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# Bearsden

A Roman Fort on the Antonine Wall

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## Chapter 5

# STONE

### 5.1 ANALYSIS

G H COLLINS<sup>†</sup>

Four specimens of stone from the bath-house were examined. Three are cross-laminated sandstones and the fourth a coarse yellow-sandstone. All the specimens can be matched with examples from the Carboniferous Limestone Series of the Lower Carboniferous (Macgregor & MacGregor 1948: 35). Outcrops of these rocks are to be found in the valley of the River Kelvin about 2.5km south-east of the site of the fort between NGRs NS 555 706 and NS 569 712.

### 5.2 THE STONE OBJECTS

L AWRENCE KEPPIE

Measurements are given in the order: height, width, depth, unless otherwise specified. The stone employed is normally a yellow-buff

local sandstone. The descriptions of nos 5–9 draw upon entries in Keppie and Arnold 1984, and Keppie 1998.

#### 5.2.1 Inscribed and sculptured stones

1. Inscribed building stone (illus 5.1 and 5.2), 125mm × 265mm × 290mm with tapering sides, having the outer face recessed in the shape of an ansate panel to receive an inscription which reads LEG x x VV / QVINT FEC. *Leg(ionis) XX V(aleriae) V(ictricis) (centuria) Quint(...) fec(it)* 'Of the Legion x x, Valiant and Victorious, the century of Quint ... built (this)' (illus 5.1 and 5.2). A single interpunct is visible in line 2, between the fifth and sixth letters. Letter heights: 1: 16mm–30mm; 2: 16mm–25mm. Published: Hassall and Tomlin 1977: 433 no 32, pl xxixA; *AE* 1977, 526; Keppie 1983: 401 no 12; Keppie 1998: 96 no 25; *RIB* 3506. The ansate panel is unusual in that the central rectangle is enlarged by triangles to left and right, into the latter of which the inscribed



Illustration 5.1

Stone 1, the inscription of the Twentieth Legion.

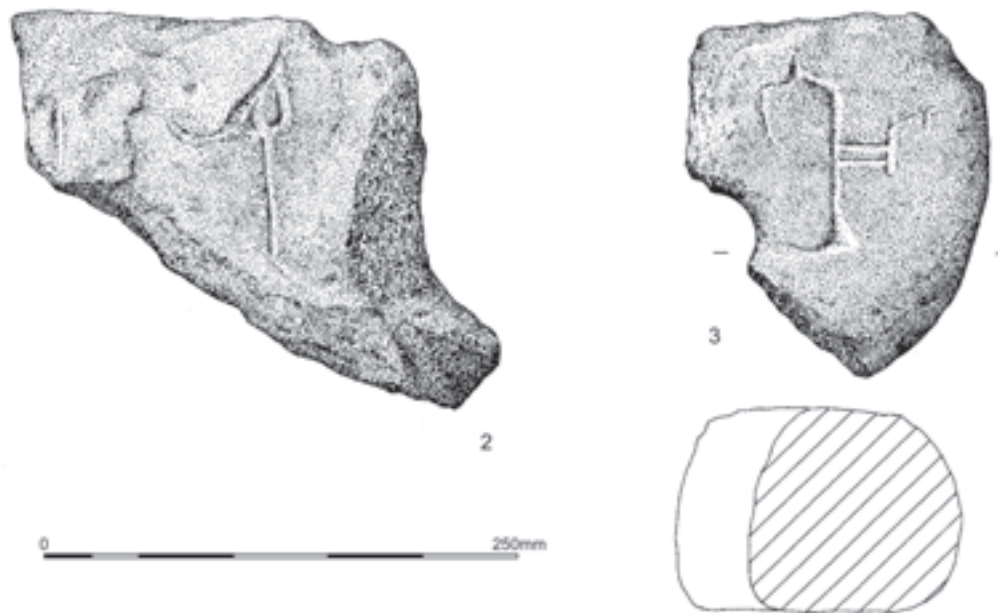
BEARSDEN: A ROMAN FORT ON THE ANTONINE WALL



*Illustration 5.2*  
Stone 1, photograph of the inscription of the Twentieth Legion.

