THE GLASS

by G E Oakley (GL1-39, 41-94) and J Hunter (GL40)

The report is divided into three sections each subdivided by period: window glass, objects other than vessels, and vessels. Finds of Saxon date include two vessel fragments and a bead. Medieval and later periods produced window glass, linen smoothers, and vessels of great variety. I am grateful to Mr R J Charleston, Miss D Charlesworth, Dr D B Harden and Dr J Hunter for helpful discussion on the vessels.

Early medieval window glass

Fig. 130; GL1-17

A scatter of 17 mostly small pieces of thick (2.5 to 5mm) early medieval window glass, almost all rendered opaque by the effects of weathering and decomposition, comes from all parts of the site excluding House 8. Seven pieces bear painted decoration on the inner face. Others may be stained or coloured but this is not discernible except for one possibly olive green piece (GL8). Both painted and unpainted quarries have grozed edges, trimmed by a technique leaving a series of conchoidal scars at an angle. The quarries were fitted together in windows by means of channelled lead strips, or cames, of which four fragments have been found on the site, two in 12th or 13th century contexts (p. 265). The outer face of each quarry (e.g. GL8) is pitted by weathering towards the centre but less worn along the grozed edge which would have been enclosed in the came.

Glass is unlikely to have been used in domestic windows except of superior stone dwellings and certainly not in the timber buildings of early medieval St Peter's Street. The fragments found on the site perhaps came from one of the nearby churches during rebuilding operations together with the fragments of lead came and possible roof sheeting and architectural stone fragments (p. 320).

GL6 bears a design also found at Greyfriars, Northampton (Williams 1978), and as background in mid-14th century windows in York Minster (French 1971: 88, Pl. XVIIa); the design is common at this period.

Catalogue

GL1 Painted fleur-de-lys. Hatched background. Corner of diamond-shaped quarry?
L: 65mm. Unstrat. SF880.

GL2 Painted straight border with ovals containing dot in circle. End of narrow quarry with 3 grozed edges.
W: 31mm. A524. House 2, garden. SF1357.

GL3 Painted broad and narrow linear border with cross saltire in square outline. 2 grozed edges, 1 curved.
W: 31.5mm. A445. House 3, garden. SF1236.

GL4 Painted curvilinear design. Square corner of quarry.
L: 33mm. G132. House 10, Phase 6B. SF2596.

GL5 (not ill.) Painted. Part of cross-hatched filled circle. Fragment.
L: 20mm; W: 20mm; Th: 3mm. G132. House 10, Phase 6B. SF2596.

GL6 Painted spiky flower design. 1 grozed edge. 14th C.
L: 38mm. E, unstrat. SF1799.

GL7 Painted design of robes or drapery? Acute-angled corner of quarry.
L: 33mm. E(14) = 11. E, pre-Phase 6. SF2102.

GL8 Unpainted. Translucent olive green where surface not weathered. Narrow quarry fragment, 3 grozed edges.
L: 36mm. A(105) = 103. House 2, Phase 6Biii. SF3093.

GL9 -17 (not ill.) Small unpainted fragments of indeterminate colour. Th: 2.5-5mm.
GL9 A524. House 2, garden. SF1788.
GL10 A100. House 2, garden. SF3091.
GL11 A196. House 3, garden. SF3092.
GL12 B(182) = 7a. House 4, Phase 6Di. SF3137.
GL13 B(263) = 15. House 4, Phase 6B. SF3138.
GL14 C(73) = 20. House 7, Phase 5. SF1014.
GL15 C126. House 7, Phase 5. SF1653.
GL16 G(56) = 44. House 9, Phase 5-6. SF2300.
GL17 G(96) = 87. House 10, Phase 7. SF2398.

Late and post-medieval window glass

Fig. 130; GL18-34

Thin green window glass was made less than 2mm in thickness to improve the translucency of the unavoidably coloured potash glass. It became more widely available for domestic windows in the late 16th and 17th centuries with the expansion of the English glass industry.

Ten small and somewhat weathered pieces are likely to be late medieval though only four are so stratified. Four have grozed edges. These are hardly evidence enough to suggest that the stone-built houses in St Peter's Street had glazed windows. With fire destruction of the street more direct evidence for windows in the form of concentrations of glass fragments and molten pieces would be expected. Wooden shutters were probably used at night and possibly slatted louvres during the day. The few glass fragments could perhaps derive from ecclesiastical building alterations as in earlier medieval times.

Unweathered green glass from the 16th-17th century fill of tanning pits in House 10 (GL32) still has grozed edges (cf. Basing House, Hants., Moorhouse 1971c: 72) but GL29, from an 18th century deposit in House 7, has straight cut edges and its parallel elongated bubbles indicate the cylinder of muff process. GL34, a light or colourless diamond pane fragment from the same context, has brown painted decoration and yellow staining and could derive from a 16th or 17th century window (cf. Moorhouse 1971c: 72).

Catalogue

GL18 -27 (not ill.) Small fragments, late medieval. Th: 1.5-2mm.
GL18 A3. House 1, Phase 6Bii. SF392.
GL19 A144. House 2, Phase 6A-B. SF3296.
GL20 A100. House 2, garden. SF3091.
GL21 A(66) = 64. House 3, Phase 6Diii. SF395.
GL22 A50. House 3, destrat. SF3096.
GL23 C123. House 7, Phase 4 (? intrusive). SF1268.
GL24 C54. House 7, Phase 6iii. SF3176.
GL25 C63. House 7, Phase 7. SF966.
GL26 N(39) = 36. N, Phase 6/7v. SF3501.
GL27 G68. House 10, Phase 7. SF2098.

GL28 -33 (not ill.) Unweathered fragments, post-medieval.
GL28 House 7, destrat. SF3173, 3178, 3181.
GL29 House 9, destrat. SF1908, 1911.
GL30 -32 G66, 69, 71. House 10, Phase 7. SF2516, 2195, 2181.
GL33 G21. House 10, Phase post-7. SF2037.

GL34 Post-medieval painted pane. Reddish-brown painted foliage edged with thin lighter brown line. Both borders of diamond pane stained clear acid yellow. Edges cut rather than grozed, one rough, one smooth.
L: 75mm. C112. House 7, destrat. SF948.

Glass objects other than vessels

Fig. 130; GL35-39

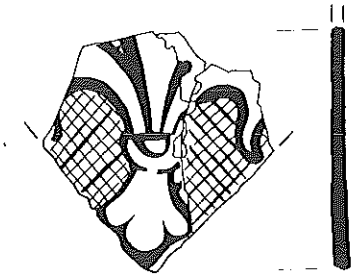
A bead of probable Saxon date (GL35) and fragments of four medieval linen-smoothers were found, three of them from medieval layers in Houses 9 and 10.

Linen smoothers are fairly common in Viking period graves in Scandinavia (Petersen 1951: Fig. 178; Arbman 1943: Taf. 153) and similar objects were used for this purpose in comparatively modern times in Scandinavia (Charleston 1972: 143). They occur on a few Late Saxon and medieval sites in England: e.g. Yarmouth, Norfolk, in an 11th century context (Rogerson 1976: Fig. 51, no. 13); Hangleton, Sussex, in late 13th or early 14th century layers (Holden 1963: 163-5); Lyveden, Northants. (Bryant and Steane 1969: 44). Production continued in the 16th century when the mushroom-shaped objects have a stem-like handle (Charleston 1972: 143).

In size the smaller St Peter's Street linen-smoothers (GL36-7) are comparable with the Viking and medieval examples. The larger ones (GL38-9) are the same diameter as those from Rosedale and Hutton, Yorkshire (Charleston 1972: Fig. 62). There seems to be a tendency for later linen-smoothers to be larger. GL39, from a 15th century

Fig 130

Glass 1



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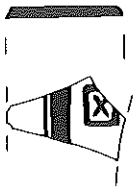

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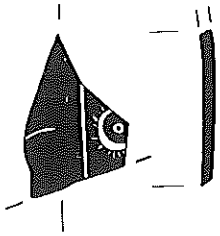

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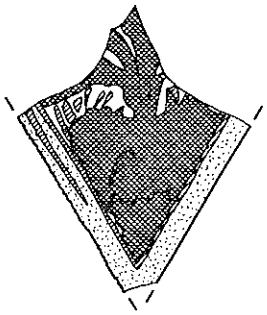

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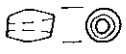

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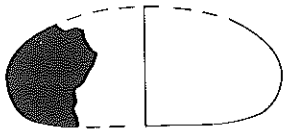

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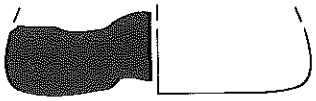

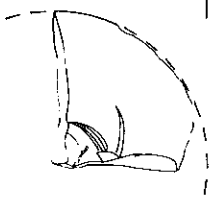

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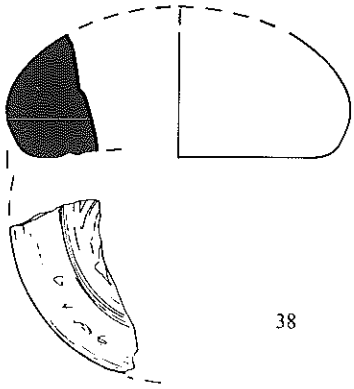

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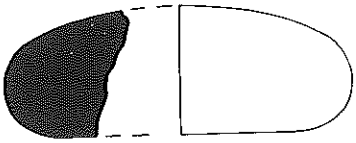

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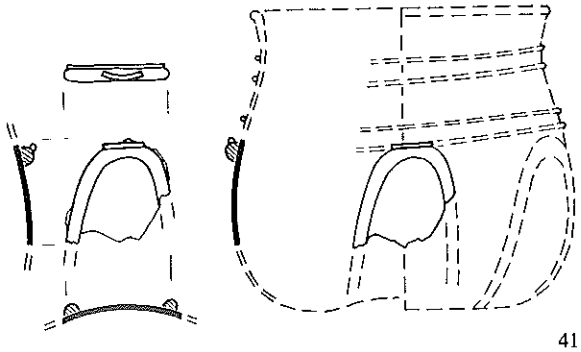

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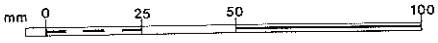


pit, is pale green while the others are weathered and opaque. Dating them by counting the weathering layers on the surface has not been attempted (cf. Holden 1963: 163-5) and they could be residual.

Catalogue

GL35 Glass bead. Barrel-shaped or bi-conical bead pierced lengthwise. Semi-opaque turquoise with a little surface weathering. From weathered sand overlying bedrock and so possibly of Saxon date.
L: 6.5mm. A, unstrat. SF3062.

GL36 Linen smoother. Fragment of perimeter. Dark, weathered surface, opaque.
Diam: 72mm. G(56) = 44. House 9, Phase 5-6. SF3158.

GL37 Linen smoother. Quarter of 'base'. Central scar where stem handle or pontil removed. Deeply weathered surface. Interior dark and glossy but opaque.
Diam: 80mm. C57. House 7, destrat. SF3177.

GL38 Linen smoother. Perimeter fragment. Dished base with swirling creases. Surface highly polished just above and below maximum diameter. Opaque.
Diam: 90mm. G85. House 9, Phase 5. SF2534.

GL39 Linen smoother. Perimeter fragment. Exterior weathered, centre pale green.
Diam: 90mm. G134. House 10, Phase 6Aiii/B. SF2896.

Early vessels

Fig. 130; GL40-42

Two vessel fragments are of Saxon date and one Roman: one from weathered sand overlying bedrock and two from Late Saxon contexts. GL40 and 42 are relatively unweathered and therefore soda-lime glass while GL41, from the fill of Grubenhaus 3, is badly weathered potash glass.

Catalogue

GL40 (not ill.) Vessel fragment.
A very small fragment of glass of soda-lime type probably belongs to a tall conical vessel and exhibits specific decorative features. Most significant is the colouring which is light green and contains red streaking within the metal. This is a deliberate decorative feature brought about by the use of a particular additive, almost certainly containing copper, the melting point of which was lower than that of the rest of the glass. The fragment also exhibits traces of applied horizontal fine trailing.
Vessels with this type of coloured streaking are known mostly from the continent from Merovingian times and later. Examples can also be seen in certain window glasses from England dated to the late 7th or 8th centuries (Cramp 1970: Pl. LIVa). In view of the possible vessel form a date within the 7th century would seem fitting.
From weathered sand overlying bedrock.
L. and W: c. 10mm; Th: c. 1mm. F, unstrat. SF3352.

GL41 Fragment of squat jar or cup? Thin fragment of curved body with applied thick trailed loop overlain by thin trail across top of loop. Surfaces weathered dull grey, core opaque yellow in centre. Type of weathering indicates potash rather than soda-lime glass. Closely comparable to vessels from Viking graves at Birka (Arbman 1943: Taf. 193, no. 2 and especially no. 3) which have loops trailed up and down the body and a thin horizontal trail spiralling around the neck. In Arbman's plate (no. 3) this trail overlies one of the thicker loops just like that on GL41.
The Birka vessels are similarly decayed (Arbman 1943: 265, 271). The drawing is a reconstruction based on these vessels.
Dr D B Harden comments that Late Saxon potash glass is rare in England.
Diam: approx. 80-90mm. K171. House 10, Phase 4. SF2820.

GL42 Rim of bottle. Shape moulded, matt surface, translucent duck-egg blue. Miss D Charlesworth reports that this is definitely Roman glass. Residual.
Diam: 40mm. K188.5. House 10, Phase 4. SF3048.

Medieval and later vessels

English glass vessels were being made in forested areas, for convenience of fuel supplies, probably by the 13th century in the south and the industry spread gradually northwards in the 16th century (Charleston 1964: 146; Kenyon 1967). The potash glass is green or bluish-green in colour but medieval vessels tend to weather badly and become opaque in the soil. Later glass is of improved quality and survives better.

Some medieval forms continued in production into the post-medieval period as two finds from this site show. The hanging lamp and urinal are forms rarely found with complete profiles as they are in places exceptionally thin and break easily. Both forms are represented here in medieval and post-medieval contexts. Vessels with moulded and wrythen patterns were introduced in medieval times but beakers with a folded foot probably date from the 16th century onwards.

Thick olive green glass bottles belong to the 17th and 18th centuries and can be roughly dated from their changing shapes. English bottles also differ in shape from foreign ones, enabling imports to be identified.

Weathered opaque vessel fragments

not ill.; GL43-51

A handful of completely devitrified vessel fragments, mostly too small to identify vessel type, come from contexts of late 14th century date and later.

Catalogue

GL43 Base fragment?
A421. House 1, Phase 4/5. SF1361.

GL44 Spherical body fragment.
A144. House 2, Phase 6A-B. SF3296.

GL45 Thin spherical body fragments. Residual.
A(105) = 103. House 2, Phase 6Biii. SF354.

GL46 Spherical body fragment.
A unstrat. House 2. SF390.

GL47 Conical pushed-in base, perhaps bottle, and spherical body sherds.
A(220) = 170. House 3, Phase 6C-6Di/6Di. SF593, 1024.

GL48 Spherical body fragment.
A237. House 3, garden. SF1032.

GL49 Straight wall, of beaker?
A55. House 3, destrat. SF3094.

GL50 Bottle neck/shoulder fragment.
F32. House 8, Phase 5-6. SF2019.

GL51 Pushed-in base of bottle? Residual?
G(96) = 87. House 10, Phase 7. SF3156.

Hanging lamps

Fig. 131; GL52-3

The medieval form has a long narrow base, with round bottom and external pontil mark, which widens abruptly into a rounded bowl. The bowl is fairly thin and seldom survives. It held oil and was supported on a metal ring, suspended by three chains, through which the base hung down. GL52 is a typical medieval base fragment, cf. complete 13th century example in Winchester Museum (Kenyon 1967: Pl. XV) and French example from tomb *c.* 1040 (Barrelet 1953: 30, Pl. XVIII,A). Lamps are frequently depicted in manuscripts with floating wick alight, e.g. late 12th century psalter in the British Museum (Royal MS.2A.XXII,f.13b), another in the Bodleian Library (MS. Laud Misc. 409, f. 3v).

Later the base was made with a gently sloping profile and the rim out-curved slightly, cf. painted Altarpiece of Boulbon (*c.* 1460, Louvre), where the glass appears grey or white, and Rademacher 1933: Pl. 20a, b and d. 16th century German artists show lamps with flat bottom to the base and angular bowl (cf. woodcuts of Foolish Virgins by Nikolaus Manuel Deutsch and Martin Schongauer). GL53 is a late survival of a medieval form and the first from such a late context that has come to Mr Charleston's notice. It could have been old when discarded but, if so, is surprisingly complete.

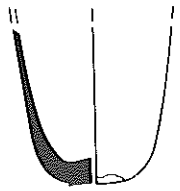
Catalogue

GL52 Hanging lamp base. Weathered and opaque. Probably residual.
Diam: 30-40mm. N(6) = 5. N, Phase 6/7ii. SF3372.

GL53 Hanging lamp. Pale bluish-green glass. Complete base and about a third of rim, not quite joining but profile overlaps. Blotches of weathering on exterior.
Diam: 130mm. H: 125mm. K28. House 10, Phase 7. SF2582/2585.

Fig 131

Glass 2



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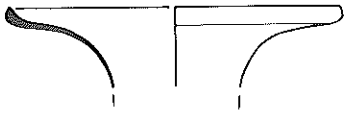

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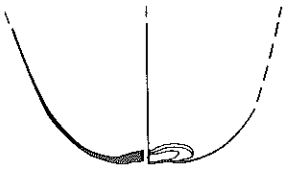

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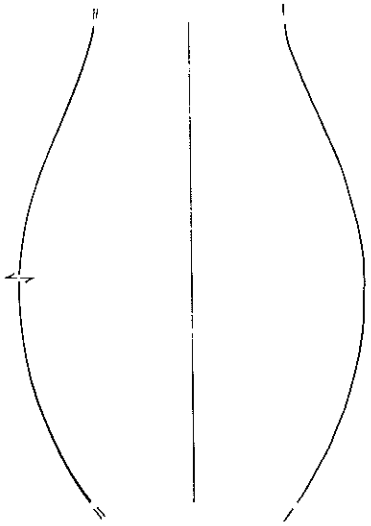

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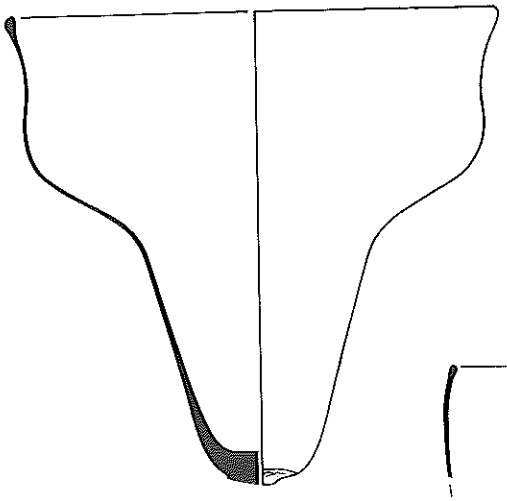

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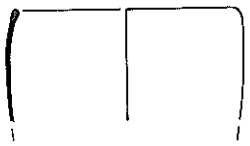

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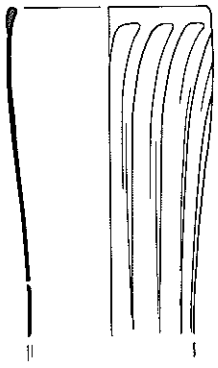

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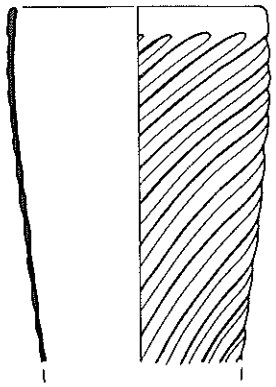

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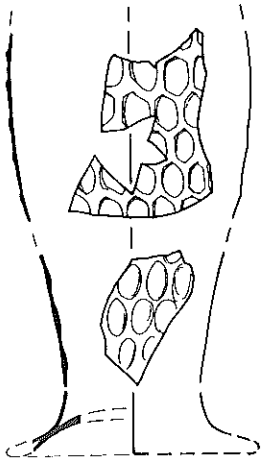

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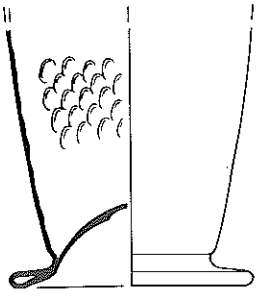

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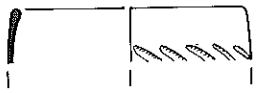

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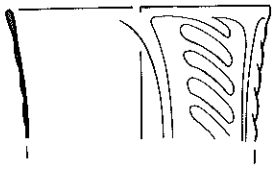

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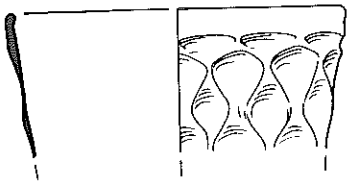

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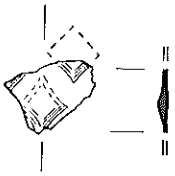

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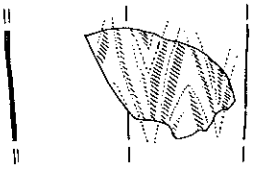

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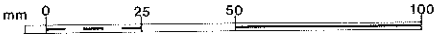


Urinals

Fig. 131; GL54-6

A urinal is a thin-walled vessel used, among other purposes, for checking on one's state of health by examining the urine (Hume 1957: 106; Charleston 1964: 146). The characteristic rim, GL54, and the convex base with external pontil mark, GL55, survive more often than the extremely thin body, GL56. Only one complete urinal has been found (Hume 1957: Fig. 2); this has a pear-shaped body but they are more often depicted in medical tracts as spherical (Charleston 1972: 149, fn. 84 and 85). GL54-5, from a medieval context, are accompanied by numerous pieces of very thin body which are not restorable. Urinals certainly continued to be made up to the 17th century (Moorhouse 1971c: 67 and Fig. 28, nos. 33-5; Charleston 1972: 149).

Catalogue

GL54 Rim and base of urinal, with body sherds (not ill.), not joining.
-5 Mostly devitrified and opaque, parts translucent pale green. For rims cf. Charleston 1975: no. 1506; 1964: Fig. 50, no. 14.
Rim diam: 90mm. E(14) = 11. E, pre-Phase 6. SF1919D.

