ware collared flagon probably dates within the later 1st century, whilst a strap handle from another flagon could date within the 1st century or slightly later. A South Gaulish samian ware cup or beaker base dates to the 1st century, however a single sherd (11g) from a Central Gaulish Drag.18/31 dish would not be expected to date before the beginning of the 2nd century (Webster 1996, 35). The 2nd century samian may be intrusive, as this section is cut by a variety of later features.

Fifty-four sherds weighing 1.004kg of pottery were recovered from the four fills of [2311], making this the second largest group from this feature. A single sherd (8g) from a shelly ware lid-seated jar was the only material found in the primary fill (2413). The jar dates to the mid-late 1st century, but the

fragment is very small and abraded. Six sherds (155g) were recovered from a secondary fill (2344), comprising a shelly ware necked jar and sandy ware jar dating to the mid-late 1st century, along with four grey ware jars. The grey wares include lattice decoration, a ribbed body and a zone of stabbed or impressed decoration, and could date within the second half of the 1st century. Another secondary fill (2314), revealed 12 sherds weighing 245g. The pottery comprises three grog-tempered ware jars including one with combed decoration and one with a fold or rib at the shoulder, and a sandy ware carinated burnished jar dating to the mid-late 1st century. A coarse oxidised ware jar/bowl and fine jar or beaker most likely date within the 1st century, probably from *c.*AD60 onwards, whilst a white ware flagon could date within the late 1st century or slightly later. No grey ware was present.

The upper fill (2312) produced the most pottery with 35 sherds weighing 596g recovered. Shelly ware jars account for just over a third of the group, including lid seated and ledge rim forms along with large roll necked storage jars dating to the mid-late 1st century. Some sherds are abraded with the shell leached out. The grog-tempered wares include a fine bowl/jar with recurved rim and burnishing dating to the mid-1st century, whilst two sandy ware jar bases date to the mid-late 1st century. Taken together, mid-late 1st century shelly, grog-tempered and sandy wares form 65.7% by sherd count and 70.5% by weight of the group. Two oxidised ware jars or bowls and a white ware flagon or bowl date from the later 1st century onwards, whilst two grey ware jar/bowls with recurved rims and burnished outer surfaces most likely date within the 1st century from *c.*AD60 onwards. A South Gaulish samian ware Drag.29 decorated bowl also dates within the 1st century.

So far, the material from (2312) indicates a date probably within the second half of the 1st century however, there are three other vessels of later date present. A Central Gaulish samain ware Drag.18/31 dish would not date before the early 2nd century and is given a Hadrianic-early Antonine date by the samian specialist (Hopkins in archive). Likewise, a Drag.31 samian ware bowl, also from Central Gaul, is unlikely to date before *c.*AD160. In addition, a Nene Valley grey ware bead rimmed dish dates to at least the later 2nd century (Perrin 1999, 84-86, fig.58.84). The Drag.18/31 is a very small fragment (2g) however the Drag.31 is represented by three sherds weighing 118g and the grey ware dish by two sherds weighing 19g. This is not a large quantity of material and does not represent the majority of the group by any means, particularly when viewed in relation to the pottery from the other fills as well. It may well be that this is a small amount of intrusive material, as this section is cut by a later feature.

Ditch/Gully

Contexts: [1749] (1746) (1748).

A ditch or gully located to the north of those already discussed, [1749] was only seen in section. Two sherds (50g) from a shelly ware jar with combed decoration dating to the mid-late 1st century were recovered from (1746), whilst a very small sherd (1g) of fine grey ware was recovered from (1748). The grey ware is not closely datable but could date within the 1st century, possibly from *c.*AD60 onwards.

Pits

Contexts: [2035] (2034) (2054) (2055) (2056) (2057); [2734] (2667); [3234] (3235).

A substantial group of pottery comprising 139 sherds weighing 1.971kg was recovered from pit [2035] located to the east of linear feature [1919]. Nineteen sherds (288g) of pottery were recovered from the lowest fill (2057). The earliest material is from a shelly ware storage jar with combed decoration and a South Gaulish samian ware Drag.18 platter both dating to the mid-late 1st century. The grey wares also most likely date within the 1st century as they include rusticated jars, a jar with incised chevron decoration and one with a brownish colour-wash on the outer surface. There is also a cylindrical cordoned bowl comparable to one found at Vine Street in Leicester (Johnson 2009b, 36-42, fig.17.22). An oxidised ware everted flagon rim and a smattering of white wares could date within the later 1st century, but are not closely datable and could be slightly later.

The fabrics present in middle fill (2056) comprise shelly and sandy wares dating to the mid-late 1st century, along with a South Gaulish samian ware Drag.37 decorated bowl most likely dating to the later 1st century, but no later than *c.*AD110 (Webster 1996, 3). The grey wares include rusticated jars, an everted rim and a carinated jar with combed decoration suggesting a date within the 1st century. A white ware flagon dates from the later 1st century onwards, whilst a colour coated ware with oxidised fabric and dark slip remains unidentified. A tiny sherd (1g) comes from a beaker although the fabric does not appear fine enough to suggest a Continental import. The pottery from middle fill (2055) is comparable to both (2057) and (2056) above, comprising shelly and grog-tempered ware storage jars

with combed decoration, grey ware jars including one with ribbing on the body and two burnished oxidised ware jars, indicating a date most likely within the later 1st century.

Shelly, grog-tempered and sandy wares dating to the mid-late 1st century are still present in the upper fill (2054) and top fill (2034). The remaining pottery from (2054) comprises a white ware flagon from the Verulamium region, a South Gaulish samian ware platter, and grey and oxidised ware jars. The grey wares include rusticated and barbotine dot decorative styles suggesting a date within the 1st century or possibly into the early 2nd. The remaining pottery from (2034) is similar with a white ware flagon, oxidised and grey wares including rusticated and ribbed jars. One sherd of oxidised ware is from the same vessel as a jar from (2054) above, indicating some mixing of fills. There is a little more samian ware present comprising a South Gaulish Drag.29 bowl, Drag.18 platter and possibly a beaker, all probably dating within the 1st century. A samian Drag.18/31 dish from Central Gaul would date to the early 2nd century at the earliest, whilst a mica dusted ware bowl can be dated to the late 1st-early 2nd century.

Most of the pottery suggests a date within the 1st century, though some could be slightly later. Overall, the pottery present is fairly similar throughout all the fills, with the latest positively identifiable material found in the top fill (2034).

Two other pits produced small quantities of pottery. Seven sherds weighing 144g were recovered from [2734] (2667), located to the west of linear feature [1919], comprising shelly and sandy ware jars dating to the mid-late 1st century, along with some grey wares. The four grey ware vessels include a rusticated jar, carinated cordoned jar with zone of lattice decoration, an everted rimmed small jar or beaker and a platter derived from Gallo-Belgic forms such as the Cam 17 (Hawkes and Hull 1947, 218-219, pl.XLIX), suggesting a date within the 1st century. One sherd (18g) from a mica dusted ware flanged rim shallow bowl was recovered from [3234] (3235), located to the east of the intercutting ditches [3095] [3107] and [3185]. The fabric and form suggest a late 1st-early 2nd century date.

Layer

Context: (2820).

A brown silty layer sealing the large ditch [2621] produced a substantial assemblage of pottery consisting of 284 sherds weighing 6.039kg. The average sherd weight is 21.3g indicating good levels of preservation. Shelly, grog-tempered and sandy wares dating to the mid-1st or mid-late 1st century account for 58.2%, 71/4% and 41.5% by sherd count, weight and EVEs respectively. The forms present include roll necked and ledge rimmed large storage jars with combed decoration, including one comparable to a large storage jar from Vine Street, possibly from the Great Holme Street kiln (Johnson 2009b, 36-41, fig.16.13). The sandy ware jars include everted rims and carinated forms with burnished outer surfaces including lattice or diagonal line decoration.

The oxidised wares include a shallow plain rim dish in a micaceous fabric, a ring necked flagon and jars with cordons, rustication, burnishing and one example with white painted barbotine dots. The fabrics and forms suggest a date within the 1st century, although white painted barbotine decoration may well continue into the 2nd century (Pollard 1994, 78-79). The flagon rim form can be dated from *c.*AD60 to *c.*AD120 (Davies *et al* 1994, 41-43). Similarly, the grey wares suggest a date within the 1st century overall, comprising a platter and jars. The platter is derived from Gallo-Belgic forms such as the Cam 17, but with a beaded rim. As with the example from pit [2734], concentric circles are present on the inner and outer surfaces of the base. The jars include everted and neckless ledge rim forms, with rustication, burnishing, lattice zones and impressed decoration. White and white-slipped wares are also present, including a fine beaker with roulette decoration, probably a butt beaker, dating to the mid-1st century. The other vessels are flagons dating from the later 1st century onwards. A mortarium from the Verulamium region dates to the late 1st-early 2nd century. All the samian ware is South Gaulish dating within the 1st century. Nine individual vessels were identified comprising three Drag.29 bowls and four Drag.18 platters dating to the mid-late 1st century, along with one Drag.18/31 and one Drag.37 dating to the later 1st century.

Although a few vessels could potentially date into the early 2nd century, the assemblage does form a fairly coherent group suggesting a date within the 1st century. The proportion of shelly, sandy and grog-tempered wares dating to the mid-late 1st century is comparable to a pit feature found at the neighbouring Vine Street site, also dated to the later 1st century on the basis of grey, oxidised and white wares (Johnson 2009b, 36-37).

Phase 2b (late 1st to early 2nd century AD)

Pottery was examined from two pits and a ditch within Phase 2b. The selected assemblage comprises 391 sherds of pottery weighing 7.160kg with an EVEs value of 8.61. The average sherd weight of 18.3g shows a good level of preservation.

Pit

Contexts: [3136] (3120) (3160) (3168).

Thirty-eight sherds (1.654kg) of pottery were recovered from pit [3136] located to the east of ditch [3050], in the eastern area of the site. The primary fill (3168) contained four sherds (110g) comprising a shelly ware neckless ledge rim jar dating to the mid-late 1st century and grey ware jars probably dating to the later 1st century. Shelly and sandy wares dating to the mid-late 1st century were also found in the middle fills (3160) and (3120), along with white, oxidised and grey wares dating to the late 1st-early 2nd century. Datable forms include a reeded rim carinated bowl from (3160), and a Northamptonshire white grogged ware jar from (3120). Decorative styles present include barbotine dot panels, ribbing and rustication. A rim from a Dressel 20 amphora from (3120) can be dated approximately between the mid-1st and early 2nd century (Peacock 1986, 136-138).

Pit

Contexts: [2236] (2234) (2235).

Fifty-seven sherds (1.067kg) of pottery were recovered from pit [2236] located to the east of ditch [2345]. The primary fill (2235), contained 15 sherds (409g) including shelly and grog-tempered storage jars, a white ware rouletted butt beaker and a grey ware platter derived from Gallo-Belgic forms such as Cam 17, dating to the mid-late 1st century. The remaining grey wares comprise jars and bowls including carinated forms, most likely dating from *c.*AD60 onwards and probably within the 1st century.

A further 42 sherds (658g) of pottery were recovered from the secondary fill (2234). Along with pottery comparable to that from (2235), white and grey wares suggesting a late 1st-early 2nd century date were also present, including a reeded rim bowl and a jar with barbotine dot decoration. The small amount of samian ware includes a Drag.30 bowl dated to the mid-late 1st century (Hopkins in archive) and a Drag.18/31 dish from Central Gaul dating to the first half of the 2nd century. In addition, a small sherd (5g) from a Black Burnished ware jar and one sherd (6g) from a Nene Valley grey ware jar base were found in (2234). Both these fragments suggest a date later in the 2nd century however, as this feature is cut by a later quarry pit [2327], they are most likely intrusions from the later feature.

Ditch

Contexts: [2011] (1795) (2012) (2020) (2021) (2117).

A substantial assemblage of 258 sherds of pottery weighing 3.996kg was recovered from ditch [2011] located in the southern area of the site. The ditch runs from north-east to south-west, cutting through ditch [2345]. Only 13 sherds (81g) were retrieved from the primary fills (2012) and (2021) including mid-late 1st century sandy and shelly wares alongside oxidised, grey and white wares, dating from around AD60 onwards. Forms present include a mid-1st century white ware rouletted butt beaker, grey wares with rustication, a carinated oxidised ware jar and a white-slipped ware flagon with a zone of roulette decoration. A further 56 sherds (883g) were recovered from the secondary fill (2020). The pottery is comparable to the primary fills insofar as mid-late 1st century shelly, sandy and grog-tempered wares were recovered with grey and white wares dating from around AD60 onwards. A sherd from the same white-slipped ware flagon as that from (2021) was also found. The grey wares include jars with roulette decoration and an everted rim beaker. A white ware bowl with red painted dot decoration is most likely from Northamptonshire dating to the later 1st or early 2nd century (Woods and Hastings 1984, 37; Marney 1989, 109). An imported South Gaulish samian ware Drag.29 bowl dates to the mid-1st century and a Dressel 20 amphora fragment could date from the mid-1st century onwards. Lastly, a colour-coated ware platter from an unknown source has been dated to the 1st century based on its similarity to Gallo-Belgic forms from which it is derived. The fabric is white with a pale orange colour-coat and more sherds from the same vessel were recovered from upper fill (1795).

The two upper fills (1795) and (2117) account for approximately three-quarters of the pottery from this ditch by sherd count and weight. Both contained mid-late 1st century shelly, sandy and grog-tempered jars comparable to those from the lower fills, including a large storage jar with a combed chevron pattern similar to one recovered from Vine Street in Leicester, suggesting the Great Holme Street kilns as a possible source for the grog-tempered wares. The oxidised, grey and white wares are also

comparable to the lower fills, including ledge rim, everted and carinated jars and bowls with cordons, roulette decoration, burnishing and rustication, suggesting a date range from *c.*AD60 to the early 2nd century. Three lid seated grey ware jars are comparable to a group from excavations at St Peter's church, Vaughan Way, Leicester, given a date range from the later 1st century through to the middle of the 2nd (Johnson 2009a, 27). A white-slipped ware ring or screw necked flagon from (1795) also dates to the late 1st-early 2nd century. The samian ware includes a Drag.15/17 platter and Drag.29 bowl dating to the mid-1st century.

There are two anomalous sherds from (1795), a Central Gaulish samian form 79 dish (16g), and a grey ware jar (13g) in an East Midlands burnished type ware. The samian dates to the second half of the 2nd century, whilst the grey ware dates to at least the later 2nd century and is more commonly found into the 3rd. Both these sherds are likely to be intrusive, as the ditch [2011] is truncated in this section by later features.

The assemblage as a whole suggests a date from the later 1st to the early 2nd century, with a substantial element probably dating within the 1st century. Although the material from the primary fills could well date within the 1st century, there does not seem to be a clear difference between the primary and later fills, as early material dating to the mid-late 1st century was recovered from all levels, and the primary fills themselves contained such a small amount of pottery. The two instances where fragments from the same vessel were discovered in two different levels could suggest a single deposit of material or disturbance occurring during more than one backfilling episode. Either explanation would also apply to the quantity of earlier material appearing in all levels. The suggestion that the ditch was backfilled rapidly corresponds with the structural evidence on site, that the feature may have rapidly been superseded.

Phase 2c (mid-late 2nd century AD)

Pottery was examined from the boundary ditch and a pit in *Insula V* within Phase 2c. The selected assemblage comprises 698 sherds of pottery weighing 13.877kg with an EVEs value of 12.20. The average sherd weight of 19.9g shows a good level of preservation.

Boundary ditch

Contexts: [2385] (2343) (2364) (2387) (2391) (2396) (2805).

A boundary ditch running east/west across the northern part of the site revealed a substantial pottery assemblage consisting of 398 sherds weighing 6.969kg, recovered from multiple sections sampled across its length. Approximately two-thirds of the material, (266 sherds weighing 4.203kg), was recovered from the primary fills (2343) (2391) (2396) and (2805), most of which came from (2396) (149 sherds weighing 2.765kg). The earliest material comprises shelly, grog-tempered and mixed-gritted ware storage jars dating to the mid-late 1st century. The grey wares include some earlier material such as carinated jars and rusticated decoration, along with a dish, flagon and jars with burnished lines and lattice decoration. Likewise, some of the oxidised and white wares could date from the later 1st century onwards, however the presence of beakers with clay roughcast decoration and cornice rims indicates a date after *c.*AD130 (Pollard 1994, 79). The white wares include flagons with everted rims, along with a white grogged ware jar and red painted bowl most likely from Northamptonshire. Two white-slipped ware flagons also date within the 2nd century, probably the earlier part. One mortarium from Mancetter Hartshill dates from the middle of the 2nd century up to the middle of the 3rd.

The imported wares include Dressel 20 and Gauloise 4 amphorae from Spain and Gaul respectively, along with some samian ware. There is a small amount of South Gaulish 1st century samian, however, most is from Les Martres de Veyres and other Central Gaulish production centres dating to the 2nd century (Hopkins in archive). The latest datable vessel is a Drag.38 bowl dating to the second half of the 2nd century (Webster 1996, 51).

A major difference between this group of material and that from Phases 2a and 2b is the appearance of Black Burnished ware, indicating a date after *c.*AD120. Nine vessels were identified, comprising a beaker, bowls and jars. The beaker was recovered from (2805) and is a handled form with acute lattice decoration dating from *c.*AD140 onwards (Holbrook and Bidwell 1991, 101-102). The remaining vessels were all recovered from (2396). The bowls with flat rims and acute lattice date within the 2nd century, whereas those with intersecting arc decoration are dated from the middle of the 2nd century into the 3rd. The jars have acute or right angled lattice, indicating a date range from *c.*AD120 to the end of the 2nd century (*ibid*, 95-109).

The pottery from the secondary fills (2364) and (2387) is comparable with the rest of the assemblage comprising a small amount of mid-late 1st century shelly and grog-tempered wares alongside grey, oxidised, white and white-slipped wares dating to the later 1st and 2nd centuries. Sherds from a white ware flagon match a sherd found in (2396) strongly suggesting this is the same vessel. The small amount of samian ware dates to the late 1st or early 2nd century. Four separate mortaria were recovered; one earlier vessel from the Verulamium region, two from Mancetter-Hartshill and one from the Nene Valley industry. Unfortunately none are identifiable to a specific form, but the latter two types date to the 2nd century at the earliest. The same forms of Black Burnished ware bowls and jars as those found in (2396) were found in (2387).

There is no discernible difference between the pottery from the primary and secondary fills. Overall, a date within the second half of the 2nd century can be given based on the presence of Black Burnished wares.

Pit

Contexts: [989] (955) (957) (958) (959) (987) (988).

Re-cut [1011] (920) (921) (934) (935) (936) (937) (950) (951).

An assemblage of 167 sherds weighing 5.137kg was recovered from the fills associated with the initial cut [989], approximately three-quarters of which came from the upper fill (955). Grey wares form just over a third of the group, comprising jars with everted and outcurved rims. Decorative styles present include cordons, burnishing, lattice, rustication, barbotine ring and dot and barbotine dot panels, suggesting a date range from the later 1st century up to the middle of the 2nd. The shelly and white wares account for approximately a quarter each and could easily date within the same range as they grey wares. Ledge rim and roll necked shelly ware storage jars date from the mid-late 1st century into the 2nd. A roll necked storage jar of this date was the only vessel found in lower fill (988). The white wares are all flagons dating from the later 1st century into the 2nd. Together, these three fabric groups account for 85% by sherd count, 80.6% by weight and 66.2% of the EVEs. Very small amounts of oxidised and white-slipped wares also date from the later 1st to the middle of the 2nd century. One Mancetter-Hartshill mortarium was found in (957), the form indicating a date from *c.*AD90-130 (Gillam 1968, 26). Three sherds of Black Burnished ware representing two jars were recovered from (955) and (957). These would not date before *c.*AD120 but do most likely date within the 2nd century.

The imported wares comprise a Dressel 20 amphora from (955) and samian ware. An almost complete Drag.18/31 dish stamped ROPPUS.FE was the only pottery recovered from (959). The dish is from Les Martres des Veyres in Gaul and dates to *c.*AD105-135 (Hopkins in archive). It is very fresh with kiln grit still present on the inner surface, suggesting it was broken and discarded after very little use, if indeed it was used at all. Other dishes and bowls from South and Central Gaul date to the later 1st and 2nd centuries. The latest datable vessel is a Drag.37 bowl possibly in the style of Cinnamus, indicating a date from about AD135 up to *c.*AD170 (Hopkins in archive; Webster 1996, 84).

It is difficult to determine any significant differences in date between the upper and lower fills as the upper fill (955) produced most of the assemblage. On the whole the assemblage does form a fairly coherent group dating to the first half of the 2nd century, with only one or two vessels potentially dating after *c.*AD150.

The pit appears to have been re-cut at some point, and a group of 133 sherds of pottery weighing 1.771kg was retrieved from the fills associated with [1011]. Thirty-five sherds (294g) were recovered from the primary fills (950) (951) including shelly, grey, oxidised and white wares comparable to those from [989] above. Likewise a Black Burnished ware jar dates from *c.*AD120 onwards. The imported wares comprise one sherd from a Dressel 20 amphora along with samian and colour-coated ware from Central Gaul. The samian Drag.18/31 dish is possibly from Les Martres des Veyres, suggesting a date from *c.*AD100-120 (Hopkins in archive), whilst the colour-coated ware beaker with clay roughcast decoration dates from the later 1st century up to approximately AD120 (Tyres 1996, 140).

The secondary, middle and upper fills are all similar with shelly, white, white-slipped, oxidised and grey wares dating up to the middle of the 2nd century. The range of forms present includes jars with ledge and outcurved rims, lids, an everted rim beaker, a ring necked flagon and reeded rim bowl. The decorative styles include burnished lines, lattice and barbotine hairpin and dots. The samian from both the secondary and middle fills is all from South Gaul dating to the late 1st-early 2nd century. Two Black Burnished ware bowls and a jar with acute lattice were recovered from secondary fill (935), as was a Mancetter-Hartshill mortarium base. The mortarium fabric is the same as the rim found in [989]

(957) and could be the same vessel, however as the base sherd has been burnt a little, it is not possible to be certain. Some of the shelly wares from middle fill (937) are abraded, possibly indicating disturbed or re-deposited material. Only seven sherds (224g) were recovered from the upper fill (936), five of which (202g) were from a Dressel 20 amphora. The remainder comprises two sherds of grey ware probably dating within the 2nd century.

Taken together, the material from [989] and [1011] is comparable, with most dating within the first half of the 2nd century. The pottery from [1011] is more thinly spread between fills as opposed to the dominance of the upper fill (955) from [989], which, along with the presence of some abraded material and possibly the same vessel spread between the two cuts, suggests the pottery recovered from [1011] originates from [989]. In this respect, a date after *c.*AD150 could be suggested for the re-cut of the initial pit.

Selected Groups from Phase 3 (late 2nd and 3rd century AD)

Phase 3b (early-mid 3rd century AD)

Pottery was examined from two pits in *Insula V* thought to be of Phase 3b date. The selected assemblage comprises 108 sherds of pottery weighing 2.567kg with an EVEs value of 3.20. The average sherd weight of 23.8g shows a good level of preservation.

Pit

Contexts: [2166] (2091) (2165)

A pit containing demolition rubble and pottery was located inside the south-eastern room of **Building C**. Although substantial quantities of building material were found, only 11 sherds (213g) of pottery were recovered. Four sherds representing four separate vessels were found in the lower fill (2165), comprising a Central Gaulish samian ware Drag.33 cup, a mica dusted ware plain rimmed dish, a grey ware jar and grey ware burnished bead and flanged bowl. The bowl is the latest datable vessel, dating from *c.*AD250 onwards (Pollard 1986, 5), and the most substantial sherd weighing 104g. The remaining material from upper fill (2091) comprises an abraded Central Gaulish samian ware Drag.18/13 dish, a Black Burnished ware bowl base, a grey ware jar and dish and a Nene Valley colour-coated ware beaker. The dish is a grey ware copy of a Black Burnished ware form dating from the middle of the 2nd century onwards, whilst the colour coated-ware beaker dates to the late 2nd-early 3rd century.

The discovery of a pit inside **Building C** containing building rubble suggests a decline in the use of the building. Although a meagre amount of pottery was recovered, the appearance of Nene Valley colour-coated ware suggests the date of this event was towards the 3rd century, with the bead and flange bowl supporting this, indicating a date from the middle of the 3rd century onwards. Quarry pit [1018] in Phase 3c is similar in nature, and it may be that pit [2166] dates towards the later 3rd century as well.

Pit

Contexts: [2612] (2611) (2632).

A shallow pit to the north of **Building C** revealed 97 sherds of pottery weighing 2.354kg. The primary fill did not produce any dating evidence. The secondary fill (2632) contained only two sherds (19g), comprising a grey ware jar and dish dating to the 2nd century, with the remainder recovered from tertiary fill (2611). From the latter came a group of Black Burnished ware jars and bowls dating into the 3rd century, including a bead and flanged bowl dating from *c.*AD270 onwards and jars with obtuse lattice and flared rims (Holbrook and Bidwell 1991, 95-99). The presence of the later bowl suggests the pit may have remained partly open during the second half of the 3rd century, or that it is a slightly later feature. In addition a dish and three bowls have been classified as GW1 (the fabric denoting Black Burnished ware copies). The dish is a plain rim type with lattice decoration, whilst the bowls include flat and grooved rim types with lattice and intersecting arc decoration, with a date from the middle of the 2nd century and into the early 3rd (*ibid*). The fabric and finish is extremely close to Dorset Black Burnished ware and these vessels could be examples of Rossington Bridge Black Burnished ware (Buckland *et al* 2001, 47-55). East Midlands burnished type grey wares dating to the 3rd century are also present, including a deep cupped rim jar comparable to material from neighbouring Vine Street (Todd 1968; Johnson 2009b, 65-66). A plain rimmed beaker, similar to funnel necked types found in colour-coated ware, presumably also dates to the 3rd century based on the form. The presence of Nene Valley colour-coated wares comprising beakers, a flagon and castor box lid also indicate a date into the 3rd century. The beaker forms present include body sherds with barbotine scroll decoration and folded

forms with lustrous outer surfaces. There is also one folded beaker with an oxidised fabric and lustrous brown colour-coat from an unidentified source, presumably dating to the 3rd century based on the form.

The remaining pottery comprises mortaria from the Nene Valley and Mancetter-Hartshill, along with some shelly, white, white-slipped and oxidised wares. The forms present include large storage jars with combed decoration, a flagon with a disc rim, hemispherical flanged bowl and white grogged ware jars from Northamptonshire. The mortaria can only be dated from the middle of the 2nd century onwards, whilst the rest dates within the 2nd century, including some residual material dating from the later 1st to the middle of the 2nd century.

Phase 3c (late 3rd century AD)

Pottery was examined from two quarry pits within Phase 3c. The selected assemblage comprises 497 sherds of pottery weighing 10.860kg with an EVEs value of 11.28. The average sherd weight of 21.9g shows a good level of preservation.

Quarry Pits Insula V

Contexts: [1018] (982) (983) (984) (985) (1008) (1015) (1016) (1017) (1019) (1021) (1022) (1023) (1024) (1025) (1026) (1027) (1865).

Contexts: [2327] (2092) (2171) (2196) (2204) (2229) (2232) (2246) (2250) (2285) (2290) (2291) (2297) (2300) (2310) (2485) (2486).

Pit [1018] was a large quarry pit located adjacent to the north wall of **Building C**, from which a substantial assemblage of 215 sherds weighing 3.942kg was recovered. A large amount of building material was also found in this pit.

Fifty-one sherds (996g) were recovered from the lower fills (1024), (1025), (1026), (1027) and (1865). The assemblage is characterised by Black Burnished wares, Nene Valley colour-coated wares and East Midlands burnished grey wares. The Black Burnished ware comprises a bowl and three jars, including one with obtuse lattice decoration indicating a 3rd century date. Likewise the Nene Valley colour-coated wares comprise beakers, flagons and a castor box lid dating to from the later 2nd century into the 3rd. As well as East Midlands burnished grey wares, a Nene Valley grey ware jar dates to the later 2nd or 3rd century. A small amount of earlier material is also present, comprising a Cam 189 “carrot” amphora dating to the mid-late 1st century, a white ware bowl with orange painted decoration, a very abraded samian ware dish and some shelly ware jars including a roll necked storage jar. Some of the grey wares are also residual including a rusticated jar. Many of these sherds are small or abraded, for example the sherd of amphora weighs only 5g and the white ware bowl only 3g. In addition, joining sherds from a grey ware jar were found in lower fills (1024), (1027) and middle fill (1023), suggesting either a single deposit or disturbance between the levels.

The pottery from the middle, upper and top fills are all comparable, comprising Black Burnished, grey and colour-coated wares dating to the 3rd century alongside some residual material. The Black Burnished wares include plain rimmed dishes with plain burnished surfaces, lattice or intersecting arc decoration, dating from the middle of the 2nd century and into the 3rd. Jars with flared rims and obtuse lattice also indicate a 3rd century date. Two Derbyshire ware jars date to the later 2nd or 3rd century, whilst mortaria from the Nene Valley and Mancetter-Hartshill date from the middle of the 2nd century onwards. The East Midlands burnished grey wares comprise jars and a dish. Other grey wares include a plain rimmed dish copying the Black Burnished ware form with joining sherds found in middle fill (982) and upper fill (983). Joining sherds from a narrow mouthed jar were found in middle fill (1021) and upper fill (1016). The colour-coated wares are all from the Nene Valley comprising beakers, a castor box and flagons dating to the later 2nd and 3rd centuries, along with a dish dating to the 4th century. Sherds from a flagon were found within middle fills (1023), (1008) and lower fill (1027).

As with the lower fills, a small amount of residual material was present, comprising a Gauloise 4 amphora, white ware flagons, oxidised and grey ware jars. A small amount of samian ware is also present, ranging from a 1st century platter to a mortarium and bowl dating to the mid-late 2nd century. The upper fill (1017) revealed only one sherd (10g) from a shelly ware jar. The body sherd is not closely datable and could date any time from the later 1st or 2nd century.

One vessel recovered from upper fill (1015) remains a mystery, as the form is clearly Roman, but the fabric is more similar to early Saxon fabrics found in Leicester. Plates of gold mica and fragments of

sub-angular granitic rock, along with rounded to sub-rounded quartz are visible. It has been classified as "rock tempered" (RT) to identify it as a separate fabric and is illustrated below.

The vessel is highly burnished at the shoulder with a rim diameter of 210 mm suggesting a large storage jar of some kind. The vessel is presumably later Roman as it was found in the upper fill of the quarry pit, but this is by no means certain and a parallel has yet to be found.

Figure 5 Rock tempered jar from pit [1018] (1015).

A second large quarry pit [2327], located to the north of **Building C** and pit [1018], revealed another substantial assemblage of 282 sherds weighing 6.918kg. Only eight sherds (100g) of pottery were recovered from the primary fills (2485) and (2486). The latest datable material is a Black Burnished ware plain rimmed dish with lattice decoration dating from the mid-2nd century onwards. The remaining pottery comprises a grey ware jar, white ware flagon and two samian ware vessels dating to the first half of the 2nd century. Lower fill (2310) produced three sherds (40g) of white and grey ware also dating within the 2nd century.

Fifty-eight sherds (1.011kg) of pottery were recovered from the secondary fills (2291), (2297) and (2300). The coarse wares present comprise grey, white, shelly and Black Burnished wares, most of which date within the 2nd century. One highly fired burnished grey ware jar is comparable to East Midlands Burnished wares dating to the 3rd century. The samian ware also dates from the 1st century to the middle of the 2nd. The latest datable material is a Nene Valley colour-coated ware beaker dating

to the late 2nd-early 3rd century. Two sherds from a Gauloise 4 wine amphora are not closely datable, and could date from the later 1st century through to the mid-3rd.

Pottery from the middle fills (2171), (2196), (2204), (2229), (2232), (2250), (2285), (2290) totals 157 sherds weighing 4.427kg, accounting for just over 55% of the sherds and 64% of the weight of the material recovered from the pit. Grey and Black Burnished wares form the bulk of the coarse wares. The grey wares include copies of Black Burnished ware dishes and bowls, along with jars including East Midlands Burnished wares dating to the 3rd century. The Black Burnished wares comprise dishes, bowls and jars, including a grooved rim bowl and jars with obtuse lattice decoration indicating a date from the later 2nd century and into the 3rd (Holbrook and Bidwell 1991, 95-100). A wheel-thrown Black Burnished ware 2 bowl dating to the mid-late 2nd century was found in (2196) (Tyres 1996, 186-187). This fabric is not particularly common in Leicester, for example only two sherds were recorded from the excavations at the adjacent Vine Street site, both occurring in phases dating to the mid-late 2nd century onwards (Johnson 2009b in archive). A Bourne-Greetham shelly ware jar also dates to the later 2nd or 3rd century. The remaining coarse wares comprise small quantities of white, oxidised and shelly ware dating within the first half of the 2nd century, including matching sherds found across contexts (2232), (2204), (2285) and (2250). The earliest material is a very fragmentary sandy ware jar from (2232), which dates to the mid-1st century and is residual in this context.

Amphora sherds representing three vessels were recovered. Two Dressel 20 olive oil amphorae are present, including one in a fabric associated with vessels dating from the later 2nd century onwards (Pollard 1994, 113). One sherd from a Gauloise 4 wine amphora is from the same vessel as that found in secondary fill (2291). The mortaria comprise two vessels from Mancetter-Hartshill dating from the mid-2nd century to the early 3rd, along with a later Swanpool type dating to the late 3rd-4th century (Webster and Booth 1947; Darling 1977).

Most of the colour-coated wares are beakers from the Nene Valley. The forms present include cornice and plain rimmed vessels with barbotine scroll or dot decoration dating to the late 2nd-early 3rd century, along with 3rd century folded forms with barbotine scales (Perrin 1999, 89-98). There are also flagons with roulette bands, including sherds from the same vessel found in (2171) and (2204). An imported beaker from Central Gaul dating from the late 1st to the mid-2nd century was recovered from (2171), and is residual in this context. There are also samian fine wares present, with at least 15 separate vessels identified. Most date within the first half of the 2nd century and are probably residual. The latest forms present comprise two bowls dating from *c.*AD160-200 (Webster 1996, 35; 51).

The upper fills (2092) and (2246) revealed 15 sherds (252g) comprising white, grey and Black Burnished wares along with a Nene Valley colour-coated ware beaker. The white ware flagon dates within the 2nd century, whilst the Black Burnished wares can only be dated from the middle of the 2nd century onwards. The colour-coated ware beaker dates to the late 2nd-3rd century, whilst the grey wares include East Midlands Burnished wares typical of the 3rd century.

The material recovered from these quarry pits is broadly 3rd century, with a residual element. There is a hint of 4th century pottery, such as the Nene Valley colour-coated ware dish from [1018] and Swanpool mortaria from [2327] and perhaps the pits were finally sealed at some point during the 4th century.

Pottery Supply and Site Status

Romano-British pottery can be broadly divided into local, regional and imported supply. Local supply is generally accepted as within a 15-25km (15 mile) radius of manufacture (Peacock 1982: 156-158), whilst regional or "non-local British" (Cooper 2000: 79) describes products from large industries such as Mancetter-Hartshill or the Nene Valley. Comparison of the phase assemblages as illustrated by the charts below highlights the changes in pottery supply through time.

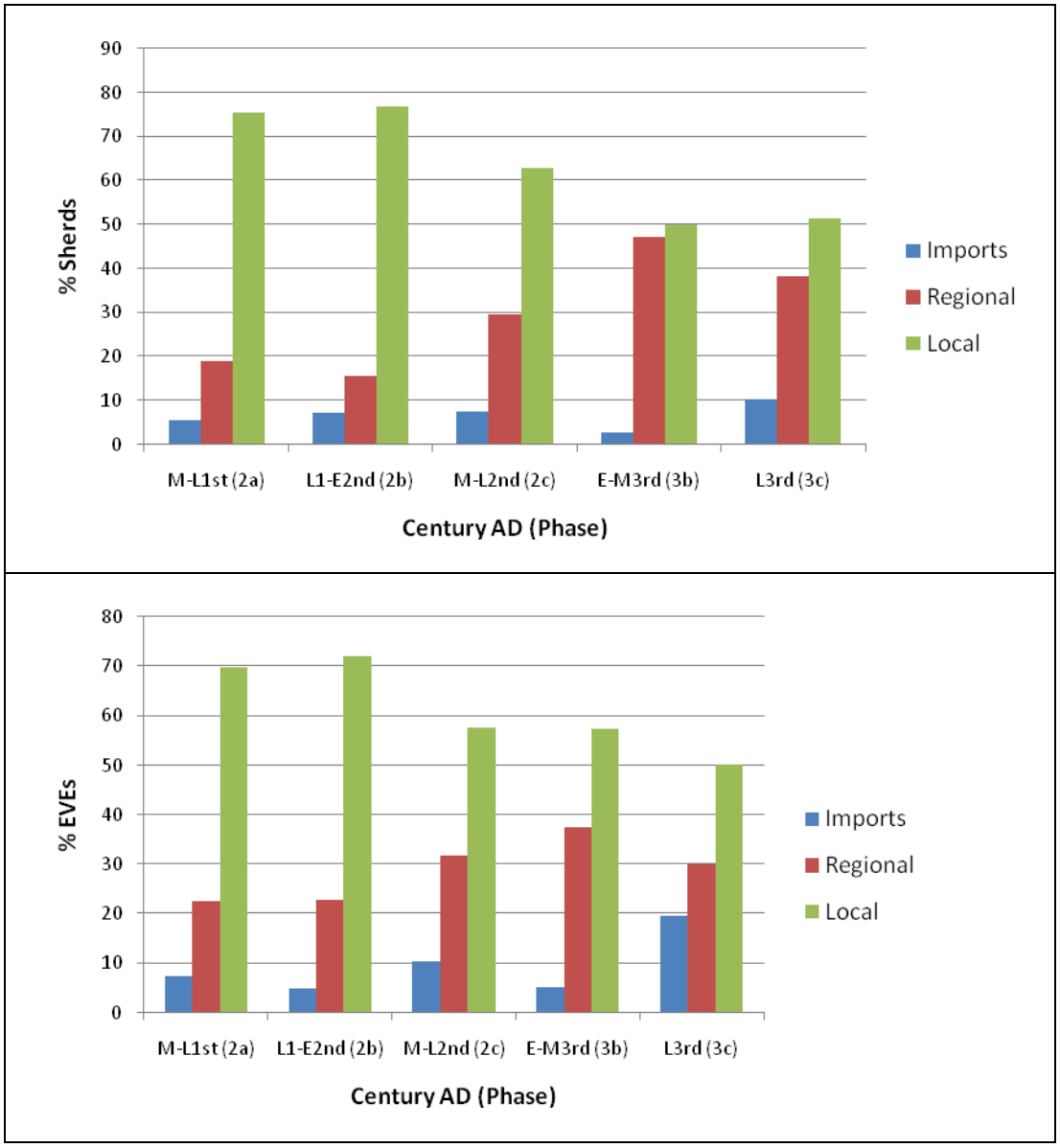


Figure 6 Changes to pottery supply through time.

The overall trend shows a decrease in local supply matched with increases in regional and imported wares through time. The earliest two phases are very similar spanning the second half of the 1st century up to the middle of the 2nd. The regional wares in these two phases are white, oxidised and white-slipped wares. The imports are almost all samian wares, with a few Gaulish colour-coated ware beakers and small quantities of amphorae. Although overall proportions of local wares are similar, 31% of the local wares in Phase 2a are transitional sandy, grog-tempered and mixed-gritted wares, with only 30.9% grey wares (% EVEs). In contrast, only 11.5% of the local wares in Phase 2b are early transitional wares, with grey wares accounting for 43% (% EVEs). The presence or absence of transitional fabrics is one of the key distinctions between the two earliest phases.

Phases 2c to 3c have similar amounts of local wares, with regional wares gradually replacing imports. The large amount of imports showing in the latest phase is the result of a significant number of 2nd century samian ware vessels found in quarry pit [2327], and in this respect Phase 3b is a more accurate representation of imported wares during the 3rd century, whilst 3c illustrates the dominance of samian fine wares during the 2nd century. The mid-late 2nd century (Phase 2c) sees the arrival of significant quantities of Black Burnished wares which account for 11.3% of the EVEs, with grey wares reduced to 41.7%. During the 3rd century (Phases 3b and 3c), Black Burnished wares increase again to 13.9% in Phase 3b and 21.8% in Phase 3c, with grey wares reduced to 39.8% and 37.9% respectively. Comparable increases in Black Burnished wares from the middle of the 2nd century to the middle of the 4th can be seen at the adjacent site of Vine Street (Johnson 2009b, 87-90). Nene Valley colour-

coated wares are the other major source of regional imports from the later 2nd century and account for 3.1% and 4% in Phases 3b and 3c respectively. Again, this is comparable to Vine Street during the first half of the 3rd century (*ibid*). Mortaria comprise approximately 3.5% of the regional wares from the middle of the 2nd century and into the 3rd.

These trends are comparable to other sites within Leicester such Vine Street and Causeway Lane (*ibid*, Clark 1999), other *civitas* capitals such as Cirencester (Cooper 1998), and urban sites such as Gloucester (Ireland 1983) and Chelmsford (Going 1987).

Proportions and variety of vessel types can also be used as an indicator of site status and the chart below summarises the fluctuation through time of the forms used by Evans (2001) to suggest site type, such as rural, urban or military sites.

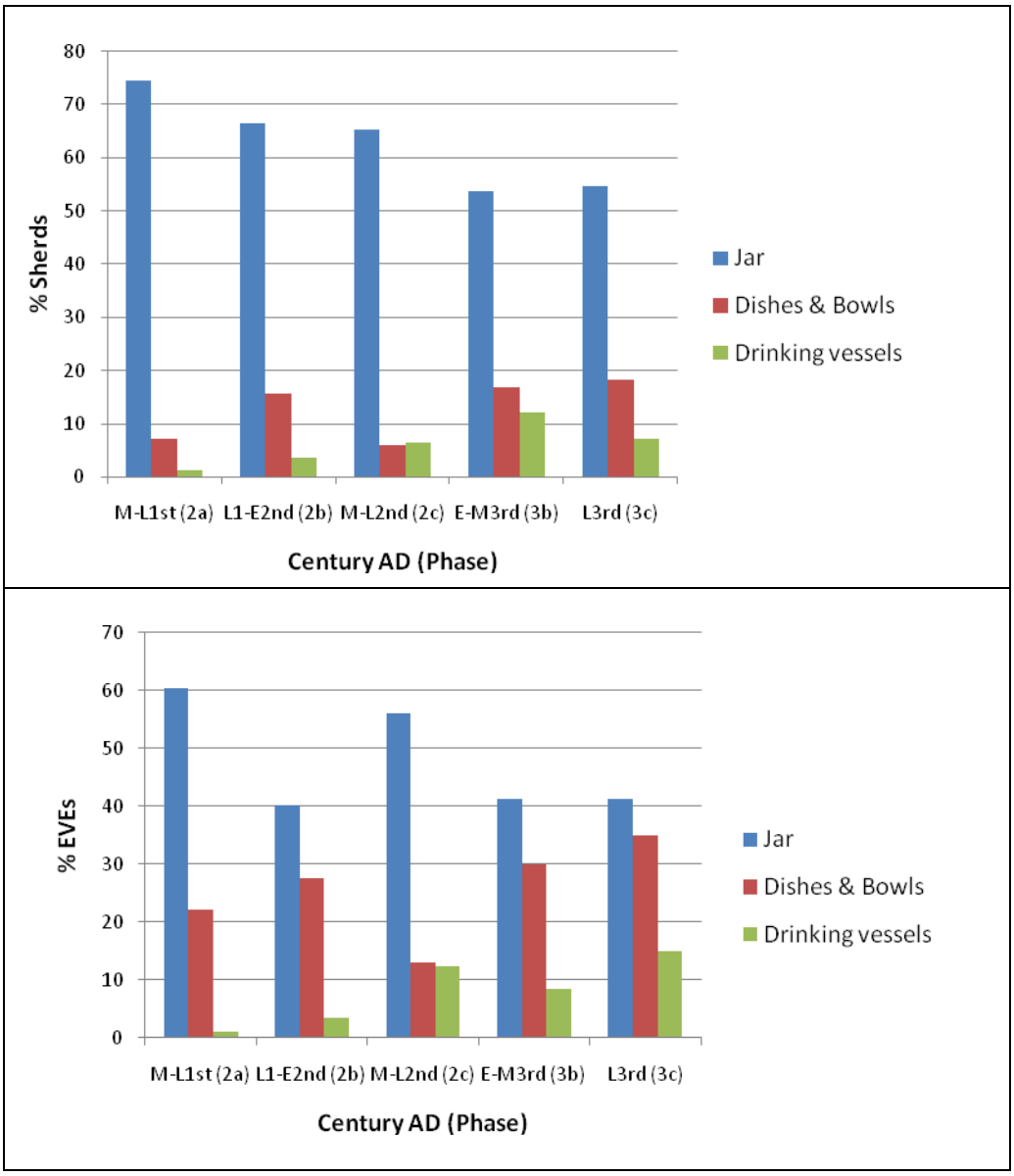


Figure 7 Proportions of vessel types present over time.

There is a decrease in the quantity of jars, with the main drop taking place after the end of the 1st century, after which time the proportion remains reasonably stable. This is perhaps a result of the decline in the use of very large storage jars seen in the earliest phase. The apparent increase in jars during Phase 2c is the result of a significant quantity of residual mid-late 1st century jars from the boundary ditch [2385] and pit [989], which account for approximately 15% of jars in that phase (% EVEs).

There is a steady rise in the number of dishes and bowls from the late 1st-early 2nd century. Again, the percentages for Phase 2c are skewed by the presence of those residual jars indicating a larger than expected proportion of that vessel type. Samian table wares comprise the majority of dishes during the 1st and 2nd centuries, followed by the increase in Black Burnished wares from the middle of the 2nd century. The most common table ware is the samian Drag. 18/31 and 18/31R dish, whilst the plain rimmed dish in Black Burnished ware remains the most popular coarse ware form. Conical bowls in Black Burnished ware with flat, grooved and bead and flange rims dominate from the middle of the 2nd century. Grey ware derivatives of both the plain rimmed dish and conical bowls are common alongside the Black Burnished wares.