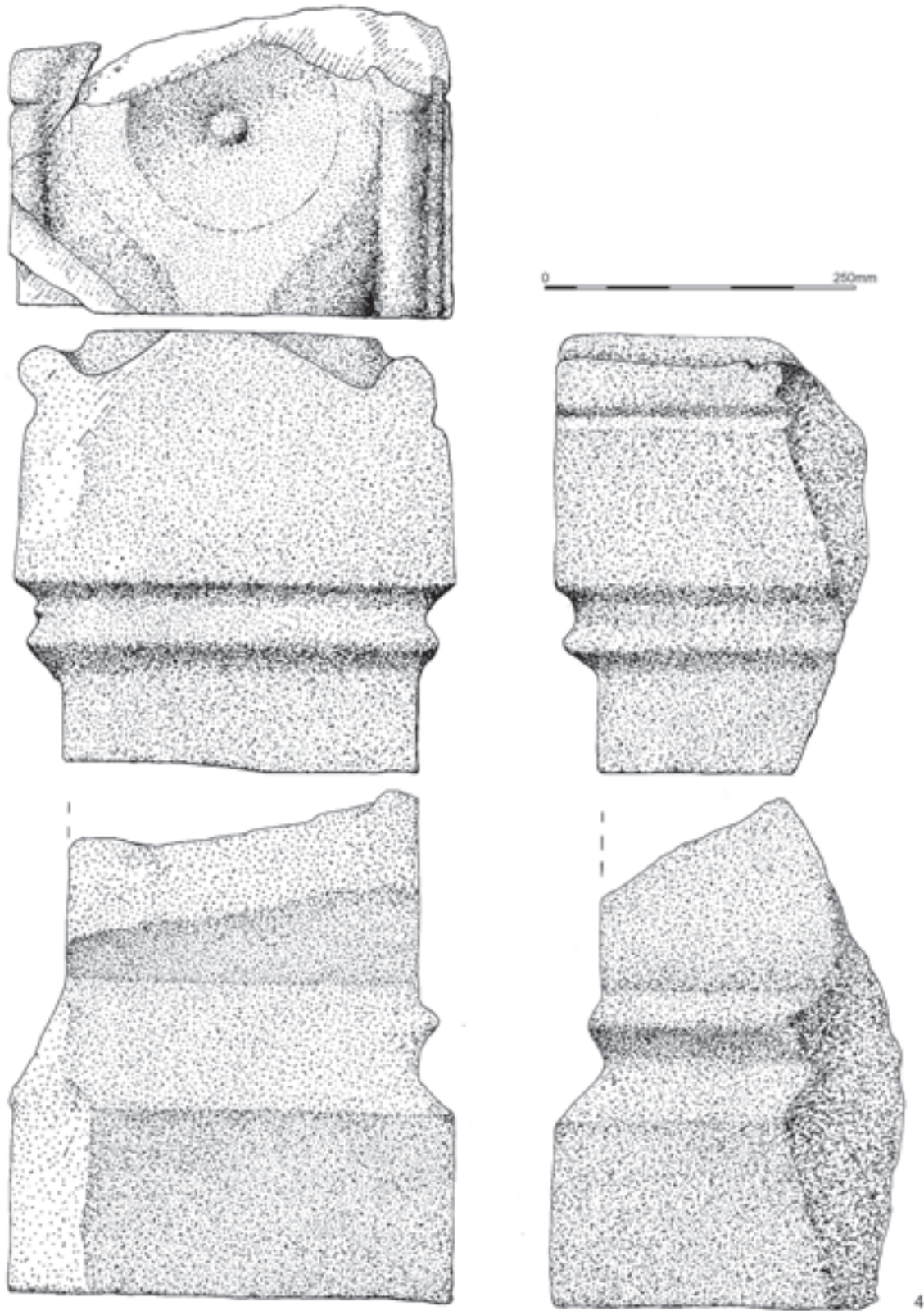
text intrudes. The lettering is crudely cut; note in line 2 the unusual serifs, the long Q, I and F and the broadened N. The reduction in the size of the lettering at the end of the line 1 could suggest that the stonecutter had already realised that space was going to be insufficient for the information