GL56 Body fragments of urinal. Bulbous shape tapering towards neck. Clear bluish-green glass with very bright surface finish. Maximum thickness of surviving portions: 0.8mm; minimum: 0.2mm.
Diam: *c.* 90mm. G71. House 10, Phase 7. SF2157.

Beakers

Figs. 131-2; GL57-83

Almost all the beakers are decorated, some being blown into vertically-ribbed moulds and then wrythen (twisted). Others show a variety of fancy mouldings. GL68 appears to have been shaped successively in two moulds: wrythen ribbing is interrupted by vertical fluting from a second mould. GL75 and 76 show chequered spiral trails obtained by blowing a trailed beaker into a ribbed mould (Tait 1967). Though thought to derive from the Netherlands, this technique appears at the glass furnace at Rosedale, Yorkshire (Charleston 1972: 137, Fig. 60, nos. 19-22). The rim profile and applied footring of GL76 (cf. Tait 1967: Figs. 4, 5, 7 and 8) and the separately added base of GL75 (cf. Tait 1967: Fig. 24) often accompany chequered spiral trail decoration. All other beaker bases are pushed-in forming a folded hollow footring like GL79, often with a pedestal of varying height and diameter. The pushed-in foot of GL58 and the inturned rim of GL57 are considered to be 16th century features and are surprising in a context of 14th or perhaps early 15th century date (pers. comm., Mr R J Charleston).

Substantial beaker fragments GL59, 60 and 64 come from the early 17th century pit containing a Bellarmine (pottery no. 483, p. 201) in House 7. GL59 is rather narrow for a beaker rim but wide for a bottle neck. Several small fragments come from the series of possible tan pits in House 10. All the beakers are bluish green though GL64 and 76 are very pale. They are broadly comparable with those produced at Hutton and Rosedale in Yorkshire (Charleston 1972: Figs. 64 and 66) though no doubt they came from a nearer source.

Catalogue

GL57 Plain beaker rim, inturned and somewhat irregular shape. Also body sherds (not ill.). Partly weathered, rest green and bubbly.
Diam: *c.* 60mm. E(14) = 11. E, pre-Phase 6. SF1919A.

GL58 Mould-blown beaker. Non-joining body sherds with lozenge pattern and part of pushed-in base. Bubbly green glass, slightly weathered. Cf. Charleston 1972: Fig. 64, no. 64.
Diam: *c.* 64mm. E(14) = 11. E, pre-Phase 6. SF1919C.

GL59 Mould-blown beaker. Complete pushed-in base with folded footring. Body dimpled on interior, surfaces weathered. Cf. Charleston 1972: Fig. 64, no. 64.
Base diam: 66mm. C63. House 7, Phase 7. SF965.

GL60 Mould-blown beaker or perhaps bottle neck. Vertical fluting twisted slightly near rim. 3 non-joining fragments overlapping in profile to uncertain extent. Small diam. for beaker, wide for bottle (cf. Charleston 1975: nos. 1522 and 1536).
Diam: 54mm. C(205) = 63. House 7, Phase 7. SF3298.

GL61 (not ill.) 2 rim fragments as GL60 with vertical fluting 12 and 15mm
-2 wide.
Diam: 80 and 70mm. G39/40 and G2. House 9, destrat.
SF1956A, 1937.

GL63 (not ill.) Body fragment from straight-sided beaker with vertical fluting 11mm wide.
Diam: 60mm. G72. House 10, Phase 7. SF2120.

GL64 Complete rim of mould-blown ribbed and wrythen beaker. Slightly greenish but almost colourless glass.
Diam: 68mm. C(205) = 63. House 7, Phase 7. SF3299.

GL65 Rim as GL64 but wrythen in opposite direction. Glossy deep green bubbly glass.
Diam: 62mm. G68. House 10, Phase 7. SF2240.

GL66 (not ill.) Fragments from 2 beakers, rim as GL64, body as GL65, both
-7 weathered.
Diam: *c.* 70mm. G39/40. House 9, destrat. SF1956B and C.

GL68 Beaker rim, 2 fragments. Apparently first vertically ribbed and wrythen, then blown into second mould with widely spaced vertical ribs, leaving panels of wrythen ribbing between. Glossy deep green bubbly glass, slightly weathered.
Diam: 70mm. G68. House 10, Phase 7. SF2143.
and G21. House 10, Phase 7. SF2099.

GL69 (not ill.) Body fragment as GL68 but oppositely wrythen.
G73. House 10, Phase 7. SF2178.

GL70 (not ill.) Vertical rib from vessel as GL68.
L: 26mm; W: 11mm. G(96) = 87. House 10, Phase 7. SF2458.

GL71 Mould-blown beaker rim. Diamond pattern. Weathered surface. Cf. Charleston 1972: Fig. 64, no. 64.
Diam: 90mm. G2 and G39/40. House 9, destrat. SF1958A/1956G.

GL72 Fragments of mould-blown beakers.
-5

GL72 Raised diamonds, weathered.
W: 24mm. G68. House 10, Phase 7. SF2093A.

GL73 Hollow pointed diamonds.
L: 25mm. G73. House 10, Phase 7. SF2127.

GL74 Lozenges offset between zigzag?
Diam: 60-64mm. G12. House 9, Phase 6iii. SF2063.

GL75 Beaker fragment with narrow chequered spiral trail. Rim and upper part of body missing. Separate foot added to base after moulding trail and linked by spikes drawn upwards around periphery. Cf. Tait 1967: Fig. 24.
Diam: 44 mm. G68. House 10, Phase 7. SF2088.

GL76 Beaker fragments with broad chequered spiral trail. Badly weathered, surface flaking, very bubbly almost colourless glass. Both fragments have traces of chequered trail. Base has applied plain footring, cf. Tait 1967: Figs. 4, 5, 7 and 8.
Rim diam: 100mm; base diam: 70mm. G2. House 9, destrat.
SF1958F, 1937C.

GL77 (not ill. except GL77 and 79) Pushed-in bases, probably of beakers,
-83 all with pedestal.
GL77 Diam: 104, 94mm. B329. House 7, Phase 6i? SF3356A,B.
-8
GL79 Diam: 76, 88mm. G39/40. House 9, destrat. SF1956D, 2064.
-80
GL81 Diam: 78, 80, 90mm. G2. House 9, destrat. SF1958C,E,B.
-3

Jar or flask and small bottles

Fig. 132; GL84-91, not ill. except GL84 and 87

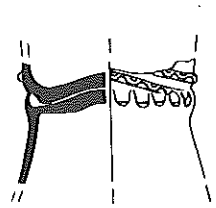
GL84 appears to be a jar of 'albarello' shape with slightly diverging walls and wrythen blown ribbing (cf. shouldered bottles in Charleston 1972: Fig. 65, nos. 85-6). Two irregular 'kicked' bottle bases, GL85-6, show traces of similar decoration and are probably 16th-17th century in date (cf. Hume 1957: Figs. 5-6). GL87 resembles small late 16th to early 17th century pharmaceutical bottles (Hume 1956: Fig. 4). A large folded footring base, GL89, might belong to a flask or bottle rather than a beaker. Octagonal and square bottles are also represented by base fragments.

Catalogue

GL84 Mould-blown ribbed and wrythen jar or flask with shoulder, rim missing. Several non-joining portions of body show that ribbing spirals closer as diameter increases. Glossy pale green glass, slight weathering.
Shoulder diam: 57mm. E(14) = 11. E, pre-Phase 6. SF1919B.

Fig 132

Glass 3



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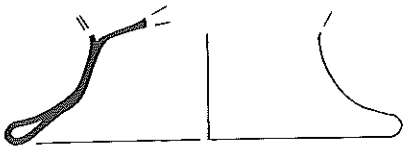

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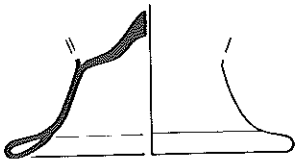

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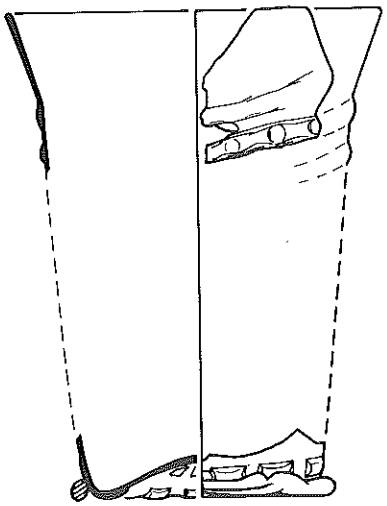

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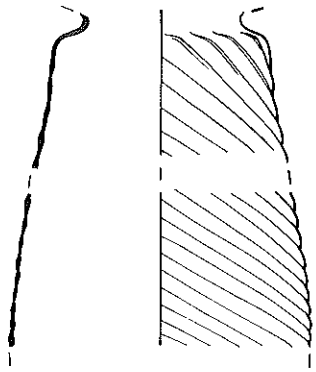

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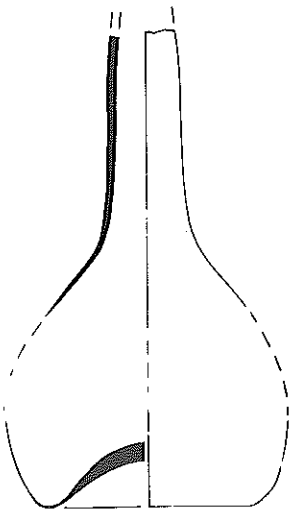

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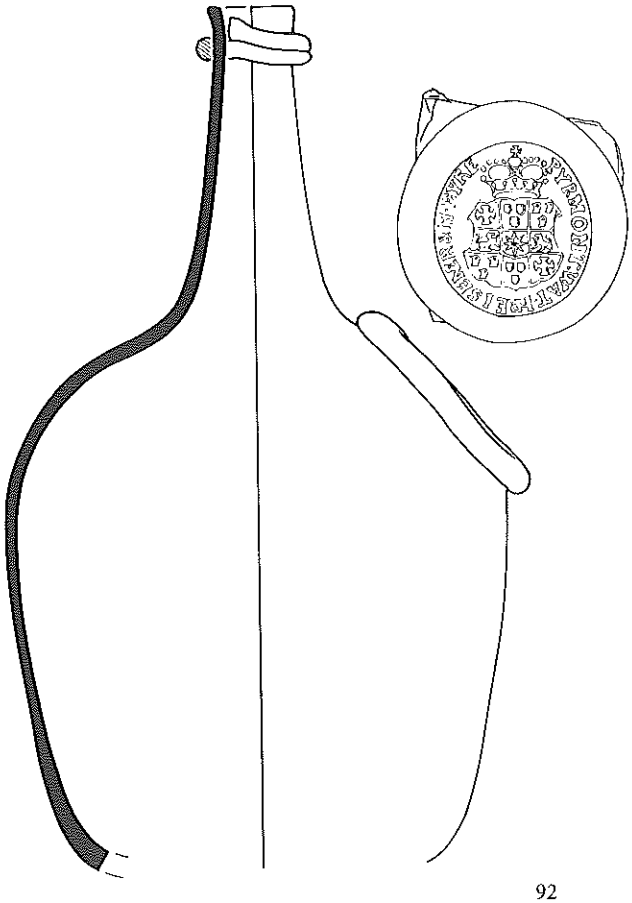

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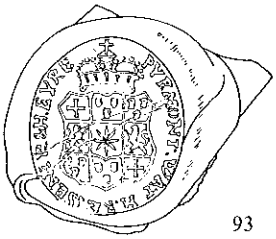

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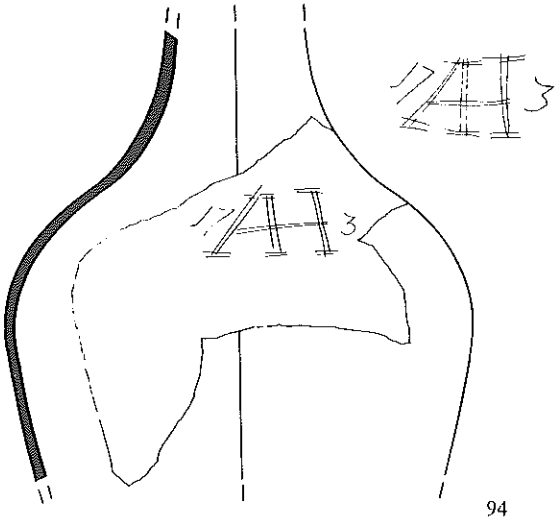
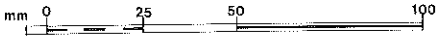


94

Scale 1:2



GL85 Oval bottle base with 'kicked' centre. Traces of wrythen ribbing. Pale green, weathered.
W: 55mm. G69. House 10, Phase 7. SF2195.

GL86 Bottle base with asymetrical 'kick'. Traces of wrythen moulding. Badly weathered.
Diam: *c.* 75mm. B65. House 4, destrat. SF3127.

GL87 Small bottle. Body blown very thin but shape restorable. Weathered blotches on exterior. Pale bluish green glass.
Diam: 75mm. K28. House 10, Phase 7. SF2584.

GL88 Thin body sherds from vessel like GL87?
G121. House 10, Phase 6Aiii/B. SF2527.

GL89 Folded footring base of bottle or flask, thin and weathered. No pedestal.
Diam: 100mm. G2. House 9, destrat. SF1958D.

GL90 Thick square bottle base. Bluish green glass.
W: 90mm. G2. House 9, destrat. SF1937A.

GL91 ? Octagonal bottle. 2 joining sherds near base, corner of octagonal bottle with 4 concave corners and 4 flat sides? Another related sherd in second context? Bluish green weathered glass.
W: at least 70mm. G68,70. House 10, Phase 7. SF2093B, 2090.

Olive green bottles

Fig. 132; GL92-4

A few small pieces of thick olive green bottles are stratified in post-medieval contexts in Houses 1, 2, 7, 9, 10 and area N (details in site archive).

Two sealed bottles, GL92-3, of intrinsic interest come from Houses 7 and 9 (destrat). Both are imports bearing the arms of Waldeck in Germany and the description 'PYRMONT WAT', i.e. mineral water from the Pyrmont springs. The legend also gives the names H. REISENER and H. EYRE. Mr R J Charleston comments that Reisener was perhaps the purveyor in Germany and Eyre the retailer, probably in London, though he has not noticed the name in documents. The spa waters were normally imported in the bottle and the bottles themselves are never of English type. From their shape these bottles are datable to the second or third quarter of the 18th century. A similar bottle with the arms of Waldeck but no legend is in the Victoria and Albert Museum (reg. C294-1926; illustrated in Morgan undated: 92). Such bottles have been found in mid-18th century contexts at Williamsburg, Virginia (Hume 1961).

House 9 also yielded (in the same unsealed deposit as GL93) fragments of at least six olive green wine bottles, some weathered and none completely restorable (GL94), with the monogram AH incised with a diamond at the base of the neck. Three of these graffiti are accompanied by dates with two digits on either side of the monogram in the style of the period. The dates, 173( ), (17)42 and 17( ), agree with the span indicated by the shapes of the bottles (1730-50, cf. profile no. 8 in Morgan (undated: 24) based on dated sealed bottles). The graffiti are presumably marks of ownership made by a local resident wealthy enough to buy wine and to possess a diamond, perhaps a member of the Hesilrige family—possibly Sir Arthur Hesilrige (see above p. 134).

Catalogue

GL92 Sealed mineral water bottle. Rich olive green glass. Applied untooled neck ring. Applied pad on shoulder bearing stamped impression of seal: arms of Waldeck surrounded by legend
PYRMONT. WAT. HREISENER & H. EYRE
Seal impression W: 42mm; L: 46mm.
Bottle diam: 132mm. C112. House 7, destrat. SF947/3180.

GL93 As GL90 but neck missing. Seal differs in detail. Legend as before but H. REISENER.
Seal impression W: 41mm.
Bottle diam: *c.* 130mm. G13. House 9, destrat. SF1910-11.

GL94 Wine bottle. Dark green glass, streaks down neck, some bubbles. Graffiti on shoulder 17AH3( ) Figures executed by single line, letters double with ends crossed in monogram. Narrow incision stands out clear and white against dark glass, almost certainly made with a diamond.
Bottle diam: 125mm. G13. House 9, destrat. SF1911B.
Fragments of 5 other graffiti (not ill.) all with same monogram, or parts of it, as GL94, come from same context. 2 others have dates: (17)42, and 17( ). All but 1 are on green bottles, 2 of them with weathered surfaces; the last on a brownish bottle. (SF1911A,C-F).

THE CLAY PIPES

by W R G Moore

As the post-medieval levels were not usually investigated (see above page 8) the site's stratigraphy is generally unhelpful in the study of the clay pipes, with the exception of the layers associated with the mid-16th to mid-17th century skin-dressing workshop in House 10. Precise dates cannot be given to the robbing of many of the walls and additionally several pieces would appear to be intrusive to the layer in which they were found.

A small number of 17th to 19th century pipe fragments found at various locations is described below, whilst a large mid-19th century group found in a pit is treated separately (Figs. 133-4).

The pipe-stem fragments

The 35 examples from various locations do not form groups large enough for close dating (Walker 1967). However, in general terms, those with a wide stem-bore ($\frac{8}{64}$", $\frac{7}{64}$") are likely to be of the 17th or earlier 18th centuries and those with narrow stem-bores ($\frac{5}{64}$", $\frac{4}{64}$") are probably of 18th or 19th century date.

	Provenances
Wide bore (10 fragments)	A32, House 2, destrat (6 examples); C86, House 7, Phase 6iii; G12, House 9, Phase 6iii; G71, House 10, Phase 7 (2 examples).
Narrow bore (19 fragments)	(B326) = C20, House 7, Phase 5; C5, House 7, destrat; G13, House 9, destrat (14 examples); G69, House 10, Phase 7; G70, House 10, Phase 7.

One stem fragment (CP1) with a small area of incuse decoration, of 18th or 19th century date cannot be paralleled with any local products (G13, House 9, destrat.)

The bowls

The 12 bowls are classified as follows (Oswald 1975: 37-41):

Approximate date	Type	No.	Provenances
c. 1660-1680	Oswald G6	2	(A200) = 3, House 1, Phase 6Biii; unstrat.
c. 1660-1680	Oswald G18	1	Unstrat.
c. 1690-1710	Oswald G19	1	C54, House 7, Phase 6iii.
17th to mid-18th century		2 frags	A32, House 2, destrat; G13, House 9, destrat.
c. 1730-1760	Oswald G11	1	G13, House 9, destrat.
c. 1730-1780	Oswald G22	1	Unstrat.
c. 1850-1900	Oswald G29	1	Unstrat.
Unclassified		2 frags	

Makers' marks

The one bowl of type G11 has the initials W(?)/H in relief on either side of the base, a mark not previously recorded in the Northampton area. The maker is possibly William Hutchins, working *c.* 1707-1740 or William Henshaw, working *c.* 1745-1765, both of Northampton (Oswald 1975: 185).

A stem fragment (from G71, House 10, Phase 7) has part of a base with a circular mark in relief (CP2). An identical, but complete, mark has recently been found at Wellingborough, Northamptonshire on the base of a bowl of type G5 (*c.* 1640-1660) (CP3). The maker's initials LS cannot be attributed to a Northamptonshire pipe maker and the pipes are possibly of London manufacture.

A mid-19th century pit group

A rectangular, stone-lined pit (C7, House 7, destrat.) contained a quantity of clay pipe fragments and a few pieces of pottery. A total of 169 pipe bowls and 500 plain stem fragments were recovered. The pipes had all been smoked. The stem fragments were mostly long pieces (up to 215mm), with stem-bore diameters of $\frac{5}{64}$" and $\frac{4}{64}$". It would seem likely that the pipes had been broken and thrown out of some local public house or similar establishment where smoking was a regular habit.

The bowls (CP4-18)

15 types are present, each from a different mould, generally similar to Oswald type G24 (*c.* 1810-1840). The bowls are thin-walled and all have fairly small spurs.

Undecorated bowls. Type 1 (CP4) (5 exampes); types 2 and 3 (CP5 and 6) (one of each type); type 4 (CP7), small, five-pointed star in relief on the spur and an incuse, oval mark of J Hurst on the back of the bowl (20 examples).

Bowls with a design of oak leaves. These are sometimes stylised and appear down the front and the back of the bowl. Type 5 (CP8), large, crude leaves (14 examples); type 6 (CP9), small stylised leaves (12 examples); type 7 (CP10), forward-drooping bowl, Oswald type G15 (two examples); type 8 (CP11), few stylised leaves on the back of the bowl (one example); type 9 (CP12), initials F/S on the spur (54 examples); type 10 (CP13), eight-pointed star on each side (six examples); type 11 (CP14), large, eight-pointed star on the spur (28 examples).

Bowls with fluting or ribbing on the sides. Type 12 (CP15), five prominent ribs on the sides, stylised leaf pattern down the front and flower design on the back of the bowl (three examples); type 13 (CP16), oak leaves down the front and stylised leaves down the back of the bowl, F/S on the spur (one example); type 14 (CP17), ribbing all over the bowl and F/S on the spur (seven examples); type 15 (CP18), almost a plain bowl, with traces of ribs on each side, perhaps the result of an altered mould, and F/S on the spur (14 examples).

Makers' marks

Type 4 has an incuse, oval mark reading HURST COW X STR . . This is the mark of John Hurst, working in Cowcross Street, West Smithfield, London, *c.* 1808-1849 (Atkinson and Oswald 1969: 220). Fragments of pipes by J Hurst are known from Stoke Goldington and Stony Stratford, Bucks. (Oswald 1975: 82).

Types 9, 13, 14 and 15 have the serif initials F/S in relief. These are pipes made by Francis Street, working in Northampton, *c.* 1826-1850 (Oswald 1975: 185).

Date

A piece of pottery from the pit is marked MOSS NEW STONE CHINA CJM & Co, datable to *c.* 1840-1845 (Haggar and Adams 1977: 114). This gives the earliest possible date for the pit group as *c.* 1840. The latest possible date for the pit group is indicated by the marked pipes as *c.* 1850.

