APPENDIX 4
THE GOLD (B) AND COPPER ALLOY (C)

T G Padley

The Gold (B)

Only five items of gold were recovered from the northern Lanes, all of which are elements of jewellery. Three of them (B3-5) are small pieces of gold wire, which are probably the remains of very fine chains. The hook shape of B5 may indicate that it originally formed part of an earring. The fourth chain-link (B2) is more elaborate. It is in the shape of a ‘Hercules Knot’ and may be part of an earring similar to that illustrated by Kosevic (1991, 15, no 41). Equally, it may have formed part of a necklace or bracelet, as the Hercules knot became a popular element of necklaces throughout the imperial period (Pinkernelle 2007, 47). An element from one of these is in the British Museum, and is similar in size to that from The Lanes (Bastien and Metzger 1977, 165-6, B5). The final piece (B1) is a globular bead, which has no really diagnostic features.

The pieces are divided between the mid- and late Roman periods of occupation on the site. The more substantial pieces (B1-2) came from Periods 9-10. The Hercules knot (B2) is compatible with a second-century date. Two of the three pieces of fine wire (B3, B5) came from Period 11 (11E and 11D respectively), in the later Roman sequence. The third (B4) came from a medieval deposit, but the context contains 71.5% Roman pottery, and the wire is so very similar to the other two that it is included here, with the proviso that it could be medieval.

The Catalogue

B1 Bead (Fig 162). A hollow spherical bead with a single perforation at each end. Around each of the perforations the metal is pushed up, as if pierced from inside, or that the hole has been enlarged, resulting in an irregular shape. Diam: 5 mm; L (perf): 2 mm W (perf): 2 mm KLA A 957, Au 1403, Period 10C

B2 Jewellery (Fig 162). An ornamental link made from two pieces of gold wire, shaped and soldered together to form a Hercules knot. There is a small loop at each end, one pointing up and the other down. A second piece of gold wire is wound loosely three times through one of them, before being wound tightly round itself, to form a coiled ‘stem’. The wire forming the knot is hand-made. L: 24 mm; W (max): 11 mm; Th: 1 mm KLA C 1831, Au 2, Period 9

B3 Chain? A small oval link made from a round-sectioned wire (Fig 162). L: 8 mm; W: 6 mm; Diam (wire): <1 mm LAL D 635, Au 2, Period 11E

B4 Chain? A length of wire bent into a roughly triangular shape, which may originally have formed a chain link. L: 6 mm; W: 4 mm; Diam (wire): <1 mm KLA B 601, Au 1823, Period 14B (Post-Roman)

B5 Hook. A length of round-sectioned wire bent into a hook. One end has been flattened deliberately, while the other is broken. L: 8 mm; W: 4 mm; Diam (wire): <1 mm LAL C 135, Au 1, Period 11D

The Copper Alloy (C)

The site produced 192 copper-alloy finds of Roman date that could be defined as ‘Class 1’ (sensu Padley
of these, nearly a third (31.2%) came from post-Roman levels, or from unstratified material, or contexts that could not be closely phased. Although there is twice as much material as was found at the southern Lanes (op cit), its distribution in terms of functional groups is similar. Thus the largest group comprises objects which are classified as fasteners and fittings, followed by personalia. The main differences are that, in the northern Lanes, there are items connected with religious practices, a group absent from the southern part of the site, and there are almost twice as many items of militaria (7.8% of the total as opposed to 3.1% for the southern part).

The personalia include 25 brooches and brooch parts. The earliest, both stratigraphically and chronologically, is a Hod Hill brooch (C1; p 409) from Period 3, which probably dates to the last quarter of the first century AD, and is the only one from the site. Brooches were not recovered again until Period 10A, which produced an enamelled disc brooch (C6) and two penannular brooches (C17, C21). The disc brooch is one with a very widespread distribution, covering both Britain and continental Europe (Hattatt 1989). In terms of date, the type can be assigned to the later part of the second century, running on into the third. The penannular brooches are of Fowler’s Type A2 (1960, 152, 174) and Type A3 (ibid) respectively. Both of these types cover the whole of the Roman period.

The later phases of Period 10 produced two bow-brooch parts (C14-15) and three penannular brooches (C18, C19, C22), the latter being the same types as those from earlier phases. The later Roman activity produced the largest number of brooches, with eight examples. These range from enamelled trumpets (C2-3), to an enamelled headstud (C4), three knee brooches of different types (C7-9), and two penannular brooches (C20, C23). All are second- to third-century types and thus probably residual.

The remainder of the brooches comprise a crescent-shaped plate brooch (C5), two knee brooches (C10-11), two crossbow brooches (C12-13), and a fragmentary penannularbrooch(C24). Again, all are residual, coming either from post-Roman levels or are unstratified.

Other jewellery includes a finger-ring, two earrings, three bracelets, and seven pins. The finger-ring (C26, p 414) is dated by its intaglio to the late second- or early third century, but was recovered from Period 13 (a medieval period). The earrings (C27-28) are not in themselves datable; one (C27) came from Period 8A, while the other (C28) came from post-Roman Period 15A. It is thus possible that the latter earring is medieval, but the shape is similar to one of the bracelets (C31), which is unquestionably a Roman type. The bracelets (C29-31) are all types which are not closely datable, although C31 can be paralleled at South Shields (Allason-Jones and Miket 1984, 128, 136 nos 3.278-3.285).

The head of one of the pins (C38) is that of a woman, placing it within Cool’s group 18A (1990, 168, fig 10 nos 7, 11). It is not closely datable, and it has rather a thick shank for a hairpin, and so might be a votive object of some kind. A second pin also appears to have a head like this (C39), but this is very badly preserved, with the whole of the face missing. It differs from Cool’s group 18A in having a pierced disc above the head, the decoration on this disc being similar to that on Cool’s group 27 pins (op cit, 172, fig 13; Fig 63), a feature which she dates to the first century by analogy with military metalwork. An almost identical example, but better preserved, was found in a first-century context in the fort (Howard-Davis 2009c, fig 386.3). If this dating is correct, its position in Period 6 would make it residual. One of the pins (C36) belongs to Cool’s group 3A, which suggests it is a first- to second-century form (op cit, 154), although it was unstratified at the Lanes. A pin (C37) of Cool’s group 10B came from Period 11A, and is similar to one from Blackfriars Street, Carlisle (Caruana 1990, 139, no 132, fig 122, 110, 132). In southern Britain, the type can be seen as a group around the River Severn, with only one outlier, from the Walbrook in London (Cool 1990). Three pins cannot be fitted into Cool’s typology: one came from Period 11C (C40) and another from Period 11D-12 (C41); a third (C42) came from medieval levels. Again, this can be paralleled in the fort, where it was regarded as a post-Roman object (Howard-Davis 2009c, fig 386.9).

The remainder of the personalia comprises dress accessories: a button and loop fastener; and three buckles. The button and loop fastener (C32) is of Kilbride-Jones’ type a, which appeared in the late Iron Age at Glastonbury, was found with Flavian material at Manchester, and in second-century deposits at the Lochspouts crannog and at Newstead (1980, 161-3). A similar piece came from the fort at Annetwell Street, Carlisle, from a context dated AD 76-84 (Padley in prep a, F46). This suggests that C32 is residual, as it was recovered from a late second- or early third-century level (Period 11A). One of the buckles (C33), which survives as a crudely made pin, came from Period 6; the other two (C34-35) were from Period 11, one of which lacks only the iron bar on which the pin was hinged. It is possible that both were military in origin.

The toilet, pharmaceutical, and surgical instruments would all be normal in a domestic context. The possible nail cleaner (C43) was originally part of a set, and, although it came from a medieval context, the appearance is more Roman than medieval. There were also three toilet spoons and a toilet-spoon handle. The first two (C44-45) have no distinctive features, except that they are clearly Roman, even though one
came from a medieval feature, and the other is from a context that could not be closely phased; the third (C46) also came from a deposit that could not be linked to a tight stratigraphical sequence. It is distinguished by the decoration on the bowl, a feature that has not been noted elsewhere in Carlisle. A thin decorative rod fragment (C47) is included in the Roman material, as it is probably the handle of a toilet spoon. A spatula (C49) is of a well-known Roman type, and the tweezers (C50-51), though not closely datable, were found in Period 11A contexts.

The three mirror fragments (C52-4) are all of Roman type, even though one (C53) came from a late medieval context. The most unusual piece (C48) is a pestle from a cosmetic set, of Jackson’s centre-looped type (1985, 165-7), from Period 11D-12. This is the most northerly example of the type, and while the majority can be dated to the first or second century AD, one from Chichester came from a grave dated to the late second/early third century (op cit, 184, fig 7, no 57), and one from Colchester came from a context dated to between AD 100 and AD 250 (op cit, 190, no 94) which would fit better with the phasing of the Lanes example. However, it is worth noting that a rectangular mirror (C52), which came from Period 11E, is also a first-century type (p 418).

The household utensils and furniture consist mainly of vessel fragments, along with two spoons and a furniture fitting. A trefoil-shaped flagon lid (C55) is similar to two others from the southern Lanes (Padley 2010, C30-1) and is of a type which is dated at Nijmegen to the first to third centuries AD (den Boersterd 1956, 70, nos 247-53, pl 11, nos 245 and 249). As this example came from Period 11A, it may be that it belongs to the latter end of the sequence. Another flagon lid (C56) is circular, found in a medieval context, but is more likely to be Roman, an interpretation supported by the fact that 88% of the pottery recovered from the context in question is Roman.

A handle from Period 4B (C57) probably came from a saucepan-type vessel, whilst a fragment of a saucepan handle of the more usual type (C59) was also recovered from the site. A third handle (C58) is elaborate, probably coming from a cup, and perhaps similar to those in silver found at Hockwold, dating to the first to second century AD (Potter and Johns 1992, fig 2). The final piece presumably belonging to a vessel (C60) is an escutcheon, which, because of its size, probably came from a fairly small example.

Two fragmentary spoons were also recovered. One (C61) is of the round-bowed type, while the other (C62) is the handle of a larger spoon, which would have had an oval, pear-, or mandolin-shaped bowl. Finally, there is a circular object (C63) which resembles a furniture fitting from the Corbridge hoard (Allason-Jones and Bishop 1988, 77-8, fig 95, nos 238-40), or that from Castle Street, Carlisle (Padley 1991a, 114, no 70, fig 80), though it came from a medieval context.

Written communication is represented by two enamelled seal boxes. The first survives only as part of the leaf-shaped lid (C64), from 1OC, a period which also produced fragments from two samian inkwells (Appendix 1). The other is a complete diamond-shaped box (C65), also from Period 1OC. This is a well-known type, two being recovered from Blackfriars Street (Caruana 1990, 115, fig 106, nos 30-1). Both of these types can be dated to the second century.

Two items could be placed in a group associated with transport and trade. The first is a linch-pin (C66) of pre-Roman type (Fig 59), which came from Period 6. The iron shank, with its ornamental copper-alloy head and transverse perforation, together with the ornamental disc which was originally attached to the bottom of the shank, are reminiscent of the linch-pins from the Arras Culture in Yorkshire (Stead 1979, 45-7, fig 14, nos 1-2). The other is a possible steelyard weight (C67), which is similar to those from South Shields (Allason-Jones and Miket 1984, 174, nos 475-7), even though it came from a post-Roman context. However, it is possible that both are plumb-bobs rather than steelyard weights (see C71).

