THE METALWORK

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The non-ferrous metal objects

Alison Goodall

Introduction

As has been noted in Fascicule 1, the High Street excavations provided one of the first opportunities to study a significant quantity of archaeological material from an urban context in Scotland. In England such opportunities have been provided by large-scale development in cities such as London, Winchester and York. The Perth excavations opened a window on the life and development of a medieval Scottish burgh and yielded an assemblage of finds which can be compared with those from excavations south of the border. The date range of the finds from Perth is relatively early with the bulk of the non-ferrous metal objects concentrated into a period of about 200 years from the end of the 12th century with very little later or intrusive material.

Approaching 300 objects and fragments of copper alloy and of lead and its alloys were found in the excavations. They include 27 brooches, and another 50 objects which may be from dress or other decorative objects. There were 38 needles, but few pins, and some fragments of sheet metal domestic vessels but little evidence for metal cooking pots. However, there were about 100 miscellaneous fragments of copper alloy and lead sheet, offcuts and scrap metal. The first impression is one of relative affluence, if not great wealth, as witnessed by the number of brooches and other decorative objects. One small brooch appears to be made of gold (Cat No 24), the others being of base metal with little evidence of their having been gilded to imitate higher status goods. Despite the number of brooches, none of them contain glass or stones. These would therefore seem to be relatively humble objects, decorative trinkets rather than indicators of wealth or status.

Looking at the metal finds alone, even with the preponderance of fragments and waste pieces, it would be difficult to make a case for metalworking on the site. However, when looked at alongside the other evidence, the hearths, slags and stone moulds, a clearer picture unfolds. The moulds include dies for casting simple brooches and six of the brooches were found in the area of Building 53 where hearths identified as metalworking hearths were excavated. Two brooches (Cat Nos 1 and 9) appear to be unfinished, while an ornamental brooch with cast bosses on the frame (Cat No 20) may have been damaged in casting. From this evidence it is clear that ornamental metalwork of copper and lead alloys was being cast on site, and the presence of sheet metal patches and rivets suggests that possibly larger items, such as vessels were being repaired. The accumulations of scrap and broken material may be the waste products of manufacture, or they may have been intended to be melted down for re-use. The stylus (Cat No 77) provides evidence of literacy, and may perhaps have been used in connection with the manufacturing and trading processes on the site.

Whatever the details of the industrial processes, the picture that emerges is one of backland workshops engaged in the manufacture and repair of a variety of metal objects. The workshops would appear to have been run by a class of artisan craftsmen who, while not wealthy, were sufficiently well off to wear decorative metal brooches and dress accessories themselves, as well as making them for others, which leads one to suppose that the manufacture of brooches and trinkets from copper and lead/tin alloys was a lucrative business.

Catalogue

Catalogue entries included in the report are numbered consecutively and marked 'Illus' or 'Not illustrated'. They are grouped according to type and then listed in chronological order. They include the following information:

Metalwork catalogue number (number in brackets relates to the late Nicholas Bogdan's draft metalwork catalogue for his projected 'Fascicule 4 – The Metalwork')
Object type (brooch, buckle, etc).
Material Chemical element names are used throughout, for example Cu=copper, Pb=lead, Sn=tin, etc).
Description with dimensions (mm)
Accession number Axxxx for 1975–76 excavation season; Axx–xxxx for 1977 season.
Lab number (Lxxxx)
X-Ray number X for older X-rays, NX for new x-rays
Archive illustration number Refers to original line illustrations in site archive: D from photograph, DX from X-ray.
Context number – Area number Cxxxx–x
Feature number Buildings, midden, paths, pits, etc.
*Phase (*I, II, III, IV, V, VI, etc)
Rig (V–VIII)
Illus number/not illustrated

All finds are from the South Sector, unless stated otherwise, that is, from the North Sector.

Personal objects

Brooches (Illus 116 and 117)

A total of 27 brooches was found in the High Street excavations, twice the number of buckles. A similar proportion was observed from excavations at the medieval burgh of Rattray in Aberdeenshire (Goodall, A R 1993, 188). In contrast, on sites in southern England, such as Winchester (Biddle 1990) and London (Egan and Pritchard 1991), copper alloy buckles far outnumber a relatively small number of brooches. This may be a reflection of Scottish taste or the result of a less clement northern climate making it necessary to wear more clothes tightly fastened at the neck. Although many medieval brooches were highly decorative and might be worn to display the wealth of the owner, their primary use was as a means of holding together the neck opening of a tunic or as a cloak fastener.

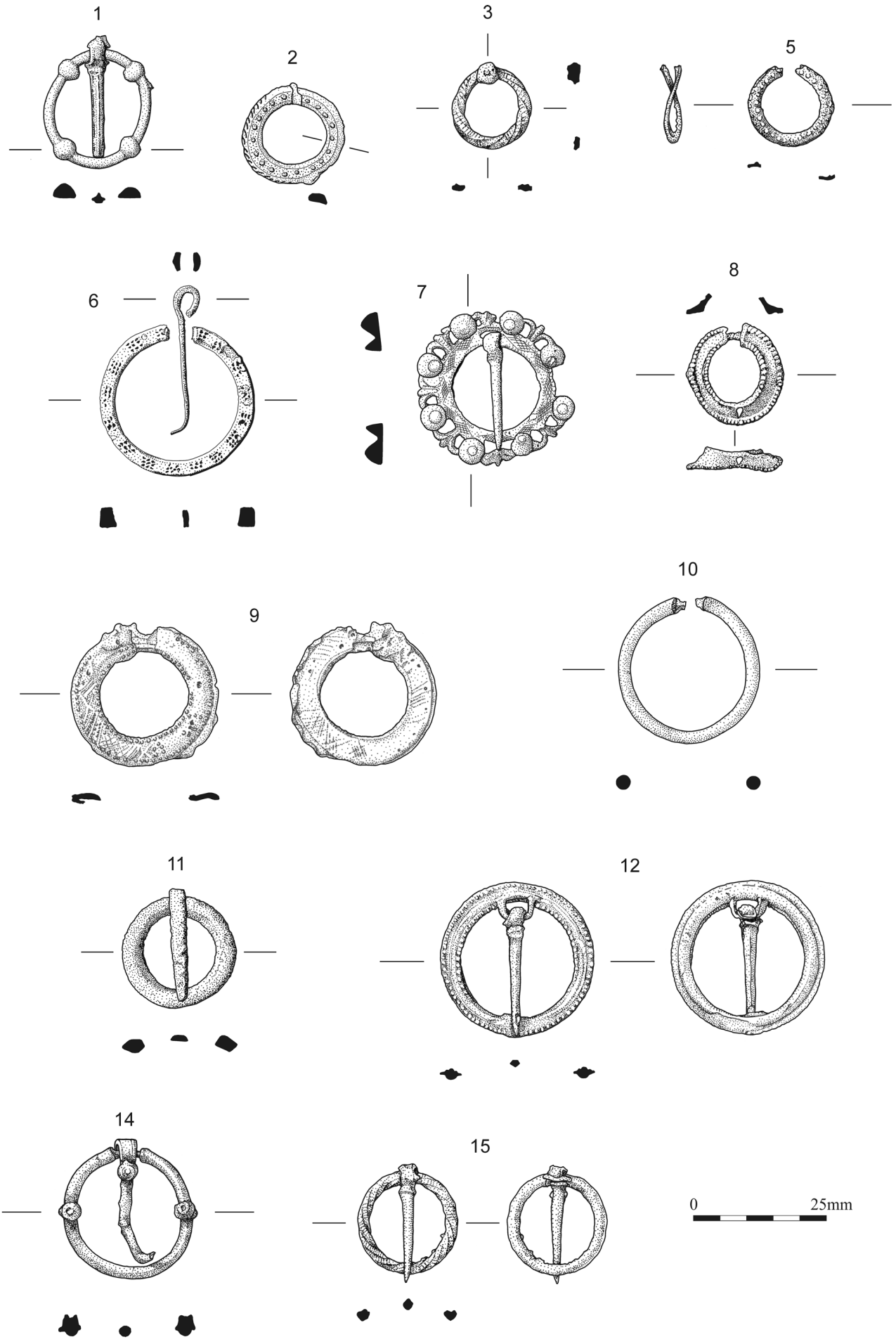
The large number of brooches at Perth is also explained by the metalworking that was being undertaken on this site. Six of the brooches, Cat Nos 14–19, were found in Building 53 where there were hearths and other evidence for metalworking. These brooches include examples in both copper alloy and lead/tin alloy, as well as one, Cat No 14, which may be silver. Pieces of scrap copper alloy and lead were found in the same areas. Brooches were also found on other parts of the site where there was some evidence for metalworking in the form of slag, while Cat Nos 5 and 6 came from the same midden (M1.4d) as the stone mould (see Fascicule 4, The stone objects, Stone Cat No 40) which was used for casting simple, unadorned annular brooch frames 25mm in diameter and their pins. Another mould, Stone Cat No 39, was used for casting similar brooches, while Stone Cat No 42 has dies cut into both surfaces of the stone indicating that it may have been part of a stacked mould, one part of which was used for casting brooch pins. Although it is not possible to identify any brooches that were cast in these moulds, similar types of brooch are represented by Cat Nos 13 and 18, which are of copper alloy, and Cat No 19, which is of lead/tin alloy. Although there appear to be traces of metallic residues in the moulds, these have not been identified. The moulds show that the gate, where the molten metal entered the die, was at the point on the brooch frame where it is rebated for the pin. The pins would have had simple collar mouldings and would have had perforated heads for attachment to the frame. On the surviving brooches, the rebate is broken or discontinuous, presumably so that the pin could be attached. The join would have been hidden once the pin was in position but would always be a weak area that could spring open with the resultant loss of the pin.

Further evidence for manufacture on the site is provided by three lead/tin brooches which appear to be unfinished or damaged. Cat Nos 1 and 9 still have flashes of metal around the edge. These are thin flanges that result from molten metal leaking out between the mould pieces during casting. They would normally be removed and filed smooth. In the case of Cat No 9 the excess metal on the rebated pin bar would probably have rendered the brooch impossible to use. Cat No 20 is a more ornate brooch with rosette-shaped bosses cast in one piece with the frame. Two of these are missing and the most likely explanation seems to be that the metal cooled before it had run into this part of the mould. It was found in Midden 3a which also contained tools, broken heckle teeth and several incompletely forged iron bars or strips (Iron Cat Nos 130–133, 191, 209, 212, 347, 506, 517) so it is possible that it was dumped there as a waster.

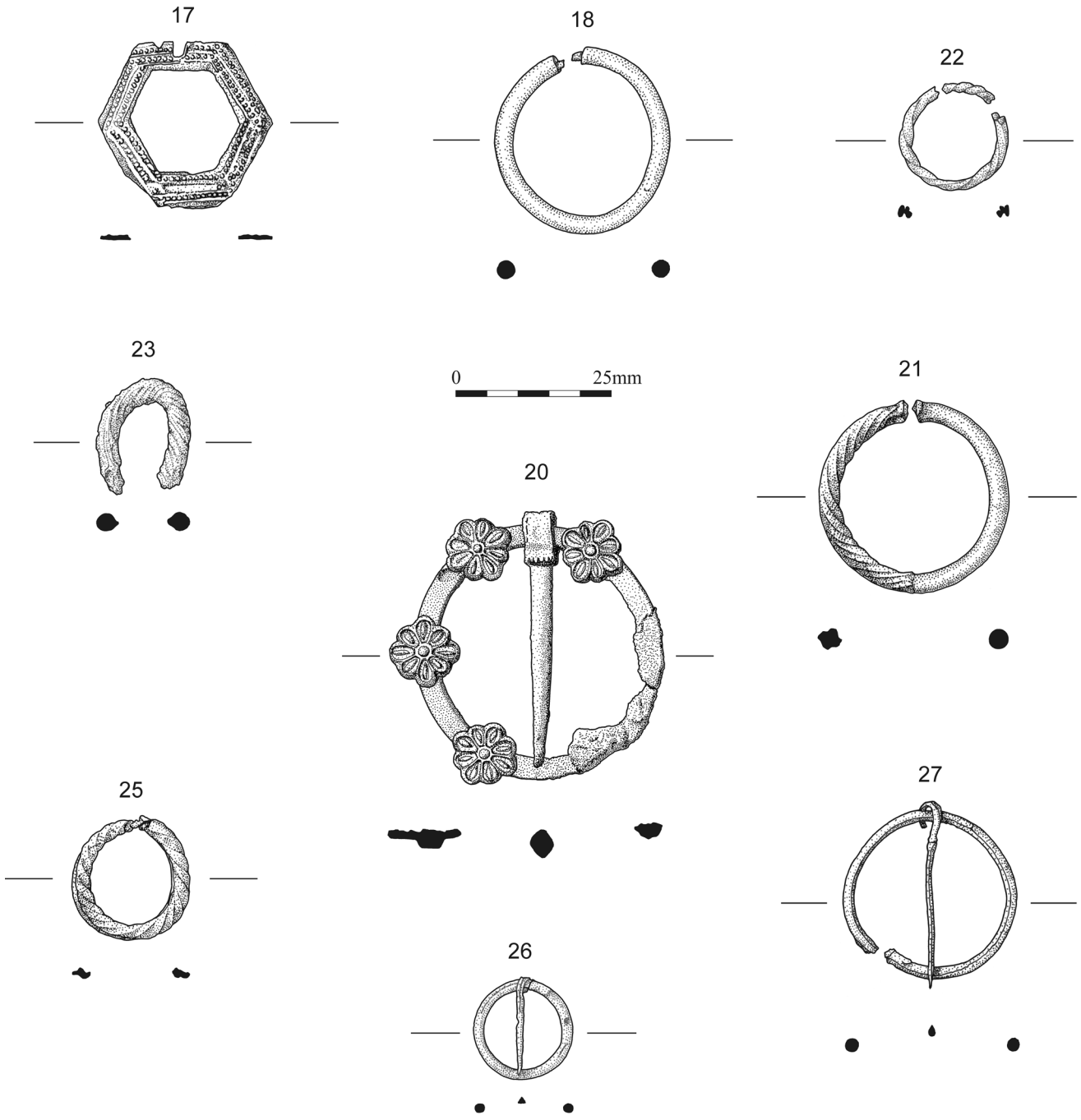
Medieval brooches are found in a variety of forms although annular is the most common. All but the hexagonal brooch, Cat No 17, from Perth were annular in shape. Annular brooches are found in Britain from the 13th to the 15th centuries, but a figure of a queen from the west portal of the church of Notre Dame in Corbeil, France, dated c1150–60 (Campbell 2009, 36, pl 33), shows that they were worn in Europe in the mid-12th century. The brooch shown on this sculpture is large and is worn at the throat of the figure's gown. Its form is otherwise similar to the lead/tin brooch Cat No 7 which came from a context dated to the second half of the 13th century. A larger, more ornate pewter brooch of this type was found in spoil from excavations at Billingsgate, London (illustrated in Egan and Pritchard 1991, 258–60, Fig 167).

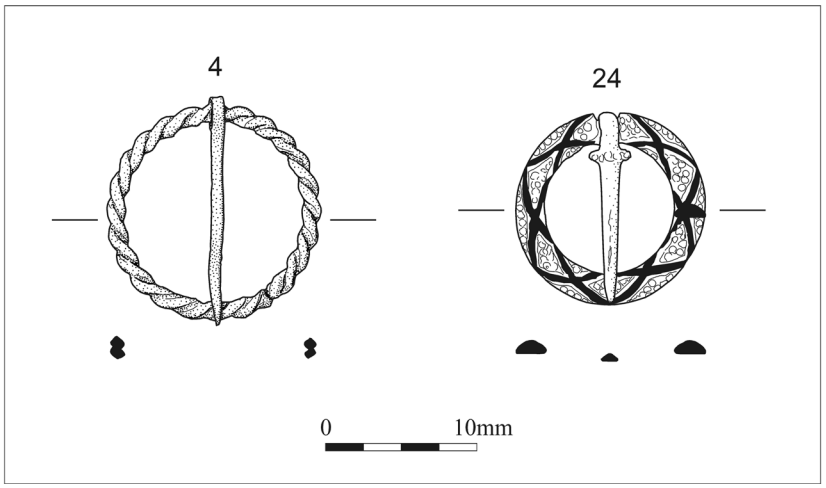
The only brooch certainly made from precious metal is the tiny gold brooch Cat No 24, which seems far too small to have been used as a fastening. Cat No 14 may be of silver. It is of similar type to a brooch from Winchester dated to the late 13th–early 14th century (Biddle 1990, 641, Fig 172: 2025). The Winchester brooch retained some blue glass or paste in one of the settings. None of the brooches from Perth had gems or glass of any sort although Cat No 14 almost certainly would have done. The bosses on Cat Nos 1 and 7 were probably intended to mimic gems. Brooches with rosettes and other bosses like Cat No 20 can be paralleled in copper alloy at Rattray (Goodall, A R 1993, 189, Fig 40:182) and Norwich (Margeson 1993, 15–16, Fig 7:59), where the bosses have been applied to the frame rather than being cast as integral to it.