Clay pipes 1

Fig 133

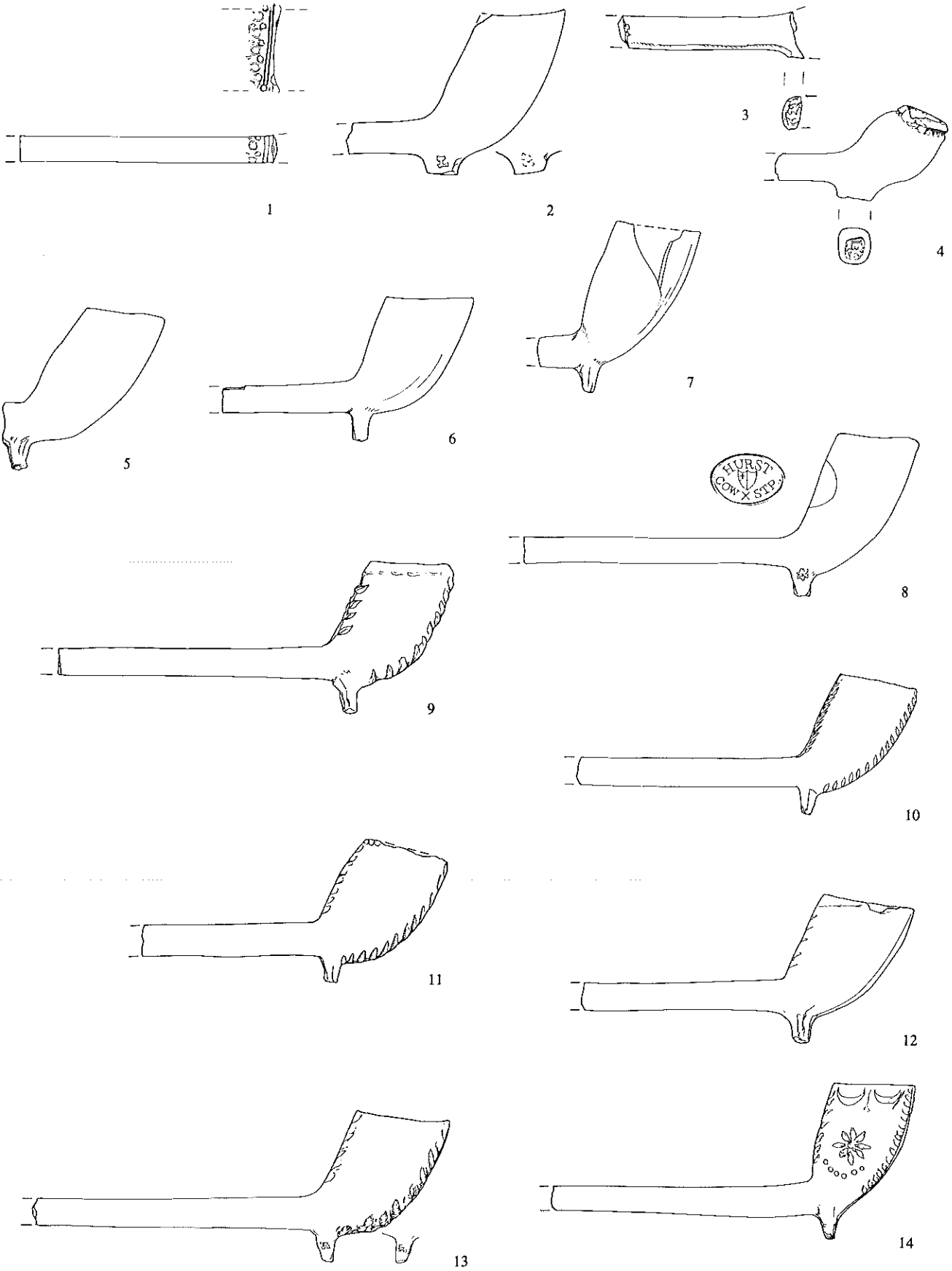
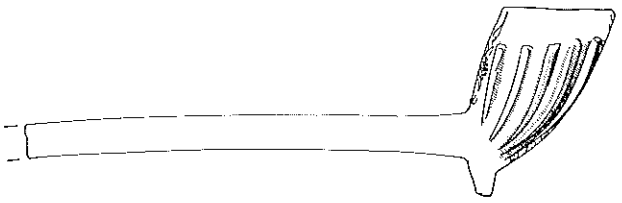


Fig 134

Clay pipes 2

15



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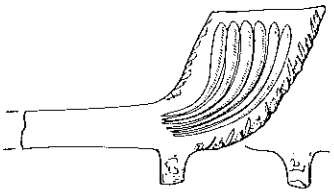

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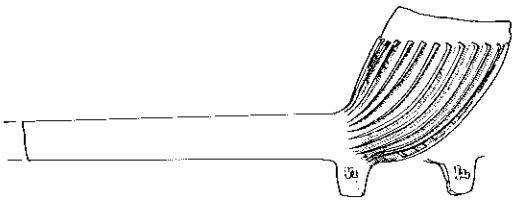

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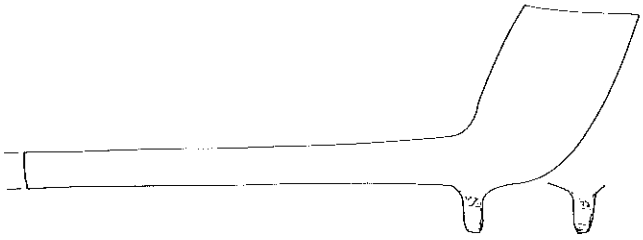

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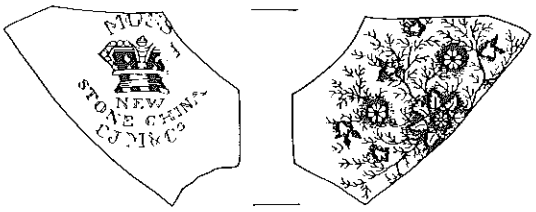


20

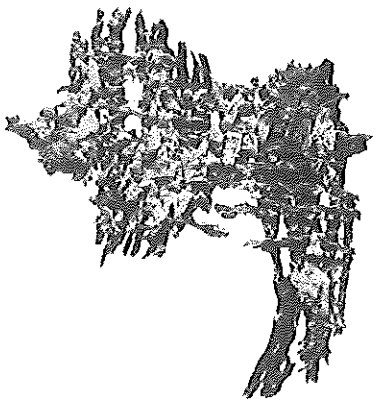
Scale 2:3

THE TEXTILES

by E Crowfoot

T1 Textile. Tablet woven braid fragments preserved in corrosion on the backs of a pair of copper alloy belt fittings, Cu41 and 42. The larger fragment (Pl. 50) is from Cu42, width present 12mm, greatest length *c.* 12mm; the stud on the fitting has gone through the braid. The yarn was possibly flax (Mr H M Appleyard reported that he could find very small pieces of vegetable structure, but no sign of any animal fibres or skin), the warps very loosely Z spun, the wefts much finer and darker, Z spun or possibly Z ply; count *c.* 9-10 twists on 5mm, wefts 8-9 on 5mm. Both edges are missing, and what remains of the braid is worked on 2-hole tablets, as far as can be seen in chevrons with a slightly displaced meeting. Fig. 135.1 shows the weave slightly opened to reveal the passage of weft threads. Cu41 and 42 lay 300mm apart, which might indicate the original length of the braid.

PLATE 50 *Tablet-woven braid fragment, T1.*



The nearest English example published, both in date and style, is a flax braid on a 13th century bronze buckle from Bramble Bottom, near Eastbourne (Crowfoot 1954: 234f., Pl. XXVIIa); in that the 2-hole tablets are threaded differently to give a diagonal twilled effect to the centre of the braid, and there was probably one 4-hole twist at each edge. A similar 2-hole chevron weave to that in the Northampton braid is the basic weave of the silk arm-bands from the Mammen find in Denmark, *c.* AD1000 (Hald 1950: 236f., Figs. 233-5). The use of 2-hole tablet technique for bands is noted from Snartemo in Norway in the Migration Period (Dedekam 1924-5: 42-5, Figs. 21-2), and in England, another flax example, from the Anglo-Saxon cemetery at Wakerley, Northants. (Grave 78).

Tablet weave is a twined-warp weave used for braids and borders, made by the manipulation of a number of tablets—flat pieces of wood, bone, hide or card, pierced with holes through which the warp ends are threaded; the sheds for the passage of the weft are made by rotating the tablets. The number of holes used in the tablets varies, though 4 is that most commonly seen; the warp ends threaded through each tablet are twisted together as the tablets are rotated, and the result is a very strong and solid band, suitable for belts, straps and decorative braids for use on garments. The wefts are generally completely concealed. Patterns can be made by combinations of different coloured warp ends, and different methods of threading; both sides of the braid are normally presentable, but sometimes one surface is embellished with a surface brocading, as in the gold thread work of the Mammen arm-bands, and in the braids on many medieval vestments.

The Northampton braid is too deteriorated to show any traces of colour, though the weft thread is noticeably darker than the remains of the warps; no colour was visible in either the Bramble Bottom or Wakerley braids. Two other tablet-woven pieces from buckles, very similar in appearance to the 2-hole examples though in a variety of 4-hole weave, had visible patterns—linked diamonds in white and possibly 2 shades of blue in an Anglo-Saxon braid (Crowfoot 1951a: 28-30, Pl. VIa), and alternate chevrons in buff and light brown in a medieval belt (Crowfoot 1951b: 202-4, Pl. xxx); in both these also the weft thread is noticeably brown.

(Cu41) B(250) = 198. House 4, Phase 6B. SF794.
(Cu42) B278. House 4, destrat. SF795.

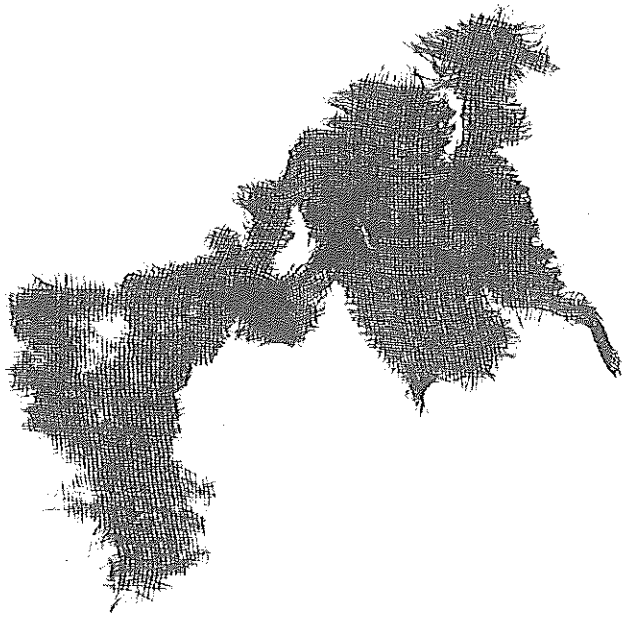
T2 Textile. 8 ragged fragments and 2 tiny scraps of fine silk fabric. 4 pieces have remains of patterned bands, (a) roughly 75 × 60mm, (b) *c.* 100 × 50mm at widest part, (c) *c.* 40 × 40mm, and (d) *c.* 30 × 20mm. The other pieces are from the same fabric, but without decoration, (e) *c.* 80 × 80mm, (f) *c.* 55 × 50mm, (g) *c.* 35 × 18mm, (h) *c.* 35 × 50mm, and two scraps.

Weaving
The silk in both systems is fine, unspun, the ?warp slightly finer than the weft, and the main weave a very regular tabby, slightly open, count 38-40/52 threads per 10mm, no selvedge preserved. The colour is now reddish in some parts and black in others, perhaps originally a black from which one of the component dye elements has faded; examination by Mr M C Whiting and Mr A Clemson at Bristol University failed to identify the dye used, but neither indigo nor madder was present.

PLATE 51 *Silk textile, T2a.*

The pattern bands can be assumed to be in the weft; they are in golden coloured silk, also unspun. On (a) (Pl. 51), after 25mm tabby, a band 6.5mm wide of 34 throws of the gold silk, passing over seven warps and under one, with one throw of tabby ground-weft between, is followed by 13 throws tabby; a similar narrow gold stripe; 37 throws tabby; and then a band with chequered float pattern (Fig. 135.2) 12mm wide, originally bordered by gold bands of 22 throws each, now shown only by the holes left by the passage of the pattern wefts. On piece (b) there are the same two gold border stripes and small remains of the chequered

PLATE 52 *Silk textile, T2b.*

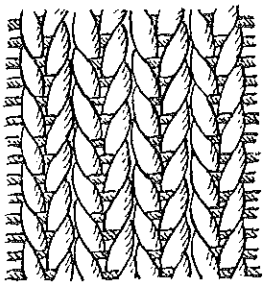


pattern, on (c) (Pl. 52) fragmentary remains of the border and the best preserved area of the chequers; piece (d) has no pattern threads surviving, but the marks left by both wide and narrow stripes can be seen.

Sewing
The six undecorated pieces have folds and traces of sewing, on (e) a double row of stitch-holes along one bias-cut edge, one row 9mm from the edge, the other 3mm; on (f) one edge is turned under for 3mm on the bias, with one row of stitch-holes; on (g) two edges form part of a seam, slightly on the bias, the top piece turned under 3-4mm, the under piece

Fig 135

Textile



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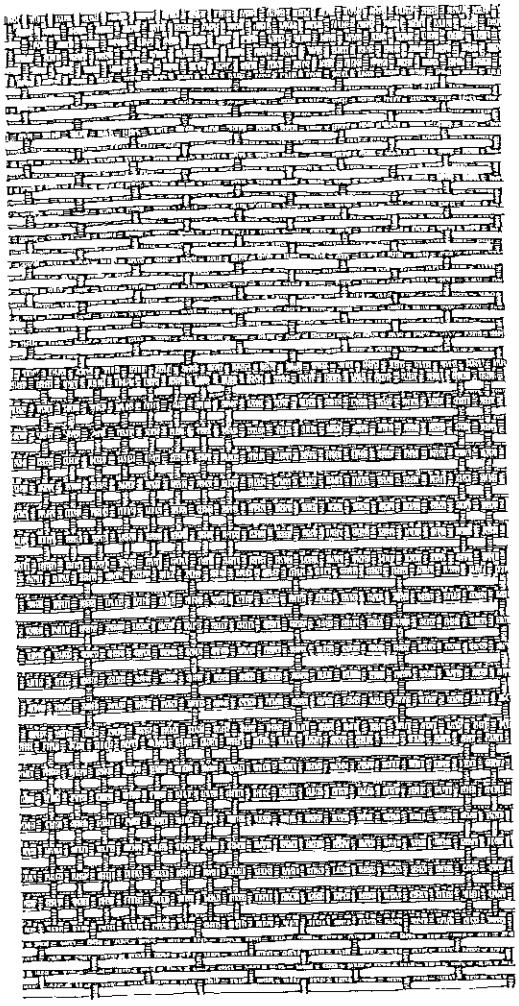

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(not to scale)

5mm wide, turned under 4mm; these pieces were found adhering to each other, and the holes fit in pairs, probably from running stitches; piece (h) is also turned under for 3-4mm, with a line of stitch holes, and both the tiny scraps are folded. The needle-holes are rather large for such a fine fabric, and the complete disappearance of the sewing thread suggests it may have been of a vegetable fibre, cotton or flax, which has decayed more quickly in the damp conditions of preservation.

The fragments are too small to give any idea of what they were cut and sewn to make, but the original piece of weaving would almost certainly have been a complete scarf or veil with borders.

Origin and dating

This has been a fine silk of excellent quality, but unfortunately its style does not give any indication of its period; though the float pattern technique used for its decoration has been known for many centuries, scarves and veils with borders of this type are still made in Islamic weaving centres. There is, however, one interesting and possibly significant point about the use of silk in this fabric.

Silk tabbies from the London site of Baynard's Castle of the 14th and late 15th centuries, in common with many early Near Eastern silks, are woven with a twisted (spun) warp and an untwisted weft. The threads used for both ground weave and pattern in the Northampton pieces are unspun in warp and weft. Mr D King, Keeper of Textiles, Victoria and Albert Museum, agrees that this characteristic may suggest the possibility of a Far Eastern origin, since these fine untwisted threads are often found in early Chinese textiles, though it is impossible without other evidence to regard this as more than a suggestion. While these fragments could be later, then, it seems that the 16th-17th century date suggested for the clay-lined pit at the top of which they were found is not impossible for the textile.

G2. House 10, destrat. SF2058.

T3 Textile impression: on potsherd of ceramic type T1-2, 10th-12th century, area 15×7mm, clear impression on edge of base of medium to fine textile, spinning Z in both systems, weave tabby, count 5-6/5 on 5mm, i.e. *c.* 11/10 threads per 10mm, fairly even spinning and weaving, rather open, and could be either wool or flax.
A439. House 1, Phase 5. SF3488.

T4 Fabric impressions on side of pot of ceramic type W29, ?14th-16th century, 8×3mm at widest; and other small traces. Spinning Z on both systems, weave tabby, count *c.* 18/19-20 per 10mm (estimate—9 on 5mm/4-5 on 2.5mm), most probably a fine flax.
G(96)=87. House 10, Phase 7. SF3354.

T5 Traces of impressions left by fine cloth over most of the back of the lead piece used for a patch; all appear to be from the same tabby weave; the clearest area, *c.* 14×5mm at one edge, gives a thread count of *c.* 16/16 (8 on 5mm) per 10mm. None of the impressions is clear enough to show a spinning direction.
The appearance and fineness suggests a flax cloth.
(Pb7) A436. House 1, Phase 5. SF1279.

THE WORKED BONE

by G E Oakley (bone identified by M Harman)

The site produced a fair quantity of worked bone objects from the Middle Saxon period onwards. Indeed there is evidence for on-site manufacture, mainly in the Late Saxon period, of bone and antler artefacts: tools, composite combs, inlaid caskets and beads. Use of the lathe and some sort of rasp or file is suggested by tool marks. Decoration by incised lines and compass-cut ring-and-dot is popular from the Middle Saxon period onwards.

The finished artefacts are matched on other Middle and Late Saxon sites and their presence confirms the dating suggested by pottery and coins. Parallels are also to be found in Scandinavian contexts, perhaps emphasising the close cultural links with the Saxon peoples, but little light as such is thrown on the problem of the degree of Scandinavian settlement in Northampton.

Antler

Fig. 136; WB1-32

Late Saxon and medieval artefacts made from antler include double-ended tools (WB52-54, 56-57, 61), composite combs (WB34-43) and a comb case (WB33). Partly worked fragments of antler suggest that some at least may have been made on the site. 31 sawn fragments, mostly from red deer, were found in ten Late Saxon and 21 medieval contexts; the latter are mostly pits and road deposits which could easily contain residual material. Half the fragments come from the area of House 1; the rest are scattered. Similar waste products were associated with comb-making in Dublin (O'Riordain 1971: Pl. VII B).

For strong tools and comb teeth only the dense outer ring of bone is usable and must be cut along its natural growth direction. A mature red deer antler would have three branch junctions and from four to six tines which would be discarded in favour of the two almost straight lengths of beam up to 300mm long.

The fragments found comprise 14 tines (two with the knobbly surface characteristic of roe deer), four branch junctions, two burrs (both red deer, one naturally shed), two short beam sections, seven surface fragments, and two thin sawn pieces. Several fragments show the ends of tangential cuts to remove the rough outer surface of the beam (e.g. WB2 and 19). WB30 with two parallel sawn faces cut chordwise through solid outer bone along its grain, skimming the vesicular core, is probably trimmed from a composite comb tooth segment and is the only firm evidence for comb manufacture on the site.

Some of the tines have polished tips and polish on the sawn faces suggests they have been handled and used as tools. The possible blade holder WB32 is slotted and pierced but its poor state of preservation disguises any wear. Further articles made of antler include the pulley block (WB74), decorated knife handle (WB78), and disc (WB98).

As deer bones are rare on the site it is suggested that the antler was mostly shed antler collected in nearby forests and brought to the site for industrial purposes rather than a by-product of hunting deer for food.

Catalogue

not ill. except WB1, 2, 19, 25, 31, 32

WB1 -14 Tines. All except WB8 and 10 have sawn ends. WB2 and 8 have smoothed surface. WB1, 3 and 14 have polished tips. WB1 has polish on sawn end too. L: 44 to 150mm. WB3 and 14 are roe deer.
WB1 K171. House 10, Phase 4. SF2878.
WB2 ?(H4) = A871. House 2, Phase 4A. SF3365.
WB3 C167. House 7, Phase 4. SF1705.
WB4 A550. House 1, Phase 4C? SF1397.
WB5 A(567) = 547. House 1, Phase 4C. SF3236.
WB6 A407. House 1, Phase 5. SF1179.
WB7 -10 A414. House 1, Phase 5. SF1140, 1142-4.
WB11 A(507) = 256. House 1, Phase 5/6A. SF1318.
WB12 F108. House 8, Phase 5. SF2106.
WB13 F(128) = 19. House 8, Phase 5. SF2730.
WB14 G(120) = 119. House 9, Phase 5. SF2515.
WB15 -18 Branch junctions. WB15 and 18 with 3 sawn faces. WB16 and 17 with tine and 2 sawn ends. WB16 has tangential cuts on end of beam. WB17 has polish on surface and tip. WB16 and 18 are red deer.
WB15 K177. House 10, Phase 4. SF2910.
WB16 K171. House 10, Phase 4. SF2849.
WB17 G100. House 9, Phase 5. SF2894.
WB18 G44. House 9, Phase 5-6. SF2751.
WB19 -20 Burrs. Both red deer; WB19 shed, WB20 sawn from skull. Both show tangential cuts along beam. WB20 with brow tine intact has polish on tip, knobbed rim of burr, and sawn face.
WB19 L: 80mm. A(567) = 547. House 1, Phase 4C. SF1455.
WB20 L: 200mm. A599. House 2, Phase 5. SF1514.
WB21 -2 Beam sections, sawn off.
WB21 L: 37mm. A508. House 1, Phase 5. SF1311.
WB22 L: 29mm. A526. House 1, Phase 5. SF1344.
WB23 -9 Surface fragments, all but WB27 sawn both ends. WB27 has smoothed surface with tangential cuts. WB29 has radial line incised in sawn face. L: 32 to 59mm.
WB23 K23. House 10, Phase 4. SF3364.
WB24 A(567) = 547. House 1, Phase 4C. SF1789.
WB25 A407. House 1, Phase 5. SF1262.
WB26 A414. House 1, Phase 5. SF1142.
WB27 A439. House 1, Phase 5. SF2644.
WB28 A391/(359) = 256. House 1, Phase 5/6A. SF1341.
WB29 B(165) = 117. House 4, Phase 6A. SF1800.
WB30 Thin piece, both faces sawn parallel to grain. 3 neat squared edges. One long edge roughly sawn across grain. Trimming from composite comb tooth plate?
L: 23.5mm; W: 7.5mm; Th: 1.5-2.5mm. A439. House 1, Phase 5. SF1864.
WB31 Thin piece, sawn both faces. Parallel edges across grain snapped through after partial cut on each face (to prevent splitting). Central hole removed by drilling holes, edge partly smoothed. Object broken before completion.
L: 15mm. C121. House 7, Phase 5. SF984.
WB32 Possible blade holder. Beam with tine (tip broken), second tine or branch broken after burial. Red deer. End of beam slotted and perforated transversely. Poor preservation—wear uncertain. Cf. Brodribb *et al.* 1972: Fig. 61, no. 78; 1973: Fig. 72, no. 119.
L. of beam: 165mm. K28. House 10, Phase 7. SF2550.

