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EXCAVATION OF 45-47 GALLOWGATE, ABERDEEN

HILARY K MURRAY

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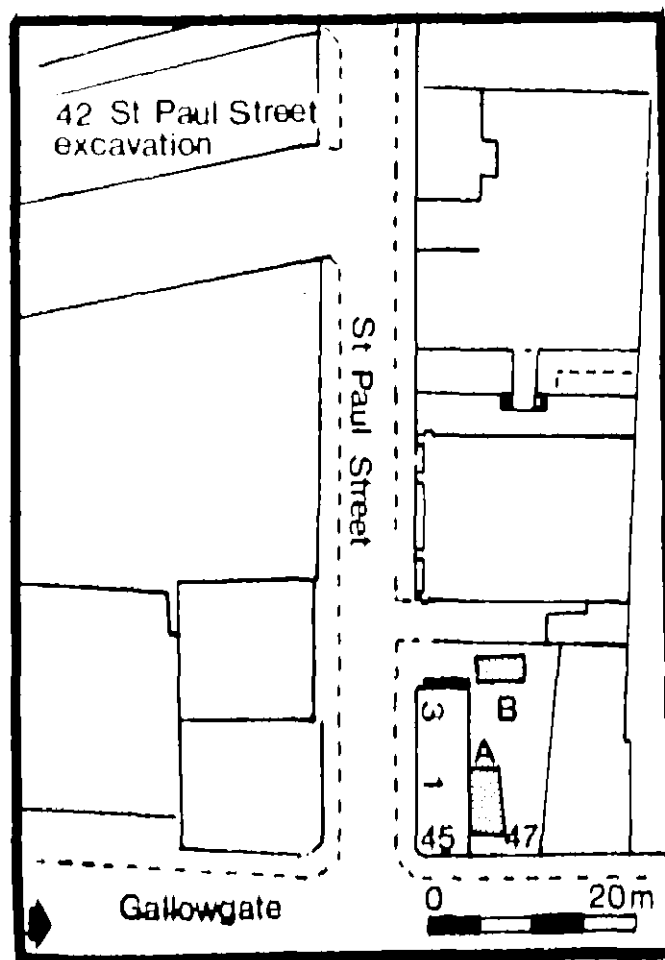
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45-47 GALLOWGATE, ABERDEEN HILARY MURRAY

Excavation took place at 45-47 Gallowgate, Aberdeen from 6 August to 26 October 1979. The work was carried out by the Aberdeen Archaeological Unit (now part of Aberdeen Art Gallery and Museums Department) with the aid of grants from the Scottish Development Department (Ancient Monuments).

The site

The site, which lay at the corner of St Paul Street and Gallowgate (NGR : NJ 941 055) included the area of 45-47 Gallowgate and 1-3 St Paul Street. These properties, which were under threat of redevelopment, had been demolished some years earlier and the most recent use of the site had been as a car-park.



Illus 6 Site location map

A survey carried out by the then City Council in 1946 showed that all these properties had been cellared. No passages were depicted on either the 1867 or 1967 OS maps, but as this was the only frontage site available in the area, it was decided to machine out the area of the cellars to see if any medieval layers remained undisturbed between or below them. This preliminary examination revealed a pond between the cellar walls of 45 and 47 Gallowgate and a trench (Area A) was excavated by hand covering the whole of this passageway (3 x 6 m). Most of the back of the site was also cellared, with the exception of a small area behind 3 St Paul Street, where a second trench (Area B : 2.5 x 5 m) was excavated. There was no possibility of a physical link between these two areas. The cellars on the site had cut to a depth of 3 m and destroyed medieval deposits in all other areas. As the excavation in Areas A and B revealed a total thickness of c 2.5 m stratified deposits above natural, it is possible that some pits might have survived below the cellars but the potential evidence did not appear to justify the mechanical removal of such a large area of rubble fill.

The excavation

Area A : the Gallowgate frontage

Excavation below the passage between properties 45 and 47 Gallowgate revealed a series of 15 phases of site use, dating between the early 13th century and the 19th century.

Phase 1 (illus 2)

The earliest activity on the site appears to have consisted of the dumping of ash, manure and general rubbish (129, 127, 126, 125, 124) including bone and pottery. Part of a cess pit (AAF) extended on to the site; the fill (132) was covered by a clean sand layer (128). The overall impression was that the area was an open yard. There was no evidence concerning boundaries or structures.

Pottery: 1-5. Small finds : Leather : 21; Flint : 67, 68; Iron link : 88.

Phase 2 (illus 2, 3, 8)

In Phase 2 a building was constructed on the Phase 1 rubbish layers. A grooved sill beam (AAE) on a foundation of large stones formed the southern edge to a very compact floor of yellow sand (122). Bone and

pottery in the overlying organic occupation layer (122x123) suggested a domestic function. Although it is possible that any southern extension of this structure might have been destroyed by the Phase 3 ditch, the wall lay on what became a consistent boundary line and is more likely to have been the southern outer wall of a structure extending across the frontage of the northern property. The eastern wall appears to have been destroyed by a later pit.

Pottery : 6

Phase 3 (illus 2, 9)

After the building fell into disrepair and was demolished, a ditch (AAD) was dug directly south of its wall, apparently redefining the boundary line between the north and south properties. The base of the ditch was packed with stones (flat-boulder size 120) which were sealed by an organic rubbish and cess (116). This contained significantly large quantities of leather scrap and hair which can be interpreted as leather-working waste, suggesting that at this period a shoe-maker or other leather worker may have worked on the southern property.

Small deposits of ash (118) and organic rubbish (117) built up in the yard to the north while the ditch was being filled up. Both layer 117 and the overlying Phase 4 layer (114) contained mould fragments and metal working may have taken place on or near the northern property.

Pottery : None drawn. Small finds : Leather : 4, 14-20; Moulds : 45;
Flint : 69; Lead : 85

Phase 4 (illus 2)

During Phase 4 there was a gradual accumulation of a thick silt and organic layer (114) 0.15 - 0.20 m deep. A rectangular area of hard yellow clay (113) had been laid down on top of this, forming a floor which extended north from the midpoint of the excavated area.

Pottery : 7-10. Small finds : Leather : 1, 28; Moulds : 44, 46-47, 49-51;
Whetstone : 65; Stone vessel : 66; Flint : 70

Phase 5

During Phase 5 the property boundary was once again redefined by a wattle-lined ditch (AAB). The fills of silt (111, 133) and sand (110, 112) suggest that the ditch may often have been waterlogged. Pottery and bone in the fill presumably derive from rubbish dumping from the

adjoining properties. After the wattle lining collapsed inwards the hollow filled with more silt (109) and rubbish and scrap timbers (A2) were used to level it up. The timbers included a basket base and other worked pieces. Pottery : 11-16. Small finds : Leather : 5-6; Wood : 38-42; Flint : 71

Phase 6 (illus 2)

After the ditch was filled in the boundary appears to have been marked on the same line by a wattle fence of which a few posts survived (AX), while general yard deposits accumulated on either side of it (104, 105, 107). Pottery : 17-24. Small finds : Leather : 8, 24, 26-27; Mould : 52; Roof tiles : 53; Flint : 72-74; Lead : 86-87

Phase 7 (illus 2, 11)

The boundary was redefined slightly to the south by a wattle fence (AY). A large cess pit (AW) was dug in the yard surface of the northern property. The fill (94, 95, 97, 99, 100) consisted of alternate coal/rubbish layers and clean peaty layers, over a basal soak away of stones. The sealing layer of peat (95) was nearly sterile of finds and was presumably used to clean the area up.

Pottery : 25-36. Small finds : Leather : 10; Cloth : 37; Roof tiles : 54-56; Flint : 75-76

There was considerable animal bone in the fill of AW.

Phase 8 (illus 2, 12)

After a considerable build up of organic layers in both properties (79, 81, 83, 98, 102) a structure was built on the southern property, the remains of which consisted of a very decayed sill beam on a low stone foundation, with a probably associated deeply set post (Atu). The nature of the structure was not clear from the site evidence but the use of a sill and the depth of the post-pit suggest that this was part of a building rather than a fence.

Pottery : 37-52. Small finds : Roof tile : 57-61; Flint : 77-79; Iron : 89

Phase 9 (illus 2, 13)

In Phase 9 the two properties were redefined by a wattle fence (AM) with yards or floors of compact clay (59, 60, 67) in both properties.

Pottery : 53

Phase 10 (illus 2, 4, 14)

The earlier surfaces were covered by a soft organic layer (88) which contained

a large number of wood fragments which may derive from preparing the timbers for the Phase 10 building (AP). This building, which stood on the southern property, extended south from the middle of the site. The east and west sides of a gravel floor (46) were bordered by single course stone foundations, which had probably held sill beams. There was no similar foundation on the north side but the clean edge to the floor suggests that an earthfast sill may have been used on this side, with the floor abutting it. The combined use of earthfast and raised sills is known from roughly contemporary contexts in Perth (Murray forthcoming). The east-west dimension of 3.60 m appears to have been the width. The building had an excavated length of only c 1.5 m north-south, but on the basis of the standard 5-6 m plot width in Aberdeen at this period (Murray, 1982, 79) a length of a c 5 m would appear probable. The superstructure of the walls on the sills may have been wattle as the burnt remains included a lot of small diameter charcoal, although it is possible that some of this may have derived from roof underlay. Straw charcoal may have been from thatching material. There was a quantity of burnt clay (44) but there were no clear wood impressions so it is not possible to identify this as daub.

Contemporary with building AP, there was a band of cobbles (AL 38) lying parallel with modern Gallowgate. This may have been the frontage of the building or possibly part of the early street. The pathway appeared to outlive the destruction of the building as it was not sealed by the destruction layers.

Pottery : 54-63. Note there was a minimum of six vessels fabric 18 and 19 (Scarborough) and 1 fabric 37 (unidentified) in layers 40, 44, 45 associated with the destruction of the building.

Small finds : Cloth : 36

Phase 11 (illus 2)

After the destruction of building AP, the area may have been derelict: there was an overall deposit of homogeneous garden earth overlaid by small dumps of rubbish (32, 27, 31, 30, 28, 29) and scrap planks (AJ). The lack of activity does not necessarily mean that there was no occupation in either of the frontage plots, but it does suggest that there was decreased pressure on the frontage land if any part of it could remain open and without building.

Pottery : 64-67. Small finds : Cloth : 30-35; Flint : 80-81

Phases 12, 13, 14 (illus 2, 15)

In these phases there was a series of paths extending east-west on the boundary line, at right angles to Gallowgate. In Phase 14 the path became incorporated into the buildings as a covered passage, with a clay-bonded wall along its S side. There was no dating evidence. Pottery in the path layers included abraded medieval sherds but these were not necessarily in a primary context. Phase 14, however, was the only phase to contain clay-pipe fragments and may date to the 17th - 19th centuries.

Small finds : Leather : 25; Cloth : 29; Clay pipe : 62-64; Flint : 82

Phase 15

The cellar walls of 45 and 47 Gallowgate were built on either side of the passage. The cellar wall of 47 Gallowgate was built alongside the earlier clay-bonded wall. Both cellars were brick-lined. The property in this form can be dated to the 19th - 20th centuries.

Area B : the backland (illus 1, 16)

There was no possible physical link between the two areas due to the cellaring of both the Gallowgate and St Paul Street properties, so during excavation, Area B was phased separately and could not be linked to Area A. However, examination of the pottery shows sufficiently comparable trends for it to be possible to discuss Area B in terms of broad bands of the Area A phasing.

Area B : equivalent to Area A, Phases 1-5 (Area B, Phase 1)

The first activity on Area B was the accumulation of a series of thick organic rubbish layers which could only be examined in a small area at the north end of the site as the south end had been totally cut away by modern service trenches. The pottery in these layers (Layers 57, 58, 66, 68, 76, 69, 70, 72, 77, 84, 90, 91) included a large proportion of fabrics 12, 13 and 7, with smaller quantities of fabrics 8, 19 and 22. In Area A fabrics 12, 13 and 22 were predominant in Phases 1-3, with fabric 7 appearing in Phases 4-8. Fabric 19 occurred in Phase 2 but was common from Phase 4 onwards. The comparison suggests that this period of the midden extended throughout the 13th century, being roughly equivalent to Area A, Phases 1-5.

Pottery : 68-78. Small finds : Leather : 3, 7, 9, 12-13, 23; Wood : 43;

Mould : 48; Flint : 83

Area B : equivalent to Area A, Phases 6-8 (Area B, Phase 2)

A further series of rubbish layers (42, 54, 63, 64) contained no fabric 12 and little fabric 13, with a greater quantity of local fabrics 7, 8, 10 and Scarborough (fabric 19) with some Yorkshire (20) and Low Countries wares (33), suggesting that these dumps were contemporary with Area A, Phases 6-8, which covered the increasing dominance of local pottery, in combination with the lack of much 20 or 33 after Phase 8.

It is perhaps reasonable to suggest that during Area A Phases 1-8 there was a slow build up of a midden in the backland area, with little pressure on land and no development of the backlands.

Pottery : 79-86. Small finds : 84

Area B : equivalent of Area A, Phases 8-10 (Area B, Phase 3)

During this period, there appears to have been an increased pressure on land and a series of clay floors, with an associated sill-beam (BE), suggest that the backland was built up. The area was too small to get any impression of the structure, but the sill beam and the floor construction are suggestive of a building rather than a fence.

The predominance of Scarborough (19) and grey ware (37), coupled with the use of local wares 5 and 8 suggest that this area was occupied during the equivalent of Area A Phases 8-10. It appears possible that when the fairly well constructed and possibly wealthy building AP was built on the frontage, there was an extension of buildings behind it into the previously open waste ground and yards.

Pottery : 87-89

Area B : equivalent of Area A Phases 11-14 (Area B : Phase 4)

The floors of the preceding phase were cut through by a massive clay-bonded stone wall extending east-west across the trench. There was no dating evidence from the wall (the top of which had been re-used as the foundation for 19th-century brick walls) but the size and construction were similar to the walls of building JC on the site at 42 St Paul Street (Murray 1982, 73-6) for which a date within the 15th-17th centuries was suggested.

It is interesting that this structure would appear to coincide with the path extending through the frontage from the Gallowgate and possibly with the clay-bonded wall of far lighter construction on the frontage in Phase 14. Gordon's map of Aberdeen in 1661 shows a large building at right angles to Gallowgate in an open area behind the frontage, with either a building or wall on the frontage itself. While positive identification is impossible, the similarity is suggestive.