to be imparted in line 2. The stone belongs in the class of 'centurial stones', recording building work by the Roman army, especially the legions. Such stones are familiar from the line of Hadrian's Wall where they record the completion of lengths of the curtain wall, and elsewhere, including some



*Illustration 5.3*  
Stones 2 and 3.

STONE



*Illustration 5.4*  
Stone 4, the unscripted altar.

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Illustration 5.5  
Stone 4, photograph of the uninscribed altar.

from forts in Scotland. Such inscriptions may identify the builders by naming the legion, or the cohort of an unnamed legion, or the century, or some combination of these three elements. For inscriptions combining the name of a legion and a centurion, as here, see *RIB* 1431, 1965, 2016, 2137.

The first line names the legion responsible, *legio XX Valeria Victrix*, the Twentieth Valiant and Victorious legion. The second begins with the name of the officer in charge, who may be presumed to have been a centurion. If a single name is used, this is most often the man's cognomen (surname); or if two names are given, these are the nomen (family name) and the cognomen (surname). Most probably Quint here is an abbreviated cognomen, eg *Quinti*, 'of Quintus', *Quintiani*, 'of Quintianus' or *Quintini*, 'of Quintinus'. Notice *L Aurelius Quintus*, centurion at Rome (*ILS* 4776) and *Quintinus*, centurion (presumably of II Augusta) at Caerleon (*RIB* 349); a lead-stamp from the same site, perhaps for bread, reads *7 Quintini Aquilae*, 'the century of Quintinus (or Quintinius) Aquila' (*RIB* 2409.7). *Quintianus*, a centurion of *cohors I Frisiavonum*, is attested at Manchester (*RIB* 578). The name of the centurion in such texts is usually preceded by the notation 7, but this 'centurial' sign appears lacking here. The Bearsden stone commemorated construction work on a stone-built structure, presumably the north granary.

NG76CK; found in the rubble of building 4, the granary, unstratified.

2. Fragment of a flat slab, 200mm×210mm×90mm, with rounded top edge, rather worn, showing the possible remnants of one or more letters (left on *illus* 5.3) and what appears to be a leaf-tendril with a very long stalk. The orientation of the fragment is uncertain.  
NK73BT; building 3, topsoil.
3. Fragmentary block of stone, 185mm×165mm×120mm, with rounded edges, and part of a central perforation (right

on *illus* 5.3). Visible on one surface is what could be a single letter F or two letters ligatured. Alternatively, if the fragment is reorientated by 90° to the right, it could show a stylised two-legged bird (Dr R S O Tomlin, pers comm, who compares *RIB* 1491 = Coulston and Phillips 1988: no 384). The stone seems most likely to have served as a counterweight.

Bath-house, unstratified.

4. Uninscribed altar (*illus* 5.4 and 5.5). Two fragments preserve the greater part of an altar, in reddish buff sandstone. The first, 350mm×360mm×230mm, preserves the capital and the upper portion of the shaft. The capital is separated from the shaft by a plain triangular moulding round three sides; on the left side only there is a small, secondary moulding. The front of the capital is plain but worn, and damaged at the left side. The front of the right-hand bolster had broken away, but is now reattached. Damage has also been sustained at the front-left corner, matching that on the capital. The top of the capital is ornamented with plain bolsters, divided by an incised line half way along their length. Between them is a focus with high sides and a central boss, in imitation of a metal vessel. The second fragment, 380mm×390mm×300mm, preserves the base and a small part of the lower portion of the shaft which is separated from it by a plain moulding. Published: Keppie 1998: no 46.