Medieval brooches often carried amatory, religious or prophylactic inscriptions round the frame. A brooch from London is inscribed with a slightly bungled version of 'Ave Maria Gracia Plena' and another 'Iesvs Nazarenvs' (Egan and Pritchard 1991, 255, Fig 164:1336 and 1337). While none of the Perth brooches bears a legible inscription, the writing on Cat No 16 looks like an illiterate attempt at an inscription. Six brooches, Cat Nos 3, 15, 21–3 and 25, have twisted decoration, either on the whole of the frame or just on half of it. The decoration is made to look as though the frame was made from a rectangular-sectioned bar and twisted, but has in fact been cast in the mould. Another form of decoration, seen on Cat Nos 2, 5, 8, 9 and 12,



Illus 116 *Cu alloy. Brooches Cat Nos 1–3, 5–12, 14, 15.*





Illus 117 *Cu alloy. Brooches Cat Nos 4, 17, 18, 20–27.*

includes various groups or strings of raised pellets, in the case of Cat Nos 8, 9 and 13 forming pelleted or beaded borders round the inner and outer edges of the frame. Similar motifs are seen for example on pewter brooches from London (Egan and Pritchard 1991, 252–4, Fig 163:1323 and 1328). Several more brooches were plain and undecorated and must have served simply as fastenings.

1 (**832**) **Brooch** Pb/Sn
Annular frame with four cast bosses. Collar moulding on the pin. The brooch has been cast in a two-piece mould but the flash, where molten metal has leaked between the two mould parts during casting, has not been completely removed, suggesting that the brooch may be unfinished. Diameter 22mm.
A4497; C2462A–3; M1.4c; Phase IIIa–IVcc; Rigs V and VI
Illus 116

2 (**427**) **Brooch** Pb/Sn
Small annular frame with trapeze-shaped section. Upper surface decorated with a row of pellets and a cabled outer edge. There appears to be a rebate for the pin. Diameter 18mm.
A5511; L4073; X003m, X008m, X063m; DX004, DX008, DX054; C3550–1; B20, Occupation (4b); Phase <IIId–IVaa; Rig VI
Illus 116 (drawing based on a sketch by A Goodall)

3 (**541**) **Brooch** Cu alloy
Annular frame with square or rhomboid section, cast to appear twisted. Remains of the pin. Diameter 15mm.
A04–0628; C7320–7; B18 (Phase 1/2); Phase IVaa,IVb; Rig VII
Illus 116

4 (**645**) **Brooch** Cu alloy
Annular frame made from two strands of wire twisted together. Diameter 14mm.
A04–0346; L3233; C9165–9; B18 (Phase 2a), North Room and Hall Construction (1); Phase IVb; Rig VII
Illus 117

5 (**783**) **Brooch** Cu alloy
Annular frame decorated on the upper surface with rows of raised pellets. Broken rebate for the pin. Diameter 16mm.
A8430; L3945; D096; C2476–3; M1.4d; Phase IVb,IVc; Rig VI
Illus 116

6 (**798**) **Brooch** Cu alloy
Annular frame with rectangular section. The upper surface is decorated with groups of small punched V-shapes. Broken rebate for the pin and pin now separate. Diameter 29mm.
A3937; D034; C2790–2; M1.4d; Phase IVb,IVc; Rig VI
Illus 116

7 (**998**) **Brooch** Pb/Sn
Annular frame with angled section. Central part of ring has alternating plain and cross-hatched triangles, outer flange has openwork decoration and raised bosses imitating gemstone settings. The pin is attached through a perforation in the frame. Diameter 30mm.
A04–0409; L3237; C6054–10; M9b(b); Phase IVc,IVcc; Rig VIII
Illus 116

8 (**1037**) **Brooch** Sn
Annular frame with cabled internal and external edges. Rebate for the pin and a hole on the opposite side which may result from damage. Diameter 18.5mm.
A7840; L3934; X031m; C2547–3; M1.4e; Phase IVcc(Va); Rig VI
Illus 116

9 (**1046**) **Brooch** Cu alloy
Annular frame cast in a two-piece mould. The decoration on the upper face consists of a beaded border: on one side of the rebated pin bar are groups of pellets, on the other side what appears to be a zigzag line with a cross-hatched background. The underside is cross-hatched. The brooch appears to be unfinished as the flashes from casting have not been removed from the edges of the frame and especially from the rebate for the pin making it impossible to attach a pin. Diameter 27mm.
A5298; L4075; X031m; C2484–3; P6; Phase IVcc,Va; Rig V
Illus 116

10 (**1320**) **Brooch** Cu alloy
Annular frame. There appears to have been a rebate for the pin but this is broken or worn through. Diameter 27mm.
A04–0436; L0629; C7204–7; M8a; Phase Va,Vaa; Rig VII
Illus 116

11 (**1327**) **Brooch or buckle frame** Sn
Annular frame, cast in a two-piece mould. Analysis shows that the metal is mainly tin with a small proportion of silver and copper. Diameter 23mm.
A04–0451; L3851; C7205–7; M8a; Phase Va,Vaa; Rig VII
Illus 116

12 (**1256**) **Brooch** Pb/Sn
Annular frame with beaded edges. Poorly cast. The pin is attached to a rectangular loop projecting into the inside of the frame. Diameter 29mm.
A04–0345; L3874; C7169–7; M1.5b; Phase Vaa; Rigs VI and VII
Illus 116

13 (**1526**) **?Brooch** Cu alloy
Incomplete annular frame with possible rebate for a pin, now broken. Diameter 29mm.
A3567; L3887; D029; C2750–2; M4a; Phase Vaa–Vc; Rigs V and VI
Not illustrated

14 (**1371**) **Brooch** ?Ag
Annular frame of dark grey-black metal, possibly silver. There are two bosses on the frame with indentations for enamel or stones, and another on the pin. Diameter 25mm.
A04–0213; L3236; C7113–7; B53 (Phase 1), Central Area–Occupation (2a); Phase Vb; Rig VII
Illus 116

15 (**1352**) **Brooch** Pb/Sn
Annular frame cast in a two-piece mould with twisted decoration on the upper surface. Pin with collar. Diameter 19mm.
A04–0206; L3929; C7143–7; B53 (Phase 1), Central Area, Pit 7142; Phase Vb; Rig VII
Illus 116

16 (**1463**) **Brooch** Pb/Sn
Annular frame with raised profile. The underside is decorated with alternating plain and cross-hatched triangles. The upper surface is decorated with what appear to be groups of three letter forms separated by crosses. Some of the letters are reversed or set sideways and the inscription is probably illiterate. The pin is missing but would have been attached through an oval perforation in the frame. Diameter 35mm. See also Devotional Cat No 16.
A04–0114; L3234; C7077–7; B53 (Phase 2), North Area–Occupation 14; Phase Vbb; Rig VII
Illus 156

17 (**1440**) **Brooch** Cu alloy
Crudely made hexagonal frame with flat section, decorated with rows of pellets. One side of the frame is notched where the pin would have been attached. Diameter 28mm.
A04–0175; L4099; X198m; DX146, DX188; C7093–7; B53 (Phase 2), North Area–Occupation (7b); Phase Vbb; Rig VII
Illus 117

18 (**1343**) **Brooch** Cu alloy
Annular frame with rebate for pin now broken. Analysis shows that the metal is mainly copper with some tin and iron, and small amounts of silver and zinc. Diameter (max) 29mm.
A04–0215; L3922; C7129–7; B53 (Phase 1), Central Area–T7152; Phase Vb; Rig VII
Illus 117

19 (**1423**) **Brooch** Pb/Sn
Plain ring, possibly from an annular brooch, cast in a two-piece mould. Diameter 21mm.
A04–0102; L3953; X173; C7071–7; B53 (Phase 2), South Area–Occupation (7a); Phase Vbb; Rig VII
Not illustrated

20 (**1677**) **Brooch** Pb/Sn
Annular frame cast in a two piece mould. The frame is decorated with four rosettes which appear to be integral with the frame rather than separately applied. There are spaces for two further rosettes which have not formed properly in the mould. Collar moulding on the pin. Diameter 48mm.
A3558; L5561; X021m; D027, D028; C2176–4; M3a; Phase Vb–Vc; Rigs V and VI
Illus 117

21 (**1578**) **Brooch** Pb/Sn
Annular frame with rebate for pin. Twisted decoration on one side of the rebate, plain on the other side. Diameter 31mm.
A04–0038; L4121; X169m; D021; C7027–7; M7; Phase Vc; Rig VII
Illus 117

22 (**1926**) **Brooch** Cu alloy
Annular frame with twisted decoration. Diameter 17mm.
A6465a; L2225; C1065–6; Lade, Fill; Phase C–F (North Sector)
Illus 117

23 (**1683**) **?Brooch** Pb/Sn
Decorative fragment probably from a brooch but now distorted. It is decorated with a cast twisted design. Length 19mm.
A10746; L0897; C2407–3; B34, MF2407; Phase Va; Rig VI
Illus 117

24 (**1779**) **Brooch** ?Cu alloy
Small annular brooch either made of gold or gilded. The upper face is decorated with diagonal lines, inlaid with ?niello, and raised pellets between them. The collar moulding on the pin is also pelleted. Diameter 12.5mm.
A04–0615; C7000–7–10; Unstratified; Rigs VI–VIII
Illus 117

25 (**1771**) **Brooch** Pb/Sn
Annular frame with twisted decoration. The pin-bar is broken and the pin missing. Diameter 19mm.
A04–0140; L4087; X213m; DX141; C7000–7–10; Unstratified; Rigs VI–VIII
Illus 117

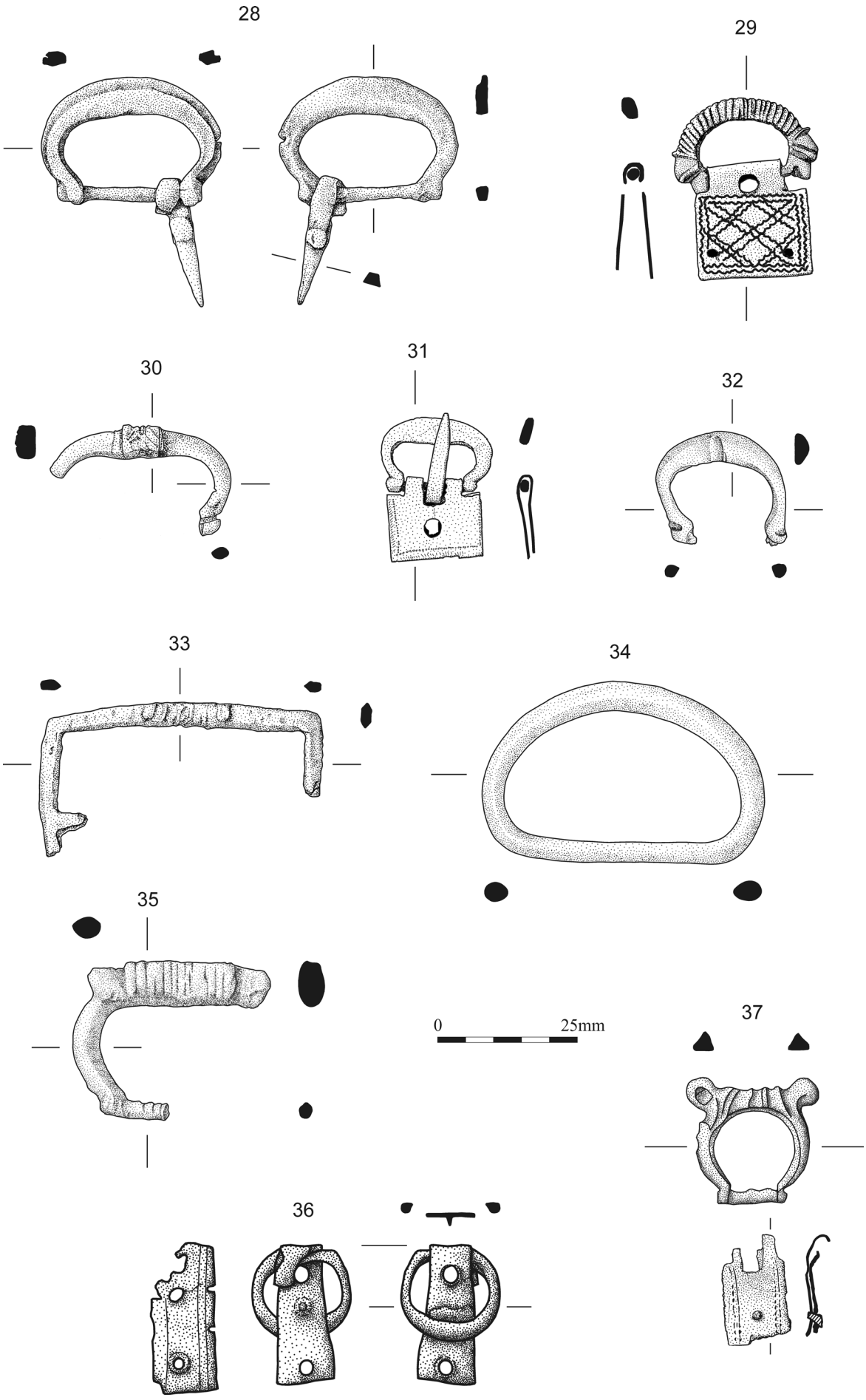
26 (**1695**) **Brooch** Cu alloy
Small annular frame and a very fine pin. No decoration. Diameter 15.5mm.
A1130; D012; C2006–3/4; Unstratified; Rigs V and VI
Illus 117

27 (**1718**) **Brooch** Cu alloy
Annular frame made from fine copper alloy wire. A loop of finer wire forms the collar of the pin. Diameter 30mm.
A04–0004; C7000–7–10; Unstratified; Rigs VI–VIII
Illus 117

Buckles (Illus 118 and 119)

Buckles were used as fastenings on belts, shoes, armour and horse harness. Those made of copper alloy or lead/tin alloy are generally smaller and more ornamental than iron examples and are more likely to have been used as belt or shoe buckles while iron buckles are likely to have been used on harness. Buckles could be attached to the strap by means of a plate, riveted onto the leather or textile. As the plates were usually made from quite thin sheet, folded over the pin bar of the buckle, the fold would have become a weak point and would often break. In the absence of a buckle plate, unless part of the strap remains stitched or riveted directly over the pin bar, it is impossible to say whether or not a plate was originally used. At the other end of the strap a metal strap end might be attached. This was often decorative but also served to reinforce the tip of the strap where it was pushed through the buckle and to add weight to it, helping the end of the strap to hang vertically as shown in contemporary illustrations and memorial brasses.

As the buckles from Perth are generally well finished, although some are broken, it seems reasonable to suppose that they formed part of the costume of the people who lived and worked on the site rather than having any more direct association with the metalworking that was being carried out. Some of them are quite decorative



Illus 118 *Cu alloy. Buckles Cat Nos 28–37.*

and, even if they are not indicators of high status, they would certainly be the sort of accessories worn by a comfortably-off artisan class.

The animal head mouldings on Cat No 29 have affinities with Anglo–Saxon metalwork although this type of buckle is considered to be post-Conquest. A more elaborate example was found at Lyveden, Northamptonshire (Cherry 1975, 106–7, pl 29, 77.71), and a simpler one in the Winchester excavations (Biddle 1990, 509, 516, Fig 129:1110). They have elongated buckle plates whereas that on the Perth example is more square in shape. Both were found in 11th- to 12th-century levels. The Perth buckle, coming from a context dated later 12th to mid-13th century, seems to confirm that this type of buckle was worn around the 12th century.

Cat No 35 is of a type found commonly in Britain and Europe. Fingerlin (1971, 65–70) suggests that these buckles, with a beaded bar on the front of the frame flanked by small knops, date mainly from the second half of the 13th century although examples from London hint at a greater longevity, from the late 12th to the late 14th century (Egan and Pritchard 1991, 76). The evidence from Winchester (Biddle 1990, 506–19, Fig 131:1161) and here at Perth supports a 14th-century date. Cat No 37 is a more extreme form of the same type where the knops are more emphasised. Fingerlin (1971, 76) considered that this form persisted into the third decade of the 14th century.