Pottery : 90-92

Area A. Catalogue of features

NUMBER DESCRIPTION

Area A, Phase 1 (illus 2)

AAF Pit
128 : sand seal
132 : cess
Pottery 1

Area A, Phase 2 (illus 2, 7, 8)

AAE Sill beam. Building on N plot? Sill roughly cut from tree trunk, width : 0.19 m; thickness : 0.02 - 0.07 m. Groove : 0.03 - 0.05 m width and depth, in upper surface. Foundation : head-sized stones.
121 : occupation, organic
122 : sand floor

Area A, Phase 3 (illus 2, 7, 9)

AAD Ditch. Width : 0.26 - 0.42 m; depth : 0.32 m.
116 : cess
120 : stones in base
Leather : 4, 14, 15, 16-20

Area A, Phase 5 (illus 2, 7, 10)

AAA Wattle lining on both sides of ditch AAB. Built in base of ditch. Collapse suggests that it projected at least 0.15 - 0.30 m above top of ditch. Posts : 0.03 - 0.04 m diameter; wattles : 0.02 m diameter.
Partly collapsed over fill.

AAB E-W ditch. Top width : 0.64 - 0.75 m; base width : 0.45 m; depth 0.30 - 0.58 m. Slight slope down to W away from Gallowgate. After collapse of sides, hollow filled by scrap timber AZ.
109 : silt
110 : sand seal

111 : silt
112 : sand seal
131 : organic and silt
133 : organic
AZ : scrap timber
AAA : wattle lining
Pottery : 11, 12, 13, 14, 15, 16

Area A, Phase 6 (illus 2, 7)

AX Fence. Posts : 0.03 - 0.04 m diameter. Very scrappy fence.

Area A, Phase 7 (illus 2, 7, 11)

AV Vertical plank associated with AY. 0.14 x 0.02 m.
AW Pit. 1.50 x 1.15 m. Depth : 1.05 m. Stones as soakaway.
94 : cess
95 : black sterile peaty
97 : compact cess
99 : stones and cess
100 : basal silting from sides
Bone in 94, 97, 99, 100
Cloth : 37. Pottery : 26, 28, 32, 33, 34, 35, 36
AY Fence. Posts : 0.03 - 0.04 m diameter. Wattles : 0.02 m diameter. Ends at plank AV.

Area A, Phase 8 (illus 2, 7, 12)

AT Sill beam. Width : 0.10 - 0.12 m; thickness : 0.02 m. Very rotted. No detail. On foundation stones.
ARa Vertical timber

Area A, Phase 9 (illus 2, 7, 13)

AR Fence. Posts : 0.02 - 0.03 m diameter. On edge of floor 59.
ARb Post. 0.22 x 0.13 m in post-pit 0.90 m diameter, depth : 0.35 m.
62 : fill of post-pit. Sand and stones.

AS Post. Diameter : 0.04 m. On edge of floor 60.

Area A, Phase 10 (illus 2, 4, 7, 14)

AL Path. N-S parallel with Gallowgate frontage. Stones set in clay.

38 : clay

AN N-S wall foundation. Stones with yellow clay bonding.

Wall of building AP

AO As AN. Wall of building AP

AP Building defined by floor 46 and wall footings AN, AO.

Width internally : 2.75 m, length extending into S property.

44 : burnt clay

45 : charcoal, ash. Destruction levels

46 : floor. Compact sand

AN, AO : wall foundations

Area A, Phase 2 (illus 2, 7)

AH Path/frontage. Stones set in clay.

Path 1 E-W path.

16 : sand 33 : yellow gritty sand and small stones. Patches of clay

Area A, Phase 13 (illus 2, 7)

Path 2 11 : compact trodden earth

Area A, Phase 14 (illus 2, 7, 12)

Path 3 E-W path. Cobbles fist-to head-sized. Step 0.06 m high leading up to Gallowgate. Path sealed by mortar which was foundation for 19th-century passage between collars.

AB : cobbles

6 : sand foundation, 0.05 - 0.10 m thick

AA Clay-bonded wall of rough stones. Along S side of path. Re-used as foundation by later brick wall. Cellar wall AC built against AA.

Area A, Phase 15 (illus 2, 7, 15)

AC Wall. Mortared brick and stone. Cellar wall 45 Gallowgate.

AD Wall. Mortared stone. Cellar wall (?) 1 St Paul Street.

AE Wall. Mortared brick and stone. Cellar wall 47 Gallowgate.

Area B, Phase 1 : equivalent Area A, Phases 1-5 (illus 1, 16)

BI Planks

Area B, Phase 3 : equivalent Area A, Phases 8-10

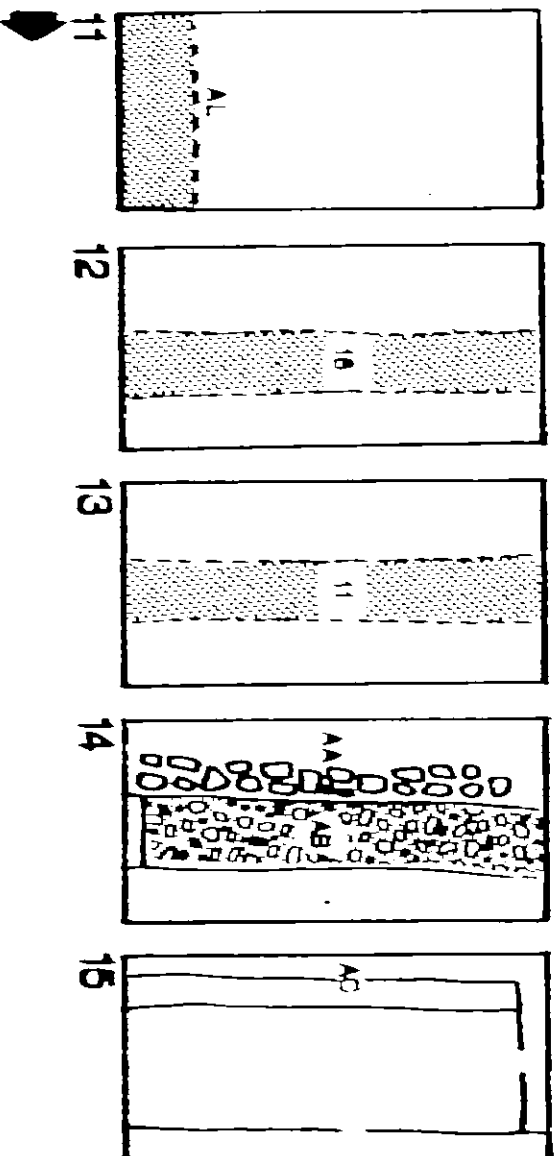
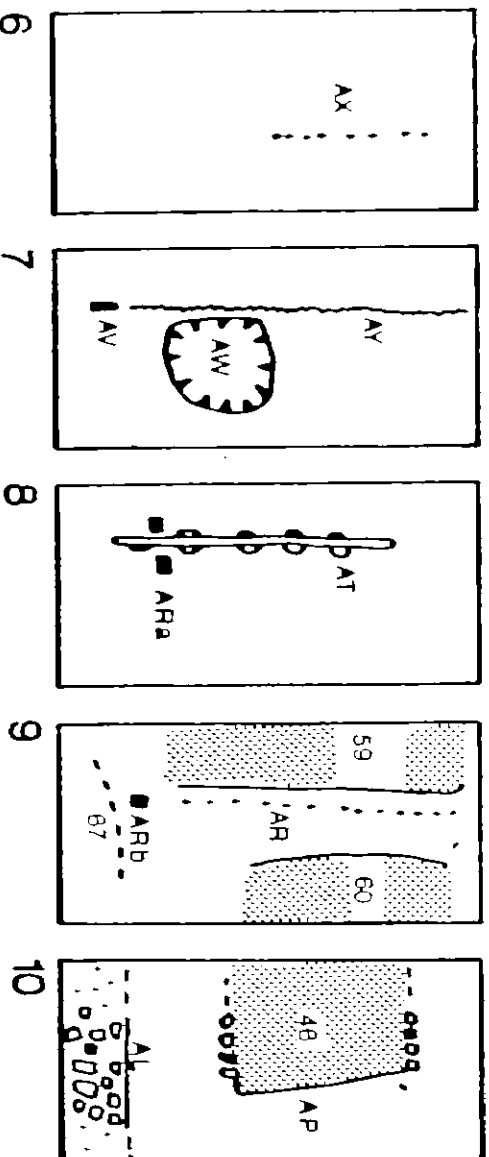
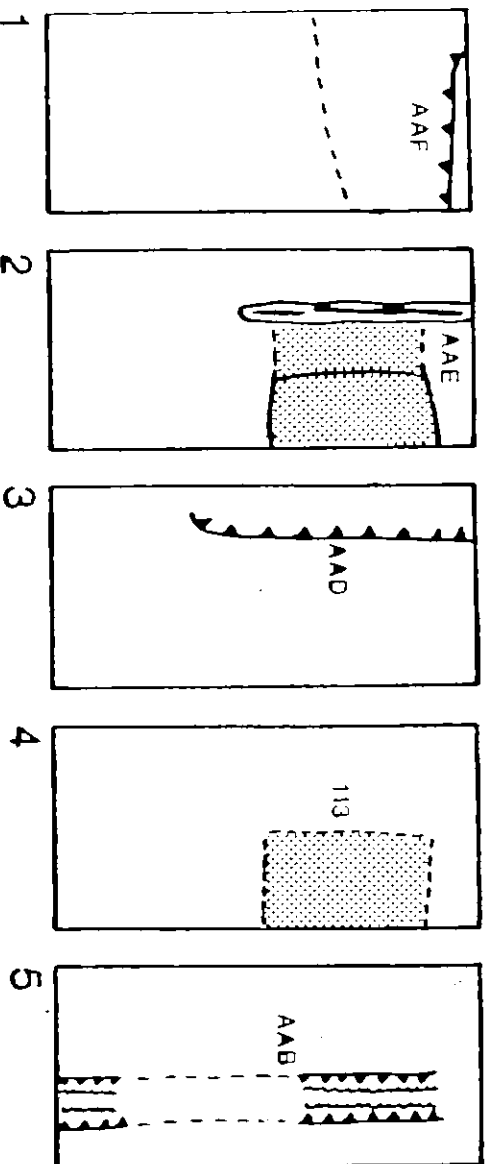
BE Sill beam. 0.10 x 0.10 m. Decayed groove in top surface.
35 : associated clay floor
36 : clay packing around sill

BF Floor. Cobbles set in clay
47 : clay
Pottery : 88

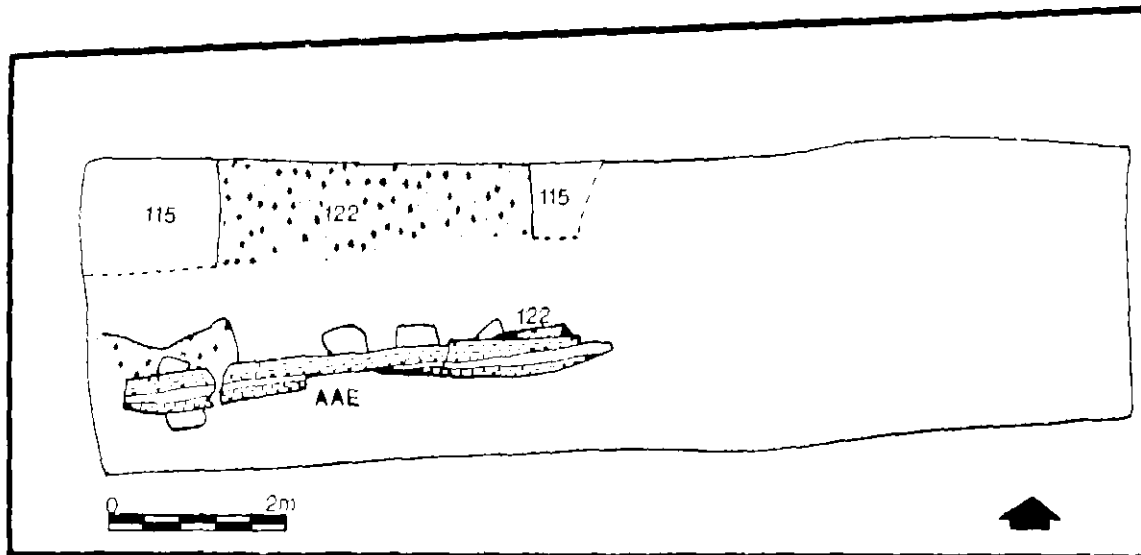
BG Pit. Cut away by modern service pipes.
65 : organic pit fill

Area B, Phase 4 : equivalent Area A, Phases 11-14 (illus 1, 16)

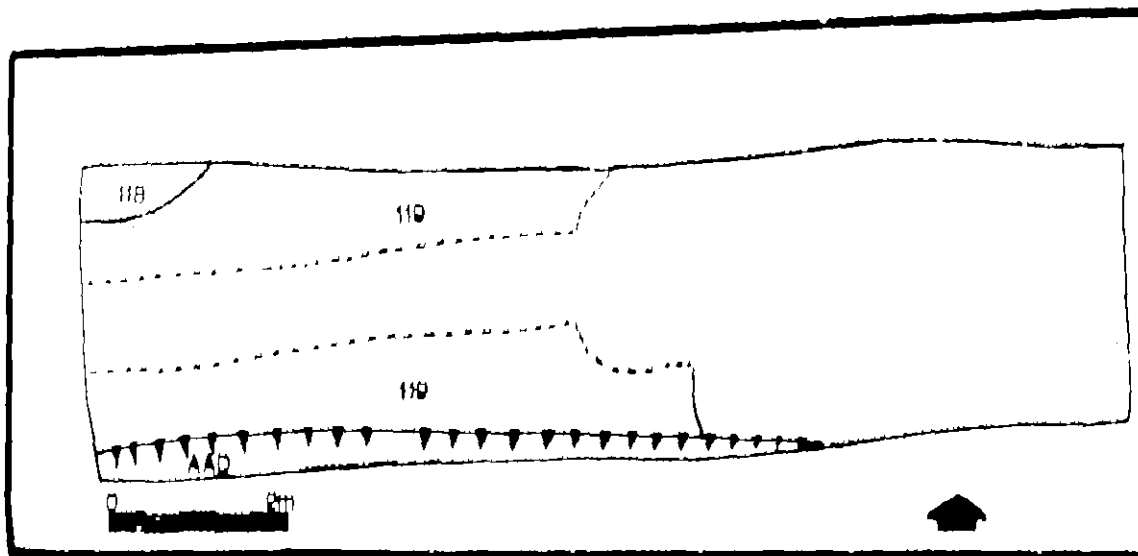
BA Clay-bonded stone wall. Width : 1.04 m. Re-used as foundation by modern wall.
23 : mortary fill of foundation trench