The copper-alloy objects which can be connected to tools and industry are again probably best seen in a domestic context. The most numerous are needles, of which there are three. Only one (C68) can be identified as a late Roman type (Crummy 1983, 67), but it was unstratified. The plumb-bob (C71) is of the same general type as C67, and thus could equally be a steelyard weight. One tool survives only as an I-shaped handle (C72), which would have held an iron blade in the U-shaped channel of the lower crossbar of the I. The lack of a central swelling on the shank suggests that it was a tool handle rather than for a dagger. The other tool (C73) could, at first glance, be a stylus, but it is much larger than any of the iron styli so far recovered from Carlisle, which, at Castle Street, had an average length of 130 mm, with a maximum of 147 mm (Padley 1991a, 133-7), and it is therefore more likely to be a modelling tool.

Fasteners and fittings form the largest group of copper-alloy objects from the site. There are eight drop handles, which came from Period 10 onwards. A range of types is present. The simplest has a square cross-section to the central part, which diminishes abruptly at each end, with plain hook-shaped terminals (C77). Elaboration of this can be found in both the terminals, which are bud-shaped on C76, and in the form of stylised birds’ heads on C79, and in the main
body of the handle, which can have a central bead (C75), as well as a round (C76), multangular (C75, C79, C82), or square/rectangular cross-section (C77-8, C80-1). Three of them (C76-8) are of the right size to accommodate the three middle fingers, and so could have been used for helmets (Bishop and Coulston 1993, 93), although this use is by no means certain. Drop handles were attached by double-spiked loops, some of which have been found with their handles (C76-9), and some separately (C83-6).

A range of studs was recovered (Table 29). The bell-shaped examples have been classified using the types suggested by Allason-Jones (1985, 95-6, fig 1), though only one was actually recovered from a Roman context. The commonest of the studs are bun-headed, of which one (C96), from Period 11D-12, has a head decorated with an incised cross. One of the lead-filled, dome-headed examples (C110) has a separate iron shank, as have all the similar studs from modern excavations in Carlisle, and the other has an oval depression, which probably held a similar shank. Similar studs were used to decorate the first Butt Road box (Crummy 1983, 85, nos 2179-82). The lion-headed stud (C113) is similar to others recovered from excavations in Carlisle (Padley 2010, C62; Padley in prep a, F293-4; Caruana 1990, 128, no 72; fig 113, no 72, Howard-Davis 2009c, fig 399.6), and may also have come from a box (Borrill 1981, 315-16, table 46).

Both tumbler and rotary locks are represented. There are three tumbler-lock bolts, none of which is complete, but no matching keys were found. Bolt C122 is unusual, as there is a circular hole through the horizontal projection. There is also a possible bolt from a rotary lock (C123), although this identification is not certain, but the piece is similar to that from an iron rotary padlock from Caerleon (Manning 1968, 410). The ring-key, although from a post-Roman context, is a typical example, which can be paralleled from London (Wheeler 1930, 75, pl 31, no 10) and Colchester (Crummy 1983, 84, nos 2164-9, fig 89, nos 2164, 2169), where they are said to date to the third to fourth century AD. Finally, there are two large key handles, each with an openwork design in the shape of a fleur-de-lys (C125-6), one of which came from a post-Roman level. This pattern of key handle was common in Roman Britain, and examples are known from the Carlisle fort (Howard-Davis 2009c), South Shields (Allason-Jones and Miket 1984, 144, no 3.147) and Chesters (Budge 1907, 121, pl 63, no 798).

There are three fittings which are probably from boxes. The first of these is a hasp (C127), which has a circular hole in the plate at the top, perhaps used with a staple, or a strap with a loop, as a hinge. This type of loop hinge is also known in iron, for instance from Gorhambury (Wardle 1990, 146, no 544, fig 134, no 554), where it was thought that this type of hinge was commonly used on lids. The hasp from Colchester (Crummy 1983, 89, no 2223, fig 93, no 2223) lacks its hinge, however. The second is a small strap hinge with prominent side plates (C128), of a type more usually found in iron, such as that from London, in the British Museum (Manning 1985, 127, no R13, pl 59, no R13), although a copper-alloy example is known from Old Penrith (Mould 1991, 208, fig 109, no 801). Its asymmetric shape suggests that it was attached to the top right or bottom left of a vertical pair of hinges, or in the same relative position on a horizontal pair. The third piece is an L-shaped corner reinforcement for a box (C129). This would have been held in place by small nails through the holes in the corner, and at the ends.

The remainder of the fasteners and fittings have less recognisable functions. The only piece which comes from earlier Roman levels is a tubular binding, with a grooved outer surface (C135). This can be paralleled at Annetwell Street (Padley in prep a, F181). There are also 14 assorted rings, of which the D-sectioned ones (C143-7) are the most common.

<table>
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<th>Type of stud</th>
<th>No of examples</th>
<th>Earliest occurrence (Period)</th>
<th>Latest occurrence (Period)</th>
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<tr>
<td>Bell-shaped Type 1</td>
<td>4</td>
<td>12</td>
<td>19A (Post-Roman)</td>
</tr>
<tr>
<td>Bell-shaped Type 2</td>
<td>2</td>
<td>13 (Post-Roman)</td>
<td>13 (Post-Roman)</td>
</tr>
<tr>
<td>Bun-headed</td>
<td>9</td>
<td>10C</td>
<td>14B (Post-Roman)</td>
</tr>
<tr>
<td>Sub-rectangular domed</td>
<td>3</td>
<td>11B</td>
<td>11B</td>
</tr>
<tr>
<td>Flat-headed</td>
<td>1</td>
<td>Not closely phased</td>
<td>-</td>
</tr>
<tr>
<td>Dome-headed</td>
<td>4</td>
<td>10C</td>
<td>17D (Post-Roman)</td>
</tr>
<tr>
<td>Dome-headed lead-filled</td>
<td>2</td>
<td>11A</td>
<td>14A (Post-Roman)</td>
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<td>10C</td>
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<tr>
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<td>11A</td>
<td>11A</td>
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<tr>
<td>Other</td>
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<td>11B</td>
<td>15A (Post-Roman)</td>
</tr>
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</table>

Table 29: Distribution of copper-alloy studs

408
The site has produced more than twice the amount of militaria recovered from the southern Lanes. The first item is a leaf-shaped pendant (C166), similar to one illustrated in Oldenstein (1976, Taf 30,210). The tag of the double disc and ring strap-end (C155) is more elaborate than those which attached helmet tie-rings (Bishop and Coulston 1993, fig 58, nos 9-10), but lacks the characteristic rosette decoration of fourth-century disc and ring attachments (op cit, 174-8, fig 125). As the strip holding the ring is separated from the disc-shaped tag by a notch which resembles the ‘spectacle’ strap attachments of the Antonine period, it is tempting to suggest that it should be assigned a similar date.

The openwork belt mount (C157) is a type which is familiar on Antonine sites, and a fragmentary example was found at the nearby fort (Howard-Davis 2009c, fig 357.5). Belt plate C158 was probably originally similar to examples from Osterburken (Oldenstein 1976, Taf 62, no 786) or Rickingen (op cit, Taf 63, no 815), but without the enamel. Heart-shaped buckle C161 can be dated to the third century and may have belonged to horse harness; mount C163 also has equine connections and dates to the third century (Deschler-Erb and Schwartz 1993, 12). Openwork mount C164 was in almost unused condition when it was lost or discarded, the casting itself being only roughly finished, with file marks visible on the reverse. It can be paralleled in Oldenstein (1976, Tafs 31-2) and dated to the second to third century. The two pendants (C167-8) are both so damaged and that their original shape cannot be recovered.

There were four items of a votive or religious nature. Two are phallic amulets, with C170 of the usual type, with a suspension ring, that would have been worn on the person, or attached to harness. The other (C171) is double ended, and has a central rectangular socket, suggesting that it might have been placed on a shaft as a cult object. Both items are elements of private belief rather than public religion. The third is a miniature adze (C172); the remains of a projection opposite the adze blade suggest either a second blade or a hammer head. Again, this is probably a cult object, as the central socket suggests a shank, rather than a loop to hang it around the neck. The final piece is a possible ‘foot’ from a statue (C173). It was recovered from a post-Roman context, but the appearance of the piece, representing a leg with a foot in a straight low boot, is more Roman than medieval in character.

The remainder of the copper-alloy items have no readily identifiable purpose. Some of the pieces are incomplete, like the enamelled bull’s head (C185). This item is part of a larger item, enamelled in a third-century style, similar to a plaque from Karlsruhe (Henry 1933, fig 32, no 32). Others must have had a distinctive purpose, but this is not now discernible.

Cross-shaped binding C186 falls into this category, as does possible handle C188.

The Catalogue
The brooches
P M Cracknell

C1 Hod Hill-derivative brooch (Fig 163). In good condition, missing only the major part of the return of the catchplate. The head of the brooch has been rolled forward to form a tube for the hinged pin. The bow is decorated with four vertical ridges, the central pair higher than those on the edges. The triangular leg is decorated with a lightly incised line around the edge, and a series of punched dots forming a cross. The thin catchplate has a single circular perforation.

The type was largely introduced with the Roman invasion, falling out of general use by around AD 60-70, its place being taken by the numerous native British types (Mackreth 2011). The only other example of the type from Carlisle came from the fort (Cracknell and Padley in prep, fig 307, F69), where it was associated with the construction phase of the first fort, and firmly dated to AD 72/3-78/9. The Annetwell Street brooch has been described by Snape as a Hod Hill derivative, late in the series (1993, 13). The present example is similarly late in the sequence, and a date in the last quarter of the first century would not be inappropriate.

L: 52 mm; W: 14 mm
LAL D 1502, Ae 142, Period 3

C2 Trumpet brooch (Fig 163). An elaborate enamelled trumpet brooch, but only the wire headloop and enamelled collar survive. The wire passes through a rectangular loop on the back of the collar with, originally, the two lower ends inserted into either end of a copper-alloy tube, held within the coils of a separate spring. The enamel decoration consists of a horizontal row of blue lozenges, with the spaces between infilled with small triangles of red. The trumpet type is usually given a date range from the mid-first century through to the late second century, but the presence of enamel suggests a late first-century date at the earliest (Bayley and Butcher 2004).

L: 22 mm; W: 19 mm
KLA A 641, Ae 870, Period 11D-12

C3 Trumpet brooch (Fig 163). An enamelled disc and fantail brooch in reasonable condition, with some damage to one wing; the headloop and pin are missing. The pin was hinged on
an axial bar housed in the tubular wings. The central disc has a small projection to either side, and is decorated with a circle of white enamel, around a now empty central cell. An incised line runs around the edge of the triangular leg, and a central rectangular panel is decorated with three blue enamel lozenges flanked by triangles of discoloured enamel. There are several local parallels, including an example from the fort at Carlisle (Cracknell and Padley in prep, fig 308, F81), a heavily restored example from Kirkby Thore (Tullie House Museum Acc No 27-1926.164), and two from Corbridge (Allason-Jones 1989a, fig 76, nos 8-9). They date to the second century.

L: 48 mm; W: 18 mm
KLA A 846, Ae 1354, Period 11B

Figure 163: Copper-alloy Hod Hill-derivative, trumpet, headstud, plate, and disc brooches
C4  Headstud brooch (Fig 163). An enamelled brooch in poor condition, being bent and lacking the pin, headloop, and much of the catchplate. The wings are short, with three plain vertical mouldings. A small stud at the head of the bow contains discoloured enamel. The bow is decorated with a row of blue enamel lozenges, flanked by opposing triangles containing discoloured enamel. The lower part of the bow is decorated with a series of plain mouldings, ending in a simple bulbous foot. The hinged pin would have been held within the D-sectioned tube behind the head. This dates from the late first century through to the end of the second century.