During the 1st and 2nd centuries imported samian wares form most of the drinking vessels, with Drag.27 and Drag.33 cups the most popular. The number of drinking vessels rises sharply from the mid-2nd century, coinciding with the introduction of masonry buildings in the area and the arrival of colour-coated ware beakers from the Nene Valley. Nene Valley colour-coated wares are the dominant fine wares in Leicester from the 3rd century onwards and account for three-quarters of the drinking vessels in Phase 3c.

The assemblage from Sanvey Gate clearly falls into the urban category and is comparable to assemblages from Verulamium, Colchester and Alcester (Evans 2001, 29-31) as well as other sites in Leicester.

Summary

Phase 2a represents the earliest activity at the site with the creation of a series of ditches and gullies dividing the area up into what later became the *insulae*. The phase is characterised by the presence of mid-late 1st century transitional wares, with some primary fills dating as early as *c.*AD50-70. Layer (2820) sealing ditch [2621] by the end of the 1st century suggests continued changes during the second half of the 1st century. Phase 2b sees the establishment of the street grid and a further property division in the form of ditch [2011] during the late 1st-early 2nd century. The pottery from Phase 2b is characterised by the decrease in mid-late 1st century transitional wares and increases in grey, oxidised and white wares. The second half of the 2nd century sees the appearance of masonry buildings such as **Building C** within *Insula V* and the substantial boundary ditch [2385], with additional occupation evidence from pit [989]. Ceramically, this phase is characterised by the appearance of Black Burnished ware. During the first half of the 3rd century (Phase 3b), occupation of **Building C** appears to decline, as pit [2166] is situated inside one of the rooms. The presence of demolition material within this pit and the slightly later pit [1018], suggests the building may have been demolished sometime in the second half of the 3rd century. The two quarry pits in Phase 3c suggest a continued decline in occupation activity at least in this part of *Insula V* from the late 3rd century onwards.

There is an emphasis on later 1st and 2nd century material within the groups selected for detailed analysis and recording. However, later 3rd and 4th century pottery was noted during the initial assessment of the entire assemblage, suggesting continued activity at the site during the 4th century, albeit perhaps on a smaller scale. The bias towards earlier material has occurred as a result of selection of material based on its relationship with known stratified features and the residual elements found within later features. As is common on complex urban sites, the later Roman features appear to have suffered multiple episodes of truncation by post-Roman activity, making it impossible to associate the later Roman pottery with stratified Roman features.

THE EARLY ANGLO-SAXON POTTERY

Nicholas J. Cooper and Alice Forward

Introduction

A total of 28 sherds of Early Anglo-Saxon pottery was retrieved from the excavations at Sanvey Gate. The pottery came predominantly from features interpreted as structures of Anglo-Saxon date, with a little material from pitting perhaps of a later period. The assemblage is one of four, totalling 105 sherds, examined as part of the current study of sites in the NE quarter of Leicester (three from the Highcross excavations and one from Sanvey Gate). Together with three other assemblages excavated in the late 80s and early 90s; The Shires (Blinkhorn and Williams forthcoming), Causeway Lane (Blinkhorn 1999) and Bonners Lane (Blinkhorn 2004), the total from the City in recent times totals 254 sherds. In addition, a large assemblage from the settlement at Eye Kettleby near Melton Mowbray, is currently

being analysed (Cooper and Forward in prep), and so there is an opportunity to review the methods of analysis of an unprecedented amount of material at the same time.

Chronology

Whilst the association of this type of coarse handmade pottery with metalwork of Early Anglo-Saxon date (*c*.450-650) is well attested across Leicestershire and Rutland and decorative elements, when they occur, can be paralleled with more complete vessels from pagan cremation and inhumation cemeteries of fifth and sixth century date, the question of whether the production of Early Anglo-Saxon pottery extends into the Middle Anglo-Saxon period (*c*.650-850) remains unanswered and, at present, has been assumed largely on the basis of a lack of evidence to the contrary. This is due to an almost complete lack of diagnostic Middle Anglo-Saxon imports from outside the region such as Ipswich and Maxey-type wares and a paucity of associated metalwork or other material culture of the same date, both in the City and across the County. We either have to assume that the fabric and forms of these vessels remain unchanged across four centuries or that this part of the East Midlands becomes aceramic after the mid-7th century, creating a ceramic lacuna which is not filled until the appearance of early Stamford ware products in the mid-9th century.

When the relatively low-level of pottery usage during the Anglo-Saxon is compared with the massive scale of production and use during the Roman and medieval periods, the concept of becoming aceramic is easier to grasp. However, the main difficulty with accepting the idea for Leicestershire is that the Charnwood district has been identified, on the basis of the distinctive Mountsorrel granodiorite inclusions, as the centre of production of the so-called 'Charnwood' ware, the source of much of the pottery under discussion here as well as across much of the East Midlands during the 5th to 7th centuries (Williams and Vince 1997, 219 and fig. 7; Young and Vince 2006, 31), and so it would need explaining why production and use suddenly stops at the end of the Pagan period. Whilst stating that the ware has been identified on Christian sites such as Repton and Flixborough, Williams and Vince, stop short of categorically stating that it continues into the Christian period but do acknowledge that by the later 7th century the ware is being replaced by the Ipswich and Maxey-type wares across the region (1997, 219).

With the exception of a Maxey ware vessel from Wymondham Manor House (A. Pickstone and A. Connor 2008, 290 *TLAHS* **82**) and an example of Ipswich ware from Uppingham (A. Vince pers. comm.) this replacement does not include Leicestershire or Rutland respectively. If the ware does continue through the 7th and 8th century, we might expect to see evidence for it in Leicester which we know, politically and religiously is becoming an important centre. The latest stratified association of the pottery within the fill of a sunken-featured building is with a bone comb at Bonner's Lane tentatively dated to *c*.AD650-720 (Harvey 2004, 106 and fig.42.34, dating revised by Ian Riddler pers. comm.). The occurrence of a bone spindle whorl from the post-hole of the same building would also support a Middle rather than Early Anglo-Saxon date.

Across Leicestershire and Rutland it should also be possible to detect this continuity but progress is hampered by the fact that the later 7th and 8th century appears to represent a period of transition from the dispersed settlement pattern towards the nucleated pattern of villages we know today. Many of the sites detected by field walking therefore belong to the dispersed pattern whilst the evidence for those which continued is hidden beneath modern villages. A programme of controlled metal detecting on field walked sites would help to confirm how long these sites continue whilst systematic garden walking and metal detecting within villages, alongside the results of developer led excavations may reveal the necessary association of Middle Saxon metalwork with the pottery or with the distinctive imported wars that have so far remained elusive.

To summarise, in the present state of knowledge it is probably best to date any assemblage of pottery of Early Anglo-Saxon character to the period *c*.450-700 with the proviso that future evidence may support an extension further into the Middle Anglo-Saxon period. When diagnostic decoration occurs, it may be possible to refine dating slightly for individual groups but the variable nature of fabrics and conservative nature of the forms dictates that this will rarely be possible on the domestic assemblages found across the City and County.

Methodology

The assemblage has been analysed by fabric and form and quantified by sherd count, weight and EVEs, and, where possible, vessel dimensions have been recorded. Fabrics have been analysed using low power microscopy (x20) and identified in accordance with the series developed by Blinkhorn for the two currently published assemblages from the City (Blinkhorn 2000 and 2004), but simplified

following petrological thin-section work undertaken by David Williams on the material from Causeway Lane, Little Lane (Shires) and St Peters Lane (Shires) (Williams forthcoming). The details of this fabric series are discussed below.

Fabric Analysis

Studies by both Blinkhorn and Williams established that the pottery of this date was produced exclusively using opening materials of mineral origin, predominantly quartz and granite, the quartz also occurring alongside or deriving from quartzite and sandstone. This contention is supported by analysis of the large assemblage from Eye Kettleby (Cooper and Forward in prep) and numerous other small assemblages across Leicestershire and Rutland (Blinkhorn 2000). Indeed, work by Williams and Vince (1997) established that Charnwood district granite was used extensively in pottery production in the Early (and Middle) Anglo-Saxon period across the East Midlands (the so-called Charnwood ware) with examples reaching London to the south and Lincoln to the north (Williams and Vince 1997).

The petrological examination by Williams identified four main inclusion types; granite, quartz, quartzite and sandstone, from which a series of six fabrics (SX1-6) was established to include a dense, fine sandy quartz fabric and a quartz fabric also including calcareous material. Blinkhorn's analysis of the same material recognised the same divisions but included further subdivision of the quartzite fabrics to make nine in all (F1-9), six of which were recognised in the small assemblage from Causeway Lane (Blinkhorn 1999, 165).

Whilst confirming the ubiquity of granite and quartz, the opportunity to study the large assemblage from Eye Kettleby has thrown doubt on the merit of subdividing fabrics too much on the basis of density and grain size, when the extremes turn out to be at either end of a continuum and probably the result of potters preparing and working clay under a range of atmospheric conditions using highly variable sources of opening materials. Additionally, it has highlighted the problem of assessing the significance of minor constituents of fabrics such as calcareous material and ferruginous clay pellets which are probably natural occurrences in the clay.

The present analysis has therefore adopted Williams' series and a concordance is presented below which seeks to group fabrics according to dominant inclusion type. Three fabrics, *sx1, sx3* and *sx4* were identified based on general descriptions which, as seen below, directly relate to and incorporate the more specific fabric variants recognised by Williams and Blinkhorn. A sub-category, *sx1a*, within *sx1* of the Highcross fabric series was created to take into account the identification of sandstone with the quartz temper, believed to be an attribute worth distinguishing within an assemblage. The Highcross fabrics enable the assemblages to be analysed and incorporated into one Leicester city group.

Table 6 Anglo Saxon Pottery Fabric Types

SX	Highcross	SX	Williams	F	Blinkhorn 1999	BL	Blinkhorn 2004
sx1	Quartz	sx 1	Quartz(ite)	F1	White quartz(ite)	BL5	Quartzite
		sx 2	Fine sandy quartz	F2	Grey quartz(ite)		
		sx 5	Sand and mica (IA?)	F3	Fine sandy quartz(ite)		
				F5	Sparse sandy		
				F9	Fine micaceous (IA?)		
sx1a	Quartz with sandstone	sx 6	Sandstone	F8	Sandstone		
sx3	Granite	sx 3	Granite	F4	Coarse Granite	BL1	Granite
				F6	Fine Granite		
sx4	Quartz and	sx	Quartz and	F7	Quartz	BL4	Limestone and

	limestone	4	Limestone		calcareous		white quartzite
						BL2	Shell
						BL3	Granite and shell

Results

Table 7 Anglo Saxon Pottery Catalogue

Context	Fabric	Phase	Type	Form	Décor	No. Sherds	Weight	Eves	Diameter
2047	sx3		nr complete vessel	open	smoothed	9	437	0.35	10
2047	sx1		rim	closed	burnished (outer)	1	67	0.125	15
2047	sx1		base			1	16		
2097	sx1		base			2	60		
2097	sx1		body			1	3		
2961	sx4		body			2	12		
1910	sx1		body			1	9		
1990	sx3		base		smoothed	2	27	0.15	10
1990	sx1		rim	open		1	5	0.1	11
2496	sx1		body		smoothed	1	43		
1990	sx3		body			1	4		
1990	sx1		body			1	15		
2047	sx1		base		burnished	5	135		
Total						28	833		

Table 8 Anglo Saxon pottery summary.

Sanvey Gate	No. sherds	Weight
sx1	14	353
sx3	12	468
sx4	2	12
Total	28	833

Discussion

The Sanvey Gate assemblage is notably varied in comparison to the other Highcross groups. The proportion of sx1 to sx3 is more equal with quartz tempered wares representing 50% of the assemblage and granitic wares, 43%. 7% of the group is quartz and limestone tempered although, unlike the sherd at Freeschool Lane in the same fabric, it is not decorated. As well as a range of fabrics, there are two forms represented. From (2047) a near complete vessel, a bowl, was retrieved. Jars are also present in the assemblage but decorated or stamped ware was absent.

THE MEDIEVAL AND POST-MEDIEVAL POTTERY

Deborah Sawday

Introduction

Approximately 2791 sherds of medieval and later pottery, weighing 43,056 grams, were recovered from the site. Over 77 per cent of the total by sherd count, 2159 sherds weighing 37417 grams and 46.598 Eves, with an average sherd weight of 17.3 grams was targeted for detailed study.

Methodology

The pottery was analysed with reference to the Minimum Standards for the Processing, Recording, Analysis and Publication of Saxon and Medieval Ceramics (MPRG 2001) and the Guide to the Classification of Medieval Ceramic Forms (MPRG 1998). Quantification is by sherd number, weight (grams), and vessel rim equivalent, the latter represented by the addition of the percentages of the circumference of each of the vessel rims present, where one vessel is equivalent to 1.00 Eve.

The pottery was recorded using an Access database which forms the site archive. The selected material dated from the late Anglo Saxon to the early post-medieval period; the later post medieval and modern pottery was generally intrusive in medieval contexts or was catalogued as part of the three-dimensionally recorded materials from the fill of the ditches associated with the town defences.

Chronology and Sources

Potters Marston, dating predominantly from the 12th to the late 13th or early-mid 14th centuries, the terminal date of this pottery is uncertain, was the most common ware, accounting for over 55 per cent of the total by sherd count, 60.5 per cent by weight and over 78 per cent by Eves. Almost 19 per cent of the assemblage by sherd count and approximately 12 per cent by weight and Eves were in late Saxon or Saxo Norman wares: Lincoln, the Stamford fabrics ST2 and ST3, and Torksey, Thetford and Saint Neots wares/type wares, with an additional 2.7 per cent in the developed Stamford ware ST1, dating from *c*.1100. The 13th-century Chilvers Coton and Nottingham wares account for another 5 per cent by sherd count and approximately 3 per cent by weight. Comparative figures for the pottery dating to the end of the medieval period, the late Chilvers Coton, CC2, the Medieval Sandy wares MS7 and MS8, Midland Purple, and Cistercian ware was only 5.3, and 11.3 per cent by sherd count and weight.

Fabrics

Table 9 The Medieval Pottery Fabrics.

Fabric	Common Name/Kiln & Fabric Equivalent where known	Approx. Date Range
ST3	Stamford ware 3 – coarse, fabrics E/F, H A/D (1)	*c*.850/900-1050+
ST2	Stamford ware 2 - fine, fabrics G B/(A) (1)	*c*.1050-12th C.
ST1	Stamford ware 1 – very fine, fabrics B/C (1)	*c*.1150-13th C.
LI1/2	Lincoln Kiln type/Lincoln late Saxon Shelly ware (2)	*c*.870–early 12th C.
SN	St Neots/St Neots type ware - Northants CTS 100 (3)	*c*.850-1100
TH	Thetford ware/type (4)	*c*.850-c.1200
TO	Torksey ware/type (5)	*c*.850-c.1200
RS/RS1	Reduced Sandy wares-? Local (6)	*c*.850-c.1400
PM	Potters Marston ware - Potters Marston, Leicestershire (7)	*c*.1100-*c*.1300/50+
SP2	Splashed ware 2 – Nottingham Fine Fabric NSP (8)	*c*.1100-1150
SP3	Splashed ware 3 - Leicester (9)	*c*.1100-1250

OS1	Oxidised Sandy ware 1-? Local, Brackley fabric T68, (10) Northants CTS fabrics 302-305, (11)	*c*.12th-13th C.
OS2	Oxidised Sandy ware2 -? Local.	*c*.12th -13th C.
OL	Oolitic Limestone Tempered ware - ?South Lincolnshire (2)	*c*.12th-13th C
CS	Coarse Shelly ware (includes sherds previously catalogued as LY4 – Lyveden Stanion A ware) - Northampton fabric T1/2, T2, (12) Northants CTS 330 (11)	*c*.1100-1400
LY4	Lyveden/Stanion type ware 4 - Lyveden Stanion A ware) - Northampton fabric T1/2, T2, (12) Northants CTS 319 (11)	*c*.1150-1400
LY1	Lyveden/Stanion type ware 1 - Northampton fabric T2 (12), Lyveden/Stanion 'B' ware, Northants CTS fabric 320 (11)	*c*.1200/1225-1400
CO2	Coventry Sandy ware/type – Coventry fabric A (13), Warwick CTS SQ202/203 (14)	12th-14th C.
CO1	Coventry Glazed ware/type – Coventry fabric D (13), Warwick CTS SQ21/SQ211 (14)	*c*.1150-1250
CO3	Coventry, Canon Park ware Warwick CTS SQ23/SQ231/232 (14)	*c*.1200-1400
BO2	Bourne A/B ware/type (15)	*c*.1250-1450
CC1	Chilvers Coton ware 1 - Chilvers Coton fabric A/Ai (16), Warwick CTS WW01, WW012? (14)	*c*.1250-1400
CC2	Chilvers Coton ware 2 - Chilvers Coton fabric C (16), Warwick CTS SQ30 (14)	*c*.1250/1300-1500
NO1/2	Nottingham Iron Rich/Early Green Glazed ware NOTGI/ NOTGE(8)	Early/mid 13th
NO3	Nottingham Light Bodied/Reduced Green Glazed ware NOTGL/NOTGR (8)	Early/mid 13th - *c*.1350
BR2	Brill/Boarstall ware/type –Brill/Boarstall 'standard fabric', Oxford fabric OXAM (19)	*c*.1200-1400
MS1	Medieval Sandy ware 1 - quartz tempered fabric, possibly a fine version of Chilvers Coton fabrics A/Ai, (16)	Early/mid 13th C.-1400
MS2	Medieval Sandy ware 2 – misc. coarse soft fired quartz tempered fabrics, including coarse Chilvers Coton fabrics A/Ai, (16), and ? Nottingham, Burley Hill/Allestree, Derbyshire (17)	Early/mid 13th C.-1400
MS3	Medieval Sandy ware 3 – misc. coarse hared fired quartz tempered fabrics -? Burley Hill/Allestree/Ticknall, Derbyshire (17)	Early/mid 13th C.-*c*.1400-1400/1450
MS7	Medieval Sandy ware 7 – misc. predominantly later medieval coarse red sandy fabrics, possibly from sources similar to the above (17)	
MS8	Medieval Sandy ware – misc. sandy fabrics? including under fired Midland Purple ware, fabric MP2 (17), (18)	*c*.1300-1550
MP2	Midland Purple ware 2 -? Ticknall, Derbyshire (17), (18)	*c*.1375-1550
MP3	Midland Purple ware 3 –pos. vitrified MS3, Ticknall (18)	*c*.1375-1550
TG/TG2	Tudor Green/type/Surrey White wares (19)	*c*.1400-1600
CW1	Chilvers Coton fabric E (16), CIST (14)	*c*.1450/75-1550
CW2/MB	Cistercian Midland Black/Ticknall, Derbys/Staffs etc.	*c*.1450/75-1550

RH	Rhenish Stoneware	c.1475+
MY	Midland Yellow – Ticknall, Derbys (20)	*c*.1500-1725
EA 1, 2,7	Post Medieval/Modern Earthenwares (21)	16th – 19th C.

(1) Kilmurry 1980, Leach 1987	(12) McCarthy 1979, Brown 1993/4
(2) Young *et al* 2005	(13) Redknap and Perry 1996
(3) Hunter in McCarthy 1979, Northants CTS	(14) Soden and Ratkai 1998
(4) Rogerson and Dallas 1984	(15) Healey 1973, Hurley & Zeffertt 1992
(5) Barley 1964, 1981	(16) Mayes & Scott 1984
(6) Davies and Sawday 1999	(17) Coppack 1980, Cumberpatch 2002/3
(7) Haynes 1952, Sawday 1991, Davies and Sawday 1999	(18) Spavold and Brown 2005, Boyle and Rowlandson 2006, 2008
(8) V. Nailor pers. comm / Nailor & Young 2001	(19) Pearce and Vince 1988
(9) Sawday 1998, Davies and Sawday 1999	(20) Woodfield 1984
(10) Mellor pers. comm	(21) Sawday 1989
(11) Northants CTS	

Table 10 The fabric totals by sherd numbers, weight (grams) and EVES

Fabric	Sherds	%	Grams	%	EVE	%
ST3 – Stanford ware	87		814		1.479	
ST2 – Stanford ware	231		1761		1.315	
ST1 – Stanford ware	59		571		0.020	
LI/LI1 – Lincoln Kiln Type Shelly ware	4		112		0.100	
LI2 – Lincoln Late Saxon Shelly ware	3		54		0.225	
SN - St Neots/St Neots type ware	8		50			
TH - Thetford ware/type ware	36		1295		1.680	
TO - Torksey ware/type ware	46		534		0.795	
RS - Reduced Sandy wares	5		78			
PM - Potters Marston ware	1208	55.9	22672	60.5	36.481	78.2
SP2 – Nottingham Splashed	5		39			
SP3 – Leicester Splashed	98		1655		1.060	
OS/OS1/2 - Oxidised Sandy wares	31		363		0.423	
OL - Oolitic ware	3		151		0.325	
CS - Coarse Shelly ware	22		248		0.160	
CO1/2/3 - Coventry wares	15		253		0.335	
LY4 - Lyveden/Stanion type ware	3		52		0.110	
LY1 - Lyveden/Stanion type ware	1		41			
BO1/2 – Bourne wares/type	1		11			
CC1 - Chilvers Coton ware	83		977		0.125	
CC2 - Chilvers Coton ware	7		183			
NO1 -3 Nottingham wares	28		225		0.170	
BR2 - Brill/Boarstall ware/type	2		6			

MS/MS1/2 - Medieval Sandy wares	22		229		0.135	
MS3- Medieval Sandy ware	22		310		0.200	
MS7/8 - Medieval Sandy wares	19		389		0.055	
MP/MP2/3 - Midland Purple wares	72		3387		1.020	
TG/TG2- Tudor Green/type/Surrey White wares	5		13			
CW1/2/MB – Cistercian wares/Midland Black	17		292		0.100	
RH – Rhenish Stoneware	3		379			
MY - Midland Yellow	4		86		0.040	
EA, EA1/2/7 – Post Med Earthenwares	9		187		0.245	
Totals	2159		37417		46.598	

The Pottery by Phase

A sample of the pottery in phases 7 to 11 has been analysed. It is hoped that this will help to enhance our understanding of the later history of the town defences and the development of the extra-mural suburb on Sanvey Gate and of the adjacent intra-mural activity in the north-east quarter of the medieval town.

Phase 7 Saxo Norman c.850-1100

Intra-mural features

[1044] and [1897] Pits

Assemblage: 8 sherds, 48 grams, 0.09 EVEs, 6 grams ASW.

Two sherds in the earliest of the Stamford wares, the coarse Stamford ware, ST3, in [1897] date from the later 9th or 10th centuries, and six thin-walled and externally sooted rim sherds from a Potters Marston jar with slashing on the exterior neck in [1044], made up the only stratified pottery in this phase. The jar rim fragments are generally associated with cylindrical profiles which are dated from the late 11th or early 12th century, similar vessels were recorded at Causeway Lane (Davies and Sawday 1999, fig. 89.54) and on the Highcross excavation sites 1-3. The latter feature is of note as it cut the metalling of the Roman road running north-south across the site.

Phase 8 Earlier High Medieval c.1100-1250

Town defences – back-fill of ditches

[4], [153), [504], [516], [797], [1092], [1109], [1243], [1272], [1273], [1426], [1475], [1549], [1593].

Layers sealed by the collapsed town wall

(1286), (1288), (1742)

Assemblage: 103 sherds, 1876 grams, 0.785 EVEs, 18.21 grams ASW.

The stratigraphic record and the presence of sherds of late Saxon or Saxon Norman pottery in Stamford and Lincoln ware have been taken as evidence that the inner ditch was re-cut in the 12th or the first half of the 13th century. Whilst the layers (1286), (1288) and (1742) in front of the line of the town wall, and sealed by the collapse of a section of the wall, contained single fragments of Potters Marston in (1288), copper glazed Stamford ware, fabric ST1 (in 1286) and Coventry Glazed ware, CO1, in (1742), all with a terminal date in the late 12th or early to mid 13th century.

A range of earlier high medieval pottery, including Splashed ware and the Coventry fabrics CO1 and CO2 was found in the back-fill of the ditches. Chilvers Coton, Nottingham, Medieval Sandy, Midland Purple and post-medieval Earthenware dating from the later high medieval and later phases was also present. Late medieval pottery, dating from phase 10, occurred in contexts (4) [4], (135) [153], (503)

[516], (1344) and (1345) [1426], (1140) (1399) and (1403) [1475] and suggests, together with the documentary evidence (W. Jarvis, pers. comm.), that this part of the inner ditch remained open until the 16th century.

The only identifiable late Saxon or Saxo-Norman vessels were a bowl rim in the Lincoln Late Saxon Shelly ware (Young *et al* 2005, fig.56.287), and a jar in the Stamford fabric ST2. Potters Marston accounted for a relatively small part of the assemblage, just over 46 per cent of the totals by sherd count, and approximately 42 per cent by weight, probably as a consequence of the later high medieval and late medieval wares which are intrusive in this phase. Four Potters Marston decorated jugs including one with a frilled base, dating from the mid or later 12th into the 13th century were present, but most of the vessels, predominantly jars, have the collared or everted rims generally associated with the earlier vessels with cylindrical profiles in this ware.

Table 11 The phase 8 medieval and later pottery associated with the town defences and the collapsed town wall, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST3- Stamford	3		11			
ST2- Stamford	5		23		0.075	
ST1- Stamford	3		37			
LI2- Lincoln Late Saxon Shelly	1		22		0.045	
TH – Thetford type	1		6			
TO – Torksey type	3		6			
Saxo Norman Sub totals	16	13.59	105	5.59	0.120	15.2
PM – Potters Marston	48	46.60	786	41.89	0.485	61.78
SP3 – Leicester Splashed	2		34			
CO1/2 - Coventry	3		37			
CO3 - Coventry	2		9			
CC1 – Chilvers Coton	8		153		0.125	
CC2 – Chilvers Coton	2		53			
NO3 - Nottingham 1	1		13			
MS – Medieval Sandy	1		20			
MS3 – Medieval Sandy	3		34			
MS7/8– Medieval Sandy	7		214		0.055	
MP2 – Midland Purple	8		373			
MP3 – Midland Purple	1		42			
EA - Earthenware	1		3			
Totals	103		1876		0.785	

Robbing of the town wall

[107], [808], [898], [1366]

Assemblage: 32 sherds, 357 grams, 0.675 EVEs, 11.15 grams ASW.

Table 12 The phase 8 medieval pottery associated with the robbing of the town wall, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%

ST3 - Stamford	1		2			
ST2 - Stamford	1		1			
Saxo Norman Sub totals	2		3			
PM – Potters Marston	25	78.12	305	85.43	0.675	100
SP3 – Leicester Splashed	2		34			
CC1 – Chilvers Coton	1		11			
NO1 - Nottingham	2		4			
Totals	32		357		0.675	

The bulk of this small assemblage was in Potters Marston, with jars the predominant vessel type, identifiable chiefly by their rims. A jug with a simple everted rim occurred in the same ware (Davies and Sawday 1999, fig.93.105). Other pottery dating from before the mid 13th century included Stamford and Splashed ware, and possibly the Nottingham fabric NO1. A fragment of Chilvers Coton dating from *c.*1240/1250 was found in [1366], context (1380).

*Intra-mural robbing of Roman **Buildings C** and **D***

[961], [1000], [1046], [1803], [1809], [1842], [2960], [2988]

Assemblage: 363 sherds, 3552 grams, 3.513 EVEs, 9.78 grams ASW.

Much of this pottery was recovered from the robbing of **Building D**. Typically for this phase, Potters Marston is the dominant ware, but it only accounts for approximately 34 and 48 per cent of the totals by sherd count and weight, whilst a significant part of the group, almost 61 per cent of the sherds, are in the late Saxon/Saxo Norman wares. The most common forms in Stamford ware were jars and spouted vessels, probably pitchers. Thetford and Torksey type jars were also present (Illustrations 1 - 3). These vessels account for approximately 51 per cent of the Eves totals for the whole assemblage. Most of this early pottery was recovered from [2960], 206 sherds, weighing 2086 grams occurring in contexts (2961) and (2963), which may represent an early phase in the robbing of **Building D**. A sherd in the Chilvers Coton fabric CC1 dates from *c.*1240/1250 and is possibly intrusive in the same context, [2960] (2961).

Table 13 The phase 8 medieval pottery associated with the robbing of the intra-mural Roman buildings, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST3- Stamford	29		218		0.340	
ST2- Stamford	135		817		0.705	
ST1- Stamford	14		78			
LI/1- Lincoln Kiln Type/Shelly	3		72			
SN – St Neots type	1		4			
TH- Thetford type	7		136		0.210	
TO - Torksey	21		276		0.420	
RS – Reduced Sandy	2		16			
Saxo Norman Sub totals	212	60.9	1617	47.1	1.675	51.25
PM – Potters Marston	119	34.19	1669	48.64	1.593	48.74
SP2 – Nottingham Splashed	1		3			
SP3 – Leicester Splashed	6		76			
OS1/2 - Oxidised Sandy	8		54			
OL - Oolitic	1		1			
CC1 – Chilvers Coton	1		13			

Totals checked	348		3431		3.268	

Domestic Occupation

Intra-mural pits

[872], [1048], [1837], [1851], [2051], [2107], [2139], [2968], [3031], [3043], [3110].

Assemblage: 154 sherds, 2869 grams, 3.393 EVEs, 18.6 grams ASW.

Table 14 The phase 8 medieval pottery from the intra-mural pits, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST3- Stamford	30		355		0.63	
ST2- Stamford	23		176		0.08	
ST1- Stamford	4		97			
LI1- Lincoln Kiln Type	1		40		0.10	
LI2- Lincoln Shelly	2		32		0.18	
TH- Thetford type	25		1101		1.47	
TO - Torksey	17		209		0.15	
RS – Reduced Sandy	3		62			
Saxo Norman sub totals	105	68.18	2072	72.22	2.61	76.92
PM – Potters Marston	40		643		0.44	
SP3 – Leicester Splashed	5		96		0.285	
OS/1/2 - Oxidised Sandy	4		58		0.058	
Totals	154		2869		3.393	

Once again there is a strong element of late Saxon/Saxo Norman pottery, which represents approximately 77 per cent of the totals by Eves in this group. Much of this material came from two probable cess pits, [3043] and [3110]. Forty six of the 105 sherds of this date range came from the former, which contained exclusively early pottery in the coarse Stamford ware, fabric ST3, a single sherd of the slight later fabric ST2, Lincoln Kiln Type and Late Saxon Shelly ware, fabrics LI1 and LI2, and the single largest stratified group of Thetford type ware, TH, from the excavations on the site, (Illustrations 4 – 8). At least two of the ST3 jars dated from the 10th century, and an early date was also suggested by the presence of a rouletted jar rim in LI1. However, [3043], whose upper levels were deliberately back-filled with demolition rubble, (W. Jarvis, pers. comm.) also cut the robber trenches [2960] relating to Roman **BUILDING D** which contained pottery dating securely to phase 8. Hence the early pottery should be considered residual in this phase, although there is a possibility that there were several phases in the robbing of this part of the Roman building.

The other early assemblage in [3110] comprised twelve sherds in the early Stamford fabric, ST3, Thetford (Illustration 9) and Torksey types and Oxidised Sandy ware– the latter potentially also of Saxo Norman date. This feature cut a phase 8 robber trench [1059] close to **BUILDING D** which had produced no post Roman pottery. Another large pit or quarry [3031] with cess-like and rubble fills cut both the robber trench [1059] to the south and another robber trench to the west, [1046] and also produced a small assemblage of pottery dating from the Saxon Norman and early high medieval periods, which might also suggest intermittent robbing over a period of time. No post Roman pottery was found in the pit [3078] which cut the robber trench [2960].

Pottery with a possible terminal date in the 12th, if not the early to mid 13th, century was also recovered from the pit [1048] which cut the Roman street metalling. A further 21 sherds of phase 8 pottery, weighing 246 grams, were recovered from three pits to the south, [1851], [2051] and [2139].

Intra-mural wells

[1806], [1943], [2200], [2237].

Assemblage: 218 sherds, 4782 grams, 3.319 EVEs, 21.9 grams ASW.

Table 15 The phase 8 medieval pottery from the intra-mural wells, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST3- Stamford	12		101		0.189	
ST2- Stamford	46		601			
ST1- Stamford	8		66		0.02	
SN – St Neots type	2		13			
TO - Torksey	2		17		0.225	
Saxo Norman sub totals	70	32.11	798	16.68	0.434	13.00
PM – Potters Marston	137	62.84	3835	80.19	2.765	83.30
SP3 – Leicester Splashed	9		133		0.12	
CS – Coarse Shelly	1		9			
CO2 - Coventry	1		7			
Totals	218		4782		3.319	

The primary fill (2781) of the southernmost well [1806] produced 27 sherds in the fine Stamford ware ST2. This pottery was all from one vessel, the base of a jug dating from the mid or later 12th century, and had a relatively high average sherd weight of 19 grams. The upper fill, (1807) contained a typical range of early high medieval pottery, predominantly cylindrical and shouldered jars, but also a bowl and several jug fragments in Potters Marston, and the Stamford fabrics ST3, ST2 and ST1, with a terminal date in the late 12th or early to mid 13th century.

An early high medieval assemblage, predominantly Potters Marston and Splashed ware jars with nothing obviously post 1250 in date, also occurred in the well [1943] to the north. Three relatively unusual vessels in Potters Marston were found in the back-fill of the feature: a storage jar, a possible fire cover, and the rim of a lamp of uncertain type. A more fragmentary assemblage of 36 sherds, with an average sherd weight of just under 10 grams was recovered from the back-fill of the well [2200]. The feature also contained a relatively higher proportion of Saxo Norman pottery, including part of a bowl decorated with rouletting and jar rims in the coarse Stamford ware, ST3, and fragments of Saint Neots and Torksey type ware. A similar, rather fragmentary pottery assemblage was found in the stone lined well [2237] which lay adjacent to the Roman road. The 36 sherds had an average sherd weight of approximately nine grams, the bulk of this group was made up of undiagnostic fragments in Potters Marston, but once again, Splashed ware, and Stamford ware are also present. However, both these features, and [1806] and [1943], also contained the fine Stamford ware, ST1, which has a terminal date in the early to mid 13th century.

East-west gully

[631]

Assemblage: 1 sherd, 6 grams, 0.0 EVEs, 6 grams ASW

A single sherd of Saxo Norman Thetford type ware was recovered from this feature.

Extra mural well cutting back-fill of outer town ditch

[1326]

Assemblage: 67 sherds, 1588 grams, 0.693 EVEs, 23.70 grams ASW.

Table 16 The phase 8 medieval pottery associated with the well cutting the back-fill of the outer town ditch, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST1- Stamford	1		4			
SN – St Neots type	2		22			
PM – Potters Marston	59	88.05	1518	95.59	0.663	95.6
SP3 – Leicester Splashed	4		39		0.03	

CO2 - Coventry ware	1		5			
Totals	67		1588		0.693	

This small group of pottery is typical of phase 8 assemblages in the city, in that Potters Marston dominates in terms of both sherd numbers and weight, with cylindrical jars the most common vessel type. The presence also of a jug and a couple of shouldered jars in the same ware suggest a date from the mid or later 12th century for the group as a whole, and a lead glazed sherd in the fine Stamford fabric ST1 in (1684) is indicative of a similar date range, terminating in the early to mid 13th century. This assemblage is significant in that it provides a *terminus ante quem* for the back-filling of this section of the outer town ditch.

Table 17 The phase 8 medieval pottery from the extra-mural pits, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST3- Stamford	2		35		0.110	
ST2- Stamford	5		40		0.355	
TH – Thetford type	1		1			
Saxo Norman Sub totals	8		76		0.465	
PM – Potters Marston	134	81.2	4821	90.75	1.625	67.42
SP3 – Leicester Splashed	13		309		0.125	
OS/2 - Oxidised Sandy	2		34		0.09	
CS – Coarse Shelly	1		2			
CO2 - Coventry	4		56		0.105	
CC1 – Chilvers Coton	2		10			
NO3 - Nottingham	1		4			
Totals	165		5312		2.410	

Extra-mural pits

[505], [509], [648], [659], [1080], [1383]

Assemblage: 165 sherds, 5312 grams, 2.410 EVEs, 32.19 grams ASW.

These pits were located cutting the town ditch or near the Sanvey Gate frontage to the north of the site, and are taken to represent extra mural occupation deposits, although one pit, [670] in the same locality contained no post Roman pottery. There were few joining sherds, save for the pottery from the possible cess pit [1383], context (1384), where 75 of the 77 sherds in the back-fill of this feature came from one vessel, part of the rim and body of a large Potters Marston storage jar, decorated or strengthened with applied and thumbed strips of clay.

The average sherd weight of 32.19 grams for this small assemblage was certainly higher than for the phase 8 pits as a whole, much of this being accounted for by two Potters Marston ware storage jars in [659] context (1499), and another, as noted above, in [1383] context (1384). However, whilst both vessels were incomplete and generally fragmentary, two sherds from the former context weighed a total of 300 grams and three sherds in the latter weighed between 402 and 780 grams each.

Most of the small group of Saxo Norman pottery came from [1080] adjacent to the Sanvey Gate street frontage, but generally this assemblage is characterised by the relative paucity of Stamford ware and the dominance of Potters Marston. The latter accounted for over 81 and 90 per cent by sherd count and weight and over 67 per cent by Eves. This, and the lack of wheel thrown Nottingham Sandy wares dating from the earlier or mid 13th century, indictes a 12th- to early 13th-century date for this group, suggesting that the part of the town ditch cut by [659] had perhaps filled by the early 13th century. Two sherds of the Chilvers Coton fabric CC1, dating from *c*.1240/50 did occur in another pit [505], which cut the town ditch to the east of [659].

Phase 9 Later High Medieval c.1250-1400

Intra-mural pits [991], [1902], [2694], [3055]

Well [1888]

Grave [1783]

Assemblage: 53 sherds, 620 grams, 0.345 EVEs, 11.69 grams ASW

Table 18 The phase 9 medieval pottery from the intra-mural features, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST3- Stamford	5		28			
ST2- Stamford	3		17			
ST1- Stamford	1		6			
RS – Reduced Sandy	2		19			
PM – Potters Marston	20	37.73	336	54.19	0.155	44.92
SP3 – Leicester Splashed	1		11			
OS/1/2 - Oxidised Sandy	2		40		0.10	
CS – Coarse Shelly	2		32			
CO3 - Coventry	1		1			
CC1 – Chilvers Coton	12		104			
NO3 - Nottingham	2		14		0.09	
BO2- Bourne	1		11			
MS1 – Medieval Sandy	1		1			
Totals	53		620		0.345	

All of the features contained at least one sherd of the Chilvers Coton fabric, CC1, dating from *c*.1240/50, but the assemblage as a whole was fragmentary. Most of the pottery, twenty four sherds, weighing 365 grams, with an Eves of 0.225, occurred in the back-fill of the well [1888], the only identifiable vessels being two jars in Potters Marston, one with a shouldered profile. The pits yielded small assemblages of eight sherds or less each, the two aligned with what is now Burgess Street, [991] and [1902], producing only eleven sherds in total, including part of a jug rim in the Nottingham fabric, NO3. Similar vessels in Nottingham are dated from the second quarter of the 13th century, **(**Coppack 1980, fig.68.95). Two sherds in CC1, and one in NO3, including the neck and handle from two jugs were recovered from the back-fill of the grave, [1783], contexts (1782) and (1788). This burial lay parallel with the line of Long Lane, the medieval Torchmere, although there was no archaeological evidence for the street in the ground.

Intra-mural robbing of Roman **BUILDING C**

[1037]

Assemblage: 15 sherds, 119 grams, 0.245 EVEs, 7.9 grams ASW

Residual Stamford, Saint Neots and Splashed ware, together with six sherds of Potters Marston and sherd of Medieval Sandy ware 1 and the Nottingham fabric NO3, dating from the early or mid 13th century, were recovered from the robbing of the Roman structure.

Table 19 The phase 9 medieval pottery from the robbing of Roman building by fabric, sherd numbers and weight (grams).

Fabric	Sherds	Weight	Eves
ST1-2- Stamford	4	6	
SN – St Neots type	1	2	
PM – Potters Marston	6	80	
SP3 – Leicester Splashed	1	10	0.135

NO3 - Nottingham	2	6	
MS1 – Medieval Sandy	1	15	0.110
Totals	15	119	0.245

Extra-mural build up of soils

Layers (597), (608), (1091), (1123), (1808), (1813).

Assemblage: 194 sherds, 2975 grams, 2.085 EVEs, 15.33 grams ASW

Table 20 The phase 9 medieval pottery from the extra-mural soil layers, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST1- Stamford	14		204			
SN – St Neots type	1		5			
PM – Potters Marston	127	65.46	1872	62.92	1.550	74.3
SP2 – Nottingham Splashed	2		12			
SP3 – Leicester Splashed	18		317		0.050	
OS2 - Oxidised Sandy	5		108		0.175	
OL – Oolitic	1		11			
CS – Coarse Shelly	3		39			
LY4 – Stanion/Lyveden	1		12			
CO1 - Coventry	1		129		0.230	
CC1 – Chilvers Coton	11		153			
NO2 - Nottingham	1		10		0.080	
NO3 - Nottingham	7		79			
MS1/2 – Medieval Sandy	2		24			
Totals	194		2975		2.085	

Much of the pottery, including part of jug in the Coventry glazed ware, CO1, with an upright rim, and decorated with incised lines on the upper handle and below a cordon on the neck (Redknap 1996, figs.31 and 32) had a terminal date in the early to mid 13th century. Similarly, the rims of many of the jars, the most commonly identifiable vessels in Potters Marston, were chiefly associated with 12th and early 13th century profiles (Davies and Sawday 1999, figs. 88 and 89), and only one jug was present in this ware (*ibid* 1999, fig.93.114). A simple everted jug rim in the Nottingham fabric NO2 was the only identifiable vessel amongst the Nottingham, Chilvers Coton and Stanion Lyveden type wares, which all dated from the early to mid 13th century or later.

Extra-mural pits

[1075], [1670], [1685]

Assemblage: 54 sherds, 676 grams, 0.255 EVEs, 12.5 grams ASW

The pits are evidence of a phase of occupation post-dating the build up of garden soils on the Sanvey Gate street frontage. Most of the assemblage came from pits, [1075] and [1685], only two sherds were recorded from [1670]. Potters Marston is the most common ware, accounting for over 74 and 79 per cent of the totals by sherd count and weight. One Potters Marston storage jar fragment in [1685] weighed 64 grams, but most of this ware, save for a jar and two bowl rims, was made up of undiagnostic body sherds. Much of this and the Splashed and Oxidised Sandy wares could well be 12th or early 13th century in date. Only small fragments of Medieval Sandy ware in [1075] (1075) and [1685] (1685) and a single sherd of the Brill Boarstall type ware, BR2, in [1670] (1672) point to a post 1250 date for this group. The pottery is evidence of a high degree of residuality, which is not unexpected given that stratigraphically these features cut the build up of layers noted above.

No post Roman pottery was found in the pit [1591], which was dug out on the berm between the two town ditches, or in the pit [2890] to the south.

Table 21 The phase 9 medieval pottery from the extra-mural pits by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST1/2- Stamford	2		39			
PM – Potters Marston	40	74.07	540	79.52	0.255	100.00
SP3 – Leicester Splashed	7		65			
OS2 - Oxidised Sandy	1		15			
CS – Coarse Shelly	1		4			
BR 2– Brill/Boarstall	1		4			
MS1/2 – Medieval Sandy	2		9			
Totals (checked)	54		676		0.255	

Extra- mural timber and stone structures

Beam slot [663], post holes [1655], [1681], [1690], possible yard surface (721), hearth [1240] (**Building E1**).

Wall [1134]

Assemblage: 36 sherds, 549 grams, 0.290 EVEs, 15.25 grams ASW

Table 22 The phase 9 medieval pottery from the timber structure by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST3- Stamford	1		4			
SN – St Neots type	1		4			
PM – Potters Marston	28	77.77	439	79.96	0.120	41.37
SP3 – Leicester Splashed	3		58		0.060	
OS1 - Oxidised Sandy	1		5			
CS – Coarse Shelly	1		3			
LY4 – Stanion/Lyveden	1		36		0.110	
Totals	36		549		0.290	

The only identifiable vessels in this small assemblage were from contexts associated with the timber structure: the neck of a jug and a jar with an everted rim in Splashed ware, and an upright and squared Stanion Lyveden jar rim. All were found in the possible yard surface (721).

Two sherds of Potters Marston, weighing 45 grams, including a fragment of a large storage jar were found in the stone rubble of the wall [1134]. This feature may originally have been part of a stone built building which originally traversed the back-filled town ditch to the south.

Phase 10 Late Medieval c.1400-1500/50

Town Defences

Back-fills of town wall robber trench [639] in Trial trench 10

Assemblage: 17 sherds, 217 grams, 0.160 EVEs, 112.76 grams ASW

Table 23 The back-fill of the town wall robber trench phase 10, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	Weight	Eves
PM – Potters Marston	9	87	

SP3 – Leicester Splashed	1	3	
CC1 – Chilvers Coton	2	12	
NO2 - Nottingham	1	3	
MS – Medieval Sandy	3	34	
MP3 – Midland Purple	1	78	0.160
Totals	17	217	0.160

This small assemblage is dated to the late medieval period by an everted jar rim in the Midland Purple fabric MP3. A similar rim from a handled jar occurred in a late medieval context at the Austin Friars, Leicester (Woodland 1981, fig.40.196). The context of this pottery is possibly disturbed by a modern footing however. The Chilvers Coton fabric CC1 has a terminal date of *c*.1400, and the sherd of unclassified Medieval Sandy ware is of uncertain date. The rest of the material may be residual in this phase.