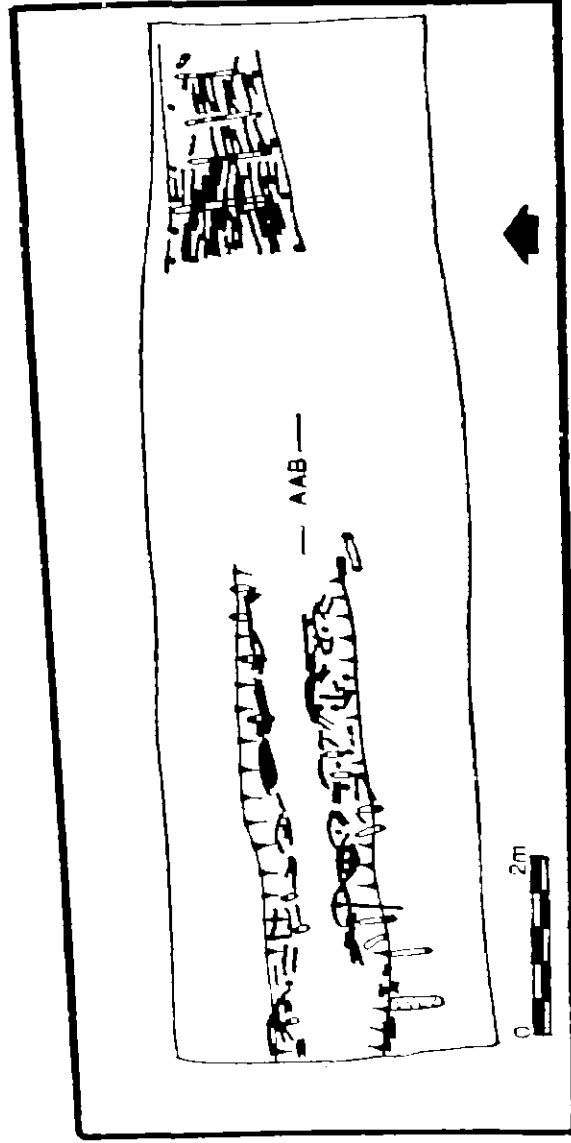
Illus 7 Key plan all phases



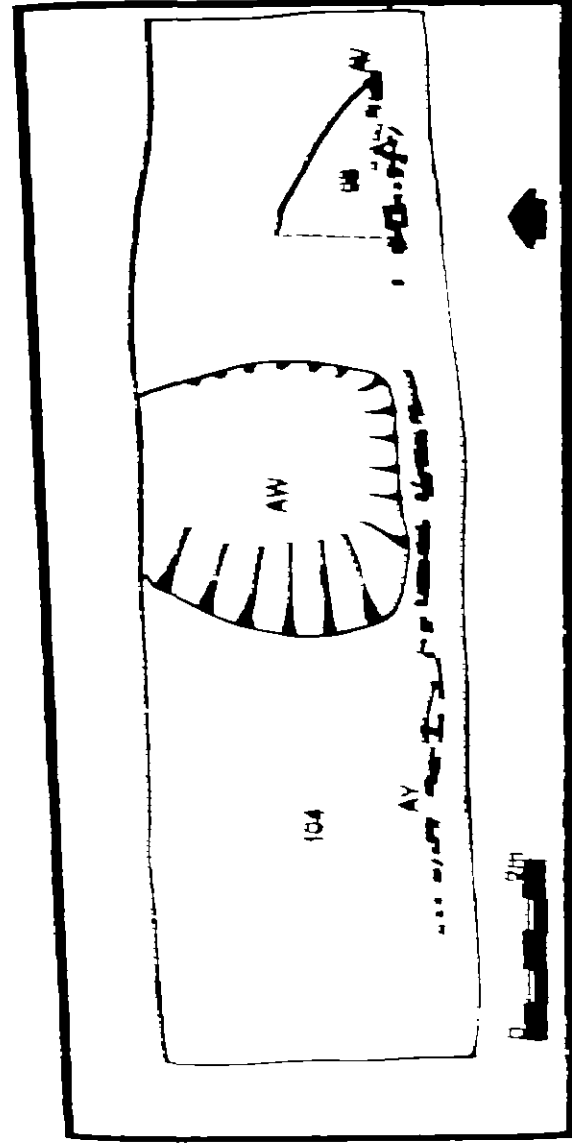
Illus 8 Area A, Phase 2



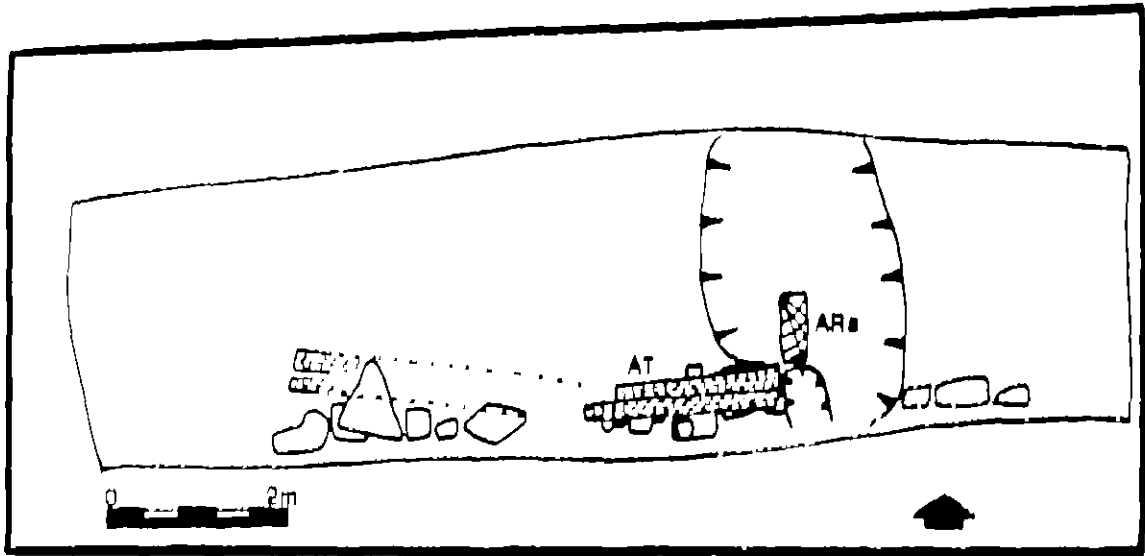
Illus 9 Area A, Phase 3



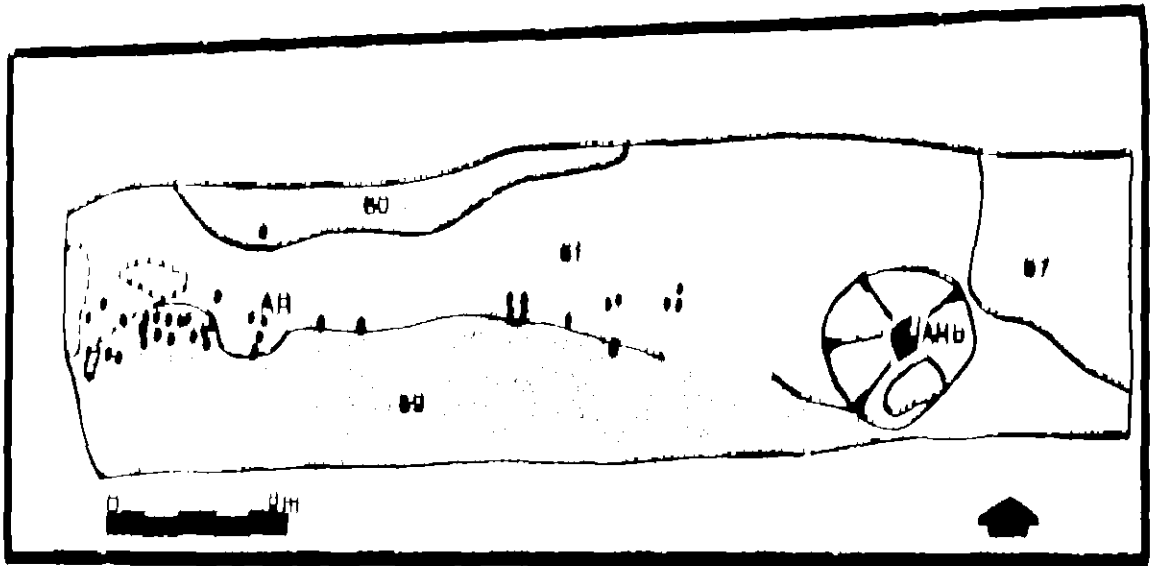
Illus 10 Area A, Phase 5



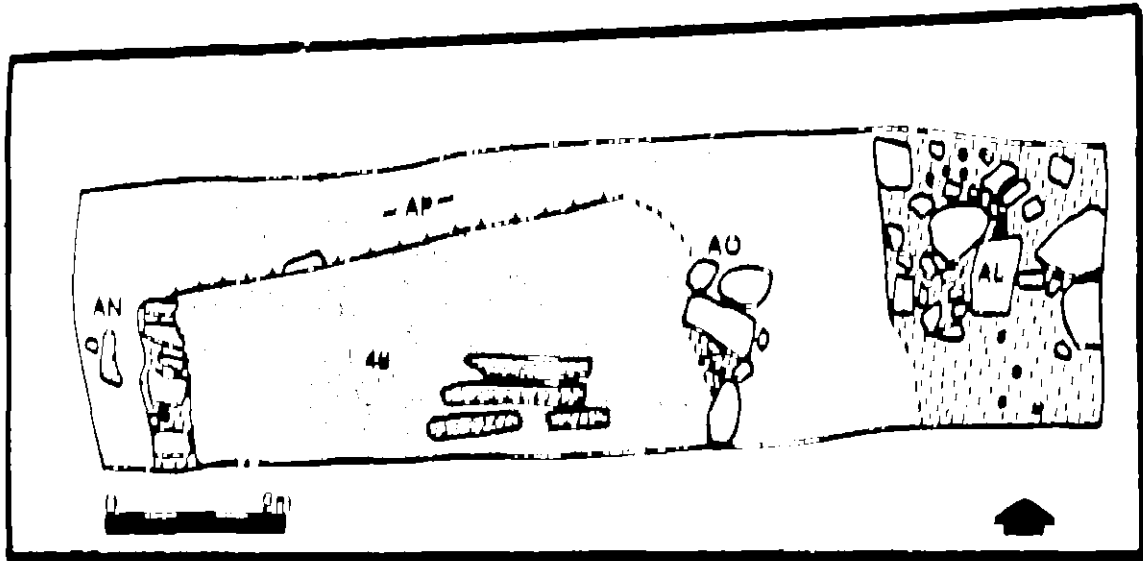
Illus 11 Area A, Phase 7



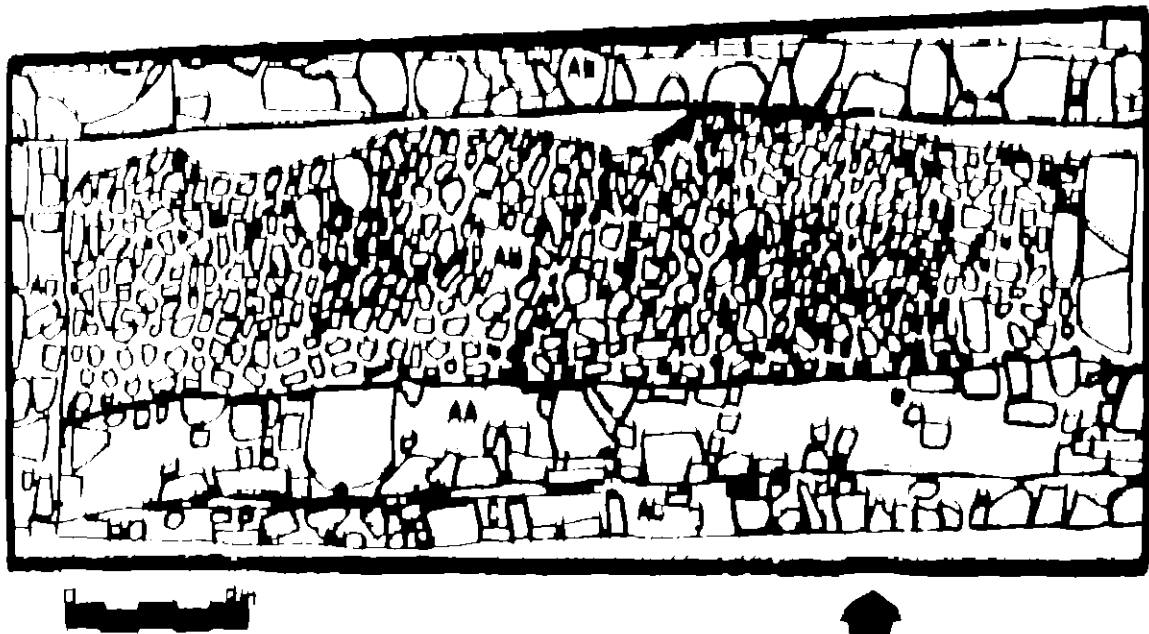
Illus 12 Area A, Phase 8



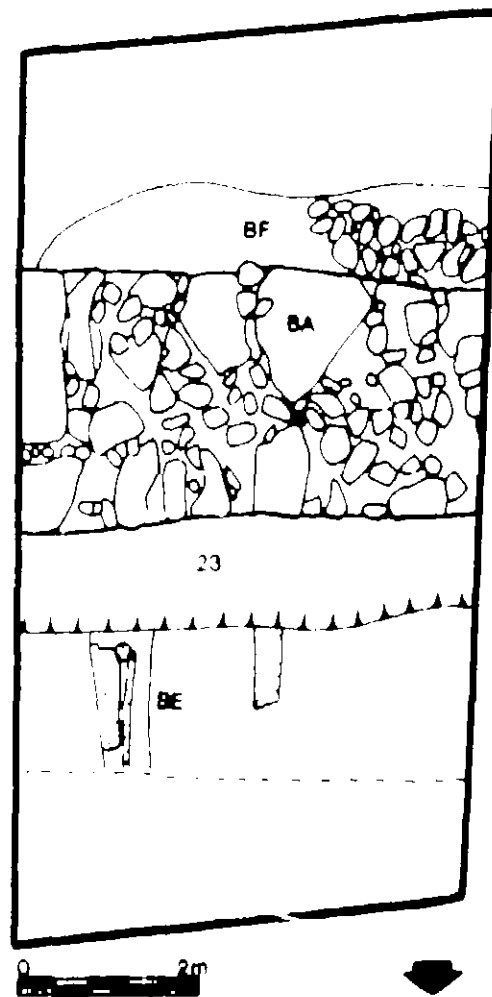
Illus 13 Area A, Phase 9



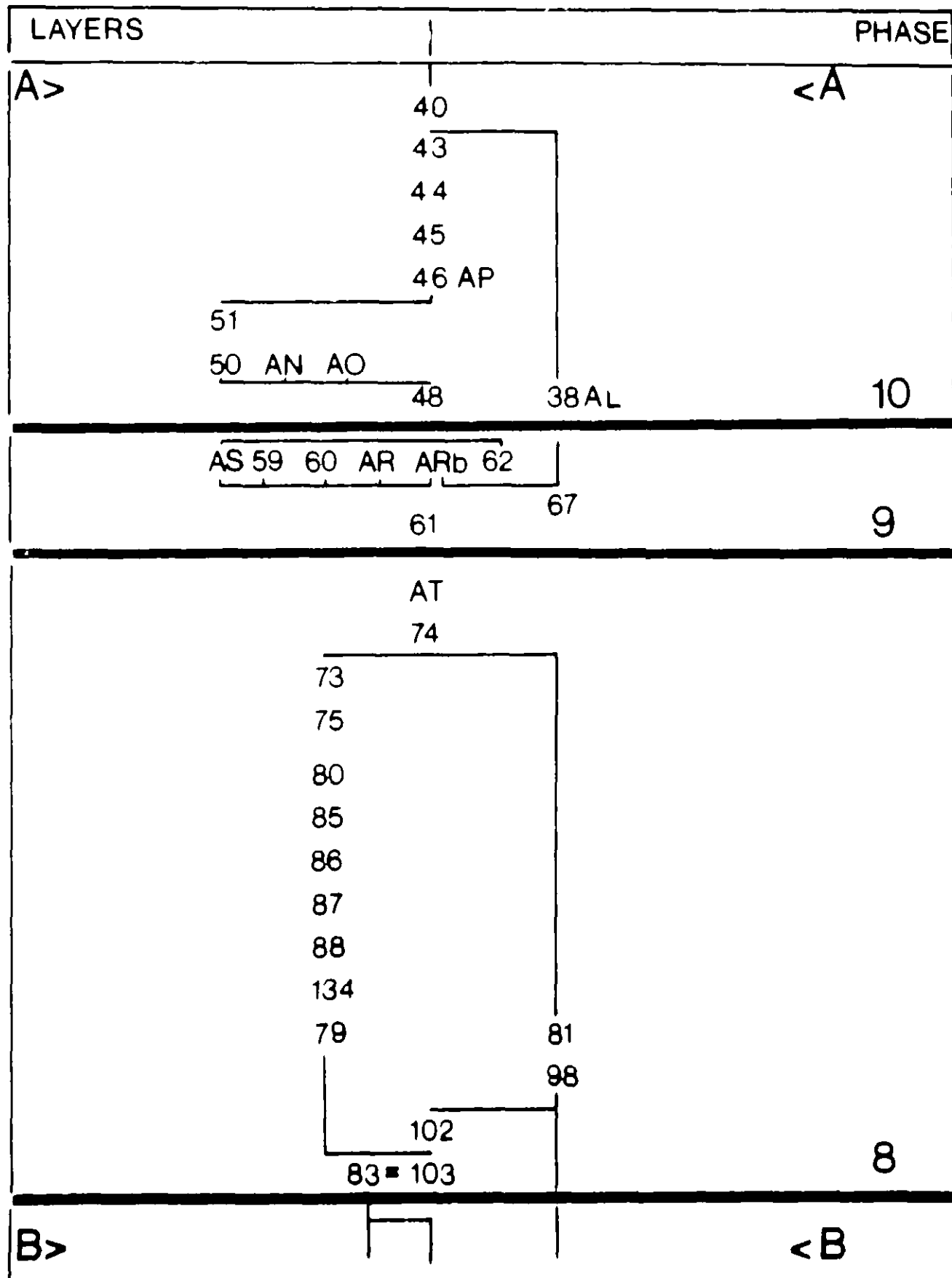
Illus 14 Area A, Phase 10



Illus 15 Area A, Phases 14 and 15



illus 16 Area B, composite plan of all phases



Illus 17 Area A. Stratigraphic matrix. 4 sheets

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illus 17 Area A. Stratigraphic matrix. 4 sheets

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C> <div style="text-align: center; margin-left: 200px;"> 115 124 125 _____ 126 127 128 132 AAF 129 130 natural </div>	<C <div style="text-align: right;">1</div>

illus 17 Area A. Stratigraphic matrix. 4 sheets

LAYERS	PHASE	AREA A EQUIVALENT PHASE
<p style="text-align: center;">1</p> <p>9 15</p> <p>5 BB</p> <p>19 14</p> <p>26BC</p> <p>21</p>	5	15
23BA	4	11-14
<p>37 22</p> <p>47 BF 34</p> <p>49 36 BE</p> <p>52 35</p> <p>53</p> <p>55 65BG</p> <p>56 41</p>	3	8-10
<p>63 42</p> <p>64 54</p>	2	6-8
<p>69 58</p> <p>70 57</p> <p>72 68</p> <p>84 66</p> <p>90 76</p> <p>91</p> <p style="text-align: center;">96/82 natural</p>	1	1-5

Illus 18 Area B. Stratigraphic matrix

The fabrics

Throughout this report the fabrics are described in accordance with the definitive fabric list in the report on the pottery from St Paul Street and Broad Street Aberdeen (Murray 1982, 118-21). Full discussion of the fabrics and a large assemblage of illustrated vessels are available in that publication.

Method

For the purpose of analysis only the pottery from Area A, Phases 1-13 has been included. Phases 14 and 15 have been regarded as potentially contaminated due to the disturbance caused by the construction of the cellars. Area B has also been regarded as not sufficiently well stratified for full analysis due to the large areas disturbed by service trenches; however, examination of the material from the less disturbed north end of the trench shows many of the same trends, allowing some comparative dating of the two areas (see above).

Area A, Phases 1-13 is a relatively 'clean', tightly stratified sequence which can be used for valid comparisons with the corpus from the nearby site of 42 St Paul Street. This comparison had three basic aims:

- 1 To date the Gallowgate site
- 2 To see if the same basic trends existed in the ceramic evidence from both sites
- 3 To see if there was any difference which could be attributed to differences between backland and frontage assemblages

All the Area A, Phase 1-13 material has therefore been visually identified and weighed by fabric and phase (table 1).

Table 1 Fabric by phase as a percentage of the fabric total (by weight)

Phases 1-13

FABRIC / PHASE

	1	2	3	4	5	6	7	8	9	10	11	12	13
Local													
2 (62g)	24	-	-	-	-	76	-	-	-	-	-	-	-
3(458g)	-	-	-	-	-	2	56	7	2	14	9	5	5
5(188g)	3	-	-	-	-	-	7	32	5	44	7	-	2
6(82g)	-	-	-	-	-	30	25	27	7	7	1	-	3
7(1849g)	-	-	-	2	4	26	23	42	1	2	-	-	-
8(1064g)	-	-	-	-	-	4	6	83	1	5	-	1	-
9(401g)	-	-	-	-	-	-	-	90	9	-	1	-	-
10(17g)	-	-	-	-	-	-	-	-	-	-	100	-	-
E coast Scottish gritty													
12(108g)	7	5	8	22	8	25	11	13	1	-	-	<1	-
13(119g)	29	5	2	8	7	19	15	15	-	-	-	<1	-
14(43g)	-	-	-	-	14	51	19	7	-	9	-	-	-
15(92g)	10	-	-	37	-	-	7	46	-	-	-	-	-
Possibly Scottish													
17(14g)	-	-	-	-	-	100	-	-	-	-	-	-	-
Scarborough													
18(173g)	-	-	-	-	24	-	7	-	-	49	17	3	-
19(2225g)	-	2	-	2	8	20	10	17	3	35	2	<1	1
Yorkshire													
20(236g)	-	10	-	-	8	18	4	55	1	4	-	-	-