L: 44 mm; W: 20 mm
KLA A 816, Ae 1315, Period 11B

C5  Plate brooch (Fig 163). An enamelled, crescent-shaped, plate brooch, now corroded and missing parts of the pin and catchplate. The spring is held in place by a short axial bar that passes through the coils and the single vertical pierced lug. The crescent-shaped plate is decorated with two enamelled cells, the inner red, the outer blue. There is an excellent local parallel from the fort at Carlisle (Cracknell and Padley in prep, F97, fig 309). It is second century in date.

L: 24 mm; W: 20 mm
KLAB 648, Ae 1698, Period 14B (Post-Roman)

C6  Disc brooch (Fig 163). An enamelled umbonate disc brooch in good condition, although the hinged pin is missing, as is the return of the catchplate. There are six small lugs equally spaced around the circumference, the one at the top being merely a stump. The truncated cone opens out to form a cup, with a central stud that projects above the rim. At the base of the cone, there is a shallow channel, within which is a narrow milled band. The area between the base of the cone and the raised edge originally contained enamel, but most is now missing and what remains is discoloured. As is the case with similar brooches, the cup also appears to have contained enamel. The back of the brooch is recessed.

This is not a common type, being one of only 24 examples from Britain. With the exception of one other from Hadrian’s Wall and two from Nor’noun, in the Scilly Isles, the rest are distributed between the Humber and the southern coastal counties, with a small concentration in the lower Severn area (Hattatt 1987, 185). This example comes from a context containing two coins, of AD 77-8 and AD 103-17 (Appendix 3), together with pottery of the early to mid-second century (Appendix 1). The type continues well into the third century.

Diam (including lugs): 40 mm
LAL D 1021, Ae 125, Period 10A

C7  Knee brooch (Fig 164). In good condition, it lacks only the catchplate return and part of the small suspension loop at its head. The spring has four turns, with an internal chord, and is held in place by a horizontal bar passing through the coils and secured in the two pierced vertical endplates. The bow is hollow, with five facets across the front face.

L: 32 mm; W: 13 mm
LAL B 187, Ae 93, Period 11C

C8  Knee brooch (Fig 164). An unusual, S-profiled brooch, now in poor condition, but missing only part of the pin. The bow is square in section and S-shaped in profile. The lower surface of the foot is decorated with three shallow grooves; the head of the brooch is formed by a square plate. The long spring, partly enclosed within a semi-cylindrical case, has been attached asymmetrically; this has always been the case, as the chord can be seen on the shorter, right-hand, end. The presence of an axial bar passing through the coils, together with the lack of any end plates for the spring case, suggests a central pierced lug as the only means of attachment, although corrosion makes this uncertain. It would seem likely that this large and ungainly spring was a replacement, either for a smaller spring more appropriate to the size of the head plate or, less likely, for a hinged pin.

L: 32 mm; W: 22 mm
KLA D 63, Ae 36, Period 11C

C9  Knee brooch (Fig 164). S-profiled brooch, now badly corroded, and missing the spring mechanism and most of the catch plate. The spring was housed in a semi-cylindrical case, which forms the head of the brooch. The wide bow is slightly domed and has an S-profile. The only decoration comprises three horizontal steps, two on the rear face of the bow, and one on the front. A good local parallel comes from Annetwell Street, Carlisle (Cracknell and Padley in prep, fig 308, F86).

L: 40 mm; W: 19 mm
KLA C 851, Ae 193, Period 11D-12

C10  Knee brooch. Fragmentary example similar to C9 in size and type. It is now in two fragments, the larger of which comprises the foot, the
lower part of the hollow bow, and the stump of a catchplate. The other fragment has part of a semi-cylindrical spring case and the start of the bow.

Fragment 1: L: 20 mm; W: 10 mm
Fragment 2: L: 12 mm; W: 12 mm

KLA C 538, Ae 159, Period 15B (Post-Roman)

Knee brooch (Fig 164). Incomplete enamelled knee brooch, in poor condition and missing the lower part of the bow, the foot, and the pin. The spring has four turns, and was attached by means of a bar passing through the coils and originally secured in the ends of the semi-cylindrical head, now missing. There is a slight raised central ridge running down the bow. To either side are four roughly rectangular panels of enamel, appearing red, but possibly originally green.

The shape and enamelling is typical of knee brooches found in late second- to early third-century contexts (Mackreth 2011, 189). However, similar brooches from early second-century deposits have been found at Traprain (Burley 1956) and Wroxeter (Mackreth 2011). A complete example of the type is illustrated by Butcher (1974, 27, fig 55, brooch 25). Knee brooches were introduced into Britain from the Rhineland in the first half of the second century and continued in use into the early third (Bayley and Butcher 2004). During the second half of the second century, knee brooches, in their wide variety of forms, became one of the more popular types, particularly amongst military personnel (Crummy 2015). Indeed, from a total of about 140 brooches of all types recovered from excavations in Carlisle, 17% are knee brooches (pers obs).

Crossbow brooches are a widespread type, known throughout the Roman Empire during the third to early fifth centuries (Mackreth 2011). Brooches C12 and C13 are only the third and fourth examples, to date, of the fully developed crossbow from Carlisle. Although neither of them is in good condition, the other two examples were only fragments (Mackreth 1990, 111-12, fig F102).

While the P-shaped profile remains constant, the variations in detail are almost endless. Neither of the two brooches is late in the development of the type, although the presence of faceted wings and faceted terminals on C13 indicate that it is later in date than C12. On the basis of Keller’s typology, produced from an analysis of brooches from coin-dated graves, both brooches can be safely dated to the first half of the fourth century (Keller 1971, 35 and 38-41, Abb 11).

L: 77 mm; W: 48 mm; Wt: 31 g
KLA C 884, Ae 197, Period 14A (Post-Roman)

Bow brooch (Fig 164). Fragmentary brooch, only part of the spring survives. It has seven coils, with part of the spring case attached, and part of the pin. L (pin): 21 mm; L (coils): 14 mm
LAL D 1043, Ae 119, Period 10B

Bow brooch (Fig 164). Complete pin from a hinged bow brooch.
L: 36 mm
LAL C 168, Ae 57, Period 10C

Bow brooch. Fragment, two coils of a spring.
Diam: 7 mm
LAL D, Ae 53, Unstratified

Penannular brooch (Fig 164). Complete small Fowler type A2 (1960) brooch, in reasonable condition. The terminals are decorated with diagonal milling and the pin is sharply humped, with a piriform point.
Diam: 21-22 mm
LAL C 274, Ae 59, Period 10A

Penannular brooch. Almost complete Fowler type A2 (1960) brooch; most of the ring and one terminal survive.
Diam: 24-26 mm
KLA B 13, Ae 69, Period 10B
Figure 164: Copper-alloy knee, crossbow, bow, and penannular brooches
C19 Penannular brooch. Almost complete Fowler type A2 (1960) brooch; most of the ring and both terminals survive. 
Diam: 21-22 mm 
KLA B 974, Ae 3146, Period 10C

C20 Penannular brooch. Complete but distorted small Fowler type A2 (1960) brooch, similar in details to C17, although the terminals are more clearly defined. 
Diam: 25-27 mm 
KLA B 1220, Ae 2754, Period 11A

C21 Penannular brooch (Fig 164). Almost complete Fowler type A3(i) (1960) brooch in reasonable condition. It has bulbous terminals backed by a single milled moulding. The pin is thin and sharply humped. 
Diam: 28-29 mm 
LAL C 290.01, Ae 60, Period 10A

C22 Penannular brooch. Almost complete Fowler type A3(i) (1960) brooch, in poor condition and now fragmentary. The terminals are decorated with diagonal milling and backed by a single plain moulding. 
Diam: 28 mm 
KLA D 1043, Ae 122, Period 10B

C23 Penannular brooch (Fig 164). Complete small Fowler type A3(i) (1960) brooch in good condition. It has plain and slightly angular terminals, with a thin raised collar. The pin is sharply humped with a piriform point. 
Diam: 22 mm 
KLA B 982, Ae 3056, Period 11A

C24 Penannular brooch, fragmentary. Only a short section of ring survives, with the pin attached. 
Diam: 24 mm 
KLA C 767, Ae 184, Period 14B (Post-Roman)

C25 Penannular brooch (Fig 164). Complete Fowler type A2 (1960) brooch, in good condition. The plain bulbous terminals are backed by a single plain moulding. The pin is thin and sharply humped, with a piriform point. 
Diam: 32-33 mm 
KLA C, Ae 247, Unstratified

The basic date-range for the A3(i) type is from the first century AD through to the third century, while the A2 type continues into the fourth century (ibid).

Other personalia
C26 Finger ring with intaglio (Fig 165). Martin Henig writes: Nicolo-paste intaglio, shape F2, set in a type xii copper-alloy ring (Henig 1978). The device is a bull in profile to the left, head lowered. A lion leaps onto its shoulders from the right and thus appears above the bull to the right. Such scenes have a long ancestry in ancient art, being ultimately derived from Near Eastern motifs. Archaic and Classical Greek versions are extant on gems (Boardman 1970, 144-5; no 324; 198, no 508). Amongst later examples, note a violet-coloured paste in a cache of workshop wasters dated to the first century BC (Henig 1975, 91, no 45, pl 29).

This appears to be a new type from Britain, but an onyx gem from Gestingthorpe, Essex, depicts a lion confronting a centaur (op cit, 265, no 656, pl 20). As in the case of this latter intaglio, the employment of indifferently moulded Nicolo-paste, and the form and material of the ring are suggestive of a late second- or early third-century date.
L: 15 mm; W: 11 mm; Th: 3 mm 
KLA C 801, Ae 208, Period 13 (Post-Roman)

C27 Earring (Fig 165). A narrow strip which has been bent into a spiral, with one and a half loops, both ends possibly broken. At one end, the strip is formed into a roughly semi-circular hook, which ends with a short reverse curve. At the other end, the strip is twisted across itself and broken. 
Diam (spiral): 17 mm; W (strip): 1 mm; Th (strip): <1 mm 
KLA C 1848, Ae 279, Period 8A

C28 Earring (Fig 165). Probably complete earring made from a short length of S-twisted rectangular-sectioned wire which has been roughly bent into a ring with overlapping ends. 
Diam (ring): 21 mm; Th: 2 mm 
KLA C 484, Ae 143, Period 15A (Post-Roman)

C29 Bracelet fragment (Fig 165). Bracelet comprising round-sectioned wire with a set of transverse grooves, giving it a segmented appearance. 
Diam (ext): 78 mm; Diam (wire): 2 mm 
KLA A 874, Ae 1374, Period 10C

C30 Bracelet (165). Cast D-sectioned rod which has been bent to form a bracelet; about one third survives. The outer surface is lobed, forming a bead-and-reel pattern. The interior of the wider end has an oval depression in it. 
Diam: 60 mm; W: 5-6 mm; Th: 6-7 mm 
LAL D 819, Ae 99, Period 11A
Figure 165: Copper-alloy personalia
C31 Bracelet (Fig 165), type 15 (Allason-Jones and Miket 1984). Almost complete, one end missing. S-twisted square-sectioned rod. The twists increase from three per 30 mm to six per 30 mm as they approach the surviving end. The end is flattened and bent over to form a hook, the sides of which have been extended to give it a T-shape.
W (rod): 2 mm; Th (rod): 2 mm
KLA C 935, Ae 216, Period 11D-12