Combs and comb case

Figs. 136-7; WB33-45

The nomenclature proposed by Galloway (1976) is used.

The composite comb fragments found on the site (WB34-42) are all from single-sided combs of Late Saxon type made mostly or entirely of antler. This type is sometimes assumed, from its common occurrence in Scandinavian and continental Viking period contexts (Long 1975: 21, Fig. 9; Arbman 1943; Petersen 1951; Roes 1963), to indicate Viking settlement in this country, e.g. at York (Waterman 1959); Dublin (O'Riordain 1971) and London (Wheeler 1927), while isolated finds could result from trade.

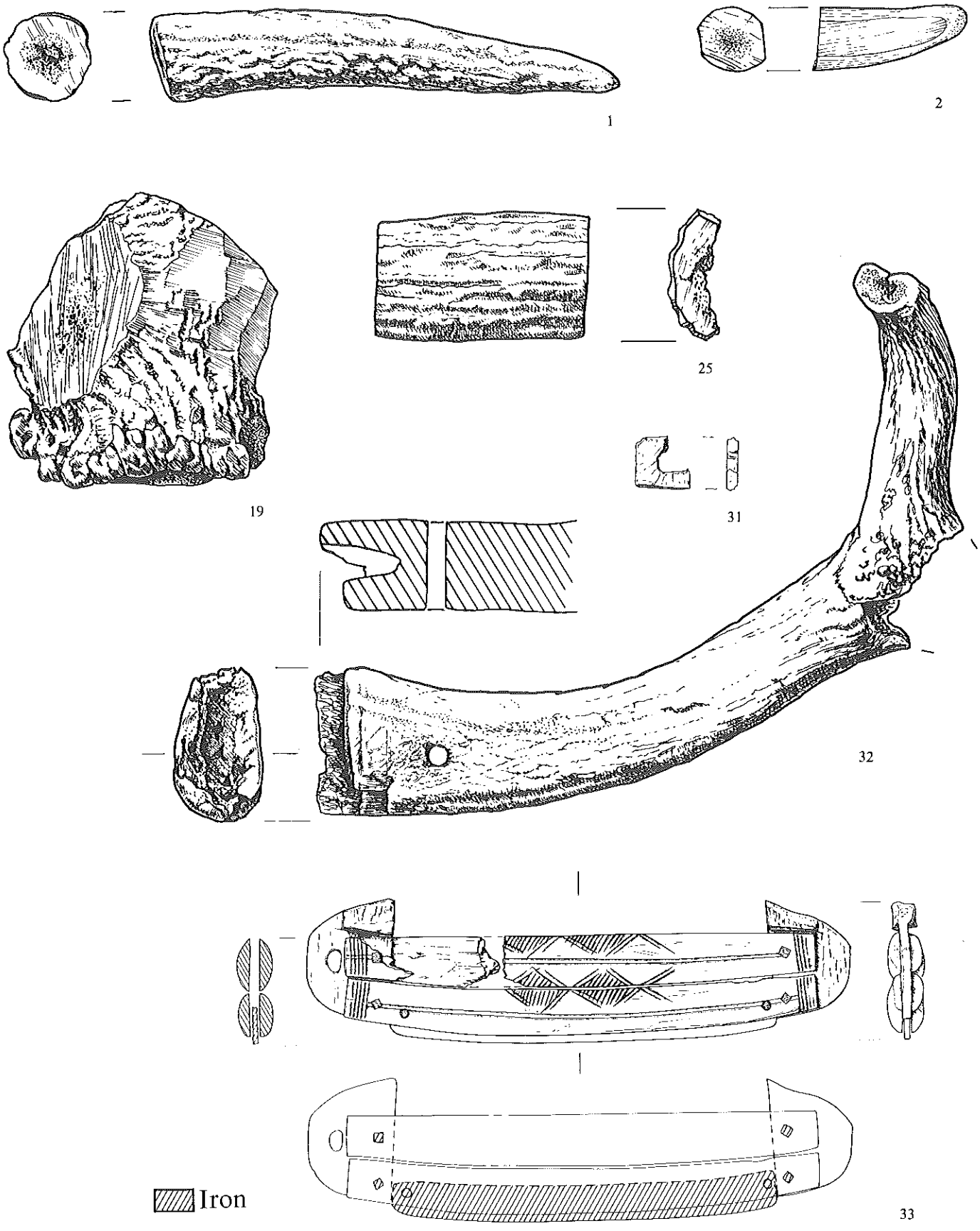
However, composite bone combs of the double-sided type had been made throughout the Anglo-Saxon period. By the 7th century they show a tendency for the originally contrasting fine and coarse teeth on either side to become similar in size, e.g. at Winnall (Meaney and Hawkes 1970: Figs. 8, 10, 11), Shakenoak (Brodribb *et al.* 1972: Figs. 56-9), and Southampton (Holdsworth 1976: Fig. 21, nos. 1-2). The change to single-sided combs could be due to fashion and economy in raw materials rather than fresh Scandinavian settlement. Single-sided composite combs are indicators of the Late Saxon period (9th to 11th centuries) though not necessarily of Danish settlement.

While no unfinished combs were found, and only one (?) offcut from a tooth segment (WB30), the sawn antler fragments could reasonably be taken as evidence for the manufacture of combs as well as other tools. Similar debris is positively related to a comb-maker's workshop in Dublin (O'Riordain 1971: Pl. VIIB). Contemporary Late Saxon iron-working could provide rivets. Both activities took place in the area of Houses 1 and 8.

The laborious assembly of composite combs, amply described by Addyman and Hill (1969: 75), and prolific decoration make their use for human hair care most likely. Combs are often carried in cases on the person and frequently deposited in graves with other personal

Fig 136

Worked bone 1



equipment (Arbman 1943). Wide end segments with a solid zone (e.g. WB42) make use in weaving less plausible.

The comb case found recently in nearby Gold Street (WB33) is reported here as it is clearly of Late Saxon date and is decorated in the same way as the combs. It is unusual in having a metal blade or strike-a-light fixed on the side opposite the comb slot.

Simple one-piece combs with differentiated fine and coarse teeth on opposing sides (WB44 and 45) were made from imported ivory throughout the medieval period and later.

Catalogue

WB33 Comb case of antler. 4 iron rivets connect 2 pairs of plates to 2 separator segments, one with hole for suspension. Both segments have wide projection on open side to match thickness of back of missing comb whose teeth would slot between central pair of plates. Between outer pair of plates is an iron blade or strike-a-light held by rivets at each end. Diagram shows shape of iron revealed by X-radiograph. Both sides of case ornamented with incised lines. Probably lost soon after manufacture as plentiful tool marks on surface and little wear. Late Saxon.
Similar designs on cases from York (Waterman 1959: Pl. XIX, no. 1; Fig. 16, no. 14).
L: 153mm. 34 Gold Street, unstrat. NDC site no. M1. SF1.
For report on watching brief by Mr D C Mynard see McCarthy 1977b.

WB34 Single-sided composite comb of antler. 8 central tooth segments and one end segment held by 5 iron rivets between 2 connecting plates, broken across hole for 6th rivet. End segment projects above back and is unwisely cut with grain parallel to slanting end. Wear suggests its graduated teeth broke early. Only stumps of other teeth survive (average 5 in 10mm). Design of paired incised lines of 2 different widths on both connecting plates. If design symmetrical original length of comb estimated to be *c.* 300mm.
Similar end segment profile and incised design on York comb (Waterman 1959: Fig. 16, no. 5). Another York comb is of comparable length to that estimated (Waterman 1959: Pl. XVIII, no. 1). Same decoration occurs in Friesland (Roes 1963: Pl. XXIII, no. 3).
L: 175mm. N103. Phase 4/5. SF3370.

WB35 Single-sided composite comb of antler. 5 surviving tooth segments held by 3 iron rivets between 2 connecting plates, both ends broken across rivet holes. Identical design of incised diagonal lines and filled triangles on both plates. Teeth (4 to 4½ in 10mm) clearly cut after assembly while design on connecting plates probably executed beforehand. Teeth show beaded aspect of wear at their rounded tips, as noted by Roes (1963: 7) and Holdsworth (1976: 45), perhaps due to being cut close to vesicular core of antler. Notched wear on edges of teeth higher up, as seen by Alcock (1963: 154), may be due to hairs catching on saw scars on sides of teeth (see also WB37-39).
Similar design at Birka (Arbman 1943: Abb. 294) and Friesland (Roes 1963: Pl. XXI, no. 2).
L: 98mm. F207. House 8, Phase 4B. SF2239.

WB36 Connecting plate fragment from single-sided composite comb of antler. Broken across 2 square rivet holes 26mm apart. Traces of teeth cut (4 to 4½ in 10mm) along one edge after design of parallel incised lines in panels. Probably Late Saxon.
L: 34mm. B461. House 4, Phase 4/5. SF1783.

WB37 Tooth segment from single-sided composite comb of antler. Back and teeth cut to fit curved connecting plates. Notched wear on tooth edges seems related to steps in sides caused by saw cutting. One end of segment has part of rivet hole. Additional hole in centre of back is irregular and worn as if by suspension. Tips of teeth worn away from centre of segment suggest secondary use of segment by itself. Polish on surfaces and back confirms this.
L: 43mm. A576. House 1, Phase 4B. SF1482.

WB38 (not ill.) Antler tooth segment from single-sided composite comb. Broken across rivet hole. Teeth (5 in 10mm) and back cut to fit sharply curved connecting plates. Segment is thicker than average and tapered smoothly to tips of teeth.
L: 30mm; W: 15mm; Th: 4.5mm. A222. House 3, garden. SF865.

WB39 Antler tooth segment. Straight back, unusually narrow width with vesicular core exposed on central tooth, rivet hole in edge. Teeth fairly coarse (2½ in 10mm), rounded at tips, with notched wear on edges (see WB35). Probably adjacent tooth segment in same comb as WB40.
L: 31.5mm. A441. House 1, Phase 5. SF1231.

WB40 (not ill.) Antler tooth segment. As WB39 but 5 teeth. Probably adjacent segment in same comb with half rivet hole in edge.
L: 32mm; W: 17mm; Th: 2mm. A441. House 1, Phase 5. SF1283.

WB41 (not ill.) Antler tooth segment. As WB39 but 9 teeth, 5 broken (4 in 10mm).
L: 32mm; W: 22.5mm; Th: 3.5mm. F. House 8, unstrat. SF1867.

WB42 End tooth segment of antler from single-sided composite comb. Broken across rivet hole. Shaped with teeth parallel to grain. Cut to fit curving connecting plates with knob projecting above (cf. Waterman 1959: Fig. 16, no. 8). Perforation in end possibly for suspension or for securing comb in case. Late Saxon.
L: 36.5mm. G267. House 9, destrat. SF3141.

WB43 (not ill.) Single tooth from antler comb. Saw marks on sides, edges knife-trimmed. Probably from composite comb.
L: 21mm. K23. House 10, Phase 4. SF2758.

WB44 Simple double-sided comb of ivory. Coarse and fine teeth (14 and 23 in 30mm) on opposite sides. Marking-out lines for cutting teeth on both faces.
W: 76mm. B158. House 4, Phase 6Di. SF372.

WB45 Simple double-sided comb fragment. Possibly ivory. Coarse and fine teeth (4 and 8½ in 10mm) cut on opposite sides. Ends broken. Marking-out lines on both faces.
W: 45mm. G2. House 10, destrat. SF2080.

Pins

Fig. 138; WB46-51

Bone pins may be dual purpose, e.g. dress or hair pins and weaving tools. The bone used depends on available raw material as much as intended purpose. Deliberate shaping and wear both give clues to use.

Pins with 'hipped' shaft span the 6th to 9th centuries (Stevenson 1955: 285-6). They are supposed to be dress pins applied in loosely-woven garments. Decoration of those with enlarged heads like WB46 and production in metal, occasionally in pairs linked by a chain (Jessup 1974: 33-4; Clough *et al.* 1975: Pl. 13a), support the idea.

Another distinctive type is the pig fibula pin (WB47-51). Roes (1963: 66) describes them as a Scandinavian type, common on the Frisian terps and at Dorestad. They occur in Early (Philp 1973: Fig. 49, no. 476), Middle (West 1963: Fig. 55, nos. 4-6; Brodribb *et al.* 1972: Fig. 64, nos. 105-7) and Late (Holdsworth 1976: Fig. 21, no. 8) Saxon contexts in this country. Though possibly used as needles the width of the often sharp-edged head would restrict them to net-making. Macgregor (1972-4: 71) discusses their probable use as dress pins, tied to the garment.

Catalogue

WB46 Disc-headed pin with hipped shaft. Both faces of head have compass-cut concentric double and treble ring-and-dot ornament. Roughly rounded faceted edge of head bears deeply incised zig-zag lines. Square knop below head has 2 diagonal cuts on each of 4 faces. Numerous lengthwise cuts shape shaft and fine sharp point. Secondary cuts produce waist above hip. Could be made from bone or antler.
Similar bone pin in Pagan Saxon grave at Sibertswold, Kent (Faussett 1856: Pl. XII, no. 25). Larger examples from Friesland (Roes 1963: Pl. LII, no. 11; Pl. LIII, nos. 23 and 24). Copper alloy pins with similar heads but straight tapered shafts from York (Waterman 1959: Fig. 11, nos. 1-3), Southampton (Addyman and Hill 1969: Fig. 26, no. 11), Whitby (Peers and Radford 1943: Fig. 13, nos. 1, 7 and 7a), and Kegworth, Leicestershire (Clough *et al.* 1975: Pl. 13a). The 8th century set of 3 linked pins from Witham has hipped shafts (Wilson 1964: 132-4, Pl. XVIII). Probably Middle Saxon.
L: 60.5mm. G85. House 9, Phase 5. SF2493.

WB47 -51 Pig fibula pins. One end of bone removed, shaft trimmed to point and polished by use. Heads of WB48 and 49 shaped by small cuts. Head of WB47 unworked except for perforation. WB49 marked but not pierced. Little wear on heads. WB50 and 51 are shaft fragments (not ill.).

WB47 L: 66mm. G85. House 9, Phase 5. SF2514.
WB48 L: 97mm. K172. House 10, Phase 4. SF2853.
WB49 L: 86mm. K169. House 10, Phase 4. SF2851.
WB50 L: 46mm. K171. House 10, Phase 4. SF2852.
WB51 L: 33mm. K175. House 10, Phase 4. SF2942.

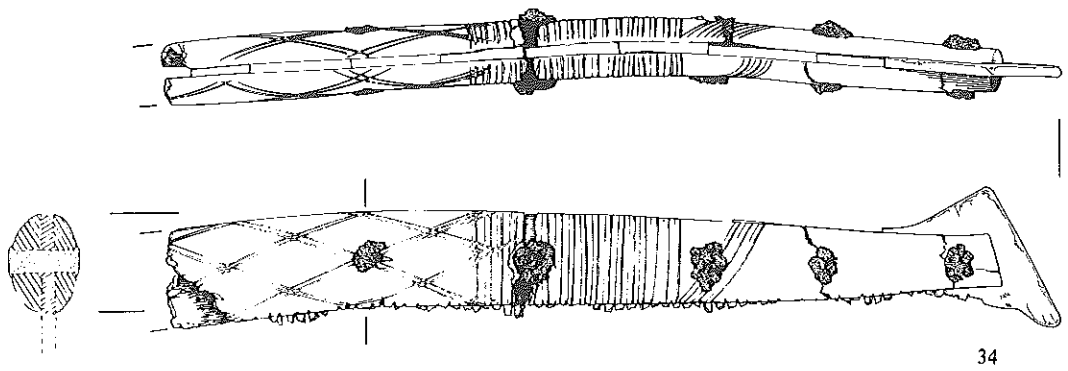
Double-ended tools

Figs. 138-9; WB52-64

Possible weaving tools namely thread-pickers or pin beaters (Crowfoot 1945) have a straight stem pointed or specially shaped at both ends and are usually highly polished. Though use in weaving would probably produce such wear other explanations are possible (e.g. Biddle 1962-3: 184).

Fig 137

Worked bone 2



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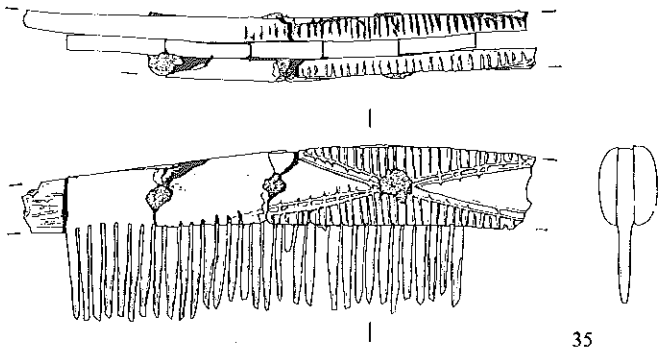

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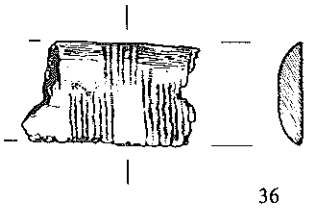

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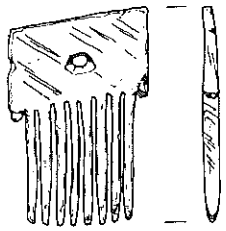

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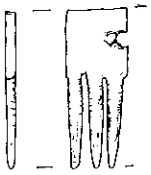

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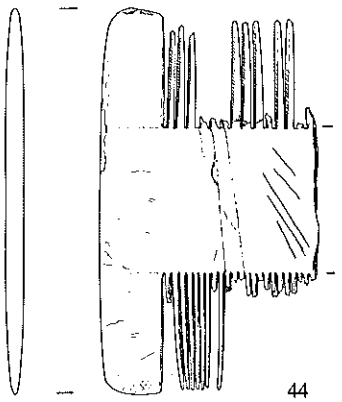

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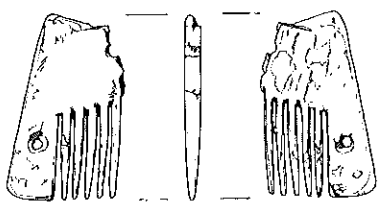

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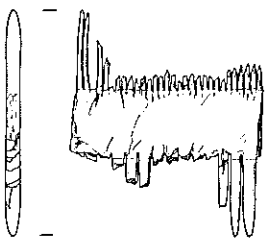

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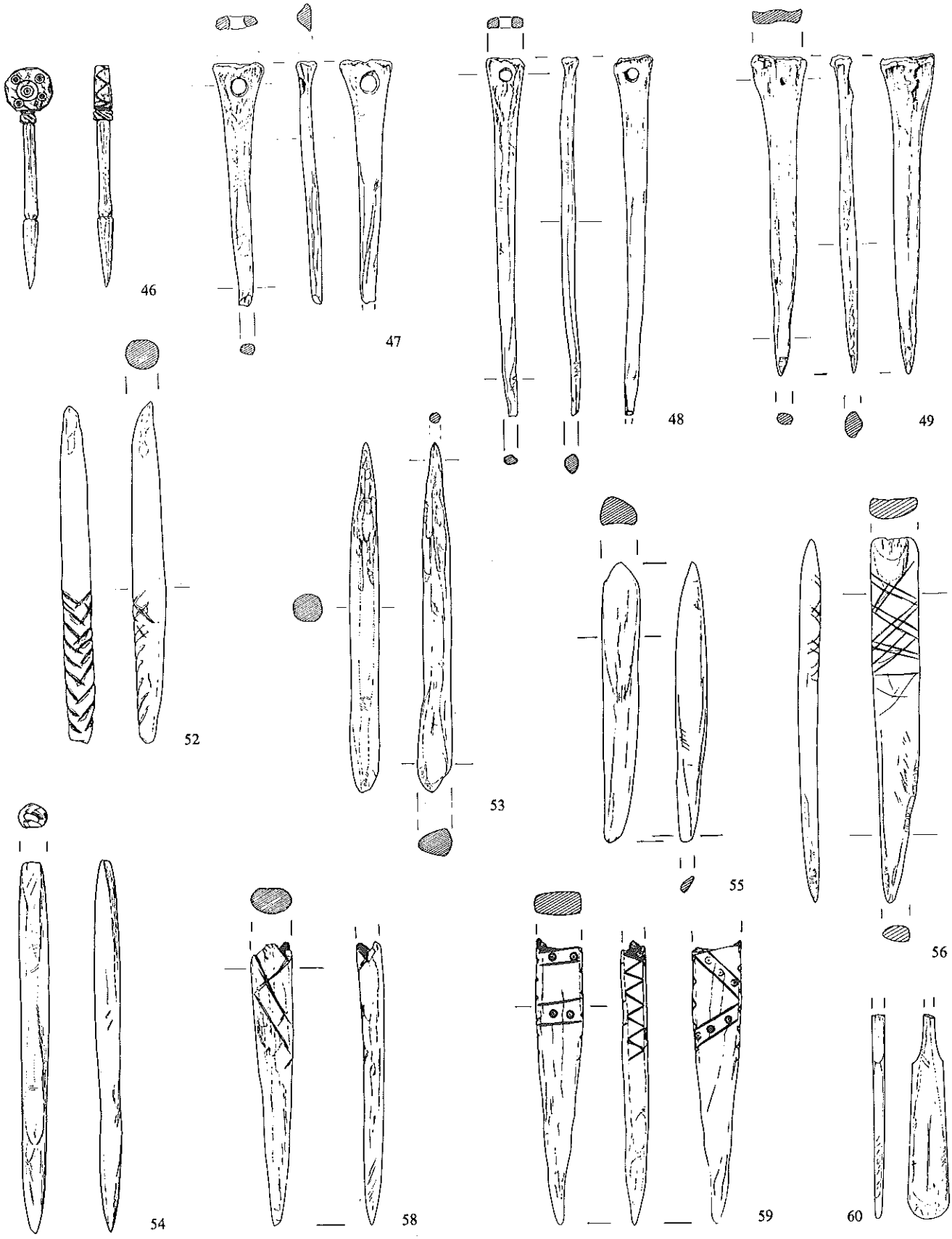
Scale 2:3

Fig 138

Worked bone 3



Scale 2:3

mm 0 25 50 75

Middle Saxon examples seem generally to be symmetrically pointed slim cylinders of round section (Addyman 1964: Fig. 16, nos. 21 and 22; Addyman and Whitwell 1970: Fig. 2, no. 23; West 1963: Fig. 55, nos. 7 and 8; Brodribb *et al.* 1972: Fig. 62, nos. 82-86).