E Anglia													
22(869g)	13	5	27	13	4	20	2	14	-	2	-	-	<1

Table 1 cont

FABRIC / PHASE

	1	2	3	4	5	6	7	8	9	10	11	12	13
E Anglia?													
24(47g)	-	53	-	-	-	-	6	17	-	24	-	-	-
S English shelly													
26(10g)	-	-	-	-	-	100	-	-	-	-	-	-	-
S English?													
27(18g)	-	50	-	-	-	50	-	-	-	-	-	-	-
French : Saintonge													
28(8g)	-	-	-	-	-	-	25	-	-	-	75	-	-
French : N French													
29(101g)	-	-	-	-	22	-	-	76	-	2	-	-	-
French : Rouen													
30(1g)	-	-	-	-	-	100	-	-	-	-	-	-	-
Rhine													
31(21g)	-	-	-	19	19	-	-	62	-	-	-	-	-
Aardenburg													
32(2g)	-	-	-	-	-	-	-	-	-	-	100	-	-
Low Countries													
33(114g)	-	-	-	-	-	25	-	75	-	-	-	-	-
London													
34(28g)	21	68	11	-	-	-	-	-	-	-	-	-	-
Unidentified													
35(9g)	-	-	-	-	-	-	-	44	-	-	-	-	56

Table 1 cont

FABRIC / PHASE

	1	2	3	4	5	6	7	8	9	10	11	12	13
Unidentified cont													
37(539g)	-	-	-	-	5	5	8	2	-	32	48	-	-
Grimston?													
45(2g)	-	-	-	-	-	100	-	-	-	-	-	-	-
Local?													
46(143g)	-	-	-	28	-	19	53	-	-	-	-	-	-

Overall trends : the pottery and the site

Dating

There are several distinct trends in the pottery (the minor variations in percentages may often be attributable to site use or phase duration, which can not always be assessed in such a small area. As a result only the main trends are discussed). With the exception of small quantities of local pottery in Phase 1, these wares were almost totally absent until Phase 6, with a concentration of usage in Phases 6-10. In the earlier phases the functions of cooking and table ware appear to have been fulfilled by the E Scottish gritty wares (12, 13, 14, 15) which were present in quantity from Phases 1-8 inclusive, with a fairly steady use over this period.

English imports included Scarborough, Yorkshire, E Anglia, S English and London products. Scarborough fabric I (fabric 18) was present in Phases 5 and 7 but occurred mostly in Phases 10-12. Scarborough fabric II (fabric 19) was present in most phases but significant quantities only occurred in Phases 6-10. The main importation of Yorkshire wares appears to have covered Phases 6-8, but E Anglian products occurred in most phases up to Phase 10.

Continental imports derived from the Low countries, France and the Rhineland.

Comparison of trends in Gallowgate and 42 St Paul Street

These overall percentage patterns are very similar to those published from the far larger group of pottery from 42 St Paul Street and by comparison between the two it is possible to suggest that Gallowgate Phases 1-5 are contemporary with 42 St Paul Street Phases 3-6. (There was no Stamford at Gallowgate so it is possible that St Paul Street Phase 2 was earlier than occupation of the Gallowgate site). Gallowgate Phases 6-10 were contemporary with St Paul Street Phases 7-10.

Thus Gallowgate Phases 1-5 appear to date to the 13th century and Phases 6-10 to the 14th century. There was no adequate dating from the pottery in Phases 11-14 which may be post-medieval.

Frontage and backland trends

There was no significant difference in the overall corpus of pottery from the frontage of Gallowgate and the backland of 42 St Paul Street. This is perhaps partial confirmation of the view that much of the 'backlands' finds derive from frontage properties and that the backland buildings should not necessarily be assessed in terms of the wealth suggested by imported pottery, etc.

45-47 Gallowgate: Catalogue of pottery

Area A Phase 1 (illus 19)

- 1 Cooking pot rim. Fabric 13. Sooted exterior. Layer 132.
- 2 Cooking pot rim. Fabric 13. Sooted exterior. Layer 129.
- 3 Cooking pot rim. Fabric 13. Sooted exterior. Layer 115.
- 4 Cooking pot rim. Fabric 13. Sooted exterior. Layer 115.
- 5 Cooking pot rim. Fabric 12. Layer 126.