C32 Button-and-loop fastener (Fig 165). Complete, but slightly damaged, fastener of Kilbride-Jones type a (1980). The domed head is hollow, with a single incised line round the base. In the centre of the underside of the head, there is a flattened oval-sectioned shaft which, at the other end, becomes the apex of the triangular lop. The loop is set at right-angles to the dome.
L: 40 mm; Diam (dome): 15 mm
KLA C 1685, Ae 276, Period 11A

C33 Buckle (Fig 165), pin only. The pin has an irregular rectangular cross-section. One end has been flattened and pierced with an irregular hole. The whole has been bent into a rough semi-circle.
L: 30 mm; W: 2 mm; Th: 2 mm
LAL C 389, Ae 64, Period 6

C34 Buckle (Fig 165). U-shaped frame; part of the plate and the bar are missing. The frame has a D-shaped cross-section, which has been flattened at the ends to form circular terminals, which are pierced to hold a separate bar. Only the ends of the bar survive. The plate is a single sheet, folded in two, and originally attached to the strap by a single rivet. There is a slot to accommodate the bar, which survives, with the pin, in the fold. The pin is wrapped round the bar with a single curl.
L (frame): 15 mm; W (frame): 15 mm
L (plate): 11 mm; W (plate): 14 mm
KLA D 72, Ae 15, Period 11B

C35 Buckle (Fig 165). Frame and pin of D-shaped buckle, with a rectangular cross-section. The ends have been flattened and form round terminals, pierced with circular holes to carry a (probably) iron bar. The rectangular-sectioned pin has been flattened at one end and worked into a round terminal with a circular hole. It has been bent to an obtuse angle 7 mm from the point.
L (frame): 29 mm; W (frame): 23 mm
L (pin): 20 mm
LAL B 163, Ae 91, Period 11E

C36 Pin (Fig 166). The pin, now bent, with a head comprising a conical knob surmounting two narrow reels, a biconical head, and a third reel, falls into Cool’s (1990) group 3A. The head is no larger in diameter than the shaft. Conservation suggests that the pin, or at least the head, was originally gilded.
L: 72 mm; L (head): 6 mm; Diam (shaft): 1 mm
KLA B, Ae 3183, Unstratified

C37 Pin (Fig 166). The pin, with only slight damage, has a solid head, comprising a central diamond-shaped element with three curved lobes. The outer face of the largest lobe has a groove running down the outside. There is a small triangular-sectioned collar below the head. It falls into Cool’s (1990) group 10B.
L: 78 mm; L (head): 5 mm; Diam (shaft): 1 mm
LAL D 823, Ae 100, Period 11A

C38 Pin (Fig 166), part of the shaft missing. The head is a female bust with an elaborately modelled coiffure. The front of her hair is a raised crescent, arranged symmetrically on both sides of a shield-shaped area. To the rear there are two crescent-shaped buns, with a gap between. The head, behind the frontal crescent, is covered by a veil which obscures the ears and the front of the body. The pin falls into Cool’s (1990) group 18A. The shaft is sub-rectangular in cross-section.
L: 54 mm; W: 4-12 mm; Th: 5-11 mm
KLA B 842, Ae 2910, Period 11A

C39 Pin (Fig 166), now badly damaged; only the head survives. The head shows a woman, modelled in three dimensions, but the face is now missing. Surmounting the head is a head-dress, comprising a disc with off-centre perforation. The front of this is decorated with punched dots, and was originally covered with a white metal. The hair is drawn back from the face and arranged in a bun to the rear. There is a single bead-and-reel moulding between the shaft and the head.
L: 60 mm; Diam (disc): 10 mm; Diam (shaft): 3-5 mm
KLA C 1162, Ae 252, Period 6

C40 Pin (Fig 166). Only the head survives. It comprises a biconical knob surmounting a triangular-sectioned collar. In the centre of the underside is a round-sectioned projection, which is all that remains of the shaft.
L (head): 10 mm; Diam (head): 10 mm; Diam (shaft): 4 mm
KLA D 43, Ae 43, Period 11C
Figure 166: Copper-alloy personalia, and toilet and surgical instruments

C41 Pin; only the head survives. It comprises a cone surmounting a sphere. On the underside, a small projection marks the remains of the shaft. L: 19 mm; Diam (head): 9 mm
KLA C 904, Ae 212, Period 11D-12

C42 Pin (Fig 166). Complete pin with a solid head, comprising an octagonal faceted biconical knob with a single angular cordon beneath. The octagonal-sectioned shaft is straight for most of its length, only tapering to a point.
over the last 15 mm.
L: 73 mm; Diam (head): 8 mm; Diam (shaft): 2 mm
LAL B 112, Ae 72, Period 14B (Post-Roman)

Toilet, pharmaceutical, and surgical instruments

C43 Nail cleaner? A rectangular-sectioned rod, broken at one end (Fig 166). At the other, it becomes thinned, with a slight step from front and rear. At one end, there is a circular terminal with a circular hole, whilst the other is broken across at an oblique angle. The object is badly bent.
L: 32 mm; Diam (terminal): 7 mm; Diam (hole): 2 mm; W (shaft): 3-4 mm; Th (shaft): 1-3 mm
LAL C 48, Ae 26, Period 14A-B (Post-Roman)

C44 Toilet spoon (Fig 166), with slight damage to the edge of the bowl and the end of the handle. The handle has a multangular cross-section, tapering to a point at the end. The bowl, flat, round, and undecorated, is set at an angle to the handle. At the junction between the two, there is a small V-shaped depression. The object is slightly bent, and has perhaps been burnt.
L: 145 mm; L (bowl): 6 mm; Diam (handle): 2 mm
LAL C 28.01, Ae 36, Period 13 (Post-Roman)

C45 Toilet spoon (Fig 166). Round-sectioned handle, broken at the end. The bowl is teardrop-shaped and undecorated. It is set at an angle to the handle, which has been flattened slightly at the junction, giving it a sub-rectangular cross-section.
L: 62 mm; L (bowl): 7 mm; W (bowl): 4 mm
LAL A 41, Ae 2, not closely phased

C46 Toilet spoon (Fig 166). Multangular-sectioned handle, broken at the end. Its swells slightly from its junction with the bowl, before diminishing again. The bowl is flat, round, and is set at an angle to the handle. Its front is decorated with ten conical bumps, set in a rough spiral.
L: 80 mm; Diam (bowl): 4 mm; Diam (shaft): 2 mm
LAL A 45, Ae 1, not closely phased

C47 Toilet spoon, handle only, comprising a length of hexagonal-sectioned rod, which tapers towards each end. There is a groove down each face.
L: 54 mm; W: 1-2 mm
CAG A 29, Ae 13, Unstratified

C48 Cosmetic set, pestle only (Fig 166). Double-ended pestle (Jackson 1985), one end missing. A curved, round-sectioned rod, which tapers towards the original end. The remains of a D-shaped suspension loop survive in the original centre of the concave face. The surface is grey and shiny, perhaps originally tinned.
L: 41 mm; Diam: 2-4 mm
KLA D 81, Ae 16, Period 11D-12

C49 Spatula (Fig 166). The handle has a multangular section, swelling towards the middle. At one end, the leaf-shaped, flattened D-sectioned spatula survives. The other end might originally have had an olivary probe.
L: 144 mm; Diam (handle): 3 mm; W (spatula): 12 mm
KLA D, Ae 49, Unstratified

C50 Tweezers. Only part of one blade survives as a narrow strip, curving inwards at one end.
L: 45 mm; W: 6 mm; Th: 1 mm
LAL C 204, Ae 47, Period 11A

C51 Tweezers. Only part of one blade survives, made from a single strip, folded double. The fold has been opened out to form a circle. The blades are decorated with incised lines down each edge, c 2 mm in.
L: 30 mm; W (blade): 6 mm; Th: 1 mm
KLA D 365, Ae 47, Period 11A

The mirrors
G Lloyd-Morgan

C52 Mirror (Fig 167). Corner fragment of an originally rectangular mirror (Lloyd-Morgan 1981a, group A). The reverse is unfinished, a characteristic of the group, and the original edges have a slight bevel. The front surface was originally polished. The whole is slightly convex.
L: 69 mm; W: 71 mm
LAL D 604, Ae 85, Period 11E

This is one of the largest pieces of Roman metal mirror found in Carlisle. There is no indication of its original size, but, a complete example from the House of Menander at Pompeii measures 124 x 150 mm (Museo Nazionale Archaeologico, Naples, no 4709; Maiuri 1932, 452). A slightly larger fragment (136 x 159 mm) is known from north-eastern Italy (Museo Archaeologico, Aquileia, no 15921), while another (155 x 178 mm) is in the museum at Udine (Museo Civico, no 494). The composition of speculum metal, with its high tin content, makes it rather brittle (Panseri and Leoni 1956, 179-83) and large mirrors like these would have been protected from breakage by being enclosed in a wooden frame with a solid backing. A large fragment of one of these frames was found with its (incomplete) mirror
during excavations at Towcester, Northamptonshire (Brown et al 1983, 106, no 44, fig 38).

The rectangular mirror is one of the most common types found throughout the Roman Empire, and is generally dated to the first century AD, as is witnessed by the mirror found in the House of Menander, and by other British finds, such as the fragment from the central ritual pit of the Iron Age temple at Hayling Island, dated to before AD 50 (Downey et al 1978, 6, 10; 1979, 6, 17). Fragments of another piece, from Caerleon, were found in a context dating to the end of the first century AD (Lloyd-Morgan 1992, 161, no 426a). Over 60 rectangular mirrors had been recorded in Britain up to the summer of 1987, to which this fragment, and earlier finds from Blackfriar’s Street, Carlisle (Caruana 1990, 136, no 103, fig 120f), and Lewthwaite’s Lane, within the southern Lanes (Lloyd-Morgan 1991), can now be added.

C53 Mirror (Fig 167). Rim fragment of disc mirror (Lloyd-Morgan 1981a, group X). The reverse shows the characteristic low, but slightly convex, moulded rim, separated from the central area by a single turned circle.

L: 28 mm; W: 16 mm; Diam (original): 102 mm

Despite its modest size, this piece is characteristic of mirrors of group X (Lloyd-Morgan 1981a, 95-103, fig 7; 1981b, 146, 151-2, fig 9.1). Its diameter averages 100 mm and, unlike most other hand mirrors, the handle is not attached radially, but forms a loop across the slightly concave back. Few of these handles, which were attached by solder, have survived in situ, although often the site of each solder plate can be seen. An incomplete mirror from Siscia still retains these parts of the handle on the mirror disc, although the grip has completely gone (Archeologskog Musej, Zagreb, no 4514). A mirror from West Court Farm, Canterbury, retains half its handle (Lloyd-Morgan 1983, 233), whilst another find from Verulamium is intact (Stead 1969, 46, no 169; in litt 1971). Some of the mirrors in this group are decorated on the reverse with dot-and-circle patterns, geometric, and compass-drawn designs, or a mixture of these motifs, but the present fragment is too small to be certain whether there was any decoration.

An earlier survey of the group led to the conclusion that mirrors of this type were made in the region of Nijmegen (Lloyd-Morgan 1981a; 1981b), and traded to other parts of the north-western provinces. By 1988, some 14 examples had been found in Roman Britain, and another two, seen in local museums, are unprovenanced. Few are well dated, but one from excavations at an extramural site at Branch Road, St Albans, was found in a late Antonine context (Verulamium Museum no 79.965). Another, the
Figure 168: Copper-alloy household utensils
most northerly find to date, came from Camelon, Stirlingshire, from a site dating to the AD 140-60s (V Maxfield pers comm; Camelon 1977, Site D, SF 40).