Intra-mural robbing [1893] of earlier well

Assemblage: 19 sherds, 311 grams, 0.260 EVEs, 16.36 grams ASW

Table 24 The phase 10 medieval pottery from the robbing of well [1893] by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST1-3 - Stamford	5		63		0.210	
PM – Potters Marston	8		176		0.050	
CC1 – Chilvers Coton	3		55			
NO3 - Nottingham	1		13			
MS – Medieval Sandy	1		3			
TG2 – Surrey White ware	1		1			
Totals	19		311		0.260	

Only a tiny fragment of Surrey White ware, dating from *c*.1400 indicates that the well was robbed during this phase. The rest of the assemblage is similar to that from the back-fill of town wall robber trench in the same phase, and is predominantly residual.

Extra-mural timber and stone structure (**Building E2**)

Structure - clay floor[603], post holes [590], [594], layers above clay floor (592), (596),(609), (690), (695), (719), (1072), (1099), (1100), (1102), wall [1085]

Assemblage: 128 sherds, 2058 grams, 1.165 EVEs, 16.00 grams ASW

The eighteen sherds from the post-holes contained generally residual Potters Marston, Coarse Shelly, Chilvers Coton and Nottingham wares. Two similarly residual sherds of Potters Marston, weighing eleven grams, were recovered from the infill of the wall [1085], which was perhaps originally the base for a timber structure above.

Most of the 19 sherds from the clay floor [603] which sealed the phase 9 timber structure below were residual, save for three fragments in the Midland Purple fabrics MP2 and MP3. The two sherds in the former, weighing 183 grams, were from a jar, whose form is paralleled at the Austin Friars Leicester, in contexts dating from the 15th century (Woodland 1981, fig.37.162) and convincing evidence of a late medieval date for the structure. The 95 sherds, weighing 1456 grams and with an EVEs of 0.635, from the layers above the clay floor, including those representing the disuse of **Building E2**, only produced three sherds, 67 grams, of late medieval pottery, once again in the Midland Purple fabrics MP2 and MP3.

Table 25 The phase 10 medieval pottery from the extra-mural structure, by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%

TH- Thetford type	1		33			
PM – Potters Marston	98	76.5	1444	70.16	0.66	40.00
SP3 – Leicester Splashed	5		39			
OS2 - Oxidised Sandy	1		4			
OL - Oolitic	1		139		0.325	
CS – Coarse Shelly	3		40			
LY4 – Stanion/Lyveden	1		4			
CC1 – Chilvers Coton	9		82			
NO2/3 - Nottingham	3		23			
MP2 – Midland Purple	4		177		0.180	
MP3 – Midland Purple	2		73			
Totals	128		2058		1.65	

Gullies [1126], [1128], well [1103]

Assemblage: 149 sherds, 1925 grams, 0.660 EVEs, 12.9 grams ASW

Only approximately 34 per cent of the assemblage by sherd count, but 43 per cent by weight, are in the late medieval Chilvers Coton fabric CC2, the Medieval Sandy fabrics MS7 and MS8 and Midland Purple and Cistercian wares. This later pottery was recovered from all three features, but predominantly from the well [1103] which cut both of the gullies, which in turn had been sited parallel to the predominantly infilled town ditch. The remainder of the assemblage is thought to be residual from phase 8 and 9.

The well was clay-bonded and lined with granite and may have been associated with a building of some significance – but, typically, the pottery showed no evidence of high status.

Table 26 The phase 10 medieval pottery from the features to the south of the extra-mural structure by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST1/2- Stamford	3		11			
TO – Torksey type	1		7			
PM – Potters Marston	69	46.3	742	38.5	0.220	33.3
SP2/3 – Splashed	3		37			
OS2 - Oxidised Sandy	2		2			
CS – Coarse Shelly	1		18		0.060	
CO3 - Coventry	1		7			
CC1 – Chilvers Coton	14		186			
CC2 – Chilvers Coton	1		10			
NO3 - Nottingham	1		31			
BR2 – Brill/Boarstall	1		2			
MS1– Medieval Sandy	2		40		0.025	
MS3 – Medieval Sandy	12		113			
MS7 – Medieval Sandy	6		72			
MS8 – Medieval Sandy	3		67			
MP2 – Midland Purple	24	16.1	521	27.0	0.355	53.7

CW2 - Cistercian	5		59			
Totals	149		1925		0.660	

Phase 11 Early Post Medieval c.1500-1650

Gully [17], ditch [108], ?well [1119], wall [1156],

Layers (8), (1112), (1113), (1143), (1166), (1167), (1170), (1293), (1299), (1308), (1367), (1728).

Assemblage: 94 sherds, 2773 grams, 0.680 EVEs, 29.50 grams ASW

Table 27 The phase 11 pottery by fabric, sherd numbers and weight (grams).

Fabric	Sherds	%	Weight	%	Eves	%
ST1- Stamford	1		1			
PM – Potters Marston	31	32.9	278	10.0	0.070	10.2
SP3 – Leicester Splashed	1		4			
CC1 – Chilvers Coton	7		23			
NO3 - Nottingham	4		18			
MS/2/3 – Medieval Sandy	5		30			
MS7 - Medieval Sandy	3		36			
MP2 – Midland Purple	15	15.9	899	32.4	0.325	47.7
MP3 – Midland Purple	1		710			
TG- Tudor Green/S White ware	4		12			
CW2/MB – Cistercian/ M. Black	7		113			
RH – Rhenish Stoneware	3		379			
MY – Midland Yellow	4		86		0.040	
EA1 - Earthenware	5		137		0.165	
EA2 - Earthenware	1		10			
EA7 - Earthenware	2		37		0.080	
Totals	94		2773		0.680	

A range of late medieval and early post-medieval pottery, the latter made up of Midland Yellow and the Earthenwares EA2 and EA7, was three dimensionally recorded in the upper back-fills of the town ditch. Rhenish Stoneware, including the wire-cut base of a Frechen drinking jug (Hurst *et al* 1986, fig.106.332), dating from the mid 16th century, was found in the possible well, [1119] which cut the infilled town ditch, and also in the ditch, [108]. A fragment of late medieval Cistercian ware, CW2, occurred in the wall [1156], and part of a post medieval Midland Yellow ware bowl was the only find in the gully [17]. The remainder of the medieval and early post medieval pottery was from the layers thought to be associated with so-called garden soils, evidence of horticultural activity in the area.

The Pottery Forms and Fabrics (Table 9 - Table 30)

In spite of the small size of the pottery assemblage, and its rather restricted date range, most of the pottery occurred in phases 8 and 9. The range of identifiable vessel types are similar to those found elsewhere in the city during the Saxo Norman and high medieval periods, with relatively few identifiable pots occurring in phases 10 and 11. Typically, jars, bowls and jugs dominate the pottery assemblage and other generally relatively uncommon vessels, such as lamps, dripping dishes and fire covers also occur here in small quantities.

In terms of Eves, jars are the most common vessel type in all phases, followed by bowls in phase 8. Liquid containers, such as spouted pitchers and jugs, make up a third of the identifiable vessels in phase 8, supplanting bowls, to become the second most common vessel type in phase 9. Not unexpectedly, the range of vessel types more often associated with late medieval wares is limited here to cisterns and cups.

A significant proportion of the jars and bowls are found in the Saxo Norman Stamford, Lincoln, Thetford and Torksey type wares, and two of the three lamps and all of the spouted pitchers and a high proportion of the jugs are in Stamford ware.

Potters Marston accounted for most of the jars, almost 50 per cent of the jugs by Eves, and all of the storage jars and both of the dripping dishes and the fire cover. The identifiable vessels in the early high medieval Leicester Splashed ware are, as is usually the case for this ware, restricted to jars and jugs. The identifiable wheel thrown and glazed Nottingham, Chilvers Coton, Coventry and Medieval Sandy wares occur here exclusively as jugs, whilst the cistern and cups are in Midland Purple and Cistercian ware respectively.

The Pottery from the Intra-Mural and Extra-Mural Contexts. (Table 29, Table 30)

The intra-mural pottery phases 8-11 (Table 29)

Assemblage: 897 sherds, 13448 grams, 12.11 Eves, 14.99 ASW

Only eight sherds of pottery were recovered from stratified levels in phase 7, in the main site area, which were widely dispersed, but with a slight bias towards the southern half of the site.

In terms of sherd count, weight and Eves, most of the intra mural pottery occurred in phase 8, where over 50 per cent of the assemblage was made up of residual late Saxon/Saxo Norman material, including sizeable assemblages of Stamford ware and, more unusually for Leicester, over 70 sherds, 1743 grams of Thetford and Torksey type wares (Illustrations 1 – 9). Much of this early pottery was associated with the robbing of the Roman buildings, chiefly **Building D** [2960], which the pottery evidence suggests may have occurred sporadically from as early as phase 7. The two probable cess pits [3043] and [3110] also contained residual Saxo Norman pottery. All these features lay in the area to the east of the north-south Roman road, and may be taken as evidence of early occupation in this part of the north east quarter of the town, south of the line of the medieval Torchmere.

Most of the remaining pottery in this phase occurred in the main site area, which also lay to the south of the site. The find spots were chiefly associated with the robbing of Roman buildings and the wells and pits, and are evidence of occupation on the west of the site, to the rear of what was to become the Burgess Street frontage.

Relatively little can be said of the much smaller assemblages from phases 9 and 10, which accounted for only only 114 pottery sherds in total. Just over 61 per cent of the phase 9 pottery, 48 sherds in all, was found in the centre of th emain area in the wells and pits, and are probably associated with continuing occupation in the area of Burgess Street. The remaining 30 sherds in this phase occurred in the robbing of Roman **Building D** and two pits [2964] and [3055] to the west of the site.

The 36 sherds of phase 10 pottery were recovered from Trial trench 10 to the north of the site, and a well [1893] in the main area, the only evidence of somewhat limited on-going activity in the vicinity of Burgess Street in the later medieval period. Only fourteen sherds of pottery were found in intra-mural contexts in phase 11.

The Extra-Mural Pottery Phases 8-11 (Table 30).

Assemblage: 1238 sherds, 23423 grams, 34.398 Eves, 18.92 ASW

No stratified pottery from the extra-mural contexts on the site could be attributed to the Saxo Norman phase 7. There was no obvious focus for the redeposited Saxo Norman material in phase 8, which occurred in all three groups of features, the town defences, the well and the pits, but accounted for less than 10 per cent of the extra-mural phase totals by sherd count. A similar picture emerges in phase 9, where although 15 of the 27 sherds of residual Saxon Norman pottery were found in the build up of soils pre-dating the construction of the timber building, the assemblage was generally too dispersed and too small to be of any significance.

The largest extra-mural pottery assemblage in terms of weight, was found in the pits and well which are thought to relate to occupation on the Sanvey Gate frontage in phase 8. A sizeable amount of pottery

was also recovered from the back-fill of the town ditches and the layers sealed by the collapsed town wall.

The phase 9 and 10 assemblages centred around the build up of garden soils associated with the Sanvey Gate street frontage and the timber and later structure and associated pits to the north of the site. The pottery in phase 11 chiefly occurred in the two features relating to the town ditch, the upper back-fills of the inner ditch and a well cutting the same feature.

Discussion

The range of pottery fabrics and forms are generally typical of that found in Leicester in the medieval period. There was a not altogether unsurprising absence of continental imports or what might be termed 'high status' wares or vessel types in an area which lay in the back streets, rather than on or near any of the major thoroughfares or significant buildings in the medieval town. One unusual feature is the relatively high proportion of Thetford and Torksey type wares present, compared to the Highcross sites 1 to 3, and the absence of any Leicester type ware. This may reflect the difficulty in visually distinguishing between these generally grey wheel thrown sandy wares. The relatively large number of Potters Marston storage jars, although only represented by 86 pottery sherds with an Eves total of 1.38, is also of note. These large vessels are thought to have been used to store and protect grain or perhaps other other foodstuffs from rodents, and their presence here is probably not particularly significant, and is simply a reflection of the predominantly agrarian occupation of most of the medieval inhabitants of Leicester.

Whilst only a small area outside the town defences was available for excavation, the evidence of earlier extra-mural activity ties in well with that recorded during an archaeologicial evaluation to the north of Sanvey Gate in 1993. These earlier excavations lay within the area of the known medieval suburb and had suggested a period of intensive occupation in the later 12th to the early 13th century, and provided evidence of buildings fronting onto Sanvey Gate during the earlier high medieval period. This phase of occupation was sealed by a series of cultivation horizons dating through to the post medieval period, (Finn 1993, 93-94).

However, at Sanvey Gate, the extra mural occupation continued throught out the medieval period, with the building of a timber and stone structure and associated features spanning phases 9 and 10, and possibly a later structure and a well in phase 11, but the ceramic record is limited.

In terms of the activity south of the town defences, there was a significant Saxo Norman presence in the area, as exemplified by the pottery of the period, which made up the single largest intra-mural assemblage by sherd numbers in any phase. This pottery and the early medieval pottery, which was also present in significant quantities, and the associated features, are taken as evidence of occupation south of the line of the medieval Torchmere and to the west of the site, to the rear of the what was later, the Burgess Street frontage. The relative paucity of the phase 9 and later pottery assemblages seems to reflect the gradual decline in the occupation in this part of the town by the late medieval period, which the documentary evidence records, had been put to horticultural use, namely gardens and orchards, by the 17th century.

Table 28 The identifiable vessel forms, phases 7-11, by sherd numbers, weight (grams) and Eves

	Phase 7			Phase 8			Phase 9			Phase 10			Phase 11			Site Totals			
Form	nos.	grams	Eves	nos.	grams	Eves	nos.	grams	Eves	nos.	grams	Eves	nos.	grams	Eves	nos.	grams	Eves	% Eves
Jar	6	23	0.09	170	4850	11.315	64	1701	26.7	16	676	1.56	2	120	0.23	258	7370	39.90	85.89
Storage jar				82	4634	1.010		261	0.37							86	4895	1.380	
				24	577	1.53	1	21	0.04	2	71	0.125	2	49	0.12	29	718	1.715	
Spouted pitcher				13	202	0.36	1	25	0.0							14	227	0.365	
Jug				81	2312	0.64	19	469	1.16	15	625	0.51	8	405	0.20	123	3811	2.518	
Lamp				3	28	0.30										3	28	0.30	
Dripping dish										1	36	0.05				1	36	0.05	
Fire cover				1	88	0.0										1	88	0.00	
Cistern													7	612	0.12	7	612	0.125	
Cup										3	40	0.10	1	3	0.0	4	43	0.100	
Eves totals			0.09			15.16			28.27			2.35			0.68			46.453	

Table 29 The intra- mural pottery phases 8 to 11, (Trial trenches & main area 4,5,10,14,15,16,17,22,24) by fabric, sherd numbers and weight (grams).

	Phase 8					Phase 9					Phase 10					Phase 11				
Fabric	nos	%	grams	%	Eves	nos	%	grams	%	Eves	nos	%	grams	%	Eves	nos	%	grams	%	Eves
Late Saxon/Saxo Norman																				
ST2/3- Stamford	278		2271		1.944	10		49			4		53		0.21					

ST1- Stamford	24		239		0.020	3		8			1		10							
LI1/2- Lincoln Kiln/Shelly	6		144		0.28															
SN – St Neots type	3		17			1		2												
TH/TO/Thetford/Torksey	73		1745		2.475	2		19												
RS – Reduced Sandy	5		78																	
Saxo Norman Sub Total	389	50.5	4494	38.2	4.719	16		78			5		63		0.21					
Earlier Medieval/Medieval																				
PM – Potters Marston	323	42.0	6527	55.5	5.618	30	38.4	555	59.3	0.35	17	47.2	263	50.5	0.05	1		2		
SP2 – Leicester Splashed	2		8																	
SP3 – Leicester Splashed	21		317		0.405	2		21			1		3							
OS1/2 – Oxidised Sandy	13		113		0.058	2		40		0.1										
OL - Oolitic	1		1																	
CS - Coarse Shelly	7		59			2		32												
CO1/2/3 – Coventry	1		7			1		1												
BO2 - Bourne						1		11												
CC1 – Chilvers Coton	1		13			16		154			5		67							
NO1/2/3 - Nottingham	2		4			6		27		0.09	2		16							
MS/1/2– Medieval Sandy						2		16		0.11						1		16		
Earlier Med/Med Sub Total	371	48.2	7049	59.9	6.081	62	79.4	857	91.6	0.65	25	69.4	349	66.0	0.05	2		18		
Later Medieval/P. Med																				
CC2 – Chilvers Coton	1		5																	

MS3 Medieval Sandy											4		37			1		4		
TG – Tudor Green											1		1							
MP2/3 – Midland Purple	6		208								1		78		0.16	2		36		0.2
CW2 - Cistercian	2		2													3		93		
RH – Rhenish Stoneware																2		17		
MY –Midland Yellow																2		34		0.04
EA1 - Earthenware																2		25		
Later Med/P. Med S. Total	9		215								6		116		0.16	12	85.7	209	92.0	0.24
Totals	769		1175 8		10.80	78		935		0.65	36		528		0.42	14		227		0.24

Table 30 The extra mural pottery (trenches 3,7,8,9,11,12,18/s,19/s,20) phases 8 to 11, by fabric, sherd numbers and weight (grams).

	Phase 8					Phase 9					Phase 10					Phase 11				
Fabric	nos	%	grams	%	Eves	nos	%	grams	%	Eves	nos	%	grams	%	Eves	nos	%	grams	%	Eves
Late Saxon/Saxo Norman																				
ST2/3- Stamford	18		126		0.54	5		47		0.10	1		4							
ST1- Stamford	9		73			19		233			2		7			1		1		
LI2- Lincoln Kiln/Shelly	1		22		0.045															
SN – St Neots type	2		22			2		9												
TH/TO- Thetford/Torksey	4		7			1		18			2		40							
Saxo Norman Sub Total	34		250		0.585	27		307		0.10	5		51			1		1		
Earlier Medieval/Medieval																				
PM – Potters Marston	283	8.3	7460	2.5	2.923	344		5293		26.50	170		2223		0.88	30		276		0.07

SP2 – Leicester Splashed						2		12			1		19							
SP3 – Leicester Splashed	24		464		0.155	42		904		0.73	8		71			1		4		
OS1/2 – Oxidised Sandy	3		47		0.09	10		157		0.175	3		6							
OL - Oolitic						1		11			1		139		0.325					
CS Coarse Shelly	2		35		0.10	7		64			4		58		0.06					
LY1/4 – Stanion/Lyveden	1		41			2		48		0.110	1		4							
CO1/2/3 – Coventry	11		109		0.105						1		7							
CC1 – Chilvers Coton	20		331		0.125	11		121			23		268			7		23		
NO2/3 - Nottingham	2		17			8		89		0.080	4		54			4		18		
BR2 – Brill/Boarstall						1		4			1		2							
MS/1/2– Medieval Sandy	3		51			6		44			2		40		0.025	3		10		
Earlier Med/Med Sub Total	349	85.5	8555	88.4	3.498	434	93.7	6747	94.2	27.595	219	76.3	2891	69.8	1.29	45	56.2	331	13.0	0.07
Later Medieval/P. Med																				
CC2 – Chilvers Coton	2		53			1		104			2		17							
MS3/7/8 Medieval Sandy	11		310		0.255	1		4			25		345			3		36		
TG – Tudor Green																4		12		
MP2/3 – Midland Purple	10		391								30		771		0.535	14		1573		.125
CW2/MB – Cistercian/ M B	1		107								6		61		0.10	4		20		
RH – Rhenish Stoneware																1		362		
MY – Midland Yellow																2		52		
EA/1/2/7 - Earthenware	1		3													6		159		.245

Later Med/P. Med Sub Tot.	25	6.1	864	8.9	0.255	2		108			63	21.9	1194	28.8	0.635	34	42.5	2214	86.9	.37
Totals	408		9669		4.338	463		7162		27.695	287		4136		1.925	80		2546		0.44

THE MEDIEVAL FLOOR AND RIDGE TILE

Deborah Sawday

Table 31 The Medieval Ridge Tile by fabric, fragment numbers and weight (grams).

Fabric	Nos.	Weight (grams)
PM - Potters Marston	3	57
SP3 - Leicester Splashed	1	24
CC1 - Chilvers Coton	1	8
MS3 - Medieval Sandy	1	21
MP2 - Midland Purple	2	651
Totals	8	761

All of the ridge tile was either residual in later contexts or unphased. Only one decorated ridge tile was present, a pyramid/cockscomb crest in the late medieval Midland Purple fabric, MP2. The crest is made by placing a long strip of clay along the ridge and then cutting it into triangular segments, though whether this particular example was cut into equilateral or right-angled triangles is not clear. This type of crest is dated from the 13th or early 14th century into the 16th century and has been recognised at several sites in Leicester, including the Austin Friars, where it was first identified, and on the Vaughan Way excavations, (Allin 1981, fig. 16.6 and 7, 59).

A fragment of floor tile was residual in the ditch [108], context (1), phase 11. The hard fired and reduced fabric suggests that this is a Nottingham product, probably dating to the 14th century.

The paucity of ceramic roofing and flooring material from the site suggests that few if any substantial structures capable of supporting roofs with tiled ridges were built here in the medieval period. It seems most likely that this building material had been bought on the site, perhaps as hardcore from elsewhere in the town.

THE CLAY TOBACCO PIPES

David Higgins

Introduction

This report deals with the clay tobacco pipes recovered by the University of Leicester Archaeological Services from excavations at Sanvey Gate in Leicester which were carried out during 2004/5. The pipes from the excavations were examined and this report prepared between July and September 2008.

Material Recovered

A total of just 8 fragments of clay tobacco pipe were recovered from the excavation, comprising 2 bowl fragments, 5 stem fragments and 1 mouthpiece. These pieces were recovered from four different contexts, all of which have been dated to *c.*1750 or later on the basis of associated pottery and/or stratigraphy. There is one elaborately decorated and marked late 18th-century bowl from context 11 (discussed below); all of the other fragments are plain.

Discussion

This site produced a very small assemblage of pipes, comprising just 8 fragments (2 bowl, 5 stem and 1 mouthpiece) from four different contexts (Table 32). Three of these (contexts 99, 125 and 140) only produced single fragments, including a largely complete spur bowl of local style dating from *c.*1670-90 from context 99, the upper fill of a robber trench. This bowl is rather battered and other evidence shows that it must be residual in this context. The stems from 125 and 140 (a robber trench and tipped fill respectively) are both of mid 18th-century to mid 19th-century types.

The largest group (5 fragments, comprising a bowl, three stems and a mouthpiece) came from context 11, the fill of a cut into a late garden soil. The best dating for this group is provided by complete spur bowl of *c.*1760-90 marked FLUDE / LEICESTER around the rim and with unclear marks or initials on its spur. The bowl is decorated with scalloped decoration and has a double-headed Prussian eagle displayed facing the smoker. This is a very distinctive design, an identical example of which has been found at Causeway Lane (Higgins 1999, Fig 98.14). There is also a very similar looking example from the garden of Castle House in Leicester but with the rim missing so that the name cannot be seen. The Castle House example, however, appears to have a plain, unmarked spur (Jewry Wall Museum; A.17.1986 U/S). A third example has been recovered from excavations in Castle Street (A7 2004 T.10 U/S).

The new example from Sanvey Gate is helpful in that the rim lettering is clearly legible, confirming the maker's name as Flude, with a small fleur-de-lys after the name. As with the Causeway Lane and Castle Street examples there are also some marks or initials on the sides of the elegant spur but these are strangely formed and very hard to decipher. The left hand mark looks like an inverted R (or possibly B) but is odd in that it has an extra line or 'leg' extending from it down the spur, perhaps indicating that it has been changed at some point. The right hand mark is unclear, but looks a bit like an R. Given the rim lettering, the right hand mark would be expected to be an F for Flude if these are initials. Comparison of the marks on the Castle Street example, one of which is very clear, suggests that both sides of the spur have a mark that looks like a letter B with an additional line projecting at ninety degrees from the upright between the two curved lines of the letter where they meet. The additional line faces towards the base of the spur on each side, so that the mark itself looks like an inverted crown. Comparison with the new examples now clearly suggests that these marks are some form of symbol mark, rather than intending to be initials.

There is a very similar style bowl, but with fluted decoration and no eagle, in the Jewry Wall Museum with the moulded rim lettering ….E / LEISTER (*sic*) and the initials IF on the spur (A185.1966.12). This also dates from *c.*1760-90 and was probably made by John Flude, who took his freedom in 1754 (Hartopp 1927, 435) and who is recorded pipemaking until at least 1768 (Gault 1979, 373). If this attribution is correct, then it seems likely that these pipes with the Prussian Eagle were also made by the same maker. If the Castle House example is from the same mould, and it does have an unmarked spur, then perhaps the mould was originally made for someone else and had the marks and name added when it changed hands. Or perhaps it is a very similar design produced by another maker. Either way, this is an early and interesting example of a mould decorated pipe and, in particular, of the use of rim lettering, which was particularly associated with pipes from Lincolnshire (Walker and Wells, 1979). Richard King is also known to have used this style of marking in Leicester during the early 19th century, showing that Leicester can be firmly added to the list of production centres where this distinctive style of marking is known to have been used during the late 18th and early 19th centuries.

Table 32 The Clay Pipes, showing numbers of bowl (B), stem (S) and mouthpiece fragments (M) from each context.

Cxt	B	S	M	Tot	Date range	Deposition date	Marks	Dec, etc	Comments
11	1	3	1	5	1760-1850	1760-1790	FLUDE / LEICESTER and initials x1	Double headed eagle and scalloped design	Three thin round stems and a cut mouthpiece of late C18th or early C19th types plus a complete spur bowl marked FLUDE / LEICESTER around the rim and illegible initials on the spur. This dates from c1760-90 and was probably made by John Flude, recorded pipemaking until at least 1768. An identical example has been found at Causeway Lane (Higgins 1999, Fig 98.14).
99	1			1	1670-1690	1670-1690			Local spur form with damaged rim, which has been bottered and partially milled (probably half milled originally). It is not burnished and there is no internal bowl cross. Residual in this context, which other

									evidence dates to c1750+.
125		1		1	1750-1850	1750-1850			Small and rather abraded stem fragment - probably of later C18th or early C19th date.
140		1		1	1760-1850	1760-1850			Stem fragment - probably of later C18th or early C19th date.
Totals	2	5	1	8					

THE SMALL FINDS

H.E.M. Cool

Introduction

The excavations at Sanvey gate produced a moderate-sized assemblage that was originally assessed by Sam Bocock. Her assessment included coins, vessel glass and leather, categories which have been dealt with elsewhere at the analysis stage. In total she recorded 714 objects (around 1128 fragments) and selected 74 items of the type dealt with here for further work. Due to changes in personnel at the University of Leicester Archaeological Services, she was not available to carry out the analysis and the present author was approached to produce this report. I have inspected all of the material available using the X-radiographs for the iron, and all items which can be identified and assigned to a function have been included in what follows. Miscellaneous items such as rings, shank fragments, unidentifiable fragments of metal etc have not been included, but details of these are available in archive as assessment level data. Very limited amounts of investigative conservation had been carried out on the metalwork prior to analysis and so some identifications have to be tentative.

The same approach to studying these finds has been adopted as was used for the Highcross site reports. The material has been divided into broad chronological periods and then by function following divisions first suggested by Crummy (1983) and followed by Cooper in his discussion of the Causeway Lane finds (Cooper 1999). Table 33 and Table 34 provide summaries of the assemblage as a whole. In Table 34the medieval category subsumes some items that may date to the early post-medieval period as typologically they cannot be distinguished from those of medieval date; and as many are unstratified their dating cannot be refined by reference to their context. The typological discussion aims to date the material and place it within a broader context. This has generally been done by directing the reader to the appropriate standard work of reference. Any references to Crummy Types, for example, are derived from Nina Crummy's seminal work on the small finds from Colchester (Crummy 1983). The opportunity has also been taken to provide more extensive lists of *comparanda* from Leicester. This is based on both published and unpublished excavations within the city conducted by the University of Leicester Archaeological Service and its predecessor, and other published excavations such as those by Kenyon (1948) at Jewry Wall. It should be stressed that the Leicester *comparanda* are far from complete as it has not been possible to review all the excavated assemblages. It is hoped, however, that it is sufficient to achieve the aim of placing the Sanvey Gate finds within their Leicester context and so to reveal those aspects of the assemblage that are part of the normal Leicester pattern, and those aspects where it deviates and which may help to characterise the nature of the activity taking place on the site. The nature of the *comparanda* available means that this approach is most successful in the Roman period where much more information about the finds recovered from Leicester has been recorded. Less information is available about Leicester's Saxon and medieval material culture, but this is not a major problem for this site as the assemblage is primarily of Roman date.

Following the consideration by period and function an overview is offered structured according to site period. This provides merely a site specific consideration that will be suitable for providing additional information for the overview volume which it is anticipated will be written for the Highcross sites

Table 33 The discussed finds by material and site phasing

Phase	Copper	Iron	Glass	Frit	Bone	Stone	Total
2a	3	-	-	-	-	-	3
2b	2	-	-	-	-	-	2
2c	2	5	-	-	-	1	8
3a	8	5	1	-	1	1	16
3b	1	-	-	-	-	-	1
3c	2	1	-	-	3	-	6
4	1	3	-	-	1	-	5
7	-	-	-	-	1	-	1
8	5	20	-	-	3	-	28
9	1	1	-	-	2	-	4
10	-	1	-	-	-	-	1
13	2	-	-	-	-	-	2
0	13	-	1	1	2	-	17
Total	40	36	2	1	13	2	94

Table 34 The discussed finds by date of find and function

Functional Category	Roman	Medieval	Total
Personal equipment	44	7	51
Toilet equipment	1	-	1
Textile equipment	2	1	3
Household equipment	2	-	2
Recreation equipment	2	1	3
Weighing equipment	-	1	1
Writing equipment	2	1	3
Transport equipment	-	1	1
Tools	4	1	5
Fasteners and fittings	19	3	22
Hunting equipment	-	1	1
Miscellaneous		1	1
Total	76	18	94

Roman finds

Personal ornaments

As normal the personal ornament category is the largest in the assemblage. As typical for Leicester it is dominated by brooches and hairpins.

Brooches

The brooch assemblage includes two early and uncommon continental imports. The unstratified no. 1 is a derivative of a lion brooch (Hull Type 29; Feugère 1985, 279-80, type 18a2). This is a type that is widespread in Gaul but rare in Britain. On the continent the date range is predominantly in the second and more especially third quarters of the first century AD. Its date range means that it could have arrived post-conquest, but given the presence of a true Gallic lion brooch at Freeschool Lane, there is the possibility of

it being a pre-Conquest import. No. 2, also unstratified, is a one-piece Knickfibeln (Riha 1979, Typ 2.6; Hull Type 42). On the continent they are commonest during the first half of the 1st century AD. In Britain the distribution would be consistent with them arriving with the army but relatively few have been found (Bayley and Butcher 2004, 148, 243).

No 3 is an example of a much more common form of continental import, the Aucissa, which is widespread on post-Conquest sites but going out of use in the 60s (Hull Type 51; Bayley and Butcher 2004, 151). Contemporary with these are Hod Hill brooches that occur in a myriad of variants (Bayley and Butcher 2004, 152-4). The example from Sanvey Gate is an example of a Hull Type 62 with the lateral lugs centrally placed. The foot fragment no. 8 might also be from a Hod Hill brooch but lacks sufficient details for the identification to be certain. Hod Hill brooches have been regularly found during excavations at Leicester (seeTable 35) but this is the first time that this variant has been recorded. Aucissa brooches, by contrast, are rare in Leicester with the only other example having been found at the Shires (Catalogue number 16). This may be reflecting the chronology of the types, with the aucissa going out of common use perhaps a decade before the Hod Hills. Langton Down brooches represented here by nos. 5 and 6 are another early type but in contrast to the foregoing are well established in late pre-Roman Iron Age contexts in Britain, going out of use in the early years of the post-conquest period (Bayley and Butcher 2004, 150). They are regularly encountered in Leicester, examples having been found at Vine Street, the forum (Hebditch and Mellor 1974, 45 no. 8), in Bath Lane (Clay and Mellor 1985, 69 no. 6), at the Shires (forthcoming cat no. 15) and from unpublished excavations at St Nicholas Circle (A163.1969 sf 67).

The only other bow brooch (no. 7) that can be identified is a well-made Trumpet brooch of Bayley and Butcher's Type A with the fully round acanthus moulding (Bayley and Butcher 2004, 160-1; Hull Type 158A). These have a later 1st to mid 2nd century *floruit*. The other example of this type to be found in Leicester came from Vaughan Way. The one penannular brooch (no. 11) is a Fowler (1960) Type D with turned back terminals which is a common form at Leicester (see Table 35). These tend not to be closely dateable within the Roman period.

This small brooch assemblage is rather curious within the context of Leicester as can be seen from Table 3. In part this may be because the focus as far as date goes is very much on the middle years of the 1st century AD, but even then contemporary brooch forms which are otherwise common at Leicester such as the Nauheim Derivative and the one piece Colchester are absent. If one was to be looking at the whereabouts of any early military or administrative centre in Leicester, then this brooch assemblage would suggest Sanvey Gate was in its vicinity. It has to be said though that nothing else in this assemblage points to such a function.

Table 35 Summary of the Roman brooches from Leicester

Type	Sanvey Gate	Vine Street	Free school	Vaughan Way	Cause way	Shires	Jewry Wall	Misc sites	Total
End 1st BC/early 1st AD	-	-	-	-	-	-	-	-	
Lion	-	-	1	-	-	-	-	-	1
Early to mid 1st AD									
Lion derivative	1	-	-	-	-	-	-	-	1
Knickfibeln	1	-	-	-	-	-			1
One-Piece	-	2	-	1	11	2	8	4	28
Colchester	-	-	1	-	1	3	7	7	19
Rosette	-	1	-	-	1	-	-	-	2
Langton Down	2	1	-	-	-	1	-	3	7
Mid 1st century									
Aucissa	1	-	-	-	-	1	-	-	2
Bagendon	-	-	-	-	-	-	-	1	1
Hod Hill	1	6	-	-	1	2	8	3	21
Early Plate	-	-	-	-	-	1	-	-	1

Mid 1st – 2nd century									
Colchester Derivative	-	5	-	1	5	4	14	5	34
Headstud	-	3	-	-	1	3	1	2	10
Trumpet	1	-	-	2	5	-	-	1	9
Lower Severn T-shape	-	1	-	1	-	1	-	-	3
Fantail	-	-	-	-	-	-	-	5	5
Algren 227	-	-	-	-	1	-	-	-	1
2nd century									
Shield bow	-	-	-	-	-	-	1	-	1
Alcester	-	-	-	-	-	-	1	-	1
Wroxeter	-	1	-	-	-	-	-	-	1
2nd to 3rd century									
Equal-armed	-	1	-	-	-	-	-	-	1
Knee	-	-	-	-	-	2	1	2	5
Disc	-	-	-	-	1	-	4	1	6
Plate	-	-	-	-	-	1	-	-	1
Cruciform plate	-	1	-	-	-	-	-	-	1
Figured plate	-	-	-	-	-	-	1	-	1
4th century									
Crossbow	-	-	-	-	-	-	1	-	1
Penannular									
Penannular	-	-	-	-	-	1	-	-	1
Penannular A	-	-	-	-	1	-	8	-	9
Penannular C	-	1	-	1	-	-	-	-	2
Penannular D	1	3	-	-	-	-	2	-	6
Penannular E	-	-	-	-	-	1	1	2	4
Total	8	26	2	6	28	23	58	36	186

1 Lion brooch derivative. Cylindrical spring cover retaining spring and upper part of pin; front of cover corroded but appears to retain mouldings - vertical ribs at either end and possibly some diagonal decoration centrally. 'D'-sectioned upper bow with concave sides; two transverse ribs centrally; fan-shaped foot with groove parallel to each edge; broken catch plate on back. Length 41mm, width of spring cover 17mm. Sf 259 : unstratified. (ID 840)

2 One-piece brooch. Copper alloy. Short wings with broken forward facing hook and scar from spring on back; D-sectioned humped upper bow with transverse rib at base; rectangular lower slightly tapering bow; trapezoidal catchplate with pin guard broken. Transverse grooves across front of upper bow. Length 45mm. Sf 217 : Unstratified. (ID 827)

3 Aucissa brooch. Copper alloy. Broken head with top bent up and over to hold (missing) hinge bar. Arched bow with concavity on either side with a vertical rib transversely grooved; transverse rib at base; tapering lower bow with hemispherical footknob; triangular catchplate. Length 46mm, bow section 8 x 2mm. Sf 53 : unstratified. (ID 831)

4 Hod Hill brooch. Copper alloy. Hinge and pin broken off and missing; upper bow has square panel with two vertical ribs on either side and wide vertical channel between them, vertical ribs have transverse grooves; panel originally had side knobs centrally places, now missing; panel has two

transverse ribs above and below; lower bow damaged but flat and slightly expanding, broken catch plate. Front coated with white metal. Present length 48mm. Sf 395 : 3196 : Phase 2a. (ID 838)

5 Langton Down brooch. Copper alloy. Hinge cylinder retaining part of spring, probably of three turns either side of missing pin; shallow 'D'-sectioned bow with two deep vertical grooves running down front with an additional pair of shallow grooves at the top of the bow. Lower bow missing and the whole flattened. Present length 34mm, width of hinge cylinder 25mm. Sf 202 : 1795 : Phase 2b. (ID 839)

6 Langton Down brooch. Copper alloy. Broken spring cylinder retaining spring of c. 6 turns. Broken flat reeded upper bow. Present length 18mm, width of spring cover c. 15mm. Sf 362; 2812 : Phase 2b. (ID 842).

7 Trumpet brooch. Copper alloy. Conservation has obscured some details of the spring arrangement. Trumpet head with groove running around edge; spring with two turns on either side and cord below; loose wire headloop - upper part diagonally grooved and held by collar that appears to be a solid block with the front decorated by groove parallel to top and bottom with rib between vertically grooved, ends of head loop inserted into ends of spring. Upper bow tapering to transverse rib dying out at back, rib vertically grooved. Central button consisting of acanthus moulding either side of circular disc moulding continues on back of bow, transversely grooved rib below lower acanthus. Triangular-sectioned lower bow with groove on either side; triple ribbed footknob with central knob, middle rib vertically grooved. Heart-shaped catch plate, groove across top of pin guard, Pin is hinged. Length including headloop 82mm, without headloop 69mm, width of head 24mm. Sf 280 : unstratified. (ID829)

8 Brooch foot. Copper alloy. Flat slightly expanded lower bow with broken catch plate on back. Present length 28mm, width foot 7mm. Sf 286 : 2251 : Phase 3a. (ID 841).

9 Brooch pin. Copper alloy. Circular-sectioned shank tapering to point, other end broken and curved over. Length 42mm, section 2.5mm. Sf 333 : 2611 : Phase 2c. (ID 862)

10 Brooch pin. Copper alloy. Circular-sectioned shank tapering to point at one end, flattening to oval terminal with slight spur. Head end corroded so impossible to confirm the presence of a perforation. Length 30mm, section 2mm. Sf 618 : 503 : Phase 3a. (ID 877).

11 Penannular brooch. Copper alloy. Circular-sectioned hoop, terminals bent back along the line the hoop. D-sectioned pin flattening and wrapping around hoop one and a half times. One terminal broken and brooch now bent slightly out of shape. Original diameter c. 18mm, hoop section 2mm. Sf 87 : 1026 : Phase 3c.

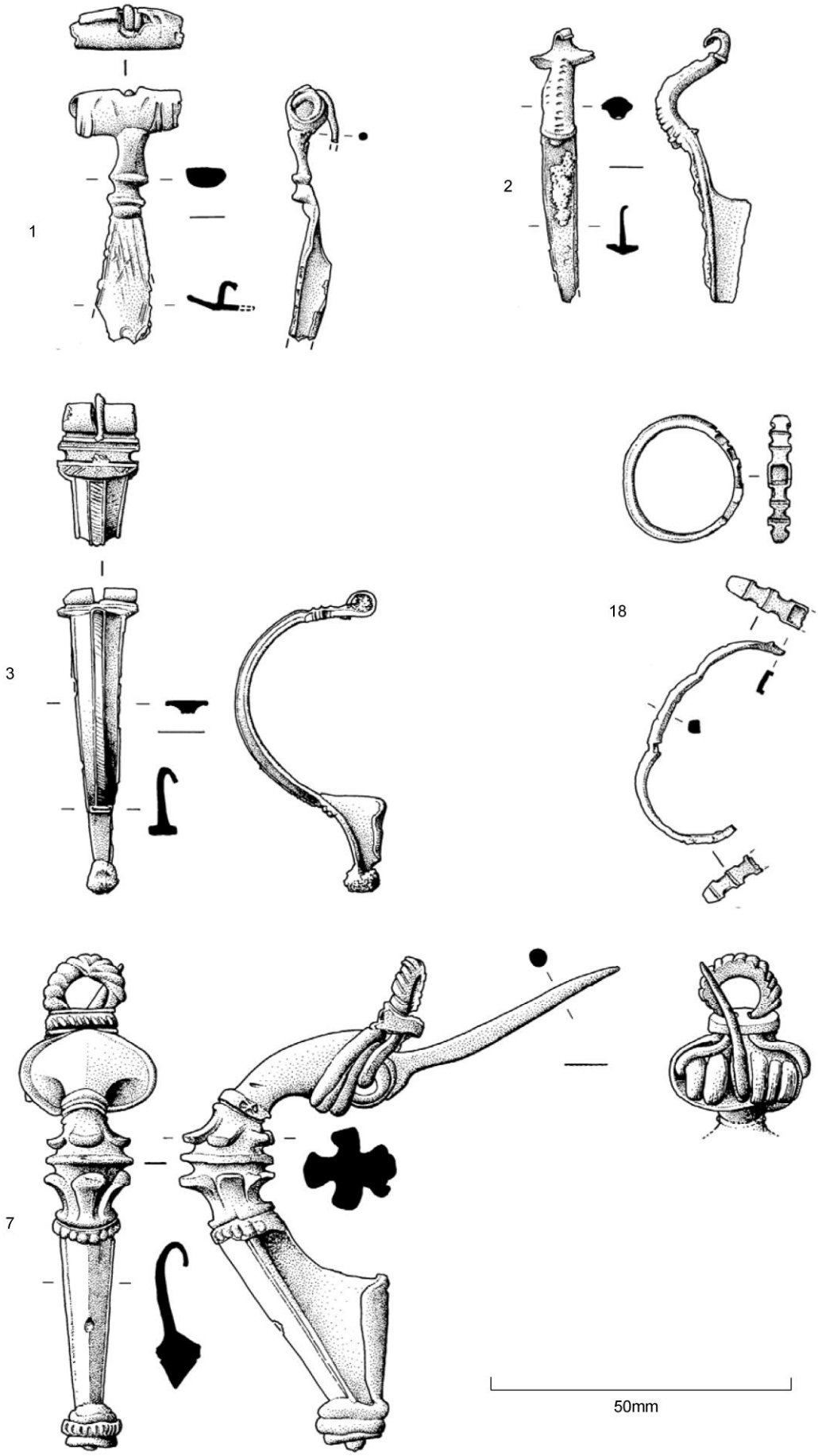

1
2
3
18
7
50mm

Figure 8 The illustrated Roman brooches 1-3, 7 and finger ring 18

Hair pins

Only five bone hair pins were found at Sanvey Gate and the types they belong to are summarised in Table 36 by date. The table also shows the incidence of the different types at other Leicester sites. It is a small assemblage, but even so the relative scarcity of the otherwise prolific 2nd century form Crummy (1983) Type 2 is noticeable, and this is predominantly a late Roman assemblage. This probably accounts for the presence of an example of the late Roman diamond and triangle faceted head form (Crummy type 4).

Table 36 Roman hairpins from selected sites in Leicester

	Sanvey Gate	Vine Street	Free school	Cause way	Shires	Jewry Wall	Total
Early Roman forms							
Cool Group 3	-	3	-	2	-	9	14
Cool Group 5	-	1	-	-	-	-	1
Cool Group 8 var	-	1	-	5	-	-	6
Crummy Type 2	1	11	1	10	2	76	101
Late Roman forms							
Crummy Type 3	2	-	-	10	3	55	70
Crummy 4	1	2	-	-	-	-	3
Crummy 5		1	-	-	2	4	7
Not closely dated							
Crummy 1	1	9	-	19	3	14	46
Total	5	28	1	46	10	158	248

12 Hair pin (Crummy Type 1). Bone. Circular-sectioned shank. Upper end very slightly pointed; tapering to broken lower end. Present length 71mm, maximum section 7.5mm. Sf 260 : 2221 : Phase 3c. (ID 819).

13 Hair pin (Crummy type 2). Bone. Circular-sectioned shank, lower end broken. Pointed terminal with two grooves below. Present length 34mm, maximum section 3mm. Sf 338 : 2664 : Phase 3a. (ID 814).

14 Hair pin (Crummy type 3). Bone. Knob head; expanding broken shank. Present length 54mm, head diameter 7mm, head length 7mm, maximum shank section 4.5mm. Sf 195 : 1900 : Phase 7. (ID no. 815).

15 Hair pin (Crummy type 3). Bone. Oval knob head; circular-sectioned shank tapering slightly to head, shank broken. Present length 62mm, head section 4mm, shank section 3mm. Sf 350 : 3299 unphased. (ID 860).

16 Hair pin (Crummy type 4). Bone. Oval knob with diamond and triangle faceting; circular-sectioned shank expanding slightly and broken. Head diameter 5mm, head depth 6.5mm, present length 37mm. Sf 90 : 992 : Phase 9. (ID 812).

17 Hair pin shank. Bone. Complete shank with slightly expanded shank tapering to point and with head snapped off. Length 75mm, maximum section 4 x 3.5mm. Sf 240 : 2131 : Phase 9. (ID 811).

Other items

The finger ring no. 18 (Fig. 4.18) belongs to the family of miscellaneous trinket rings that increasingly became jewellery items in the 3rd and 4th centuries as the role of finger-rings changed from being functional and holding intaglios to purely decorative (Cool 1983, 273 Finger ring Group XXII). The presence of this one in a late 3rd century context is a useful addition to the *corpus* of dated examples.