Tools with recto-oval or thin flat central sections appear to be later in date (Radcliffe 1963: Fig. 15, no. 10; unpublished examples from Flaxengate, Lincoln (Lincoln Archaeological Trust forthcoming), and Brook Street, Winchester (Biddle and Keene forthcoming), both areas involved in textile trades; Biddle 1962-3: Fig. 32, nos. 1, 3, 8). Some, like WB54 and 55, show wear of a distinctive kind producing a pinched profile at about two fifths of the length from one end. Others (WB55, 56 and Radcliffe 1963: Fig. 15, no. 10) have concave hollow facets on one or both wide faces at one end, such as one finds on an implement in a manicure set. Flattened points worn at an angle (WB55 and 59) also imply a specific use. A few have incised patterns, perhaps intended to improve grip as well as to be decorative. Several have been reshaped after breakage while two are unworn and unfinished (WB61 and 62) suggesting manufacture on site mostly from antler. A range of similar tools was found at Thetford (Knocker MS) and on the site of Northampton Castle (Central Museum, Northampton).

Both WB52 and 53 have profiles which suggest they could once have been spindles though both have repointed ends. Somewhat less than half the spindle whorls found on the site would fit, the others having larger holes. Six bone and seven wooden spindles from London range in length from 120 to 220mm (Guildhall Museum 1903: 42).

WB60, a fragment of a more refined medieval tool, may have been used for similar purposes as the Late Saxon tools with spatulate ends. WB64, exceptional in being made from an animal rib, seems too rough to use on textiles.

Catalogue

WB52 Antler tool, possibly once a spindle. Highly polished stem reshaped at one end to asymmetrical point. Circular section, swelling at centre. Other end has worn flat facet on back near tip and deeply incised herringbone design, for grip?
L: 92.5mm. (J6) = A870. House 2, Phase 5. SF2345.

WB53 Antler tool, possibly once a spindle. Pointed end reshaped by lengthwise cuts. 2 flat facets on wider end, both highly polished like circular section stem.
L: 96mm. F(128) = 19. House 8, Phase 5. SF2731.

WB54 Antler tool. Long, narrow polished stem with marked waist. Sharp flat point at one end; other end rounded with flat facet on back.
L: 101.5mm. A(567) = 547. House 1/2, Phase 4C/B. SF1485.

WB55 Bone tool. Short and highly polished all over. One end worn to flat angled point (tip broken); long concave hollow facet with rounded point at other end.
L: 76mm. B(491) = 380. House 4, Phase 2. SF1851.

WB56 Antler tool. Wide, flat and highly polished all over. Rough incised line pattern on convex face with short concave hollow near wide end. Concave face has exposed vesicular core of antler smoothed in one direction only, towards wide end where concave face and hollow meet in sharp edge. Pointed end asymmetrically trimmed by cuts showing less wear than stem, therefore reshaping after breakage. Close parallel at Oxford (Radcliffe 1963: Fig. 15, no. 10). Plain examples from site of Northampton Castle (in Central Museum, Northampton: D205-210/1961).
L: 98mm. A(567) = 547. House 1/2, Phase 4C/B. SF1477.

WB57 (not ill.) Antler tool. Similar to WB56. Recto-oval section polished stem with slightly concave facet one side at wide end. Small flat facet worn on other wide face has 2 incised lines parallel to end. Other end pointed by rough cuts, probably reshaping.
L: 90mm; W: 12mm; Th: 7mm. A(412) = 271. House 2, Phase 5A-B. SF1253.

WB58 Bone tool. Broken oval section polished stem has diagonal incised lines on one side and is worn flat on other side. End pointed.
L: 76mm. A569. House 1, Phase 4. SF1442.

WB59 Bone tool. Broken recto-oval section stem polished all over down to diagonally worn point, shaped by rough cuts on narrow sides. Wide faces bear compass-cut ring-and-dot ornament between parallel incised lines. Narrow sides have incised zig-zag lines. Similar ornament on tool of oval section from Southampton (Holdsworth 1976: Fig. 21, no. 5).
L: 78mm. A444. House 3, Phase 5. SF1570.

WB60 Bone spatula. Carefully shaped with broken waisted stem tapering in thickness to wide rounded end showing asymmetrical wear. Slightly convex wide faces highly polished after knife-trimming.
L: 55mm. C(109) = 20. House 7, Phase 5. SF977.

WB61 Antler tool. Similar to WB56 but roughly cut and not worn. Possibly unfinished. Point broken.
L: 106mm. (J6) = A870. House 2, Phase 5. SF2323.

WB62 (not ill.) Unfinished bone or antler tool? Partly trimmed irregular rough splinter with blunt point slightly worn.
L: 64mm. (J6) = A870. House 2, Phase 5. SF2346.

WB63 (not ill.) Bone tool fragment. Recto-oval section stem with flat facet along one side. Highly polished, possibly burnt, both ends broken. Made from large animal long bone, edges cut to shape.
L: 58mm; W: 9mm; Th: 5.5mm. K172. House 10, Phase 4. SF2858.

WB64 Bone tool. Probably cattle rib roughly cut along both edges and trimmed to point at ends. One edge and one face bear repeated indentations possibly caused by a rasp. Polished by wear but edges rough to touch where cancellar bone exposed, so unlikely to be used in weaving as fibres would catch.
L: 142mm. F70. House 8, Phase 4B. SF2237.

Bobbins or toggles and other tools

Fig. 139; WB65-74

WB65-71 are pig metapodials perforated through the shaft, often at a slight angle. They are possibly bobbins for use in weaving or toggles for clothing. Wear is restricted to polish on the shaft and on the edges of the holes parallel with the shaft as if a cord had been passed through and around the shaft. However, no wear is visible on the ends, such as should result from extensive handling. Most have been trimmed with a knife to remove sharp edges and protrusions. WB65 and 67 show artificial deepening of natural grooves across the unfused distal end of the bone. Four of the seven come from Late Saxon contexts.

Whatever their use similar finds occur on other Late Saxon or Viking period sites such as Freswick (Curle 1938-9: Pl. 68, nos. 11-14), York (Waterman 1959: 93), and Flaxengate, Lincoln (Lincoln Archaeological Trust forthcoming). Three were found in medieval pits on the Mayorhold, Northampton (Mynard 1976: 146). Of two from Chalk Lane, Northampton, one is from a Late Saxon pit underlying the Castle (NDC excavation: M139 WB71).

WB72 and 73 are tools made from cattle long bones hollowed out through the joint and cut across the shaft diagonally to form a point. Wear is only along the cut edges near the point. Some similar objects from York (Waterman 1959: Pl. XXII, nos. 4-6) have incised designs on the shaft. Roes (1963: 47) suggests these are tallow-holders for waxing threads when sewing leather. They are common in Friesland.

The antler pulley block WB74, identified from the wear in its slot, is comparable with several more complete examples from the Frisian terps (Roes 1963: Pl. LXI, nos. 5-12) which differ slightly in having large transverse holes for a cord in place of the iron rivet on WB74. Roes (1963: 84) suggests these were used in spinning wool as they would be too weak for heavy work. Other uses are however possible. Tool marks suggest the use of a rasp or file to smooth the rough surface of the antler. Such a tool was found in a grave with early 10th century Arab coins at Birka (Arbman 1943: Abb. 217, nos. 9 and 11). Similar tool marks occur on WB64, a Late Saxon implement.

Catalogue

WB65 -71 Bone bobbins or toggles. Pig metapodials. All except WB70 perforated through shaft from front to back (WB70 sideways). All except WB68 and 70 have small knife cuts trimming part of shaft. WB65 and 67 have grooves in distal end deepened by cuts. WB69 is unusual in having large protrusion at proximal end left intact. On WB67, 68, 70 and 71 such knobs are cut off. WB66 has unabraded cuts trimming the proximal joint but not removing protrusions. Its perforation is smaller than usual but appears worn. Most holes are 4 to 6mm diam., roughly oval, with slight polish on edges adjacent to shaft sides. WB69 and 70 have high polish on shaft. WB70 has fine repeated marks along shaft, possibly caused by a tool. Others have slight polish on shaft. WB68 and 71 are broken. Lengths of others: 58 to 67mm.

WB65 K171. House 10, Phase 4. SF2844.

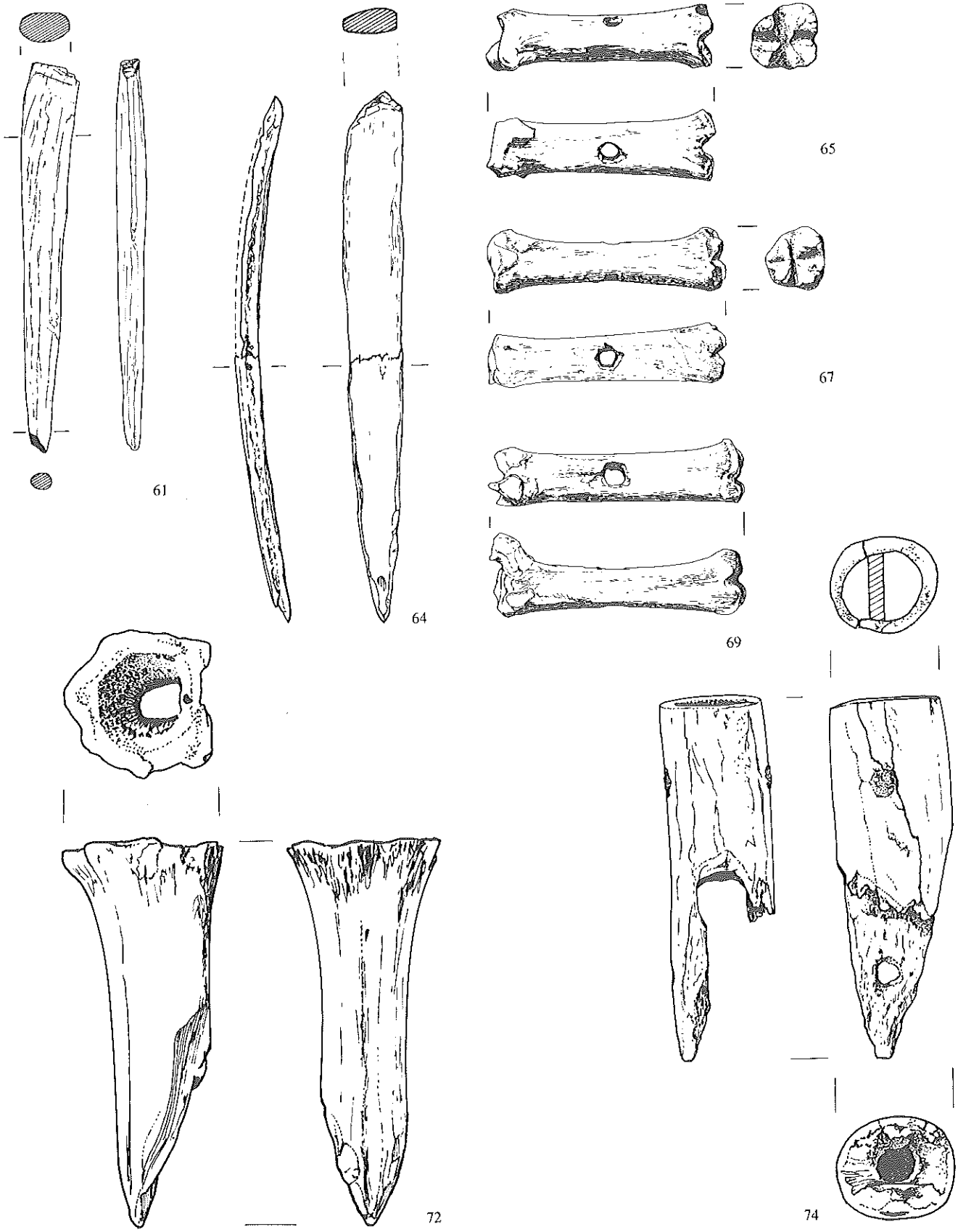
WB66 (not ill.) K170. House 10, Phase 4. SF2954.

WB67 A141. House 2, garden. SF1104.

WB68 (not ill.) B(69) = 7a. House 4, Phase 6Di. SF3239.

Fig 139

Worked bone 4



Scale 2:3

mm 0 25 50 75

WB69 C123. House 7, Phase 4. SF1089.
WB70 (not ill.) B(151) = 117. House 4, Phase 6A. SF1660.
WB71 (not ill.) G259. House 10, Phase 4. SF2924.

WB72 Tallow holder? Cattle left metatarsal, proximal end, shaft cut diagonally to point showing wear on cut edges. Joint surface sliced off and hollowed out neatly to join marrow cavity.
L: 105mm. A(567) = 547. House 1/2, Phase 4C/B. SF3235.

WB73 (not ill.) Tallow holder? Possibly cattle tibia, distal end, cut as WB72 but more roughly.
L: 104mm. A404. House 3, garden. SF1309.

WB74 Pulley block of antler. Tapering hole through centre and slot halfway along length. Slot ends in wider groove showing much wear on all 3 sides, especially at ends where one lip has deep notch, possibly made by cord or line passing through. Both sides of slot trimmed back after some wear and one side broken. Remaining side has roughly oval hole tapering inwards which could have held pivot for pulley or reel to carry line fed through slot. Complete end with centre hollowed out has transverse iron rivet perhaps for mounting on wooden shaft. Rough outer surface of antler has been removed leaving several facets bearing repetitive marks (6 in 5mm) possibly made by a rasp or file.
L: 98mm. C121. House 7, Phase 5. SF1012.

Skates

Fig. 140; WB75-77

Large animal long bones with a flat facet on one side worn to a high polish are supposed to be skates or possibly sledge runners. Long (1975: 25, p) suggests some other causes of this wear pattern. Some skates are cut to shape while others are provided with means of attachment. For discussion of typology, date range, and distribution in this country see MacGregor 1976.

In Northampton excavations have yielded nine skates, only two of which have attachment holes. Five come from Late Saxon contexts while four are from medieval deposits. Three were found on this site.

Catalogue

WB75 Skate. Cattle right metatarsal. Cut to shape for toe at distal end and upswept on anterior face. Proximal end trimmed on all 4 sides to remove projections. Unworn natural hole penetrates top angle of heel. Slot between knuckles at toe, also natural, could have been used for fastening but no signs of wear. Both faces of shaft roughly worked to prepare flat sole for skating and to provide grip for sole of foot on top. Slight polish on bottom indicates some use.
L: 199mm. K112. House 10, destrat. SF2738.

WB76 Skate. Cattle right radius, juvenile. No definite shaping. Wide polished facet has longitudinal striations. Slight wear on top of shaft. No means of fixing.
L: 180mm. F(128) = 19. House 8, Phase 5. SF3297.

WB77 (not ill.) Skate fragment. Proximal end of horse metapodial. Polished facet 12mm wide on anterior face. No other shaping.
L: 114mm (incomplete). A222. House 3, garden. SF3234.

Knife handles and decorative mounts

Fig. 141; WB78-90

Knife handle plates or scales of bone, usually riveted on both sides of a wide strip or 'scale' tang attached to the knife blade (cf. Fe44-52), were made of split rib (WB79) or antler (WB82). WB78, made from a pair of antler plates with convex surfaces decorated with ring-and-dot design, supports a folding knife (Fe31) with double-ended blade pivoting in the handle, rather than a simple tanged knife.

Multiple ring-and-dot ornament, as seen on the pin WB46, is found on pieces of large animal rib (WB83-91) which seem to be partly worked decorative mounts. WB91 appears to be a trial of the decorative technique on an unworked bone. Others have been split through the centre, exposing the vesicular core of the bone on the back, the edges trimmed by knife cuts and the face smoothed transversely before incising the design with a compass device. Then they are partly sawn and snapped off at the required length, often through the incised circles as in WB85.

These pieces resemble decorated bone strips mounted on caskets of wood found in Coppergate, York (Waterman 1959: Pl. XVII) and at Ludgershall Castle, Wiltshire (Wilson and Hurst 1966: 192, Pl. XV). Strips on these caskets are neatly finished with square edges to fit closely against one another, pinned to the wood by little bone pins inserted through holes unrelated to the incised pattern. Alternatively, the design has been used on composite comb connecting plates (Alcock 1963: Pl. VIII) and split rib could be used for this purpose as well as for knife handle plates.

Myres and Green (1973: 87, 191-2) discuss composite bone caskets in connection with pieces found in a Saxon cremation urn at Caistor St Edmunds, Norfolk. Continental examples and fragments at Richborough (Cunliffe 1968: Pls. LXI and LXII) suggest to them a late 4th or early 5th century date, while such caskets might survive later as heirlooms. Further fragments were deposited with Saxon cremations at Spong Hill, North Elmham, Norfolk (Hills 1977: Fig. 138).

Single pieces of decorated bone strip excavated at Yarmouth (Rogerson 1976: Fig. 51, no. 16), Southampton (Platt and Coleman-Smith 1975: no. 1924) and Northolt Manor, possibly from a Saxon grave (Hurst 1961: Fig. 58, no. 3), are assigned dates from the 7th to 12th centuries. There is another piece from Thetford (Knocker MS: Fig. 175, no. 1). Eight pieces of split rib found during the 1879 investigations on the site of Northampton Castle (in Central Museum, Northampton: D216-220/1961) bear multiple ring-and-dot designs and another has incised zig-zag lines. Several have smoothly finished straight edges and three have part of the face at one end rebated to fit under a fixing strip or into a slot. One piece has three holes, one with an iron rivet. Holes in others are unfinished. These are not comb components but they could be casket mounts.

WB83-91 may represent workshop waste, offcuts, rejects and trial piece, from casket making. Unfortunately the pieces are not well stratified but several come from a disturbed area in the vicinity of the large Late Saxon pit A547 from which they could derive. Dimensional similarity of the incised circles interrelates the scattered finds.

Catalogue

WB78 Folding knife with pair of antler handle plates decorated with single ring-and-dot and incised lines fastened by iron rivets. For pivoting blade mechanism see Fe31, Fig. 118.
L. of handle: 79mm. A(567) = 547. House 1/2, Phase 4C/B. SF1439.

WB79 Pair of knife handle plates. Split rib, now warped. 2 iron rivets and hole for possible 3rd.
L: 91mm. K188.9. House 10, Phase 4. SF3059.

WB80 (not ill.) Knife handle plate? Large animal rib, split, face smoothed. One iron rivet in place, broken across hole for 2nd.
L: 86mm; W: 13.5mm. P7. House 10, unstrat. SF3379.

WB81 (not ill.) Fragment of knife handle plate. Broken across rivet hole.
L: 65mm (incomplete). A41. House 1, Phase (5). SF2867.

WB82 Knife handle plate. Antler. Smooth rounded profile, width and thickness tapering slightly. Rust stain on flat back, broken across 2nd square rivet hole. Medieval or later.
L: 68mm. A. House 3, unstrat. SF1612.

WB83 -5 3 decorated rib fragments. Cut and split large animal rib with smoothed face incised with compass-cut multiple ring-and-dot. Circle cuts are V-shaped, removing more material from inside edge at lower angle. Central dot usually penetrates bone.

WB83 L: 129mm. 6 sets of triple ring-and-dot, 1 lost.

WB84 (not ill.) L: 38mm. 3 sets of triple ring-and-dot, sawn across design. 3 edges of this piece finished straight and smooth.

WB85 L: 39mm. 2 sets of quadruple ring-and-dot, sawn across design. Similar ring sizes on WB87 and 88.
House 1, unstrat (possibly derived from A547, Phase 4C). SF23.

WB86 (not ill.) As WB85. Similar ring sizes on WB90.
L: 44mm; W: 16mm. A(306) = 40. House 2, Phase 6Ai (possibly derived from A547, Phase 4C). SF909.