Although there is now increasing evidence for the use of these mirrors during the Antonine period, some larger, related examples, perhaps the prototypes of group X, have been found in first-century contexts elsewhere (Mackensen 1978, 47-8, 308, Taf 151, no 1). Other group X mirrors, occasionally found in third-century and later levels, could be heirlooms or residual finds. Two examples of group X mirrors came from early excavations at Corbridge (Lloyd-Morgan 1977), and there is another, decorated, fragment from South Shields (Miket 1983, 115, fig 74 no 109).

C54 Mirror; three joining fragments. Their upper surfaces show the usual well-finished reflecting side, whilst the undersides have the well-known lightly pocked and unfinished aspect. As none of the fragments retain their original edge, which would have allowed the size and shape of the mirror to be determined, they are classified as type Za (Lloyd-Morgan 1981a).

L: 20 mm; W: 20 mm; Th: 1 mm
KLA B 911, Ae 2993, Period 10C

Household utensils and furniture

C55 Flagon lid (Fig 168). Heart-shaped lid, hinge and knob missing. The front is flat, rather than pointed, and there is only a slight indentation between the lobes. The remains of a hinge survive in the centre of the back, and on the upper surface there is a rectangular block with a frontal projection, which would have been an ornamental knob, but is now broken. The front, ahead of the lobes, is tilted upwards.

L: 67 mm; W (across lobes): 49 mm
KLA C 1685, Ae 275, Period 11A

C56 Flagon lid (Fig 168), hinge broken. The lid is circular, with the front third carefully bent up at almost a right-angle. The remains of the hinge survive as a pierced lug projecting from the rear, which runs into a rectangular lump on the top of the lid and has a rectangular-sectioned knob projecting up from its front.

Diam: 52 mm
KLA D 13, Ae 6, Period 14A (Post-Roman)

C57 Handle. A rectangular-sectioned trapezoidal fragment, with an off-centre circular hole near the wider end, probably a handle.

L: 51 mm; W: 11-28 mm; Diam (hole): 5 mm
LAL D 1122, Ae 141, Period 4B

C58 Handle (Fig 168). Complete cast handle, made up of two separate elements. The first is rectangular-sectioned, ending in a sub-triangular tab. The central area is bounded by a single moulding at the bottom, and two at the top. The outer surface is decorated. The tab has diagonal lines on it, giving it a leaf pattern. The rest has a central line with diagonal lines on either side. The second element is a curved, basically triangular, plate, decorated on the concave face. The decoration comprises a central image of a human face with a wing on either side. The wings have an incised pattern indicating feathers. The pattern around the face suggests hair. The handle was soldered to a vessel by blobs of solder inside the base of the handle and the underside of the wings.

L: 64 mm; W: 72 mm
KLA C 1857, Ae 280, Period 8A

C59 Saucepan handle (Fig 168). About half of the disc from the end of a saucepan handle. The two notches in the outer edge are probably deliberate.

Diam: 39 mm
CAG A 20, Ae 23, Unstratified

C60 Bucket escutcheon (Fig 168). The escutcheon comprises a leaf-shaped plate, attached to a D-sectioned ring by a suspension loop. Analysis suggests tin (possibly solder) on the back of the plate.

L (overall): 75 mm; W (plate): 27 mm; Th (plate): 2 mm; Diam (ring): 25 mm
KLA A 843, Ae 1311, Period 11B

C61 Spoon fragment with round bowl. The handle has a round cross-section and extends under the bowl.

L: 55 mm; W (bowl, est): 15 mm; Diam (handle): 3 mm
LAL D, Ae 136, Unstratified

C62 Spoon (Fig 169), handle only, now bent. The handle has a square cross-section, and tapers away from the bracket that joined it to the bowl. Part of it has an S-twist. The bracket is incomplete. The surface has been tinned.

L: 105 mm; W: 2-4 mm; Th: 2-5 mm
CAG A 18, Ae 8, Unstratified

C63 Cast circular fitting (Fig 169), broken at one end; less than half survives. It comprises a hollow tube with large rectangular flanges at each end. Both the tube opening and the diameter of the flanges are wider at one end than the other.

L: 25 mm; Diam (max): 47 mm
LAL B 112, Ae 71, Period 14B (Post-Roman)
Figure 169: Copper-alloy utensils, seal boxes, linch-pin, and tools
Written communication

C64 Seal box (Fig 169). Lid of a leaf-shaped seal box. The upper surface is enamelled, but the design is fairly crude, consisting of two D-shaped blue fields and two lentoid fields (colour lost), flanking a hollow-sided orange square. Below the lower blue field, there is a triangular field of orange, flanked by red.
L: 67 mm; W (across lobes): 49 mm
KLA B 944, Ae 3047, Period 10C

C65 Seal box, lozenge-shaped (Fig 169), complete but with slight damage to the hinge. The lid has knobs on three sides, and a narrow perforated projection at the hinge. The upper surface is enamelled, with 25 diamond-shaped cells. The colour of all but the four surrounding the central cell is now obscured; the remaining four are of a different colour, probably red. The lower part of the box is pierced by four round holes.
L: 33 mm; W: 23 mm; Th: 9mm
KLA D 390, Ae 51, Period 10C

Transport and trade

C66 Linch-pin (Fig 169), almost complete, in iron, with head and attached disc. The head is of copper-alloy, cast directly onto the iron shaft. The top is domed, and has a single groove around the point of maximum girth. Below this, it curves inwards, before flaring out again to form a barrel-shaped moulding, which has a transverse perforation, now filled with iron corrosion products. There is a single groove, c 2 mm wide, around the bottom of the head. Below this, the iron shaft is square in cross-section, and curves towards the bottom, where a decorative copper-alloy disc, now slightly damaged, is attached.

The lower part of the ring is solid, whilst the upper part has a crescentic perforation. The lower part has relief decoration in the form of a circular button divided into four by a raised cross, and delimited by a marked U-shaped groove. Outside the groove, there are two small bosses on each side, all of them divided into three by shallow grooves. The rear of the disc is plain but for a rectangular-sectioned, D-shaped loop. A large amount of iron corrosion products seems to suggest that the disc was originally attached to the shaft of the linch-pin by this loop.
Ht (head): 42 mm; W (head): 22 mm; Th (head): 19 mm
L (shaft): 69 mm; W (shaft): 5-9 mm; Th (shaft): 6-9 mm
LAL D 1167, Ae 134, Period 6

C67 Steelyard weight. Acorn-shaped weight, now in two pieces. The larger fragment is conical, with an acorn-shaped lower part. The other fragment, which does not join, is a rectangular-sectioned fragment of rod.
L (main frag): 27 mm; Diam (max): 12 mm
KLA C 844, Ae 218, Period 13 (Post-Roman)

Tools and industry

C68 Needle (Fig 169), almost complete, of Crummy (1983) type 3. The point and part of the eye are missing. It has a tapering, round-sectioned shaft. The eye is oval with a groove below.
L: 50 mm; Diam: 1 mm
KLA C, Ae 268, Unstratified

C69 Needle, almost complete, with part of the eye missing. The round-sectioned shaft tapers to a rounded point at one end, and is flattened at the other. The remains of the eye can be seen, but its shape is uncertain.
L: 123 mm, Diam: 2 mm
KLA C 1871, Ae 281, Period 7

C70 Needle, with most of the head missing, now bent (Fig 169). The round-sectioned shaft tapers to a point at one end, and the other end is flattened. The edge of the eye can be seen, and there is a transverse groove visible on one side.
L (straightened): 148 mm; Diam: 3 mm
KLA C 1761, Ae 278, Period 8B

C71 Conical plumb-bob with an oval cross-section (Fig 169). The surface has grooves running down it. The larger end is slightly domed, and has a round-sectioned shaft with a slightly flattened end.
L: 24 mm; Diam: 4-13 mm
LAL D 1043, Ae 127, Period 10B

C72 I-shaped handle (Fig 169). The central shaft and upper cross-piece have solid round cross-sections, whilst the lower cross-piece has a rectangular groove, now full of iron corrosion products. The ends of the lower arm each have two incised lines.
L: 76 mm; W (across arms): 30-32 mm
LAL C 88, Ae 41, Period 11E

C73 Complete tool, now bent (Fig 170). It has an octagonal shaft, swelling towards the middle. At one end there is a wedge-shaped blade, and the other end tapers to a point.
L: 205 mm; W (blade): 5 mm; W (shaft, max): 5 mm
KLA D, Ae 35, Unstratified
C74  Off-cut. Tapering strip of sheet metal, with cut marks on each edge. Now bent.  
L (as bent): 85 mm; W: 2-5 mm; Th: <1mm  
KLA B 188.05, Ae 273, Period 7-8A

Fasteners and fittings

C75  Drop handle, broken at each end (Fig 170). The main body of the handle has a gentle curve, with a sharp bend at the ends and a multangular cross-section. There is a central bead, flanked on each side by a reel and separated from the ‘arms’ of the handle by a groove.  
L: 53 mm; W: 22 mm  
KLA C 1158, Ae 251, Period 10A-11B

C76  Drop handle (Fig 170). A circular-sectioned, basically rectangular drop handle, with bud-shaped terminals. The terminals have a collar to each side and end in a spherical knop. The tightly recurved terminals held separate double-spiked loops, of which one, now slightly damaged, survives.  
L (handle): 81 mm; W (handle): 31 mm; Diam (handle): 1-4 mm  
L (loop): 21 mm; Diam (loop, ext): 11 mm  
KLA C 1073, Ae 248, Period 10A-11B

C77  Drop handle (Fig 170). Complete, plain, handle with one damaged double-spiked loop surviving. The body of the handle has a square cross-section, which diminishes abruptly at the ends. The terminals are simple hooks. The double-spiked loop is made from rectangular-sectioned rod.  
L: 69 mm  
KLA A 829, Ae 1287, Period 10C

C78  Drop handle (Fig 170). Only the central part of the square-sectioned handle and one loop survive. The loop has a circular cross-section.  
L: 75 mm; W: 33 mm  
KLA C 1662, Ae 271, Period 10A

C79  Drop handle (Fig 170). Complete, almost semi-circular handle, with a pentagonal cross-section, swelling towards the middle, and terminals in the form of solid, stylised, bird’s heads. The double-spiked loops survive only as fragments. The whole is bent and there is some damage.  
L: 45 mm; W: 39 mm  
KLA D 342, Ae 45, Period 11A

C80  Plain drop handle (Fig 170), with a sub-rectangular cross-section. Both ends are badly corroded, but surviving fragments show that there were no elaborate terminals. Two small circular links survive, along with fragments from the attachment loops.  
L: 37 mm; W: 30 mm; Diam (links): 8-9 mm  
LAL C 144, Ae 45, Period 11B

C81  Approximately half of a drop handle (Fig 170), with rectangular cross-section and a narrower rectangular-sectioned projection at one end. At the other end, there is a projection separated from the main part by a V-shaped depression. This is probably the remains of the ‘hinge’.  
L: 35 mm  
KLA C 1558, Ae 260, Period 11C

C82  Drop handle. Part of the central section of a multangular-sectioned rectangular drop handle.  
L: 81 mm  
LAL C 11, Ae 18, not closely phased