Cat Nos 38 and 39 are related types of buckle with a roller on the front of the frame to facilitate tightening and to prevent wear on the strap. Similar rollers are found on some iron buckles although at Perth they are only represented by the possible roller Cat No 15 (see this Fascicule, Franklin and Goodall). However, the roller on the frame of Cat No 38 is unusual in that it stands proud of the frame rather than being set in a rebate as in the case of Cat No 39. A buckle and plate almost identical to Cat No 12 was found in York (Ottaway and Rogers 2002, 2889, Fig 1466:14298) in a mid- to late 13th-century context, while a similar buckle with rollers on the frame came from a 14th-century context at Winchester (Biddle 1990, 517–9, Fig 131:1170) and a 13th- to 14th-century context in London (Egan and Pritchard 1991, 76, Fig 46:317). These are consistent with the dating of the Perth buckles and that suggested by Fingerlin (1971, 70–4).

28 (**232**) **Buckle** Cu alloy
D-shaped frame with a stepped profile at the front. Pin with moulding. Length 32mm.
A11208; X109m; C2611–3; M1.2, Pit 2648; Phase <IIg(IIh); Rig VI
Illus 118

29 (**353**) **Buckle and plate** Cu alloy
D-shaped frame with animal head mouldings at the ends of the pin bar and transverse ridges on front of the frame. The plate has a lattice of traced zigzag lines. Two rivet holes and a third larger hole to accommodate the missing pin. Length 33.5mm.
A5102; X020m; D045, DX017; C3549–1; M12; Phase IIg–IIIc (–IVa); Rig V
Illus 118

30 (**347**) **Buckle** Cu alloy
Fragment of frame with decorative moulding. Length 32mm.
A04–0516; L3841; C9403–9; M15, PW9402; Phase IIId; Rig VII
Illus 118

31 (**1012**) **Buckle and plate** Cu alloy
Oval frame and a square plate. There is a traced border decoration on the plate. Stated to have had remains of leather, but this is no longer visible. Length 26mm.
A04–0535; C6145–10; M9b(b); Phase IVc,IVcc; Rig VIII
Illus 118

32 (**1117**) **Buckle** Cu alloy
Incomplete frame with notch on the front for the pin to rest in. Length 23mm.
A3928; D032; C2403–3; P6 and B1(b), Demolition; Phase IVcc,Va; Rig VI
Illus 118

33 (**1128**) **Buckle** Cu alloy
Fragment of rectangular frame with central pin bar. Groove for pin to rest in with a ridge on either side of it. Length 52mm.
A6460; L0875; C2425–3; B1(a), South Room–Floor (3d); Phase IVcc,Va; Rig V
Illus 118

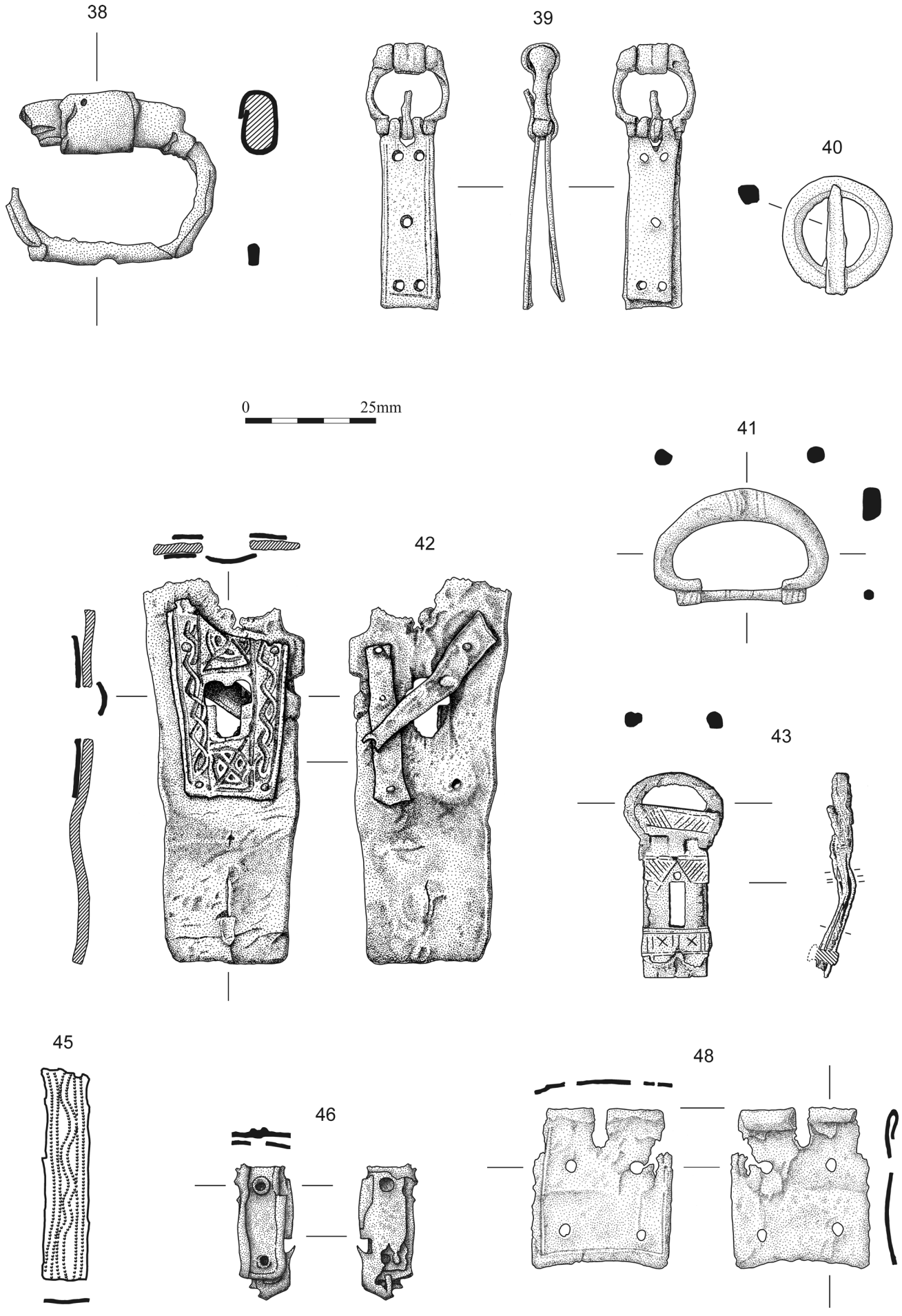
34 (**1068**) **Buckle** Cu alloy
Simple D-shaped frame. Length 51mm.
A04–0403; L3857; C7191–7; B34, 'Courtyard'; Phase Va; Rig VI
Illus 118

35 (**1304**) **Buckle** Cu alloy
Incomplete frame with grooved and knopped front. Length 35mm.
A04–0376; L3862; C7172–7; M8a, T7193; Phase Va,Vaa; Rig VII
Illus 118

36 (**1495**) **Buckle** Cu alloy
Approximately circular frame with plate. The plate has incised or traced lines along the long edges on one face. There are two rivet holes in the plate, and one larger hole for the missing pin to swivel in. The holes appear to have been punched from the back of the plate as there is a raised lip of metal around them on the decorated front face. Length 26mm.
A1819; X021m; C2717–2; M4a; Phase Vaa–Vc; Rigs V and VI
Illus 118

37 (**2063**) **Buckle and plate** Cu alloy
Frame with beaded bar at the front of the frame flanked by large knops. A fragment of the buckle plate survives. It has traced lines along the long edges. Length 38mm.
A4492; L4023; C2770–2; MC173; Phase Vdd; Rig V
Illus 118

38 (**1410**) **Buckle** Cu alloy
Incomplete frame, broken into three pieces. The front moulding has a piece of sheet metal wrapped round it, probably decoratively rather than as a roller to facilitate tightening the strap. Length 40mm.
A04–0072; L4194; X185m; DX133; C7064–7; P8.5; Phase Vb,Vbb; Rig VII
Illus 119



Illus 119 *Cu alloy. Buckles Cat Nos 38–41. Clasps Cat Nos 42, 43. Strap ends Cat Nos 45, 46. Buckle plate Cat No 48.*

39 (**130**) **Buckle and plate** Cu alloy
Oval frame with a roller made from sheet metal set in a rebate on the front. The roller appears to be decorated with traced zigzag lines. The plate has a decorative border of traced or punched opposed triangles and five rivet holes. Length 52mm.
A04–0043; C7032–7; M7; Phase Vc; Rig VII
Illus 119

40 (**1893**) **Buckle** Cu alloy
Heavy annular frame with lozenge-shaped section. Broad pin. Diameter 21mm.
A0070; D001ab; C0009–5&A; CG028; Phase 15–18; Rig VII (North Sector)
Illus 119 (drawing based on a sketch by A Goodall)

41 (**1696**) **Buckle** Cu alloy
D-shaped frame with lines of fine traced decoration on the stops at the ends of the pin bar and on either side of the pin rest. Length 31mm.
A1260a; L3943; X047; D014, DX038; C2006–3/4; Unstratified; Rigs V and VI
Illus 119

Clasps

Clasps were an alternative strap fastening to buckles and, like buckles, could be attached to the end of the strap by a plate. Both the Perth examples are elaborately decorated.

Cat No 42 seems to be a clasp of a type found in London in contexts of the late 13th to mid-14th century (Egan and Pritchard 1991, 120–1). The opening in the plate is matched by a hole in the leather strap and this would have accommodated a swivelling peg on a fitting at the other end of the strap. The guilloche design on this plate is unusual on medieval metal objects. The form of Cat No 43 shows how it can be difficult to distinguish between buckles and clasps. While it is very similar to a buckle and strap end from Liège in Belgium (Fingerlin 1971, 100–1, Fig 144, No 318) dated to the second half of the 14th century, it also resembles the clasps illustrated by Egan and Pritchard (1991, 116–20). The Belgian example lacks either a pin or the folding flap seen on the frame of the example from Perth but those from London have the more usual arrangement of a flap on the opposite side of the frame. It is not clear how the Perth object would have been used although it is clearly some form of strap fastener.

42 (**234**) **Clasp** Cu alloy
Plate attached to a leather strap by means of four rivets secured by copper alloy strips on the underside of the strap. The plate is decorated with traced ornament of circles with crosses between lines of guilloche. See also Fascicule 3, The leather, Cat No 828. Length: strap 77mm; metal plate 39mm.
A12279; X017m; D151, D152; C5166–3; M1.2, Pit 2648, MW5166; Phase <IIg(IIh); Rig VI
Illus 119

43 Clasp Cu alloy
Oval frame with a broad, hinged flap and an ornamental plate. The plate and flap are decorated with incised geometric lines and crosses and there is a large slot in the plate. Length 39mm.
A0652; C2001–3/4; Unstratified; Rigs V and VI
Illus 119

Strap-ends and buckle plates

Strap-ends and buckle plates made from folded strips of metal may be difficult to distinguish unless the folded end is split to provide a slot for the buckle pin to turn in. However, similar plates may be attached to clasps which do not have pins and in this case there would not be a slot in the end. Buckle plate Cat No 44 has a slot at the hinged end for the buckle pin. It has decoration made by rocking a chisel-like tool across the surface of the metal to produce a characteristic line of small opposed triangles, a type of decoration common in the medieval period. Similar plates occur on buckles from Winchester from contexts variously dated to the 13th to the 15th centuries (Biddle 1990, 514–21, Figs 130:1126, 131:1180 and 132:1198). The simple form of Cat No 48, with its concave cut end and incised border decoration, is paralleled by a more ornamented buckle and plate from Castle Acre Castle, Norfolk, from a context dated to the later 12th century (Goodall, A R 1982, 236, Fig 44:24).

One of the stone moulds Stone Cat No 40 (see Fascicule 4, The stone objects), although incomplete, appears to have been used for casting a strap end or buckle plate with a raised border and leaf-scroll decoration. None of the plates or mounts excavated on the site matches this form, but it indicates that these fittings were being made locally.

44 (**461**) **Buckle plate** Cu alloy
Cut from sheet and folded to make the hinge. Decorated with a border of traced lines and similar lines continuing over the hinge. One of two rivets survives. Length 24mm.
A8362; L3935; D094, D095; C2570–3; B3 (South), T2570; Phase IVa,IVaa; Rig V
Not illustrated

45 (**987**) **Strap end**(**?**) Cu alloy
Length of decorative strip with traced lines along each of the long edges and a wavy line running down the middle. There are no rivet holes or any other form of fixing. Length 41mm.
A04–0326; L3875; C9143–9; M9a; Phase IVc,IVcc; Rig VII
Illus 119

46 (**1257**) **Strap end** Cu alloy
Cut from a folded strip. Two rivet holes. It has what appears to be a raised border but this is probably due to corrosion products. Length 24mm.
A04–0352; L3868; C7169–7; M1.5b; Phase Vaa; Rigs VI and VII
Illus 119

47 Buckle or hinge plate Cu alloy
Cut from strip and folded to make the hinge. It has two rivet holes and the upper surface is decorated with groups of incised transverse lines. Length 48mm.
A10416; L1057; X015; D129, DX015; C4473–3; Unstratified; Rigs V and VI
Not illustrated

48 (**1781**) **Buckle plate** Cu alloy
Cut from sheet and folded to make the hinge. The end is cut in a concave curve and there is an incised border. It has four rivet holes. Length 31mm.
A04–0705; X176; C7000–7–10; Unstratified; Rigs VI–VIII
Illus 119

Ferrules, lace ends and chapes (Illus 120)

In the late medieval and post-medieval periods the fashion for garments fastened and held together by lacing means that large quantities of small lace ends are normally found in excavations. It is possible that some of the tubular objects from Perth, although much earlier and longer, may have had a similar function and for that reason they are included with other dress accessories. It is not possible to say what their function would have been with any certainty. While they may have bound the ends of narrow straps of leather or fabric, they may also have been bindings for other types of object. Only Cat Nos 50 and 51 have fragments of leather associated with them and it is not certain that these originally formed part of the same object. Some of the tubes may perhaps have held bundles of hair to make paint brushes. Several came from areas where metalworking was being carried on and may therefore be connected in some way with metal processing, perhaps as bindings for the handles of tools or as brushes for cleaning up the finished products, but this is only speculation.

Large cylindrical objects, tentatively identified as lace ends, have been found in contexts earlier than the late medieval period at York (Ottaway and Rogers 2002, 2920–1, Fig 1491:12914 and 12915) and London (Egan and Pritchard 1991, 284–90, Fig 188:1439–1449). Like the Perth examples, many of them have deliberately closed off narrow ends. None of those from London contained leather or fibres, unlike the small lace ends from the later period.