Area A Phase 2 (illus 19)

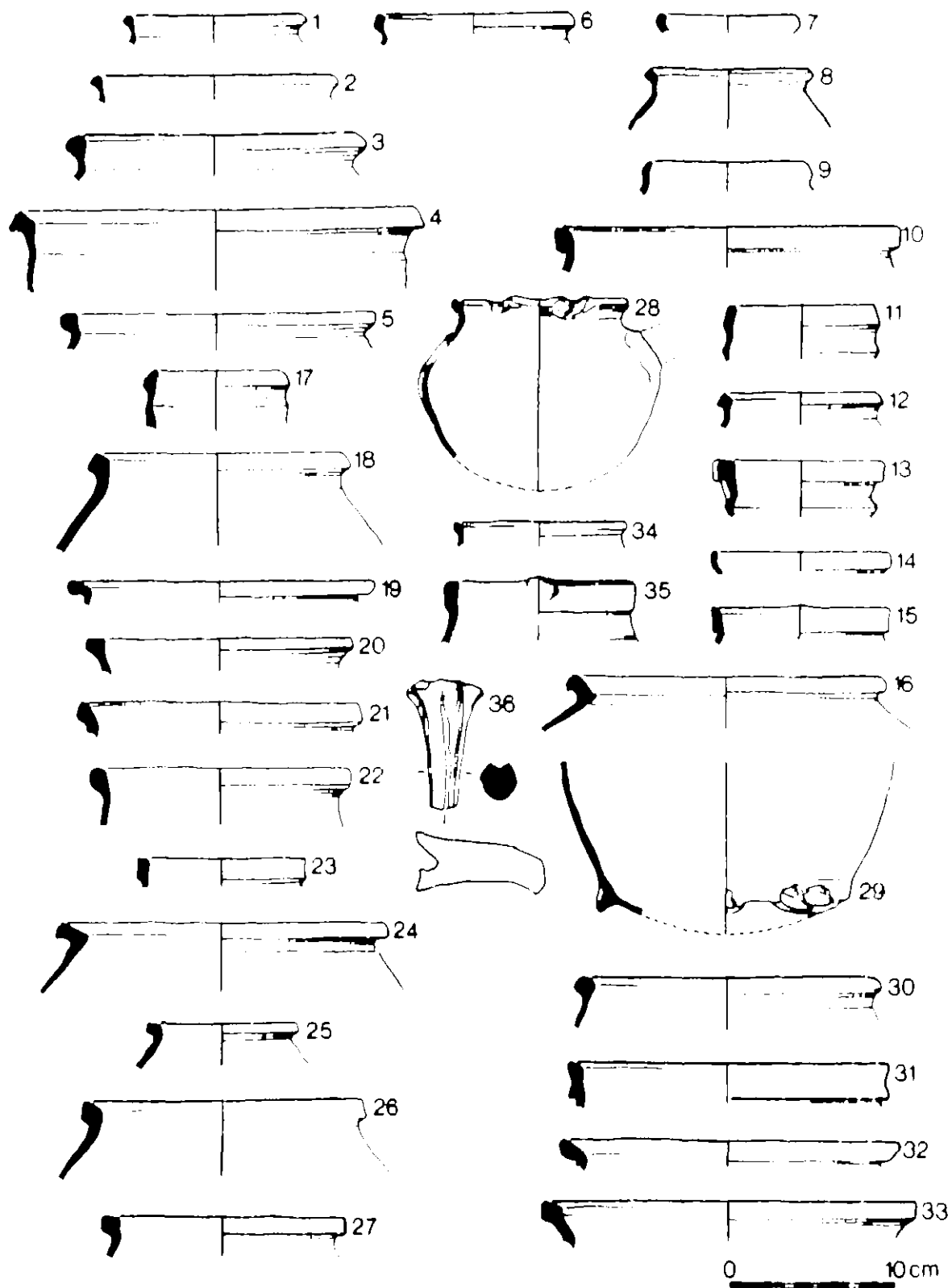
- 6 Cooking pot rim. Fabric 13. Sooted exterior. Layer 110.

Area A Phase 4 (illus 19)

- 7 Jug rim. Fabric 12. Layer 114.
- 8 Cooking pot rim. Fabric 7. Interior white slip. Sooted interior. Layer 113.
- 9 Ladle. Fabric 31. Layer 114.
- 10 Cooking pot rim. Fabric 13. Layer 113.

Area A Phase 5 (illus 19)

- 11 Jug rim. Fabric 13. Layer 131.
- 12 Cooking pot rim. Fabric 22. Layer 109.
- 13 Jug rim. Fabric 7. External brown glaze. Layer 111.
- 14 Jug rim. Fabric 19. Mottled green glaze. Layer 110.
- 15 Jug rim. Fabric 19. External olive green glaze. Layer 131.
- 16 Cooking pot rim. Lid seated. Fabric 37. Layer 111.



Illus 19 Pottery 1 - 36

45-47 Gallowgate: Catalogue of pottery cont

Area A Phase 6 (illus 19)

- 17 Jug rim. Fabric 7. External brown glaze. Layer 106.
- 18 Cooking pot rim. Fabric 7. Interior white slip. Exterior sooted. Layer 104.
- 19 Cooking pot rim. Fabric 7. Interior white slip. Exterior sooted. Layer 104.
- 20 Cooking pot rim. Fabric 26. Exterior sooted. Layer 107.
- 21 Cooking pot rim. Fabric 7. Exterior sooted. Layer 105.
- 22 Cooking pot rim. Fabric 13. Exterior and interior sooted. Layer 107.
- 23 Jug rim. Fabric 19. External yellow - olive green glaze. Layer 105.
- 24 Cooking pot rim. Fabric 37. Exterior sooted. Layer 107.

Area A Phase 7 (illus 19)

- 25 Cooking pot rim. Fabric 7. Interior and exterior white slip. Exterior sooted. Layer 78.
- 26 Cooking pot rim. Fabric 7. Exterior brown glaze. Layer 99.
- 27 Cooking pot rim. Fabric 7. Interior and exterior traces white slip. Sooted. Layer 78.
- 28 Pipkin. Fabric 3. Exterior olive glaze. Interior and exterior sooted. Layers 97, 99.
- 29 Thumbed sagging base. Fabric 3. External olive glaze. Exterior sooted. Layer 101.
- 30 Cooking pot rim. Fabric 13. Interior and exterior sooted. Layer 101.
- 31 Storage jar (?) rim. Fabric 13. Layer 93.
- 32 Cooking pot rim. Fabric 37. Layer 99.

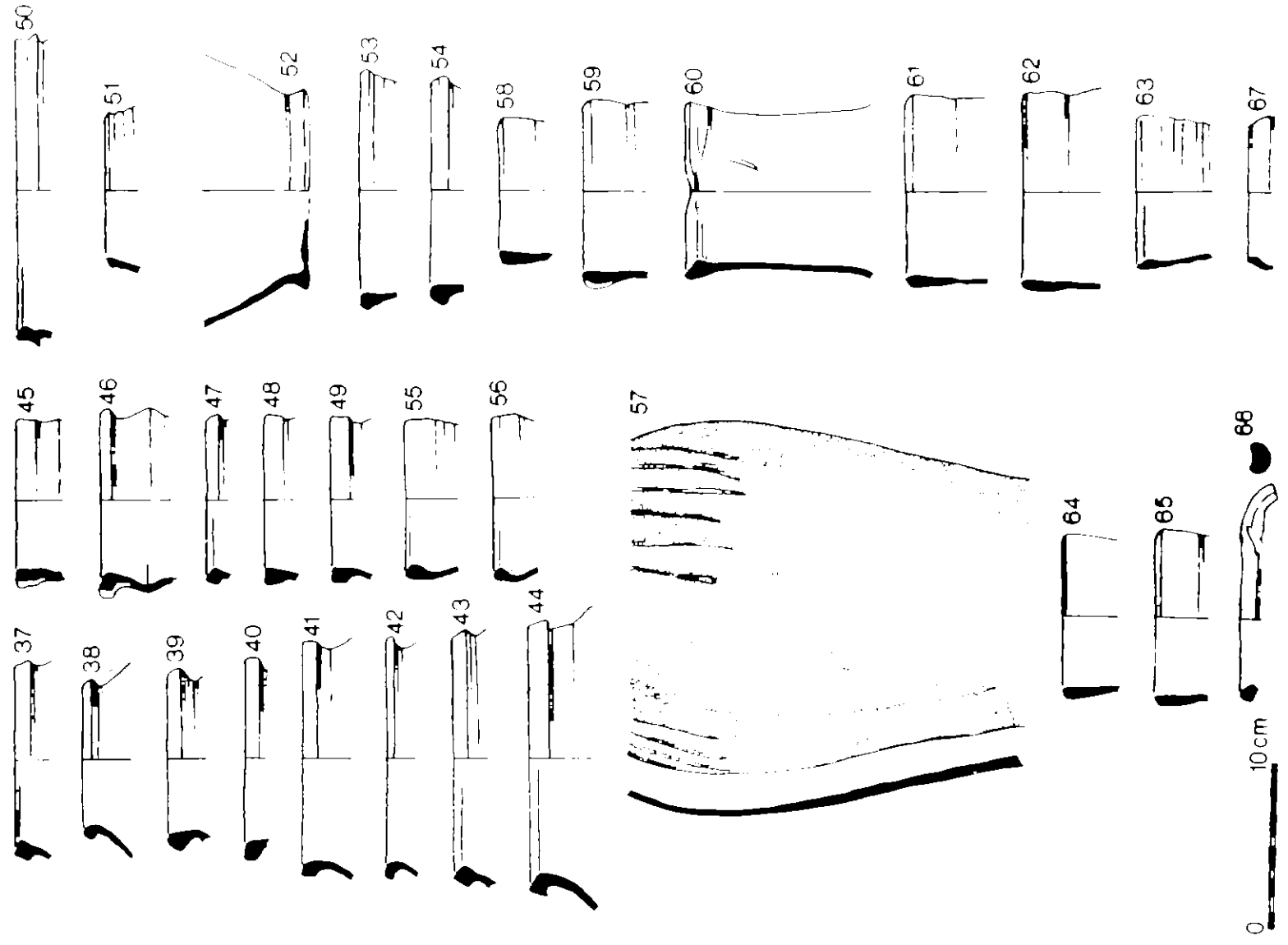
45-47 Gallowgate: Catalogue of pottery cont

Area A Phase 7 (illus 19) cont

- 33 Cooking pot rim. Fabric 37. Layer 97.
- 34 Jug rim. Fabric 19. Internal and external olive green glaze. Layer 97.
- 35 Jug rim. Fabric 19. External olive - dark green glaze. Layer 99.
- 36 Jug handle. Fabric 19. Traces green glaze. Layer 99.

Area A Phase 8 (illus 20)

- 37 Jar rim. Fabric 5. Traces interior and exterior white slip. External brown glaze. Layer 103.
- 38 Cooking pot rim. Fabric 7. Exterior sooted. Layer 73.
- 39 Cooking pot rim. Fabric 7. Interior and exterior white slip. Interior sooted. Layer 73.
- 40 Cooking pot rim. Fabric 7. Interior white slip. Exterior sooted. Layer 83.
- 41 Cooking pot rim. Fabric 7. Interior and exterior white slip. Layer 103.
- 42 Cooking pot rim. Fabric 7. Interior and exterior white slip. Layer 103.
- 43 Cooking pot rim. Fabric 7. Exterior sooted. Layers 87, 98.
- 44 Cooking pot rim. Fabric 7. Interior and exterior white slip. Exterior sooted. Layer 87.
- 45 Jug rim. Fabric 8. Exterior white slip. Layer 103.
- 46 Jug rim. Fabric 8. Layer 83.
- 47 Jug rim. Fabric 8. Layer 81.
- 48 Jug rim. Fabric 8. Layer 87.
- 49 Jug rim. Fabric 8. Layer 75.



Illus 20 Pottery 37 - 67

45-47 Gallowgate: Catalogue of pottery cont

Area A Phase 8 (illus 20) cont

- 50 Cooking pot rim. Fabric 13. Exterior sooted. Layer 75.
- 51 Jar rim. Fabric 12. External dark olive green glaze. Layer 75.
- 52 Jug base. Fabric 29. External mottled green glaze. Layers 75, 98.

Area A Phase 9 (illus 20)

- 53 Jar rim. Fabric 3. Layer 67.

Area A Phase 10 (illus 20)

- 54 Jar rim. Fabric 3. External brown glaze. Layer 48.
- 55 Jug rim. Fabric 5. Layer 45.
- 56 Jug rim. Fabric 5. Layer 44.
- 57 Jug. Fabric 19. External thick lustrous green glaze on upper body, with darker green glaze extending in thick stripes towards base. Raised vertical line decoration. Layer 44.
- 58 Jug rim. Fabric 19. External thick lustrous green glaze. Layer 40.
- 59 Jug rim. Fabric 19. External dark green glaze. Layer 44.
- 60 Jug rim. Fabric 19. Interior white slip in a band to 35 mm below rim. External dark - olive green glaze. Layer 45.
- 61 Jug rim. Fabric 18. External dark lustrous green glaze. Layer 45.
- 62 Jug rim. Fabric 18. External mottled yellow - green glaze. Layers 20, 40.
- 63 Jug rim. Lid seated. Fabric 37. Exterior sooted. Layer 40.

Area A Phase 11 (illus 20)

- 64 Jug rim. Fabric 19. External thick yellow glaze. Layer 20.

45-47 Gallowgate: Catalogue of pottery cont

Area A Phase 11 (illus 20) cont

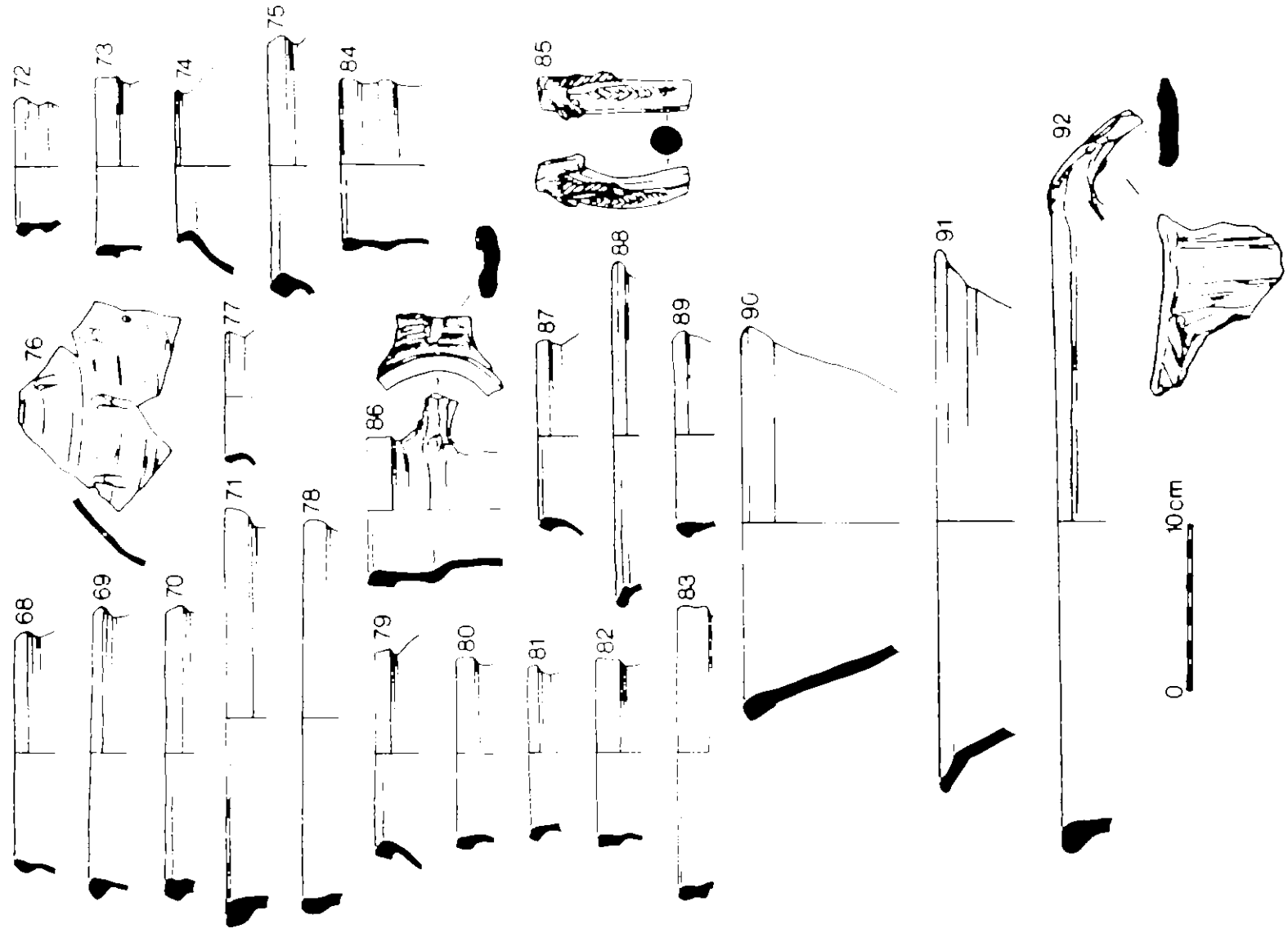
- 65 Jug rim. Fabric 18. External mottled glaze. Layer 39.
- 66 Jug rim and handle. Fabric 37. Layer 20.
- 67 Jug rim. Fabric 37. Layer 20.