Three beads were recovered. No. 19 is a frit melon bead of the first to mid 2nd century. Generally this is a very common find on military sites and not uncommon elsewhere. At Leicester fragments from seven were found at Causeway Lane (Cooper 1999, 259 nos. 60-63) and a similar number came from Jewry Wall (Kenyon 1948, 270 Type E). Long square-sectioned green beads such as nos. 20 and 21 are known from the mid 2nd century onwards in translucent emerald green glass (Cool and Philo 1998, 181). Here no. 20 was unstratified whilst no. 21 came from a Phase 3a, providing useful additional early dating evidence for their use.

The only other items in this category are hobnails (nos. 22-4), the earliest of which occurred in a Phase 2C context. The number from the Phase 8 context 2254 (no. 24) is curious. The fact that two pairs remain corroded together suggests that they came from a shoe sole rather than being singletons lost during wear. Nailed shoes were not worn in the early medieval period so this shoe must have been residual, but one would not normally expect this number in those circumstances.

18 Finger ring. Copper alloy. Rectangular-sectioned hoop expanding slightly over shoulders; four constrictions over bezel producing three panels - an oval panel between two circular ones. Shoulders appear to have groove parallel to either side but surfaces obscured. Ring now snapped across oval bezel panel and bent out of shape. Hoop section 2 x 1.5mm, maximum bezel width 4mm. Sf 244 : 2171 : Phase 3c. (ID 834)

19 Melon bead; half extant. Turquoise frit retaining bluish glaze. Diameter 15mm, length 11mm, perforation diameter 6mm. Sf 334 : unstratified. (ID 806)

20 Long square-sectioned bead. Cloudy mid green. Section 3.5mm, length 11mm, perforation diameter 1.5mm. Sf 150 : unstratified. (ID 807).

21 Long square-sectioned bead; fragmented. Green glass, now much weathered. Section *c*. 3mm, length 11. Sf 302 : 2039 : Phase 3a.(ID 915).

22 Hobnails (4). Iron. Corroded together. Sf678 : 955: Phase 2c. (ID 911)

23 Hobnail (1). Iron. Length 11mm. Sf 623: 706 : Phase 3a. (ID 895)

24 Hobnails (18). Iron. Two pairs corroded together. Sf744; 2254; Phase 8. (ID 907)

Toilet equipment

No 25 was probably a toilet set consisting of a set of tweezers, a nail cleaner and a small earscoop but its fragmented and damaged state means that it is impossible to identify the presence of any tool other than the tweezers. None of the fragments appear to have come from the suspension mechanism so it is possible that the implements were just tied together. This is the second set to have come from recent excavations as a set with a bar and shackle suspension was found at Vine Street.

25 Toilet set. Copper alloy. One arm of a set of tweezers with jaw inturned; rectangular-sectioned shank of toilet implement with perforated disc suspension loop, tool end missing and the whole much corroded so that any indication of a nail cleaner would not be visible; fragment of rectangular-sectioned shank of third implement. Tweezers - length 60mm, maximum section 5.5 x 1mm; implement - present length 51mm, shank section 3.5 x 2mm. Sf 339 : 2664 : Phase 3a. (ID 867).

Textile equipment

Bone needles are a common find on Leicester sites and, as discussed in connection with the six found at Vine Street this may be because they were hair-dressing rather than textile tools (Stevens 2008, 121). The example found at Sanvey Gate (no. 26) is an example of a Crummy (1983) Type 2 (Jewry Wall type E – Kenyon 1948, 266). A possible iron needle was identified from the X-radiograph (no. 27). If the identification is correct it would definitely be a sewing implement.

26 Needle. Bone. Oval-sectioned shank, one end tapering to spatulate head; other end broken Rectangular eye with bevelled short ends. Present length 80mmm, maximum section 3.5 x 3mm. Sf 77 : 984 : Phase 3c. (ID 820).

27 Needle (?). Iron. Rod with expanded pointed end with possible perforation. Present length 66mm, width of shank 4mm. Sf 427; 2533; Phase 3a. (ID 885)

Household equipment

Three items can be assigned to this category. The commonest (no. 28) is a fragmentary round-bowled spoon of Crummy (1983) type 1. This is a 1st to 2nd century form which has often been recovered from Leicester made in both copper alloy and bone. Examples in both materials occur at Causeway Lane (Cooper 1999, 267 nos. 135-8) and at Jewry Wall (Kenyon 1948, 259 no. 3, 269 nos. 6-7). Unpublished copper alloy examples were found at Thornton Lane (A305.1963 nos. 45-6) and at Great Holme Street (A78.1975 cat no, 137) and a bone one came from Vine Street.

The other two items are less common. The turned section of a long bone (no. 29) from a Phase 3a context belongs to a class of objects that have been identified as the feet of small caskets (Schenk 2008, 91, see especially 234 nos. 1095-6). They are not a commonly encountered item in the worked bone assemblage from Romano-British sites and so no. 29 may indicate the presence of an import from Gaul where they were more common. The copper alloy cylinder no. 30 has been tentatively identified as another foot or stand. The piece has been conserved and the interior is less well-finished than the exterior, strongly arguing against the initial identification as a flagon mouth. Given that Sanvey Gate lies adjacent to Vine Street and there is the possibility that part of the major building there may have been excavated at Sanvey Gate the presence of no. 29 is interesting. It indicates an uncommon type of furnishing within a Romano-British milieu and may have been part of an exotic import. It may be recalled that this was also the case at Vine Street.

28 Spoon bowl. Copper alloy. Circular bowl retaining stump of handle extending onto the back of the spoon. The whole much cooroded and obscured and the possibility of decoration on the back can be neither confirmed or rejected. Diameter 25mm. Sf 299 : 2364 : Phase 2c. (ID 836)

29 Short foot. Bone. Sawn section of long bone; exterior turned to leave four upstanding ribs of decreasing diameter; central cancellous area hollowed out. One side worn down. Diameter 25mm, height 11mm. Sf 312 : 2450 : Phase 3c : ID 826

30 Hollow stand or foot. Copper alloy. Cylinder with base moulding consisting of wide rounded rib between two narrow ribs; two concavities above. The edge of the base projects unevenly internally and is not well-finished. Present height 22mm, diameter 34mm. Sf 357 : 2785 : Phase 3a. (ID 869)

Recreation Equipment

Both of the bone counters found at Sanvey Gate (nos. 31-2) belong to the Greep (1986) Type 3 which is equivalent of Jewry Wall Type A (Kenyon 1948, 266). As can be seen from Table 37this is one of the commonest types found in Leicester. It came into use during the 2nd century and at Vine Street was the only type of bone counter to be found in a 4th century context (Vine Street Report Table 9). The context of no 3 would also support the fact that they continued in use to that date. This counter has a graffito on the reverse reading either IX or XI according to which way up it is read. RIB II.3 records five counters from Leicester with graffiti (nos. 2440.5. .16, .56, .142, and .240) and no additional ones have been recorded in the 'Roman Britain in …' listings published in *Britannia* since. Of the five published only 2440.240 from an unrecorded site has a number graffito, in that case a X. This is by far the commonest numerical graffiti found on bone counters whereas XI has seven occurrences and IX has only three (RIB II.3 p. 106 Table I).

Table 37 Roman counters from selected sites in Leicester

	Sanvey Gate	Vine Street	Causeway Lane	Shires	Jewry Wall	Total
Glass counters	-		1			1
Bone Greep 1	-	2	4		9	15
Bone Greep 2	2	5	2	*5	15	29
Bone Greep 3	-	4	7	5	14	30
Bone Greep 4	-	-		1	1	2
Re-used pottery	-	10	12	?	?	22
Total	2	21	26	11	39	99

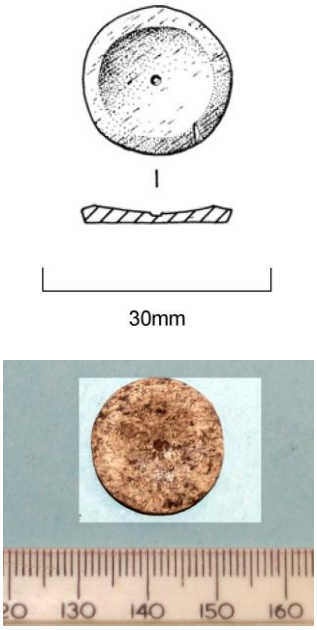


Figure 9 Bone counter (31). Greep Type 2.

31 Counter (Greep Type 2). Bone. Flat reverse, dished obverse with central dot; edge bevelled slightly. Reverse has graffito of IX or (XI). Diameter 20mm, thickness 3mm. Sf 226 : 2103 : Phase 4. (ID 813).

32 Counter (Greep Type 2). Bone. Flat reverse, dished obverse with central dot; edge bevelled slightly. Diameter 18.5mm, thickness 3mm. Sf 703 : 2989 : Phase 8. (ID 817).

Writing equipment

A fragment from the base of a circular seal box (no. 33) was recovered from an unstratified context. These were in use from the 1st to 3rd centuries and in the absence of the decorated lid it is not possible to date no. 33 more closely. Elsewhere in Leicester circular seal boxes have only been recorded at Redcross Street (three examples, A316.1962 cat nos. 50-52). Ones of other shapes have come from Jewry Wall (Kenyon 1948, 255 no. 10), Vine Street (one example) the Shires (forthcoming cat nos. 83-4) and St Nicholas Street (A653.1965 cat no. 49). No 34 has been identified as a residual stylus fragment as the non-ferrous inlay that can be seen on the X-radiograph. As only the stem is present this has to remain a possible rather than certain identification as medieval smiths inlaid iron to a much greater extent than Roman ones did, so the fragment might be contemporary with its context. The advent of X-radiography has meant that it is now possible to divide decorated styli into a number of different types (Major 2002) but with both the head and point absent from this example it is not possible to assign it to any of them. Decorated styli have also been found at Freeschool Lane and Vaughan Way at Leicester.

33 Seal box base. Copper alloy. Circular with central circular perforation and three circular smaller perforations around edge; two projecting hinge lugs and two notches at 90 degrees to hinge. Diameter 18mm, depth 4mm. Sf 153 : unstratified. (ID 872)

34 Stylus; fragment. Iron. Shank fragment. One end has non-ferrous inlay - probably two solid bands with cross-hatched band between. Present length 52mm, width 5mm. Sf 433; 2239; Phase 8. (ID 887).

Tools and knives

Inspection of the X-radiographs suggests that no. 35 might be a tool handle socket and no. 36 is a knife, probably of Manning (1985) Type 11. The whetstones (nos. 37-8) have not been the subject of expert geological analysis and so no suggestions of where they came from can be made.

35 Socket? Iron. Length 95mm, maximum width 31mm. Sf 351; 2403; Phase 3a. (ID 912).

36 Knife (?). Iron. Back of blade with broken tang continuing the line of the back of the blade. Present length 45mm, maximum width blade 21mm. Sf 672 : 1022 : Phase 3a. (ID 890).

37 Whetstone. Very fine-grained grey stone. Oval-sectioned rectangular bar with rounded ends; transverse grooves on both faces. Length 110mm, section 25.5 x 16mm. Sf 390 : 3195 : Phase 2c. (ID 825).

38 Whetstone. Pale grey, fine-grained stone with bedding lines visible. Rectangular-sectioned, rectangular bar with one end narrowed through wear. Length 61mm, maximum section 30 x 19mm. Sf 704 : 1921 : Phase 3a. (ID 823)

Fasteners and fittings

Two items connected with security were recovered: no. 39 is a fragment of an iron key with part of a fleur-de-lis key handle. These were relatively common and were in use from the later 2nd century onwards (Crummy 1983, 126 no. 4161). This example is unstratified but one with a similar handle came from a Phase 4 context at Vine Street. 'L'-shaped lift keys such as no. 40 have also been found at Vine Street but have not been identified elsewhere in Leicester. In the Highcross assemblages Vine Street was marked out as having an exceptionally high concern for security given the keys and lock fittings. Given that this site is adjacent to Vine Street, the relatively high incidence of such fittings here as well suggests that the same concerns stretched to here as well.

The assemblage includes the normal range of copper alloy studs, nails and rivets that are a feature of most urban Roman assemblages, but several are especially noteworthy. These include the peltate stud no. 45 from a Phase 3a context and one certain (no. 41) and one possible (no. 42) enamelled studs. The most interesting of these is no. 41 usefully stratified in a Phase 2a context. Enamelled studs are not uncommon 2nd century finds though none appear to have been recorded from Leicester previously. No. 41 is most unusual in not only having an elaborately enamelled face but also having enamelled cells set into the edge. Most enamelled studs have heads decorated with enamel in concentric fields divided by rings of metal, or have blocks of different coloured enamel placed immediately adjacent to each other. Sometimes both patterns are combined (see for example those from Caerleon – Fox 1940, 130 nos. 15, 17. Nash-Williams 1932. 83 nos. 16-9). This stud by contrast has been made in the champlevé technique where each colour has its own separate cell. This is a technique more commonly used on items such as military equipment, enamelled dress fasteners and some seal boxes and brooches (again see examples from Caerleon - Fox 1940, 128 nos. 10-11, 18. Nash-Williams 1932, 83 no. 14). Both the method of decoration and the fact that it has decoration on the sides set this piece apart from the common run of studs. The side decoration suggests it was not used like most other studs inserted flush against whatever they were decorating as the side decoration would not have been visible in that case. One possibility is that it may have functioned as a finial knob where the appearance of the sides would have been as important as that of the top. One possibility is that it came from the range of enamelled vessels of the late 1st to 2nd century which were decorated by the champlevé technique. A variety of forms of open and closed vessels were made and some of the latter certainly had lids which had terminal knobs. A small piriform flask from Catterick had a complex lid cast in one with an integral knob (Allason-Jones 2002), whilst a globular flask from a Flavian grave at Nijmegen had a hinged lid which was opened and shut by moving a bird-shaped knob which was inserted into the bolt that fastened it (Koster 1997, 82 no. 110). In neither case was the knob enamelled though the bodies of both vessels were. An increasingly large range of enamelled vessels is being uncovered and so it is not beyond the bounds of possibility that items such as no. 41 could have been a component part of one. The date of the context that no. 41 came from would allow such an identification.

Keys

39 Key; handle and shank fragment (Figure 10). Copper alloy handle, flat fleur-de-lis style openwork terminal, one side missing; circular-sectioned baluster-shaped base with central groove and collar above and below. Corroded iron shank of key. Present length of copper alloy handle 53mm, diameter of baluster moulding 14mm, extant length of iron shank 30mm. Sf 171 : unstratified. (ID 874).

40 'L'-shaped lift key. Iron. Ring handle, rectangular block and wards projecting to one side. Length 90mm. Sf 366 : 2902 : Phase 2c. (ID 906)

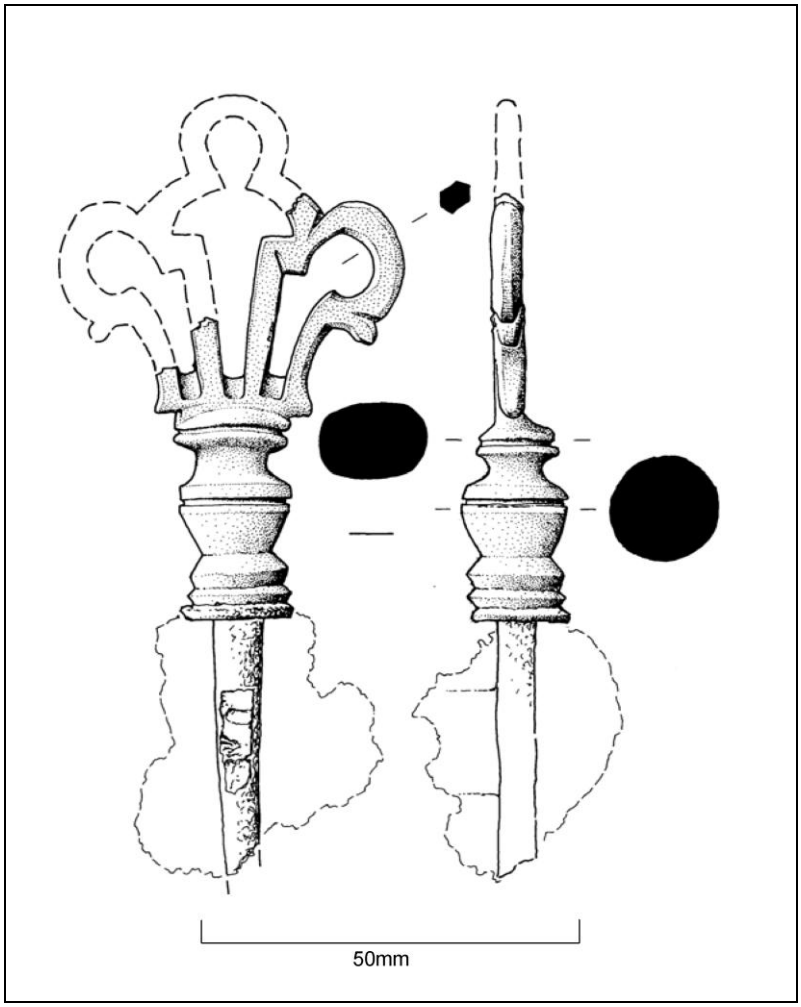


Figure 10 Copper alloy key-handle (39)

Studs and nails

41 Stud. Copper alloy. Thick disc head with enamelled cells on upper face and sides. Upper face - central square cell with triangular cell extending to circumference on each face so that eight cells form the outer ring, triangular cells infilled with enamel now appearing yellow, alternating with enamel that is now darker. Side of the head has eight rectangular cells probably alternating the same colours originally. Circular-sectioned shank with broken end. Present length 14mm, diameter of head 12mm, shank section 2.5mm. Sf 340 : 2667 : Phase 2a. (ID 852)

42 Stud. Copper alloy. Disc head with outwardly bevelled edges, raised ring and dot on upper face, possibly enamelled cells but surface obscured; square-sectioned tapering shank. Length 25mm, diameter of head 8.5mm, shank section 2.5mm. Sf 315 : 2358 : Phase 8. (ID 832).

43 Stud. Copper alloy. Spherical knob head; square-sectioned shank tapering to blunt tip. Length 24mm, head section 7mm, shank section 2.5mm. Sf 73 : 953 : Phase 3a. Sf 73 : 953 : Phase 3a. (ID 875)

44 Stud. Copper alloy. Head with dished centre, flange missing; broken shank. Present head diameter 10mm. Sf 66 : 927 : Phase 3a. (ID 864)

45 Stud. Copper alloy. Peltate head; broken integral circular-sectioned shank. Head dimensions 13 x 10mm, thickness of head 1.5mm, length of shank 6mm. SF 228 : 2070 : Phase 3b. (ID 830).

46 Nail. Copper alloy. Half flat disc head; square-sectioned broken shank. Present length 38mm, head diameter 12mm, shank section 3mm. Sf 372 : 2822 : Phase 3a. (ID 870)

47 Rivet. Copper alloy. Small hemispherical head; facetted shank tapering to point. Length 24mm, head diameter 4mm, shank section 3mm. Sf173; 1818; Phase 8. (ID 858)

48 Stud. Copper alloy. Shallow D-sectioned head; square-sectioned shank tapering to point. Length 25mm, head diameter 9 x 8mm, shank section 2.5mm. Sf 306 : unstratified. (ID 873).

Other

49 Split pin. Copper alloy. Sf 238 : 2140 : Phase 3a. (ID 909)

50 Split pin. Iron. Parallel legs, one broken. Present length 61mm, sf499 : 2334 : Phase 4. (ID 902).

51 Split pin. Iron. One arm bent sideways, other broken. Present length 60mm. Sf 420 : 2942 : Phase 4. (ID 888).

52 Chain loop. Iron. Oval. Dimensions 50 x 30mm. Sf606 : 2204 : Phase 3c. (ID 905)

53 Chain loop or oval ring. Iron. Diameter 44 x 33mm. Sf 617; 2284; Phase 3a. (ID 878).

54 Loop. Iron. Oval. Dimensions 46 x 25mm. Sf 617 : 2284 : Phase 4. (ID 879)

55 Washer. Copper alloy. Sf 261 : 2134 : Phase 4. (ID 908).

56 Fitting. Copper alloy. Sf 342 : 3674 : Phase 2a. (ID 910).

Medieval and post-medieval finds

Medieval and post-medieval material is relatively scarce in this assemblage. The most numerous item is the 'sewing pin' (nos. 57-63). These were used primarily for clothes fastening in the medieval period and the general shape has continued in use into modern times (for a general discussion see Egan and Pritchard 2002, 297-301). At the Highcross excavations it was clear that they started to appear in Leicester in the 13th century. The majority of those from Sanvey Gate were unstratified (nos. 59-63) but no 57 came from a Phase 8 context which would agree with the 13th century introduction. All of the examples from the site have been catalogued in this section though the unstratified ones could as easily be post-medieval whilst no. 63 with a solid head is likely to be of relatively modern date. Another clothes fastener of late medieval to post-medieval date is the unstratified tie ring no. 64. At the Austin Friars in Leicester one came from a late 14th-century context (Clay 1981, 137 no. 55), whilst one from Freeschool Lane came from a 16th to early 17th century one.

Most of the other functional categories are only represented by a single item. The broken needle no. 65 could be contemporary with its Phase 9 context but equally it could be a residual Roman piece. The unstratified broken tuning peg no. 66 belongs to Lawson's (1985) Type A which was suitable for an open-framed instrument such as a harps and simple fiddles like rebocs. They appear to have been introduced in the 13th century and continued in use into the 17th century. An example of the type came from an unphased context at Freeschool Lane and whilst eight, most apparently of Type A, were found from various contexts at the Shires (forthcoming cat. Nos. 148-55).

A most unusual item is the iron equal-armed balance no. 67. Such balances are a regular find in late Anglo-Saxon to post-Conquest assemblages but clearly continued in use into the late medieval period. The Phase 8 context of no. 67 would fit well with the pattern of use elsewhere as they are very common in the 10th to 12th centuries. What is unusual about no. 67 is that it is made of iron, whereas all the other examples known to me are of copper alloy. The latter material is better adapted for manufacturing such items, but the X radiograph image leaves little doubt that this is indeed part of a balance, possibly with non-ferrous (most probably copper alloy) suspension gear judged from the relative brightness of the suspension loop. Such balances, made in copper alloy, have been regularly found in Leicester. Ones with folding arms have been found at the Shires (forthcoming cat no. 96), Vine Street and Freeschool Lane, the last-mentioned preserving one of its pans. A damaged pan was also found at Vaughan Way, and at Jewry Wall there was a central suspension fork and pointer (misidentified as part of a chatelaine – Kenyon 1948, 257 no. 5).

Another item which has also been found on other sites is the tweezer-like implement with twisted shank no. 68. These are normally identified as tweezers but in discussing the one from Freeschool Lane I drew attention to the fact that the 'jaws' of the arms rarely turn in towards each other and so they would not have functioned well as tweezers. Here too the edges of no. 68 remain parallel and are not in-turned. I suggested that they might well have functioned as page holders (see for example Biddle and Hinton 1990, 756). As well as the example from Freeschool Lane from a Phase 9 context there were two from disturbed contexts at Jewry Wall (Kenyon 1948, 257 Type C, fig. 86 no. 3). The possibility exists that they might have been in use during the late Saxon period as two were found at Whitby (Peers and Radford 1943, 62 type III, fig.13 no. 11) though later material did come from those excavations. Unfortunately no. 68 came from an unstratified context and so cannot help refine the dating of the type.

The only candidate for being a tool is no. 69 from a Phase 10 context which could be either a smith's punch or a carpenters chisel. The only transport item is no 70, a bone skate from a Phase 8 context with the longitudinal striations on the underside that allow this identification to be made (MacGregor 1985, 141-4). They were in use from the 8th to the 13th centuries and examples have previously been identified amongst the finds from the Shires (forthcoming cat no.140) and Vine Street. A third may have been recovered from a grave at Vaughan Way, but the identification is less secure in that case.

Amongst the fastener and fittings category no. 73 is worthy of note, though it has not been possible to identify quite what it would have been in its unconserved state. Finally the unstratified strap loop no. 74 is very similar to loops that have been identified as fittings from archer's leather wrist guards (Egan and Pritchard 2002, 231 nos. 1250-53). In London they have been found in late 13th and 14th century contexts.

A toggle made from a modified phalange was found in a Phase 8 context (nos. 75). They have been placed here as there is no agreement as to what their function might have been, despite being a regular feature of late Saxon and medieval assemblages (see for example Oakley 1979, 313 and MacGregor *et al* mnklnkmn 1999, 1980-81 for references). Similar items were found on all of the Highcross sites and their distribution through time is shown in Table 38. As can be seen they seem commonest in the twelfth and thirteenth centuries at Leicester.

Table 38 Distribution of toggles by phase from the Highcross and Sanvey Gate sites

Phase	Sanvey Gate	Vine Street	Freeschool Lane	Vaughan Way	Total
7	-	-	2	-	2
8	1	3	-	-	4
9	-	-	2	-	2
10	-	-	1	-	1
Unstratified	-	-	-	1	1
Total	1	3	5	1	9

Personal equipment

57 Sewing pin. Copper alloy. Wound knob head. Length 16mm, head diameter 1.5mm, shank diameter 0.75mm. Sf 125 : 1128 : Phase 8. (ID 843)

58 Sewing pin. Copper alloy. Wound globular head. Length 23mm, head 1.5mm, shank section 0.5mm. Sf 13 : 18 : Phase 13. (ID 848)

59 Sewing pin. Copper alloy. Wound globular head; slightly bent shank. Length 34mm, head diameter 2mm, shank section 1mm. Sf 8 : 74 : Phase 13. (ID 847)

60 Sewing pin. Copper alloy. Wound globular head; slightly bent. Length 48mm, head diameter 3mm, shank section 0.5mm. Sf 135 : unstratified.

61 Sewing pin. Copper alloy. Wound head; bent shank. Length c. 30mm, head diameter 1.5mm, shank section 0.75mm. Sf 5 : unstratified.

62 Sewing pin. Copper alloy. Wound head, broken shank. Present length 15mm, head diameter 1.5mm, shank section 0.75mm. Sf 5; unstratified.

63 Sewing pin. Copper alloy. Solid head; bent shank. Original length c. 40mm, head section 3mm, shank section 1mm. Sf3; unstratified. (ID 859).

64 Tie ring. Copper wire. Ring with ends twisted together. Diameter 13.5m, wire section 1mm. Sf 4: unstratified. (ID 844).

Textile equipment

65 Needle. Copper alloy. Circular-sectioned shank flattening towards head and terminating in a point, small circular eye; lower end broken and now bent. Present length c. 80mm, shank section 2mm, eye diameter 1mm. Sf 55 : 583 : Phase 9. (ID 849).

Recreation

66 Tuning peg. Bone. Oval sectioned shank; head end broken off, straight lower end with transverse perforation narrowing to one side. Present length 38mm, shank section 8 x 5.5mm, maximum perforation diameter 2.5mm. Sf 50 : unstratified. (ID 816).

Weighing Equipment

67 Balance. Iron. Arm with one end missing, other has suspension loop; fork probably still in position. Present length 90mm. Sf220 : 1853 : Phase 8. (ID 883).

Writing Equipment

68 Page clasp (?). Copper alloy. Rectangular-sectioned strip expanding to either end; bent in half with upper part having a left-hand twist, the whole bent into an 'L'-shape but the ends show no signs of being inturned. Original length c. 55mm, width blade 4.5mm. Sf 141 : unstratified. (ID 835).

Tools

69 Chisel or punch. Iron. Bar tapering to both ends, one end narrower than other. Length 65mm, maximum width 13mm. Sf 701; 1129; Phase 10. (ID 891).

Transport Equipment

70 Skate. Metapodial bone; proximal end trimmed flat; very smooth facet on anterior surface showing longitudinal striations. Length 213mm. Sf 709 : 1335 : Phase 8. (ID 809).

Fasteners and fittings

71 Mount. Copper alloy. Rectangular plate with perforation in the middle of one short end, other end has four small projections producing a toothed effect. Dimensions 39 x 25mm, thickness 1mm, perforation diameter 3mm. Sf 191 : 1924 : Phase 8. (ID 871)

72 Rivetted sheet. Copper alloy. Rectangular sheet with repoussé rib across one short end, bent rivet through the other end. Dimensions 21 x 8mm. Sf 88 : 1049 : Phase 8. (ID 866).

73 Fitting. Iron. X-radiograph shows curved bar, one end of which curves down. A tanged second component has four arms, three of which curve over and appear to join the bar. Length c. 70mm, present width 30mm, tang section c. 9 x 5mm. Sf496 : 2496 : Phase 9.

Military and Hunting Equipment

74 Strap loop. Copper alloy. Five-sided arched frame; cross bar has perforation for rivet. Width 25mm, length 14mm, section 3 x 1.5mm. Sf 147 : unstratified.

Miscellaneous

75 Toggle. Bone phalange with perforation centrally; ends eroded and broken. Length 68mm. Sf 703 : 2989 : Phase 8. (ID 818).

Overview

Here is a brief summary of the key points of what the finds considered in this report are telling us about the occupation at Sanvey Gate is offered. It is structured according to the overall site phases and will consider both the material stratified from them and those items which must have been in use at a given time which are found residually or unstratified.

Phase 2a -b – the earliest Roman period

The brooches show a very strong mid 1st-century presence but curiously the types that would be characteristic of the later 1st century and into the 2nd century are virtually absent. This mid 1st century brooch assemblage is also unusual within the mid 1st century pattern of brooch use at Leicester. There is a possibility that this may reflect pre-Roman occupation, but against that both the Aucissa brooch (no. 3) and the Knickfibeln (no. 2) are more likely to be associated with the advent of the Roman military than to be pre-Roman imports. The unusual stud that has been tentatively identified as a terminal from the lid of an enamelled vessel came from a Phase 2a context. If the identification is correct, and it is a very hypothetical one, it may be of some interest to note that this was a class of item made within a military milieu as is shown by the moulds at Castleford (Bayley and Budd 1998) and Caerleon (Boon 1986). The date of these vessels would not normally be taken back as far as the *floruit* of the Aucissa brooch. The Castleford moulds come from a pit that must date to the early years of the 80s whereas Aucissa brooches go out of general use *c.* AD 65. The presence of an occasional one on sites in the area associated with the Flavian advance to the north, see for example one from Aldborough (Bishop 1996, 49 no. 304), hints that some did continue in use into the 70s, so the gap might not be as great as has been thought. Whilst a military or official presence at Sanvey Gate early in Phase 2 cannot be advanced with certainty on a handful of finds such as these, something a little uncommon within the context of Leicester must have been going on in the vicinity of the site at the time.

Phase 2c - 3 – the mid Roman period

Judged both by the numbers of items stratified in Phase 2c - 3 contexts and the typological dates of the items, the focus of small finds use on the site was in the later second 2nd and 3rd century. As at Vine Street, a widening of functional categories can be seen. The use of nailed shoes (nos. 22-3), the use of pins as a hair-dressing accessories (no. 13) and the use of spoons as part of table manners are all attested first in contexts of the late 2nd century (no. 28). There is also some valuable evidence about the wearing of necklaces with small bead necklaces (no. 21). Another link with Vine Street is the presence of an unusual and possibly imported furniture item (no. 29).

Phase 4 – the late Roman period

A much smaller number of recognisable items were found stratified in Phase 4 contexts and from a typological point of view only a small number of hair pins point to late Roman activity (nos. 14-16) all found in post Roman or unphased contexts. Typical late Roman artefacts such as bracelet fragments and small glass beads are either absent or only found unstratified. In this the assemblage is again much like that of Vine Street.

Phases 5 to 7 – Anglo-Saxon to Saxo-Norman period

The diminution of activity in the later Roman period of Phase 4 continues during this period. The only item stratified in a context belonging to these phases is a residual fragment of a Roman hair pin (no. 14), and no items that can be dated to them typologically were identified.

Phases 8 to 10 – Medieval period

The small amount of evidence from the small finds points to occupation of the same general sort as seen on other 12th- to 13th-century Highcross sites, but there is a noticeable absence of items connected with textile manufacture that occurred regularly on the other sites. There is also a noticeable absence of jewellery, dress and belt fittings apart from the few ‘sewing pins’ and a tie loop. In part this may be because the assemblages at Vine Street and Vaughan Way were biased because of the use of the sites in the later medieval periods at cemeteries where at least some of the dead were buried clothed. Equally though, given that many of the belt fittings on those sites were of thirteenth century or later, it may just be that the level of occupation in the vicinity was low from that period.

Abbreviations

RIB II.3 Collingwood, R. G. and Wright, R. P., The Roman Inscriptions of Britain Volume II Instrumentum Domesticum (personal belongings and the like). Fascicule 3, Frere, S. S. and Tomlin, R. S. O. (eds) (Stroud, 1991).

THE ROMAN COINS

John A Davies

Introduction

A total of 17 items from Sanvey Gate were inspected and studied for this report. Of these, 16 are Roman coins, and 1 is a post-Roman numismatic item.

The Roman Coins: summary of number of items recorded

	Roman Coins	Post-Roman items	Non-numismatic items
Sanvey Gate (A21.2003)	16	1	0

Despite the small number, there are similarities with other groups from the north-east quarter (Table 39, Table 40). This starts with 2 *aes* of Vespasian (AD 69-79). There is a strong later 4th-century coin loss represented, concentrating on the Constantinian period, after 330, and on the Valentinianic period (364-78). There is a single late issue of Period 16 (388-95). The broad trends in the coin deposition on each of the sites can be compared by summarising them in four chronological phases. The phases in question are A (to AD 260), B (260-296), C (296-330) and D (330-402). The results are shown in Table 39.

Table 39 The Roman Coins: chronological distribution for Sanvey Gate (A21.2003)

Period	Date	No.	%
1	To AD 41		
2a	41-54		
2b	54-69		
3	69-96	2	15.4
4	96-117		
5	117-138	1	7.7
6	138-161		
7a	161-180		
7b	180-193		
8	193-222		
9a	222-238		
9b	238-259		
10	260-275	1	7.7
11	275-296	1	7.7
12	296-317		
13a	317-330		
13b	330-348	4	30.8
14	348-364		
15a	364-378	3	23.1
15b	378-388		
16	388-402	1	7.7
Total		13	

Period	Date	No.	%
3C-4C		3	
Post-Roman		1	
Total items		17	

Table 40 The Roman Coins: coin deposition as summarised by chronological phase

Phase	A21.2003	A2.2003	A5.2006	A8.2005	A22/A24.2003
Closely identifiable	15	31	6	64	195
	%	%	%	%	%
Phase A: Before AD 260	20.0	25.8	0	9.4	16.4
Phase B: 260-296	13.3	19.4	33.3	9.4	20.0
Phase C: 296-330	0	3.2	0	3.1	5.1
Phase D: 330-402	66.7	51.6	66.7	78.1	58.5

The Sanvey Gate coins in context

The five groups of coins from the Leicester Highcross and Sanvey Gate sites comprise a substantial assemblage of 364 Roman coins. These can be added to the growing body of excavated coinage from the Roman town. Other substantial coin assemblages have come from Jewry Wall, with 762 (Pearce 1948) and The Shires, with 155.

Some common features can be seen across all five sites under consideration. Early Claudian coins are present at Vine Street (A22/24.2003) in common with both Jewry Wall and The Shires. A summary of the early coins of the Augustan coinage system, which lasted until AD 260, is presented in Table 41. *Asses* are shown to be the main early denomination deposited across the sites.

A strong late-3rd century presence is also observed across the sites. These coins include a high number of the irregular types, known as 'barbarous radiates'. There are also several British Empire radiates of Carausius and Allectus on Freeschool Lane (A8 2005), Vaughan Way (A2 2003) and Vine Street.

The generally strong later 4th-century coin presence is strongest on the Freeschool Lane site. Notable across the sites is the presence of a high number of 'falling horseman' irregular issues of the years 354-64. The Valentinianic coinage of the period 364-78 is also strongly represented. Coin loss continues strongly right through to the end of the 4th century on all of the sites. A breakdown of the identifiable mints represented within the late Roman coinage has been shown in

Table 41 The Roman Coins: denominations of coins of the Augustan system present across Leicester Highcross and Sanvey Gate sites (combined)

Issue	Den	Sest	Dup	As	Dup/as
1	0	0	0	0	0
2a	0	0	1	0	0
2b	1	0	1	7	0
3	1	2	3	6	0
4	2	2	3	4	0
5	0	2	0	5	0
6	3	0	0	0	2

7a	2	1	0	0	0
7b	0	0	0	0	0
8	1	0	0	0	0
Total	10	7	8	22	2

Table 42 The Roman Coins: sources of 4th-century coin found on Leicester Highcross and Sanvey Gate sites (Note: percentages are of identifiable mints, not of all coins)

Mint	294-317		317-330		330-348		348-364		364-378		378-388		388-402	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
London	2	40.0	0	0	0	0	0	0	0	0	0	0	0	0
Lyons	0	0	0	0	4	7.4	3	37.5	4	5.6	0	0	0	0
Trier	1	20.0	6	66.7	22	40.7	2	25.0	1	1.4	0	0	2	12.5
Arles	0	0	1	11.1	3	5.6	1	12.5	25	34.7	2	40.1	1	6.3
Rome	0	0	0	0	1	1.9	0	0	0	0	0	0	0	0
Ticinum	0	0	1	11.1	0	0	0	0	0	0	0	0	0	0
Aquileia	0	0	0	0	0	0	0	0	4	5.6	0	0	1	6.3
Siscia	0	0	0	0	1	1.9	0	0	2	2.8	0	0	0	0
Thessalonica	0	0	0	0	1	1.9	0	0	0	0	0	0	0	0
Uncertain	2	40.0	1	11.1	22	40.7	2	25.0	36	50.0	3	60.0	12	75.0
Total	5		9		54		8		72		5		16	
Irregular					11		27							

Table 43 Coin Catalogue

SF	Phase	Cont	Emp/Type	Obv.	Rev.	Coin Date	Size	Mint	Denom
57	U/S		Heavily corroded			3rd-4th century			AE3
80	3c	984	Tetricus II		Rev. PIETAS ---; sacrificial implements	AD 270-4			Radiate
89	U/S		Post-Roman - 17th century trade token	Obv. IANE PALLMER	Rev. IN LECESITER; IP	AD 1648-72			
124	10	1104	Helena. In Med context		Rev. PAX PVBLICA	AD 337-40		Trier	Follis
156	U/S		Tetricus I - Barbarous radiate		Rev. HILARITAS AVGG	AD 270-84	21mm x 17mm		Radiate
160	13	1798	Vespasian. In Mod context		Rev. FORTVNAE REDVCI; SC	AD 69-79			As
162	8	1807	HoC Irregular. In Med context		Rev, FEL TEMP REPARATIO; falling horseman	AD 354-64	12mm		
168	5	1819	House of Valentinian. In A/S context		Rev. SECVRITAS REIPVBLICAE	AD 364-78			AE3
169	8	1800	CONSTANTINOPOLIS Irregular. In Med context		Rev. Victory on prow	AD 341-6	17mm		Follis
170	7	1957	CONSTANTINOPOLIS. In S/N context		Rev. Victory on prow	AD 330-5		Trier	Follis
210	8	1988	Constantine I. In Med context		Rev. GLORIA EXERCITVS; 2 st.	AD 330-5		Trier	Follis

296	4	2134	Incomplete and illeg. copper alloy coin fragment.			3rd-4th century			
317	U/S		Hadrian		Rev. Illeg. Female figure seated left.	AD 117-38			As
324	9	2462	Illeg.. In Med context		Rev. VICTORIA AVGGG	AD 388-95			AE4
325	3a	2533	Vespasian. Residual in 2C context		Rev. Illeg. Worn smooth	AD 69-79			Sesterti us
386	U/S		Valens		Rev. SECVRITAS REIPVBLICAE	AD 364-78			AE3
399	3b	3025	Illeg. and corroded			3rd-4th century			AE3

THE WATERLOGGED LEATHER

Nicholas J. Cooper

Introduction

Five fragments of leather were covered from waterlogged deposits (1497) and (1572), of probable Phase 8 (12th-13th century) or later date.

Catalogue

SF 140 (1497) [1496] Trench 20
Narrow strip of thin leather punctuated with stitching holes and oblique thread impressions pulling in the edge of the strip to form a scalloped outline in the manner of a binding stitch. Binding seams are used to join two pieces of leather edge to edge and were generally used in medieval cobbling for small inserts such as tongues in the preparation of shoe uppers (Grew and de Neergaard 1988, 50, fig. 80). Length 46mm, width 11mm.

SF 143 (1572) [1562] Trench 20
Four irregular fragments of leather, of the right thickness for shoe soles, but with no evidence for the stitching of edges. The largest piece has two concave edges adjacent to each other, suggesting that two shoe soles have been cut from it. The other large fragment has worn edges suggesting a shoe sole but with no stitching evidence. It has a straight edge at 90 degrees to the worn edges which may indicate that it was a clump sole repair piece added to the heel or seat of the sole and that it became detached and evidence for stitching was lost (Allin 1981, 21). Length of largest fragment 105mm. Thickness up to 3mm.

Discussion

The group does present some tenuous evidence for cobbling in the form of working off cuts and possible gathering of scraps for re-use or repair. None of the pieces is diagnostic enough to allow close dating within the medieval period, but it is clear from earlier research that cobbling was an important craft in Leicester between AD 1200 and 1500 (Allin 1981).

THE WATERLOGGED WOOD AND WORKED TIMBERS

Jennie Barrett, Wayne Jarvis, Graham Morgan with drawings by Jennie Barrett

Six waterlogged wood items were recovered from the town ditch fills. Except for (1738), the contexts from where these items came contained material indicative that these finds could be of a residual nature. In fact it is likely that all the material is Roman in origin as any dateable material in these contexts was of this age. The items consist of two pieces of waterlogged wood (SAM33, SAM49), and four further fragments at least two of which were worked timber (SF137, SF149). Many of the samples appear to be very fast grown, with wide rings, probably indicating managed woodland.

The two worked artefacts both represent pieces of longer planks with neither having worked ends surviving, and they were both radially cleft or faced split trunks (Allen 1994). They are presumably from a structure of Roman date. SF137 was of fast grown oak with 27 rings surviving, and measuring 1.02m long, 0.09m wide and by 0.03m thick. Although badly damaged and decayed, toolmarks could be identified indicating an axe or adze with a minimum blade width of 40mm, and a chisel (*c.*20mm width). SF149 was similar, also of oak with 17 rings surviving. This was a shorter fragment, measuring 0.47m long, and 0.07m wide and thick. Chisel marks from a tool *c.*20mm wide were visible with a tool signature surviving. SF131 was very badly decayed but being tapered was probably originally a stake or post. It

was also of oak, with 12 rings surviving. It is very likely that further waterlogged timbers (and potentially other organic artefacts) will survive in other stretches of the town ditches. The worked fragments were analysed and drawn by Jennie Barrett. The wood identification was provided by Graham Morgan.

Ref	Cont	Cut	Dia	Rings	Age	Species
SAM33	1434	1444	70	18	18	Ash, Med context
SAM49	1738	1737	35	5	7	Blackthorn, poss RB
SF131	1396	1502	160+	12	30+	oak - ?shaped post/stake, Saxo/N.?
SF137	1413	1473	180	27	30	oak – fast grown, Med context
SF138	1447	1473	100	19	19	maple – fast grown, possible plank fragment, Med context
SF149	1434	1444	140	17	17	oak – fast grown, Med context

The species list is as follows.

Species present

Oak	*Quercus* spp.
Ash	Fraxinus excelsior
Blackthorn	Prunus spinosa
Field Maple	Acer campestre

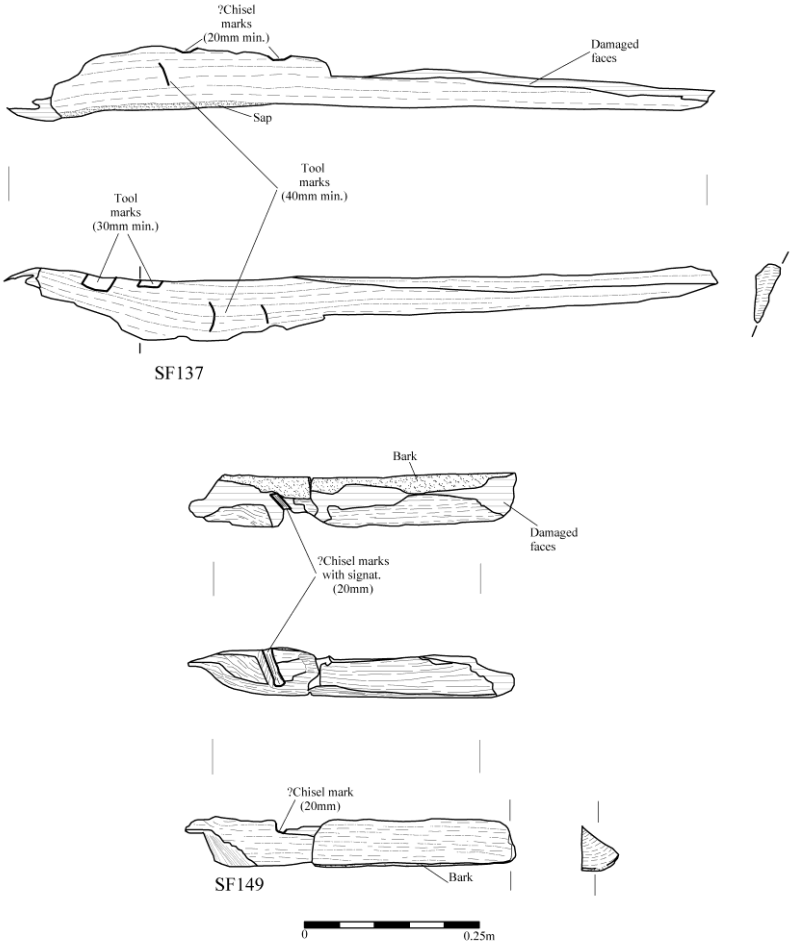


Figure 11 The worked timbers from the town ditches, SF137 and SF149

THE LITHICS

Lynden Cooper

Some 36 worked flints were recovered from the site, all (presumably) residual in later deposits. The raw material was semi-translucent flint typical of that derived from local till deposits. There were six tools with the remainder as debitage. The material was predominantly of a flake technology and would best fit within a time frame of Neolithic – Early Bronze Age. There was a single true bladelet that is likely to be of Mesolithic date. This utilised a honey coloured flint, a preferential raw material often used in the local Mesolithic.