49 (**881**) **Tube** Cu alloy
Possibly a strap or lace end, bent through 90°. Tapered profile. The narrower end has been cut to form a flap which is folded over to close the end of the tube. Length 59mm.
A6355; L4019; X071m; DX179, DX060; C2462A–3; M1.4c; Phase IIIa–IVcc; Rigs V and VI
Not illustrated

50 (**960**) **Lace end** Cu alloy
Straight-sided, made from rolled sheet with butted edges. It appears to have been found in association with a fragment of leather strap which is too thick to have fitted inside it (Fascicule 3, The leather, Cat No 3403). Length 53mm.
A04–0079; L4197; C9001–9; M9a; Phase IVc,IVcc; Rig VII
Not illustrated

51 (**1104**) **Strap end or chape** Cu alloy
More or less straight-sided with the long edges butted. A leather strip adhering to the side of the cylinder could be a fragment of the original leather strap. Length 96mm.
A04–0088; L3968; X175m; C9010–9; P8.4; Phase Va; Rig VII
Not illustrated

52 (**1088**) **Tube** Cu alloy
Tapered profile. The narrower end has been cut and folded to form a closing flap. Length 78mm.
A04–0402; L3858; C7185–7; P8.4; Phase Va; Rig VII
Not illustrated

53 (**1284**) **Tube** Cu alloy
Tapered profile. The long edges are butted. Length 67mm.
A04–0278; L4048; C7159–7; M8a; Phase Va,Vaa; Rig VII
Not illustrated

54 (**1154**) **Tube** Cu alloy
Tapered profile, bent through 90°. Narrow end was originally cut and folded to form a closing flap but is now damaged. Length 105mm.
A6513; L0877; C2189–4; M1.5a; Phase Va,Vaa; Rigs V and VI
Not illustrated

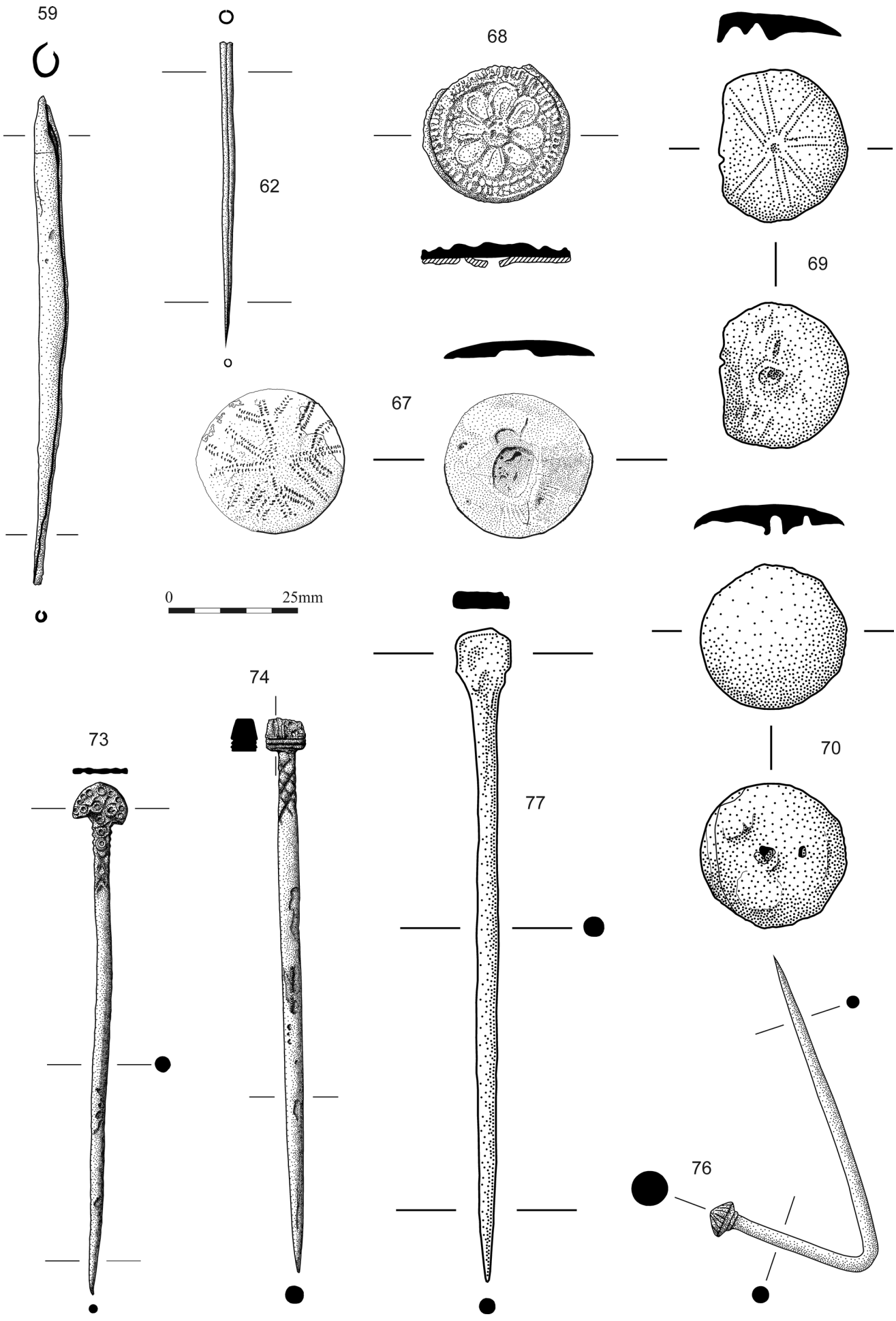
55 (**1176**) **Tube** Cu alloy
Straight-sided with butted edges. Damaged and corroded. Length 65mm.
A13001; L0249; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Not illustrated

56 (**1188**) **Tube** Cu alloy
Tapered profile with butted edges. Narrow end has been cut and folded to form a closing flap. Length 112mm.
A3933; L4043; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Not illustrated

57 (**1553**) **Tube** Cu alloy
Tapered profile. The narrower end has been flattened to close it. Length 85mm.
A3919; L4034; C2179–4; M3a; Phase Vb–Vc; Rigs V and VI
Not illustrated

58 (**1525**) **Tube** Cu alloy
Slightly tapering profile with butted edges. Damaged. Length 43mm.
A10756; L1009; X075m; D189, DX064; C2737–2; M4a; Phase Vaa–Vc(VI); Rigs V and VI
Not illustrated

59 (**1425**) **Tube** Cu alloy
Long, fine, tapered profile. Length 93mm.
A04–0108; L4131; X190m; D078; C7071–7; B53 (Phase 2) South Area–Occupation (7a); Phase Vbb; Rig VII
Illus 120



Illus 120 *Cu alloy. Tube Cat No 59. Lace end Cat No 62. Studs Cat Nos 67–70. Decorated pins Cat Nos 73, 74, 76. Writing stylus Cat No 77.*

60 (**1454**) **Tube** Cu alloy
Straight-sided, long edges originally butted. Length 56mm.
A04–0158; L4104; C7090–7; B53 (Phase 2), North Area–Occupation (8); Phase Vbb; Rig VII
Not illustrated

61 (**1378**) **Tube** Cu alloy
Straight-sided with butted edges, damaged at one end. Length 44mm.
A04–0218; L3919; C7141–7; B53 (Phase 1), Central Area–Occupation (3c); Phase Vb; Rig VII
Not illustrated

62 (**1426**) **Lace end** Cu alloy
Fine, well-made, tapered profile with butted edges. Length 57mm.
A04–0137; L4150; C7071–7; B53 (Phase 2), South Area–Occupation (7a); Phase Vbb; Rig VII
Illus 120

63 1857) **Tube** Cu alloy
Fragment. Length 26mm.
A10732; L3879; X075m; DX064; C0206–5; Garden 2; Phase 17 (North Sector)
Not illustrated

64 (**1808**) **Tube** Cu alloy
Fragments.
A0237; L0223; D170; C0013–5&A; Phase 14 (North Sector)
Not illustrated

65 (**1697**) **Tube** Cu alloy
Tapered profile. The narrow end has been flattened and folded to close it. Length 67mm.
A1260b; L3943; C2006–3/4; Unstratified; Rigs V and VI
Not illustrated

66 (**1725**) **Tube** Cu alloy
Large strap or lace end of copper alloy. Length 72mm.
A04–0013; L3980; X163; D014; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

Ornamental studs

Since none of these objects retains a loop at the back, it is more likely that they were ornamental studs rather than buttons. All have small depressions in the centre of the back where a shank or wire loop might have been attached. Three of the objects have large, shallow convex heads, of 28–29mm diameter, which is again more consistent with their being stud heads since known medieval buttons are generally smaller.

67 (**424**) **Stud head** Cu alloy
Convex top decorated with traced radial lines and an area of possible gilding. The loop is missing but there is a depression where it was attached. Diameter 28mm.
A10757; C2823–2; B26 Floor/Occupation (8b); Phase IIg–IVaa; Rig V
Illus 120

68 (**394**) **Stud head** Cu alloy + Pb(?)
Composite button or decorative boss with gold foil cap over lead(?). The cap is decorated with a repoussé floral motif. There is a depression on the reverse from a wire loop or shank. Diameter 28mm.
A8070; X084m; D089, D090, DX073; C2237–4; MC143; Phase IVaa; Rig V
Illus 120

69 (**764**) **Stud head** Cu alloy(?)
Convex top decorated with pairs of radial traced lines. The loop is missing but there is a rectangular depression where it was attached. Diameter 29mm.
A9286a; X084m; D111, D112, DX073; C2530–3; MC155, Pit 2691; Phase IVb,IVc; Rig V
Illus 120

70 (**765**) **Stud head** Cu alloy(?)
Convex top with little or no decoration surviving. The loop is missing but there is a rectangular depression where it was attached as well as smaller impressions to either side of it. Diameter 29mm.
A9286b; X084m; D111, D112, DX073; C2530–3; MC155, Pit 2691; Phase IVb,IVc; Rig V
Illus 120

Dress and hair pins

Cat Nos 71–76 are distinguished from the pins found on later medieval and post-medieval sites by their length and diversity of head form. In this they have more in common with some pre-Conquest pins. In the late 16th and 17th centuries long pins and bodkins were used as hair ornaments (Margeson 1993, 8–9) but the ornamental pins from Perth are mostly from 12th-century contexts. A pin very like Cat No 75 was excavated from Meal Vennel (Phase 2) in Perth in a context containing 14th-century finds (Cox 1996, 767–8, Illus19:102). These large decorative pins were probably used to fasten garments.

71 (**2064**) **Pin** Cu alloy
Long with globular head threaded onto the shaft. Possible gilding. Length 114mm.
A12567; C3577–2; B5, North Room–Floor/Occupation (2); Phase IIa–IIff; Rig V
Not illustrated

72 (**158**) **Pin** Cu alloy
Long with globular head threaded onto the shaft. Length 112mm.
A6424; C3577–2; B5, North Room–Floor/Occupation (2); Phase IIa–IIff; Rig V
Not illustrated

73 (**144**) **Decorated pin** Cu alloy
Semicircular or fan-shaped head decorated with punched dots and rings-and-dots. A groove runs round the edge of the head. The shaft is round-sectioned and the upper part has cross-hatched incisions. Length 99mm.
A11400; X001m, X006m, X007m; D144, DX001; C3889–1; MC071; Phase IIb–IIf; Rig VI
Illus 120

74 (**146**) **Decorated pin** Cu alloy
Head shaped like a truncated prism with deeply incised ornamental grooves. The shaft is hipped and has incised cross-hatching on the upper part. Length 106mm.
A12294; X001m, X006m, X007m; D144, DX001; C3894–1; MC071; Phase IIb–IIff; Rig VI
Illus 120

75 (**164**) **Decorated pin** Cu alloy
Pyramidal head with incised lines on the faces and a square collar below. The shaft is round-sectioned and has incised transverse lines and cross-hatching on its upper section. Length 120mm.
A10041; L1039; C2658–3; B21, North Room–Floor (1b); Phase IIff; Rig VI
Not illustrated

76 (**848**) **Decorated pin** Cu alloy
Shallow conical head with radial grooves incised into it. The shaft is sharply bent. Length 98mm.
A5441; L0870; C2462A–3; M1.4c; Phase IIIa–IVcc; Rigs V and VI
Illus 120

Writing implement
M A Hall and A Willemsen

This item has been identified by Annemarieke Willemsen (National Museum of Antiquities, Leiden, Netherlands) as a writing peg or stylus. It is unequivocal evidence of literacy (and the use of wax tablets). It is not on its own sufficient to indicate school activity on the site, though it may have belonged to someone who attended school off-site. It is also credible that it may have been used in household or craft record keeping and that it may have been manufactured on site. It is the first recorded example from a Scottish medieval urban excavation.

77 (**1187**) **Writing stylus** Cu alloy
Spatulate or fiddle-key shaped head; no trace of gilding. It has the typical features of a pointed end and a flattened end. Just below the flattened end is a horizontal rib or cuff, a feature of styli used for both gripping and preventing the wax scraped with the broad end from running down the stylus on to the writing hand (Willemsen 208, 60). The proximity of the cuff to the broad end on this example indicates it was an anti-run measure rather than gripping aid. Length 127mm.
cf stylus from Winchester (Biddle and Brown 1990, 729–32, cat nos 2279–2283) and Continental examples cited in Willemsen 2008, 60–2.
A3927; X023m, X039m; DX019; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Illus 120

Pendants (Illus 121)

Pendants of various forms, often bearing heraldic designs, were attached to horse harness using a hinged mount, but could also be worn as personal adornment. Cat No 78 is in the form of an eagle with splayed wings; the wing and breast feathers are depicted by traced or engraved lines. The form is not that of a heraldic eagle and may rather have religious or ecclesiastical significance. The eagle is traditionally the symbol of St John the Evangelist or the Apostle, patron of a hospital at Scone (*Scon Liber*, 126). The plain, circular pendant Cat No 79 is paralleled in London by two similar pendants from contexts of the 13th and 13th–14th centuries respectively (Griffiths 1995, 65, Fig 47:57 and 60).

78 (**1071**) **Eagle pendant** Cu, Au
Eagle pendant or mount of copper with traces of gilding on the front. Analysis also shows traces of silver, lead and iron. The bird's feathers are represented by engraved lines. The eyes are formed by a perforation which probably also originally held a suspension ring. The pendant is well made. See also this Fascicule, Devotional Cat No 9. Illustrated in Yeoman 1998, 119, illus 91e. Length 46mm.
A04–0124; X160m; C7059–10; M9b(b); Phase IVc,IVcc; Rig VIII
Illus 156

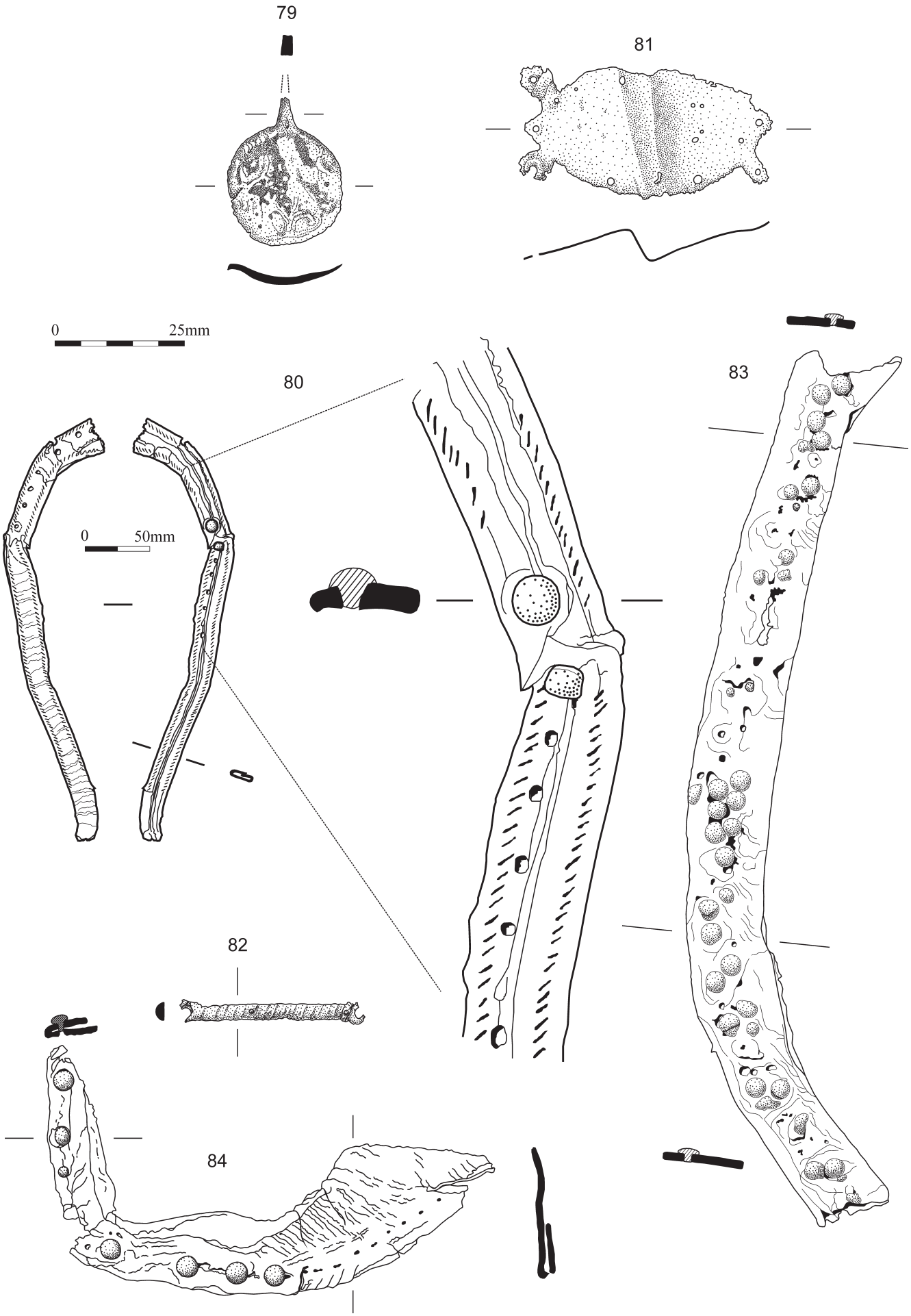
79 (**945**) **Plain pendant** Cu alloy, Au(?)
Plain, circular with a broken suspension loop. No decoration although there are possible traces of gilding. Length 28mm.
A04–0474; L3846; C7231–7; M9a; Phase IVc,IVcc; Rig VII
Illus 121

Rivets and mounts

A number of small copper alloy studs or rivets were found still attached to leather, Cat Nos 80, 83 and 84. Their use seems to have been largely decorative as the leather had also been stitched. The rivet heads will have made a pattern against the dark leather in the same way that leather belts and garments are often decoratively studded today. Some of the other mounts may also have been used to decorate and reinforce leather straps.