Area B Phase 1B (equivalent Area A Phases 1-5) (illus 21)

- 68 Cooking pot rim. Fabric 12. Layer 72.
- 69 Cooking pot rim. Fabric 13. Exterior sooted. Layer 76.
- 70 Cooking pot rim. Fabric 13. Interior sooted. Layer 66.
- 71 Cooking pot rim. Lid seated. Fabric 7. Interior and exterior sooted. Layer 84.
- 72 Jug rim. Fabric 7. Internal and external white slip. Layer 72.
- 73 Jug rim. Fabric 7. Internal and external white slip. Layer 84.
- 74 Cooking pot rim. Fabric 7. Interior sooted. Layer 84.
- 75 Cooking pot rim. Fabric 7. Exterior sooted. Layer 66.
- 76 Jug. Fabric 19. External thick olive green glaze on applied pinched pellets in horizontal bands. Layer 57.
- 77 Jar rim. Fabric 6. External yellow - olive lustrous glaze. Layer 69.
- 78 Cooking pot rim. Fabric 37. Layer 76.

Area B Phase 2B (equivalent Area A Phases 6-8) (illus 21)

- 79 Cooking pot rim. Fabric 5. Internal white slip. Layer 42/41.
- 80 Jug rim. Fabric 7. Internal and external white slip. External brown glaze. Layer 42.



Illus 21 Pottery 68 - 92

45-47 Gallowgate: Catalogue of pottery - cont

Area B Phase 2B (equivalent Area A Phases 6-8) (illus 21) - cont

- 81 Jug rim? Fabric 2. Layer 42.
- 82 Jug rim. Fabric 12. Layer 54.
- 83 Jar rim. Fabric 12. Layer 42/41.
- 84 Jug rim. Fabric 8. External brown glaze. Layer 54.
- 85 Handle from (?) Knight jug. Fabric 19. Thick lustrous green glaze. Layer 42.
- 86 Jug rim and handle. Fabric 19. External yellow - green glaze. Layer 42.

Area B Phase 3B (equivalent Area A Phases 8-10) (illus 21)

- 87 Cooking pot rim. Fabric 8. Internal and external white slip. Exterior sooted. Layer 53.
- 88 Cooking pot rim. Fabric 13. Exterior sooted. Layer 47.
- 89 Jug rim. Fabric 19. External lustrous green glaze. Layer 53.

Area B Phase 5B (equivalent Area A Phases 11-14): post-medieval and modern (illus 21)

- 90 Bowl. Hard smooth sandy micaceous buff fabric. Internal thick lustrous brown glaze. Layer 5.
- 91 Bowl. Hard smooth deep red fabric. Internal cream and brown glaze. Layer 9.
- 92 Rim and handle of large dish. Smooth sandy micaceous fabric. Fabric 9. Olive green glaze on interior of dish and upper side of handle. Slash decoration on rim. Layer 9.

THE LEATHER JUDITH STONES

All identifiable objects have been catalogued. Fragments of worn leather which could not be identified occurred in many layers in small quantities. Samples of the main types of cobbling offcuts have been drawn and catalogued.

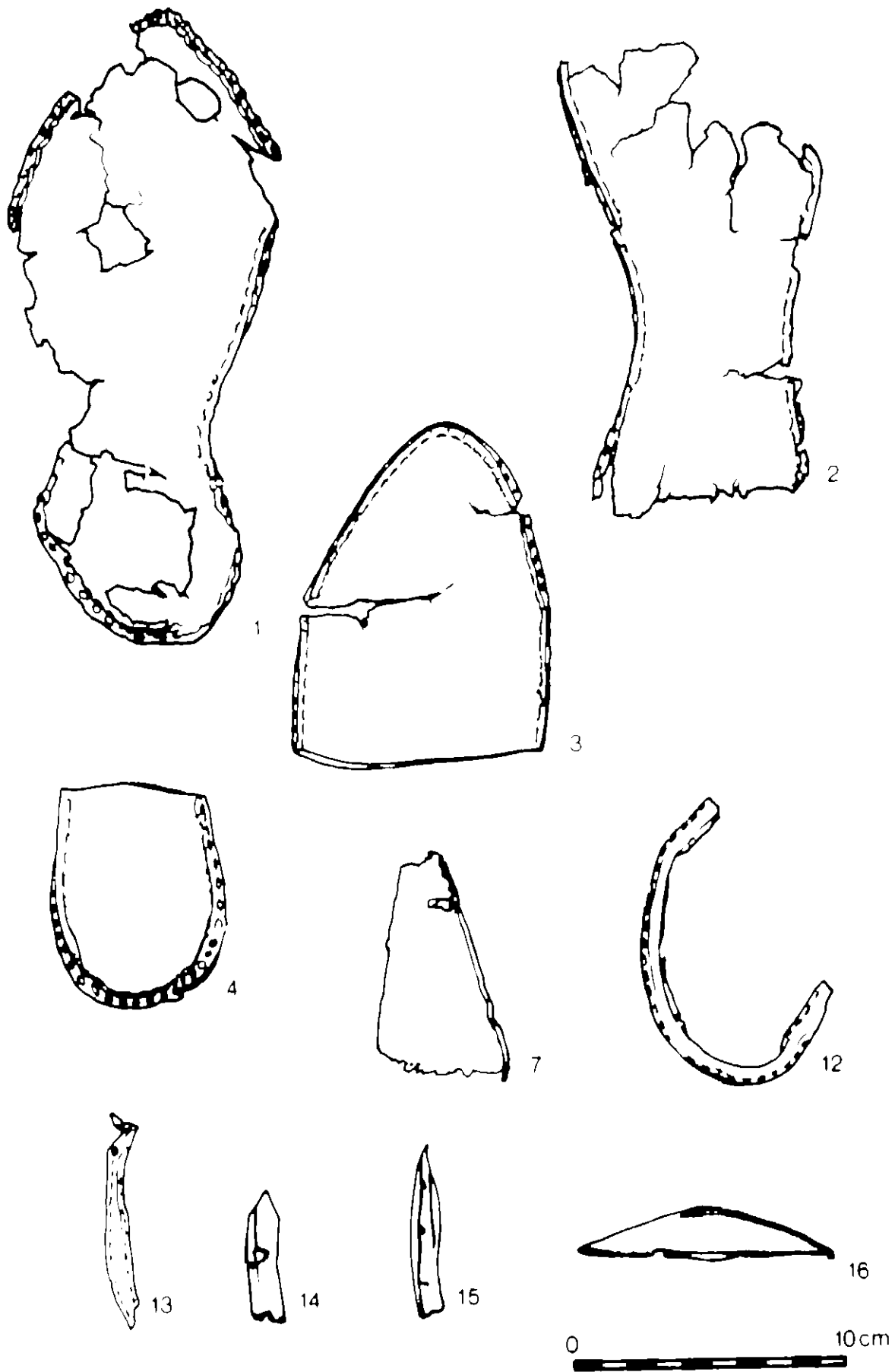
Shoes

Soles

- 1 Left sole. Much worn at toe and left seat. Area A, Layer 114, Phase 4 illus 22.
- 2 Right sole. Fragmentary. Area A, unstratified. illus 22.
- 3 Forepart of left sole cut across near waist. Area B, Layer 76, Phase 1B (equivalent Area A Phases 1-5) illus 22.
- 4 Heel portion cut from sole. Worn along stitching at seat. Area A, Layer 116, Phase 3. illus 22.

Uppers

- 5 Two fragments of very worn upper. Stitching along two edges. Area A, Layer 109, Phase 5, not illustrated.
- 6 Fragment of upper (?) Stitching on one edge. Area A, Layer 109, Phase 5, not illustrated.
- 7 Fragment of upper. Stitching along one edge. Very worn. Possible lace hole. Area B, Layer 72, Phase 1B (equivalent Area A Phases 1-5) illus 22.
- 8 Fragment of upper. Very worn. Stitching along one edge and possible stitch holes at centre. Area A, Layer 107, Phase 6, not illustrated.
- 9 Fragments of very worn upper. Area B, Layer 72, Phase 1B (equivalent Area A Phases 1-5) not illustrated.
- 10 Fragments of very worn upper. Area A, Layer 93, Phase 7, not illustrated.
- 11 Fragments of possible upper. Area A, Layer 92, Phases 6-8, not illustrated.



Illus 22 Leather 1 - 16

Binding strip

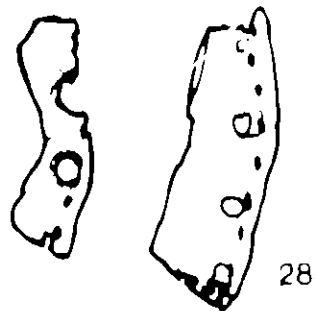
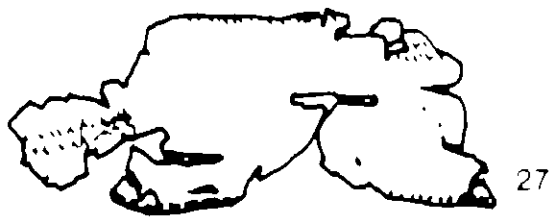
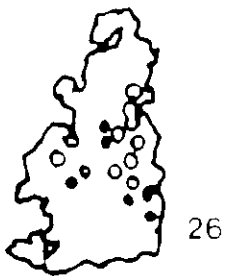
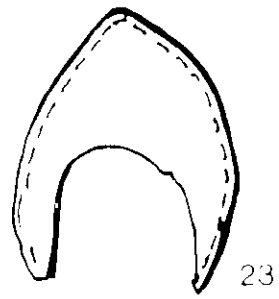
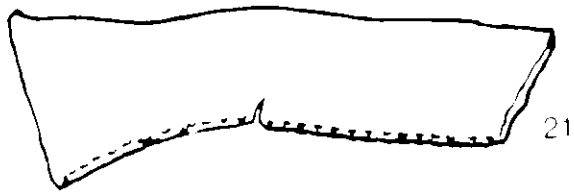
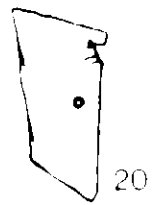
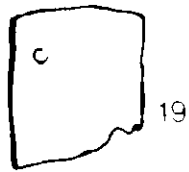
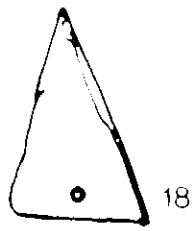
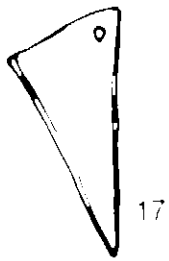
- 12 Area B, Layer 72, Phase 1B (equivalent Area A Phases 1-5)
illus 22.

Strap ends

- 13 Part of a strap of soft leather. Stitching on both sides.
Possible shoe fastener. Area B, Layer 72, Phase 1B
(equivalent Area A Phases 1-5) illus 22.
- 14 End of crude strap with one perforation, broken across a second.
Incised line along upper (grain) surface. Area A, Layer 116,
Phase 3, illus 22.
- 15 End of crude strap with three perforations, broken across a
fourth. Two incised lines along upper (grain) surface. Area A,
Layer 116, Phase 3, illus 22.

Cobbling scrap

Small quantities of cut cobbling scrap (1-10 offcuts) occurred in the following layers: Area A 128 (Phase 1); 104, 105 (Phase 6); 93 (Phase 7); 83, 103, 98, 81, 79, 87, 75, 73 (Phase 8 pit and general layers) and Area B 76, 90, 72, 84, 66 (Phase 1B = equivalent Area A Phase 1-5). A larger concentration (30-40 offcuts) occurred in yard layer 107 (Phase 6), but the only really significant concentration was in 116 (Phase 3) where c 1000 offcuts were found in the fill of a boundary ditch. The material from 116 included pieces possibly cut from new leather (16, 17) and pieces recut from old leather which still had the stitch marks of its original use (21, 22). Many of the offcuts were formless but there was a large number of triangular and lentoid pieces (16-18) which could have derived from cutting around a shoe sole. A number of scraps had perforations which may have been peg or pin holes, either connected with hanging or stretching the hides or holding the leather for cutting. In addition to the leather in the ditch fill, there was also a large amount of hair, identified by Ryder (report below) as cattle hair, and a few scraps of leather with hair attached. The implication must be that new hides were cleaned on the site, in addition to shoe making and repair.



illus 23 Leather 17 - 28

- 16 Diamond shaped offcut. No stitching. Incised line near edges on grain surface. Area A, Layer 116, Phase 3. illus 22.
- 17 Triangular offcut. No stitching. One perforation. Area A, Layer 116, Phase 3. illus 23.
- 18 Triangular offcut. As 17. Area A, Layer 116, Phase 3. illus 23.
- 19 Quadrilateral offcut. One perforation. Area A, Layer 116, Phase 3. illus 23.
- 20 Quadrilateral offcut. As 19. Area A, Layer 116, Phase 3. illus 23.
- 21 Part of large object possibly a boot, with stitching along straight edge. Cut up for re-use. Area A, Layer 132, Phase 1. illus 23.
- 22 Part of large object possibly a boot (? part of 21) with stitching along curved edge and one straight edge. Cut up for re-use. Area A, Layer 132, Phase 1. illus 23.
- 23 Part of toe from small shoe sole. Cut for re-use. Area B, Layer 84, Phase 1B (equivalent Area A, Phases 1-5) illus 23.
- 24 Toe fragment from sole. Cut for re-use. Area A, Layer 107, Phase 6. illus 23.
- 25 Toe fragment from small sole. Cut for re-use. Area A, Layer 11, Phase 13. illus 23.