Table 44 The residual flint finds

Context	SF	Description
u/s	307	Core
u/s	308	Flake
u/s		Core rejuvenation flake
u/s tr14		Flake
u/s tr13		Core
164		Thumbnail scraper (non-fancy)
608		Core
879		3 x flakes (frags)
1086		Flake
1226		Flake
1226		Chip
1369		Burnt flake frag
1674		Bladelet
1925		Flake
1962		Flake
1990		Flake
2034		Flake
2054		Bladelet (non true)
2065		Retouched flake (possibly core on a flake)
2126	232	Scraper
2126	233	Scraper
2437		2 x flakes
2844		Flake
2931		Flake
3032		Retouched natural piece
3101	739	Utilised flake (frag)
3195		Blade
3196	396	Flake
3196		Flake
3233	394	Blade

THE ROMAN CERAMIC BUILDING MATERIAL

Nicholas J. Cooper and Terri Davies

Roman Ceramic Building Material Assessment by Nicholas J. Cooper and Terri Davies

A total of 1741 fragments of Roman tile weighing 193 kg were recorded for the assessment stage, representing approximately half of the total recovered from the excavations. Tile has been recorded by form and quantified by numbers of fragments and weight. The tabulated Figures are expressed as a percentage proportion of the weight of the classified tile. Unclassified tile made up only 9% of the total by weight. No fabric analysis has been undertaken as all of the tile, with the exception of a few pieces in shell-tempered fabric, occur in the range of sandy orange fabrics typically found across the town.

Table 45 Tile Summary by Form

Form	Frags	Weight	% Weight	%Wt-uncl	Av.Frag.Wt
Tegula	475	90300		51	190
Imbrex	280	34656		20	124
Wall	170	44879		26	264
Boxflue	36	5885		3	163
Subtotal	961	175720		100	183
Unclass	780	17096	9		22
Total	1741	192816			111

Less than 3% of the assemblage was unstratified. Some 193 fragments weighing 39kg (average fragment weight 205g) and deriving from nine context groups are recognised as coming from important demolition deposits across the site, which may relate to specific buildings. The average fragment weight for the classified material is relatively high (183g) and typical for sites across the city but noticeably lower than that for Vine Street (343g for Area 2) where there were a number of large discrete dumps.

In the assessment, it was considered that the potential for further analysis was low, in view of the overall condition of the assemblage in comparison to other groups currently coming up from the Roman town and the small quantities within the destruction deposits. For this reason, no additional research was undertaken on the ceramic building material during trghe analysis stage.

THE ROMAN MASONRY

Niccolò Mugnai with drawings by Tony Gnanaratnam

Architectural fragment - SF 133, (1522), [1502]

This stone fragment was recovered from the town ditches during machining of the stepped section (Trench 20). The find was 3D located by EDM (as were all the initial finds from the town ditches), and can be associated with deposit (1522), an upper fill of the outer town ditch [1502] and of medieval, probably 12th-century date. This context contained a concentration of redeposited rubble, presumably from the demolition of stone buildings of Roman date, although this fragment is unique in being the only worked stone recovered amongst a massive dump of granodiorite rubble.

Type of decoration: cornice, corner block (Ginouvès and Martin 1992, 119-26).

Description: horizontal mouldings on the frontal and right-hand side: lower fillet; cavetto and *cyma recta*, both marked by a fillet at the top; upper protruding string course (Ginouvès and Martin 1992, 152-64). The lower and upper surfaces are plain; a depression can be seen on the lower surface. Four likely cramp holes (35 to 45 mm deep) on the upper surface (Ginouvès and Martin 1992, 108). Longitudinal signs of mason's pick are visible on the upper surface and on the rear side. Other similar traces (5-6 mm deep) are on the left-hand side, together with apparent marks of axe (30 mm wide and up to 8 mm deep: Blagg 1976, 156-8). Smaller signs, maybe of adze or flat chisel, can be observed on the whole lower surface (Blagg 2002, 9-13, fig. 1C, J).

Material: millstone grit.

State of preservation: advanced level of deterioration. Fragmented along the lower portion of the right-hand side, and at the top and corners of the frontal side.

Measures: maximum width: 650 mm; total height: 280 mm; lower fillet height: 20 mm; quarter-round height: 75 mm; *cyma recta* height: 45 mm; fillets height: 15 - 30 mm; upper band height: 90 mm.

Figure 12 Moulded cornice, SF133.

Figure 13 Moulded cornice, SF133 cont'd.

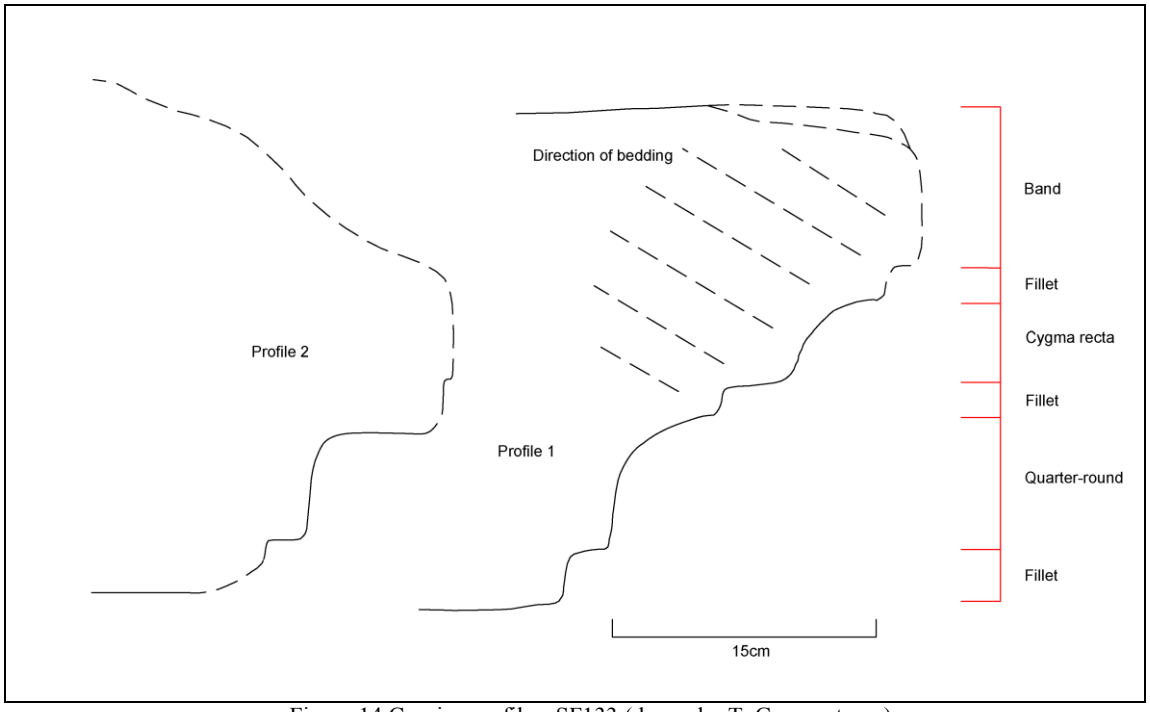


Figure 14 Cornice profiles, SF133 (drawn by T. Gnanaratnam).

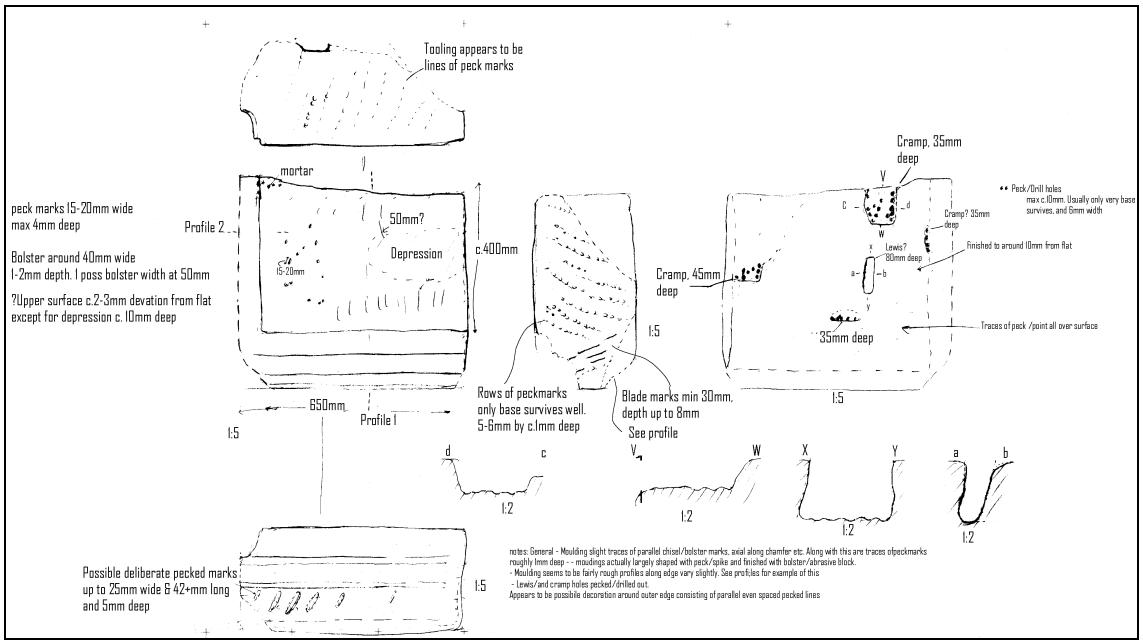


Figure 15 Annoted sketch of moulded cornice, SF133 (by T. Gnanaratnam).

CONSOLIDATING AND DISPLAYING THE TOWN WALL

Andrew Hyam and Wayne Jarvis

During the course of the excavations, a large section of the Roman town wall was discovered (context (1285), see vol.1, Phases 3 and 8). Although not in its original position, this exposed section represents a rare example of surviving town wall masonry and the only instance so far in Leicester with evidence for the Roman facing stones. The wall had toppled forwards to the north of its foundations and large quantities of stone had been robbed for use elsewhere probably during the medieval and later periods. The robbing of stone from earlier Roman buildings followed a long tradition in most British towns and many of our churches and more important buildings can trace their building materials to earlier structures. Documentary evidence shows that the Freeschool in Leicester used reclaimed stone in the 17th century

from Saint Peter's church which in all likelihood used stone from earlier Roman buildings nearby (Gnanaratnam 2009).

Figure 16 The displaced town wall fragment, lying on its face

The robbing and undermining of the town wall had caused it to fall forwards and settle at an angle with the original northern face down on the ground which helped it survive. It also appears that it had been used in this toppled position as a property boundary between the back gardens of properties on Sanvey Gate and Olive Hill., a factor which further helped its survival. The importance of this last remaining piece of town wall was quickly recognised and it was decided that it should be preserved for future generations if at all possible, and this work was carried out with the assistance of Thomas Fish. The level of the garden area location of new buildings within the Leicester Square Development meant that the wall could not be left in-situ, but a space would be created within the site to display it to the residents of Leicester.

In the early 18th century, the antiquarian William Stukeley visited Leicester and noted the state of the Roman town walls and the high quality of the mortar that bonded the stones together (Stukeley 1724). His comments indicate that even relatively recently there was still a significant proportion of Leicester's town defences still standing. Although a length of over four metres of wall was exposed during the excavations, much of it was in an extremely fragile state where the lime mortar had cracked and degraded over time. Much of it also was a thin 'strip' of as little as one course. Unfortunately urban expansion, neglect, exposure to weather, robbing and burial under a mill has taken its toll and only a metre length of the wall could be rescued.

Before any move could take place, the wall was fully recorded in the position that it had been found. This is standard archaeological practice, but in the unfortunate event of the wall breaking during the move to its new location steps had to be taken to ensure that as much information had been recorded beforehand. After recording, the loose fragments of wall were removed and the remaining piece was tilted back to its original angle so that the dressed face could be seen and recorded. This entailed strapping and supporting so that the large and heavy block of masonry could be moved in a safe and controlled way.

Figure 17 The town wall fragment selected for consolidation and display

Before the move to its display site each stone was individually labelled and recorded, again just in case of breakage. Along with strategic padding the entire wall was tightly bound in shrink wrap and carefully placed on a rigid foam base attached to a pallet in order to provide support across the whole of structure.

Figure 18 Lifting the town wall fragment

A small display area on the corner of Burgess Street and Junior Street was provided by Thomas Fish so that both the residents of Leicester Square and the general public can easily view the town wall in its new setting. After the wall fragment had been secured on its pallet, it was carefully lifted and taken to its new location. A temporary cradle was built ready to accept the wall, then more masonry and concrete were

built up around and beneath it to provide long term support. A geotextile membrane was placed between the base of the wall and the masonry cradle so that the two are separable, in the event that the wall has to be moved again in the future.

Figure 19 Consolidating the town wall fragment

Once in position and fully supported the town wall was repointed and weatherproofed with lime mortar. Samples of the original mortar had been analysed by experts at the University of Leicester and as close a match as possible was produced. In places the Roman mortar can still be seen and, although still firm and perfectly serviceable, was initially noticeably darker than the new mortar. This is to be expected after nearly two thousand years of exposure then burial, but as the new mortar weathers it is gradually weathering to a similar colour.

The fragment has provided much new information about the construction of the town wall. Up to five courses of masonry still survived. The construction used roughly squared granite blocks bonded with a hard yellow lime mortar with the flatter faces of each stone selected for the facing, and the longer dimensions (up to 60cm) of each stone deliberately laid into the wall for additional strength. On the wall-face, the stonework stood proud of the mortar perhaps as a result of weathering – certainly there was no evidence of rendering,. However, trowel pointed mortar lines have been recorded in other town wall faces (Wacher 1995). No evidence for tile courses was evident, although this does not rule out their use. At both Colchester (Crummy 2003) and in at least two other Leicester buildings (the Jewry Wall; and the *macellum,* Coward and Speed 2009) the build alternated between up to *five* courses of stone and then several of tile. It is quite possible this wall fragment was robbed as far as a tile-line then left leaving a final section of the solid mortared granite behind (again, with *five* courses).

Figure 20 The town wall fragment now on display

A small display board has been erected in front of the town wall showing its location within the northern line of Leicester's defences along with other highlights of the excavation within the Sanvey Gate Leicester Square Development.

THE SLATE

Tony Gnanaratnam

Introduction

The presence of complete roofing slates is a strong indication of the type of roof on the original demolished buildings, which may have stood in the vicinity. The results below are based on the assessment by Tony Gnanaratnam, and no further detailed analysis has been carried out.

Quantity of Material

A total of 17.956kg of slate was recovered from the excavations. Generally only fragments with holes or which had clearly been shaped were retained, although a number of undiagnostic pieces were also retained. Of these 17.929kg was recovered from stratified contexts and 27g from unstratified contexts.

Provenance and Dating

Swithland Slate roofing slates were recovered from 40 stratified, and 1 unstratified, contexts. Of the identifiable fragments retained, all are Roman except for 2 slates from contexts (1138) and (1099) which may be medieval in date.

Range and Variety

The occurrence of the slate is quantified below. 51 slates were complete enough to allow measurement of length from nail-hole to base. Of these 49 complete or near-complete slates were recovered of Roman date. Whilst there were single occurrences of near-complete slates in a number of contexts, 29 came from 6 Roman demolition deposits. The material is all of local Charnwood slate, probably from Swithland.

Table 46 Slate results, weight, no. of slates, details

Context	Wt (kg)	No of Slates	Demolition	Date
984	2.908	4	D	Roman
1003	.811	2		Roman
1008	5.030	9	D	Roman
1019	5.400	3	D	Roman
1021	10.666	8	D	Roman
1022	3.469	4	D	Roman
1023	.430	2	D	Roman
1027	3.690	3		Roman
1099		1		Medieval
1138	.858	1		Medieval
1804	.477	1		Roman
1818	5.079	4		Roman
1850	2.927	1		Roman
1894	.140	1		Roman
1920	2.025	2		Roman
1990	1.880	1		Roman
2091	5.169	4		Roman
Total	18.555	51		

THE PLASTER AND TUFA, INCLUDING ROMAN PAINTED WALL PLASTER

Heidi Addison

Quantity of material

The equivalent of 11 boxes of painted wall plaster and mortar fragments together with large fragments of tufa (vesicular limestone) were recovered from the site. In addition seven fragments of very fine plaster or stucco moulding fragments, of medieval or later date, were also recovered.

Provenance

A total of 834 painted wall plaster fragments was recorded from 48 contexts from Stage 1 and 86 contexts from Stage 2. Wall plaster and mortar has been recorded from 16 of the significant demolition deposits identified from Stage 1 and one from Stage 2. Of these groups, (3026) containing 67 fragments (25% of the material from Stage 2) was the most significant.

A total of 77 (occasionally large) fragments of Tufa, a lightweight vesicular limestone used for insulation in the vaulted ceilings of Roman buildings, particularly bath houses, was also recovered from 15 contexts in the main area. Seventy percent of the tufa was collected from post-holes within a post-Roman context (2065), which possibly represents its reuse as post-hole packing of Saxon date. All the tufa concentrates in the centre of the main area and is probably associated with either of the two Roman masonry buildings. The occurrence of the tufa is potentially significant in assessing the likely function and status of buildings on the site.

Seven fragments of very fine plaster or stucco architectural mouldings came from (1129).

Condition and dating of the Painted Wall Plaster

Much of the Roman material is very fragmentary and has suffered abrasion to the painted surfaces, indicating a high degree of disturbance and / or exposure. The Roman assemblage is dominated by cream coloured painted wall plaster (359 fragments from 27 contexts) across the two stages of work. While a few fragments showed remains of figurative paintwork and possible borders, none was identified to any individual schematic group. One fragment preserved a roller impressed chevron pattern on the reverse, indicating either the keying of clay walls before plastering or the application of a key between layers of plaster. Such a teqchnique is now relatively well known in Leicester, having been recorded at Vine Street and the Norfolk Street Roman villa (R. Buckley pers.comm.).

Close dating of the plaster assemblage from this site is problematic, and it therefore lies within the broad date range of 2nd to 4th century. Unfortunately the fragmentary condition of the Roman wall plaster limits any potential for the reconstruction of decorative schemes.

THE HUMAN REMAINS

Harriet Jacklin

Introduction

Just south of the line of the defences, was an east-west aligned inhumation burial assigned to phase 9. It lay within a 1.7m long by 0.51m wide grave cut, unusually with its head at the east end. There was no evidence for a coffin, and the close spacing of the limbs indicates that the body was probably buried in a shroud, perhaps explaining this uncommon positioning. The left arm crossed over the body towards the right wrist, with the right arm being alongside the torso. The legs were crossed at the ankles, with the left foot lying over the right foot.

The age, sex, dentition, dental health, cranial metrics and cranial morphology, post cranial metrics and non metric traits and stature have been assessed and recorded where possible, using a standardised recording form created by Jacklin (2005a) in line with Brickley and McKinley (2004). Pathological analysis on the skeletons has also been undertaken. The data has been entered in the ULAS Skeletal Database.

Age

For a reliable estimate of age a number of different age indicators have been assessed. These are: dental eruption, epiphyseal fusion, long bone length, auricular surface and rib end morphology. Age related pathology and skeletal completeness has also been considered. The varying reliability of these methods has been taken into account.

Sex

For a reliable estimate of sex a number of different age indicators have been assessed. These are: Pelvis (sciatic notch, ventral arc, ischiopubic ramus, subpubic concavity, preauricular sulcus)**,** Skull (supra-orbital ridge, nuchal crest, mastoid process, mental eminence), femoral and humeral head measurements, size of clavicle and of sacrum. Overall size and morphology has also been considered. The varying reliability of these methods has been taken into account.

SK1782

Figure 21 Inhumation SK1782

Bone Preservation: Fair

Completeness: 75 - 100%.

Age at Death: 25 to 29 Years Old.

Age Group: Young Adult.

Sex: Male

Stature: 173-179 centimetres

Dental Health: Not applicable

Pathological Analysis

Schmorls Nodes

Pathological analysis of SK1782 has revealed the presence of two small schmorls nodes affecting the inferior surface of two thoracic vertebrae (T6 and T11).

Schmorls nodes are depressions affecting the spine and are a result of herniation of the intervertebral disc due to excessive stress.

Vertebral Lesions (Possible Acute Destructive Osteomyelitis)

Pathological analysis has also revealed a destructive lesion affecting the superior surface of the sacrum (S1) and the adjacent lumbar vertebrae (L5 inferior surface).

Differential diagnoses of other similar conditions have been considered. These include: Tuberculosis (TB), scheuermanns disease, actinomylosis, brucellosis and histoplasmosis. TB has been seriously considered as the lesions are similar to those involved in TB, but in TB the sacral spine is rarely involved. Given the location and type of lesion (with a lytic focus), acute destructive osteomyelitis is the most probable cause.

Osteomyelitis is caused by a bacterial infection entering the bone and can occur anywhere on the skeleton. Its cause can be a result of direct infection by trauma/injury or through soft tissue infection.

The entry point (cloacae/ lytic foci) for the infection is located between L5 and S1 anteriorly. After which the infection extends posteriorly, destructing the surface of S1 in the process. The initial entry point is healed but the lesion affecting S1's superior surface is still active indicating that the infection was present at the time of death.

Figure 22 Sacrum (S1) Destructive Lesion: Superior View

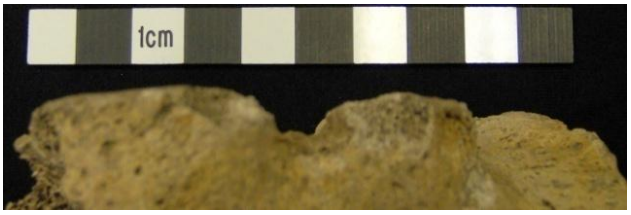


Figure 23 Sacrum (S1) Destructive Lesion: Anterior View

No other pathological signs of ill health are present on the surviving skeletal material; there is no evidence of metabolic or endocrine disorders and no congenital/ developmental variants.

Post Cranial Metrics and Non Metric Traits

Table 47 Post Cranial Metrics

Code 1	Code 2	Measurements (mm)	
		Left	Right
FeL1	60	483	-
FeD1	64	27.18	-
FeD2	65	38.09	-
FeD3	66	29.08	-
FeD4	67	29.01	-
FeE1	62	84.23	-
Til1	69	384	384
TiD1	72	36.94	34.70
TiD2	73	28.0	27.0
T1E1	70	76.25	77.61
HUL1	40	-	-
	43	-	-
	44	-	-
HUE1	41	65.92	66.59
RaL1	45	258*	259*
UiL1	48	-	-
FiL1	75	374*	-

1 = Brothwell 1981 / 2 = Buikstra & Ubelaker 1994

Table 48 Post Cranial Index

Index	Left	Result (L)	Right	Result (R)
Platymeria	71.35	Platymeric	-	-
Platycnemia	75.79	Eurycnemic	77.80	Eurycnemic
Robusticity	68.96	68.96	-	-

Table 49 Post Cranial non metric traits

Trait (Present or Absent)	Left	Right	Other
Femoral plaque	A	A	
Distal septal aperture	A	A	
Suprasacapular foramen	-	A	
Vastus notch	-	-	
Trait (Single or Double)			
Superior atlas facets	-	-	
Trait (Partial or Complete)			

Posterior atlas bridge	-	-	
Trait (Medial or Lateral)			
Tibial squatting facets	L	L	
Trait (Partial or Complete)			
Accessory transverse foramina: 7th cervical vertebrae	-	-	

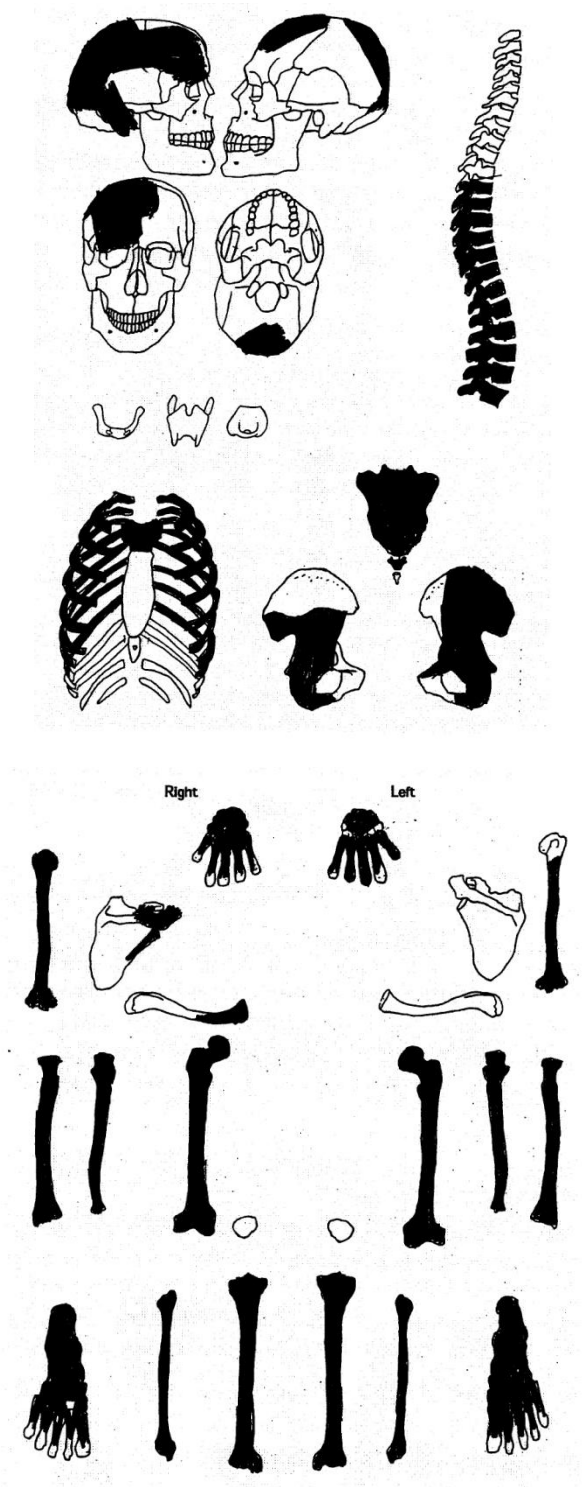


Figure 24 Skeletal inventory SK1782

Diagrams reproduced with thanks to 'Guidelines to the Standards for Recording Human Remains' IFA Paper No. 7 and 'Standards for Data Collection from Human Remains' Buikstra & Ubelaker 1994

Skeletal Inventory SK 1782

Bone	Right	Left	Bone	
Parietal	✓*	✓*	Frontal	✓*
Temporal	✓	-	Occipital	✓*
Maxilla	-	-	Sphenoid	-
Nasal	-	-	Vomer	-
Zygomatic	-	-	Ethmoid	-
Lacrimal	-	-	Hyoid	-
Palatine	-	-	Cricoid	-
Mandible	-	-	Thyroid	-
Orbit	-	✓		

Ribs	Right	Left	Unsided
Complete	1	-	
Incomplete	12*	12*	15*

Vertebrae	Centrum	Neural Arch	Vertebrae	Centrum	Neural Arch
C1	-	-	T6	✓	✓
C2	-	-	T7	✓	✓
C3	-	-	T8	✓	✓
C4	-	-	T9	✓	✓
C5	-	-	T10	✓	✓
C6	-	-	T11	✓	✓
C7	-	-	T12	✓	✓
T1	-	-	L1	✓	✓
T2	-	-	L2	✓	✓
T3	-	-	L3	✓	✓
T4	-	-	L4	✓	✓
T5	-	-	L5	✓	✓

Unidentified Vertebrae*	
Centrum	Neural Arch
	3 Thoracic

Bone (Left)	Prox. J.S	P 1/3	M 1/3	D 1/3	Dist. J.S
Humerus	-	✓	✓	✓	✓
Radius	✓	✓	✓	✓	✓

Ulna	✓	✓	✓	✓	✓
Femur	✓	✓	✓	✓	✓
Tibia	✓	✓	✓	✓	✓
Fibula	✓	✓	✓	✓	✓
Clavicle	-	-	-	-	-
Bone (Right)	Prox. J.S	P 1/3	M 1/3	D 1/3	Dist. J.S
Humerus	✓	✓	✓	✓	✓
Radius	✓	✓	✓	✓	✓
Ulna	✓	✓	✓	✓	✓
Femur	✓	✓	✓	✓	✓
Tibia	✓	✓	✓	✓	✓
Fibula	✓	✓	✓	✓	✓
Clavicle	✓	✓	-	-	-

Bone (Left)	<25%	25-50%	50-75%	75-100%
Ilium	-	-	✓	-
Ishium	-	-	✓	-
Pubis	-	-	-	-
Scapula	-	-	-	-
Patella	-	-	-	-
Bone (Right)	<25%	25-50%	50-75%	75-100%
Ilium	-	-	-	✓
Ishium	-	-	-	✓
Pubis	-	-	-	-
Scapula	-	✓	-	-
Patella	-	-	-	-
Bone	<25%	25-50%	50-75%	75-100%
Manubrium	-	-	-	-
Sternum	-	-	-	-
Ziphoid Process	-	-	-	-
Sacrum	-	-	-	✓
Coccyx	-	-	-	-

Carpals	Left	Right
Scaphoid	✓	✓
Lunate	✓	✓
Triquetral	✓	✓
Pisiform	-	-

Sesmoid	-	-
Trapezium	✓	✓
Trapezoid	-	-
Capitate	-	✓
Hamate	✓	✓
Metacarpals	Left	Right
1	✓	✓
2	✓	✓
3	✓	✓
4	✓	✓
5	✓	✓

H. Phalanges (Left)	Complete	Incomplete
Proximal	5	-
Medial	4	-
Distal	4	-
H. Phalanges (Right)	Complete	Incomplete
Proximal	5	-
Medial	3	-
Distal	-	-

Tarsals	Left	Right
Talus	✓	✓
Calcaneus	✓	✓
Medial Cun	✓	✓
Intermediate Cun	✓	-
Lateral Cun	✓	✓
Navicular	✓	✓
Cuboid	✓	✓
Sesmoid	-	-
Metatarsals	Left	Right
1	✓	✓
2	✓	✓
3	✓	✓
4	✓	✓
5	✓	✓

F. Phalanges (Left)	Complete	Incomplete

Proximal	2	-
Medial	1	-
Distal	-	-
F. Phalanges (Right)	Complete	Incomplete
Proximal	5	-
Medial	1	-
Distal	1	-

Disarticulated Human Remains

Table 50 Disarticulated human remains

Context No	Bone	Age
2907	Mandible	21+ Years
1265	Left Ulna	14+ Years
2514	Occipital and Parietal	21+ Years
1276	Right Tibia	16+ Years

Conclusion

The skeletal remains of SK 1782 reveal a young adult male, aged between 25 and 29 years old. Pathological analysis has shown that the individual took part in some sort of strenuous activity involving his mid spine (schmorls nodes) and that he suffered from some form of bacterial infection (osteomyelitis) affecting his lower back/pelvic region which was active at the time of death. The specific aetiology of the infection (whether caused by trauma, soft tissue infection or both) is unknown.

THE ANIMAL BONES

Jennifer Browning

Introduction

This is a report on the animal bone assemblage recovered during excavations at Sanvey Gate, Leicester, which took place between 2003 and 2005. The work revealed activity from the early Roman through to the medieval and post-medieval periods. Evidence for the former Roman and medieval defences was identified, including the town ditches, the partially robbed out town wall, a Roman defensive tower, and the town rampart. A small fragment of the original town wall fabric was also exposed during groundworks. Within the town defences two substantial Roman stone buildings and a series of yard surfaces running towards an east-west street were associated with another substantial wall and ditch feature, which backed onto the defences. The street linked to a significant north-south road; on the line of one recorded on previous excavations at Causeway Lane and further south at Little Lane. Earlier activity in the form of ditches, pits and gullies, and evidence for timber structures was also exposed. Later evidence included stratified Saxon pottery, an inhumation burial and disarticulated human remains, medieval pitting, wells, and robbing of the Roman structures.

Bones were recovered both by hand during excavation of features and also through targeted bulk sampling. Animal bones can provide information on the exploitation of animals for dietary purposes, trade activities and rubbish disposal. The analysis of faunal material from urban sites presents particular challenges; on the one hand assemblages are often large, well-preserved and rich in species diversity compared with their rural counterparts. However, re-working of deposits is common and since bone is not intrinsically dateable, analysis is largely dependent on the integrity of the stratigraphy. This project attempted to address these concerns by, as far as possible, basing analysis on larger groups of material recovered from sealed, well-dated and discrete deposits. Features were selected for analysis in consultation with the site director and detailed recording therefore proceeded only where subsequent stratigraphic analysis indicated that contexts could be confidently assigned to phase or were unlikely to contain significant quantities of residual or intrusive material. Phasing follows the common system devised for the recent Highcross Leicester project (excavations on a number of Leicester sites carried out

by ULAS), which means that the results are easily comparable with the other recently excavated sites in the city. During this report particular reference will be made to the bone assemblage recovered from one of the Highcross sites, Vine Street (Browning 2009a), located adjacent to Sanvey Gate.

Methodology

Specimens were identified with reference to comparative modern and ancient skeletal material held by Leicester University, School of Archaeology and Ancient History. Information was compiled directly into a specially designed database with facility for recording data on species, bone element, state of epiphysial fusion and completeness to elicit information on species proportions, skeletal representation, age and condition. Where possible, the anatomical parts present for each skeletal element were recorded using the 'zones' defined by Serjeantson (1996), with additional zones ascribed to mandibles based on Dobney and Reilly (1988) and a simple system for skulls developed by the author. Condition of the bone was assessed on a scale ranging from 'excellent' through 'good', 'medium', 'poor' to 'very poor', where 'excellent' denotes a bone surface with no cracking or flaking and 'very poor' indicates that the fragment is disintegrating into splinters. Joining fragments were re-assembled and the result counted as a single fragment. The location and nature of modifications such as burning, gnawing and pathologies were also recorded. Butchery marks were located by zone, where feasible, and described using a simple code. Measurements were taken as appropriate, following von den Driesch (1976) and Payne and Bull (1988) for pigs.

Species proportions were calculated using NISP (Number of Identified Specimens) and a restricted count based on all fragments with a recognisable 'zone'. Minimum Numbers of Individuals (MNI) was calculated using the most frequently occurring zone of the most common bone element (after Serjeantson 1996). Minimum Numbers of Individuals (MNI) is not considered a particularly appropriate method of quantification for urban sites (O'Connor 2003, 156) due to the diverse possible sources for the material and has not therefore been routinely utilised, except when describing material from particular groups. As most of the bones are likely to be meat and slaughter waste, side (although recorded) was not been taken into account when calculating carcass units. The raw counts were standardised, using zones, to ensure that only non-repeatable parts were included and were comparable across species. In order to examine the proportion of carcass components on each plot, individual elements were grouped following O'Connor (2003).

Although there is no definitive sequence and age at which epiphysial fusion of each element occurs, it is possible to use the ranges provided by various authors as a guide. This report follows the figures from Silver (1969), grouping epiphyses into 'early', 'middle', 'late' and 'final' after O'Connor (2003). Age at death was further estimated for the main domestic species using tooth-wear patterns for cattle, sheep and pigs. Recording of wear on mandibular teeth followed Grant (1982) and the resulting mandible wear stages were then grouped into age categories following O'Connor (2003, table 31).

Table 51 The animal bone: definitions of dental eruption and attrition stages used in analysis of age at death (After O'Connor 2003: Table 31)

Cattle and Sheep Mandibles		
N	Neonatal	DP4 unerupted or just in the process of eruption
J	Juvenile	DP4 in wear, LM1 not in wear
I	Immature	LM1 in wear, LM2 not in wear
SA	Sub-adult	LM2 in wear, LM3 not in wear
SA1		LM3 forming, to just erupting
SA2		LM3 erupting
A	Adult	LM3 in wear
A1		LM3 up to minor dental exposure (stages a and b)
A2		LM3 dentine exposure across central column (stages c and d)
A3		LM3 dentine exposure on distal column (stages e to h)
E	Elderly	Dentine exposure to or beyond stage j

Pig Mandibles		
N	Neonatal	DP4 unerupted or just in the process of eruption
J	Juvenile	DP4 in wear, LM1 not in wear
I	Immature	LM1 in wear, LM2 not in wear
I1		LM2 present in crypt
I2		LM2 erupting
SA	Sub-adult	LM2 in wear, LM3 not in wear
SA1		LM3 present in crypt
SA2		LM3 erupting
A	Adult	LM3 in wear
A1		LM3 with enamel attrition only (stage a)
A2		LM3 with minor dentine exposure (stages b to d)
A3		LM3 dentine exposure merging on mesial cusps (stages e to h)
E	Elderly	Three main zones of dentine exposure across LM3 merging (stage j)

Attempts were made to separate sheep and goat using criteria defined by Boessneck (1969) and Prummel and Frisch (1986), paying particular attention to horncore, skull and teeth, scapula, humerus, femur, metacarpal and metatarsal. In addition, all metacarpals were measured and the results plotted after Payne (1969). Sheep and goat bones are frequently difficult to distinguish and post-cranial fragments were recorded as sheep/goat unless positive goat attributes were present.

Selected, well-dated samples were wet-sieved in a York tank using a 0.5mm mesh with flotation into a 0.3mm mesh sieve. Samples were processed in parts up to 10 litres with additional parts processed for contexts with good potential. The purpose of examining the bone was firstly to identify bones from small mammal, birds and fish species that would not otherwise be recovered and secondly to check the recovery rates of the larger species. As is usual, a high proportion of this material consisted of tiny fragments of unidentifiable mammalian bone. Consequently, the abundance of bone from each sample was assessed on a scale of 1-3, however only fragments recovered from prioritised contexts and deemed identifiable were included in the following analysis. A separate record of sieved fragments was retained. It should be noted that not all prioritised contexts were sampled and that not all the samples contained bone. Most of the bones included in this report were recovered during hand-excavation and limited analysis was undertaken of the fragments recovered during sieving. All coarse fractions were scanned and it became apparent that the vast majority were small, indeterminate shaft fragments from domestic mammals. Small mammal, bird and fish bones were observed in a small number of samples. Particular attention was paid to the samples associated with the prioritised features. Specimens deemed identifiable were extracted and attributed to species were possible and the results are shown Table 56. Examination of the coarse fraction expanded both the range of fish and also the number of amphibians present and it is possible that further specimens are present within the fine fraction, which was not sorted for this report.

Quantity, provenance and condition

A total of 4424 bone fragments were hand-recovered and fully recorded from 230 different contexts. Forty-seven % was recovered from the Roman phases (2-4), with a further 7% from Saxon/Saxo-Norman levels and 45% from medieval phases, most of which derived from the earlier medieval period (Phase 8). Less than 1% of bones were recovered from post-medieval features (Table 52). Most of the bone groups appeared to represent debris from a mixture of sources, however one group in Phase 8, Feature 1806 (a large well) was dominated by a large group of horncores, which will be discussed separately (see Phase 8). The proportion of identified to indeterminate fragments was not as high as other assemblages from the town, averaging 38% and ranging from 24% (Phase 3a) to 72% (Phase 8).

Table 52 Proportion of assemblage recovered from each phase

Phase	Phase Description	Feature No:	No:	Percentage of assemblage (%)
2a	Early Roman (mid-1st - early 2nd century)	2035;	67	1.5
2b		1845; 2011; 2236; 2820; 3050; 3107;	345	7.8
2c		989; 1011; 1734; 1948; 2247; 2385; 2528; 2538; 2612;	745	16.8
3a	Mid Roman (mid-2nd to 3rd century)	1734; 1774;	299	6.8
3b		2166;	23	0.5
3c		1018; 2149; 2327; 2469;	443	10.0
4	Late Roman (4th century)	1860;2134; 2284;	145	3.3
5	Early Anglo-Saxon (*c*400/50-650 AD)	1839; 2048; 2052; 2097; 2265; 2592; 2595;	252	5.7
7	Saxo-Norman (850-1150 AD)	1044; 1897;	69	1.6
8	Earlier medieval (1100-1250 AD)	500; 505; 509; 654; 659; 872; 1048; 1080; 1085; 1092; 1237; 1326; 1383; 1779; 1806; 1837; 1851;1895; 1943; 2051; 2139; 2237; 2254; 2948; 2968; 2970; 3031; 3043; 3078; 3110;	1437	32.5
9	Medieval (1250-1400 AD)	608; 1075; 1094; 1105; 1133; 1172; 1278; 1670; 1681;1685; 1690; 1815; 1888; 1902; 2588; 2964; 3055;	357	8.1
10	Late Medieval (1400-1500 AD)	592; 596; 603; 609; 690; 1099; 1100; 1103; 1126; 1128; 1131; 1893;	214	4.8
13	Early modern (1750-1900 AD)	586; 601;	28	0.6
	Total		4424	100.0

Bones from the excavations were generally in a suitable condition to allow recognition of butchery marks, pathologies and other modifications. Across all phases 33% of the bone was deemed ‘good’, while a 62% was classed as ‘medium’, 1% was assessed as ‘excellent’ and 4% was considered ‘poor’. Less than 1% of bones were considered to be in ‘very poor’ condition. There was some variation among phases and features; the worst preserved bone was from Phase 2a and the best in Phase 3b. The prevalence of gnawing may also suggest residual or re-deposited material. Gnawing occurred rarely in the assemblage, affecting less than 3% (n=132) of specimens overall, suggesting that bones in all phases were rapidly buried and therefore rarely available to scavengers. Gnawing was noted on the bones of cattle, sheep/goat, pig and horse but did not appear particularly prevalent in any particular phase, except phases 3b and 7, where the small sample sizes will have affected the result (

Table 54).

Table 53 Condition of the material in each phase (%)

Condition	2a	2b	2c	3a	3b	3c	4	5	7	8	9	10	13	All phases

Very Poor	0	4	9	0	0	1	0	0	0	0	0	0	0	0
Poor	32	15	6	3	0	1	2	0	6	1	2	2	4	4
Medium	65	69	66	67	13	47	83	67	63	65	49	57	46	62
Good	3	17	28	29	87	49	15	33	31	33	48	40	50	33
Excellent	0	0	1	0	0	3	0	0	0	1	0	1	0	1
	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 54 Proportion of gnawed bones

Phase	N	% of assemblage gnawed
2a	1	1
2b	10	3
2c	26	4
3a	5	2
3b	2	9
3c	14	3
4	2	1
5	8	3
7	6	9
8	41	3
9	13	4
10	4	2
Total	132	

The Assemblage

The first part of this report examines temporal trends, considering the material by phase rather than sub-phase. Discussion of individual features follows.

Species Proportions

Table 55 Hand-recovered bones from each phase (NISP- Number of Identified Specimens)

* includes horncores from feature 1806

Species	2a	2b	2c	3a	3b	3c	4	5	7	8*	9	10	13	Total
Cattle	7	36	70	35	7	64	28	27	14	567	59	25	5	944
Sheep/Goat	13	60	79	22	5	50	11	21	11	132	56	36	2	498
Sheep			2		1	2	2			8	5	1		21
Goat										1	1			2
Pig	6	27	38	10		27	15	21	1	73	12	15		245
Horse		4	35	34		24	2	8		7	1	9		124

Red deer			1	1		3		3	2	4		3		17
Roe deer			2			2						1		5
Fallow deer											3			3
Hare						1				1				2
Rabbit										3				3
Dog	1		11	1		2	2	1		4	1	1		24
Cat								8				2		10
Human			1					1		2				4
Black rat						1								1
Badger									1					1
Vole						6								6
Rodent (unident. mouse/vole)						15								15
Domestic Fowl		1	10	2		17	1	3	1	15	4		1	55
Goose			1			5		1		8	3	1		19
Duck	1		1		1	5				1				9
Golden plover				1		2								3
Corvid (Raven)	1													1
Corvid (cf jackdaw)										1				1
Passeriform (thrush, blackbird, starling etc)						10								10
Amphibian cf. frog						5				2				7
Cod										1				1
Total	29	128	251	106	14	241	61	94	30	830	145	94	8	2031
Large mammal	16	89	252	100	9	119	46	118	25	294	101	55	10	1234
Medium mammal	17	112	116	18		40	18	37	12	140	89	45	2	646
Indeterminate	5	16	122	73		38	20	2		172	21	19	5	493
Bird indeterminate			4	1		5		1	2	1	1	1	1	17
Fish indeterminate				1									2	3
Total	67	345	745	299	23	443	145	252	69	1437	357	214	28	4424

Table 56 Identified bones from each phase recovered through sieving (CF)

Species	2b	2c	8	9	Total
Cattle		1	2		3
Sheep/Goat	2	4	6	3	15
Pig		1	8	1	10
Cat			2		2
Hare			3		3
Vole	1				1
Domestic Fowl		1	5	1	7
Goose				1	1
Small passeriform		1			1
Toad			3		3
Frog			13		13
cf. Cod				1	1
cf. Eel				1	1
Flatfish (cf. Plaice)			1		1
Total	3	8	43	8	62

In common with most archaeological sites, the main domesticates, cattle, sheep/goat and pig occurred most frequently, comprising 87% of the identified assemblage. Horse bones were more common in the Roman phases (2-4), comprising 12% of the identified remains, compared with only 1.5% in the medieval phases (8-10). Small quantities of dog bones occur in most phases but at a low level, suggesting that their bones became incorporated as part of secondary deposition. Phase 2c contained the greatest concentration (n=11) but even here the bones were deposited as semi-articulated parts rather than offering clear evidence for burials. There was a concentration of cat bones in Phase 5 but they also occurred sporadically in Phases 8 and 10 (sieved samples only). Wild animals were recovered from both the Roman and medieval assemblages and are likely to have become incorporated through a variety of processes. Roe deer occurred primarily in the Roman phases and comprised elements from the head and feet, perhaps indicative of skins. Fallow deer was recovered in phase 9 only, although in some cases it was difficult to distinguish between this species and red deer, which was the most common deer species in both Roman and medieval phases. Limb bones were recovered, as well as antler and foot fragments, indicating occasional use for food as well as skins and raw materials for crafts. Rabbit, a medieval introduction, was only recovered from phase 8. Badger, rat and vole, wild mammals that were unlikely to be exploited for food, were also recovered from Roman deposits.