80 (**35**) **Stud** Cu alloy
Dome-headed stud mounted on leather strap. The strap is folded so that the long edges butt together in the middle of the strap. The folded edges were originally stitched. At one end of the strap there is a series of perforations along the centre. The stud is in line with these holes. (See also Fascicule 3, The leather, Cat No 153.) Diameter stud head 10mm.
A12312b; L1689; C5158–3; MC037a, Pit 5157; Phase Ia–Ie; Rig VI
Illus 121

81 (**18**) **Mount** Cu alloy
Made from thin sheet or foil, lens-shaped with a pair of projecting lugs at each end. The pointed ends of the mount and the lugs are perforated and there are other perforations around the margin of the mount. Length 51mm.
A8526; L4078; D099; C3754–1/2; B8, Occupation (1); Phase (Icc)Id; Rig VI
Illus 121



Illus 121 *Cu alloy. Pendant Cat No 79. Mount Cat No 81. Bar Mount Cat No 82. Studs and decorative rivets Cat Nos 80, 83, 84.*

82 (**63**) **Bar mount** Cu alloy
D-shaped in section with cast cable decoration on the upper face. Perforated terminals at each end. Length 36mm.
A04–0689; L3819; C6516–1; B6 (Phases 1 and 2) and MC051, T6515; Phase Ie–IIa; Rig VI
Illus 121

83 (**361**) **Decorative rivets** Cu alloy
Dome-headed rivets mounted on leather strap. The leather is folded lengthwise and secured by the rivets, which are arranged in two rows and pass through both thicknesses of leather. Some of the rivets are clenched on the underside of the strap. (See also Fascicule 3, The leather, Cat No 1214.) Diameter rivet heads 4.5mm. Length strap 170mm.
A9104; X237, X238; C2583–3; M6b; Phase IIg–IIId; Rig V
Illus 121

84 (**459**) **Rivets** Cu alloy
Six dome-headed rivets mounted along the folded edge of a piece of leather. Other rivets are now missing. (See also Fascicule 3, The leather, Cat No 1692.) Diameter rivet heads c4mm. Length leather 90mm.
A5124; C2510–3; B3 (South), Pit 2529; Phase IVa,IVaa; Rig V
Illus 121

85 (**526**) **Rivet** Cu alloy
Round convex head and clenched shank. Diameter head 8mm.
A04–0646b; L1139; C7342–7; MC126, Pit 7402; Phase IVaa,IVb; Rig VII
Not illustrated

86 (**713**) **Stud head**(**?**) Cu alloy
Convex disc with solder-like substance lining it. Analysis shows traces of tin, lead and silver as well as copper. Possibly a stud head or from a composite button or pin head. Diameter 10mm.
A04–0283; L3904; X213m; D088, DX161; C9132–9; B18 (Phase 2b), North Room, Hall and Hall South–Occupation (10); Phase IVb; Rig VII
Not illustrated

87 (**609**) **Stud head**(**?**) Cu alloy
Convex disc with solder-like substance on the inside. The filling material bears a slight impression, possibly from a shank. Diameter 9mm.
A04–0552; L3836; C7292–7; B18 (Phase 2b), Hall–H7293; Phase IVb; Rig VII
Not illustrated

Chape (Illus 122)

Cat No 88 is a simple, undecorated form of chape which could have been attached to the end of a leather belt or to a scabbard for a knife. They are common finds and not easily datable. One was found, for example, at Rattray (Goodall, A R 1993, 192, Fig 41, 203) in a post-medieval context.

88 (**1898**) **Chape** Cu alloy
Made from sheet, the long edges originally overlapping and joined using a solder-like material, a large amount of which survives. Two rivet holes at the upper edge for securing the chape to leather. Traces of gold colouration near the upper edge but no further evidence of gilding. There is no decoration. Length 57mm.
A1334; L3882; X044m; D015, DX035; C0205–5; CG29; Phase 18 (North Sector)
Illus 122

Toilet implements

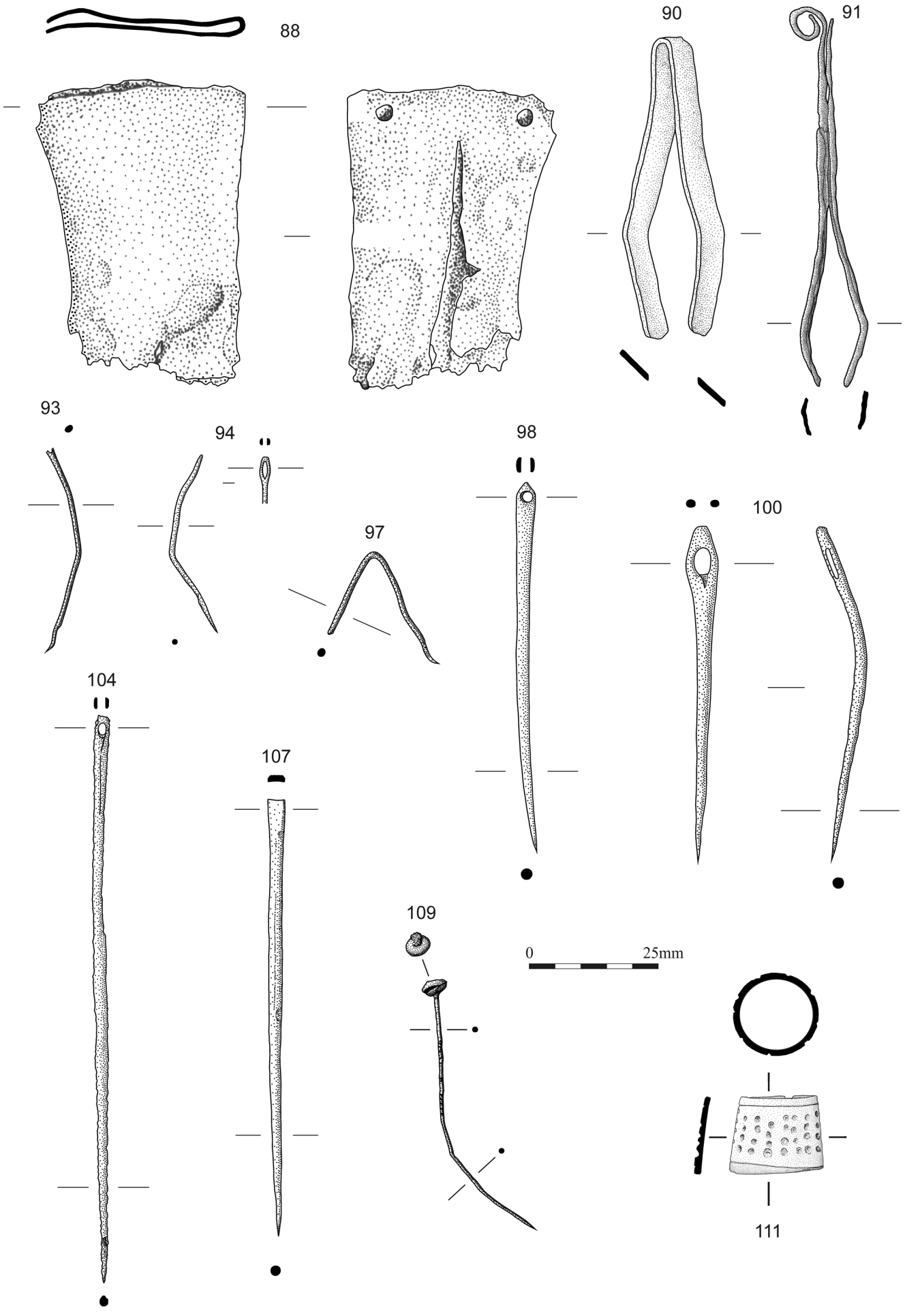
Toilet implements from the excavations comprise three tweezers. The form of Cat Nos 89 and 90 is similar to examples from Winchester (Biddle 1990, 690–2, Fig 190), most of which, like the Perth examples, come from contexts dated to the 13th and 14th centuries. The tweezer blades have an angled profile. The majority of those from Winchester have a sliding collar round the upper part of the tweezer arms which is absent from the Perth examples. At Winchester the tweezers were also decorated with the characteristic medieval rocked-tracer zig-zag lines while there appears to have been no decoration on the Perth ones. Similar tweezers were found in London, again in a 13th- to 14th-century context, and it was suggested that the looped end would have been used as an earscoop (Egan and Pritchard 1991, 381, Fig 253:1775). Earscoops are more usually shaped like small spoon bowls. Cat No 91 has a similar profile to the other tweezers but a different method of manufacture. The upper end is not looped, but split and each part coiled outwards to make an ornamental terminal.

Tweezers

89 (**610**) **Tweezers** Cu alloy
Made from strip folded to make a loop. Length 56mm.
A04–0572; L3831; C7308–7; B18 (Phase 2a and 2b), WW7308; Phase IVb; Rig VII
Not illustrated

90 (**1315**) **Tweezers** Cu alloy
Made from strip folded to make a loop. Length 57mm.
A04–0418a; L3853; C7197–7; M8a, Pit 7197; Phase Va,Vaa; Rig VII
Illus 122

91 (**1056**) **Tweezers** Cu alloy
Made from sheet, folded longitudinally; at one end the metal has been cut to form the arms of the tweezers and at the other end it has been cut to make two coils, one of which is damaged. Length 74mm.
A6514; L4047; D074; C2759–2; B34, MF2759; Phase Va; Rig VI
Illus 122



Illus 122 *Cu alloy. Chape Cat No 88. Tweezers Cat Nos 90, 91. Needles Cat Nos 93, 94, 97, 98, 100, 104, 107. Pin Cat No 109. Thimble Cat No 111.*

Needleworking equipment

Needleworking, used in its broadest sense to include the stitching of leather, is represented by more than 37 needles but only two pins and one thimble. This is in contrast to most later medieval and post-medieval sites where pins are usually found in large quantities and needles are less common. Similar relative numbers of needles and pins were found at Rattray (Goodall, A R 1993, 192). The form of the pins found here suggests that they are in fact post-medieval despite their early contexts. A number of composite-headed pins similar to Cat No 109 were found at Whitehall Palace (Goodall, A R unpublished).

The exceptionally large number of needles from the High Street excavations is in part accounted for by the single mass of 22 or more (Cat No 92) found stuck together by corrosion products and aligned as if they had originally been held in a box or case. Four of them were almost complete; they were approximately 40mm long and fine with large rounded eyes. The size of the needles suggests that they were used for general sewing using a linen thread. They were found in a context dated to the 12th century and are the earliest of the needles on this site (see Fascicule 3, Textile tools). Whether this large quantity of needles may be taken to imply needleworking on something more than a domestic scale or even needle-manufacture requires further corroborative evidence. However, it may be noteworthy that two uncertain needles, one of them possibly an unfinished needle, Cat Nos 106 and 107, came from the metalworking area of Building 53, while Cat Nos 104 and 105 came from the same context as a stone mould (see Fascicule 4, The stone objects, Stone Cat No 43) tentatively identified as having been used for the manufacture of pins or rivets.

Five needles (Cat Nos 95, 98, 100, 104 and 105) are longer and have flattened heads, sometimes cut to a point at the top, with round or oval eyes punched through them. Cat No 101 may be the broken tip from a needle used in leatherworking. These had triangular-sectioned points which served as a combined awl and needle. The angular-sectioned point could cut through the leather without damaging it.

Needles

92 (**88–109**) **Needles** Cu alloy
Large mass of at least 22. Four are almost complete although the eyes are broken. Length c40mm.
A1630a–v; L4031; X033m; DX026; C3050–1; M14a, Pit 3040; Phase Id–IIc; Rig V
Not illustrated

93 (**145**) **Needle** Cu alloy
Slender with incomplete eye. Length 39mm.
A12278; L4009; D150; C3894–1; MC071; Phase IIb–IIff; Rig VI
Illus 122

94 (**147**) **Needle** Cu alloy
Slender with elongated eye. Length 36mm.
A12326; L3947; D156; C3902–1; MC071; Phase IIb–IIff; Rig VI
Illus 122

95 (**133**) **Needle** Cu alloy
Pointed head with oval eye. Length 67mm.
A9925; D120; C2365–4; M1.1c; Phase IId; Rig VI
Not illustrated

96 (**303**) **Needle** Cu alloy
Slender with incomplete eye. Length 34.5mm.
A9096; L4014; C2265–4; MC116; Phase IIe–IIIc; Rig V
Not illustrated

97 (**400**) **Needle** Cu alloy
Bent; the eye almost completely missing. Length 41mm.
A8095; L0928; C2560–3; P2.2a and P2.3a; Phase IVa,IVaa; Rig V
Illus 122

98 (**941**) **Needle** Cu alloy
Made from a strip which appears to have been drawn through a die. The shaft is hollow for at least part of its length. The head is flattened and cut to a point and has a round eye. Length 71mm.
A04–0483; L3845; C7227–7; M9a; Phase IVc,IVcc; Rig VII
Illus 122

99 (**975**) **Needle** Cu alloy
Fragment of shaft. The head and eye are missing but there is a slight flattening indicating that this is a needle rather than a pin. Length 40mm.
A04–0179; L4182; C9050–9; M9a; Phase IVc,IVcc; Rig VII
Not illustrated

100 (**986**) **Needle** Cu alloy
Lozenge-shaped head and an oval eye set in a short gutter. Length 67mm.
A04–0191; L4092; X200m; DX148; C9089–9; M9a; Phase IVc,IVcc; Rig VII
Illus 122

101 (**1131**) **Needle** Cu alloy
Pointed, roughly triangular-sectioned fragment of copper alloy. Possibly part of a needle or just an offcut. Length 50mm.
A3936; L3884; C2764–2; B1(b), South Room–Floor (5b); Phase IVcc,Va; Rig V
Not illustrated

102 (**1126**) **Needle** Cu alloy
Possibly an incomplete needle. It appears to have been made from a strip that has been folded along its length and drawn through a die. Length 46mm.
A6330a; L2164; C2425–3; B1(a), South Room–Floor (3d); Phase IVcc,Va; Rig V
Not illustrated

103 (**1475**) **Needle or pin** Cu alloy
Incomplete needle or pin, head lost. Length 36+mm; width 3mm.
A04–0524; L3839; C6139–10; B50(a), T6149; Phase IVcc–Vc(–Vdd); Rig VIII
Not illustrated

104 (**1217**) **Needle** Cu alloy
Long, apparently made from a strip of copper alloy which has been drawn through a die. The head is flattened and blunt-ended and a round eye punched through it. Length 112mm.
A04–0125; C7079–7; M1.5b; Phase Vaa; Rigs VI and VII
Illus 122

105 (**1212**) **Needle** Cu alloy
Long, apparently made from a strip of copper alloy which has been drawn through a die. The head is flattened and lozenge-shaped and a round eye has been punched through it. Length 106mm.
A04–0113; L3960; D052; C7079–7; M1.5b; Phase Vaa; Rigs VI and VII
Not illustrated

106 (**1388**) **Needle** Cu alloy
Probably a needle, bent through 90 degrees. The head is flattened and elongated and appears to have been broken at the eye. Analysis shows that the metal is copper with silver as an impurity. Length 66mm.
A04–0246; L3909; D092; C7141–7; B53 (Phase 1), Central Area–Occupation (3c); Phase Vb; Rig VII
Not illustrated

107 (**1446**) **Needle** Cu alloy
Needle or pin with unfinished head. Length 84mm.
A04–0188; L4089; X198m; DX146, DX188; C7093–7; B53 (Phase 2), North Area–Occupation (7b); Phase Vbb; Rig VII
Illus 122