Miscellaneous

- 26 Worn fragment with punched perforations. Area A, Layer 107, Phase 6. illus 23.
- 27 Fragment of belt. Very fine stitching along edges and in central area. Area A, Layer 107, Phase 6. illus 23.
- 28 Two fragments, possibly of garment, with stitching and perforations along one edge. Area A, Layer 114, Phase 4. illus 23.

The Site Context Hilary Murray

Although there is a small quantity of very fragmentary leather in all phases, there are few complete or identifiable objects. In terms of the site, the most interesting feature is the evidence of hide preparation and cobbling from the Phase 3 boundary ditch fill (116). The quantity is significant as only a very small section of the ditch extended on to the

site (the rest had been cut by the adjacent cellar). There was no scrap from the contemporary yard layers of the N property, so the cobbler would appear to have worked on the S property, throwing waste into the intervening boundary ditch. The second much smaller concentration of cobbling waste in Phase 6 (Layers 104, 105, 107) may indicate the continuation of the industry on the site to this period. The offcuts from Phases 7 and 8 are all from pits cut through the earlier layers or from the yard levels which could have been contaminated when the pits were dug; as a result the small number of offcuts from these phases can not be regarded as particularly significant.

A quantity of cattle hair was found in Area A, Layer 116, Phase 3, mixed with the leather scraps (above).

The association of the hair with leather scraps is interpreted by the excavator as indicating leather working. Hair, however, indicates the fell-mongering process of removal from the skin, and so with leather scraps would indicate a tannery rather than subsequent leather working.

The hair appeared reddish-brown to the naked eye, a shade that can be produced by degradative discoloration, and was identified as cattle by microscopic examination in whole mount. Hair diameter was measured with a projection microscope at a magnification of x 500, and the measurements are shown in the table, together with some measurements of some cattle hair from Rochford, Essex, for comparison. This was from a medieval house under renovation, the wall plaster in which it was embedded being thought to date from c AD 1600.

It can be seen that the Rochford sample contains more hairs with natural pigmentation, while the Aberdeen sample has more hairs with a central medulla (or core) indicating coarseness, although both the mean and the most frequent diameters are lower than in the Rochford sample. In each sample it was the finer underwool that lacked pigment, which is usual in double-coated animals.

This hair specimen is of great interest because, unlike sheep from which there is a wealth of fleece material in wool textiles, cattle hair remains uncommon. Superficial observations indicate much less coat variation than with the fleeces of sheep, presumably because there has not been the same selective breeding for different varieties of coat for textile use. For the same reason any coat variation there might be in modern cattle has been little studied.

Previous investigations, however, have suggested that the general trend in the coat of cattle since domestication has been towards hairiness, unlike sheep in which the change has been away from hairiness (Ryder 1980).

Two main types of cattle coat have been identified: a primitive type

having a double coat (coarse outer coat and finer underwool as in many wild animals) with a skew fine hair diameter distribution (ie most of the hairs are fine), and a modern, coarser type with a symmetrical hair diameter distribution, which has, however, been found as early as the Bronze Age.

The Aberdeen and Rochford samples were of primitive type, indicating that this type persisted alongside the coarser type at least until the end of the Middle Ages (Ryder 1983). It is not usually possible to tell an animal's colour from the pigment distribution in the hair, but the appearance to the naked eye suggests that the Aberdeen cow was red-brown rather than black.

Table 2 : Cattle hair diameter comparisons (μm)

SPECIMEN	RANGE	MODE	MEAN
Rochford (Essex)	20-74, 82	36 (37) 38	38.1 \pm 12.1
Aberdeen	12-70, 78, 86 (2), 90	30	33.0 \pm 16.9

SPECIMEN	DISTRIBUTION	PEARSON COEFF	PROPORTION PIGMENTED HAIRS	PROPORTION MEDULLATED HAIRS
Rochford	skew fine	0.47	0.85	0.14
Aberdeen	skew fine	0.82	0.56	0.43

1 μm = 0.001 mm

All details of the textile fragments listed below are presented in table 3.

29	Area A, Layer 13, Phase 13.	Not illustrated.
30	Area A, Layer 20, Phase 11.	Not illustrated.
31	Area A, Layer 20, Phase 11.	Not illustrated.
32	Area A, Layer 32, Phase 11.	Not illustrated.
33	Area A, Layer 32, Phase 11.	Not illustrated.
34	Area A, Layer 32, Phase 11.	Not illustrated.
35	Area A, Layer 39, Phase 11.	Not illustrated.
36	Area A, Layer 45, Phase 10.	Not illustrated.
37	Area A, Layer 99, Phase 7.	Not illustrated.

Discussion

The excavation on the site of 45-47 Gallowgate yielded samples of nine different woven fabrics, all of wool; a tiny additional scrap, E17A.39b, stiff and matted, does not have an organized structure, and may be an accidental amalgamation of fibres. Three basic weaves are represented - tabby (1), 2/2 twill (1), and 2/1 twill (7).

All the cloths are rags. Only one, 37, bears signs of sewing, but the worn and fragmentary state of all the finds suggests that they have been used. In view of this, and the lack of clean-cut edges, they are best regarded as general domestic refuse rather than, say, tailor's offcuts. The pieces are too small and lacking in structural features for their exact use to be known, but it can be said that most are of a suitable weight for clothing or light blankets; the exception is the tabby fabric, 29, which is too harsh and inflexible for either purpose, but might have been sacking (see below). One example of 2/1 twill, 36, and scraps of unworked wool fibres, found together between two pieces of leather, could possibly represent the lining and padding of a leather garment; again, unfortunately, there are no signs of sewing and the fragments are too tiny for a conclusion to be reached. One other 2/1 twill, 32, was associated with a curl of unworked wool or hair, but the two are not attached, and the juxtaposition may be accidental.

37, a fine, well made 2/1 twill without finishing, is exceptional in the

group in being made entirely from Z-spun yarn. It is also the only cloth which may confidently be described as a worsted, that is, combed yarn has been used throughout. This combination of 2/1 twill weave and fine worsted yarn is not well known in England in post-Saxon or post-Viking levels (Crowfoot 1980, 113-14) but has a run of several centuries in medieval Scotland. Fabrics of this description have been recovered from three different sites in Perth: single examples, slightly less fine, and of 14th and 15th century dates, have come from Kirk Close and the Clydesdale Bank excavation, and the type is well represented among several hundred textiles, of the 12th to 14th centuries, from Perth High Street (Bennett forthcoming a; b). Among the latter there are about five with thread counts above 17 in both systems, and with the systems close to balance; these range in date from the mid 12th century to c 1300, according well with the 13th century date suggested for the Gallowgate example.

The remaining seven examples of 2/1 twill, which have lower thread counts and are of lesser quality, have been woven with Z-spun yarn in one system and S-spun in the other. In all cases the Z-spun may have been combed, but lacks the smooth even appearance of that in 37; in some cases the S-spun is similar, and in others is softer and thicker but has not necessarily been carded. The ZS combination was popular in the medieval period, especially where a cloth was to be finished, that is, fulled to compact the fabric and then brushed to raise the nap, creating a soft close surface. Five of the pieces show signs of having been fulled, and three have been lightly napped on one or both surfaces; as usual it is the face with the S threads predominating on which the nap is most prominent. Light-medium weight 2/1 twills, ZS, of no great quality are familiar finds on Scottish medieval sites, and might be described as typical, at least for eastern Scotland. Similar fabrics are already known from 13th and 14th century levels in Aberdeen (Bennett 1982, 197-9) and, in considerable quantity, with or without light finishing, from Perth, especially from late 13th and 14th century deposits in the High Street. So numerous are they, that they may reasonably be supposed to be products of the area. (Bennett forthcoming b).

The single example of 2/2 twill, 34, exists only in a scrap. Sufficient remains, however, to indicate a fine fabric, of good quality, without

Table 3 Woven cloth from 45-47 Gallowgate

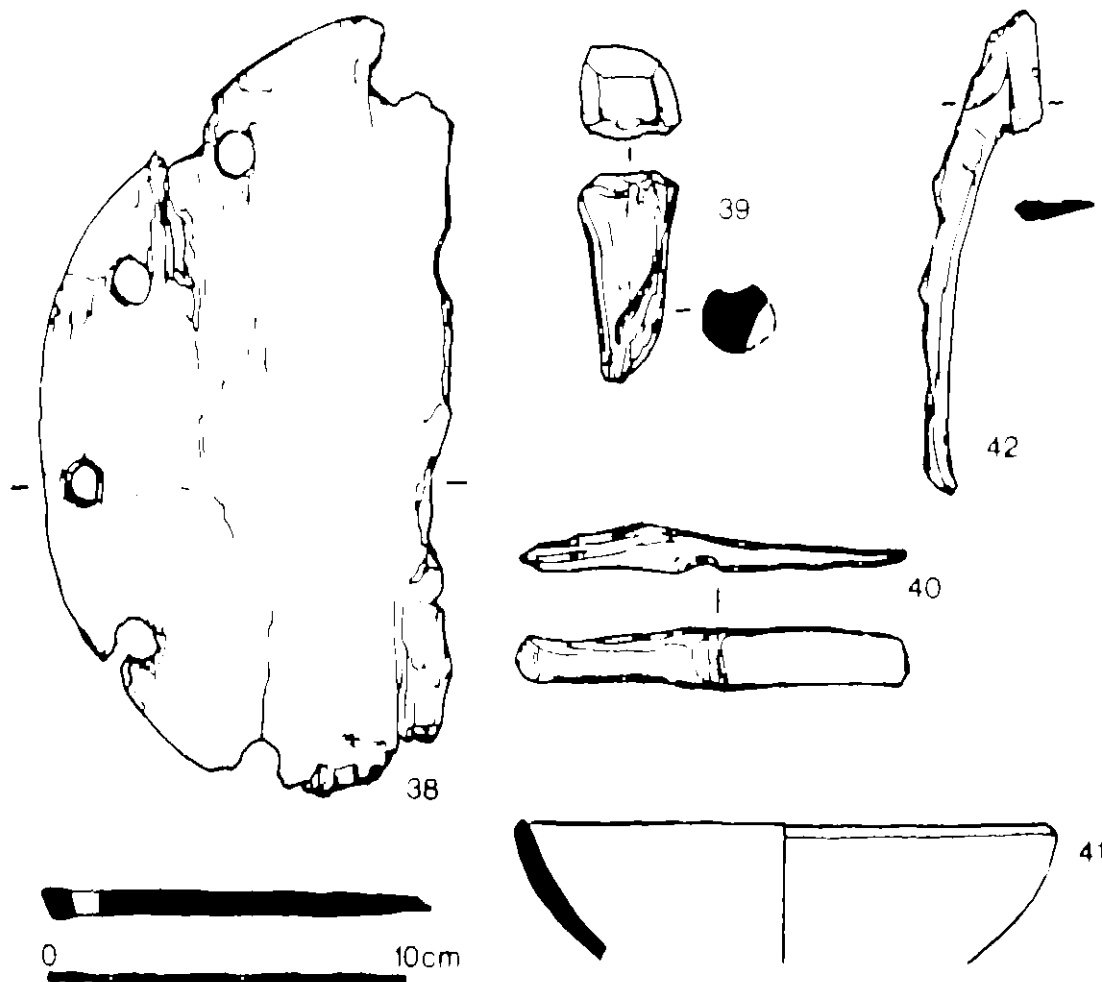
CAT NO	CONTEXT	PHASE	DIMENSIONS (mm)	THREAD COUNT (per 10 mm)	SPINNING	tabby	2/2 twill	2/1 twill	fulling	naping	COLOUR	OTHER DETAILS
29	A.13	13	150 x 290	5 x 4-5	Z x S	*					even mid-brown	yard carded
30	A.20	11	150 x 110 (fragments)	12 x 11-12	Z x S			*	*	*	reddish dark brown	nap more pronounced on one side
31	A.20	11	50 x 20	7 x 6	Z x S			*	*		reddish mid-brown	
32	A.32	11	100 x 130 (largest)	13-15 x 10	Z x S			*			mid-brown	found with unworked curl of wool/hair
33	A.32	11	33 x 24	10 x 10	Z x S			*	*	*	rich mid-brown	nap on one side only
34	A.32	11	40 x 38	24 x 20	Z x S		*				reddish mid-brown	
35	A.39	11	60 x 45	15 x 10	Z x S			*	*	*	reddish mid-brown	nap more pronounced on one side
36	A.45	10	17 x 30	6-8 x 8	Z x S			*			mid-brown	found with scraps of unworked wool between two pieces of leather
37	A.99	7	150 x 135 (largest)	24 x 19	Z x Z			*			dark brown	yarn combed; some indications of seam lines

finishing. The texture is soft, but it is not clear how the constituent yarns have been prepared. Comparable fabrics are difficult to find in Scotland. A few 2/2 twills, ZS, without nap, ranging from the 12th to the 15th centuries, have been recovered from the Kirk Close and High Street sites in Perth, but none approaches the high thread count, 24 x 20, of the Gallowgate piece. Perhaps the closest in quality is a 2/2 twill, ZZ, finer still, of the last decade of the 13th century, from Southampton (Crowfoot 1973, 335, 338). Even so, a 14th century date for the Gallowgate piece need not be discounted.

For 29, a firm, coarse tabby without finishing, a post-medieval date is suggested, and indeed the piece is without parallel among medieval material from Scotland. Tabby fabrics, ZS, with low thread counts are found among 13th - 14th century fragments from Papa Stour, Shetland (Bennett forthcoming c) and in the shirt, possibly of about the same date, from Rogart, Sutherland (Henshall 1952, 18-21), but in these cases the yarn has been combed and the appearance of the cloth is quite different from the carded Gallowgate piece. The use of carded yarn throughout in itself strengthens the argument for a late date, for true woollens are rare in Scotland before the end of the Middle Ages. It may be noted that a number of coarse tabby woollens, thought to be sacking, have been recovered from 16th century layers in Newcastle (Walton 1981, 197). The Gallowgate fabric too has the appearance of a sacking material, the successor, perhaps, to the tabbies made from coarse 2 ply wool yarn, thought to have been used for this purpose, so often found in medieval levels (Bennett forthcoming b).