C83  Double-spiked loop, complete. The loop has worn through in use.  
L: 34 mm  
KLA C 1669, Ae 274, Period 11A

C84  Double-spiked loop, broken at one end.  
L: 55 mm  
LAL C 149, Ae 47, Period 11D

C85  Double-spiked loop, only part surviving.  
L: 19 mm  
KLA C 867, Ae 199, Period 14A (Post-Roman)

C86  Double-spiked loop (Fig 170), the ends broken.  
L: 19 mm  
KLA C 763, Ae 183, Period 14B (Post-Roman)

C87  Bell-shaped stud (Fig 170). Allason-Jones (1985) type 1, with part of the head corroded. The central projection has a central circular depression. The exterior is undecorated. The head is separated from the shank by a collar in the form of a truncated cone. In the centre of the underside, there is a rectangular-sectioned shank which is of uniform thickness, but the width diminishes to a rounded point.  
Diam: 23 mm; L: 28 mm  
KLA C 886, Ae 220, Period 11D-12

C88  Bell-shaped stud. Allason-Jones (1985) type 1, with some damage to the edge of the head, and much of the shank missing. The central projection and the exterior of the head are undecorated. The head is separated from the shank by a triangular-sectioned collar. The surviving part of the shank is very short and tapers to a rough, probably not original, point.  
Diam: 23 mm; L: 24 mm  
LAL D 376, Ae 63, Period 19A (Post-Roman)
Figure 170: Copper-alloy tool, fasteners, and fittings
C89 Bell-shaped stud (Fig 170). Probably an Allason-Jones (1985) type 1, but only the head survives. The central projection has a central circular depression. The outside of the head is decorated with a single groove, 6 mm from the rim. At the base of the head is a solid inverted dome. On the underside, only a trace remains of the square-sectioned shank.
Diam: 23 mm; L: 20 mm  
KLA C 1077, Ae 234, Period 11D-12

C90 Bell-shaped stud (Fig 170). Probably an Allason-Jones (1985) type 1, with slight damage to the head and shank. The exterior of the head can be divided in two. The upper part is curved and flares out, while the lower part is cylindrical. There is a rectangular-sectioned shank in the centre of the underside; this is damaged at the end.
Diam: 17 mm; L: 27 mm  
KLA C 804, Ae 187, Period 14A (Post-Roman)

C91 Bell-shaped stud (Fig 170). Complete, Allason-Jones (1985) type 2. The central projection has a central circular depression at the top, and a narrow moulding around the base. The rim is decorated with a narrow moulding with a central groove. At the base of the head, separated from it by a small step, is a rectangular bead decorated with two grooves. The rectangular-sectioned shank retains the same dimensions for its entire length. There is a hole, 3 mm in diameter, at 2 mm from the end. One side of the end has a groove along it.
Diam: 20 mm; L: 41 mm  
KLA B 278, Ae 312, Period 13 (Post-Roman)

C92 Bell-shaped stud (Fig 170). Complete, Allason-Jones (1985) type 2. The central projection has a square depression in the centre, and the base is surrounded by a raised moulding. The interior of the rim is chamfered, while the exterior is decorated with a single raised moulding. The head is separated from the shank by a biconical disc which has a groove around it just above the point of maximum diameter. The rectangular-sectioned shank is set in the centre of the underside. There is an off-centre circular hole in the end, 4 mm in diameter.
Diam: 22 mm; L: 41 mm  
CAG A 14, Ae 20, Unstratified

C93 Bun-headed stud (Fig 171). Complete, with a solid, undecorated domed head and a tapering rectangular-sectioned shank.
Diam: 8 mm; L: 20 mm  
LAL D 969, Ae 112, Period 10C

C94 Bun-headed stud (Fig 171). Complete, with a solid, undecorated domed head and a tapering rectangular-sectioned shank.
Diam: 6 mm; L: 20 mm  
KLA D 223, Ae 53, Period 10C

C95 Bun-headed stud, with a solid, undecorated, domed head and a tapering rectangular-sectioned shank, which is now incomplete.
Diam: 7 mm; L: 16 mm  
KLA D 135, Ae 21, Period 11B

C96 Bun-headed stud (Fig 171). The solid circular domed head is decorated with an incised cross and has the remains of a circular-sectioned shank in the centre of the underside.
Diam: 6 mm; L: 10 mm  
KLA C 1099, Ae 241, Period 11D-12

C97 Bun-headed stud (Fig 171), with a solid, undecorated, domed head and a tapering rectangular-sectioned shank, which is now incomplete.
Diam: 7 mm; L: 28 mm  
LAL C 97, Ae 42, Period 11E

C98 Bun-headed stud (Fig 171). Complete, with a solid, undecorated, domed head and a tapering circular-sectioned shank.
Diam: 4 mm; L: 14 mm  
KLA B 679, Ae 1989, Period 13 (Post-Roman)

C99 Bun-headed stud (Fig 171). Complete, with a solid, undecorated, domed head and a square-sectioned shank, which becomes wedge-shaped closer to the point.
Diam: 5 mm; L: 18 mm  
KLA C 943, Ae 222, Period 14A (Post-Roman)

C100 Bun-headed stud, with a solid, undecorated, domed head and a tapering irregular-sectioned shank, which is now incomplete.
Diam: 8 mm; L: 16 mm  
KLA B 601, Ae 1761, Period 14B (Post-Roman)

C101 Bun-headed stud, with a solid, undecorated, domed head and a slightly tapering square-sectioned shank, which is now incomplete.
Diam: 5 mm; L: 22 mm  
LAL D 497, Ae 67, not closely phased

C102 Domed stud, with a solid, undecorated, sub-rectangular domed head and a tapering sub-rectangular-sectioned shank, which is now incomplete.
L (head): 6 mm; W (head): 5 mm  
LAL D 807, Ae 93, Period 11B
C103  Domed stud (Fig 171). Complete, with a solid, undecorated, sub-rectangular domed head and a tapering circular-sectioned shank. L (head): 6 mm; W (head): 4 mm  
LAL D 814, Ae 97, not closely phased

C104  Domed stud, with a solid, undecorated, sub-rectangular domed head and a tapering multangular-sectioned shank. This apparently becomes rectangular further down, but is now incomplete. L (head): 5 mm; W (head): 4 mm  
KLA B, Ae 2925, Unstratified

C105  Flat-headed stud (Fig 171). Much of the head is missing, but it was originally circular, flat, and undecorated, with a slightly curved, tapering, square-sectioned shank. Diam (est): 18 mm; W (shank): 4 mm  
KLA B 240, Ae 335, not closely phased

C106  Dome-headed stud (Fig 171), with a hollow, circular, slightly domed head and an irregularly sectioned shank, which starts off large and tapers rapidly. The shaft is bent at 90°. Diam: 11 mm; W (shank, max): 3 mm; Th (shank, max): 4 mm  
LAL C 242, Ae 58, Period 10C

C107  Dome-headed stud, with an undecorated, hollow, circular, domed head and a rectangular-sectioned shank. Diam: 9 mm; W (shank): 2 mm; Th (shank): 2 mm  
KLAB 601, Ae 1750, Period 14B (Post-Roman)

C108  Dome-headed stud (Fig 171). Complete, with an undecorated, hollow, circular domed head and a square-sectioned shank. Diam: 16 mm; W (shank): 2 mm  
KLA C 101, Ae 64, Period 17D (Post-Roman)
C109 Dome-headed stud (Fig 171). Almost complete, with an undecorated, hollow, circular domed head and an off-centre shank. Its cross-section is round for the top 5 mm and square below. Diam: 7 mm LAL D 262, Ae 31, not closely phased

C110 Dome-headed stud (Fig 171), with an undecorated, hollow, circular, domed head, now lead-filled. A rectangular-sectioned iron shank is held in place by the lead. Diam: 18 mm KLA B 782, Ae 2869, Period 11A

C111 Dome-headed stud, with an undecorated, hollow, circular, domed head, which is now lead-filled. A rectangular-sectioned iron shank is held in place by the lead. On the underside, an oval depression runs almost the full width of the head. Diam: 18 mm KLA B 690.01, Ae 2023, Period 14A (Post-Roman)

C112 Stud, with a hollow conical, undecorated head (Fig 171). The shaft is capped by a small circular rove. Diam (head): 20 mm; Diam (disc): 11 mm; Ht: 11 mm KLA B 1055, Ae 3188, Period 10C

C113 Lion-headed stud (Fig 171). Thin, hollow embossed head in the form of a lion's head, slightly damaged. On the underside are the remains of a rectangular-sectioned shank. There is no evidence for solder inside the head. Diam: 23 mm; W (shank): 2 mm; Th (shank): 2 mm LAL D 863, Ae 104, Period 10A

C114 Stud (Fig 171). Decorative circular stud, with a concave centre surrounded by an outer bead or ridge. On the underside, there is a square-sectioned hollow collar which contains the remains of a square-sectioned iron shank. Diam: 26 mm; W (shank): 7 mm; Th (shank): 7 mm LAL C 151, Ae 48, Period 11B

C115 Stud with a solid, round head (Fig 171). It is partially obscured by corrosion, but appears to have a central raised boss, surrounded by a concave area bounded by a broad convex outer rim. The flat underside has an incomplete, central, tapering rectangular-sectioned shank. Diam: 20 mm; W (shank): 6 mm; Th (shank): 7 mm LAL D 480, Ae 68, Period 11E

C116 Stud, originally with a circular head, but the majority of the original edge is missing. The centre rises to a three-sided point, but is otherwise undecorated. It has a tapering rectangular-sectioned shank. Diam: 21 mm KLA C 703, Ae 178, Period 15A (Post-Roman)

C117 Knob, with a bead-and-reel moulded head (Fig 172). The bottom reel is larger than the upper one. At the base, there is a rectangular socket which originally held an iron shank, now missing. There is a round projection above the upper reel, which is uneven and may be broken. Diam: 11 mm; L: 19 mm KLA C 1073, Ae 238, Period 10A-11B

C118 Two complete small rivets/nails. They both consist of short lengths of rectangular-sectioned rod, which tapers towards one end and is flattened at the other. Rivet 1: L: 11 mm; W (max): 2 mm; Th (max): 2 mm Rivet 2: L: 13 mm; W: 1 mm; Th: 2 mm LAL D 1075, Ae 123, Period 10B

C119 Rivet, with an uneven and irregularly shaped head, due to corrosion. In the middle of the underside is a rectangular-sectioned shank that tapers abruptly to a point. L (head): 6 mm; W (head): 4 mm LAL D 769, Ae 92, not closely phased

C120 Lock bolt (Fig 172). Incomplete slide bolt, with the openwork frame for the lock tumblers surviving in part, and showing that the key had a D-shaped tumbler at one end, then a rectangular one sub-divided into six triangles; this was followed by another rectangular tumbler, divided into two squares. The other end is missing. L: 64 mm; W: 20 mm; Th: 10 mm KLA B 1281, Ae 3284, Period 7

C121 Lock bolt (Fig 172). Incomplete slide bolt, with the openwork frame for the lock tumblers surviving in part, and showing that the key had a rectangular tumbler divided into two triangles, and a square one divided into four triangles. L: 67 mm; W: 15 mm; Th: 8 mm KLA B 1011, Ae 3059, Period 10C

C122 Lock bolt (Fig 172), complete, but completely corroded with no metal left (described from x-ray). The central area shows that the key had two tumblers, each divided into four triangles.
Figure 172: Copper-alloy knob, lock bolts and keys, hasp, and hinge
The horizontal projection has a circular hole through it, and a circular notch in the edge. The latter is probably a casting fault.