108 (**1602**) **Needle** Cu alloy
Probably an incomplete needle, broken through the eye. Length 59mm.
A10733; L3946; C2108–4; M3b; Phase Vd; Rig VI
Not illustrated

Pins

109 (**16**) **Pin** Cu alloy
Composite head made from two convex discs, probably with a solder-like material between. Length 59mm.
A11407; L4005; C4601–4; MC017; Phase Ia–Icc>; Rigs V and VI
Illus 122

110 (**40**) **Pin** Cu alloy
Globular head probably made from a coil of wire. There is white metal plating on the shaft and the tip is missing. Length 33mm.
A6570; X003m, X008m, X063m; DX004, DX054; C3078–1; B6 (Phase 1) South Room–Floor (1) and MC041; Phase Ie; Rig VI
Not illustrated

Thimble

111 (**1710**) **Thimble** Cu alloy
Open-topped tailor's thimble with irregularly spaced indentations. Maximum diameter 19mm.
A04–0082; L3962; X173; C9009–9; Unstratified; Rig VII
Illus 122

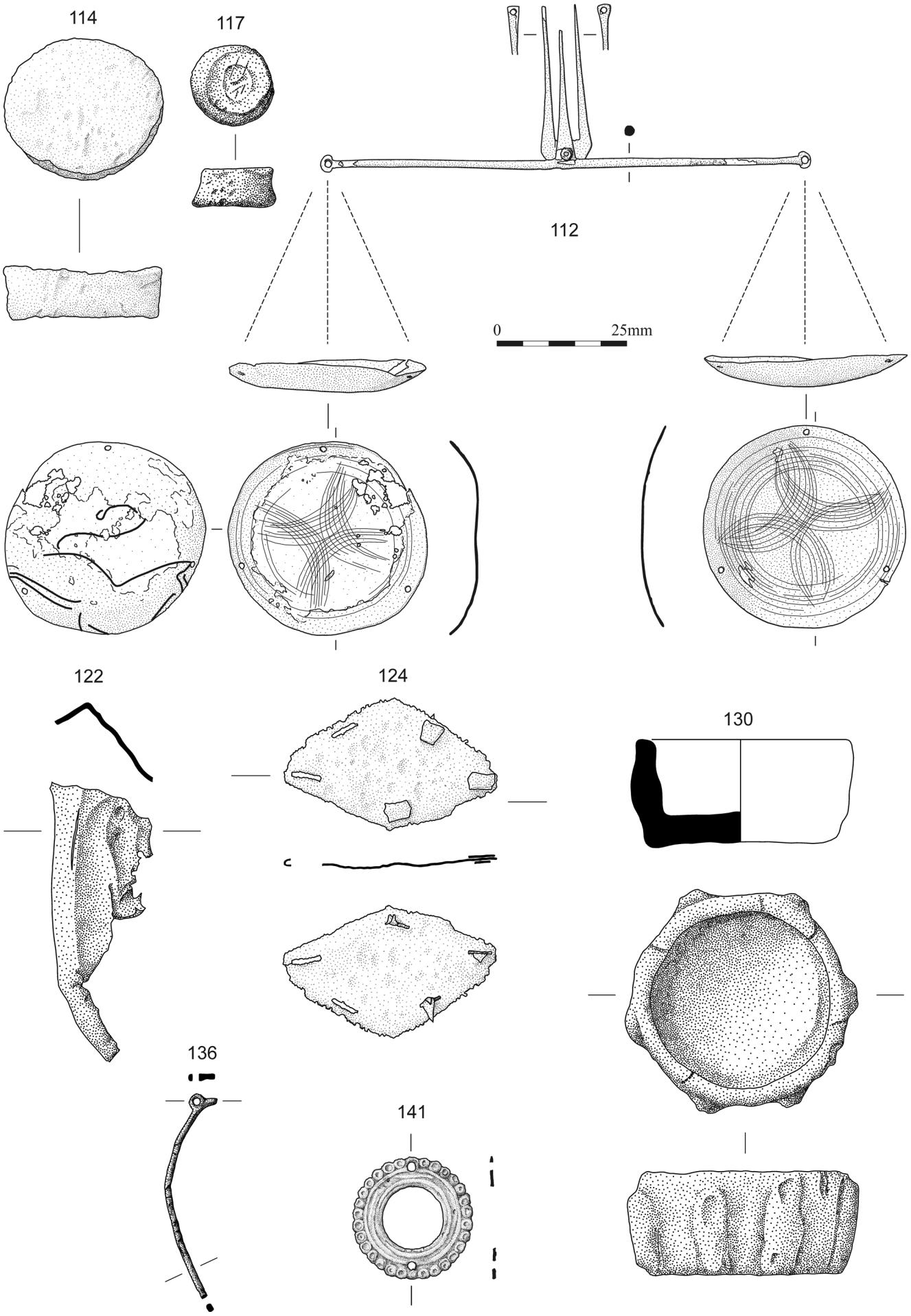
Balances and weights (Illus 123)

Balances like Cat No 112 were used for weighing coins and are often shown in illustrations of money changers, for example in a stained glass window at Le Mans Cathedral dated c1240, and in a drawing of officials in receipt of taxes from the mid 12th-century Canterbury Psalter (both illustrated in Evans 1966, 264, pl 57 and 58). They could also be used for weighing spices or in the making and dispensing of drugs and ointments. The simple, functional form of these balances appears to have changed little throughout the medieval and post-medieval periods, with similar balances being shown in portraits from the 16th century. Simple rigid-beam balances were found in London (Egan 1998, 324–5, Fig 242:1051 and 1054, Fig 243:1052) in contexts with dates in the 12th to early 14th centuries. In medieval England several systems of weights and measures were in use although attempts were made at standardisation at a local level and by statute. Similar attempts were made in Scotland, in particular a statute of 1426 enacted by James I was an attempt to codify and rationalise previous rulings of the reign of David I (Gemmill and Mayhew 1995, 88). A succession of enactments was made until, in 1661 a Parliamentary commission recommended setting up national standards (*CSD* 1985, 817).

112 (**1014**) **Balance** Cu alloy
Rigid beam with integral pointer and stirrup for suspension. Two concave, circular pans with finely incised compass-drawn decoration. One of the pans has what appears to be incised, possibly interlaced, decoration on the reverse, and may therefore have been cut from an earlier decorative plate. There are also remains of gilding. Each pan has three peripheral holes for the chains or cords which would have attached them to ends of the beam. No chains or cords survive. Beam length 190mm. Pans diameter 78mm.
A04–0539; C6145–10; M9b(b); Phase IVc,IVcc; Rig VIII
Illus 123

Weights

113 (**492**) **Weight**(**?**) Pb
Cylinder with butted edges, probably a weight or net-sinker. Length 24mm.
A04–0431; L3852; C9261–9; B18 (Phase 1b), Destruction; Phase IVa,IVaa; Rig VII
Not illustrated



Illus 123 *Cu alloy. Weights Cat Nos 114, 117. Balance Cat No 112. Bowl rim Cat No 122. Patch Cat No 124. Mortar Cat No 130. Decorative binding strip Cat No 136. Escutcheon Cat No 141.*

114 (**485**) **Weight or anvil**(**?**) Pb
Oval object, possibly a weight although hammer marks on its surface suggest it may have been used as a small anvil. Length 59mm.
A04–0471; C9319–9; B18 (Phase 1b), North Room and South Room–Occupation (6); Phase IVa,IVaa; Rig VII
Illus 123

115 (**562**) **Weight**(**?**) Pb
Irregular ball with a square impression in the surface. Possibly a weight or shot. Diameter 15mm.
A04–0570; L3832; C7307–7; B18 (Phase 1/2), MF7307; Phase IVaa,IVb; Rig VII
Not illustrated

116 (**1147**) **Weight**(**?**) Pb
Irregular disc with central perforation, possibly a weight or a washer. Diameter 34mm.
A5178; L0158; D046; C3539–1; M5a, Pit 3540; Phase IVb–Vc; Rigs V and VI
Not illustrated

117 (**989**) **Weight**(**?**) Pb
Almost round lead object, possibly a weight or a bung. Maximum diameter 33mm.
A04–0450; C9153–9; B18 (Phase 1/2); Phase IVaa,IVb; Rig VII
Illus 123

Domestic objects

All of the vessel fragments from stratified medieval contexts are made from copper alloy sheet, except for Cat No 123 which may be a rim fragment from a thin cast vessel. Perhaps unusually there are no rim fragments, feet or handles from cast copper alloy cauldrons. The cooking pot and mortar Cat Nos 129 and 130 are from unstratified deposits and may be of later date. All the other pieces are too fragmentary for the form of the vessels to be determined. Wealthier households could be expected to number a few copper alloy vessels amongst their belongings. These might include bowls and ewers for washing or cauldrons and pans for cooking. They would have been expensive items and Cat No 119 demonstrates that as they became worn or broken they were patched and repaired. When they were beyond repair, vessels could be sold as scrap for melting and reworking. As a result, the finds that we have from archaeological contexts are often fragmentary and may not be representative of the vessels actually in use at the time. A number of the vessel fragments from Perth came from contexts that also yielded metalworking evidence in the form of slag or, as in the case of Cat No 125, from the metalworking area of Building 53. It is therefore almost certain that these fragments were from vessels that were being repaired or were scrap metal that was being reworked rather than evidence of the vessels that were used on the site.

The knife, Cat No 133, is paralleled at various sites and the type is discussed by Ian Goodall (Goodall, I H 2011, 110, Fig 8.10: G75 and G76) who considered that knives with multiple handle plates belonged to the 11th to 13th centuries rather than the later medieval period. All the other examples illustrated have copper alloy plates only at the end of the handle next to the blade or shoulder and it seems likely that the missing part of the handle of Cat No 133 would have been of organic material and has not survived.

Heart-shaped drop handles like Cat No 134 were attached to metal vessels, such as chafing dishes, or to furniture, such as chests or coffers. Similar handles were excavated in Exeter (Goodall, A R 1984, 345, Fig 192:165) and Winchester (Biddle 1990, 956, Fig 293:3400) where they were found in contexts of late medieval and post-medieval date.

Decorative strips and bindings may have come from small pieces of furniture or caskets. Cat No 136 has similarities to the gilded bindings found on medieval castle and manorial sites in England, for example Castle Acre in Norfolk (Goodall, A R 1982, 235–8) although it is less well made.

Vessels

118 (**456**) **Bowl rim** Cu alloy
Fragment from the out-turned rim of a sheet metal bowl. Length 114mm.
A12532; C2588–3; B2 Floor (2a); Phase IVa,IVaa; Rig VI
Not illustrated

119 (**646**) **Vessel body fragments** Cu alloy
Six sheet fragments with curved profile, probably vessel body fragments. Two of the fragments are patched on the inside. The corrosion products present on the surface of the fragments include ferrous material and also gold coloration which the conservation notes suggest may be gilding, although this latter seems unlikely.
A04–0504; X180m, X181m, X182m; C9165–9; B18 (Phase 2a), North Room and Hall–Construction (1); Phase IVb; Rig VII
Not illustrated

120 (**1051**) **Vessel rim** Cu alloy
Rim fragment, possibly from a sheet metal plate. Length 112mm.
A1337; L3944; X004m; D016; C2407–3; B34, MF2407; Phase Va; Rig VI
Not illustrated

121 (**1308**) **Patch**(**?**) Cu alloy
Triangular sheet fragment with small slot cut into it, possibly a patch from a vessel. Length 38mm.
A04–0363; L3866; C7173–7; M8a, Pit 7183; Phase Va,Vaa; Rig VII
Not illustrated

122 (**1196**) **Bowl rim** Cu alloy
Fragment from the out-turned rim of a sheet metal bowl. Length 112mm; width 20mm.
A6523; L4027; X045m; DX036; C2404–3; M1.5a; Phase Va,Vaa (VI); Rigs V and VI
Illus 123

123 (**1177**) **Vessel rim** Cu alloy
Rim fragment of sheet metal. Length 64mm; width/height 6mm.
A13002; L3936; C2404–3; M1.5a; Phase Va,Vaa (VI); Rigs V and VI
Not illustrated

124 (**1167**) **Patch** Cu alloy
Lozenge-shaped with five slots round the edge, three of them containing rivets made from folded sheet. Length 80mm.
A1728; L3880; X046m; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Illus 123

125 (**1354**) **Rivet** Cu alloy
Lozenge-shaped sheet folded for use as a rivet. Length 17mm.
A04–0227; L4216; C7143-7; B53 (Phase 1), Central Area–Pit 7142; Phase Vb; Rig VII
Not illustrated

126 (**1366**) **Rivet** Cu alloy
Lozenge-shaped sheet folded for use as a rivet. Length 15mm.
A04–0237; L4217; C7143–7; B53 (Phase 1), Central Area–Pit 7142; Phase Vb; Rig VII
Not illustrated

127 (**1588**) **Rivet** Cu alloy
Made from sheet metal, of a type used to attach patches to sheet metal vessels. Length 16mm.
A5616; L3889; C2172–4; M3c; Phase Vd; Rig V
Not illustrated

128 (**1619**) **Riveted plates** Cu alloy
Pair of plates apparently held together by a rivet. Possibly used as a patch for a vessel or as a strap ornament, or as knife handle plates. (Not seen; written up from drawing and x-ray).
A1258; X004m, X008m; DX005, DX008/1, DX008/2; C2714–2; M4e, MF 2713; Phase Vd,Vdd; Rig V
Not illustrated

129 (**1668**) **Cooking pot** Cu alloy
Cooking pot, made from sheet metal. It has a rolled rim. The base has been made separately from the sides and attached using a type of dovetail seam which runs round the lower part of the bowl. Dovetail seams are seen on 19th century copper vessels. The inside of the bowl has white metal plating. Two rivets, below the rim, indicate the attachment point possibly for a loop handle: the rivets are flush with the inner face of the bowl and the plating continues over them. The corresponding attachment point on the other side of the bowl is missing and a sheet metal patch has been riveted over the rivet holes. A secondary strap handle was attached but is now broken: the plating on the inside of the bowl continues under these rivets. Maximum diameter 110–120mm.
A11017; L1060; C3870–1; Unstratified; Rigs VI and VII
Not illustrated

130 (**1776**) **Mortar** Cu alloy
Small mortar of cast metal. It has a flat bottom and there are six broad ribs on the sides. Its use may have been industrial rather than culinary. Diameter at top 41mm. Height 19mm.
A04–0299; L4070; C7000–7–10; Unstratified; Rigs VI–VIII
Illus 123

131 (**1730**) **Vessel rim**(**?**) Cu alloy
Strip, folded, possibly from a vessel rim. Length (overall) c120mm; width 23mm.
A04–0017; L3977; X163m; D016; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

132 (**1736**) **Patch** Cu alloy
Probably a patch for a vessel with slot for a rivet. Length 20mm.
A04–0023; L3970; D007; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

133 (**1728**) **Furniture or vessel handle** Cu alloy
Cast drop handle with attachment stud, originally shaped like an inverted heart, from a metal vessel or from furniture. Length (overall) 67mm; stud diameter 17mm.
A04–0016; L3978; X164; D004; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

Knife

134 (**11**) **Knife** Fe and Cu alloy
Iron knife with copper alloy shoulder. Heater-shaped handle plates separated by plates of organic material threaded onto the tang. Overall length of knife and tang 184mm. Each copper alloy plate length 14.5mm. See also Iron Cat No 59.
A8720; L4046; X030m; D101; C3742–1/2; M2.1b; Phase Ic; Rigs V and VI
Illus 128

Lighting

135 (**1686**) **Candle extinguisher** Cu alloy
Conical object with a loop at the top and ridge moulding around the mouth. More likely to be a candle extinguisher than a bell as there is no indication of a clapper inside. Probably late or post-medieval. Height 34mm, diameter 27mm.
A7140; L1451; X011; D076, D078, D107, DX011; C2001–3/4; Unstratified; Rigs V and VI
Not illustrated

Decorative fittings and bindings

136 (**440**) **Decorative binding strip** Cu alloy
Approximately D-shaped in section, with perforated lug for attachment. The strip appears to have been shaped initially by drawing through a die, as the metal has been partially rolled leaving a slight seam running along the flattened underside. Length 77mm; width 2mm.
A04–0401; L3859; C9207–9; B18 (Phases Ia and Ib), Pit 9208; Phase IVa,IVaa; Rig VII
Illus 123

137 (**449**) **Decorative binding strip** Cu alloy
Decorated with traced geometric lines. There are remains of a traced border round the edge of the strip. Another line runs down the centre with diagonal lines on both sides of this central line. Length 67mm.
A8353; L3902; D092; C2516–3; B2, Floor (2a); Phase IVa,IVb
Not illustrated

138 (**1141, 1142**) **D-sectioned binding strip** Cu alloy
Now in two pieces. At one end it is broken through a perforation, the other end cut to a point. Some gilding survives. Length 53mm; width 8mm.
A4496a,b; L4017; X075m; D176, DX064; C2763–2; B1(b), North Room–Occupation (3c); Phase IVcc,Va; Rig V
Not illustrated

139 (**1424**) **Fitting or hasp** Cu alloy
Almost rectangular plate. At one end it is slightly narrower and shaped so as to have two points. On the underside there is a similarly shaped flange attached at right angles to the plate. There are two rivets in the plate. Length 27.5mm.
A04–0104; L3954; X175m; C7071–7; B53 (Phase 2) South Area–Occupation (7a); Phase Vbb; Rig VII
Not illustrated

140 (**1626**) **Ornamental boss** Cu alloy
Large rosette boss with central dome-headed rivet and possible perforations around it. Although the object now consists of a mass of broken fragments, the X-ray shows that it originally had concentric repoussé decoration. Diameter unknown.
A1874; L4007; X016m; DX016; C2137–4; M3e, Pit 2111; Phase Vdd>; Rig VI
Not illustrated

141 (**1568**) **Annular mount or escutcheon** Cu alloy
Gilding on surface and two perforations for attachment. Probably an escutcheon for a handle for a door or furniture. Post-medieval or modern. Diameter 46mm.
A1568; L0404; X019; D017; C3035–1; Modern, Pit 3036; Phase VI; Rig VI
Illus 123

Miscellaneous objects

Jew's harps like Cat No 143 are amongst the earliest musical instruments. They are known throughout the world and it is suggested that they originated in China, reaching Europe in the 13th century. They consist of a metal frame and a tongue or reed which is often of iron. They are held in the mouth with the frame against the teeth and the reed is plucked. The mouth acts as a resonator and changing the shape of the mouth changes the pitch of the note. Since the form of the instrument has changed little over the centuries they are difficult to date.