WOOD

- 38 Part of a circular basket base. Diameter 420 mm; Thickness c 15 mm. Perforations 20-30 mm in diameter around edge. Area A, Layer 109, Phase 5. illus 24.
- 39 Trenail with splayed faceted head and round sectioned shaft. Diameter c 20 mm. Area A, Layer 109, Phase 5. illus 24.
- 40 Wedge. Length 110 mm. Area A, Layer 109, Phase 5. illus 24.
- 41 Rim fragment of bowl. Area A, Layer 109, Phase 5. illus 24.
- 42 Carved fragment. Charred. Area A, Layer 109, Phase 5. illus 24.
- 43 Barrel stave fragment. Area B, Layer 76, Phase 1B (equivalent Area A, Phases 1-5). Not illustrated.



illus 24 Wood 38 - 42

A total of nine separate fragments of clay mould were recovered from Phases 3 and 4 of the site. All the fragments were residual to metal casting which had taken place near the site. Two small pieces of iron slag were also recovered from Phase 3, but no non-ferrous waste metal or slag was discovered. The fabric of these mould fragments was examined by means of a x 10 hand lense. The tempering agents used were found to vary from coarse grits and vegetable matter in the larger moulds to fine chopped vegetable fibre, probably animal dung, and hair for the more delicate moulds.

The majority of the mould fragments were kindly examined by Dr Tate of the National Museum of Antiquities of Scotland Laboratories and his X-ray fluorescence results are incorporated in this report. All the examples showed traces of zinc and lead with occasional traces of copper. The first two metals are unlikely to be representative of the alloy cast as they are readily volatilized even when present in small quantities and are recorded in almost all used moulds. The traces of copper, however, suggest that in at least two cases (Cat 45b and 46) the castings were of copper alloy.

- 44 External plate of composite pin mould.
28 x 25 mm x 8 mm thick.
Fine vegetable and hair-tempered clay.
Reduced internally, Zn and Pb from internal surface.
Gate lip and channel missing.
Running chamber and runners missing.
Pattern a minimum of two 'pin impressions' of 4 mm diameter.
Keying represented by ♀ hollows between the 'pin impressions'.
It is also possible that further keying was provided by the outer 'pin impression' and associated ridge acting as keying grooves.
Area A, Layer 114, Phase 4. Illus 25.
- 45 Core fragment of vessel mould.
85 x 28 mm x 10-20 mm thick.
Fine vegetable-tempered clay.
Heavily reduced internally, Zn, Pb, Cu from internal surfaces.

- 7
- Keying consisted of a right angled groove marking the edge of the rim with fragments of coping adhering to the outer edge and base of the core.
Area A, Layer 117, Phase 3. *illus 25.*
- 46 Core fragment of vessel mould.
117 x 45 mm x 32 mm thick.
Coarse vegetable and grit-tempered clay.
Heavily reduced internally, Zn, Pb and Cu from internal surface.
Pattern consisted of a flat disc of external diameter 280 mm.
Keying consisted of a smooth outer edge at right angles to the pattern.
The cope would have been attached as in 45.
Area A, Layer 114, Phase 4. *Not illustrated.*
- 47 Core fragment of vessel mould.
48 x 40 mm x 18 mm thick.
Coarse vegetable and grit-tempered clay.
Reduced internally.
Pattern consisted of a flat disc of large diameter.
Keying consisted of a broken outer edge at right angles to the pattern. The cope would have been attached as in 45.
Area A, Layer 114, Phase 4. *Not illustrated.*
- 48 Coping fragment from vessel mould.
33 x 24 mm x 14 mm thick.
Vegetable and grit-tempered clay.
Reduced internally.
Gate lip and channel missing.
Running chamber and runners missing.
Pattern missing.
Keying consisted of a smooth inner edge at right angles to base of mould or pattern. This would have been attached to the core as in 45.
The diameter of the casting would have been 300 mm +.
Area B, Layer 72, Phase 1B (equivalent Area A Phases 1-3.)
Not illustrated.
- 49 Coping fragment from vessel mould
32 x 17 mm x 10 mm thick.
Vegetable-tempered clay.

- Reduced internally, Zn and Pb from internal surface.
Gate lip and channel missing.
Running chamber and runners missing.
Pattern missing.
Keying consisted of a smooth inner edge curving to the base or pattern of the mould. This would have been attached to the core as in 45.
The diameter of the casting would have been c 280 mm.
Area A, Layer 114, Phase 4. Not illustrated.
- 50 Coping fragment from vessel mould.
48 x 26 mm x 8-13 mm thick.
Fine vegetable and hair-tempered clay.
Reduced internally, Zn and Pb from internal surface.
Gate lip and channel missing.
Running chamber and runners missing.
Pattern consisted of a concavo-concave body fragment which was decorated by a groove at a point where the diameter of the vessel being cast was reduced. Possible wavy ribbing may also have existed on part of this mould but this was badly eroded.
The external diameter of the casting at the point where its profile changed was c 90 mm.
Keying missing.
Area A, Layer 114, Phase 4. Not illustrated.
- 51 Coping fragment from vessel mould.
60 x 50 mm x 20 mm thick.
Fine vegetable-tempered clay.
Reduced internally, Zn and Pb from internal surface.
Gate lip and channel missing.
Running chamber and runners missing.
Pattern consisted of a concavo-concave surface terminating at one end with a broken flange at right angles to the main pattern and defined at the other by a shallow groove before starting to become concavo-convex. The pattern is consistent with the external profile of an everted rim from a vessel with a bulbous body. The diameter of the vessel at this 'rim' is c 180 mm.
Keying, if this is correctly identified as a rim, is represented by the broken right angled flange which would have been

joined to the core of the mould in the same way as in 45.

Area A, Layer 114, Phase 4. illus 25.

52 Coping fragment from vessel mould.

26 x 30 mm x 8 mm thick.

Fine vegetable-tempered clay.

Gate lip and channel missing.

Running chamber and runners missing.

Pattern consisted of a plain concavo-concave surface of large diameter.

Keying missing.

Area A, Layer 104, Phase 6. Not illustrated.

Discussion

Cat 44

This is the only piece of jewellery mould from the group. It is closely paralleled by the composite pin moulds of similar date recovered from High Street, Elgin (Spearman forthcoming, Cat 1-5).

Cat 45-47

These are all core fragments from the casting of circular dishes or possibly deeper vessels. The depth of the castings is, however, unknown as few body fragments were recovered. In the case of fragment 45 the diameter was only 115 mm with an sloping everted rim, as for a ewer or small cauldron. Fragments 46 and 47 were much larger, 280 mm in the case of 46 and had flat everted rims, as for plates. All three fragments showed signs of keying with fragment 45, 45a and 45b demonstrating how the outer coping clay was bonded to the rim of the core.

Cat 48-49

These are further examples of coping which also appear to have been from the keying of the cope to the core (see 45a and 45b above).

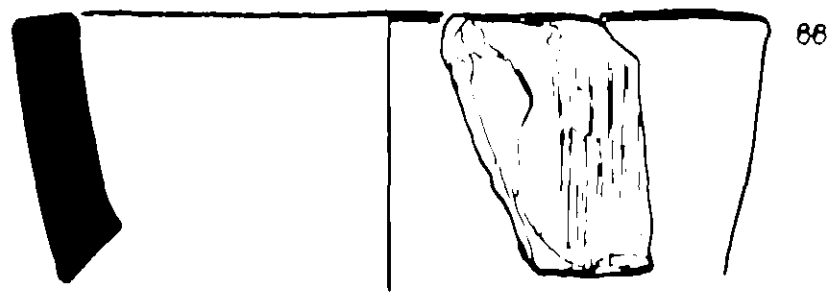
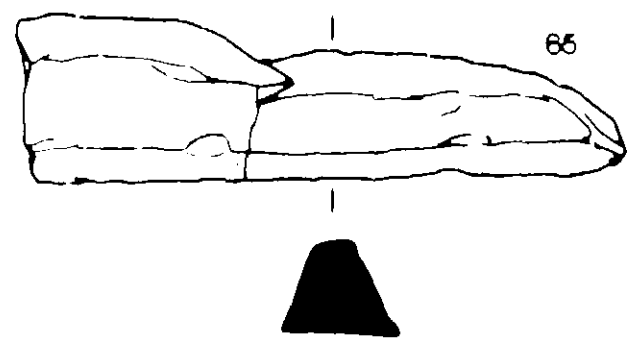
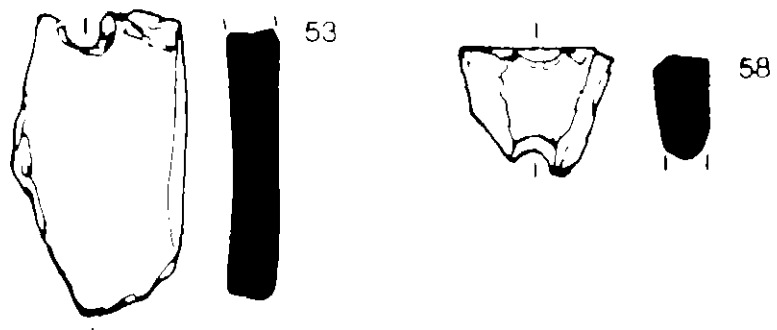
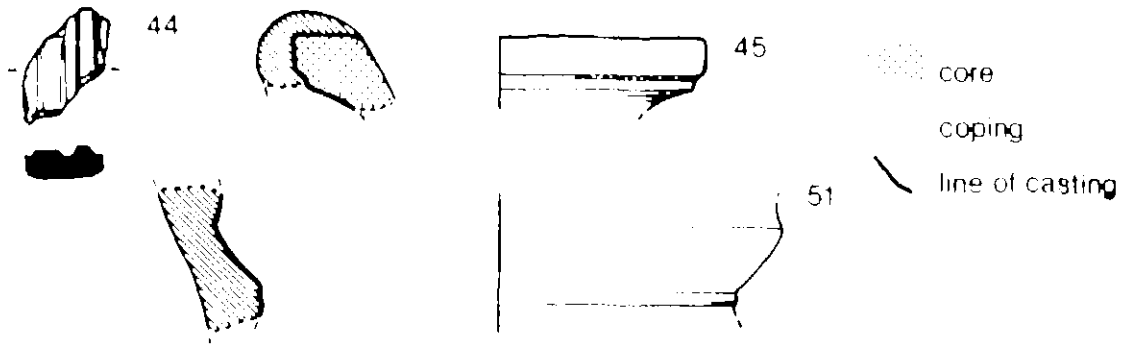
Cat 50-52

These are pieces of coping from the body of moulds. Fragments 50

and 51 are decorated by shallow grooves which pick out changes in the profile angle of the casting. Fragment 51 may be from an sloping everted rim similar to, but not matching, that of core fragment 45. This fragment also includes a broken piece of keying and hints at a bulbous body as for a ewer or small cauldron.

Conclusion

The pin mould is strikingly similar to the examples from Elgin and is presumably also part of a composite 'sandwich' mould. Insufficient body fragments were recovered from the other mould types to reconstruct the full form of the objects being cast. The scale and form of all the recovered fragments suggests, however, that they were from the casting of light-weight, presumably domestic, artefacts such as ewers, small cauldrons and plates. The two large diameter mould cores, 46 and 47 are not matched by any strong coping fragments. While this may be the result of chance preservation, their disproportionate weight and complex keying may reflect the re-use of these cores, with only the thinner cope needing to be broken for the casting to be removed. Nevertheless, unless the cope was also re-used, for which there is no evidence, the full pattern would have to be established before each casting by the 'lost wax' method. In the case of all these vessel moulds, although no pouring gates were recovered, the metal would have been run in through their inverted bases.



0 10cm

illus 25 Clay moulds 44, 45, 51
 Roof tile 53, 58
 Whetstone 63
 Stone vessel 66

CLAY : ROOF TILES

Tile fragments were found in Area A, Phases 6, 7 and 8. The Phase 7 and 8 fragments were mostly from pit contexts. There was no structural association in any phase. With the probable exception of two fragments of a hard dark fabric (55), all the tile appears likely to have been roof tile, similar to those found in contemporary contexts in Kings Lynn (Clarke and Carter 1977, 298). The nail holes survived in fragments 53 and 58.

- 53 Fragment with nail hole. Red/buff fabric. Slightly curved.
Area A, Layer 104, Phase 6. illus 25.
- 54 Five fragments. Red/buff fabric. One with straight edge.
Area A, Layer 99, Phase 7. Not illustrated.
- 55 Two fragments. Black fabric. One with straight edge.
Possible floor tile.
Area A, Layer 99, Phase 7. Not illustrated.
- 56 Fragment. Red/buff fabric.
Area A, Layer 101, Phase 7. Not illustrated.
- 57 Fragment. Red/buff fabric. Straight edge.
Area A, Layer 73, Phase 8. Not illustrated.
- 58 Fragment with nail hole, 25 mm from top edge. Red/buff fabric.
Area A, Layer 103, Phase 8. illus 25.
- 59 Two fragments. Red/buff fabric.
Area A, Layer 85, Phase 8. Not illustrated.
- 60 Fragment. Red/buff fabric.
Area A, Layer 83, Phase 8. Not illustrated.
- 61 Fragment. Red/buff fabric.
Area A, Layer 87, Phase 8. Not illustrated.

THE CLAY PIPE P DAVEY

- 62 Five fragments (2 joining + post excavation break) narrow stems, dense, very pure white clay. $4 \times \frac{4}{64}$ "; $1 \times \frac{5}{64}$ " bore.
Area A, Layer 24, Phase 14. Not illustrated.
- 63 One fragment, thick stem, off white dense clay with quartz and other inclusions, some signs of burnishing. $\frac{7}{64}$ " bore.
Area A, Layer 6, Phase 14. Not illustrated.
- 64 One fragment, thick stem, clay as 63, $\frac{6}{64}$ " bore.
Area A, Layer 10, Phase 14. Not illustrated.

Discussion

There are seven fragments of tobacco pipe stem from three contexts, all in Phase 14.

On grounds of clay type, stem width and bore diameter the five fragments from Layer 24 should belong to the 19th century whilst the remaining two from Layers 6 and 10 are probably of 17th century date.