The avian assemblage accounted for only 6% of identified bones, more than half of which were domestic fowl. Bird bones were appreciably less common at Sanvey Gate than Freeschool Lane, where in some phases they comprised more than 20% of identified bones (Browning 2009). In the Roman phases at Vine Street, domestic fowl made up to 9% of the identified assemblage; at Sanvey Gate, the highest percentage was 8% in Phase 3c. Often an increase in the utilisation of birds is apparent in the medieval compared with the Roman period but the Sanvey Gate evidence does not reflect this, with avian bones comprising only 5% of bones in Phase 8, which had the largest quantity of bones and therefore might be expected to have the greatest species variety. Goose, duck and golden plover occurred less frequently than domestic fowl and scavenging birds, such as members of the crow family were rarely found. A small concentration of bones belonging to thrush-sized garden birds was also recovered from a phase 3 deposit.

Several smaller mammal, amphibians, bird and fish species were retrieved from the sieved samples (

Table 56). The mammal assemblage was augmented by further cat and hare bones. Amphibians were predominantly frog, although a small number of toad bones were also identified. Unsurprisingly, these were more common among the sieved remains and were recovered only from Phases 3 and 8. The fish assemblage was very small, particularly when compared with the neighbouring site at Vine Street (Nicholson 2009). Only cod was recovered among the hand-recovered assemblage but sieving added eel and a flatfish to the list of taxa. The scarcity of fish bones probably reflects the nature of the archaeology, which was more defensive than domestic in this phase.

Proportions of the Main Domesticates

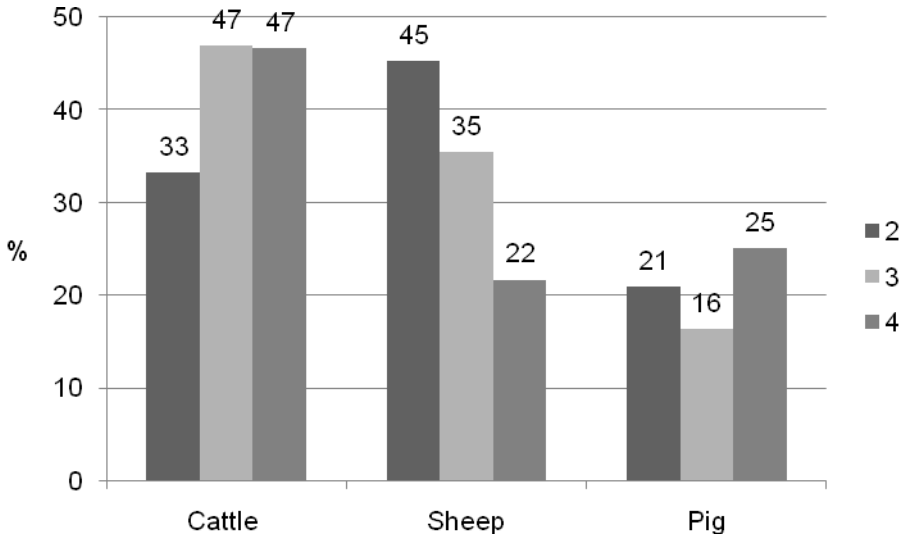


Figure 25 Relative proportions of cattle, sheep and pig in the Roman phases

A simple count based on NISP (Number of Identified Specimens) indicates a striking decline of sheep between the early and late Roman phases. Proportions of pig lessen slightly in the middle period but then increase to overtake sheep in Phase 4, although the sample size is small for this phase. The observed trend is very similar to Vine Street, where sheep were the most common species in Phase 2, contributing 47% of the combined cattle, sheep and pig total, dropping to 36% in Phase 3 and 24% in Phase 4.

In contrast to sheep, the proportion of cattle at Sanvey Gate increased from 33% in Phase 2 to 47% in Phase 3. A similar situation was seen at Causeway Lane, Leicester, where sheep were the most common species in the early phases but the later phases were dominated by cattle (Gidney 1999, 310). At Vine Street, the rise is steadier; 33% in Phase 2, 38% in Phase 3 and 47% in Phase 4. Both Sanvey Gate and Vine Street showed an increase in pig bones: at Vine Street frequency of pig increased through the phases from 20%, through 25%, to 29%, whereas a less consistent increase is seen at Sanvey Gate. Late Roman sites often have high proportions of cattle and pig (King 1978, 216; 1991, 17) and a link between elevated levels of pork and the adoption of Roman culture has been suggested (Cool 2006, 83-84).

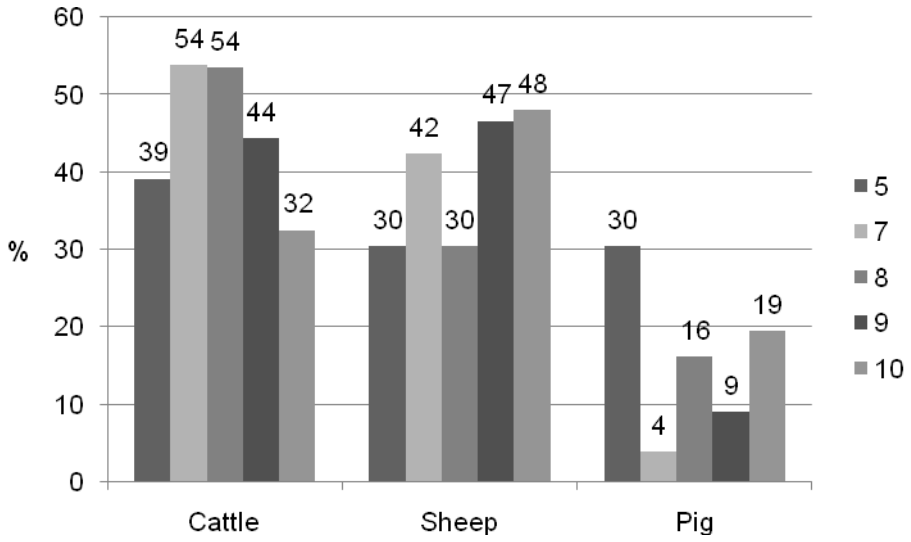


Figure 26 Relative proportions of cattle, sheep and pig in the medieval phases

An examination of varying species proportions through the medieval period suggests that roughly equal numbers of sheep and pig bones were recovered from Saxon contexts, with a slight emphasis on cattle. Material from Phase 5 at Freeschool Lane was dominated by cattle and sheep with smaller numbers of pig bones (Browning 2009) and at Vaughan Way, cattle were the most common species with sheep second and pigs accounting for only 11% of the main domesticates (Wooding 2009). However, in all cases the sample size is relatively small. In the Saxo-Norman (Phase 7) and earlier medieval (Phase 8) periods, cattle were the dominant species but their importance declined relative to sheep in the high and later medieval phases (Phases 9 and 10), a common trend which is usually attributed to the importance of the wool trade.

Mortality profiles

Epiphysial fusion and toothwear data collected for cattle, sheep and pig have been used where possible, to suggest patterns of slaughter. Unfortunately, in most phases the dataset is small and following a brief discussion of data from individual phases, the Roman and medieval data has been contrasted to try and attain a more meaningful result.

Cattle

Although the sample size is small, the Roman fusion data suggested an emphasis on mature cattle. There were no unfused bones in Phase 2 (total fused= 28) and only two unfused bones (6%), a middle-fusing and a late-fusing epiphyses in Phase 3. A small number of mandibles from sub-adults (n=3) were recovered but twice as many were from adult and elderly animals.

Phase 5 only had one unfused bone out of 11, also late-fusing. Phase 8 features (early medieval) provided a larger sample (Figure 27), which show that few animals were aged less than 18 months at the time of death. A steady decline in the proportion of fused bones in the succeeding age categories suggest that slaughter was occurring in the 2nd, 3rd and 4th year of life. However, the proportion of fused to unfused vertebrae in the final fusing category indicates that nearly 40% of animals were surviving to mature adulthood, perhaps emphasizing their importance for milk and traction. This is borne out by the small number age-able mandibles, 43% of which (n=3) were from elderly animals with all three cusps of the third molar in wear. The remaining mandibles were distributed among the sub-adult and adult age categories.

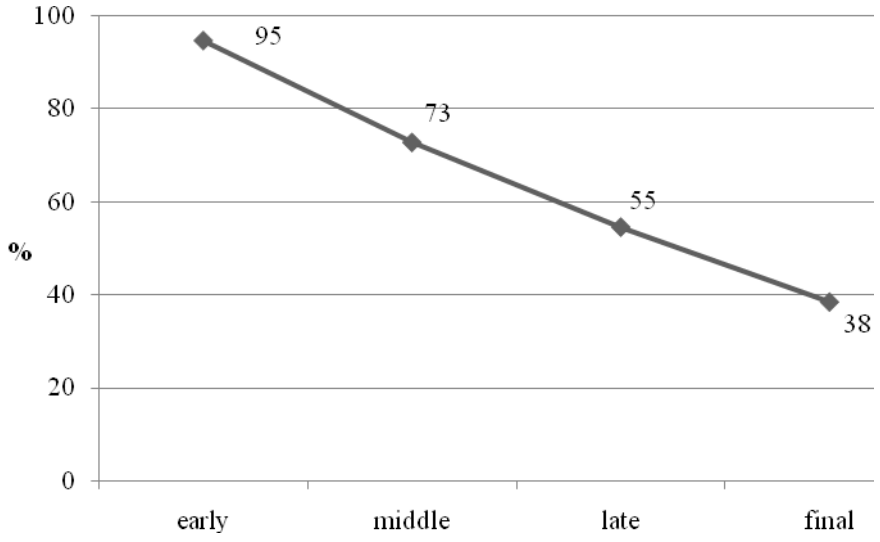


Figure 27 Cattle fusion data in Phase 8 (n=70)

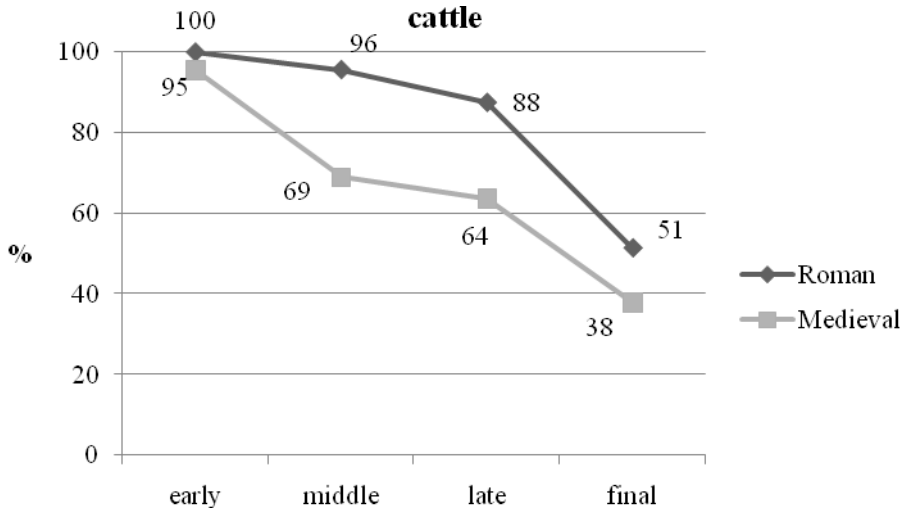


Figure 28 Epiphyseal fusion from the combined Roman and medieval phases

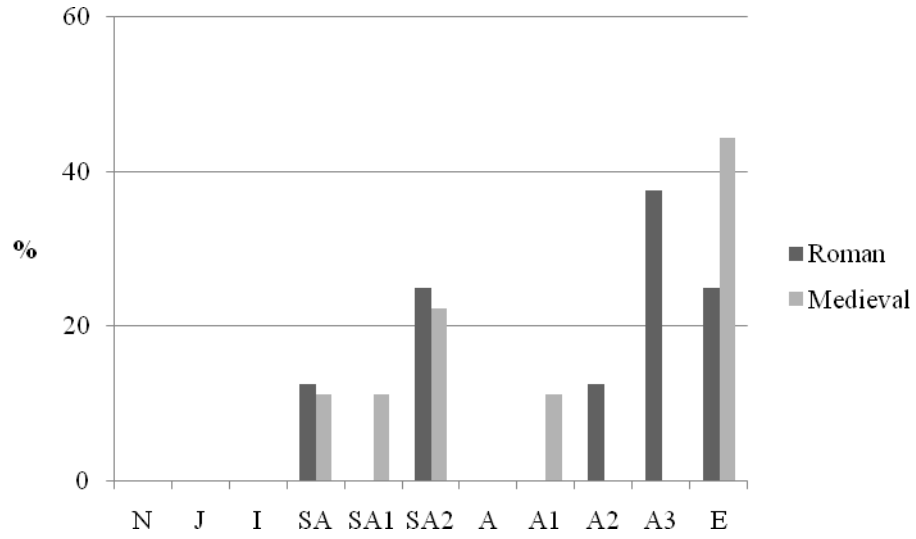


Figure 29 Cattle mandibular age stages for the combined Roman and medieval phases

Contrasting the combined epiphyseal fusion data from Roman phases 2 and 3 with that from the medieval phases 8 and 9 could suggest that there is a difference in husbandry regime between the two periods, with greater utilisation of younger cattle in the medieval period (Figure 28). A comparison of cattle mandibles between the combined Roman and medieval phases suggests a peak of slaughter at sub-adult age categories for both periods (Figure 29). This would equate to the approximate time that the third molar erupts and is indicative of animals killed for meat. The Roman animals appear to have been slaughtered at various points throughout adulthood, whereas there is a clear peak amongst elderly cattle in the medieval period, possibly suggesting greater utilisation of the older animals for traction and dairy, following an initial cull for meat.

Sheep/goat

The available pool of data for epiphysial fusion was fairly small. The distribution of mandibles in phases 2 and 3 indicates a slight difference in slaughter pattern, although the smaller sample size for phase 3 should be taken into account (n=7, compared with n=18 for phase 2). Phase 2 mandibles suggest that slaughter was occurring at a low level in most age categories but with peaks among immature and adult (A3) animals. In Phase 3, sheep were predominantly killed in the sub-adult (A2), and adult (A3) categories. This equates to animals aged between 18 months and 2 years in the first category and in the second between 2 - 5 years, according to the relative wear on the first and second molars (Moran and O' Connor 1994).

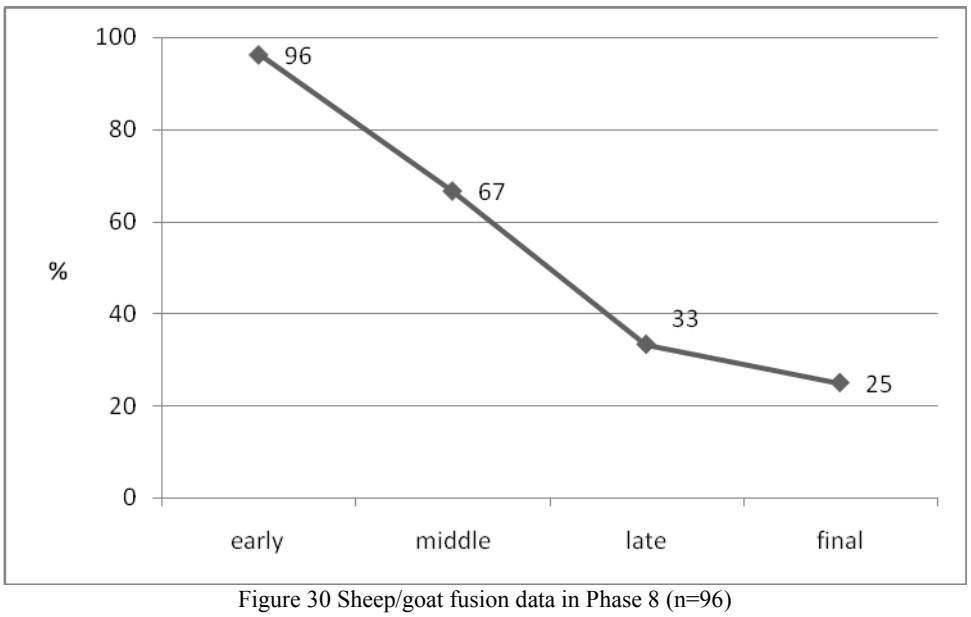


Figure 30 Sheep/goat fusion data in Phase 8 (n=96)

Phase 4 produced a mandible from a yearling (Moran and O'Connor 1994) and Phase 5 produced 2 mandibles, one from an adult (A2, aged 4-5 years) and the other a slightly younger adult (A1) (Moran and O'Connor 1994).

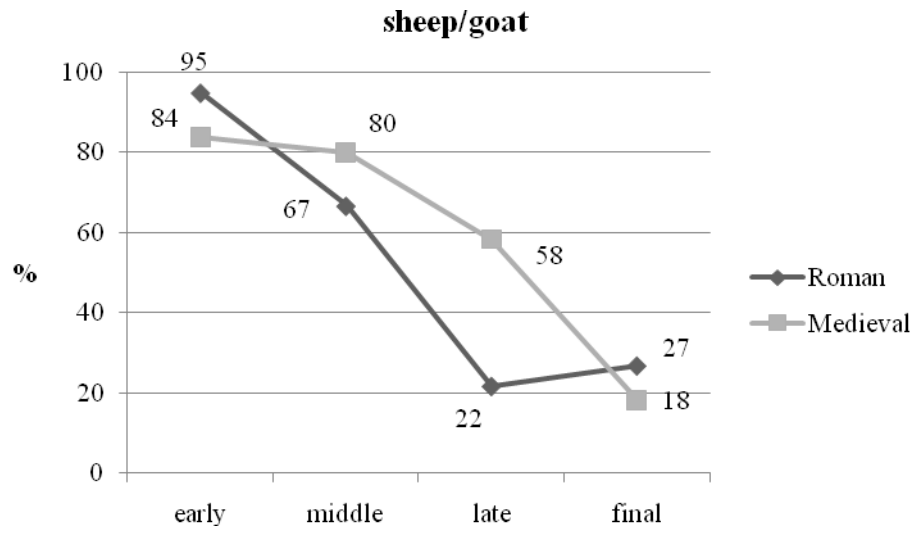


Figure 31 Epiphyseal fusion from the combined Roman (n=127) and medieval (n=79) phases

A comparison of the Roman and the medieval phases suggests that sheep were kept longer in the medieval period, in contrast to the treatment of cattle. Figure 32 and Figure 33, showing the distribution of mandibles, also confirms this view, with a greater proportion of the Roman sheep population slaughtered in the younger age ranges. This pattern has been seen at other sites in the city and almost certainly reflects the demand for fleeces in the medieval period, with sheep providing several clips of wool before slaughter.

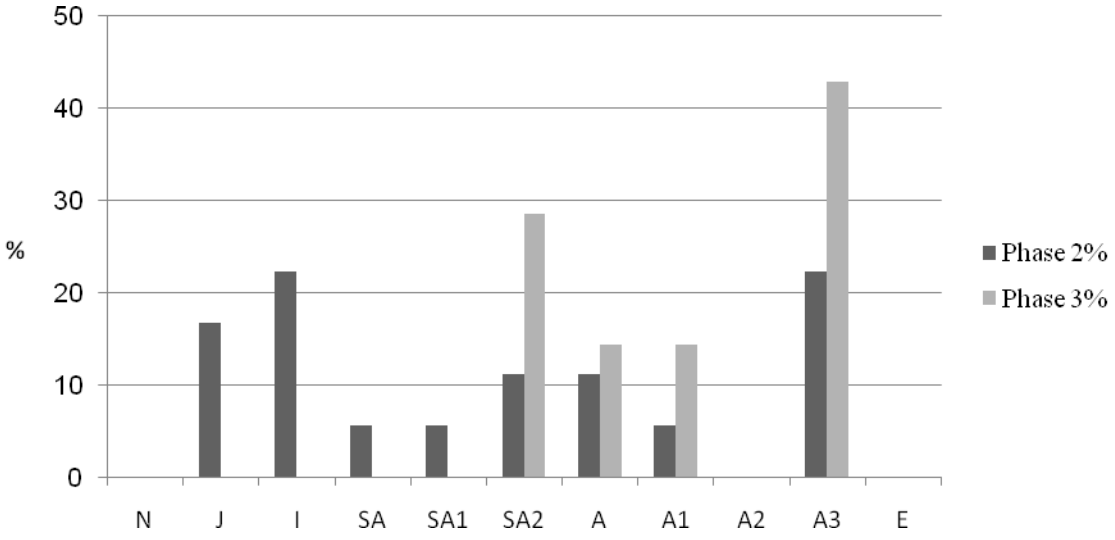


Figure 32 Sheep/goat mandibular age stages in Phases 2 (n=18) and 3 (n=7)

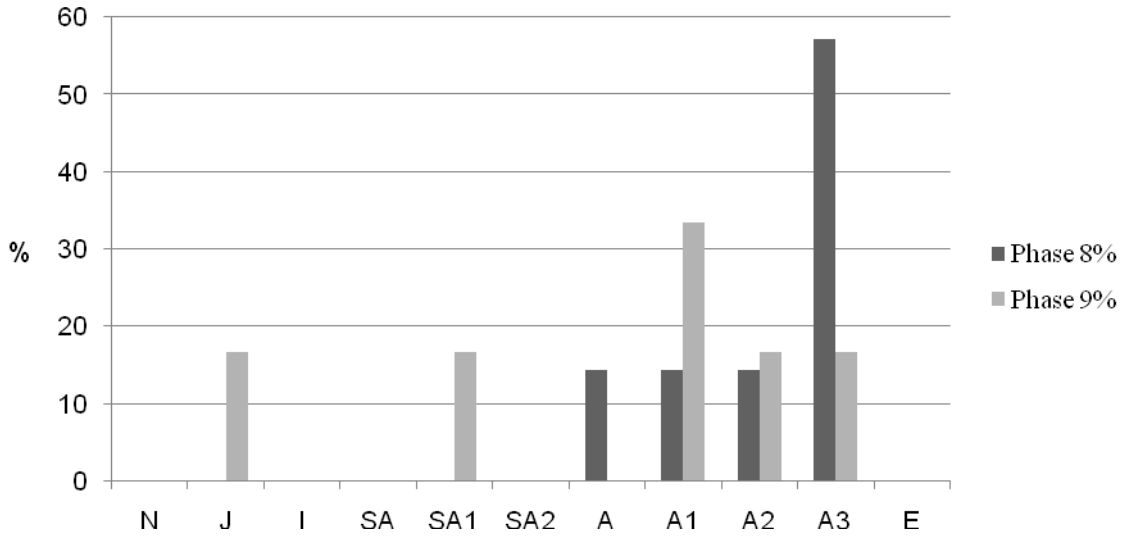


Figure 33 Sheep/goat mandibular age stages in Phases 8 (n=7) and 9 (n=6)

Pig

By comparison with sheep and cattle, few pig bones were recovered and consequently even fewer epiphyses and mandibles were available for analysis. Phase 2 produced the largest number of mandibles (n=6), half of which were sub-adult, (prior to and during the eruption of the third molar at around 2 years) an optimum time to slaughter for meat. Phase 3 produced a worn third molar from an adult animal (A3). Age-able mandibles were recovered both from a sub-adult, with the third molar erupting and a young adult (A1).

In the medieval phases, two mandibles from animals with the third molar in wear were recovered from Phase 5 (A2). All four mandibles in Phase 8 were from immature animals (I) with the second molar erupting to the occlusal surface.

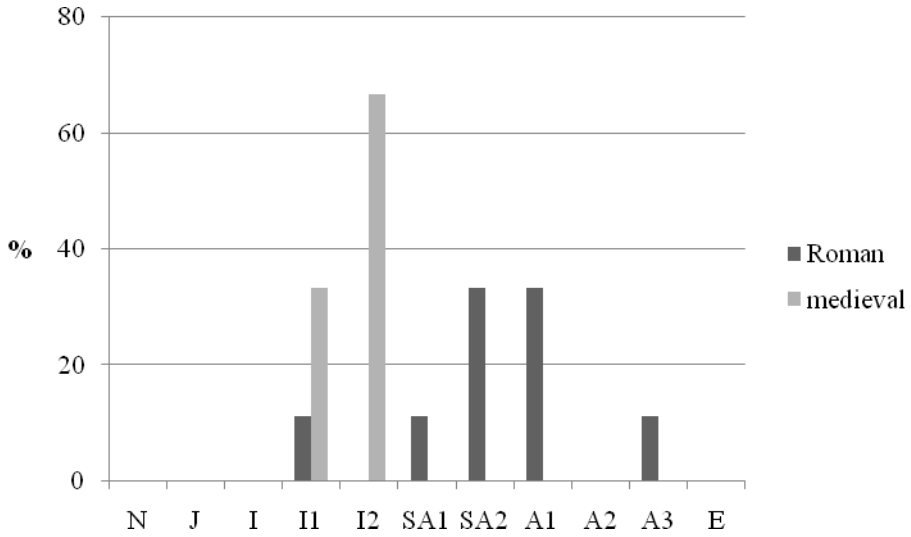


Figure 34 Pig mandibular age stages in Phase 2 (n=6)

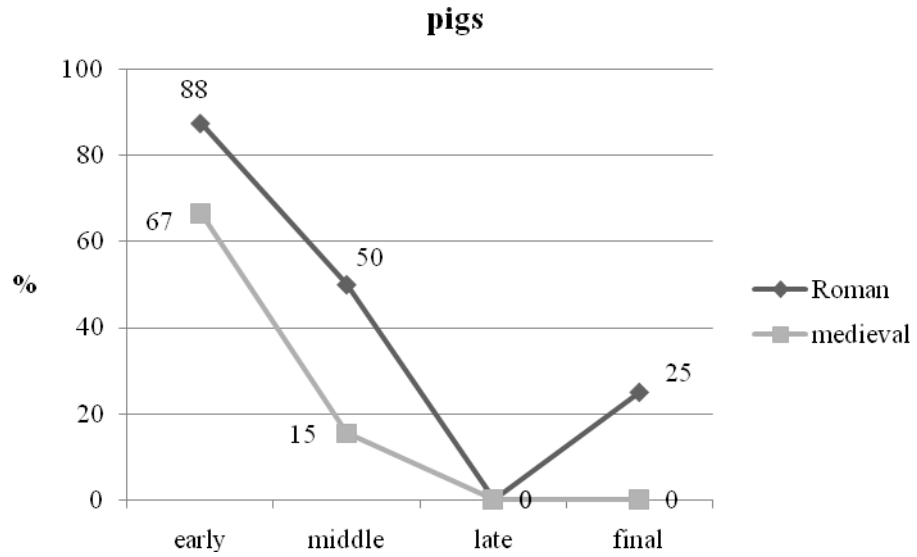


Figure 35 Epiphyseal fusion from the Roman and medieval phases.

The Roman mandibles display a wider age distribution than those from the very small phase 8 sample, possibly suggesting more mixed husbandry in the Roman period. This is confirmed by the data from epiphyseal fusion, which indicates that Roman pigs were more likely to survive into adulthood than medieval ones.

Carcass Representation

As the evidence suggests diverse sources for the bones deposited at the site, the distribution of carcass parts has been considered on a feature by feature basis.

Burning

Table 57 Burnt bones in the assemblage

Phase	Feature no.	Calcined	Charred	Scorched/ partially burnt	Total	% of assemblage
2b	2011	2	1		3	3
2b	2236	3			3	7
2b	2820			1	1	1
2b	3050	1			1	2
2c	989	10	5	1	16	14
2c	1011	12	10		22	29
2c	2247		1		1	1
2c	2612	9		2	11	9
3a	1774	1			1	1
3c	1018	3	5		8	3
3c	2149		1		1	2
3c	2327	1			1	1
3c	2469			1	1	3
4	2284	2	1	11	14	17
8	500	1	1		2	25
8	659	2			2	13

8	1048			2	2	6
8	1779		2	9	11	7
8	1895		1	1	2	2
8	1943	6	16		22	51
8	2051			1	1	1
8	2237		1		1	1
8	2968	1			1	4
8	3043		1	1	2	5
9	608	1	1		2	4
9	1094		1		1	1
10	1099		2		2	17
10	1126	1			1	3
10	1893	1			1	1
13	586	7		1	8	33
	Total	64	50	31	145	

Burnt material occurred sporadically throughout the assemblage but with one possible exception (see below) was unlikely to have occurred *in situ*. No feature contained only burnt bones, so these had evidently been incorporated with other rubbish before their final deposition. In most cases, they formed an insubstantial part of the assemblage but there were some exceptions. For example, a Phase 8 well, 1943, produced cattle bones that were charred and had evidently been exposed to a fire. Phase 2 Pit 1011 (= pit 989) contained a mixture of charred and calcined bones comprising 29% of the total assemblage, however, very few could be identified beyond the classification of medium mammal. Seventeen % of bones from several species in Phase 4 layer 2284 were lightly burnt. A third of the bones in Phase 13 hearth 586 were calcined, suggesting that they had been burnt *in situ*.

Butchery

Butchery techniques were similar to those at Vine Street, which have been described in more detail (Browning 2009). Throughout the Roman phases, between 20% and 28% of bones were butchered. Subsequent Saxon and medieval phases were variable with phase 9 having the highest incidence of butchery at 32% and phase 5 having the lowest with 15%. As with most archaeological sites, more butchery marks occurred on the cattle and large mammal bones since their larger size requires greater processing.

In all phases marks chop marks produced by a cleaver were more common than cut marks. Longitudinal splitting of the vertebral body can be indicative of whether professional butchering facilities were available. In the Roman this was comparatively rare, comprising 17% of vertebral butchery and was even less frequent in the Saxon phases. However, in phase 8 the proportion had risen to 27% and in phases 9 and 10 was 58% and 50% respectively. This is indicative of a more consistent approach to butchering practices in the medieval period. Cattle and sheep horncores were routinely removed from skulls and in phase 9, this was sometimes done with a saw instead of a cleaver. Phase 8 cattle metatarsi and phalanges had fine cut marks related to skinning and a small number of bones, particularly cattle tibiae and metapodials, appeared to have been hacked or broken open for marrow extraction. In Phase 9 butchery was very common on ribs, which were mostly divided into sections.

Biometry

During recording various measurements were taken on 526 bones. While this report contains limited biometrical information, the majority of the measurements are currently being compiled to be analysed alongside those produced by the Highcross sites.

The Assemblage by Phase

Phase 2: Early Roman (mid-1st – early 2nd century AD)

Table 58 Phase 2a feature assemblage (hand-recovered)

Phase	Species	Pit 2035	%
2a	Cattle	7	24
2a	Sheep/Goat	13	45
2a	Pig	6	21
2a	Dog	1	3
2a	Duck	1	3
2a	Raven	1	3
	Total identified	29	
2a	Large mammal	16	
2a	Medium mammal	17	
2a	Indeterminate	5	
	Total	67	

The small number of bones from the Phase 2a pit indicates a preference for sheep/goat. Most of the bones were in a poor or medium condition and were encrusted with sandy sediment, possibly indicating that this was primarily a cess pit. The pit also produced a raven carpo-metacarpus, which must have been accidentally incorporated.

Table 59 Phase 2b feature assemblage (hand-recovered)

		pit	ditch	pit	layer	ditch	ditch		
Phase	Species	1845	2011	2236	2820	3050	3107	Total	%
2b	Cattle	1	16	7	5	5	2	36	28
2b	Sheep/Goat	2	9	9	28	12		60	47
2b	Pig	1	13	6	2	5		27	21
2b	Horse		1	1		1	1	4	3
2b	Domestic Fowl	1						1	<1
	Total identified	5	39	23	35	23	3	128	
2b	Large mammal	2	36	7	25	19		89	
2b	Medium mammal	8	25	9	59	10	1	112	
2b	Indeterminate	4		7	5			16	
	Total	23	123	62	154	70	5	345	

The bones in phase 2b were recovered from ditches, pits and a layer. Overall, 30% of bones were identifiable to species and sheep/goat was the most common. Where it was possible to tell, the morphological criteria suggested that the bones belonged to sheep rather than goat. The pig bones were predominantly elements from the head, particularly in ditch 2011. Examination of canine teeth indicated the presence of both males and females; a male canine and two fragments were noted, while a maxilla contained female canines. Horse bones were few and distributed between several different contexts. A domestic fowl humerus was present in pit 1845.

Samples recovered from the final fills of the roadside ditch, layer 2820, produced a vole tibia and two sheep/goat bones.

Table 60 Phase 2c assemblage by feature

		pit	pit	ditch	well	layer	ditch	pit	ditch	pit		
Phase	Species	989	1011	1734	1948	2247	2385	2528	2538	2612	Total	%
2c	Cattle	12		4	5	9	12		13	15	70	28
2c	Sheep/Goat	18	7		3	22	21		3	5	79	31
2c	Sheep		1						1		2	<1
2c	Pig	2	5			10	7		6	8	38	15
2c	Horse						33		2		35	14
2c	Dog				1		6		3	1	11	4
2c	Red deer				1						1	<1
2c	Roe deer					1			1		2	<1
2c	Human				1						1	<1
2c	Domestic Fowl	1	1			4	1			3	10	4
2c	Goose									1	1	<1
2c	Duck			1							1	<1
	Total identified	33	14	5	11	46	80	0	29	33	251	
2c	Large mammal	36	27	13	9	37	53	2	42	33	252	
2c	Medium mammal	32	11		5	18	20		6	24	116	
2c	Indeterminate	10	23		7	8	30		13	31	122	
2c	Bird-indeterminate	2					2				4	
	Total	80	61	13	21	63	105	2	61	88	745	

Nine features in Phase 2c produced animal bones, including ditches, pits, a well and a layer. An east-west aligned roadside ditch, 2385, produced the greatest quantity of bones of which the most common species was horse. The horse bones appear to have been deposited in several articulated sections, probably representing a single animal and comprising the major bones of the foreleg, humerus, radius and ulna, part of the hock including the calcaneum and distal tibia and articulated phalanges. A number of ribs and vertebrae from the thoracic part of the spine were also present.

Two sampled features produced identifiable fragments. A bone from a small passeriform (garden bird) along with part of a cattle tibia was recovered from roadside ditch 2538, and also additional fragments of sheep, pig and domestic fowl were recovered from feature 2612.

Phase 3: Mid-Roman (mid-2nd - 3rd century)

Table 61 Phase 3a assemblage by feature

		ditch	ditch		
Phase	Species	1734	1774	Total	%
3a	Cattle		35	35	33
3a	Sheep/Goat		22	22	21
3a	Pig		10	10	9
3a	Horse	1	33	34	32

3a	Dog		1	1	1
3a	Red deer		1	1	1
3a	Domestic Fowl		2	2	2
3a	Golden plover		1	1	1
	Total identified	1	105	106	
3a	Large mammal	6	94	100	
3a	Medium mammal		18	18	
3a	Indeterminate		73	73	
3a	Bird indeterminate		1	1	
3a	Fish indeterminate		1	1	
	Total	7	292	299	

Phase 3 witnessed the construction of the defensive town ditches. Faunal material soon became incorporated in the backfill, particularly bones from larger animals. Horse bones were as common as cattle bones in the Phase 3a ditches. Elements constituting an articulated right foreleg were recovered from one of the town ditches, 1774, as well as a series of ribs. Most of the cattle bones were from the head or the feet, which are often considered to be slaughter waste. A small number of cattle limb bones (n=8) were also recovered. Many of the large mammal bones consisted of ribs, of which 63% were butchered. The sheep/goat bones were quite gracile on the whole and represented a minimum of three animals based on the number of distal tibiae. The metatarsal of a red deer was also recovered from the ditch.

Table 62 Phase 3b assemblage by feature

		pit	
Phase	Species	2166	%
3b	Cattle	7	50
3b	Sheep/Goat	5	36
3b	Sheep	1	7
3b	Duck	1	7
	Total identified	14	
3b	Large mammal	9	
	Total	23	

A small number of bones were recovered from a Phase 3b pit. A cattle horncore, although not complete enough to measure, was of a shorthorn type. In addition to the main domesticates, a duck scapula was recovered, comparable in size to mallard.

Table 63 Phase 3c assemblage by feature

		pit	pit/ph	pit	pit		
Phase	Species	1018	2149	2327	2469	Total	%
3c	Cattle	28	14	18	4	64	26
3c	Sheep/Goat	23	14	12	1	50	21
3c	Sheep		2			2	1
3c	Pig	14	4	5	4	27	11

3c	Horse	16		2	6	24	10
3c	Dog	1		1		2	1
3c	Red deer	3				3	1
3c	Roe deer	1		1		2	1
3c	Hare			1		1	<1
3c	Black rat	1				1	<1
3c	Vole	6				6	2
3c	Small rodent	15				15	6
3c	Domestic Fowl	12		3	2	17	7
3c	Goose	2		2	1	5	2
3c	Duck	5				5	2
3c	Golden plover	2				2	1
3c	Passeriform cf Blackbird	2				2	1
3c	Passeriform cf Starling	1				1	<1
3c	Passeriform cf Sparrow	2				2	1
3c	Passeriform	5				12	5
3c	Frog	4				4	2
3c	Frog/toad	1				1	<1
	Total identified	144	34	45	18	241	
3c	Large mammal	61	7	41	10	119	
3c	Medium mammal	24	1	12	3	40	
3c	Bird-Unidentified	5				5	
3c	Indeterminate	25	8	5		38	
	Total	259	50	103	31	443	

The greatest quantity and range of species was recovered from pit 1018, which produced not only the usual domesticates but also a variety of wild mammals, birds and amphibians. While many of these species would have been eaten, others such as the vole and amphibian bones may have become accidentally incorporated into the backfill, suggesting either that the pit may have been left open for a time, effectively creating a pitfall trap, or else was only partially backfilled with open pockets, affording a suitable environment for small creatures. Non-faunal finds from the pit included large quantities of building material, which may have left gaps when deposited. The most significant find was a single bone identified as black rat (*Rattus rattus*), which, if confirmed, may represent the earliest known occurrence of the species in the town. The cattle bones were mostly from the limbs, with a smaller number of elements from the head and the feet (MNI=2). A partial cattle skull, consisting of frontal, parietal and horncores, was from a shorthorn. A clean chop through the remaining occipital condyle indicated decapitation. Most parts of the sheep skeleton were represented and the bones came from a minimum of two animals (distal tibia, distal humerus). The horse bones included three mandibles with butchery marks; two had holes through the ramus, which appeared to be deliberately produced, although it was not clear to what purpose. The third had cut marks on the lingual side of the ramus suggesting disarticulation.

Pits 2327 and 2469 were a pair of possible quarry pits, which were later backfilled, while 2149 was a small pit to the east of **Building C**; this was the only feature in phase 3c without horse bones, possibly signifying that it contained predominantly domestic rubbish from cooking and consumption.

Phase 4: Late Roman (4th century AD)

Table 64 Phase 4 assemblage by feature

		pit	pit	layer		
Phase	Species	1860	2134	2284	Total	%
4	Cattle	18	6	4	28	46
4	Sheep/Goat	1	2	8	11	18
4	Sheep	2			2	3
4	Pig		4	11	15	24
4	Horse	1	1		2	3
4	Dog	1		1	2	3
4	Domestic Fowl		1		1	2
	Total identified	23	14	24	61	
4	Large mammal	12	6	28	46	
4	Medium mammal	4	1	13	18	
4	Indeterminate	4		16	20	
	Total	43	21	81	145	

Pit 1860 contained the very fragmented remains of a horse skull, along with a number of cattle limb bones.

Phase 5: Anglo-Saxon (c.400/50- 650)

Table 65 Phase 5 assemblage by feature

		pit	pit/ph	ph	SFB	pit	ph	ph	
Phase	Species	1839	2048	2052	2097	2265	2592	2595	Total
5	Cattle	14	7		6				27
5	Sheep/Goat	11	7		2			1	21
5	Pig	9	7	1	3	1			21
5	Horse	8							8
5	Dog				1				1
5	Cat	8							8
5	Red deer	2			1				3
5	Human	1							1
5	Domestic Fowl	2	1						3
5	Goose		1						1
	Total identified	55	23	1	13	1	0	1	94
5	Large mammal	72	22	1	18		1	4	118
5	Medium mammal	13	17	1	5			1	37
5	Indeterminate	1						1	2
5	Bird-Indeterminate				1				1

	Total	141	62	3	37	1	1	7	252

The majority of the assemblage was recovered from a large pit (over 3m in diameter), 1839, of unusual size for a Saxon feature. It is therefore possible that the pit is later and contains residual finds (W. Jarvis, pers.comm.). The faunal assemblage did not consist of the usual domestic refuse but contained some material that could be associated with craft activities, as well as other non-food remnants. A partially articulated cat skeleton was represented solely by limb bones. There were no visible butchery marks. The pit also contained part of a horse pelvis and fragmented skull, with maxillae and mandibles. A fragment of a human cranium was also present. Red deer was represented by an antler fragment and loose premolar. The antler fragment was worked, roughly shaped into a curved point.

SFB 2097 contained few bones, of which cattle were most frequent. Ribs and limb bones were butchered. Recent excavations in Leicester have revealed evidence for several SFBs in Leicester. A small group of material from the fill of a Sunken-Featured Building (SFB) in Area 7 at Freeschool Lane, comprised fairly equal numbers of identified cattle, sheep/goat and pig bones, although the majority of the assemblage consisted of large and medium mammal rib, vertebrae and shaft fragments. Butchery marks were particularly prevalent on ribs, which exhibited marks from both cleaver and knife.

Phase 7: Saxo-Norman (850-1150 AD)

Table 66 Phase 7 assemblage by feature

		pit	pit	
Phase	Species	1044	1897	Total
7	Cattle		14	14
7	Sheep/Goat	6	5	11
7	Pig		1	1
7	Red deer		2	2
7	Badger	1		1
7	Domestic Fowl	1		1
	Total identified	8	22	30
7	Large mammal	4	21	25
7	Medium mammal	7	5	12
7	Bird-Indeterminate	2		2
	Total	21	48	69

A slightly damaged tibia from pit 1044 was identified as badger. A partial badger skeleton was identified in the Roman phases of Vine Street (Browning 2009). However, badgers are not especially common on archaeological sites: a mandible fragment was identified in a 4th century context in Lincoln (Dobney et al 1996, 51) and there have been examples from 3rd century Exeter (Maltby 1979, 65) and medieval Flaxengate (O'Connor 1982, 41). The 14 cattle bones in 1897 were a mixture of post-cranial bones, along with two mandibles. Wild animals were represented by a red deer tibia and antler fragments.

Phase 8: Earlier medieval (1100-1200 AD)

Table 67 Phase 8 assemblage (Sanvey Gate frontage)

Species	654	659	1080	1085	1092	1326	1383	Total
Cattle	1	2	8		5	1		17
Sheep/Goat		2	5	1		2	2	12

Pig			1			3		4
Goose						1		1
Total identified	1	4	14	1	5	7	2	34
Large mammal		4	8		8	3		23
Medium mammal		5	4					9
Indeterminate		3	8	1			1	13
Total	2	16	34	3	18	10	3	79

Table 68 Phase 8 non-frontage assemblage by feature (only showing assemblages with more than 30 bones)

		pit	pit	well	well	pit	pit	pit	well	pit	well	pit	pit	pit	
Phase	Species	1048	1237	1779	1806	1837	1851	1895	1943	2051	2237	2970	3043	3110	Total
8	Cattle	6	15	27	349	7	23	21	12	24	18	4	11	13	5300
8	Sheep/Goat	4	4	21	5	2	14	8	8	2	9	8	7	4	96
8	Sheep			1	2					2				1	6
	Goat				1										1
8	Pig	3	5	9	4	2	6	10		3	5	6	4	3	60
8	Horse		2	1	1		1				1		1		7
8	Dog							4							4
8	Red deer		1		1						1		1		4
8	Hare					1									1
8	Human			2											2
8	Domestic Fowl	1		4	2	1	1					1		2	12
8	Goose	1		4			1								6
8	Duck		1												1
8	Frog					1								1	2
8	Corvid cf jackdaw	1													1
8	cod	1													1
	Total identified	17	28	69	365	14	46	43	20	31	34	19	24	24	5504
8	Large mammal	6	20	44	13	24	42	26	2	19	24	7	10	7	252
8	Medium mammal	8	3	36	27		20	5	5	3	9	2	1	3	126
8	Indeterminate	1	15	13		6	50	11	16	10	28	2	4		164
8	Bird-indeterminate		1												1
8	Total	32	67	162	405	44	158	85	43	63	95	30	39	34	1257

Phase 8 contained more bones than any other phase. A small quantity of animal bone was associated with domestic activity taking place outside the town, on the Sanvey Gate frontage and partially overlying the defences (Table 67). This activity continued into Phases 9 and 10.

The bulk of the assemblage was distributed predominantly amongst pits and wells inside the town, which suggest domestic and craft activities taking place amid the disintegration of the town defences. Well 1806 contained the largest assemblage, consisting primarily of cattle horncores and this group is discussed in greater detail below. As previously noted, cattle were more common than sheep, even discounting the horncores. A well, 1779, contained the second largest quantity of bone (n=162) but only 69 bones were identifiable to species. However, these included three cattle and one ram horncore, providing a possible link with well 1806. Horncores were also recovered from features 1048, 1080, 2200, 3043, 3110, 1943, many of these features containing more than one. Most belonged to cattle (n=12) but a smaller number of sheep (ram) horncores were also recovered (n=6).

Two human bones were recovered from robbed well 2200. These were part of an adult size tibia and a pelvis, which was from a possibly female individual aged between 17 and 35 (H. Jacklin *pers. comm.*).

Several juvenile specimens were noted among the domestic fowl bones, including one bone from a very young chick, possibly suggesting that birds were bred in the vicinity. Tibio-tarsi were the most common elements, comprising a third of bones and it has been noted that the tibio-tarsus makes a useful handle for a drumstick (Coy 1989, 32). Geese were half as common as domestic fowl in the assemblage. The goose bones were mostly elements from the wing, with the exception of the furcula and two leg bones.

Two rabbit tibia fragments were recovered from this phase (feature 500). These are earlier than remains found at Freeschool Lane in deposits dating to Phase 10 (1400-1500) (Browning 2009b). Rabbits were probably introduced to England at the beginning of the 12th century and became more established in the next century (Rackham 1986, 47).