142 (**1114**) **Cloth seal** Pb alloy
Disc-shaped object, probably a cloth bale seal. Diameter 17mm.
A04–0466; L3848; C7186–7; P8.4; Phase Va; Rig VII
Not illustrated

143 (**1682**) **Jew's harp** Cu alloy
The reed, which was probably of iron, is missing. Length 47.5mm.
A10408; L1056; X118m; C2716–2; Unstratified; Rigs V and VI
Not illustrated

144 (**1670**) **Hinged fitting** Fe
Much corroded. Possibly the attachment for a pendant, or from a book binding. Dimensions 23mm by 21mm.
A? (wrongly recorded as 0945); C?; Unstratified
Not illustrated

145 (**1595**) **Swivel hook** Cu alloy
Length 43mm.
A3564; L4045; C2168–4; P1a; Phase Vd; Rig VI
Not illustrated

146 (**1484**) **Unidentified object** Cu alloy
Sub-rectangular sectioned bar with a nail-like head at one end. Towards the other end it becomes more rectangular in section and there is a collar moulding. The end is incomplete and was either forked or had an elongated slot. Length 85mm.
A04–0031; C7015–10; B50(b) North Room–Occupation (2a); Phase Va–Vc(–Vdd); Rig VIII
Not illustrated

147 (**1773**) **Hasp** Cu alloy
Crudely made from sheet metal with a loop made from a separate strip and inserted through perforations. Length 44mm.
A04–0146; L4143; D044, D045; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

148 (**1702**) **Unidentified object** Cu alloy
Incomplete, annular form. Diameter 26mm.
A0943a; L0269; C2006–3/4; Unstratified; Rigs V and VI
Not illustrated

149 (**28**) **Fragment/anvil**(**?**) Pb
Irregular block with 14 apparently randomly-arranged, punched dots in one face. Possibly used as an anvil for working on sheet metal. Length 40mm.
A11068; L4022; D140; C5097–3; MC025, Pit 5337; Phase (Ia–)Id
Not illustrated

150 (**978**) **Staple** Cu alloy
Cut from copper alloy sheet with pointed ends. Length 15mm.
A04–0194; L4090; C9050–9; M9a; Phase IVc,IVcc; Rig VII
Not illustrated

151 (**1437**) **Staple or Offcut** Cu alloy
Cut from copper alloy sheet with pointed ends. Length 23mm.
A04–0172; L4156; C7073–7; MC168; Phase Vc(–Vdd); Rig VII
Not illustrated

152 (**653**) **Loop** Cu alloy
Irregular strip with a perforation at each end, bent into a U-shaped loop. Length 48mm.
A04–0469; L3847; C9197–9; B18 (Phase 2a), Hall and Hall South–Construction (3); Phase IVb; Rig VII
Not illustrated

Wire

153 (**2**) **Wire** Cu alloy
Fine, loosely coiled with the ends wound together. Thickness c0.3mm.
A11661; L1033; C3867–1; MC002; Phase Ia; Rigs V and VI
Not illustrated

154 (**143**) **Wire** Cu alloy
Fine, clean and pliable, partly folded and rolled. Length c450mm, thickness 0.6mm.
A11558b (not recorded in Finds Register); L4010; C3888–1; MC071; Phase IIb–IIf; Rig VI
Not illustrated

155 (**304**) **Wire** Cu alloy
Very fine, pointed at both ends, possibly a pin shaft. Length c50mm.
A5169; L3895; X013m; DX013; C2505–3; M1.3/M1.4a, Pit 2504; Phase IIi–IIId; Rig VI
Not illustrated

156 (**348**) **Wire** Pb or Pb/Sn
Coil. Thickness 1mm.
A04–0523; L3840; C9404–9; M15; Phase IIId; Rig VII
Not illustrated

157 (**606**) **Wire** Cu alloy
Fine, coiled. Thickness c0.3mm.
A04–0546; L3837; C7288–7; B18 (Phase 2b), Hall, Pit 7290; Phase IVb; Rig VII
Not illustrated

158 (**1301**) **Wire** Cu alloy
Loosely wound. Thickness <0.5mm.
A04–0348; L3872; C7168–7; M8a; Phase Va,Vaa; Rig VII
Not illustrated

159 (**1344**) **Wire** Cu alloy
Tangled length. Thickness c0.5mm.
A04–0251; L4205; C7129–7; B53 (Phase 1), Central Area–T7152; Phase Vb; Rig VII
Not illustrated

160 number not used

161 (**1678**) **Wire** Cu alloy
Two lengths folded and twisted together. Thickness c0.5mm.
A4490; L3898; D041; C2176–4; M3a; Phase Vb–Vc; Rigs V and VI
Not illustrated

162 (**1470–1474**) **Wire** Cu alloy
Five fragments, very fine. Longest piece approximately 50mm long; thickness 0.3mm.
A04–0178a–e; L4171; X186m; DX134; C7093–7; B53 (Phase 2), North Area–Occupation (7b); Phase Vbb; Rig VII
Not illustrated

163 (**2001**) **Wire** Cu alloy
Elongated loop, thick. Possibly a chain link or a distorted bangle. Length 67mm; thickness of wire 2.5mm.
A0325; L4077; X010m; D003, DX010; C1005–B; T1006, D1006; Unstratified (North Sector)
Not illustrated

Copper alloy sheet and strip fragments

A large number of fragments of copper alloy sheet and strip were found. Although some may be pieces of larger objects such as vessels of beaten sheet or decorative bindings, all too incomplete for identification, many of the others may be pieces of scrap metal associated with metal working. Fragments Cat Nos 206–215, together with a sheet metal rivet Cat No 125 and a patch Cat No 126 referred to above, are almost certainly associated with metalworking as they were all found in the industrial area, Building 53 (Fascicule 1, The excavation, 75ff). The fragments and offcuts may be waste material from the fashioning of objects out of sheet metal, or they may have been scrap metal collected for melting down and re-casting. The patch and the rivet suggest that either broken pots were being repaired on the site or broken pieces were being collected and reworked. Such a large number of unidentifiable and fragmentary pieces of copper alloy certainly corroborates the evidence we already have for metalworking on the site.

164 (**4**) **Sheet** Cu alloy
Fragment with nail hole. Length 29mm.
A10034; C3822–1; MC006, T3852; Phase Ib; Rig VI
Not illustrated

165 (**24–26**) **Sheet** Cu alloy
Three fragments of thin sheet, one folded. Length 24mm, 47mm and 11mm.
A6563a–c; X003; DX004; C3134–1; MC029, Pit 3125; Phase Id; Rig V
Not illustrated

166 (**162, 163**) **Sheet** Cu alloy
Two fragments, a) triangular with cut edges, b) irregular. Length: a) 63mm; b) 38mm.
A04–0701a,b; L3818; C9531–9; B27, South Room–Occupation (1/2); Phase <IIc–IIff; Rig VII
Not illustrated

167 (**192**) **Strip** Cu alloy
Fragment. Length 27mm; width 3mm.
A10769; L4037; C2385–4; M10; Phase IId–IIg; Rig V
Not illustrated

168 (**426**) **Strip** Cu alloy
Offcut. Length 123mm.
A5618; L3892; C2813–2; B26, Floor/Occupation(12b); Phase IIg–IVaa; Rig V
Not illustrated

169 (**287**) **Sheet** Cu alloy
Possible nail hole on one edge. Dimensions 32mm by 33mm by 35mm.
A10056; L4020; D124; C2597–3; M1.3; Phase IIi; Rig VI
Not illustrated

170 (**307**) **Sheet or foil** Cu alloy
Fragment. Length 23mm.
A9928; L4039; C4453–3; M1.3/M1.4a, PW4453; Phase IIi–IIId; Rig VI
Not illustrated

171 (**831**) **Sheet** Cu alloy
Cut edges and three nail-holes. Length 60mm.
A4494b; L0104; C2462A–3; M1.4c; Phase IIIa–IVcc; Rigs V and VI
Not illustrated

172 (**867**) **Strip** Cu alloy
Fragment. Length 53mm.
A6327; C2462A–3; M1.4c; Phase IIIa–IVcc; Rigs V and VI
Not illustrated

173 (**861**) **Sheet** Cu alloy
Offcut. Length 74mm.
A5712; L3942; X012m; DX012; C2462A–3; M1.4c; Phase IIIa–IVcc; Rigs V and VI
Not illustrated

174 (**296**) **Sheet** Cu alloy
Perforation on one corner. Length 38mm.
A04–0620; L3827; C9480–9; B19(Phase 2a), T9481; Phase IIIb; Rig VII
Not illustrated

175 (**332**) **Sheet** Cu alloy
Fragment with possible trace of gilding. Length 24mm.
A04–0534; C9246–9; P8.1c; Phase IIIc; Rig VII
Not illustrated

176 (**439**) **Sheet** Cu alloy
Small offcut. Length 23mm.
A04–0399; L3861; C9207–9; B18 (Phases 1a and 1b), Pit 9208; Phase IVa,IVaa; Rig VII
Not illustrated

177 (**786, 787**) **Sheet** Cu alloy
Patch or rivet (a) made from folded sheet. Also another copper alloy sheet fragment (b). Length: a) 15mm, b) 22mm.
A8896a,b; L3901; C2476–3; M1.4d; Phase IVb,IVc; Rig VI
Not illustrated

178 (**814**) **Sheet** Cu alloy
Offcut with scoring and cut marks along some of the edges. Length 48mm.
A5617; L3885; D060; C2478–3; M1.4g; Phase IVb,IVc; Rig V
Not illustrated

179 (**743–745**) **Sheet** Cu alloy
Three fragments.
A6325a–c; L0871; X071m; DX060; C2480–3; Phase IVb,IVc; Rig V
Not illustrated

180 (**1146**) **Sheet** Cu alloy
Cut edges; perforated by corrosion. Length 107mm.
A4488; L4028; C3539–1; M5a, Pit 3540; Phase IVb–Vc; Rigs V and VI
Not illustrated

181 (**980**) **Thin sheet or foil** Cu alloy
Two fragments, one very small. Length of larger fragment 45mm.
A04–0317; L3877; C9050–9; M9a; Phase IVc,IVcc; Rig VI
Not illustrated

182 (**1032**) **Sheet** Cu alloy
Fragment. Length 56mm.
A4495; L0102; C2456–3; M1.4e; Phase IVcc(Va); Rig VI
Not illustrated

183 (**1034**) **Sheet** Cu alloy
Offcut with a longitudinal cut apparently made by shears. Two chisel-cut slots. Length 51mm.
A6525; L3883; D025; C2456–3; M1.4e; Phase IVcc(Va); Rig VI
Not illustrated

184 (**1094**) **Sheet** Cu alloy
Copper alloy sheet fragment with one straight edge and a possible nail-hole. Length 34mm.
A04–0417; L3854; C7185–7; P8.4; Phase Va; Rig VII
Not illustrated

185 (**1082**) **Sheet** Cu alloy
Offcut. Length 57mm.
A04–0416; L3855; C7170–7; P8.4; Phase Va; Rig VII
Not illustrated

186 (**1111**) **Sheet** Cu alloy
Offcut. Length 69mm.
A04–0462; L3849; C7186–7; P8.4; Phase Va; Rig VII
Not illustrated

187 (**1610–1612**) **Sheet** Cu alloy
Three offcuts, the longest being 50mm, found together with two offcuts of leather (Fascicule 3, The leather, Cat Nos 4250–4252). The metal and the leather do not appear to have been associated.
A4491a–c; L3891; C2748–2; B1(b), Demolition; Phase Va; Rig V
Not illustrated

188 (**1274**) **Sheet** Cu alloy
Fragment, cut through a perforation. Length 74mm.
A04–0249; L3906; X204m; D086, DX152; C7128–7; M8a; Phase Va,Vaa; Rig VII
Not illustrated

189 (**1302**) **Sheet** Cu alloy
Thin fragment. Length 65mm.
A04–0351; L3869; C7172–7; M8a, T7193; Phase Va,Vaa; Rig VII
Not illustrated

190 (**1311**) **Sheet** Cu alloy
Offcut, possibly from trimming a cast sheet during manufacture. Length 102mm.
A04–0350; L3870; C7175–7; M8a, Pit 7183; Phase Va,Vaa; Rig VII
Not illustrated

191 (**1399**) **Sheet** Cu alloy
Strip, perforation at one end. Length 62mm.
A04–0304; L4237; D081; C7168–7; M8a; Phase Va,Vaa; Rig VII
Not illustrated

192 (**1286**) **Sheet** Cu alloy
Thin and corroded. Length 42mm; width 9mm.
A04–0286; L4060; D084; C7159–7; M8a; Phase Va,Vaa; Rig VII
Not illustrated

193 (**1207**) **Sheet** Cu alloy
Fragment. Length 16mm.
A? (wrongly recorded as A1787a); C?; Unstratified (South/North Sectors)
Not illustrated

194 (**1192**) **Sheet** Cu alloy
Offcut. Length 43mm.
A6448; L2223, L4032; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Not illustrated

195 (**1205**) **Sheet** Cu alloy
Offcut. Length 31mm.
A10749; L0899; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Not illustrated

196 (**1316, 1317**) **Sheet** Cu alloy
Two offcuts. Length 23mm and 27mm.
A04–0418b,c; L3853; C7197–7; M8a, Pit 7197; Phase Va,Vaa; Rig VII
Not illustrated

197 (**1173**) **Strip** Cu alloy
Fragment, broken through a perforation at one end. Length 28mm, width 4.5mm.
A2031; L0299; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Not illustrated

198 (**1183, 1184**) **Sheet** Cu alloy
Offcut (in two pieces), scored and cut along one edge, four chisel-cut slots along the other. Length 123mm.
A3569a,b; L0207; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Not illustrated

199 (**1204**) **Sheet** Cu alloy
Offcut with perforation in middle. Length 132mm.
A10748; L0898; X047m; D133, DX038; C2404–3; M1.5a; Phase Va,Vaa(VI); Rigs V and VI
Not illustrated

200 (**1238**) **Sheet** Cu alloy
Offcut. Length 106mm.
A04–0347; L3873; C7082–7; M1.5b; Phase Vaa; Rig VI
Not illustrated

201 (**1230, 1231**) **Sheet** Cu alloy
Two fragments with blackening on one face, possibly from a broken cooking vessel. Length 27mm and 25mm.
A04–0306a,b; L4238; C7082–7; M1.5b; Phase Vaa; Rig VI
Not illustrated