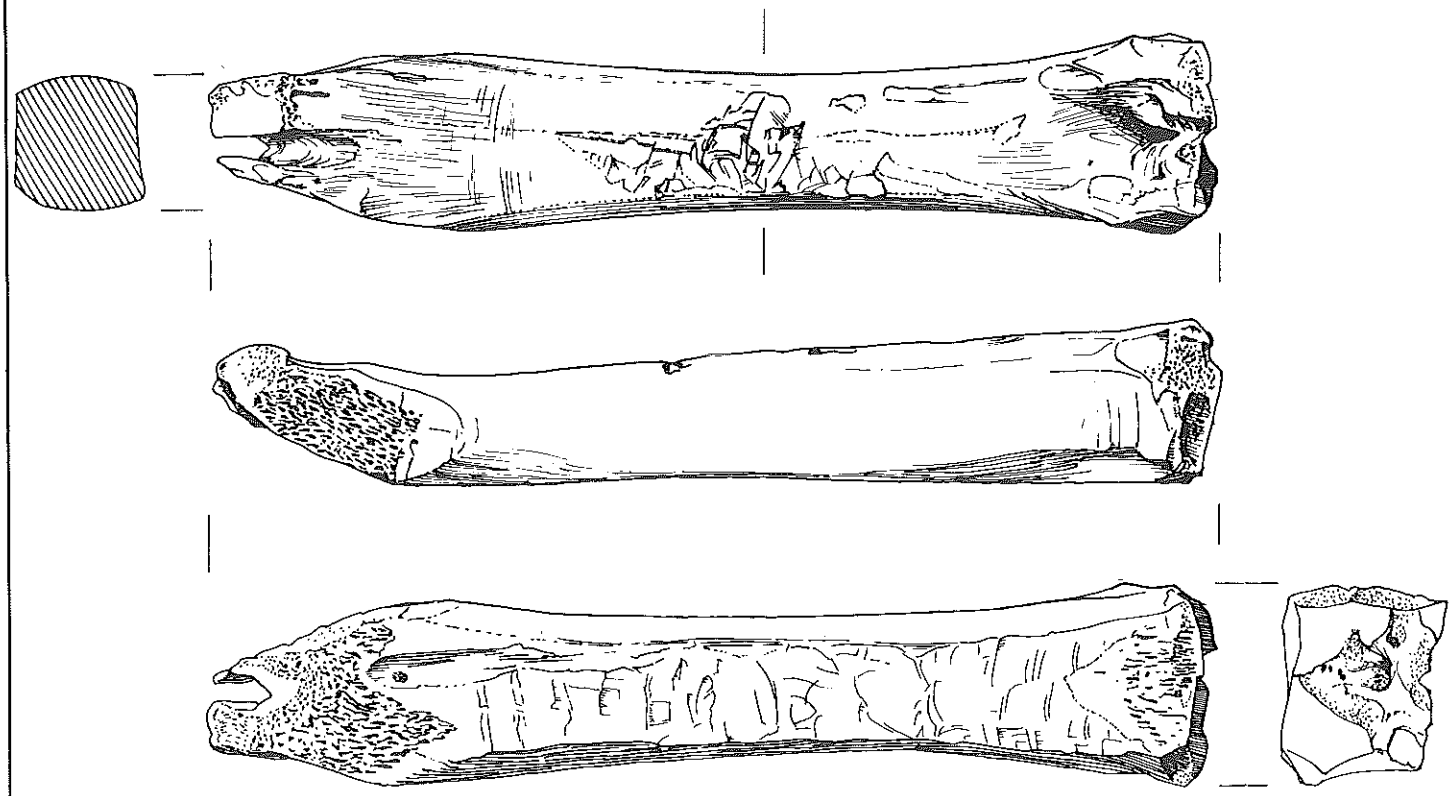
WB87 (not ill.) 13 split rib fragments with cut edges. 4 have incised triple ring-and-dot, 2 others incised arcs, all but one sawn across design, other end broken. 4 other plain sawn pieces and 3 plain fragments. All possibly trimmings from casket mounts. Ring sizes as WB83.
L: 9 to 60mm; W: 14 to 26mm. A476. House 1, destrat. (possibly derived from A547, Phase 4C). SF1326.

WB88 (not ill.) Decorated rib fragment. Cut and split with incised quadruple ring-and-dot, cut across design. Ring sizes as WB85.
L: 19mm; W: 13mm (incomplete). F32. House 8, Phase 5-6. SF2010.

WB89 (not ill.) Decorated rib fragment. Triple ring-and-dot sawn across centre, other end broken. Ring sizes smaller than WB83.
L: 36mm; W: 19mm. F. House 8, unstrat. SF1950.

Fig 140

Worked bone 5



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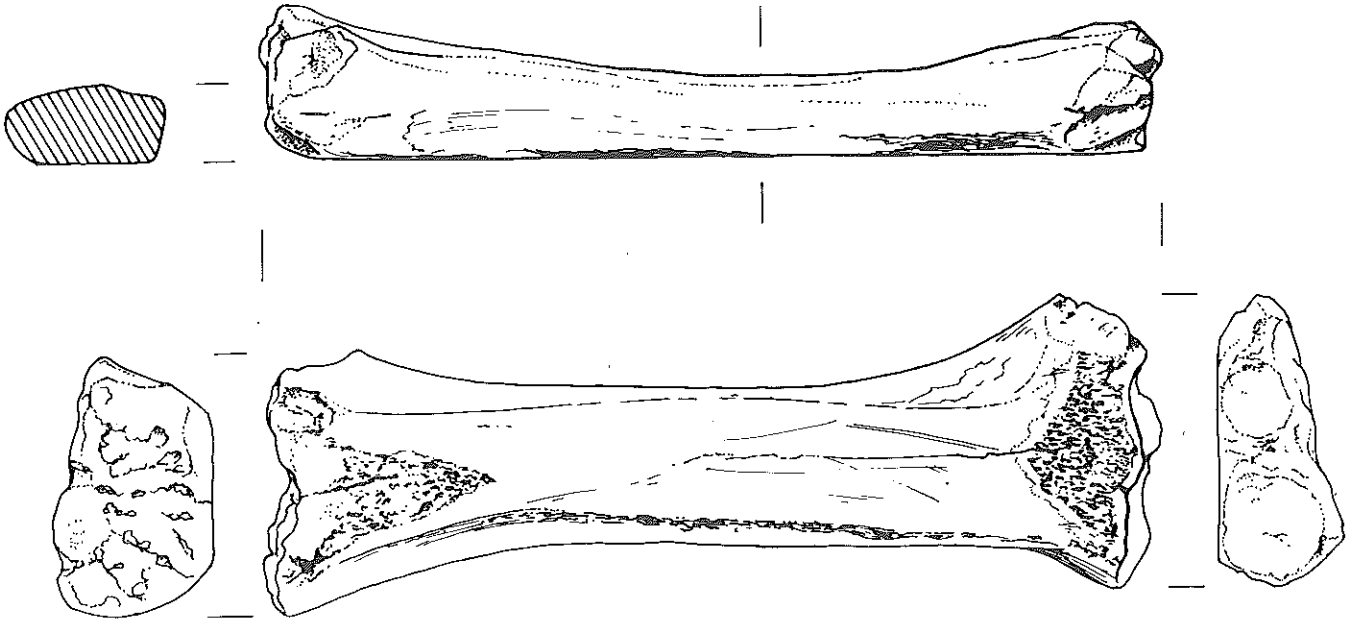

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Scale 2:3

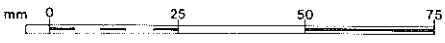
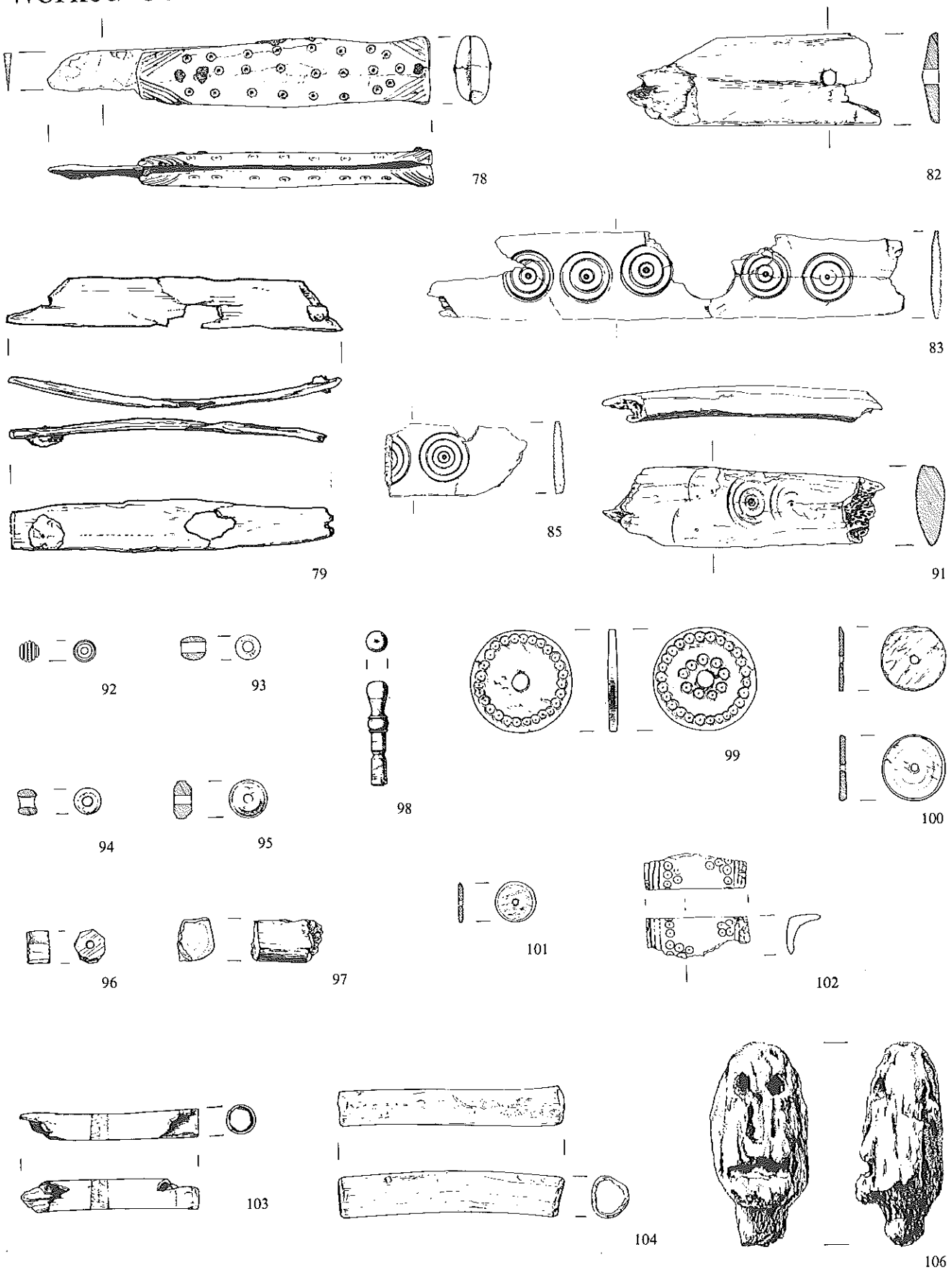


Fig 141

Worked bone 6



WB90 (not ill.) Decorated rib fragment. Sawn across 2nd quadruple ring-and-dot. Ring sizes as WB86.
L: 45mm; W: 20mm. House 9 or 10, unstrat. SF2497.

WB91 Trial piece. Unworked rib with part of 2 quadruple ring-and-dot designs and 5 other centre-points with arcs incised in inner face. Arcs are not exactly circular because of bone curvature across width. Ring sizes approx. as WB85 and 88.
L: 75mm. A(199) = 49. House 2, Phase 6Bi. SF3233.

Decorative and miscellaneous objects

Fig. 141; WB92-106

Beads found in Late Saxon and later levels show use of the lathe in their manufacture (WB92-95). Steps in their production are shown by the raw material WB97 and pierced roughout WB96. WB98 and WB100-101 are also lathe-turned, the latter possibly buttons.

The popularity of ring-and-dot ornament is shown by several items. The gaming piece WB99 is an early medieval type sometimes with central hole (cf. Radcliffe 1963: Fig. 15, 11; Cunliffe 1964: Fig. 52, nos. 1-4; Platt and Coleman-Smith 1975: no. 1930). The decoration on the knife handle WB78 takes the fashion back to Late Saxon times. The fragmentary tubular object WB102 with similar ornament is too short to be a tool handle.

WB103 and 104, made from bird bones, identified by Mr D Bramwell, might possibly be parts of musical instruments or perhaps the composite hinges described by Frere (1972: 149-50). Similar tubes were found at Thetford, where Knocker suggested they were used for decorating pottery (MS), and others found in the 1879 excavations on Northampton Castle include some with holes along the shaft (in Central Museum, Northampton).

The carved doll or puppet head WB106 is made of cattle horn core, at first sight a most unsuitable medium because of its uneven, pitted surface. However, it is light in weight compared with solid bone or wood. The eye sockets, nose and mouth slots could have held inserts or the carving may represent a death's head. Long (1975: Fig. 8, c) describes wooden pegs with heads of similar size carved with human faces from medieval levels in Trondheim, Norway.

A number of animal bones found in the more organically rich deposits bear reddish marks on the surface, usually around the shaft of long bones. Occasionally these resemble runes or letters. They are believed to be due to root activity in an iron-rich soil leaving a deposit on the bone. Our thanks are due to Dr R I Page, who kindly examined several bones under infra-red light with negative results, and to the staff of the Ancient Monuments Laboratory.

Catalogue

WB92 Bone bead. Lathe-turned notches and polished surface.
Diam: 5.8mm. K189. House 10, Phase 4. SF3342.

WB93 Bone bead. Made from piece with 2 flat non-parallel faces. Perforation (as WB96) drilled before shaping on lathe and polishing.
Diam: 6.3mm; L. 6.8mm. B96. House 4, Phase 6C. SF132.

WB94 Bone bead. Lathe-turned surface and large perforation, axis perpendicular to grain of bone.
Diam: 7mm. A43. House 2, Phase 6Bi. SF441.

WB95 Bone bead. Probably lathe-turned. Axis perpendicular to grain.
Diam: 10.6mm. A4. House 1, Phase 7. SF355.

WB96 Bead rough-out. Sawn both ends from knife-trimmed longitudinal splinter of large animal long bone (cf. WB97), perforated through centre. Cf. finished bead with same size hole, WB93.
W: 8.5mm; L: 6mm. A326. House 2, destrat. SF857.

WB97 Worked bone fragments. 6 pieces from longitudinal splinters of large animal long bone knife-trimmed to form polygonal cylinders, all sawn at one end, broken at other. Largest shown. Waste from bead or pin-making.
L: 13 to 20mm; W: 6.5 to 9mm. A, unstrat. SF2362.

WB98 Peg or handle, broken. Lathe-turned with depression in top. Cf. earpick with turned handle, Guildhall Museum 1903: Pl. V, no. 19. Could be peg for use in board game.
L: 29mm. B333. House 4, Phase 6A? SF1693.

WB99 Gaming piece or draughtsman. Disc decorated on both sides by ring-and-dot ornament. Central hole tapers towards more ornate side and stained green within, possibly by location on a copper alloy peg. Edge of disc shaped by knife cuts. Possibly antler. Cf. Wheeler 1927: Fig. 26, nos. 4 and 6.
Diam: 28mm. F(11) = 9. House 8, Phase 7. SF1870.

WB100 2 discs or buttons. Both cut from thin bone with grain across diameter. One has face turned on lathe, edge bevelled, back sawn. Other has edges only bevelled, faces sawn. Central holes. Cf. WB101.
Diam: 17 and 18mm. C112. House 7, destrat. SF950.

WB101 Disc or button. Both faces sawn. One face turned on lathe, edge bevelled. Central hole rough and unworn.
Diam: 10.8mm. House 7, unstrat. SF917.

WB102 Decorated hollow bone fragment. Length of square section bone, possibly sheep metatarsal, hollowed out in centre. Slightly convex faces bear incised line and grouped ring-and-dot design. Broken diagonally. Central hole, imperfectly bored, has ridges showing wear.
L: 27mm. A100. House 3, garden. SF127.

WB103 Decorated tube. Ulna of small goose, small enough to belong to a wild species e.g. pink foot or barnacle. Shaft cut and smoothly bevelled on inside. Other end broken. Incised herringbone decoration in 2 bands around shaft possibly partly erased by wear near complete end. Perhaps used as mouthpiece.
L: 47.5mm. A576. House 1, Phase 4B. SF3231.

WB104 Tube. Goose ulna shaft cut at both ends and irregularly bevelled on outside. Slight trimming on shaft lengthwise to remove angles. Highly polished all over exterior and just inside ends. Length comparable with shortest of 5 examples found at Thetford (Knocker: unpublished MS). Another from Sulgrave, Northants, also unpublished, has hole in side as do 2 from the castle site, Northampton. All could be parts of musical instruments or perhaps composite hinges.
L: 61mm. A462/463. House 3, destrat. SF1471.

WB105 (not ill.) Handle? Left tibia of sheep perforated through one side of shaft only, near distal end. Polish on shaft which is broken. Exactly similar object in Middle Saxon deposit at Shakenoak (Brodribb *et al.* 1972: Fig. 61, no. 80).
L: 124mm. B(491) = 380. House 4, Phase 2. SF3240.

WB106 Carved head. Tip of cattle horn core cut back at neck and rounded down to chin. Eyes are 2 tapering converging holes. Nose is rectangular slot and mouth a slot deeper in the centre and of semicircular profile. Neck shows signs of constriction just below chin perhaps due to tying head to doll or puppet.
L: 55mm. A(243) = 144. House 2, Phase 6A-B. SF657.

CHARCOAL AND WOOD REMAINS

by G E Oakley

All charcoal fragments found on the site have been examined but only those which are of structural importance, show signs of working or are themselves artefacts were selected for wood species identification. Oak (here, as always, plentiful) is easy to recognise but other ring-porous and diffuse-porous woods are more difficult. I am grateful to Mrs A Miles of the Princes Risborough Laboratory of the Building Research Establishment for advice on wood identification and Mrs C A Keepax of the Ancient Monuments Laboratory for checking and correcting my tentative identifications.

Structural remains

W1-11

The structural fragments all appear to be oak. This is not surprising as oak is a strong and durable timber which would have been locally available in large pieces suitable for beams, partitions, doorsteps, posts, lining for pits, etc. W2 and 11 show evidence of saw cutting across the grain and W10 of shaping but the timber would have been cleaved lengthwise where possible. Some structural traces are preserved in corrosion on iron nails, W6-9, notably from the ?tanning pits in House 10 and Area N. The pits were lined with timber set in clay but the wood only survived as brown streaks except on the nails. Oak would have served well in tanning liquors.

Artefacts

W12-17

Vessels are represented by fragments of a lathe-turned bowl and a shaped handle, in section not unlike the strap handles on pottery and presumably from some vessel. The bowl has a flat base and gently curving side but most of the top is missing. These scraps are the only evidence we have, on a site without waterlogged deposits where wood might survive, for what must have been a large variety and quantity of wooden vessels in daily use throughout the Saxon and medieval periods. Lathe-turning is also shown by WB92, 98 and WB100-1 (p. 318). Other artefacts include the tip of an arrow shaft, W16, preserved in corrosion within the socketed iron arrowhead Fe89. It is apparently oak, though the fine detail of wood structure is less well preserved than in charcoal.

W14 is a piece from a round shaft of about the right size for a spindle and it is made from *Euonymus europaeus,* popularly called the Spindle tree. This is a native species occurring in woods and scrub mostly on calcareous soils throughout England, Wales and Ireland and fairly common (Clapham *et al.* 1962) but not often found in archaeological contexts. The close-grained wood is suitable for pegs, etc., and was used for spindles before the invention of the spinning wheel (Edlin 1949).

Catalogue

(Wood dimensions are given relative to growth direction: radial W. × tangential W. × L. along grain).

W1 Pit lining, charred fragments in places but elsewhere a void. Oak.
K187. House 10, Phase 4/?5. SF3044.

W2 Pit lining? Oak, roughly sawn across grain at an angle.
50 × 25 × 70mm. B333. House 4, Phase 6A? SF1136.

W3 Doorstep. Survived as charred wood on stone step. Oak.
20 × 100 × 150mm. A(81) = 39. House 2, Phase 6Ai. SF42.

W4 Collapsed partition or roof timbers? Oak. Large burnt timbers up to 1m long lay some 400mm apart and roughly parallel across a 4m area. Smaller pieces lay beneath them at right angles with evidence of attachment by nails. Sample timber 60 × 125 × 230mm had 15 × 65mm section piece attached beneath.
A46. House 2, Phase 6Bii. SF3202-4.

W5 Doorstep or beam fragment? Oak.
60 × 75 × 150mm. G9. House 9, Phase 6ii. SF1959.

W6 2 pieces of oak 40mm thick with grain at right angles joined by iron nail 105mm long.
(K33) = G77. House 10, Phase 6B/C. SF2678.

W7 Lining of ?tan pit. Iron nail with remains of wood from side-wall. Oak.
N9. Area N, Phase 6/7i. SF3386.

W8 Lining of ?tan pit. 2 pieces of oak, 20 and 22mm thick, joined by iron nail 50mm long with tip bent over.
G69. House 10, Phase 7. SF2194.

W9 Lining of ?tan pit. 5 iron nails, 3 of which have well-preserved remains of 2 pieces of wood 22mm thick joined with grain at right angles. From surface of clay floor of pit. 1 definitely, 2 probably and 1 possibly oak.
G71. House 10, Phase 7. SF2242-6.

W10 Shaped wood. 5 large pieces of oak charcoal, 1 with 7-8mm chamfer across 2 edges at 1 end.
25 × 30 × 50mm. A441. House 1, Phase 5. SF1243 and 1794.

W11 Oak fragment sawn across grain at an angle.
5 × 27 × 45mm. L22. SF3149.

W12 Lathe-turned bowl. Flat base with turning ridges on interior, exterior smoothed but crusty burnt deposit on bottom, gently curving side, rim missing. Birch.
Base diam: 50mm; base Th: 15mm; edge Th: 10mm. C123. House 7, Phase 4. SF1115E.

W13 Handle of vessel? Short piece kidney-shaped in section and slightly curved. Traces of woodworm activity. Willow or *Populus* sp.
W: 27mm; Th: 11mm; L: 25mm. B448. House 4, Phase 4/5. SF1775.

W14 Round shaft or spindle? Cut from larger size timber. *Euonymus europaeus* L.
Diam: 9-10mm; L: 28mm. F79. House 8, Phase 4B. SF2217.

W15 Fragment of wooden spoon? Apparently from edge of 'bowl' and worn along shaped edge. Oak.
7 × 15 × 40mm. K188.1. House 10, Phase 5. SF3057.

W16 Arrow shaft. Oak. Tip preserved in socket of iron arrowhead Fe89. Medieval.
Diam: 7mm. A222. House 3, garden. SF900.