Table 69 Identified fragments from the sieved samples (Key: F= Sanvey Gate frontage)

	F				
	659	669	1943	2254	3110
Species					
Cattle	1	1		1	
Sheep/Goat			3	1	2
Pig			1	6	1
Cat	1	1	1		
Hare				3	
Domestic fowl			1	4	
Amphibian (frog				2	11
Amphibian (toad)				0	3
Flatfish cf plaice				1	
Herring				2	
Total	2	2	6	20	16

The phase 8 samples produced 52 identified bones from features 3110, 1943, 659 and 2254. Cat bones (a humerus and a femur) were recovered from features 1943 (well) and 659 (ditch fill). In addition to further cattle, sheep, pig and domestic fowl bones, the caudal vertebrae of a flatfish, probably plaice/flounder, was recovered from feature 2254 and some radially broken fish scales, possibly cyprinidae (carp family). The sample also produced a partial hare skull, along with mandible and pelvis. The pig bones included skull fragments from a juvenile. Both frog and toad were recovered from 3110; the frog bones appear to have been part of an articulated skeleton, perhaps suggesting accidental inclusion when the creature entered a damp pit and was unable to escape. A herring otic bulla and a vertebra of the same species and some radially broken scales, possibly belonging to a cyprinidae fish, were recovered from the flot.

The Horncore Pit [1806] (1807) (Phase 8)

A large deposit of cattle horncores, dating from the medieval period, was recovered from a well or pit [1806] (1807), located within the town defences, close to the southern limit of the excavation area. Although the well structure is likely to be earlier, the bone deposit is associated with 12th and 13th century pottery, placing it in Phase 8. The presence of large quantities of horncores is usually taken to signify waste from processing the carcass for industrial or craft purposes. Information on condition, completeness, side and butchery was recorded directly onto an excel spreadsheet. Where completeness allowed, four measurements were taken on each horncore, following von den Driesch (1976) and Sykes and Symmons (2007): outer length; basal circumference; minimum basal diameter; and maximum basal diameter. The shape of each horncore was assessed and scored on curvature and torsion (after Sykes and Symmons 2007, figure 1) and the angle of attachment to the skull (after Armitage and Clutton-Brock, 345). Butchery marks noted on the horncores and skulls were recorded using simple descriptions, which included type of implement used, location, angle and frequency.

Quantity and composition

The pit contained a minimum of 320 horncores, in addition to fragments. The great majority were identified as cattle but two partial sheep horncores and a goat horncore were also present. Left and right were represented in almost equal numbers (L=115; R=112).

Table 70 Species representation within pit 1806

Species	N	%
Cattle	349	96
Sheep/Goat	5	1
Sheep	2	0.5
Goat	1	0.3
Pig	4	1
Horse	1	0.3
Red deer	1	0.3
Domestic Fowl	2	0.5
Total identified	365	99.9
Large mammal	13	
Medium mammal	27	
Total	405	

Morphology and Metrical Analysis

The bones were generally in a good condition (Table 71), facilitating examination for butchery marks and measurements in most cases. The horncores belonged predominantly to small-horn (64%) and short-horn (35%) cattle types, therefore consistent with cattle found elsewhere in the town during this period (Table 72). Most horncores were lightly curved, a smaller proportion had a more pronounced curve (Table 73) and the vast majority (85%: Table 74) showed no torsion (twist). Where it was possible to determine, horns branched horizontally from the skull or projected obliquely upwards (Table 75). A number of different horncore shapes were observed, some were small, stocky and curved, while others were longer and thinner; some had a flattened oval cross-section, in other cases there was a more rounded cross section. At the outset of the project, it was uncertain whether the bones belonged to one population or had been imported from a number of diverse sources, however, on the basis of shape no clear distinctions were observed. Only a small number of horncores were assigned confidently to sex based on morphological characteristics; a recent study has established that cross-sectional shape, curvature and torsion cannot be unambiguously used to determine sex (Sykes and Symmons 2007, 518). The size and shape of the horncores are also likely to be influenced by breed and age. Consequently, only 38 specimens (12%) were confidently sexed using morphology: females or possibly castrates (n=20) and bulls (n=18). However, this distinction proved to be useful when compared with the biometrical data: plotting the basal circumference against the minimum basal diameter demonstrated only a slight overlap

between the 'females/castrates' and the 'males' and suggested where such a line might be drawn among the rest of the data (Figure 38). No specific criteria were used to assess age but a total of 20 horncores were believed to be juvenile, based on the fact that the bone appeared 'porous' and heavily grooved.

Table 71 Condition of the horncores in pit.

Condition	Description	N	%
1	excellent	9	3%
2	good	209	75%
3	fair	52	19%
4	poor	6	2%
5	very poor	0	0%
Total		276	

Table 72 Horn types categorised by length (after Sykes and Symmons 2007, table 1)

Category	Length in mm	N	%
Small horn	<145	97	64%
Short horn	145-195	53	35%
Medium	195-350	2	1%
Long	>360	0	-
Total		152	100%

Table 73 Horn types categorised by curvature (after Sykes and Symmons 2007, figure 1)

Curvature	Description	N	%
1	No curve	6	3%
2	Light curve	138	61%
3	Curved	82	36%
4	High curve	0	-
Total		226	100%

Table 74 Horn types categorised by torsion (after Sykes and Symmons 2007, figure 1)

Torsion	Description	N	%
1	No twist	174	85%
2	Light twist	31	15%
3	Twisted	0	-
4	High twist	0	-
Total		205	100%

Table 75 Horn types categorised by angle of attachment to skull (after Armitage and Clutton-Brock, 345)

Angle of attachment	Description	N	%
1	Held sharply downwards	0	-
2	Held obliquely downwards (0-60° angle)	0	-
3	Core held horizontally	66	37%
4	Held obliquely upwards (0-60° angle)	112	63%
5	Held in upright position (pitchfork like)	1	<1%
Total		179	100%

Biometrical data

Table 76 Table of horncore measurements

Measurement	N	Min	Max	Average (mean)	Standard Deviation
Outer length (OL)	152	76	217	136	23.117
Basal circumference (BC)	264	88	192	140	20.670
Minimum diameter (Min D)	259	23.2	56.1	38.3	7.948
Maximum diameter (Max D)	259	29.5	68.9	47.9	7.685

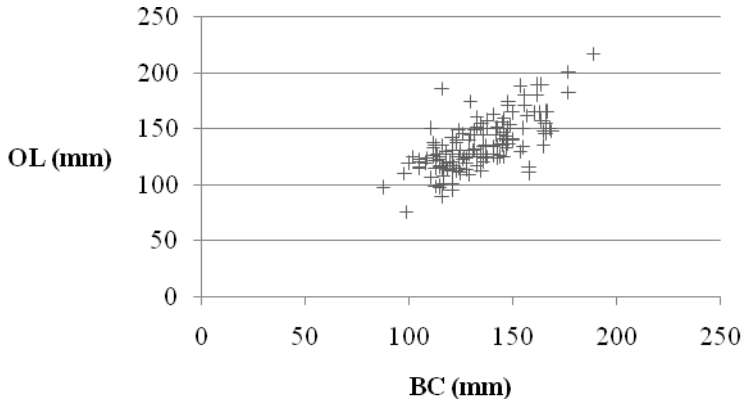


Figure 36 Distribution of horncores according to their outer length (OL) and basal circumference (BC)

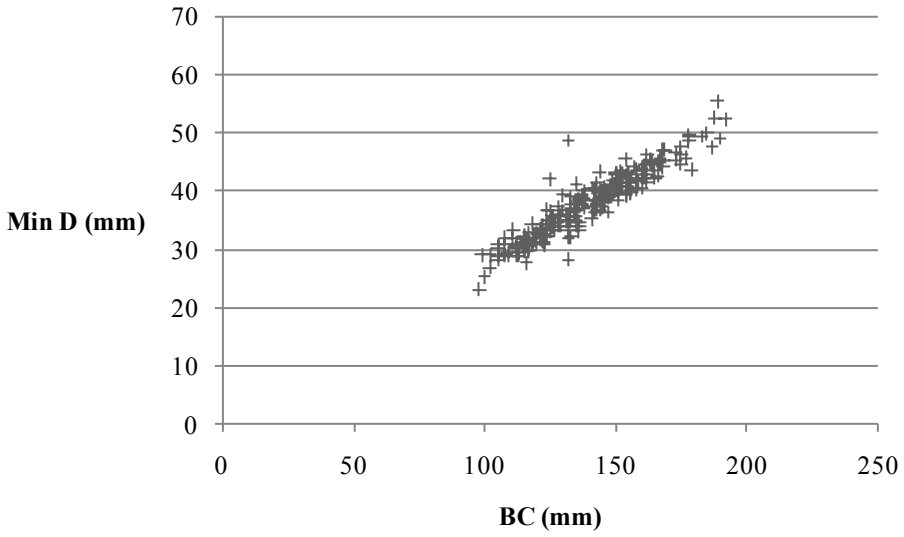


Figure 37 Distribution of horncores according to their minimum basal diameter (Min D) and basal circumference (BC)

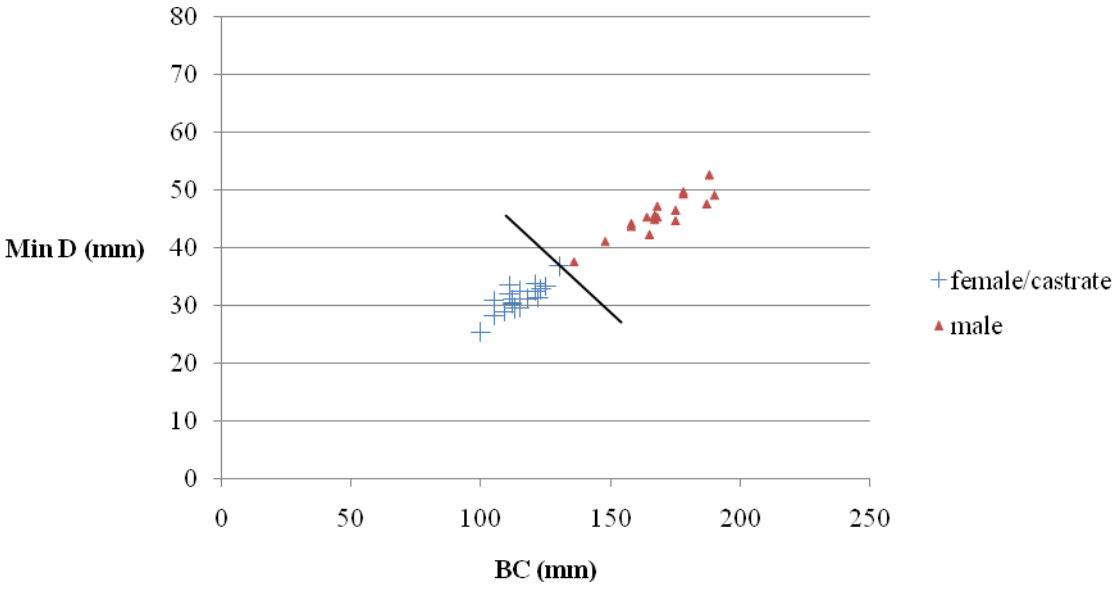


Figure 38 Distribution of male and female/castrate horncores according to their minimum basal diameter (Min D) and basal circumference (BC)

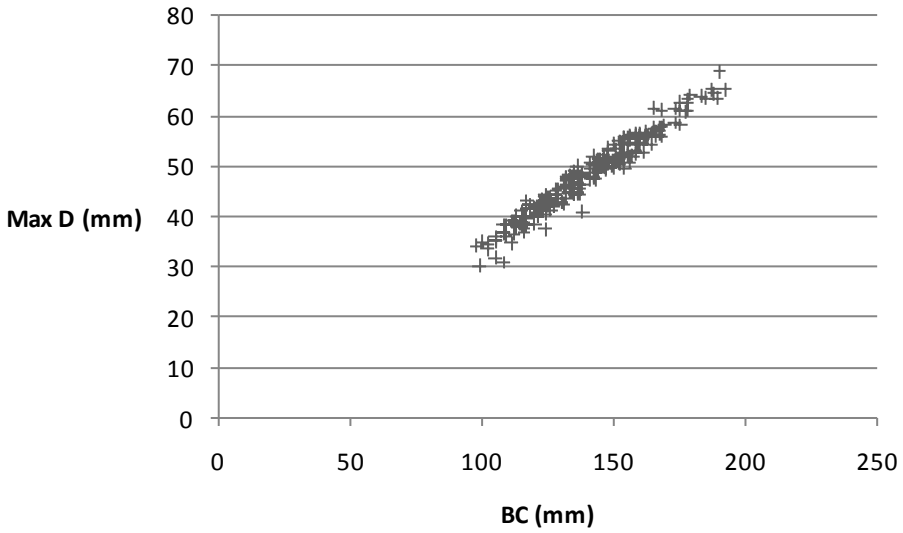


Figure 39 Distribution of horncores according to their maximum basal diameter (max D) and basal circumference (BC)

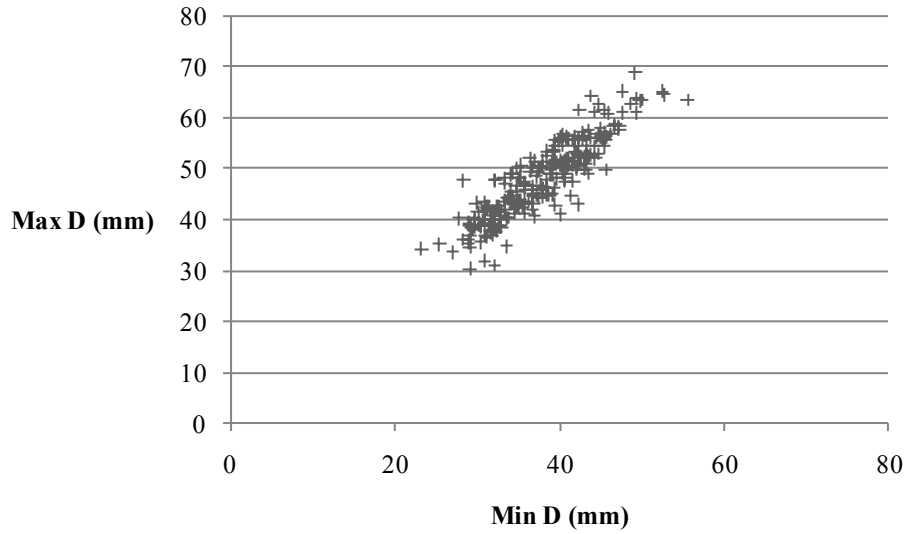


Figure 40 Distribution of horncores according to their maximum basal diameter (Max D) and minimum basal diameter (Min D)

Butchery

Of 311 recorded cattle horncores, 117 (38%) had clear butchery marks. However, none of the horncores was attached to a complete skull, indicating that they had been deliberately detached from the rest of the cranium even when the evidence was not obvious. This appears to have been a rapid and possibly rough process, which left a varying amount of the frontal and parietal bone associated with the horncore. Only one horncore had been sawn; neatly severed though the basal part. The majority (n=68) had been chopped using an axe or cleaver. Most specimens were chopped through the cranium, either through the frontal bone, below the horncore or from the lateral side, into the parietal and braincase. In a small number of cases (n=5), chop marks were found on the shaft of the horncore and the tip had been deliberately removed in seven cases; in several others it was not possible to distinguish purposeful removal from taphonomic damage.

Cut marks were observed on fifty horncores (16%). Of these 42% (n=21) had cuts circling the base of the horncore, often occurring in clusters. Fine cut marks were also observed in smaller groups on the frontal and under the horncore. The fine marks were interpreted as careful cutting around the horncore to separate the hide. Deeper angled cuts are likely to represent attempts to loosen the hornsheath.

Discussion of Pit [1806]

Horn was a valuable animal product, which was used extensively in the medieval period for such objects as lantern panes, beakers, spoons and even window panes, before glass became common (MacGregor 1989, 118). Horn itself perishes under normal preservation conditions (MacGregor 2001, 364) and consequently the discarded horncores (the bony structure beneath the horn sheath) are often the main archaeological evidence for its usage.

The Sanvey gate pit assemblage consisted almost exclusively of cattle horncores, clearly representing skeletal remains from craft activity. Very little post-cranial material was recovered and only two sheep and a single goat horncore were recorded. Workshops most likely to amass this type of assemblage were those belonging to the tanner and the horner, however the butcher was also a possibility. The professions were closely allied: evidence at Brugge indicated that the horners and tanners worked closely together (Ervynck et al 2003, 68). A lack of documentary evidence implies that horners were less common than tanners in England; only London and York had registered Guilds (Albarella 2003, 72), which suggests that horn-working was relatively small-scale in towns such as Leicester. Parish records from London indicate that the job of horn-breaker, presumably the noxious work of removing the horn sheath from the core, was separate to the more skilled job of horner, to which some horn-breakers may have progressed (Yeomans 2008, 132-3).

Horns may have been supplied to the horn-worker by either the butcher or by the tanner. The butcher probably sold on the hide complete with horns and feet, therefore the first job of the tanner may have been to remove the bones before starting to process the hide (Cherry 2001, 296). Alternatively the butcher may have separated the horns and passed them onto the horner themselves. The horn sheath could be loosened from the core by natural decay, soaking or by simply prising with a knife (MacGregor 2001,

364). Chopping at the base may also represent the removal of the horn for sale to the horners (Yeomans 2008, 137). MacGregor notes that if the material was to have been transported any distance it would save labour if the horn sheath was removed from the heavier core first (2001, 372). It can be seen therefore that horncores could conceivably be accumulated by any one of these professions (Albarella 2003, table 10). However, the available evidence suggests that the pit is least likely to signify a horners' workshop. Certainly, as regards post-medieval assemblages, the presence of sawn sections is the factor which distinguishes horners' waste from that of tanners (Yeomans 2008, 137) and only one sawn horncore was recovered from the Sanvey Gate pit. Although the saw was not generally used in butchery prior to the 18th century, it was certainly employed in bone-working from the Iron Age (Grant 1987, 55). Axes or cleavers and knives had been used on the bones, tools associated with the butcher.

Although the metrical and morphological evidence suggests that cows, bulls and castrates are all represented in the assemblage, the distinction between the three was not clear-cut. The animals represented are predominantly attributed to small-horn and short-horn breeds, which is consistent with previous evidence for cattle in Leicester. If the horncores were accumulated by the butcher, they would presumably separate the horns of any horned cattle that were slaughtered; in other words this would probably be opportunistic, rather than by deliberate selection for size, quality or colour. By contrast, horncores from medium-horn and long-horn types were recovered from the 18th century deposit at Bath Lane and may represent deliberate selection (Browning 2006).

In Leicester, both documentary and archaeological evidence shows that waste from the tanning and whittawyering trades was dumped on the banks of the River Soar from the medieval period onwards. The Borough Records note that in 1399 'the burgesses and tenants of the town of Leicester were wont to have easement from old time to put their hides and wool-fells in the water of the Soar at the bridge which is called West Bridge up to the north bridge' (RBL 1327-1509). A town dump on the banks of the Soar is referred to in 1508 (RBL ii, 290-1 and 380) and there are numerous mentions of the 'common dunghill' near the West Bridge (RBL vi, 25, 83, 131). A 'little peice or spunge of ground…walled out for a fellmongers Yard' was recorded by receipts in 1729 (RBL vi, 132). A preliminary examination showed that a group of late medieval material excavated from a site on the banks of the Soar (Kipling 2008) was dominated by metapodia and horncores. An assemblage largely comprising cattle and sheep skull fragments, horncores and metapodials, dating to the 15th and 16th centuries, had been previously recovered during trial trenching at Bath Lane (Browning 2002) and large numbers of 18th century horncores were observed during subsequent excavations at the site, a small sample of which was recovered and analysed (Browning 2006). Unlike the dumps on the edge of the river, which could conceivably have come from any part of the town, the Sanvey Gate material may well have been produced by activities taking place in the immediate vicinity. While, the location of the pit, some distance from the river, may suggest that it is associated with a butcher's premises, rather than the leather and horn trades, documentary evidence notes a concentration of tanners north of the town, beyond Sanvey Gate (Allin 1981, 3) and it may be that the town defences were considered far enough removed from residences for activities of this sort to be permitted.

Phase 9: Medieval (c.1250-1400)

Table 77 Phase 9 assemblage by feature (Sanvey Gate frontage)

		layer	pit	pit	layer	layer	layer	layer	pit	ph	pit	ph	
Phase	Species	608	1075	1094	1105	1133	1172	1278	1670	1681	1685	1690	Total
9	Cattle	7	6	16	4	1	4				1		39
9	Sheep/Goat	11	4	19	1						5	2	42
9	Sheep	1		2		1							4
9	Pig	2		4							2		8
9	Horse			1									1
9	Dog									1			1
9	Fallow deer	1							1				2
9	Domestic Fowl		1	1									2
9	Goose			2									2

	Total identified	22	11	45	5	2	4	0	1	1	8	2	101
9	Large mammal	14	14	22	1	7		1	1	1	9		70
9	Medium mammal	12	4	18	1	2	10	3	1	4	6		61
9	Indeterminate	1	6	7							3		17
		49	35	92	7	11	14	4	3	6	26	2	249

Table 78 Phase 9 assemblage (inside defences)

		?	well	pit	pit	pit	pit	
Phase	Species	1815	1888	1902	2588	2964	3055	Total
9	Cattle	2	7	2		1	8	20
9	Sheep/Goat	1	5	2	2		4	14
9	Sheep		1					1
9	Goat		1					1
9	Pig	1	1	1		1		4
9	Fallow deer			1				1
9	Domestic Fowl			2				2
9	Goose						1	1
	Total identified	4	15	8	2	2	13	44
9	Large mammal	1	10	10	1	2	7	31
9	Medium mammal	1	3	10		5	9	28
9	Indeterminate			4				4
9	Bird-indeterminate			1				1
		6	28	33	3	9	29	108

There were no large concentrations of bones in the Phase 9 assemblage, which was distributed between 17 different features both on the Sanvey Gate frontage and also within the defences. Cattle and sheep bones were fairly evenly represented on the frontage but cattle were slightly more prevalent in the internal features. Unlike the earlier phases, only fallow deer, rather than red or roe deer was represented. Fallow deer were probably introduced to Leicester in the 13th century; a hunting agreement for Charnwood Forest and Bradgate Park, dated 1247, appears to refer to fallow rather than roe deer (Yalden 1999, 156). At Freeschool Lane (Browning 2009c) fallow deer was very rare until Phase 10, when it became the most common deer species. Goat was represented by a large horncore attached to a fragment of cranium in a non-frontage feature. A small number of horncores of both cattle and sheep (n=10) were recovered from features on both sides of the former defences, perhaps indicative of the continuation of industrial activities in the area at a low level.

The only sieved bones were recovered from feature 1094 (Sample 48). In addition to a small number of additional sheep/goat, pig, domestic fowl and goose bones, a single cod vertebra and an eel vertebra were

recovered, indicative of domestic consumption on the frontage. The flot produced a fish scale, unfortunately not identifiable.

Phase 10: Late Medieval (c. 1400-1500)

Table 79 Phase 10 assemblage by feature (Sanvey Gate frontage)

		layer	layer	?	layer	layer	layer	layer	well	gully	gully	layer	
Phase	Species	592	596	603	609	690	1099	1100	1103	1126	1128	1131	Total
10	Cattle	1	1	1	2	2			4	3	3		17
10	Sheep/Goat	3	1	1			2		11	9	1		27
10	Sheep								1				1
10	Pig			1	1				6	2			10
10	Horse									1			1
10	Dog										1		1
10	Cat								1				1
10	Red deer												0
10	Roe deer										1		1
10	Goose					1							1
	Total identified	4	2	3	3	3	2	0	23	15	6	0	61
10	Large mammal			1	2	3	6		7	8	6	4	26
10	Medium mammal		1		1		3		17	9	2		33
10	Indeterminate						1		4	4	2		11
10	Bird-Indeterminate							1					1
	Total	4	3	4	6	6	12	1	51	36	16	4	143

Table 80 Phase 10 pit within the town

		pit
Phase	Species	1893
10	Cattle	8
10	Sheep/Goat	8
10	Pig	5
10	Horse	8
10	Cat	1
10	Red deer	3
	Total identified	33
10	Large mammal	18
10	Medium mammal	12
10	Indeterminate	8
	Total	71

Phase 10 features produced a small assemblage from features on the Sanvey Gate frontage, from which the largest quantity of bones came from a well 1103. A roe deer metatarsal was recovered from a gully context on the edge of the medieval town ditch.

Fragments of skull from both horned and polled sheep were noted in the assemblage. At Freeschool Lane, polled skulls were relatively uncommon and do not occur before 1400; present only in Phases 10 and 11, alongside horned skulls. However, it is difficult to know whether these represent males, females and wethers from the same regional population or types with different cranial morphologies. The findings are in keeping with the assemblage at Little Lane (Gidney 1991), where both horned and polled skulls were recovered but horned were most common.

The only feature not associated with the Sanvey Gate frontage was pit 1893, which cut an earlier well [1048]. The pit contained remains from cattle, sheep/goat, pig, horse, cat and deer. The deer bones are three butchered radii fragments. Interestingly, the species represented was red deer rather than fallow deer, which were more common in this period.

Phase 13: Early Modern 1750-1900 AD

Table 81 Phase 13 assemblage by feature

		Hearth	Layer	
Phase	Species	586	601	Total
13	Cattle	3	2	5
13	Sheep/Goat	1	1	1
13	Domestic Fowl	1		1
	Total identified	5	3	8
13	Large mammal	10		10
13	Medium mammal	1	1	2
13	Indeterminate	5		5
13	Bird-Indeterminate	1		1
13	Fish- indeterminate	2		2
	Total	24	4	28

A small assemblage was recovered from a hearth and layer dating to the early modern period. As reported in a previous section, several bones from the hearth were calcined, introducing the possibility that they were burnt *in situ*.

Summary and Conclusions

The Sanvey Gate animal bone assemblage was recovered from features spanning the Roman to the post-medieval periods. The assemblage confirms some of the wider trends observed at the Highcross sites and also produced valuable evidence of its own. The site occupies an important position straddling the border of the Roman and medieval town and the faunal assemblage evidently represents material from a range of activities. Structural archaeology has revealed evidence for the town defences, constructed in Phase 3 and reused in the medieval period, as well as domestic occupation and evidence for industrial activities.

The assemblage has produced information on the economic exploitation of species in various periods. As at Vine Street, sheep are the most common species in the early Roman phase but their numbers decline sharply in proportion to cattle and pig bones in the middle and late Roman period. This is in accordance with other evidence from the town: cattle were the most common species in the late Roman assemblage from Great Holme Street (Gouldwell 1991), the Shires excavations (Gidney forthcoming) and the Bonners Lane (Baxter 2004). For the medieval period, indirect evidence for the wool trade is provided by both the prevalence of sheep and by their increased age, enabling them to produce several clips of wool before their eventual slaughter for meat. This is comparable with Phase 8 at Vine Street, where two distinct age groupings were noted among the sheep assemblage; sub-adults less than two years and older

adult animals, possibly aged five or six, a pattern suggesting exploitation for both meat and wool (Browning 2009b).

There is some evidence for patterns in spatial distribution, although it has not been possible to fully explore this aspect in this report. In summary, the defensive ditches seem to have been used for the dumping of waste. Examples of this include horse bones, some partially articulated, and cattle heads and feet, possibly representing slaughter waste.

A bone attributed to black rat represents an early occurrence in the town, although given the rarity of such remains, confirmation of this identification is required. Evidence for rats in Roman Leicester is scarce, but they are known from other towns in Britain, such as York (O'Connor 1992, 108). The current evidence suggests that rats were introduced to Britain during the Roman occupation but it is thought likely that their numbers drastically reduced during the Saxon period, but populations became re-established in medieval times (Reilly 2010, 135).

In Phases 8, 9 and 10, a medieval building fronted onto the medieval street of Sanvey Gate, which was outside the town wall. In this period, both domestic and industrial activity appears to have been carried out in both the inter- and extra-mural part of the town. An early medieval pit from within the town defences contained a large number of cattle horncores and may represent activity associated with a butchers or tanners premises. This provides support for the documentary evidence which indicates that the tanners were concentrated north of the town centre (Allin 1981, 3). The faunal evidence also suggests that craft activities continued at into phases 9 and 10 on a smaller scale. An abundance of sheep and goat horncores and metapodials on plots 3 and 4 at the neighbouring site of Vine Street may be associated with this activity (Browning 2009b).

THE ENVIRONMENTAL EVIDENCE

Angela Monckton

Introduction

During the excavations, bulk samples were taken from feaures for the recovery of charred plant remains, mineralised remains, and fish bones and scales. In addition, waterlogged deposits from the town ditch and some deeper pits and wells were also sampled for environmental and other evidence. The ditch fills were mainly of medieval to post-medieval date and it is known from documentary records that some of the ditches were open into the post-medieval period, however, some remains of the Roman deposits survived and these were investigated and dated by radiocarbon. The main ditch section was sampled by James Greig for pollen and plant macrofossils and is reported on separately (see Greig below). A range of bulk samples was processed for the recovery of charred plant and other remains which could provide evidence for foods, crops and activities of the people on the site in the past to compare with other areas of the town because this was the first detailed investigation of a site near the town walls.

Excavations in the city of Leicester over recent years have been extensively sampled, for example the Shires, Causeway Lane and Southern suburb sites, so there is a large amount of information about a wide range of remains for comparison with the Highcross sites including this site at Sanvey Gate (summary in Monckton 2004a). Waterlogged remains have been recovered from wells at some of these sites (Greig 1999) and from excavations of the Austin Friary at West Bridge (Mellor and Pearce 1981). Data from samples from these sites has contributed to evidence for the type and extent of occupation as well as revealing evidence of trades and activities in the past for different areas of the town from Roman to post-medieval times.

Methods

Features were sampled if they were datable and had the potential to contain charred plant remains and then a range of samples was selected for processing with consideration of their archaeological integrity and context type; 30 bulk samples of Roman to medieval date were processed. In addition waterlogged features were sampled and some examined for organic preservation.

Bulk samples were wet sieved in a York tank using a 0.5mm mesh with flotation into a 0.5mm mesh sieve. The samples ranged in size of one to three bags of 5-10 litres each, and were processed in numbered parts. The residues were air dried and the fraction over 4mm sorted for all finds which are included in the relevant sections of this report. The fraction below 4mm was reserved for the recovery of remains which may not have floated. The flotation fractions (flots) were transferred to plastic boxes and

air dried and then packed carefully in self-seal polythene bags. This work was carried out by John Tate and Alex Beacock at ULAS.

Flots from each of the sieved samples were examined with a x10-30 stereo microscope for plant and animal remains and assessed for further analysis The remains were noted with an estimate of quantity and tabulated below (tables E1 and E2), (Monckton 2006). The selected samples were then sorted for charred plant remains and mineralised seeds which were then identified by comparison with modern reference material, the seeds were counted and recorded for Roman and medieval deposits (Table 82, Table 83). Other remains were also noted where present. The plant names, both botanical and common, follow Stace (1991). Samples not recorded in detail are referred to as scanned samples below.

To compare the samples with each other and with those from other sites the proportions of cereal grains, chaff and weed seeds were calculated for each sample with over 50 items recovered because below this there is insufficient material for interpretation. However, there was little chaff recovered in either the Roman or medieval periods. The density of plant remains as items per litre of soil sieved was also considered (Table 82, Table 83).

Waterlogged deposits

Samples from deposits from the ditches were processed for the recovery of waterlogged remains by washing a sub-sample of 200 mls of each sample into a 0.2mm mesh sieve; the residues were then examined under the microscope whilst wet for the presence of organic remains because very small seeds shrivel if dried. A few of the bulk samples also contained uncharred seeds which may also be preserved by waterlogging and they are noted below. These samples provided a little additional information to the samples analysed by James Greig (below).

Results

All the samples contained charred plant remains which were most numerous in the Roman samples. The plant remains recovered included charred cereal grains, and weed seeds with a sparse amount of cereal chaff. Some mineralised seeds were also found in medieval deposits, these are preserved in such conditions as are found in cesspits where sewage is dumped, or possibly in contexts where lime from mortar is at a high concentration. Other remains included fish bones and scales which can give evidence of diet as well as trade. Small mammal bones were also present in some of the samples which can give indications of the environment (see Browning above).

Roman

The most numerous cereal in the samples was barley (*Hordeum vulgare*) including hulled grains and twisted grains showing the presence of six-row barley. Spelt wheat (*Triticum spelta*) was also present identified from a very small amount of chaff although most of the wheat grains could only be identified as of glume wheat, either spelt or emmer (*Triticum dicoccum/spelta*). Weed seeds were quite numerous in some deposits (Table 82) showing a variety of arable weeds and grassland plants as found at Causeway Lane Leicester (Monckton 1999). Other crops were only represented occasionally by fragments of beans or peas (*Vicia/Pisum*) and a flax seed (*Linum usitatissimum*). Hazel nutshell represented gathered food.

Mineralised remains were sparse in the Roman samples and the waterlogged deposits of the Roman period were very restricted and did not contain much evidence of domestic waste, however seeds in waterlogged sample 23 provided some evidence of the environment of the Roman ditch (see Greig below).

The samples which have potential for analysis were from near the rampart within the town wall. Most are from the Early Roman period Phase 2 (mid 1st to early 2nd century AD), with a few from Middle Roman period Phase 3 (mid 2nd to 3rd century AD) Highcross phases.

Phase 2a: Samples 57, 93

These samples were both poorer samples which were scanned only. Sample 57 (2057) from cut 2035 near to **Building C** the latter possibly being a stable, contained only a couple of cereal grains and a few weed seeds as only a possible scatter of domestic waste. Sample 93 (2810) from a pit cut 2809 near the rampart contained very abundant charcoal with only a couple of abraded barley grains.

Phase 2b samples 91, 95, 100 and Building D sample 111.

Phase 2b sample 91 (2772) from beam slot 2773 was dominated by cereal grains mostly of barley (Table 82). Sample 100 (2820) contained a few grains of wheat and barley but was dominated by weed seeds possibly including a little cereal cleaning waste from consumption of cereals. Ditch sample 95 (2861) cut

2862 differed in containing abundant hazel nutshell with occasional cereal grains and weed seeds probably representing domestic waste from food preparation and consumption. Samples with abundant nutshell are unusual in the Roman town but this compares with a Phase 2 sample from Vine Street in a pit and spread (G344) (Monckton and Radini 2009).

The remains from the sample 111 (3205) from a ditch below **Building D** contained around equal quantities of grains and seeds with charred legume fragments and may be simply domestic waste from food preparation.

Phase 2c samples 6, 84, 68, 80, 78 (was Ph 2b), 96 (was Ph 3).

The richest sample found was sample 78 (2515) from ditch cut 2538 which was dominated by weed seeds with cereal grains mostly of barley. The seeds include those of grassy vegetation and may possibly represent fodder or waste fodder used as kindling.

Samples 68 (2277) from a hearth raking and 84 (2393) are also dominated by barley grains with fewer seeds, while sample 6 from the occupation layer differs in containing wheat and barley in similar numbers with more numerous seeds of a variety of arable weeds and grassland plants such as those of clover type and grasses. These may also suggest the presence of fodder from features in a yard outside **Building C**. A charred seed of flax was also present in sample 6, this is an edible seed and provides a little evidence of another crop plant.

Scanned samples 80 (2611) and 96 (2867) are poorer samples mainly of barley grains with a few seeds, sample 90 (2396) has a few cereal grains and weed seeds. These are probably part of a scatter of domestic waste from food preparation.

Phase 2b: Scanned samples from two small charcoal filled post-holes, samples 75 (2492) and 76 (2494) contained only a few cereal grains and occasional weed seeds possibly incidental from the general scatter of waste on the site.

Phase 3b: Scanned samples 105 (3042) and 110 (3072), the former contains a cereal grain fragment and a couple of weed seeds of goosefoots and chickweed type; the latter charcoal with a few cereal grains and a couple of hazel nutshell fragments. Both contain a few fish scale segments and probably represent a scatter of domestic waste from food preparation burnt in hearths and accumulated on the site.

Barley was the most common cereal in the Roman samples examined for Phase 2 Early Roman period, this differs from Causeway Lane where barley was most common only in the Late Roman period samples (Monckton 1999). At Vine Street nearby, wheat and barley were found in about equal amounts in Phase 2 and 3 with more barley in Late Roman Phase 4. Samples representing hay were found at Causeway Lane and Vine Street in Phase 3 although these were much richer samples than found here. Barley is sometimes associated with use for fodder although it is often used for food for people as well, when considered together with the evidence of grassland plants in Phase 2 this may suggest fodder for animal keeping on this site near the walls. Animals used for transport of food and goods by cart may have been kept near the road and town boundary.

Medieval

Charred plant remains were found with mineralised remains in some of the samples. Charred cereal grains were quite numerous and were mainly wheat of free-threshing type, possibly bread wheat (*Triticum* cf *aestivum*) together with hulled barley (*Hordeum vulgare*), oat (*Avena* sp) and occasional rye (*Secale cereale*) grains. Cereal chaff was also found but only as occasional fragments, it included bread wheat rachis confirming the presence of this cereal, another type of wheat called rivet wheat type has been found in medieval samples in Leicester but has not been found in these samples. Fragments of possible peas or beans were found as evidence of a further crop used as food with fragments of hazel nutshell (*Corylus avellana*) as food waste from gathered food.

Only three of the samples 34, 58, 56 contain single fragments of wheat rachis which show that bread wheat was used on the site. The small amount of chaff only suggests cereal cleaning from food preparation of possible whole grain foods such as pottage, this compares with the Shires and Causeway Lane. The site lacks any other evidence for cereal processing and suggests domestic occupation in this area of the town, both inside and outside the walls.

A variety of seeds were found including stinking mayweed (*Anthemis cotula*) an arable weed of clay soils, together with other arable weeds such as docks (*Rumex* sp), vetch (*Vicia* sp), goosefoots (*Chenopodium* sp) and more unusually club-rush (*Schoenoplectus* sp) probably growing in the large

ditches. A few mineralised seeds of elder (*Sambucus nigra*) and a seed of corn gromwell (*Lithospermum* sp) were also present.

Mineralised seeds were found in samples from a cesspit sample 101 including sloes (*Prunus spinosa*), cherry (*Prunus* sp.), apple (*Malus* sp.) as remains of fruits consumed, together with quite numerous seeds of opium poppy (*Papaver somniferum*) which was used aa a food flavouring and possibly for medicinal use. Some fish remains were also present with fish bones and scales as food waste, more fish remains were present in sample 107 which lacked fruit remains. Fly puparia were also present in these samples indicating the possible presence of sewage in the deposit. These deposits were characteristic of cesspits and compare with others from the town such as at Causeway Lane (Monckton 1999). A similar cesspit was found at Sanvey Gate during an evaluation by J. Abams (Monckton 2003). Other remains included small mammal bones were quite numerous in sample 69 (see Browning above).

Phase 8: selected samples 56, 69, 107 and 101

The most productive well stratified medieval samples were from Phase 8; samples 107 and 56 from cesspits, and a charred barley sample 69 were analysed (Table 83). The contents of sample 101 are typical of a deposit from a cesspit and are likely to belong to this phase. The remaining scanned samples are also considered to aid interpretation of activity in the area.

Sample 69 (2254) was dominated by cereal grains, mainly barley with a few legume fragments of peas or beans with a few weed seeds. It probably represents cleaned barley grains because few seeds were present which suggests that it may have been for human consumption. The grains were very burnt and blistered but a few probably germinated grains were recognised representing about 19% of the deposit, this seems too low to suggest that this was malted grain (Moffett 1990), and the quantity of remains too small to suggest cereal processing other than on a domestic scale. The barley may have been burnt during food preparation carried out in this area. A deposit from a cesspit sample 107, contained mainly charred remains of cereal grains with a few seeds suggesting domestic waste. Although fruit remains were absent the presence of some latrine waste was indicated by fly puparia. A deposit from a well cut 1944 sample 56 (2058) was similar with some mineralised organic fragments and fish remains with a few fly puparia suggesting that the feature was used for rubbish disposal including latrine waste after going out of use as a well.

Sample 101 (2942) from pit cut 2943 was the most typical and productive cesspit deposit with abundant mineralised remains as well as a few charred remains. The mineralised seeds included opium poppy and is interesting as a medicinal plant, also used as a food flavouring, and cultivated as a garden plant. Fruit remains include pips and stones of apple, sloe and cherry as evidence of fruits consumed. Fish remains add to evidence for diet and trade (see Browning above), while occasional fly puparia suggest the presence of sewage.

Sample 58 (2110) from pit cut 1944: the scanned sample containes a few wheat grains and weeds seeds, with a few fragments of hazel nutshell, probably representing domestic waste from a hearth dumped or accumulated on the site. A charred seed of club-rush (*Schoenoplectus* sp.) probably represents the vegetation of the ditch-side of material brought from the wetland near the river, possibly brought to the site for flooring.

Extra-mural occupation

*Samples associated with **Building E**: samples 12, 21, 34, and 46*

The medieval samples associated with **Building E** are not very productive and may represent general domestic rubbish as found on other sites in the town; samples 12 and 46 may have a little organic material preservation so may have been previously waterlogged but dried at times in the past.

Phase 8: sample 34 (1499), Hearth cut 1498 contained a few grains of wheat and barley, with a couple of chaff fragments of wheat including bread wheat, occasional straw fragments were also present. Weed seeds included cleavers indicating autumn sown cereals and wheat was usually autumn sown. Rye grains were also present in a second part of the sample which was very rich in charcoal. Fragments of hazel nutshell suggested that domestic waste was present, as did occasional fish remains. Some cereal cleaning waste is present in this deposit but insufficient to suggest other than domestic scale cleaning of cereal during food preparation of possibly whole grain foods such as pottage. At this period grain for flour would have been ground at a mill and bread mainly purchased from bakers in the town (Dyer 2002).

Phase 8: pit sample 46 (1648) near to **Building E**: This sample from a deep medieval pit was sieved as a bulk sample and thought on site to be possibly waterlogged. It contained charred cereal grains, weed

seeds and hazel nutshell. The only uncharred seeds were 14 elder seeds and a fragment of hemlock seed, both are robust seeds and may be the remains of a previously waterlogged deposit although the elder is common in many sediments. The deposit did not preserve any other organic remains and was probably a rubbish pit (Table 83).

Phase 9: Sample 21 (Table 83) probably represents domestic waste with cereal grains, legume and nutshell fragments with a few seeds of crop weeds including stinking mayweed brought with the cereals. Scanned samples 47 (1715) and 48 (1674) are similar but contain fewer remains although both include a few fish remains, and the latter occasional fly puparia suggesting some latrine waste in the rubbish pit.

Phase 10: Sample 12 (1047) was a poor sample similar to the Phase 9 samples as domestic waste with a few fish remains. Abundant charcoal in the layer suggested waste from a hearth.

Waterlogged deposits

Roman, 130 AD to 340 AD Radiocarbon date (95.4%, Ua40155), Phase 2c-4.

Ditch Phase 3a, Sample 23 context (1432):

This sample was sieved as a bulk sample and the flot was found to contain abundant seeds of water plants including pond weed (*Potamogeton* sp.) and duckweed (*Lemna* sp.) which are plants of standing water, crowfoot (*Ranunculus* subgen. *Batrachium*) was also present as another water plant of shallow water, with waterside plants such as gypsywort (*Lycopus europaeus*) and water-pepper (*Polygonum hydopiper*). Other seeds include some disturbed ground plants with damp ground plants such as buttercups. The deposit seems rather clean of domestic rubbish and is Roman in date (table E1). Further analysis of pollen and plant macrofossils is suggested to add to the evidence from the pollen column from the same section taken by James Greig (see below).

Medieval Phases

Ditch samples 24 – 29 and column 1 (see Greig below).

Early Post-medieval town ditch fill

Ditch in Trench 5, Sample 1 context (64): This was a black organic deposit which contained twigs and leaf fragments together with some seeds which were mainly blackened and corroded although some were identifiable. Of the seeds docks (*Rumex* sp.) were the most numerous some with attached leaf fragments, there were single numbers of seeds of other plants. Goosefoots (*Chenopodium* sp.), white or black mustards (*Sinapis/Brassica*), chickweed type (*Stellaria* sp.), knotgrass (*Polygonum aviculare*) are all plants of disturbed ground. Damp grassy vegetation was represented by thistle (*Cirsium* sp.) and sow-thistle (*Sonchus* sp.). Hemlock (*Conium maculatum*) and mallow (*Malva sylvestris*) represented nutrient rich ground, while bramble (*Rubus fruticosus* agg.) could be from consumed fruit or rough vegetation. There were a few uncharred straw fragments present and amorphous burnt material representing various types of rubbish. The sample appears to represent a vegetated ditch with some rubbish deposited or accumulated in the fill. Although waterlogged, the preservation of this part of the deposit was not very good perhaps because some decay had occurred while the deposit was being formed. The ditch seems to have been rank and weedy with some accumulation of rubbish and is probably of post-medieval date.

Ditch in Trench 5, Sample 2 context (68): Uupper sample, probably also post-medieval. This context was of dark crumbly soil and was not waterlogged but did contain charcoal fragments showing some accumulation of rubbish in the sediment.

Discussion

Roman

The plant remains in samples can be interpreted by considering the proportions of cereal grains, chaff and weed seeds which can indicate the stage of cereal processing or activities on the site (van der Veen 1992). Deposits with a high proportion of grains represent the cereal product for use, while deposits with a high proportion of chaff and weed seeds represent waste from various stages of cereal processing and cleaning to prepare grain for use. Spelt wheat of the Roman period and earlier could be stored in the chaff because the grain is held tightly in the chaff, before use it required extra processing by parching and pounding to free the grain. In the Middle and Late Roman periods this was carried out in corn driers at certain sites to supply towns and for trade; these sites are typified by abundant chaff as waste from cereal dehusking as found at Norfolk Street, Crown Hills and Hamilton near Leicester (Jones 1982, Jarvis 2000, Monckton and Jarvis 2004). There was no evidence for this at Sanvey Gate but in the Early Roman period

represented here spelt may have been processed in small batches on a domestic scale as it was in the Iron Age, or in bulk elsewhere outside the town.