202 (**1263**) **Sheet** Cu alloy
Fragment with blackened surfaces. Length 44mm.
A04–0362; L3867; C7169–7; M1.5b; Phase Vaa; Rig VI
Not illustrated

203 (**1506, 1507**) Cu alloy
Fragments with adhesions and blackened corrosion products. Length 40mm.
A1788a,b; L4026; X013; DX013; C2727–2; M4a; Phase Vaa–Vc; Rigs V and VI
Not illustrated

204 (**1518**) **Sheet** Cu alloy
Fragments, much corroded.
A3920; L0163; X074; DX062; C2736–2; M4a; Phase Vaa–Vc; Rigs V and VI
Not illustrated

205 (**1522**) **Strip** Cu alloy
Perforation at one end. Length 46mm.
A4205; L0134; D035; C2737–2; M4a; Phase Vaa–Vc(VI); Rigs V and VI
Not illustrated

206 (**1346**) **Strip** Cu alloy
Fragment. Holes at both ends which may be corroded rivet holes. Another small fragment attached at one end. Length 46mm, width 11mm.
A04–0269; L4063; C7129–7; B53 (Phase 1), Central Area, T7152; Phase Vb; Rig VII
Not illustrated

207 (**1379–1381**) **Sheet** Cu alloy
Three offcuts. Length 23mm, 35mm and 43mm.
A04–0219a–c; L3918; C7141–7; B53 (Phase 1), Central Area–Occupation (3c); Phase Vb; Rig VII
Not illustrated

208 (**1401**) **Strip** Cu alloy
Fragment, one long edge slightly thicker than the other. Length 42mm.
A04–0189; L4085; X198m; DX146, DX188; C7118–7; B53 (Phase 1), South Area–Occupation (2c); Phase Vb; Rig VII
Not illustrated

209 (**1357**) **Strip** Cu alloy
Rolled strip or offcut. Width 8mm.
A04–0230; L4188; C7143–7; B53 (Phase 1), Central Area–Pit 7142; Phase Vb; Rig VII
Not illustrated

210 (**1358**) **Strip** Cu alloy
Fragment. Width 12.5mm.
A04–0236; L4233; C7143–7; B53 (Phase 1), Central Area–Pit 7142; Phase Vb; Rig VII
Not illustrated

211 (**1356**) **Sheet** Cu alloy
Two offcuts. Length 20mm and 31mm.
A04–0238; L4208; C7143–7; B53 (Phase 1), Central Area–Pit 7142; Phase Vb; Rig VII
Not illustrated

212 (**1355**) **Sheet** Cu alloy
Thin fragment, made from cast metal, possibly from a vessel. Length 27mm.
A04–0229; L4187; C7143–7; B53 (Phase 1), Central Area–Pit 7142; Phase Vb; Rig VII
Not illustrated

213 (**1556**) **Foil** Cu alloy
Fragment with possible traces of white metal or solder. Length 50mm.
A3931; L3888; C2179–4; M3a; Phase Vb–Vc; Rigs V and VI
Not illustrated

214 (**1465**) **Sheet** Cu alloy
Fragment. Length 67mm.
A04–0063; L3975; C7034–7; B53 (Phase 2), North Area–Occupation (15), H7075, T7076; Phase Vbb; Rig VII
Not illustrated

215 (**1459**) **Sheet** Cu alloy
Thin plate or offcut with perpendicular cuts into the edges.
A04–0212; L3924; C7095–7; B53 (Phase 2), North Area–Occupation (9b); Phase Vbb; Rig VII
Not illustrated

216 (**2065**) **Strip** Cu alloy
D-sectioned strip bent into a hooked shape. One end broadens but is incomplete. Possibly part of a decorative binding. Length 38mm.
A6526; L0878; C2770–2; MC173; Phase Vdd; Rig V

217 (**1635**) **Sheet** Cu alloy
Fragments, possibly originally one piece.
A04–0056; L4103; X169; C8004–8; MC175; Phase Vdd–VIb; Rig VII
Not illustrated

218 (**1817**) **Sheet** Cu alloy
Offcut of irregular thickness. Scoring marks suggest that this rough edge was trimmed from a larger sheet during manufacture. Length 110mm.
A2890; L0197; C0218–5; Garden 1; Phase 15; North Sector
Not illustrated

219 (**1818**) **Strip** Cu alloy
Fragment, perforated. Length 13mm, width 7mm.
A6557; L3886; C0220–5; Garden 1; Phase 15; North Sector
Not illustrated

220 (**142**) **Strip** Cu alloy
Narrow offcut. Length 60mm.
A11558a; L4010; C3888–1; MC171; Phase IIb–IIf; Rig VI
Not illustrated

221 (**1704**) **Strip** Cu alloy
Slightly tapering and with a dog's leg bend. Width 8mm.
A8071; L0930; C2006–3/4; Unstratified; Rigs V and VI
Not illustrated

222 (**1755**) **Sheet** Cu alloy
Rolled to form an irregular cylinder. Length 45mm.
A04–0064; L4169; X185; DX133; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

223 (**1770**) **Sheet** Cu alloy
Copper-tin alloy offcut. Length 47mm.
A04–0128; L3956; X213m; DX038, DX161; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

224 (**1720**) **Fragment** Cu alloy
Length 17mm.
A04–0006; D002; L3992; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

225 (**1660, 1661**) **Sheet** Cu alloy
Two offcuts.
A04–0007a,b; L3993; D003; C7001–7/9; T7014; Unstratified; Rig VI
Not illustrated

226 (**1991**) **Sheet** Cu alloy
Fragments.
A0410; L4015; X010m; DX010; C1003–B; Unstratified; North Sector
Not illustrated

Miscellaneous lead fragments

The lead fragments include pieces of sheet and strip, irregular lumps and runnels of molten metal. While some of the lead may have been used in buildings, other fragments and runnels of molten metal may result from metalworking and the casting of objects made from alloys of tin and lead. The timber, wattle and thatch construction of the majority of the buildings on this site would not have used lead and it is uncertain whether the few stone or partially stone-walled buildings could account for all the lead fragments. There are no fragments that can be identified as window lead and this supports the idea that the windows were shuttered rather than glazed. (See Fascicule 1, The buildings, 131ff).

Two fragments of lead sheet, Cat Nos 238 and 252, show evidence of their method of manufacture by casting. Molten lead was run onto a flat bed of sand resulting in one face being rougher than the other, where it bears the impression of the sand.

Sheet fragments

227 (**17**) **Sheet** Pb
Folded fragment. Length 47mm.
A11691; C4625–4; MC017; Phase Ia–Icc>; Rigs V and VI
Not illustrated

228 (**117**) **Sheet** Pb
Length 64mm.
A5122; L0142; C3140–1; MC059, Pit 3142; Phase Id–IIc; Rig V
Not illustrated

229 (**68**) **Plate** Pb
Irregular, almost square in shape. Dimensions 24mm by 22mm.
A11144; L1026; C5052–3; P5.3b; Phase If,IIa; Rig VI
Not illustrated

230 (**66**) **Sheet** Pb
Rolled fragment. Length 67mm.
A2637; C3062–1; Path 5.3b; Phase If,IIa; Rig VI
Not illustrated

231 (**67**) **Sheet** Pb
Twisted offcut of thick sheet. Length 113mm.
A10880; L1020; C5052–3; P5.3b; Phase If,IIa; Rig VI
Not illustrated

232 (**70**) **Sheet** Pb
Offcut. Length 75mm.
A10333; L1050; C4478–3; MC049; Phase IIa; Rig V
Not illustrated

233 (**186**) **Sheet** Pb
Rolled fragment. Length 40mm.
A10751; L3948; D134; C2333–4; M10; Phase IId–IIg; Rig V
Not illustrated

234 (**193**) **Runnel** Pb
Length 33mm.
A8835; L1464; C2276–4; B12, H2276; Phase IIe–IIg; Rig VI
Not illustrated

235 (**230**) **Sheet** Pb
Piece of sheet with a smaller fragment pressed into it and partly fused to it. Length 54mm.
A10413; D127, D128; C2611–3; M1.2, Pit 2648; Phase <IIg(IIh); Rig VI
Not illustrated

236 (**291**) **Sheet** Pb
Length 55mm.
A04–0661;C9499–9; B19(Phase 1), South Room–Floor (5a); Phase IIIa; Rig VII
Not illustrated

237 (**892**) **Sheet** Pb
Crumpled, with nail-hole and impression of a rectangular nail-head. Length 51mm across widest part. Also another smaller fragment. Length 14mm.
A6427; L3932; D068; C2462A–3; M1.4c; Phase IIIa–IVcc; Rigs V and VI
Not illustrated

238 (**331**) **Sheet** Pb
Fragment, possibly fused. Rough on one face. Length 57mm.
A04–0509; L3842; C9246–9; P8.1c; Phase IIIc; Rig VII
Not illustrated

239 (**351**) **Sheet** Pb
Possibly from flashing or roofing. Dimensions 103mm by 95mm.
A04–0544; C9441–9; M15, Pit 9464; Phase IIId; Rig VII
Not illustrated

240 (**368**) **Lump** Pb
Irregular lump of fused metal. Length 42mm.
A5509; C2841–2; P2.2a; Phase IVa; Rig V
Not illustrated

241 (**411**) **Lump** Pb
Irregular scrap. Length 42mm.
A5586; L0869; C2518–3; MC156; Phase IVaa; Rig V
Not illustrated

242 (**518**) **Sheet** Pb
Large piece of sheet, possibly from flashing or roofing. Length 132mm.
A04–0651; C7336–7; MC126, Pit 7402; Phase IVaa,IVb; Rig VII
Not illustrated

243 (**547**) **Sheet** Pb
Length 56mm.
A04–0280; C9137–9; B18 (Phase1/2); Phase IVaa,IVb; Rig VII
Not illustrated

244 (**618**) **Sheet** Pb
Folded fragment. Length 93mm.
A04–0536; C9246–9; P8.1c; Phase IIIc; Rig VII
Not illustrated

245 (**916**) **Fused metal** Pb
Two pieces fused together. Length 67mm.
A6361; L1411; C2190A–4; M1.4b; Phase IVb–IVcc; Rigs V and VI
Not illustrated

246 (**1011**) **Spillage** Pb
Length 105mm.
A04–0470; C6087–10; M9b(b); Phase IVc,IVcc; Rig VII
Not illustrated

247 (**1003–1010**) **Sheet** Pb
Eight fragments of scrap, some fused, others crumpled sheet.
A04–0258a–h; C6070–10; M9b(b); Phase IVc,IVcc; Rig VII
Not illustrated

248 (**999–1002**) **Sheet** Pb
Four offcuts. Longest length 135mm.
A04–0257a–d; C6070–10; M9b(b); Phase IVc,IVcc; Rig VII
Not illustrated

249 (**1024**) **Runnel** Pb
Length 28mm.
A6556; L0873; C2447–3; M1.4e; Phase IVcc(Va); Rig VI
Not illustrated

250 (**1478**) **Sheet** Pb
Offcut. Length 49mm.
A04–0486; C6003–10; B50(a), Construction, T6180; Phase IVcc–Vc(–Vdd); Rig VIII
Not illustrated

251 (**1091**) **Runnel** Pb
Length 29mm.
A04–0410; L3856; C7185–7; P8.4; Phase Va; Rig VII
Not illustrated

252 (**1139**) **Sheet** Pb
Offcut, rough on one face. Length 83mm.
A3921; L0164; C2763–2; B1(b), North Room–Occupation (3c); Phase Va; Rig V
Not illustrated

253 (**1485**) **Sheet** Pb
Length 100mm.
A04–0154; C7066–10; M8b; Phase Va,Vaa; Rig VIII
Not illustrated

254 (**1288**) **Fragment** Pb
Probably fused. Length 51mm.
A04–0282; X214m; DX162; C7160–7; M8a; Phase Va,Vaa; Rig VII
Not illustrated

255 (**1527**) **Fragment** Pb
Fused metal. Length 38mm.
A6431; L1420; C2750–2; M4a; Phase Vaa–Vc; Rigs V and VI
Not illustrated

256 (**1382**) **Runnel** Pb
Length 81mm.
A04–0222; L3915; C7141–7; B53 (Phase 1), Central Area–Occupation (3c); Phase Vb; Rig VII
Not illustrated

257 (**1396**) **Sheet** Pb
Crumpled and partially fused. Length 90mm.
A04–0202; L4231; X201m; DX149, DX189; C7123–7; B53 (Phase 1), North Area–Occupation (1b); Phase Vb; Rig VII
Not illustrated

258 (**1554**) **Sheet** Pb
Thin plate with slots cut into the long edges, possibly used as a patch. Length 59mm.
A3930; L0170 and L3881; C2179–4; M3a; Phase Vb–Vc; Rigs V and VI
Not illustrated

259 (**1436**) **Bar** Pb
Irregular with cut marks in the upper face. Length 43mm.
A04–0171; L4252; C7093–7; B53 (Phase 2) North Area–Occupation (7b); Phase Vbb; Rig VII
Not illustrated

260 (**1659**) **Sheet** Pb
Rolled. Length 63mm.
A2242; L0240; C3066–1; Modern, Pit 3067; Phase VI; Rig V
Not illustrated

261 (**1637**) **Runnel** Pb
Length 59mm.
A7674; C2538–3; Building G–OPH(1), Wall 2020a; Phase VIa–VIf; Rigs V and VI
Not illustrated

262 (**1645**) **Fused metal** Pb
Fragment with foliage impressions on surface. Length 21.5mm.
A0880; L0266; C2013–3; Building G–ML(1), Wall 2012; Phase VIb–VIf; Rigs V and VI
Not illustrated

263 (**1802**) **Sheet** Pb
Partly rolled. Length 36mm.
A6587; C0239–5; CG020; Phase 12; North Sector
Not illustrated

264 (**2000**) **Sheet** Pb
Fragment, originally rectangular. Length 56mm.
A0326; L0225; D004; C1004–B; Unstratified; North Sector
Not illustrated

265 (**1753**) **Sheet** Pb
Thick, partly rolled. Length 34mm.
A04–0057; L4120; C7000–7–10; Unstratified; Rigs VI–VIII
Not illustrated

Lead caulking

266 (**12**) **Caulking** Pb
Rectangular nail hole passing through it. Length 66mm.
A9845; D186; C3764–1; B15 (West and East), Construction–Levelling; Phase Ic,Icc; Rigs V and VI
Not illustrated

267 (**19**) **Caulking** Pb
With large nail hole passing through and the impression of the nail head. Length 33mm.
A8103; D091; C3728–1/2; B8, Occupation (2); Phase (Icc)Id; Rig VI
Not illustrated

268 (**806**) **Caulking** Pb
Irregular lump, possibly used for caulking or flashing. Length 45mm.
A6345; L0874; C2473–3; M1.4g; Phase IVb,IVc; Rig V
Not illustrated

Stone moulds

The stone moulds are also considered in Fascicule 4, The stone objects (135–137), where notes on their geological origin may be found.

Stone Cat 39
Mould cut from fine grained stone. Similar to A10909 below and used to make brooches of 23mm diameter. There is an iron peg in situ for holding the parts of the mould together. There are also dies for making three much smaller rings of unknown use.
A4750? (number marked on object but not recorded in accession registers); unstratified
See Fascicule 4, The stone objects, Illus 58.

Stone Cat 40
Fragment of mould cut from fine grained stone. The die is cut into one face of the stone and is incomplete. It was used to cast a strap-end or buckle plate with a concave end and with a raised border and leaf scroll ornament.
A8074; C2580–3; M1.4d, Pit 2566; Phase IVb,IVc; Rig VI
See Fascicule 4, The stone objects, Illus 59.

Stone Cat 41
Incomplete mould cut from fine grained stone. The die, which is cut into one face of the stone, was used to cast simple annular brooches of 24mm diameter together with their pins. There is a slot where a peg or bar would have been inserted to make the loop of the pins. There are several examples of similar brooches from the excavations, although none is of a size to have been cast in this mould. Two further holes in the mould are for the pegs which held the parts of the mould in the correct position during casting.
A10909; C2716–2; Unstratified; Rigs V and VI
See Fascicule 4, The stone objects, Illus 60.

Stone Cat 42
Fragment of mould cut from fine grained stone. Dies have been cut into both upper and lower surfaces suggesting that the mould pieces may have been stacked for multiple casting. On one side there is a fragmentary die for casting a brooch pin, the other side appears to have been used to cast small rings, each 7.5mm in diameter.
A06–0040; C7170–7; P8.4; Phase Va; Rig VII
See Fascicule 4, The stone objects, Illus 61, 62.

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