THE ARCHITECTURAL FRAGMENTS

by C Wilson with identification of the limestones by F W Anderson

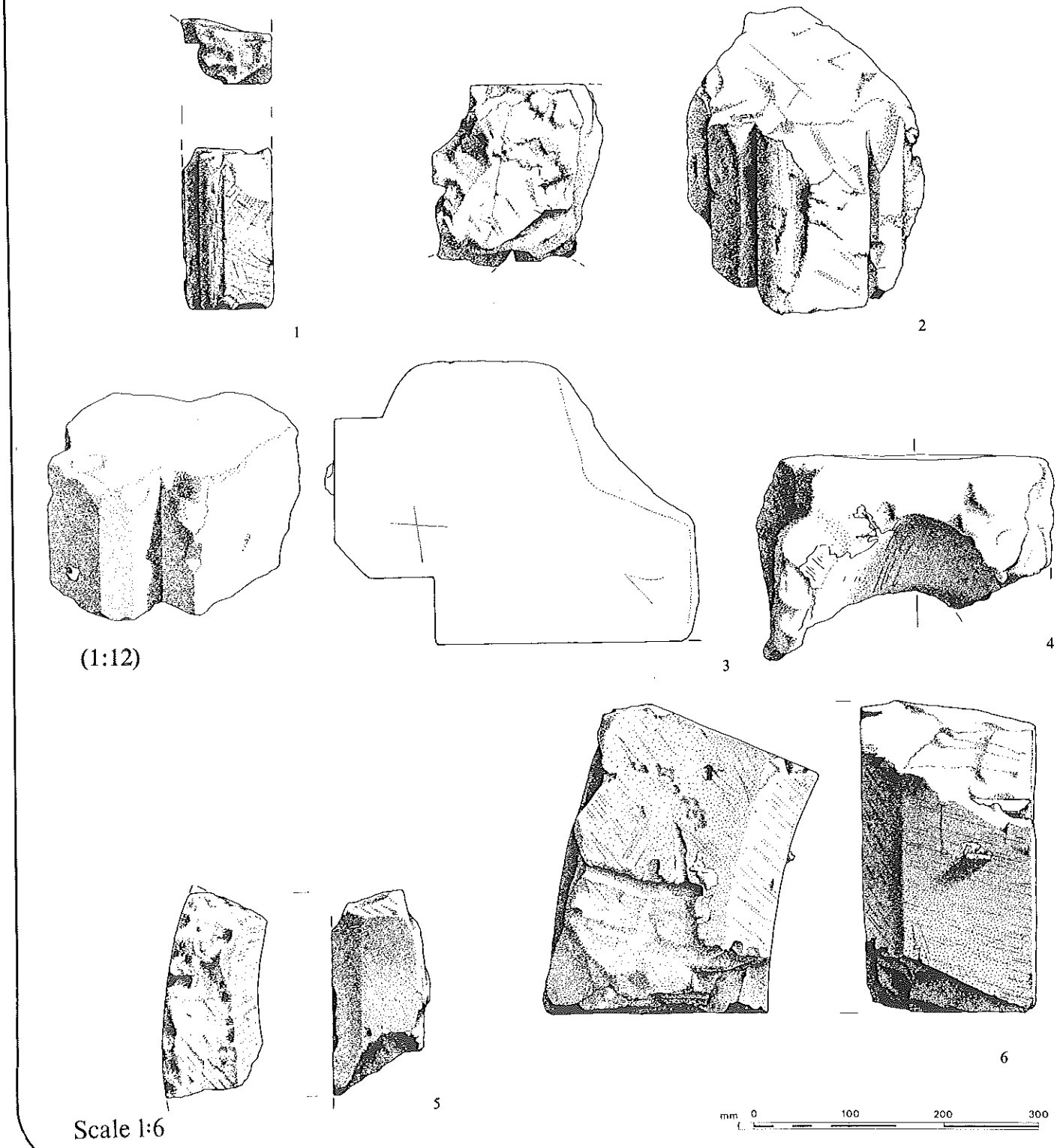
AF1 Fragment of ironstone jamb or respond. The shallow half-fillet profile suggests a date in the later 13th century and compares with AF2. C18. House 7, Phase 7. SF53.

AF2 Fragment of ironstone jamb, arch or arcade. (There is possibly a very slight curve on the piece.) The broad 'squashed' profile of the filleted angle roll suggests a later 13th century date. Mason's mark on the horizontal joint.
N(38) = 36. Area N, Phase 6/7v. SF3552.

AF3 Possible door jamb—with chamfered edge to the outside. Mason's mark in the form of a cross on the upper surface. Iron stained oolitic limestone-?Ketton.
G(110) = 109. House 10, Phase 6B. SF3193.

AF4 Possibly part of the head of a small 13th century lancet window in ironstone and painted white.
B1. House 4, Phase 6A. SF1798.

Fig 142



AF5 Possibly part of the voussoir of a small arch in ironstone. G(14) = 11. House 9, Phase 6i. SF2776.

AF6 Voussoir of a small arch in ironstone. 2 lead plugs. House 8, unstrat. SF2054.

AF7 White painted ironstone fragment of a course from a respond or a cylindrical pier, with an attached shaft of approximately circular plan. This probably comes from quite a substantial structure incorporating at least one arcade. A later 13th century date is likely. House 4, unstrat. SF25.

AF8 -9 Capital and part of a shaft from a wall arcade. A date of *c.* 1200 or just before is suggested by the simple stiff leaf foliage and plain chamfered abacus of AF8. A notable feature of both pieces is that they have not been bonded into a wall in the usual way but were attached instead by means of (lead?) dowels. They are both broken at the weak points coinciding with the dowel holes. Both pieces are in a shelly oolitic limestone—? Lincolnshire Limestone.

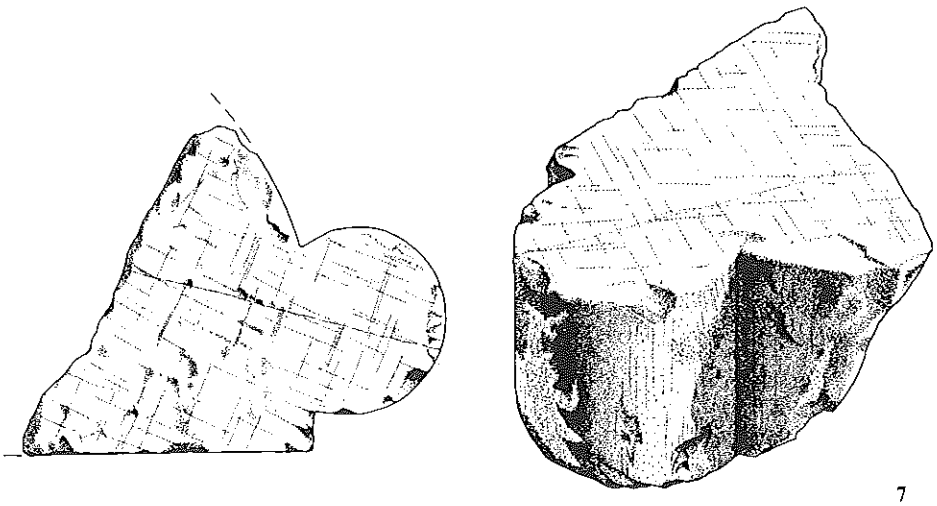
AF8 G109. House 10, Phase 6B. SF2795.

AF9 G(110) = 109. House 10, Phase 6B. SF2798.

AF10 Architecturally indeterminate ironstone fragment with inscription. The inscription is not a mason's mark but almost certainly a graffito: 1494 = 1494. If the much deeper cut initials WM go with the date they are interesting as an early use of Roman lettering in England. House 4, unstrat. SF29.

Fig 143

Architectural fragments 2



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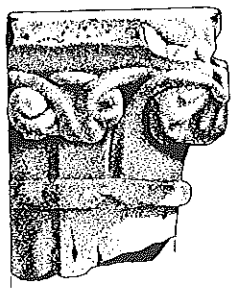

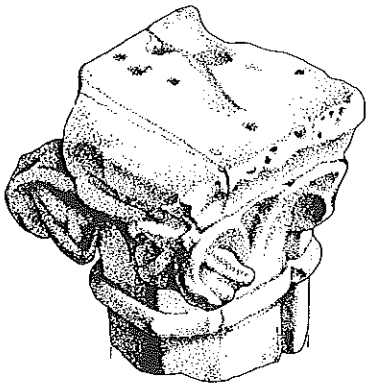

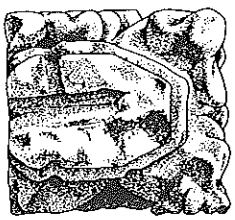

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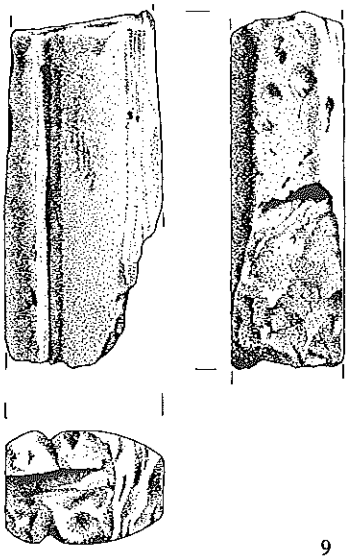

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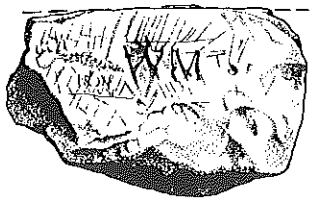


10

Scale 1:6

mm 0 100 200 300

THE TILES AND BRICKS

by F Williams and J H Williams
with a contribution by E Eames

Acknowledgements
Thanks are due to Mr D C Mynard and Mrs E Eames for their comments on the tiles, and to Dr K Langley for advice on the fabric descriptions.

The Roman bricks and tiles

No Roman levels were excavated on the site and accordingly the Roman tiles may relate to a Roman building in the vicinity. Their distribution, however, being concentrated at the west end of the site and mainly in association with the Saxon stone (?)church, mortar mixers and related levels suggests their reuse in the Saxon period and transport from a local or not so local Roman site, perhaps even Duston (cf. the probable reuse of Roman tile in Brixworth church). While some tiles are fairly obviously Roman, others (fabrics 6 and 7) are rather cruder and their Saxon manufacture cannot entirely be discounted although a Roman origin seems more probable.

The fragments were sorted into seven fabric groups (Table 31); 'tiles' and 'bricks' are not distinguished. Also, where small fragments are concerned, flat tiles or bricks may be represented or indeed other forms with flat components such as *tegulae* and *tubuli*.

Fabric 1
Inner and outer margins red (2.5YR 5/8); core greyish brown (2.5YR 5/2). Smoothish surface. Smooth—irregular fracture. Massive core but vesicular in places through the burning out of inclusions. Rare—common calcite; rare sub-rounded quartz. Flat tiles only were present, 30-50mm thick.

Fabric 2
Reddish yellow throughout (5YR 6/8). Smoothish surface. Rough to laminated fabric. Fine grained, fairly massive. Fairly common grog; frequent muscovite flakes; rare—common sub-rounded quartz.

Flat forms varied in thickness from 15.24mm. The single *tegula* measured 23mm thick at the base, 10mm thick across the flange, and the height of the flange was 50mm. The *tubuli* fragments were consistently *c.* 18mm thick. Two unusual fragments came from A815 and F(261)=260: both have the combed patterns on one surface which are characteristic of *tubuli*, but they are clearly not *tubuli*: 80mm wide by 15mm thick and 73mm wide by 15mm thick.

Fabric 3
Inner and outer margins yellowish red (5YR 5/8); core yellowish red (5YR 4/6). Smoothish sandy surface. Smoothish fracture. Massive core. Frequent sub-angular to sub-rounded quartz (0.2mm or less across); frequent muscovite flakes; fairly common grog. Two *imbrex* fragments both *c.* 15mm in thickness.

Fabric 4
Inner and outer margins light brown (7.5YR 6/4); core dark grey (N4/0). Smoothish surface. Very irregular break. High calcareous content in clay. Frequent large angular calcite or grog inclusions (commonly *c.* 2mm across); rare sub-rounded to sub-angular quartz; rare chert.

Flat tiles are present ranging in thickness from 20-53mm, and the single *tegula* fragment was 45mm thick at the base.

Fabric 5
Inner and outer margins yellowish red (5YR 5/6); core grey (5YR 5/1). Smoothish pimply surface. Smooth to rough fracture. Fairly massive core. Rare—common calcite (some small ooliths; some calcite burnt out leaving voids); common grog; rare sub-angular quartz; rare muscovite.

Two fragments of *tegulae* both 17-18mm thick at the base, 20mm thick across the flange and one with the flange 45mm high.

Fabric 6
Inner and outer margins yellowish red (5YR 5/6); core very dark grey (5YR 3/1). Smoothish surface. Very irregular core from grass tempering but rest of matrix fairly massive. Rare—common small grog; frequent flakes of muscovite; rare sub-rounded quartz; occasional large calcite.

Fragments of flat tile or brick *c.* 50mm in thickness came from Saxon contexts associated with the mortar mixers. Lines of furrows run in diagonal patterns across the surface of one tile (perhaps finger marks); this is a feature which also occurs on some of the other Roman fabrics, particularly Fabric 4. The Fabric 6 tiles are rather more crude than a normal Roman tile, so it is possible that these fragments could be Saxon.

Fabric 7
Inner and outer margins light reddish yellow (7.5YR 6/6); core dark grey (N4/0). Smooth slightly soapy surface. Laminated core. Rough irregular fracture. Heavily calcite gritted (cf. St Neots type pottery).

Several *tegulae* fragments occur in this fabric with average dimensions of 17-20mm thickness at the base, 20-22mm thickness across the flange and flange height of 40-47mm. The single *imbrex* fragment was 15mm thick.

Some tiles in this fabric are clearly Roman (*tegulae, imbrex*) but there are also thicker bricks/tiles (40-55mm) which occur in Saxon contexts and as noted in Fabric 6 above it is possible that these fragments are Saxon rather than Roman. Some fragments may be medieval but at the moment no differences can be identified within the fabric group.

Table 31 Roman brick and tile form analysis

Fabric	Brick/ Flat tile	Tegulae	Imbrices	Tubuli	Unclassified	Total
1	17				2	19
2	5	1		3	4	13
3			2		1	3
4	16	1			3	20
5		2			2	4
6	3					3
7	25	5	2		1	33
Unclassified					16	16
Total	66	9	4	3	29	111

Table 32 Distribution of Roman brick and tile

	House 1	2	3	4	5/6	7	8	9	10	N
No. of fragments	11	16	2	5	1	6	6	3	10	18

Medieval roof tiles

Introduction
The tile fragments were sorted into fabric groups in hand sample with the aid of a binocular microscope (×20). Counts were taken for each fabric in each context under the following headings: Nib, Peg, Ridge, Nib/Peg/Ridge (precise form not determined), Floor, Unclassified. Joining fragments were treated as one. So few fragments were present in any context that to be able to produce more meaningful figures it was necessary to simplify this information by phase in each house (Table 33). Further tables (34-5) show the broad chronological pattern of the fabrics for the whole street and the distribution of the different tile types.

Peg and nib tiles were conclusively identified only when the diagnostic features of the peg holes and nib were present. Ridge tiles were isolated on the basis of form (distinct curve, thickening at the edges, presence of crest) and/or elaborate glazing. Traces of glaze on two peg tiles, one a complete tile (from A457) and the other a fragment (A57) clearly indicate that glaze alone on an otherwise undiagnostic fragment does not identify the piece as ridge tile.

In spite of the substantial area excavated, the number of fragments with characteristics diagnostic of form (i.e. nib, peg, ridge) was very small and consequently little detailed comment can be made on the roofs of the buildings in the street.

Fabric 1
Inner and outer margins reddish yellow (7.5YR 6/6); core black (N2/0). Glazes patchy, pale olive (5Y 5/6). Smooth surface except where sanded from mould; reduced core. Smooth fracture. Fine texture with frequent muscovite flakes; rare-common sub-rounded quartz grains (0.2-0.5mm across) and very rare calcite.

No nib tiles were identified; only the thickness of the peg tiles (12-13mm), which were generally rather irregularly made, could be determined. Ridge tiles were generally 10-14mm thick. Fragments of two crested ridge tiles were found. One had only the base of the crest surviving, with stabbing at the junction of the crest and the lower part of the tile and a patchy green glaze (A7). The second example similarly preserved only the base of the crest and had rows of stab marks within a border *c.* 30mm wide round the thickened end of the tile, and a rich olive-green glaze (B74; Fig. 144.1). An otherwise plain ridge fragment with a patchy dark brown glaze had a circular perforation in the centre of the top *c.* 25mm in diameter (B235). The remaining fragments were of plain ridge tile with no evidence of crests.

Table 33 Fabric totals for each phase by house

a House 1

Phase	Fabric 1	2	3	4	5	Unclassified	Total
5			1				1
5/6A		1					1
6A			1				1
6Bi	1				3		4
6Bii			1				1
6Biv	2	1					3
Total	3	2	3		3		11

b House 2

Phase	Fabric 1	2	3	4	5	Unclassified	Total
5A-B trans		1					1
6Ai		1	1			1	3
6A-B			2			1	3
6Bi		1	1				2
6Biii	1	17	2	3			23
Garden	16	61	15	1	2	14	109
Total	17	81	21	4	2	16	141

c House 3

Phase	Fabric 1	2	3	4	5	Unclassified	Total
6A	1						1
6B		4			1		5
6C	1	5	10		5	1	22
6C-D trans or 6Di	4	6	4		1	5	20
6Di	3	7	12	2	3		27
6Dii		3		6			9
6Di & ii			1				1
Garden	30	49	39	2	10	17	147
Total	39	74	66	10	20	23	232

d House 4

Phase	Fabric 1	2	3	4	5	Unclassified	Total
5?		1	1				2
6A	13	12	39	12		2	78
6A?	6	7	8			5	26
6Aii/iii	3	4	2		1		10
6B	1	1	2				4
6B or ?C		1	3				4
6B-D		1					1
6C	4	1	2		1		8
6C or ?B	10	28	24		1		63
6D	5	6	17	4		1	33
6D or ?C	21	15	37		7		80
6Di	4	11	8		1	2	26
6Diii		5	3		1	1	10
Total	67	93	146	16	12	11	345

e House 5/6

Phase	Fabric 1	2	3	4	5	Unclassified	Total
4-6?	3	3				3	9
5?		2			1	1	4
6ii		1			2		3
Total	3	6			3	4	16

f House 7

Phase	Fabric 1	2	3	4	5	Unclassified	Total
5	7	7	8		2	2	26
6i	1		1		1	1	4
6i?		2					2
6ii						1	1
6iii		1			1		2
7		5				1	6
Total	8	15	9		4	5	41

g House 8

Phase	Fabric 1	2	3	4	5	Unclassified	Total
5/6		1					1
6i	2				6		8
Total	2	1			6		9

h House 9

Phase	Fabric 1	2	3	4	5	Unclassified	Total
4?		1					1
5-6		1			1		2
6i	1	1					2
6ii		1					1
Garden					1	1	2
Total	1	4			2	1	8

i House 10

Phase	Fabric 1	2	3	4	5	Unclassified	Total
4					1		1
5					1		1
6A?					1		1
6Aii		1			8		9
6Aiii or B	1						1
6B	1				2		3
6B/C	1		2			1	4
7	3	3	1		2	4	13
Total	6	4	3		15	5	33

j Area N

Phase	Fabric 1	2	3	4	5	Unclassified	Total
4/5		1					1
6/7v					1		1
Total		1			1		2

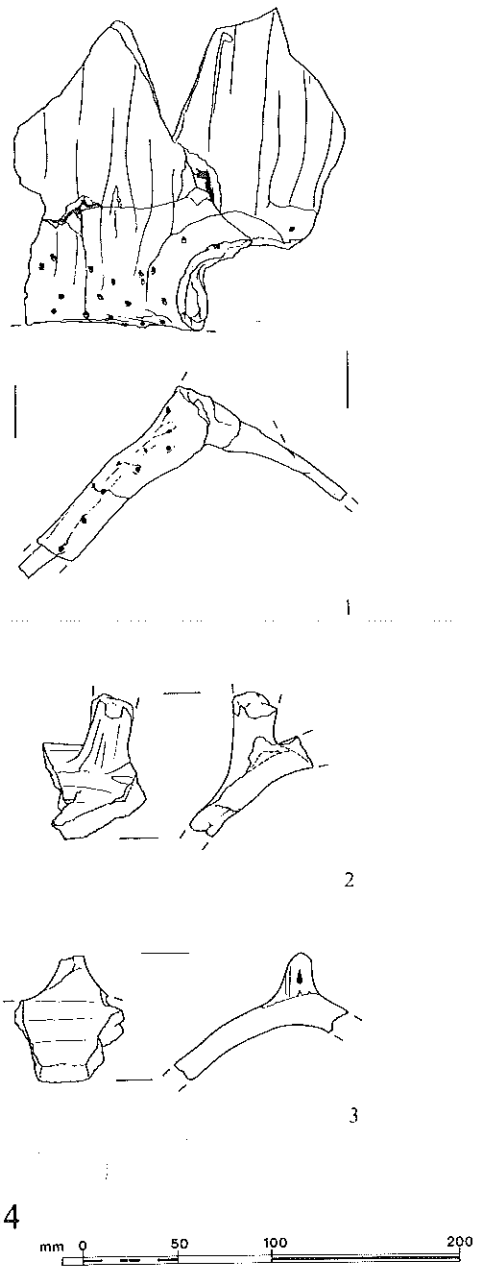
Table 34 Date range of fabric types

	Group	Fabric 1	2	3	4	5	Unclassified	Total
900-1100	2					1		1
1100-1400	3	7	14	10		5	3	39
1250-1400	3B	28	39	66	12	8	15	168
1400-1500	4	59	104	119	15	38	7	342
1500+	5	3	9	1		2	6	21
	Total	97	166	196	27	54	31	571

Group 3B relates to those contexts within Phase 6 which pre-date 1400. NB only 2 fragments (of Fabric 2 and Fabric 5) within group 3 can be certainly assigned as early as the 12th century.

Ridge tiles

Fig 144



Fabric 2
Inner and outer margins reddish yellow (5YR 6/8); core dark grey (5YR 4/1). Glaze olive (5Y 4/3). Smooth surface except where sanded from mould; massive core but with some voids from ?burning out of calcitic inclusions. Smooth fracture. Fine sandy matrix, somewhat coarser than Fabric 1; frequent muscovite flakes fairly common sub-rounded quartz grains (0.2-0.5mm across) and rare calcite.

The nib tiles were consistently *c.* 15mm thick and 150-55mm wide. No complete tiles survived but the original length in all cases was more than 130mm. The only dimension of the peg tiles which could be examined was the thickness, frequently 12mm, but ranging from 10-15mm. There were very few ridge tiles in this fabric, thickness *c.* 12mm.

The nib tiles were very well made and very consistent in form suggesting perhaps that they survived from a single batch. The peg tiles were also well made and much more regular than in Fabric 1. One peg tile (from A57) had a streak of brown glaze on its surface. Only plain ridge pieces appear in this fabric.