Spelt was found here but with very little chaff which compares with Causeway Lane and the Shires (Monckton 2004). Domestic occupation has been found to be typified by a low density scatter of charred cereal grains and weed seeds, probably as waste from food preparation with the weeds from the final cleaning of the grain burnt in the hearth. Dehusking of spelt is likely to have been carried out elsewhere, unknown at present for the Early Roman period. Most of the samples here have a low density of remains below 10 items of charred plant remains per litre of soil as a scatter of domestic waste from food preparation, although other evidence for occupation from cesspits was lacking. The better samples were up to 17 items per litre of soil, much lower than the best samples from the Shires and Causeway Lane which were grassy material as fodder or kindling. However, the presence of grassy material associated with barley as the main cereal in Phase 2 suggest that this may be fodder for animal keeping on the site. The few Phase 3 samples suggest domestic waste only.

Medieval

In the medieval period the cereals used were free-threshing wheats including bread wheat which is easily threshed from the chaff, hence chaff would not be expected to be found in quantity far from where the cereals were grown. However, chaff was very sparse on this site but has been found in some areas of the town perhaps from processing cereal brought to the town or from the town fields. Chaff was sparse at the Shires and Causeway Lane but more common in the suburb at Bonners Lane where it was probably associated with commercial activity (Monckton 2004b). As a site on the edge of the town cereal processing or other cereal related activities may have been expected but were not found here at Sanvey Gate although found at Vine Street (Monckton and Radini 2009). The evidence here compares more with Causeway Lane and the Shires thought to be domestic occupation typified by a low density scatter of charred cereal grains and weed seeds, probably as waste from food preparation of whole grain foods such as pottage, with the weeds from the final cleaning of the grain and a few spilled grains burnt in the hearth. These areas of domestic occupation also have cesspits for sewage disposal which also preserve fruit and fish remains as evidence of foods consumed as found at Causeway Lane (Monckton 1999). Evidence from Phase 8 cesspits here compares with that from Causeway Lane, the fruits sloe, cherry and apple are represented with opium poppy probably as seeds used for food flavouring. Hence Phase 8 samples within the walls show domestic occupation but this does not preclude other activities because in the medieval period trades were carried out in yards of houses.

Samples of Phase 8 associated with the extra-mural **Building E** also show a scatter of charred pant remains from domestic occupation with some latrine waste in pits and a few later samples of Phase 9 and 10 are similar.

Conclusion

Roman samples with charred plant remains were mainly of the Early Roman period Phase 2 and contained a scatter of domestic waste including evidence for consumption of spelt, peas or beans, hazel nuts with flax as an additional crop. The main cereal was barley and some samples contained seeds of grassy vegetation suggesting that fodder was present on the site either from animal keeping or waste fodder used as kindling. Medieval samples of Phase 8 within the walls consisted of burnt domestic waste showing the consumption of different cereals; bread wheat, barley and rye, with peas or beans and hazel nuts. Cesspits contained evidence for the fruits consumed including apples, sloes and cherry with opium poppy as a food flavour. Fish remains were also recovered and fly puparia were thought to indicate the presence of sewage in these pits. Extra-mural samples from Phase 8, 9, and 10 also contained a scatter of charred cereal remains as domestic waste with some latrine waste in pits. Evidence of domestic occupation both inside and outside the walls was found in the medieval period.

Table 82 Charred plant remains from Roman contexts at Sanvey Gate

Phase	2b	2b	2b	2c	2c	2c	2c	
Feature type	BS	D	D	L	Hth	D	L	
Cut number	2773	2862	3216	1011	-	2538	-	
Context	2772	2861	3205	935	2277	2515	2393	
Sample	91	95	111	6	68	78	84	
GRAINS								

Triticum dicoccum/spelta	-	-	1	4	-	2	-	Glume wheat
Triticum sp.	2	-	1	-	2	-	6	Wheat
Hordeum sp. hulled	21	1	2	6	22	27	40	Barley
Cereal/Poaceae.	-	-	1	-	1	1	-	Oats, wild
Cereal indet.	14	-	5	9	6	12	11	Cereal
CHAFF								
Triticum spelta L. glume base	-	-	-	-	-	3	1	Spelt
T. dicoccum/spelta glume base	-	-	1	4	-	-	2	Glume wheat
Cereal culm node	-	-	-	-	-	2	-	Straw
FOOD and USEFUL PLANTS								
Corylus avellana L.	-	22	-	-	-	-	5	Hazel nutshell
Vicia/Pisum	-	-	3	-	1	-	-	Bean/Pea
Linum usitassimum L.	-	-	-	1	-	-	-	Flax
WILD PLANTS								
Ranunculus subgen Ranunculus	-	-	-	1	-	3	-	Buttercups
Cerastium/Stellaria	-	-	1	1	-	3	-	Chickweed type
Spergula arvensis L.	-	-	-	3	-	-	-	Corn Spurrey
Chenopodium album type	-	3	1	4	-	5	1	Fat-hen
Chenopodium sp.	-	1	2	-	-	13	-	Goose foot
Polygonum aviculare L.	-	1	-	1	-	-	1	Knotgrass
Rumex sp.	-	-	-	5	-	4	1	Dock
Rumex cf. acetosella	-	1	-	2	-	2	-	Sheep's-sorrel
Potentilla sp.	1cf	2	-	-	-	-	-	Cinque-foil
Vicia sp.	-	-	-	-	-	1	-	Vetches
Vicia/Lathyrus	-	-	-	2	-	-	-	Vetch/Vetchling
Medicago/Trifolium type	1	-	1	11	-	18	1	Clover type
Solonaceae	-	-	1	-	-	-	-	Solonaceae
Euphrasia/Odontites	-	-	2	-	-	1	-	Eye-bright type
Plantago lanceolata L.	-	-	-	3	-	-	-	Ribwort plantain
Galium aparine L.	-	-	-	1	-	-	-	Cleavers
Carex sp.	-	-	-	1	-	21	-	Sedges
Eleocharis sp.	-	-	-	2	-	24	-	Spike-rush
Schoenoplectus sp.	-	-	1	-	-	-	-	Club rush
Bromus hordeaceus/secalinus	-	1	-	3	-	6	6	Brome grass
Poaceae large	4	2	1	2	-	5	5	Grasses
Cynosurus cristatus L.	-	-	1	-	-	3	-	Crested dog's-tail

Danthonia decumbens	-	-	-	2	-	1	-	Heath grass
Poaceae medium	-	-	1	-	-	-	1	Grasses
Poaceae small	-	1	-	1	-	-	1	Grasses
Indetermined seeds	2	7	1	7	-	12	2	Seeds
Poaceae stem	-	-	+	+	-	+	++	Grass stem
Bark fragments	-	+	-	-	-	-	-	Bark
TOTAL	45	41	26	76	32	165	85	Items
Vol sample	6	5	5	10	12	10	5	Litres
Vol flot	35	75	20	150	95	50	35	Mls
% Sorted	all	all	all	50%	all	all	all	% Flot sorted
Items/litre	7.5	8.2	5.2	15	2.7	16	17	Items/litre

Key. + = present, ++ = abundant. D = ditch, BS = beamslot, Hth = hearth, L = layer.

Remains are seeds in the broad sense unless described otherwise.

Table 83 Charred plant remains from Medieval contexts at Sanvey Gate

Phase	8	8	8	8	8	8	9	
Type	W	L	CP	CP	Pit	Pit	Hth	
Cut	1944	-	3110	2943	1498	1326	1240	
Context	2058	2254	3114	2942	1449	1684	1241	
Sample	56	69	107	101	34	46	21	
CEREAL GRAINS								
Triticum free-threshing grain	1	2	-	-	5	1	-	Free-threshing Wheat
Triticum sp(p)	-	-	3	-	-	-	-	Wheat grains
Secale cereale L.	1	-	-	-	5	-	-	Rye grains
Hordeum vulgare L.	2	38	3	-	4	1	1	Barley grains
Hordeum sp. Germinated	-	9	-	-	-	-	-	Barley germinated
Avena sp.	2	-	1	-	-	-	-	Oat grains
Cereal/Poaceae	-	-	2	-	2	1	-	Small Oats/Grass
Cereal indet	5	11	15	-	12	2	1	Cereal
CEREAL CHAFF								
Triticum aestivum s l rachis.	-	-	-	-	1	-	-	Bread wheat
Triticum free-threshing rachis	1	-	-	-	1	-	-	Free-threshing Wheat
Cereal awns.	-	-	-	-	1	1	-	Light chaff fragments
Cereal culm nodes	1	-	-	-	2	-	1	Cereal straw
Cereal stem (m)	1m	-	-	-	2	-	-	Cereal straw fragments
LEGUMES								
Vicia faba L. type	-	-	-	-	-	-	1	Bean
Vicia/Pisum	-	3	1	-	1	-	1	Bean/Pea

FOOD PLANTS								
Corylus avellana L.	2	-	1	-	3	1	1	Hazel nutshell
Prunus spinosa L. (m)	-	-	-	3	-	-	-	Sloe
Prunus sp. Cherry (m)	-	-	-	1	-	-	-	Cherry, wild?
Malus sp.	-	-	-	1m	-	-	-	Apple
Crataegus sp.	-	-	-	-	1cf	-	-	Hawthorn
Papaver somniferum L. (m)	-	-	-	19	-	-	-	Opium Poppy
ARABLE/ DISTURBED								
Chenopodium sp	-	-	-	1m	-	-	-	Goosefoots
Chenopodium album L.	-	-	-	-	-	-	1	Fat-hen
Agrostemma githago L.	-	-	1	1m	-	-	-	Corn Cockle
Cerastium/Stellaria	-	-	-	-	-	-	1	Mouse-ears/Chickweed
Fallopia convolvulus (L)	-	-	1	-	-	-	-	Black bindweed
Rumex sp	-	-	-	-	-	1	1	Docks
Vicia sp	-	-	-	-	-	2	-	Vetch
Vicia/Lathyrus	-	-	-	-	-	-	1	Tare/Vetch/Vetchling
Lithospermum arvense L.	-	-	1	-	-	-	-	Field gromwell
Galium aparine L.	-	-	-	-	1	-	-	Cleavers
Centaurea cyanus L.	1cf	-	-	-	-	-	-	Cornflower
Anthemis cotula L.	-	-	2	-	-	-	1	Stinking Mayweed
Bromus hordeaceus/secalinus	-	-	-	-	-	1	-	Lop-grass/Rye-brome
UNCLASSIFIED								
Ranunculus sp.	-	1	-	-	-	-	-	Buttercups
Malva sp.	1	-	-	-	-	-	-	Mallow
Brassicaceae	-	-	-	-	-	-	1	Brassica, small weed.
Conium maculatum L. (u)	-	-	-	-	-	1u	-	Hemlock
Sambucus nigra L.	1	-	-	-	-	-	-	Elder
Sambucus nigra L. (u)	1	3	1	-	2	14	-	Elder
Valerianella sp.	-	-	-	-	1	-	-	Cornsalad
Asteraceae	-	-	1m	-	-	-	-	Daisy family
Carex sp.	-	-	1	1m	1	-	-	Sedges
Poaceae large	1	-	3	1	6	-	-	Grasses
Poaceae small	-	-	-	-	-	1	-	Grasses
Indeterminate seeds (charred)	-	-	-	-	5	3	1	Indeterminate seeds
Uncharred seeds (u)	-	-	6	5	-	-	-	Seed fragments
OTHER								
Grass stem frags.	1m	-	-	-	-	-	2	Grass stem
Stem fragments (m)	-	+	++	++	-	-	-	Stem mineralised

Buds	-	-	-	-	-	-	4	Buds, small
Puparia (flies)	+	-	+	+	-	-	-	Insect puparia
Fish remains	-	+	++	+	+	-	-	Fish remains
Bones (small)	-	++	++	-	+	-	-	Small bones
TOTAL	22	64	42	32	54	30	20	Total seeds
Sample Vol	8	13	8	8	14	4	4	Litres
Flot Vol	30	120	75	20	270	10	50	Mls (100% sorted)
% flot sorted	#	#	#	#	#	-	-	% sorted
Items/litre of soil	2.8	4.9	5.4	4.0	3.8	7.5	5.0	Items per litre of soil

Key: Remains are seeds in the broad sense and are charred unless described otherwise. u = uncharred, m = mineralised, + = present, ++ = common, +++ = abundant.

Ov = oven or kiln, D = ditch.

Table 84 Assessment of flots for charred plant remains: Sanvey Gate Roman contexts**.**

Samp No.	Cont No.	Feat type	Samp Vol. litres	Flot Vol. mls	Gr Ch	Cf ch	Se ch	Se un	Nut Ch	Oth ch	Chc	Charred plant remains and comments.
Ph2a												
57.3 Ph2a	2057	Pit	6 (+2)	45	2	-	3	1?	-	1Le	++	Few charred remains, a ?mineralised frag, some root concretions. Few small bones.
93 Ph2a	2810	Pit	7	205	2	-	-	-	-	-	+++	All charcoal with only 2 barley grains.
Ph.2b												
91.1 Ph2b	2396 2391	B-sl	6 (+1)	35	c.40	-	10	-	-	-	+	Cereals mostly barley with wheat, few seeds mainly large grass.# Part 2 n/s.
95 Ph2b	2861	Dch	5	75	1	-	25	1	22	Bk	++	Hazel nutshell, seeds, sparse cereals, Bark present looks lignified or waterlogged not charred.#
100 Ph2b	2820	L.	19*	85	5	-	15	-	1	-	++	Wheat and barley present, seeds of cleavers and plantago, nutshell and a straw frag. Sort part 2?
111 Ph2b	3205	Dch	5	20	10	1	15	-	-	2Le	+	Barley and wheat grains and ?oat. A legume frag, seeds of grassy vegetation, henbane and club-rush present. #

75 Ph2b	2492	P/H	6	10	4	-	-	1	-	-	+	Barley present. Small mammal bone.
76 Ph2b	2494	P/H	4	15	10	-	3	-	-	-	+	Wheat and barley present, large grass and a henbane seed.
Ph.2c												
6 Ph2c	935	Occ	10	150**	19	3	45	-	-	-	+++	50% Flot examined. Spelt chaff, wheat grains and barley, 17species of plants, weeds and Flax present. Sort more? #
68.1 Ph2c	2277	Hrth	12 (+1)	95	30	-	-	-	-	1Le	++	Mainly barley with wheat and a legume fragment, no seeds, ?domestic waste.# Part 2 n/s
78 Ph2c	2515	Dch	19*	50	c.35	3	100 a	+	-	St	++	Cereals mostly barley, abundant seeds including large grasses, sedges, spike rush, medicks, buttercup, docks, and small seeds, ?pod frags, straw frags. Count seeds #. Sort part 2?
80 Ph2c	2611	Pit	17*	30	16	-	6	-	-	-	++	Mainly barley with a few seeds. A few fish scales and small bone frags. Sort part 2?
84 Ph2c	2393	L	13*	35	c.60	3	25	-	6	8st	++	Mostly barley grains with spelt chaff and wheat grains. Weed seeds and straw/grass stem frags. Few fish scales and small bones. Count # Sort part 2 ?
96 Ph2c	2867	L	17*	90	16	-	2	-	-	St	++	Mainly barley with few seeds, a straw frag. Sort part 2?
90 Ph2c	2391 2396	Dch	5	20	3	-	4	-	-		+	Few grains and seeds. A fish scale and 2 small mammal bones.

Ph3a												
23.1 Ph3a	1432	Dch	5 (+2)	20	-	-	-	+++	-	-	-	Waterlogged; pond-weed, duckweed, water-crowfoot, water-pepper. Some land plants persicaria, gypsywort, thistles, docks, henbane present. Analysis by J. Greig ##
Ph3b												
105.3 Ph3b	3042	Floor	7 (+2)	20	1	-	2	-	-	-	++	Occasional charred remains only, some charcoal. A fish scale segment, a few small mammal bones.
110.2 Ph3b	3072	Charc L.	10 (+2)	75	3	-	-	-	2	-	+++	Charcoal with occasional charred remains, wheat barley and hazel nutshell. Four segments of fishscale. ?Charcoal ID.

Key: see table E2. a = approximate number, # see Table 83, ## see Greig below.

Table 85 Assessment of flots for charred plant remains: Sanvey Gate Medieval contexts.

Samp No.	Cont No.	Feat type	Samp Vol. litres	Flot Vol. Mls	Gr Ch	Cf ch	Se ch	Se un	Nut Ch	Oth ch	Chc	Charred plant remains and comments.
MED						-	-	-		-		
56 Ph8	2058	Well	14*	30	10	1	5	5+	2	Org +	++	Charred and mineralized remains moderate, fly puparia, organic frags. A wheat rachis indet. Seed of mallow. # Sort part 2? Parasite tests?
69 Ph8	2254	L.	24*	120	50+	-	1	+	-	3Le	+	Abundant barley, very blistered, occasional wheat grains, few seeds and legume frags. Count # Sort part 2?

101 Ph8?	2942	Cess	15*	20	-	-	1	c.30	-	St	Fl	Mineralised seeds of opium poppy, apple pip with corn cockle frags and a few seeds of sedge etc. Organic fragments and grass stem.# A few fish bones and scales with ?perch. Sort FF? Fly puparia v.small. Parasite tests? Sort part 2? Dating uncertain but probably Phase 8.
107 Ph8	3114	Cess	16*	75	25	-	10	10+	1	1Le Org ++	+	Cesspit with mineralised fly puparia, woodlouse, FISH remains, small mammal bones. Seeds include corn gromwell and corn cockle frags. Charred plant remains also present.# Sort part 2? Parasite tests?
58 Ph8	2110	Pit	6*	55	4	1	10	-	3	St	+	Wheat grains and a rachis frag check ID, seeds include club-rush. Sort part 2?
Ex-M												
34 Ph8	1499	Pit	14*	80	11	1	7	-	1	1Le	++	Wheat of free-threshing type with one wheat rachis cf bread wheat. Some barley. Weed seeds include cleavers.# Few fish scale segments. Part 2 sorted, counts to add.
46 Ph8	1684	Pit	4	10	5	-	10	15	1	-	Fl	Little organic preservation except elder seeds. Charred wheat and barley, seeds include A.cotula. # Sort part 2?
21 Ph9	1241	Hth	4	50	2	-	9	-	1	2Le	+++	A barley grain, seeds include A. cotula. #
48 Ph9	1674	Pit	16*	15	10	-	1	+	-	St	+	Wheat, rye and oat. A fly puparia, few fish remains.

47 Ph9	1715	Pit	8	95	5	-	1	-	-	St	++	Charcoal, few wheat grains, Few fish remains and small mammal bones.
12 Ph10	1072	Dep	4	110	2	-	2	-	2	-	++	Charcoal with occasional charred cereal and seeds. Few fish remains.

Key: Gr = cereal grain, Cf = chaff, Se = seed, ch = charred, un = uncharred, Le = legume, Nut = nutshell, Chc = charcoal, Oth = other charred item, tu = tuber, gs = grass stem, st = straw frag, sf = stem frag, Org = organic remains, fl = flecks, frag = fragments, Dch = ditch, Cess = cesspit deposit, Dep = deposit, P/H = post-hole, + = present, ++ = moderate amount, +++ = abundant. * = 50% of the flot sorted, # see Table 83.

THE POLLEN AND PLANT MACROFOSSILS

James Greig

Report 10.03, updated 12.01

Summary

The samples were from town ditch fills, and show surroundings typical of a ditch or pond, with plants of water, waterside and ditch bank habitats together with perennial and annual weeds, and some signs of trees. A sample of Roman date from the lowest ditch fill looked as though it had been soil and its moderate pollen content might represent the past surroundings of dryish mainly unwooded land. The pollen preparation contained enough pollen which was reasonably well enough preserved for a count. There was very little sign of human activity in the form of cultivated plants in any of the samples. This lack of cereal pollen and other cultivated plants may be a result of poor preservation, or sample deterioration during storage due to the delay in starting the project. The results do have the potential to show something of archaeological significance in the interpretation of the site as a whole.

Objectives

Plant remains were investigated to obtain further evidence for the interpretation of the site and its surroundings at the time of its occupation, and those from three samples were also extracted and identified for AMS radiocarbon dating.

The Site

The site is at Leicester, Sanvey Gate, where a number of Roman and medieval features were excavated by ULAS between 2004-5, directed by Wayne Jarvis.

Samples

Samples and a monolith all representing the town ditch were collected from the site on August 25th 2004, and some further samples were submitted by ULAS. Initially the samples were assessed (Monckton 2006). Sample 23 was a mainly inorganic looking brown sediment of Roman date, and the coarse sieving residue showed that it contained sand and charcoal, in addition to organic debris. The monolith consisted of four 25 cm tins through the medieval ditch fills, and the sediments were brown rather organic sediment at the top [1338], going down through fine grey sediment [1436] to more organic sediment with stones [1435], on to sand and gravel.

Laboratory work

Plant macrofossils

Subsamples of around 300 ml were measured out. They were broken down in water, and the lighter, organic, fraction washed over to separate it from the inorganic material, and caught in a 500 µm sieve. The washover was sorted in water under a x10 stereo microscope and the plant remains identified and checked with the writer's own reference collections. The results are listed in taxonomic order (Kent 1992) in Table 86.

Pollen analysis

Pollen samples were processed using the standard method; about 1 cm3 subsamples were dispersed in dilute NaOH and filtered through a 70µm mesh to remove coarser material, which was then scanned under a stereo microscope. The finer organic part of the sample was concentrated by swirl separation on a shallow dish. Fine material was removed by filtration on a 10µm mesh. The material was acetolysed to remove cellulose, stained with safranin and mounted on microscope slides in glycerol jelly. Counting was done with a Leitz Dialux microscope, using phase contrast illumination where needed, to about 100-150 grains. The slides were also scanned with three traverses at lower power to detect rarer taxa, which have been recorded as "+" for presence. Identification was using the writer's pollen reference collection. Standard reference works were used, notably Fægri and Iversen (1989).

The pollen types have been listed in taxonomic order according to Kent (1992), in Table 86.

Results

Seeds were present in the samples in fairly small amounts. Pollen was present and very abundant in part of the column (60 cm) but rather poor at the bottom (80 cm), and moderate in the Roman sample.

Seeds and pollen from sample 23 and the column revealed the past landscape, although as always, there are some plants that leave a record, but others were probably present but were not found if they did not leave many preservable and identifiable remains.

The pollen slide from sample 23 contained many rather coarse organic fragments and resembled many soil and archaeological sediment preparations, as opposed to waterlogged ones. The pollen spectrum was mainly of grassland plants such as plantain, knapweed etc. and weeds such as mugwort. The only sign of damp ground was bistort. Grasses were the main part of the pollen, and as they grow in almost all habitats they provide little ecological information. Trees and woodland show up best from the pollen, and trees and shrubs were present in small amounts. Unusually lime, elm and ash were all present beside the usual alder, hazel and birch. Surprisingly, oak was not found, but this was a small count which may have missed it. Ericales (heathers) could either be local, or from material brought in to the site. Further counting of pollen might increase the flora somewhat.

From the column the most abundant record for trees and woodland were from the middle part of the column (60 and 80). *Quercus* (oak), *Corylus* (hazel), *Betula* (birch) and some *Alnus* (alder) were the main trees. They probably did not amount to much more than a few trees present, rather than woodland. *Sambucus nigra* (elder) and its seeds show it was local, and there were occasional records of possible *Ulmus* (elm), *Crataegus* (hawthorn), *Fagus* (beech) and *Carpinus* (hornbeam). There were some pollen records of Ericales (heathers), which could have been brought into the site if they did not grow nearby on the sandy ground.

The evidence from the other plants for the Roman and medieval periods was somewhat similar. Crops and cornfield weeds were not found, an absence that is quite unusual for an archaeological site where the remains of crops and weeds are usually scattered far and wide, and a town ditch which can be expected to have attracted all kinds of rubbish. Cereal type pollen was found, but this could also have come from *Glyceria* (sweetgrass) which was identified from the macrofossils. The only signs of human activity are charcoal which was present in some samples, and a few *Trichuris* and *Ascaris* parasite ova in the medieval samples suggesting only very slight sewage content.

Grassland plants include pollen of *Centaurea nigra* (knapweed), *Sanguisorba minor* (lesser burnet), together with *Trifolium repens* and cf. *T. pratense* (white and red clovers). A seed of *Leontodon* (hawkbit) was also present, and the large amount of Lactuceae pollen is from this group, although *Sonchus* could also have been the source

Ubiquitous annual weeds such as *Chenopodium* (goosefoot), *Atriplex* (orache) as well as Chenopodiaceae pollen, *Stellaria media* (chickweed) and *Polygonum aviculare* (knotgrass) were present, as in most archaeological deposits.

More perennial tall weed communities are also indicated, with *Urtica dioica* (nettle), *Rumex* (dock), and, especially in the lower part of the column, *Conium maculatum* (hemlock), *Carduus* and *Cirsium* spp. (thistles) and *Sonchus asper* (rough sow-thistle), and pollen records of *Artemisia* (mugwort). A number of Roman sites have shown evidence of such a perennial community, such as Droitwich (Greig 2006). Today, such a community can be seen on floodplains of small rivers which are swept bare in the winter, but in summer the perennial weeds can flourish there. One can speculate how this weed community was apparently so common in past occupied sites, present here in both Roman and medieval samples.

Other weed communities are associated with muddy banks, such as *Ranunculus sceleratus* (celery-leaved buttercup) which was very abundant at the base of the column, pollen and seeds of various *Polygonum* species (bistorts and persicarias), *Apium inundatum* (marshwort), *Lycopus europaeus* (gypsywort), and these like the aquatics below are the most easily preserved in wet deposits, but tell us the least about the occupied surroundings.

The column samples and perhaps sample 23 were laid down in water. The medieval aquatic flora is represented by significant numbers of seeds of *Ranunculus* subg. *Batrachium* (water crowfoot), *Potamogeton* sp. (pondweed), *Zannichellia palustris* (horned pondweed), *Lemna* sp. (duck weed), *Glyceria* (sweetgrass), *Typha* (bulrush), *Sparganium* (bur-reed), oogonia of *Chara* (brittlewort), huge numbers of resting bodies of *Daphnia* (water flea), and larval cases of Trichoptera (mayflies).

Acknowledgements

Thanks to Angela Monckton for the assessment report and for other information relating to the site, and ULAS for offering me this project.

Table 86 Plant list, names and order according to Kent (1992). Numbers highlighted* were not used in radiocarbon samples e.g. aquatic taxa in [square] brackets

sample:	23	5-10 cm	95-100 cm	
amount	300 ml	300 ml	200 ml	
Ranunculus sceleratus L.	6	-	504	celery-leaved buttercup*
Ranunculus subg Batrachium (DC) A. Gray	[4]	[132]	[6]	water crowfoot*
Urtica dioica L.	25	31	78	common nettle
Chenopodium sp.	2	-	-	fat hen, etc.
Atriplex sp.	-	-	1	orache
Stellaria media (L.) Villars	1	1	5	chickweed
Persicaria lapathifolia (L.) Gray	-	9	1	pale persicaria
Persicaria cf. maculosa Gray	-	2	-	persicaria
Persicaria sp.		14	3	persicaria
Polygonum aviculare L.	1	-	-	knotgrass
Rumex acetosella L.	1	-	-	sheep's sorrel
Rumex sp.	1	10	5	dock
Aphanes inexpectata Lippert	1	-	-	slender parsley piert
Conium maculatum L.	-	-	15	hemlock
Apium cf. *inundatum* (L.) H.G. Reichenb	[1]	-	[7]	lesser marshwort*
Lycopus europaeus L.	1	-	17	gypsywort

sample:	23	5-10 cm	95-100 cm	
Plantago major L.	1	-	-	greater plantain
Sambucus nigra L.	-	1	1	elder
Carduus sp.	-	1	4	thistles
Cirsium sp.	1	-	3	spear thistles
Leontodon sp.	-	-	1	hawkbit
Sonchus asper (L.) Hill	-	-	8	prickly sow-thistle
Potamogeton sp.	[5]	-	-	pondweed*
Zannichellia palustris L.	[9]	-	-	horned pondweed*
Lemna sp.	[9]	[61]	[85]	duckweed*
Glyceria sp.	[3]	-	[5]	flote-grass*
larger Poaceae nfi	1	-	1	grasses
Sparganium sp.	2	-	-	bur-reed
Chara sp.	-	-	[2]	brittlewort*
other remains				*
charcoal	+	+		*
Coleoptera	+	+	+	*
Trichoptera	+	+		*
Daphnia	+++	++++	+++	*

Table 87 pollen and spores, parasite ova

	SAM23	SAM23 %pollen	Column 20 cm	60 cm	80 cm	90 cm	
spores							
Pteridium			-	-	1	1	bracken
Polypodium			-	+	-	-	polypody
pollen							
Pinus	2	2	1	+	2	1	pine
Ranunculus-tp.	1	1	2	6	5	3	buttercup, crowfoot
Ulmus	+	+					elm
Fagus			-	-	1	1	beech

Quercus			6	15	19	3	oak
Betula	1	1	5	5	5	5	birch
Alnus	1	1	1	1	3	-	alder
Carpinus			-	-	1	-	hornbeam
Corylus	4	4	-	4	17	2	hazel
Chenopodiaceae			4	3	3	3	goosefoot
Caryophyllaceae			4	1	-	3	stitchwort family
Persicaria maculosa-tp.			6	1	-	-	persicaria etc.
Persicaria bistorta-tp.	4	4	6	26	5	3	bistort etc.
Rumex-tp.			-	-	6	2	docks and sorrels
Tilia	1	1	-	-	?	-	lime
Salix			-	-	-	1	willow
Brassicaceae	1	1	1	-	1	3	brassicas
Ericales	3	3	-	-	2	1	heathers
Filipendula			-	-	-	-	meadowsweet
Potentilla-tp.	1	1	-	1	-	1	tormentil, cinquefoil
Sanguisorba minor-t			-	3	-	-	lesser burnet
cf. Crataegus-t			-	-	1	-	hawthorn
Trifolium repens-t			-	1	-	-	white clover
cf. Trifolium pratense-t			-	-	1	-	red clover?
Apiaceae			1	-	-	6	umbellifers
Mentha-t			-	-	1	-	mints etc.
Plantago lanceolata	5	5	1	8	4	2	ribwort plantain
Fraxinus	1	1	-	-	1	1	ash
Rubiaceae			-	-	-	1	bedstraws
Sambucus nigra			1	-	2	-	elder
Dipsacaceae			1	+	-	+	scabiouses

Cirsium-t			3	2	-	2	thistles
Centaurea cyanus			-	-	-	-	cornflower
Centaurea nigra	3	3	2	4	2	5	knapweed
Lactuceae	8	9	69	31	18	8	a group of composites
Aster-t	1	1	5	10	7	1	daisies etc
Artemisia	5	5	1	6	9	8	mugwort
Anthemis-t			-	-	1	-	mayweeds etc.
Cyperaceae			2	2	-	-	sedges
Poaceae	51	56	21	115	66	57	grasses
Cerealia-t			8	9	5	-	cereals
Sparganium-t			-	1	3	1	spike-rush
Typha			-	-	-	9	bulrush
other microfossils							
Trichuris ova			2	1	?	-	round worm parasite ova
Ascaris ova			-	1	-	-	whip worm parasite ova
charcoal			+				
phytoliths			+		+		
unidentified	3						
total pollen	93	99%	153	255	191	133	

THE ^{14}C DATING

Wayne Jarvis

Carbon Dating Programme for the Town Ditches

Bulk environmental samples were taken routinely during excavations on site. Additionally, samples were taken where the potential was high for waterlogged remains from the town ditches, and a 1m column sample was also taken through the lower fills of the outer town ditch. Alongside the latter, further bulk samples were taken as standard. Pottery that was recovered during machining of the town ditch trenches, by hand recovery and by sample excavation of discrete deposits was 3D located by EDM. From these pottery results and the environmental assessment, several issues were highlighted that could be tackled by a limited programme of C14 dating. These issues were that (a) the exposed stretch of the outer town ditch had more than one ditch cut visible with the potential of ditches surviving of different dates, (b) the pottery evidence was ambiguous for the dating of these ditch cuts, and there is a high potential for residuality of these finds in the ditches. Whilst the majority of ditch fills are largely thought to be of medieval date, the outer ditch actually produced very little pottery dating to confirm this. This is despite known domestic activity occurring on the adjacent frontage, which would potentially produce dating evidence that could have entered the ditches, (c) assessment of the evaluation samples had indicated relatively good preservation of waterlogged material in the ditch fills, with their potential for C14 dating,

pollen survival and environmental information (d) the Sanvey Gate excavations provided the first opportunity to sample these deposits using modern methods, and with an understanding of the full sequence, (e) by recovering a column sample it would be possible to look at environmental changes over time in the town ditch environs.

The following samples were selected. (1) Sam 23 1428 which came from a lowest ditch, potentially an early separate ditch cut, (2) Sam Base COL1434 the lowest fill in the column sequence stratigraphically above (1) and from a ditch with a different profile, and (3) Sam Top COL1332 the uppermost fill of the same column, 1m higher than (2), and towards midway in the town ditch fills.

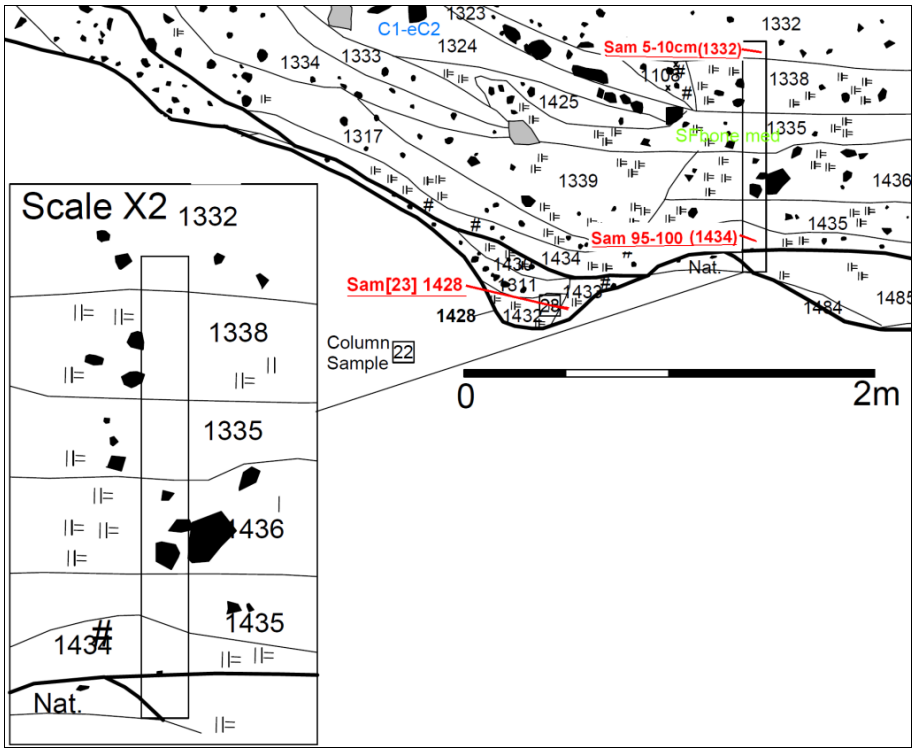
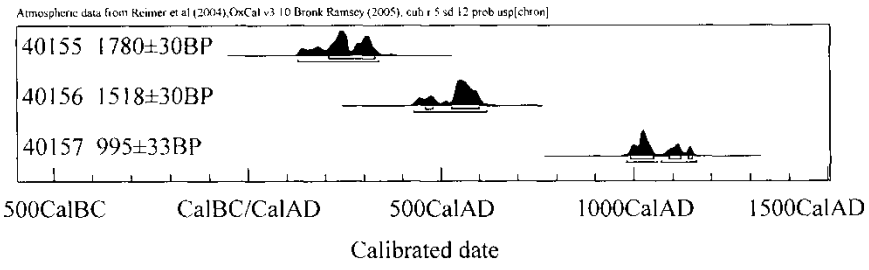


Figure 41 Sample locations for radiocarbon dating of town ditches

Subsamples from these waterlogged deposits were dispersed in tap water and washed on a fine sieve, and seeds were sorted from the sediment and identified under magnification by James Greig. Plant remains from three samples were extracted and identified for AMS radiocarbon dating. These consisted of seeds from land plants, as follows:- *Urtica dioica*, *Cirsium* sp., *Chenopodium* sp., *Rumex* sp., *Poaceae* etc. The extracted seeds were sent to the Angstrom Laboratory, Uppsala University, Sweden. The results are shown in Table 88 below, and also see Figure 42 - Figure 43.

Table 88 C14 results

ULAS Sam Ref./C14 Ref.	Location	C14 age BP	Date range (95.4%)	Date range (68.2%)
SAM23 Ua40155	First ditch cut lower fill	1780+/-30	130AD 340AD	210AD 330AD
COL1434 Ua40156	Secondary ditch cut lower fill	1518+/-30	430AD 620AD	460AD(4.3%)480AD 530AD(63.9%)600AD
COL1332 Ua40157	Secondary ditch cut upper fill	992+/-33	980AD(60.1%)1060AD 1070AD(35.3%)1160AD	990AD(52.2%)1050AD 1090AD(13.2%)1120AD 1140AD(2.8%)1150AD



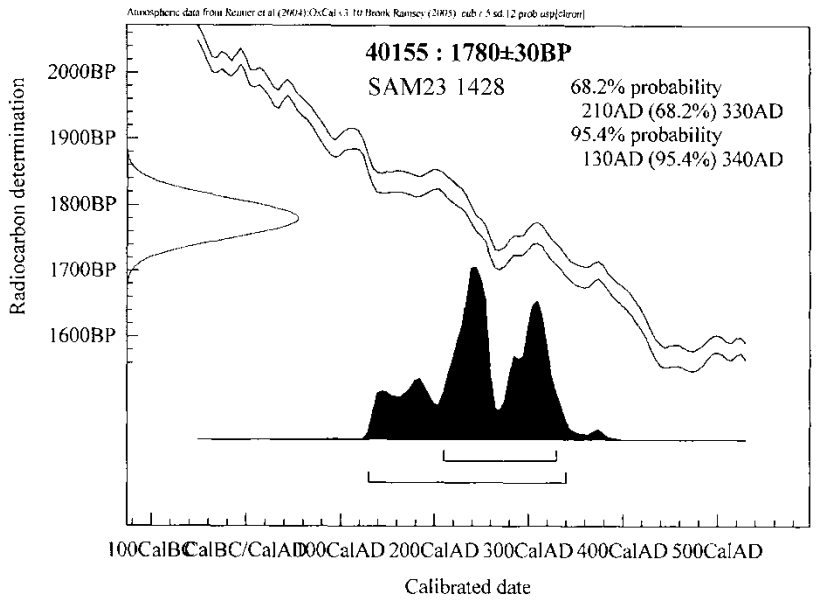
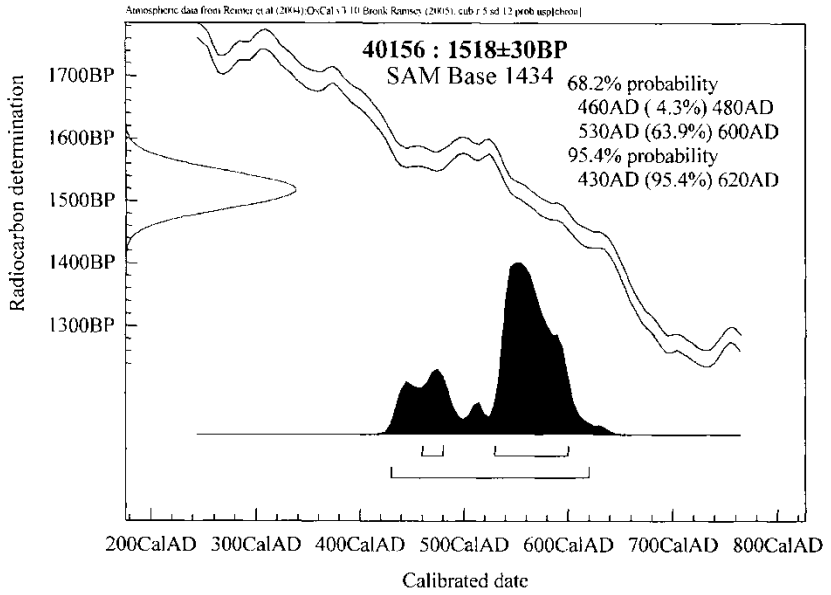


Figure 42 Radiocarbon results



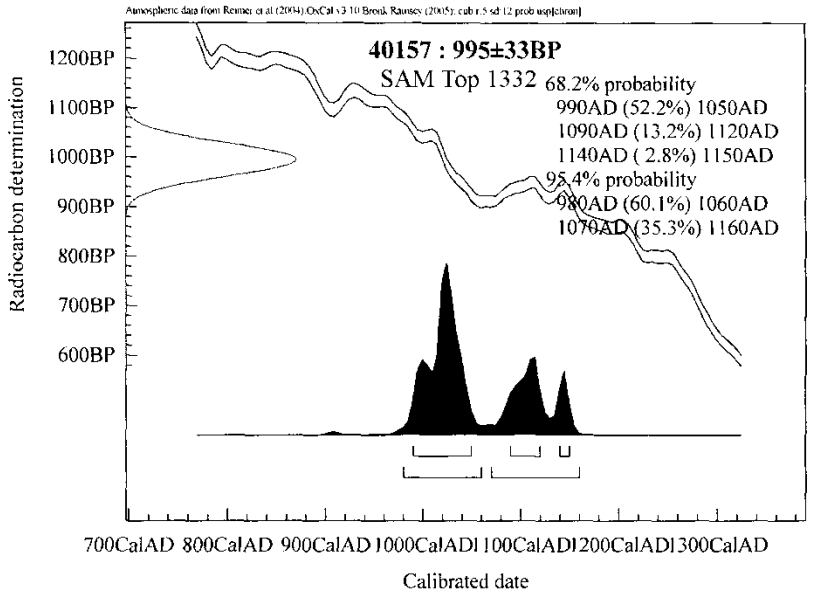


Figure 43 Radiocarbon results (cont'd)

These C14 results confirm that the earliest ditch is of Roman date (Figure 44). This feature consisted of a V-shaped ditch profile and only survived in places where the cut was deeper and below the base of the later ditch. This feature is comparable to the outer initial ditch at Magazine Walk (Site 2, F9, Buckley and Lucas 1987, 20), also thought to have been of Roman date. At Sanvey Gate the initial fills (SAM23) of this ditch dated to around the turn of the 3rd century onwards (130-340AD, 95.4%, Ua40155).

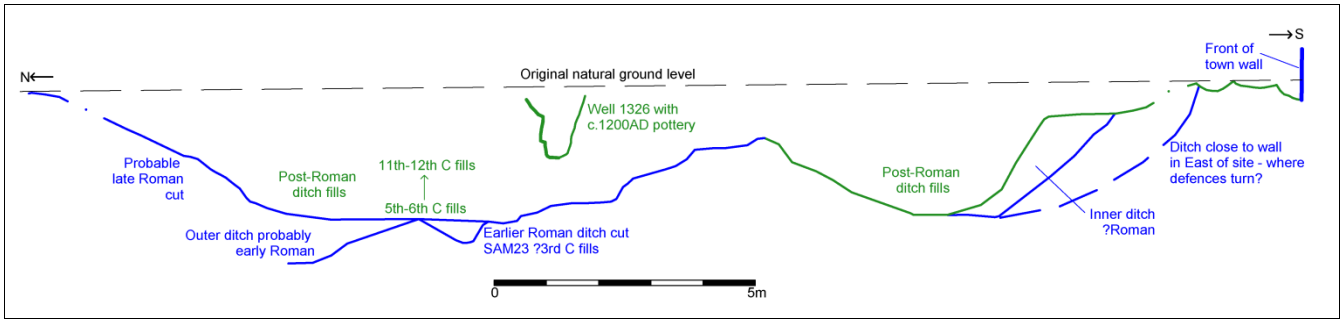


Figure 44 Schematic dating of the town ditches

This early initial ditch system was in turn cut through by a wider near flat-bottomed feature (cut [1443] etc.). It is likely that this is a late Roman ditch cut, a ditch not maintained as an open feature in the post-Roman period. The C14 results provide a date for its initial fills (COL1434) of 5th-6th century date (430AD-620AD, 95.4%, Ua40156). This filled up over a long time, partly naturally but a number of fills with demolition rubble indicate some deliberate backfilling. At the top of the one metre column within this ditch fill sequence a C14 date (COL1332) provided a probable 11th century date (980-1060AD, 60.1%; 1070AD-1160AD, 35.3%, Ua40157). Certainly, a stone-lined well (feature 1326 trench 19) cutting from the top of the outer town ditch fills indicates that this ditch had been fully infilled by the 13th century. It is worth adding that the early V-ditch did not survive the later recuts in all observed sections at Sanvey Gate, and so will probably only survive sporadically on other sites. Interestingly, the environmental evidence confirms that the outer ditch sequence was waterlogged (perhaps seasonally), and did hold standing water (Grieg report *this volume*), something postulated from other evidence in town (Buckley and Lucas 1987). The fact that a sequence including Roman, post-Roman, and medieval deposits survives with both waterlogged plant remains and pollen is significant. Further work on town ditch samples will add much to our knowledge of the local environment, and changes in this through time.

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Abbreviations

AML	Ancient Monuments Laboratory
BAR	British Archaeological Report
CBA	Council for British Archaeology
CTS	County Type Series
EH	English Heritage
HMSO	Her Majesty's Stationery Office
LAHS	Leicestershire Archaeological and Historical Society
MOLAS	Museum of London Archaeological Service
MPRG	Medieval Pottery Research Group
PRS	Palaeoecology Research Services
RRCSAL	Report of the Research Committee Society of Antiquaries of London
TLAHS	Transactions of the Leicestershire Archaeological and Historical Society
ULAS	University of Leicester Archaeological Services

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Cover: A copper alloy trumpet brooch. Bayley and Butcher's Type A with the fully round acanthus moulding. Later 1st to mid 2nd century. SF280.

THE UNIVERSITY OF THE YEAR 2008/9