L: 89 mm; W: 17 mm; Th: 9 mm; Diam (hole): 4 mm
KLA C 884, Ae 200, Period 14A (Post-Roman)

C123  Lock bolt, possibly from a rotary lock. It survives as a cast rod, which becomes wider and thinner from one end to the other, and is broken at both ends. There is an asymmetrical notch in the underside and a ‘step’ in the upper surface. If it is a lock bolt, then the bit of the key would have engaged in the notch.
L: 44 mm; W: 3-7 mm
KLA B 845, Ae 2871, Period 11A

C124  Complete ring-key (Fig 172). The hoop of the ring is thin and largely round-sectioned, becoming triangular as it nears the front. The stem of the key has a round section. The wards are rectangular and have a wedge-shaped cross-section. They are separated from the stem by a narrow gap. The front face is decorated with a lightly incised X.
Diam (ring, int): 19-21 mm; L (stem): 16 mm; L (wards): 9 mm; W (wards): 6 mm
KLA D 18, Ae 8, Period 14A (Post-Roman)

C125  Key (Fig 172). Cast key handle, with an openwork fleur-de-lys design surmounting a rectangular base. The central lobe is topped by a segmented circular-sectioned rod. The base can be divided into two; the upper part has three triangular mouldings separated by grooves, while the larger bottom half has a central rounded moulding with a narrow one on each side. The remains of a rectangular socket for the stem of an iron key can be seen on the underside.
L: 68 mm; W: 38 mm; Th: 11 mm
KLA B 763, Ae 2302, Period 11B

C126  Key (Fig 172). Cast key handle, with an openwork fleur-de-lys design surmounting a rectangular base. The central lobe is topped by a solid round bead. The rectangular base is decorated with raised mouldings. A circular socket for the stem of an iron key can be seen on the underside.
L: 70 mm; W: 47 mm; Th: 16 mm
KLA C 867, Ae 195, Period 14A (Post-Roman)

C127  Complete hasp (Fig 172), with slight damage. The main part of the hasp is a rectangular sheet, with a wider sub-rectangular extension at one end, where there is a slightly off-centre circular hole. On the underside, there is a narrow sub-rectangular loop set at right-angles to the main part. The hasp would have been attached to the box by a link passing through the hole. The box would have been locked by passing a bolt through the loop when the hasp was in the ‘closed’ position.
L: 84 mm; W: 12-23 mm; Diam (hole): 8 mm
L (loop, int): 13 mm; W (loop, int): 10 mm
KLA A 916, Ae 1373, Period 11A

C128  Small cast hinge of trapezoidal form (Fig 172). When viewed with a flat edge along the top, the right-hand 18 mm has a rectangular cross-section, and has an oval hole at the right-hand end. The left-hand end consists of two curving projections, separated from the main body of the piece by a double triangular moulding, and from each other by a trapezoidal gap. Both of the projections are pierced by circular holes containing the remains of an iron pivot with domed ends.
L: 30 mm; W: (max): 13 mm; Th: 3-9 mm
KLA A 616, Ae 923, Period 11B

C129  Corner reinforcement (Fig 173). L-shaped piece of sheet, complete, but with minor damage. The end of each arm has a small rectangle cut from the centre. This was done with ‘tin-snips’, as one side of one of the cut-outs is over-cut. There are circular nail holes in the centre of the long sides of each arm, and originally there was a similar hole at the external angle.
L: 70 mm; W: 65 mm; Th: <1mm; Diam (holes): 2 mm
LAL D 232.09, Ae 87, Period 11D

C130  Fitting (Fig 173). The main part of the fitting is a slightly domed but undecorated rectangular plate, with sub-rectangular perforated projections at each end of the underside; one is broken, and one corner of the plate is missing.
L: 39 mm; W: 21 mm; Th (max): 3 mm
KLA B 842, Ae 2929, Period 11A

C131  Fragmentary fitting (Fig 173), now comprising two D-sectioned arms separated by a lozenge. The face of the lozenge is decorated with a raised rectangular-sectioned moulding.
L: 11 mm; W: 17 mm; Th: 3 mm
LAL C 133, Ae 52, Period 11B

C132  Incomplete fitting, the main body of which has curved ends, each with a circular hole. The area between contains opposed grooves, joining the holes to the sides. On each of the sides where the grooves meet the edge is a triangular projection.
Figure 173: Copper-alloy fittings

C133  Washer? A disc with a circular central hole. One side has a vertical flange around the hole; the other does not. Diam (disc): 36 mm; Diam (hole): 14 mm; Th: 2 mm
LAL D 1003, Ae 117, Period 10B

C134  Washer? Complete plano-concave disc, pierced with an off-centre circular hole (Fig 173). There is a V-shaped groove around the edge. Diam (disc): 17 mm; Diam (hole): 7 mm; Th (max): 3 mm
KLA B 289, Ae 389, Period 11D-12

C135  Binding (Fig 173). Complete tubular binding with a grooved outer surface. L: 10 mm; Diam (ext): 10 mm
KLA F 26, Ae 1, Period 4B

C136  Fragment of round-sectioned solid rod, with a slight curve near one end. L: 28 mm; Diam: 5 mm
LAL D 1104, Ae 133, Period 9

C137  Incomplete tube, made by wrapping sheet metal around a former, and lap-jointing the end. The tube may originally have been curved along its length, but this is not certain. The conservation report states that there is tin on the inside and copper alloy on the outside. L: 41 mm; Diam: 10 mm; Th (metal): <1 mm
KLA B 724, Ae 2366, Period 11D-12

C138  Ring, incomplete. Circular section. Diam (approx): 25 mm; W: 3 mm
KLA C 1026, Ae 231, Period 11D-12

C139  Ring, complete. Circular section, worn on one side. Diam: 17 mm; W: 2 mm
KLA B 279, Ae 316, Period 13 (Post-Roman)

C140  Ring, complete. Circular section, with an intentional break in it. Diam: 6 mm; W: <1 mm
KLA B 601, Ae 1407, Period 14B (Post-Roman)

C141  Ring. About 50% survives. Round section. Diam: 35 mm; W: 3 mm; Th: 3 mm
LAL D, Ae 137, Unstratified

C142  Ring, complete, oval-sectioned. Worn on one side. Diam: 18 mm; W: 1 mm; Th: 2 mm
CAG A 17, Ae 11, Unstratified

C143  Ring, complete. D-sectioned, worn on one side. Diam: 20 mm; W: 1 mm; Th: 2 mm
KLA D 378, Ae 50, Period 10A
C144  Ring, complete, D-sectioned. At one place it is very corroded and split.
Diam: 21 mm; W: 2 mm; Th: 2-3 mm
LAL D 987, Ae 114, Period 10B

C145  Ring. Less than 50% survives; fragments. D-sectioned.
Diam (est): 24 mm; W: 4 mm; Th: 2 mm
LAL D 894, Ae 114, Period 10B

C146  Ring. About 12.5% survives. D-sectioned.
Diam (approx): 50 mm; W: 4 mm; Th: 4 mm
KLA C 1528, Ae 259, Period 11C

Diam: 20 mm; W: 2 mm; Th: 3 mm
KLA D 458, Ae 56, not closely phased

C148  Ring. Two fragments, rectangular-sectioned. Diam (est): 24 mm; W: 3 mm; Th: 3 mm
LAL D 575, Ae 80, Period 11E

C149  Ring. About 25% survives in three fragments, rectangular-sectioned.
Diam: 30 mm; W: 4 mm; Th: 4 mm
KLA C 935, Ae 219, Period 11D-12

C150  Ring. Fragment only survives, rectangular-sectioned.
Diam: 18 mm; W: 1 mm; Th: 2 mm
KLA B, Ae 1359, Unstratified

C151  Ring. Complete. Trapezoidal-section.
Diam: 22 mm; W: 3 mm; Th: 4 mm
LAL D, Ae 12, Unstratified

C152  Ring. Irregular-sectioned rod bent into a ring.
Diam: 18 mm; W: 2 mm; Th: 1 mm
LAL D 1182, Ae 135, Period 8A

C153  Ring. A length of rectangular-sectioned wire, which has been bent into a penannular ring.
Diam: 14 mm; W: 1 mm; Th: 1 mm
LAL D 1021, Ae 129, Period 10A

C154  Ring. A D-sectioned rod bent into a ring, with the ends overlapping. The whole has been squashed into an egg-shape. Found with a small irregular disc and a small rectangular strip.
Diam: 20-7 mm; W: 2 mm; Th: 2 mm
Diam (disc): 12-14 mm; L (strip): 13 mm
W: (strip): 7 mm
KLA C 886, Ae 223, Period 11D-12

Militaria
C155  Strap end, in the form of a ring held by a double disc-shaped tag. The ring is made from a rectangular-sectioned rod with the ends butted together. The tag is made from two discs joined by a waisted tag. The tag is separated from the discs by a notch. The strip has been folded double around the ring. There is a central square hole for the shank of the stud used to hold the tag to a strap. This probably had a circular head, as there is a depression, 10 mm in diameter, around the hole.
Diam (ring): 20 mm; W (ring): 3 mm; Th (ring): 3 mm
Diam (tag): 14 mm
KLA C 948, Ae 288, Period 10A-11B

C156  Belt fitting (Fig 174), in the form of a stylized phallus. The shaft and head were originally inlaid with tin but much is now missing. The underside is hollow and has the remains of two round-sectioned rivet shanks.
L: 27 mm; W: 13 mm; Th: 4 mm
KLA B 1055, Ae 3191, Period 10C

C157  Belt mount (Fig 174). Rectangular mount with openwork centre. The openwork is a repeat pattern consisting of a hollow concave-sided lozenge with a trefoil at each point. The elements have a triangular cross-section. The mount narrows at one end and has a trapezoidal tongue, pierced with two circular holes.
L: 53 mm; W: 23 mm; Th: 2 mm
KLA D 226, Ae 54, Period 11A

C158  Belt plate (Fig 174). Probably less than 25% survives of this originally rectangular mount, with straight sides and decorated ends. At the corner, this is a simple zig-zag, with a larger semi-circular projection nearer the centre. The centre of the mount is hollow, with a convex border bounded on both sides by flat zones, the inner one being separated by a triangular moulding. There are flecks of gilding visible in the central area. On the underside, a single round-sectioned shank, with the remains of a flattened end, survives.
L: 20 mm; W: 25 mm; Th: 2 mm
KLA C 886, Ae 198, Period 11D-12

C159  Belt stiffener. The stiffener is a plain, straight-sided rectangular strip. One end is broken and the other is at an angle to the sides. The underside is plain, except for two integral round-sectioned rivets.
L: 40 mm; W: 10 mm; Th: 2 mm; Diam (rivets): 3 mm
KLA C 1254, Ae 253, Period 6

C160  Strap-connector? One end of the connector is a narrow strip pierced with a rivet hole. The other end of the strip becomes a rectangular-
sectioned bar, which is curved round to form an open loop.
L: 36 mm; W (strip): 7 mm; W: (loop): 3 mm; Diam (loop): 11 mm
KLA B 844, Ae 2883, Period 11A

C161 Buckle (Fig 174). Incomplete heart-shaped buckle frame, with a hollow rectangular-sectioned T-shaped extension. There is a corroded piece of thin metal around the cross-bar. The rectangular-sectioned pin is also attached to the T, by a single loop.
L: 38 mm; W: 29 mm
LAL D 816, Ae 101, Period 11A

C162 Mount (Fig 174). Approximately half of an enamelled mount. The slightly trapezoidal object has a convex surface. It bears a simple enamelled design, with rows of alternating squares, now red and pale green, separated by a blue stripe. The underside has the remains of two square-sectioned shanks, but probably originally had three.
L: 32 mm; W: 17 mm; Ht: 8 mm
LAL C 146, Ae 49, Period 11A

C163 Mount (Fig 174). This comprises a lyre-shaped plate, with a triangular projection at the top and a more substantial rectangular one at the bottom. The front face is decorated with two converging V-sectioned grooves, which form a lozenge. The front of the rectangle has a knob at the top, and the sides are chamfered. There is a single rectangular-sectioned shank on the rear.
L: 23 mm; W: 12 mm; Th: 5 mm
LAL D 502, Ae 72, Period 11E

C164 Fitting (Fig 174), the main part of which is an open heart-shape. Above this is a rectangular plate, with curved projections in the middle of each short end. The face is decorated with an incised line following the edges. Below the heart is a palmette, which has a bead at the end, separated from the central point by

Figure 174: Copper-alloy militaria

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a transverse moulding. The rear has three projecting shanks, one at each end of the rectangular plate and one at the base of the heart. The casting is roughly finished, with the interior of the heart-shape being irregular and with visible file-marks on the reverse. Only the flattened ends of the shanks suggest that it has been used.