Fabric 3
Inner and outer margins reddish yellow (5YR 6/8); core grey (10YR 5/1) but rare fragment fully oxidised. Glaze olive (5Y 4/4) with dark yellowish brown mottling (10YR 3/6). Smoothish surface, except where sanded from the mould. Laminated and vesicular core. Muscovite and quartz as in Fabrics 1 and 2, but very rare; frequent calcite; rare magnetite.

No nib tiles were identified in this fabric. The thickness of the peg tiles ranges from 11-15mm, most frequently *c.* 15mm. The very few large fragments with the full width surviving indicated a width of *c.* 160-70mm, and the single complete peg tile measured 15mm by 170mm by 290mm. Few ridge tiles were identified (width *c.* 12mm).

Only two peg tiles preserved the complete width of the upper part of the tile, and each had two round holes, diameter *c.* 15mm, and 50-60mm apart. The single complete peg tile from the site is of interest since on the bottom *c.* 100mm a decomposed dark green-brown glaze can be seen. It is unusual for plain roof tiles to be glazed and in this instance it appears that for economy only that part of the tile which would be exposed between other overlapping tiles was glazed. This factor shows that a small fragment of glazed roof tile cannot be presumed to have been part of a ridge tile purely on the basis of the glaze.

Fabric 4
Yellowish red throughout (5YR 5/8). Smoothish surface except where sanded from mould. Fracture very irregular. Frequent red grog up to 5mm across; frequent muscovite flakes; rare sub-rounded quartz; rare calcite but some voids from ?burning out of calcitic inclusions.

The only identifiable tile types in this fabric were two fragments of nib tiles indicating a thickness of *c.* 11-13mm, width of 164mm and length of more than 165mm.

Fabric 5
Considerable variation in colour; main types—core reddish yellow (5YR 7/8); light grey (5YR 7/1) and pink (5YR 7/4) laminations; yellowish red margins (5YR 5/8), grey core (5YR 5/1). Glaze olive (5Y 4/3). Texture roughish, sandy. Slightly irregular fracture; fairly massive core but traces of lamination. Plentiful white, red and grey sub-rounded quartz (typically *c.* 0.2mm across); rare—common muscovite flakes.

No nib tiles were found in this fabric. The thickness of the very few peg tiles ranged from 13-20mm. Among the ridge pieces the thickness of fragments varied between 9-15mm. The fabric includes two fragments of crested ridge tile. One fragment with a very rich green glaze had the base of a cylindrical projection (A100; Fig. 144.2). The other crest was in the form of a simple four-sided peak coming to a rounded top (A111; Fig. 144.3).

One fragment (A222) of tile 15mm thick had a light brown glaze on one surface and covering completely one edge, and may be part of a decorative wall tile. Another fragment (unstratified) may have been part of a kiln structure (pers. comm., Mrs E Eames).

Table 35 Distribution of tile types

	Fabric 1				Fabric 2				Fabric 3				Fabric 4				Fabric 5				Total			
	N	P	R	N/P/R	N	P	R	N/P/R	N	P	R	N/P/R	N	P	R	N/P/R	N	P	R	N/P/R	N	P	R	N/P/R
House 1			1	2		1		1				3							3			1	1	9
House 2		1		16	7	6		68		2		19			4			2			7	9	2	107
House 3		3	2	33	1	6		67		6	1	59	2		8		1	1	17		3	16	4	184
House 4		1	11	55		8	2	83		13	1	132					1	6	21			23	20	291
House 5/6				3				6											3					12
House 7				8				15				9							4					36
House 8			2			1												3	3			1	5	3
House 9			1					4									1		1			1	1	5
House 10			2	6				2				4							13				2	25
Area N								1											1					2
Total	5	19	123		8	22	2	247	21	2	226		2		12		3	12	66		10	51	35	674

Fabric sources and inter-relationships

Fabric 1 appears to be identical with pottery fabric W18 (Potterspury). The finest fabrics within the range of Fabric 2 are very close to Fabric 1, and in fact Fabrics 1 and 2 may be the same. Within Fabric 5 some fragments are also probably of Potterspury type, particularly those noted as buff-white or pink-white in colour.

It is possible that Fabric 3 may be related to Fabric 2 but overfired. Nevertheless it seems more likely, given the much more frequent presence of calcareous inclusions that it is a distinct type.

Fabric 4 is a much coarser fabric than any of the other types.

Fabric 5 may well incorporate more than one type but is distinguished by the frequency and density of the inclusions.

All of the fabrics, except no. 3, were also found on the Greyfriars site in Northampton. Fabrics 1 and 2 fall within the Greyfriars Roof Tile Fabric 1 and comprise the bulk of material from that excavation; Fabrics 4 and 5 are represented within the Greyfrairs Fabrics 2 and 3 respectively, but occurred in very small quantities only. Most of the Greyfriars material came from destruction debris and cannot, therefore, help to refine the date range of these various fabrics (Eames 1978: 125).

Discussion of the tile forms

The number of stratified identifiable fragments from such a large site is surprisingly small: Nib—10; Peg—51; Ridge—35 (Nib/Peg/Ridge—674).

It is clear that only Houses 2, 3 and 4 produced what might be called a significant amount of ceramic roof tile. Taking overall totals for each house and disregarding phase, nib and peg tiles are seen to be present in Houses 2 and 3, while it may be significant that in House 4 only peg tiles were identified. It is doubtful, however, if any firm conclusions can be based on such a small group of identifiable tile types. Ridge tiles were present in all three houses, again in markedly greater quantity in House 4.

The range of forms does seem to vary according to fabric. Nib tiles do not appear in Fabrics 1, 3 and 5 where only peg and ridge tiles are present. In Fabric 2 peg and nib tiles are in evidence but very few ridge fragments. There were very few identifiable fragments in Fabric 4.

The dimensions of the various types of tile in each fabric do not produce a coherent pattern, with as wide a variation within one fabric as between fabrics. This is probably because there were so few identifiable fragments—only one complete tile of any type.

Stone roof tiles, of which only 69 pieces were found, follow approximately the same distribution pattern by house as the ceramic tiles (p. 327).

Dating

In Table 34 the fabric counts are rationalised into major groups for which date ranges can be given derived from other categories of material on the site. Overall, by far the heaviest concentrations are in Groups 3B-4, i.e. between 1250 and 1500, and within that range the emphasis is in Group 4, 1400-1500. This pattern is true also for each of the individual fabrics. It seems, therefore, that the table is probably reflecting only the general increase in the use of tile without bringing out any chronological distinctions between the various fabrics.

Medieval floor tiles

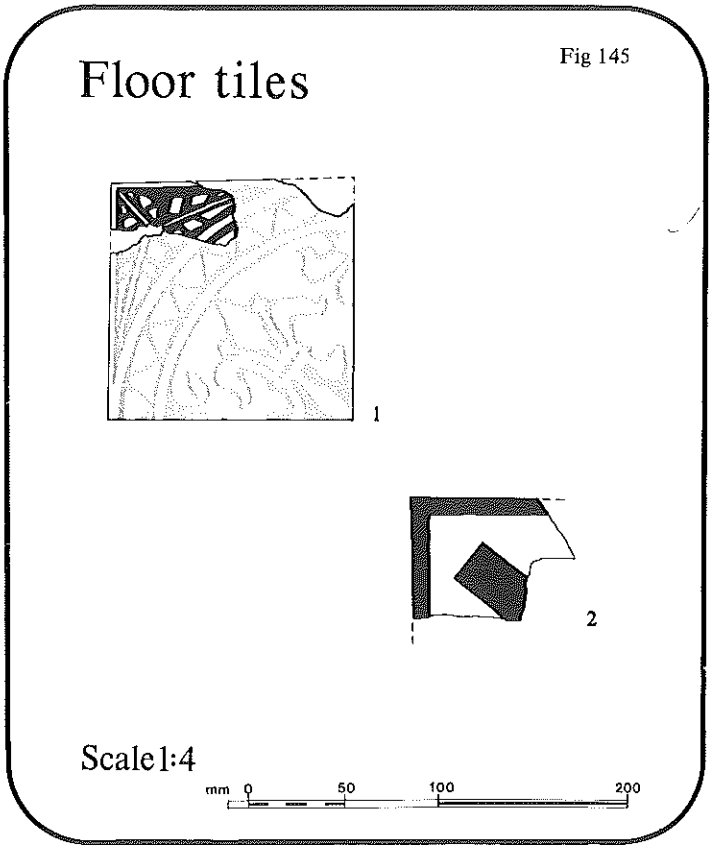
Fig. 145; FT1-2

by E Eames

Catalogue

FT1 One corner of a 2-colour tile, 65×33×21mm. Close, hard-fired fabric, fully oxidised, with one lump of stone visible at the base of the fractured edge. Glazed with a lead glaze that looks golden brown or purplish brown over the body and orange over the white slip. It shows no sign of wear. The decoration was applied by the method in which the design was stamped on the surface and the bottom of the cavities so formed was covered with a thin layer of white slip. Too little slip had been used on this tile and the base of the cavities is not covered completely. The remaining decoration is part of a 3-fold spray of leaves such as was frequently used to fill the space in the corner above or beside a shield of arms set diagonally on the tile or in the outer corners of a 4-tile design in which the main motif was enclosed in a circular band. In this example the leaves are composed of separate leaflets placed on either side of the stem, arranged roughly in pairs. The leaflets have square-cut outer ends that are probably derived from the more exaggerated leaf forms used on the tiles made at Great Malvern in the 1450s. Designs that include corner sprays of foliage closely related to the Northampton foliage are present on tiles from Maxstoke Priory in Warwickshire and Burton Lazars leper hospital in Leicestershire. Examples from both sites are present in the British Museum, and on most of them the main decoration is a shield of arms set diagonally. One design in this group from Burton Lazars and all in this group from Maxstoke have the plain border outlining the outer edges that is present on the piece from Northampton. (Eames forthcoming: Ch. 6, and design nos. 332 and 379 from Burton Lazars, 332 having the border and design nos. 325-30, 2252 and 2519 from Maxstoke; Whitcomb 1956: design nos. 164-72, 242 and 251). The decoration on the tiles from Burton Lazars is carried out in counter-relief so that they are monochrome tiles and so are most of those from Maxstoke, but a few are 2-colour tiles with the decoration applied by the same method as that on the Northampton piece (Eames forthcoming: design no. 2519 has leaflets resembling those on the Northampton fragment applied to the tile by the same technique). It was more successful on the Maxstoke tiles and the bottom of the cavities is adequately covered by the slip. The foliage in the Burton Lazars designs has indented leaves; some of that on the Maxstoke tiles has indented leaves and some is made up of separate leaflets. None of the foliage with separate leaflets is the same as that from Northampton because the Maxstoke leaflets grow out of a stem left upstanding in body colour but the Northampton leaflets grow out of a stem that is a stamped cavity outlined by 2 upstanding lines of body clay. This last type of foliage is present on one tile in the British Museum collection also from Maxstoke Priory (Eames forthcoming: tile 2506 design 2252) but belonging to a different group from the heraldic tiles just discussed. It is one of 4 identical tiles that together would form a pattern consisting of a circular band with chevron ornament enclosing 8 fleurs-de-lis, 4 springing in from the band and 4 from the centre. This decoration is designed with the motifs drawn in outline and when this was applied to the tiles the outline was in body clay and the interior of the decorative motifs and the background were covered in white slip. Each corner outside the circular band was occupied by a 3-fold spray of foliage carried out in the more usual block technique. Unfortunately most of the outer corner has broken off the tile in the British Museum but there is a small area of overlap between this and the fragment from Northampton and the decoration on the two seems to fit. It is therefore probable that both tiles were decorated with the same stamp.

The monochrome tiles from Maxstoke Priory were found in the Infirmary and were thought by the excavator, Mr J R Holliday, to date from 1448 (Holliday 1878: 81), but I should prefer to place them



in the second half of the 15th century. The tiles from Burton Lazars are thought to date from the late 15th or early 16th century (Eames forthcoming: Ch. 6). The method of designing with the main motifs outlined in body clay was used on a series of early 16th century tiles at Llanthony Priory, Gloucester, on a series of early 16th century tiles in Yorkshire and on the products of the tilery at Little Brickhill in Buckinghamshire (Eames forthcoming: Ch. 15). Mr D Mynard, who re-excavated the Little Brickhill kiln site, has dated the Little Brickhill tiles to the 15th century (Mynard 1975: 74), but I still prefer the earlier view that they were made in the first half of the 16th century (Eames forthcoming: Ch. 15; Hohler 1942: 15), probably between 1510 and 1540. Although the design on the tile from Maxstoke is carried out mainly in the outline technique and includes the type of fleur-de-lis common in Little Brickhill designs, it is not the same as any known Little Brickhill design published by Hohler or by Mynard, or present on the tiles from the site in the British Museum. Other tile designs carried out in the outline technique but unknown from Little Brickhill, have been found in Warwickshire and published by Chatwin (1936: Fig. 43.4, 7 and 9) and also in Leicestershire and published by Whitcomb (1956: design nos. 255-60). In fact it is probable that one design published by Chatwin from Maxstoke Priory and St John's, Coventry (Chatwin 1936: Fig. 43.7) should be the same as this Maxstoke-Northampton design, and a fragment published by Whitcomb (1956: design no. 259) is probably the outer corner of it. Mr D Mynard has suggested to me that there was another centre of manufacture north of Little Brickhill and it is probable that there was such a tilery in Warwickshire. If so the Maxstoke and Northampton examples are likely to have been made there. This hypothetical Warwickshire tilery seems to have been related in some way to that at Little Brickhill, which may have been derived from it. I suggest a date in the first quarter of the 16th century for the tiles of this type from Warwickshire, Leicestershire and Northampton. The design illustrated in Fig. 145 is based on the complete tile from Maxstoke in the British Museum and the fragment from Northampton, the part known only from Maxstoke being shown in outline and the part from Northampton in block.
A(6) = 5. House 1, Phase 6Biv.

FT2 One corner of a 2-colour tile, 81 × 61 × 25mm. Close, hard-fired body with a reduced grey core. It might be a Little Brickhill product. In the appearance and thickness of the body and in the appearance and colour of the surface it closely resembles two fragments from the Little Brickhill kiln site now in the British Museum (Eames forthcoming: tiles 3303 and 3304). Clear marks of the wood grain of the stamp are visible on all three pieces. The large area of white slip, the speckled appearance of the glaze over the slip and its dark, purple brown colour over the body are characteristic of Little Brickhill products. On the other hand the decoration on the piece from Northampton is not part of any known Little Brickhill design, and it may have been made at the possible Warwickshire tilery already postulated. It shows no sign of wear but there is secondary burning on two of the fractured edges. This suggests that the tile broke before it was laid in a pavement and that is was used in a hearth or fire place.
G(105) = 104. House 10, Phase 6A? (Contamination from layer above would have been extremely easy.)

FT3 (not ill.) Part, including a corner, of a plain glazed tile, 113 × 92 × 23mm. Hard-fired, grey, reduced body with a thin layer of red oxidised fabric on all the surfaces. The base is very rough. A large lump of apparently ferruginous material is visible in one fractured edge and another lump has fallen out taking part of the base with it. The surface was coated with white slip and scraped with an implement that left marks of wood grain on it, and then glazed with a lead glaze containing a scatter of copper or brass filings which remain as green spots except in one area where the glaze has flowed down the tile and the filings have melted and coloured it green. The lower edge of this run of glaze is clearly visible and looks similar to the bottom of a run of paint. This run suggests that the oven had only just got hot enough for the glaze to flux when it began to cool down. Specks of clay from the tile that stood in front of this one in the kiln are adhering to the surface near one edge where it has bulged. There are no signs of wear and the tile may never have been used in a pavement. The body resembles that of some of the Little Brickhill tiles in the British Museum and the surface is similar to that of 2 plain glazed tiles from the site described by Mynard. It is however possible that this tile also came from a related more northerly site, perhaps the same tilery as the other pieces from Northampton.
G104. House 10, Phase 6A? (Contamination from layers above would have been extremely easy.)

FT4 -11 are pieces of plain glazed tile all apparently made of the same fabric as FT2 above.

FT4 (not ill.) Part, including a short length of edge, of a plain glazed tile, 40 × 37 × 26mm. Hard-fired, red body with reduced blue-grey core. Glaze yellow over white slip that had been scraped with a wooden implement that had gone through to the body in places. Traces of secondary burning on one fractured edge.
G(133) = 132. House 10, Phase 6B.

FT5 (not ill.) Part, including one corner, of a plain glazed, triangular tile, scored before firing and broken apart afterwards, 80 × 60 × 23mm. Hard-fired red and grey fabric. Glaze brown over the oxidised and olive over the reduced areas. It has not covered the surface near the corner.
G225. House 10, Phase 4?/5 (Intrusive?)

FT6 (not ill.) Part, including one complete edge, of a plain glazed tile, 118 × 41 × 22/31mm. Overfired, the body has swollen during firing and the glaze has bubbled in places. Glaze dark green and purplish brown.
G(96) = 87. House 10, Phase 7.

FT7 -9 3 small fragments with yellow glaze over white slip.
K28; G66; G68. All House 10, Phase 7.

FT10 (not ill.) Fragment with no part of an edge or of the surface present, 72 × 40 × 22mm.
G(96) = 87. House 10, Phase 7.

FT11 (not ill.) Part, including one corner, of a tile, 54 × 52 × 19mm. Hard-fired red and dark grey fabric. Surface worn away.
G21. House 10, Phase post-7.

FT12 (not ill.) Part, including one corner, of a plain glazed tile, 113 × 107 × 21mm. Sandy fabric, the edges roughly cut without a bevel. Glaze black. Broken in 2. Signs of secondary burning.
A500; A566. House 3, garden.

FT13 (not ill.) Part, including one corner, of a plain glazed tile 54 × 50 × 19mm. The same fabric and glaze as FT11 above, and possibly part of the same tile but not adjacent to any edge of FT11.
A566. House 3, garden.

Discussion

It seems most likely that pieces 1-3 are of earlier 16th-century date, and that all are products of the same tilery and that 4-11 were made in the same place at the same date. In his discussion and distribution table of Little Brickhill tiles, Mynard records examples from four sites in Northamptonshire: Blakesley, Whittlebury, Grafton Regis and Wappenham (Mynard 1975: 74, 79, 80) none of them decorated with the two designs represented on the Northampton fragments, which are indeed unknown on tiles that are certainly products of Little Brickhill. While it is not impossible that these tiles found in Northampton were made at Little Brickhill, it seems more likely that they were made at a related tilery, situated further north, perhaps in Warwickshire. Pieces 12 and 13 are roughly made, apparently of a sandier fabric. They could also date from the late 15th or earlier 16th century.

Medieval bricks

Several complete or near complete bricks were found in House 4 (B134, Phase 6C) where they had been used in a hearth. The two most complete examples measure: 45mm by 90mm by 235mm, and 50mm by 110mm by 235mm. The fabric of these bricks was as follows: margins yellowish red (5YR 5/6), core grey (5YR 5/1); well fired; sandy surface; common calcite; rare sub-angular to sub-rounded quartz; rare muscovite.

Fragments of brick came from the following medieval contexts in various fabrics but the fragments themselves and the total quantity was too small to enable anything useful to be said about them: House 1, A(259)=67; House 3, A152, A203, A230 (garden); House 4, B(152) = 7a, B461; House 5, B105; House 8, F11.

THE STONE ROOF TILES

by G E Oakley (stone identifications by D Sutherland)

A total of 69 pieces were recovered from 45 contexts. 12 contexts contained tiles of more than one stone group, not just of different types, perhaps suggesting that stone tiled roofs were patched with stone from different sources as available.

Stone types and groups

The roof tiles were examined with a (×10) hand lens and separated into stone types. Tentative identifications of these types were made by comparison with local quarry samples in the collection at the University of Leicester Centre, Barrack Road, Northampton, by Dr D Sutherland. The types were assigned to geological groups with indications of likely quarry location. Greater precision is not possible. The original quarries may be worked out or obscured by development though documentary references might help.

Several additional types of stone were noted amongst the roof tiles from Greyfriars, Northampton (Oakley 1978b), but these were assignable to the same basic groups.

Group 1: (Type 1) ferruginous calcareous sandstone with mica; poorly fissile—definitely Northamptonshire Sands—could be from Duston area near Northampton.

Group 2: (Types 4 and 9) sandy limestones (or calcareous sandstones), some shelly, some oolitic—probably Northamptonshire Sands, resembling samples from the Duston area.

Group 3: (Types 3, 6, 7) not very coarse shelly sandy limestones, fairly fissile—possibly Northamptonshire Sands (from Duston area) though possibly Upper Estuarine Limestone from N of Northampton (these beds converge).

Group 4: (Types 5 and 8) very shelly limestones—Upper Estuarine Limestone from SW of Northampton (resembling samples from Farthinghoe area).

Group 5: (Type 2) fine-grained white limestone—Great Oolite (Blisworth Limestone), not necessarily from Blisworth.

Group 6: (Type 12) very fine-grained sandy micaceous and very fissile—Lower Lincolnshire Limestone (Collyweston Slate) from NE Northamptonshire.

Group 7: (Type 17) thin blue slate (probably from Wales).

Table 36 Summary of stone types

		Stone group										
		1	2		3			4		5	6	7
Stone type		*1*	*4*	*9*	*3*	*6*	*7*	*5*	*8*	*2*	*12*	*17*
Quantity		3	2	6	12	4	5	18	9	1	3	6
	Total	3	8		21			27		1	3	6

Total
69
69

Most of the stone is obtainable near Northampton. From further afield came three pieces of Collyweston slate (including one possible piece from Area N, Phase 3) and six pieces of blue Welsh slate, two of which are almost certainly of 15th century and one of 14th century date, the rest being probably later.

Only one tile is complete and it is the same long rectangular shape as those from Greyfriars. Traces of mortar on both faces covering two thirds of the length show that tiles were bedded in mortar and laid overlapping each other by two thirds. Each has a hole near one end to take a fixing nail. The holes were carefully executed and usually countersunk on each side to take the nail head so that it did not project above the tile's surface. There are two examples of incomplete diamond-shaped tiles, probably floor tiles, one from Area N, Phase 2/3.

Only 16 tiles came from contexts pre-dating 1400: five (of stone types 3, 5, 8 and 12) came from Area N, Phase 3, but 11 (of types 1, 3, 5, 7 and 8) are not earlier than 1250. The vast majority are to be assigned to the 15th century and are fairly well distributed between all the houses on the N side of the street, with a few from Houses 9 and 10.