L: 65 mm
KLA B 188.05, Ae 274, Period 7-8A

C165 Fitting. A roughly pentagonal fragment, with a line of embossed dots spaced at six per 10 mm along the top and bottom edges, to the left of a line drawn across the piece from the apex of the top edge. There are also two pairs of holes punched through the sheet, one on either side of the line. The holes on one side of the line were punched through the sheet from one side and the other holes from the other side. The undulating nature of the sheet suggests that it was folded at some time. It may have been folded in half and riveted to something else, leaving the side with the embossed dots visible.

L: 48 mm; W: 20 mm; Th: <1 mm
LAL D 1021, Ae 126, Period 10A

C166 Military pendant (Fig 174). A leaf-shaped pendant, with a rectangular-sectioned loop at the shorter end. Conservation has revealed traces of tinning along the edges of the plate and under the loop.

L: 37 mm; W: 12 mm; Th: 2 mm
KLA B 957, Ae 3007, Period 10C

C167 Military pendant (Fig 174). There is a suspension loop at the top and the remains of a symmetrical pendant below.

L: 22 mm; W: 15 mm; Th: 1 mm
KLA A 864, Ae 1318, Period 10C

C168 Military pendant (Fig 174). Incomplete peltate pendant. All that remains is the bottom, with the remains of openwork decoration above. On the underside, there are two round-sectioned shanks with flattened ends.

L: 29 mm; W: 30 mm; Th: 1 mm
KLA A 726, Ae 1000, Period 11C

C169 Shield binding? A strip bent lengthwise in a U-shape. There is a round-sectioned rivet through the binding. One edge of the binding is broken at this point and the other expands into a semicircular tab around the rivet. A second strip, at right-angles to the binding, is also secured by the rivet. Conservation noted possible traces of wood inside the binding.

L: 27 mm; W: 4 mm
KLA B 704, Ae 3356, Period 11D-12

Religion

C170 Phallic amulet (Fig 175). A phallus with a suspension loop in the centre of the upper surface.

L: 45 mm
LAL D 1075, Ae 124, Period 10B

C171 Double phallic amulet (Fig 175). A central socket, open at each end, flanked on both sides by an erect phallus. The central socket

Figure 175: Copper-alloy 'religious' objects
is narrower at the top than the bottom, and conservation has revealed traces of wood within it. The front of the socket is decorated with parallel grooves.

W: 38 mm; Ht: 12 mm
KLA B 797, Ae 2692, Period 11B

C172 Votive object (Fig 175). Possible miniature adze-hammer, cast. One end is missing and there is damage to the blade. There is a central perforation, flanked by opposing triangular projections. The blade flares out to an expanded cutting edge, and on the opposing side, a short stub survives, which, to judge from its cross-section, was either another similar blade or a hammer.
L: 29 mm; W: 12-16 mm
LAL D 455, Ae 148, Period 11E

C173 Statuette? One foot and part of the leg from a small statuette, broken at mid-calf (Fig 175). The foot is wearing a straight low boot, with no detail indicated. X-ray fluorescence analysis (XRF) shows that the metal is copper with 9% lead.
L (foot): 30 mm; Ht (piece): 28 mm
LAL B 108, Ae 69, Period 14B (Post-Roman)

Other copper-alloy objects
C174 Wire. Two fragments of tapering round-sectioned wire, possibly from pin shafts.
Piece 1: L: 47 mm; Diam: 1 mm
Piece 2: L: 61 mm; Diam: 1 mm
KLA C 1188, Ae 257, Period 10A-11B

C175 Unidentified object, possibly a key. A rectangular-sectioned stem, which is flattened at one end and worked into a rounded shape, with a central rectangular void.
L: 21 mm; W (flattened end): 8 mm; W (stem): 2 mm; Th (stem): 2 mm
KLA C 838, Ae 225, Period 11D-12

C176 Unidentified object (Fig 176). A flat disc, with a carelessly executed serrated edge, formed by V-shaped notches which are not radial to the disc. The notches are cut from one side only. On the rear of the disc are the remains of what was identified, during conservation, as solder (J Jones pers comm).
L: 21 mm; W: 23 mm; Th: <1 mm
LAL D 1021, Ae 130, Period 10A

C177 Unidentified object. A small cast piece, with an oval-sectioned central element. One end is flat with an oval concavity, while the other has extensions on each of the long axes. The surface is undecorated except for a ridge along the narrow parts of the oval.
L: 18 mm; W: 12 mm; Th: 13 mm
KLA C 945, Ae 244, Period 10A-11B

C178 Unidentified object. Fragment of strip with irregular edges. At one end, one edge continues on to form a triangle. Originally, the other side also did so, giving the object a forked end. The other end is straight. The whole is slightly curved.
L: 46 mm; W: 4 mm; Th: <1 mm
KLA C 1073, Ae 235, Period 10A-11B

C179 Unidentified object (Fig 176). Two triangular pieces of sheet and a round-sectioned rod. The rod has been bent into an oval loop.
Triangle 1: L: 14 mm; W (base): 8 mm
Triangle 2: L: 13 mm; W (base): 9 mm
Diam (rod) 3 mm; Diam (loop): 13-18 mm
LAL D 1013, Ae 120, Period 10B

C180 Unidentified object (Fig 176). A hollow cylinder, closed at one end. The exterior of the base is flat, with a vertical outer edge, 3 mm high. Above this, it slopes in before meeting the vertical side of the main body, which is undecorated except for two triangular-sectioned lugs, 12 mm and 15 mm long, and 9 mm from the base. The top edge is flat. The interior is undecorated and follows the shape of the exterior.
Diam: 39-46 mm; Ht: 29 mm
KLA D 413, Ae 57, Period 10C

C181 Unidentified object. Fragment of strip, which has a squared-off end with chamfered corners and a raised dot in the centre. The strip tapers in from this to a point 41 mm from it, where it expands into a rough teardrop shape. This has been shaped by cutting, and it is at a slight angle to the strip. It has a small rivet hole in the centre. The direction in which the rivet hole was made is the opposite from that used to make the dot.
L: 48 mm; W: 4-5 mm; Diam (hole): 2 mm; Diam (dot): 1 mm; Th: <1 mm
KLA B 757, Ae 2364, Period 11B

C182 Unidentified object (Fig 176). A roughly pistol-shaped object. At the surviving original end is a round socket, containing much iron corrosion. Conservation has revealed traces of white metal plating.
L: 27 mm; W (max): 14 mm; Th: 9 mm
KLA D 329.02, Ae 44, Period 11C

C183 Unidentified object (Fig 176). A rectangular cast object with a rectangular cross-section. The sides are flat, but the top and bottom are
Figure 176: Miscellaneous copper-alloy artefacts
shaped. The central part is an arc of a circle and there are rectangular(?) extensions at each end of the convex side.
L: 31 mm; W: 8 mm; Th: 6 mm
KLA C 1065, Ae 239, Period 11C

C184 Unidentified object (Fig 176). A sub-rectangular ‘blade’, which is separated from a rectangular-sectioned stem by curving shoulders on each side.
L: 47 mm; W (blade): 12 mm; W (stem): 2 mm; Th (blade): 1 mm; Th (stem): 2 mm
LAL C 97, Ae 78, Period 11E

C185 Unidentified object (Fig 176). A triangular object, with a projection on each side of the top, giving a superficial resemblance to a bull’s head. The front surface is enamelled, with a roughly symmetrical design in red enamel.
Ht: 50 mm; W (across top): 49 mm; Th: 3 mm
LAL D 561, Ae 78, Period 11E

C186 Unidentified object (Fig 176). A sheet-metal cross-shaped object. The arm opposite the long one is broken, and was originally much longer. The front of the cross has a single dot-and-circle motif at the centre. The surviving long arm has a semi-circular end, and is pierced by a hole, 3 mm in diameter. The hole appears worn on the side nearest the main body of the object.
W (head): 36 mm; W (long arm): 9 mm; Th: 1 mm
LAL D 604, Ae 84, Period 11E

C187 Unidentified object (Fig 176). A hollow cylindrical object, closed at one end, containing a smaller cylinder offset to one side. Inside the smaller cylinder is a square-sectioned void. The exterior is undecorated except for an off-centre rounded projection on the base.
Diam: 16 mm; Ht: 20 mm
KLA B 696, Ae 2078, Period 11D-12

C188 Unidentified object (Fig 176). A Y-shaped cast object, perhaps a handle or escutcheon. The two arms of the Y are D-sectioned and curve in to join, forming an oval-sectioned leg. The lower end of this expands to form a concave sub-triangular area, pierced with a circular hole. The bottom edge of this is uneven and may be broken. There are the remains of circular rivets at the end of each arm.
L: 40 mm; W (across arms): 41 mm; Diam (leg hole): 6 mm; Diam (rivets): 3 mm
KLA B 697, Ae 2094, Period 11D-12

C189 Unidentified object. A flat circular disc, which has a ring on one side and a rectangular loop on the other. The disc is now bent. Only about half of the lentoid-sectioned ring survives. The majority of the long side of the rectangular loop is missing, and the short sides have been pushed together by the bending of the disc.
Diam (disc): 30 mm; Diam (ring, ext): 15 mm; W (loop): 5 mm; Th (loop): 3 mm
KLA B 730, Ae 3361, Period 11D-12

C190 Unidentified object. A plate of copper alloy, with straight edges and tapering sides. At the centre of one end is a short neck, set at an angle and terminating in a round button.
L (overall): 19 mm; W: 13 mm; Th (plate): 1 mm; Diam (button): 7 mm
KLA C 904, Ae 221, Period 11D-12

C191 Unidentified object. A short length of tube. As it is biconical in shape, it may be a bead but, if so, the perforation is large for its size.
L: 17 mm; Diam (max): 9 mm; Diam (perf): 8 mm
KLA C 1028, Ae 230, Period 11D-12

C192 Unidentified object. Two lentoid-sectioned arcs, one wider than the other, joined at one end. On the underside, the metal forms an irregular lump at the join.
L (overall): 23 mm; W: 4-9 mm; Th: 3 mm
LAL C 73, Ae 40, Period 12