The two fragments together preserve about two-thirds of the altar, whose overall height can be estimated at c 800mm. The orientation of the fragments can be established by an examination of the chisel marks on the front and right-hand sides of both fragments. The bottom of the lower fragment has been slightly hollowed out in the centre. If the one well-preserved and carefully smoothed face has been correctly identified as the front of the altar, it seems most unlikely that any letters were ever carved upon it. The altar was found inside the bath-house, so was presumably in regular use; but we cannot say which deity or deities were being venerated.

NK73BO; bath-house, cold room, rubble overlying floor.

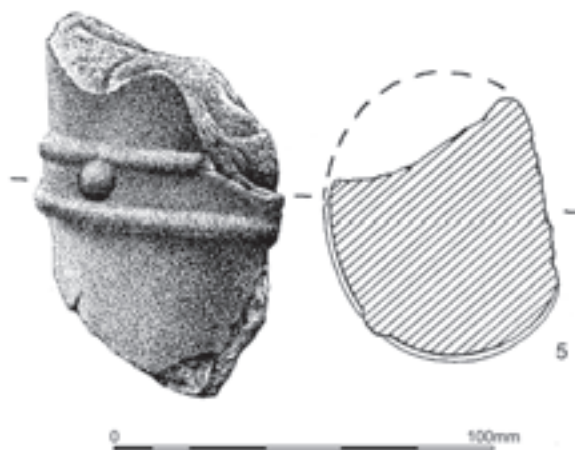


Illustration 5.6  
Stone 5.



Illustration 5.7  
Stone 6, the head of a goddess.

5. Fragment, 70mm × 105mm × 80mm, likely to be the central part of a bolster from an altar capital; it shows strapping decorated with a plain raised boss (illus 5.6). Cf *RIB* 2176. Published: Keppie & Arnold 1984: no 141; Keppie 1998: no 79.

NK73, debris in the cold plunge of the bath-house.

6. Female head, 170mm × 110mm × 150mm (illus 5.7 and 5.8). The head, from a statue or bust of about half life-size, is only slightly worn but the nose is broken away. The face was sheared off at the moment of discovery, but was subsequently restored. There is damage at the right side and to the rear which is roughly finished off. The face, which is slanted slightly upwards, has broad, down-turned lips and lentoid eyes. The hair is neatly waved with a central parting and covers the ears. Rising from the top of the head, towards the back, is a roll of hair with a criss-cross binding on top. Published: Keppie & Arnold 1984: no 139; Keppie 1998: no 64.

The waved hair is a familiar feature of Romano-Celtic portraiture. Compare, for example, a female head from the cold room of the annexe bath-house at Balmuildy (Keppie & Arnold 1984: no 133 = Keppie 1998: no 62); the waterspout from the bath-house at Duntocher (Keppie & Arnold 1984: no 151 = Keppie 1998: no 66); the statue of Brigantia from Birrens (*RIB* 2091 = Keppie & Arnold 1984, no 12); a head from York (Rinaldi Tufi 1983: no 71); the head of 'Luna Selene' at Bath (Cunliffe & Fulford 1982: nos 21–3); reliefs of the Mother Goddesses at Cirencester (Henig 1993: nos 116–17), and depictions of the Gaulish goddess Nantosuelta



Illustration 5.8  
Stone 6, photograph of the head of a goddess.

(Green 1995: 129). Notice also Espérandieu 1911: no 3379 and Howard-Davis 2009: 870 pl 230. The lentoid eyes are closely paralleled on a male head found recently at Binchester, County Durham. The findspot has prompted identification with Fortuna, often venerated in military bath-houses. However, no attributes of Fortuna survive here, so that a positive identification is not possible. The intact statuette

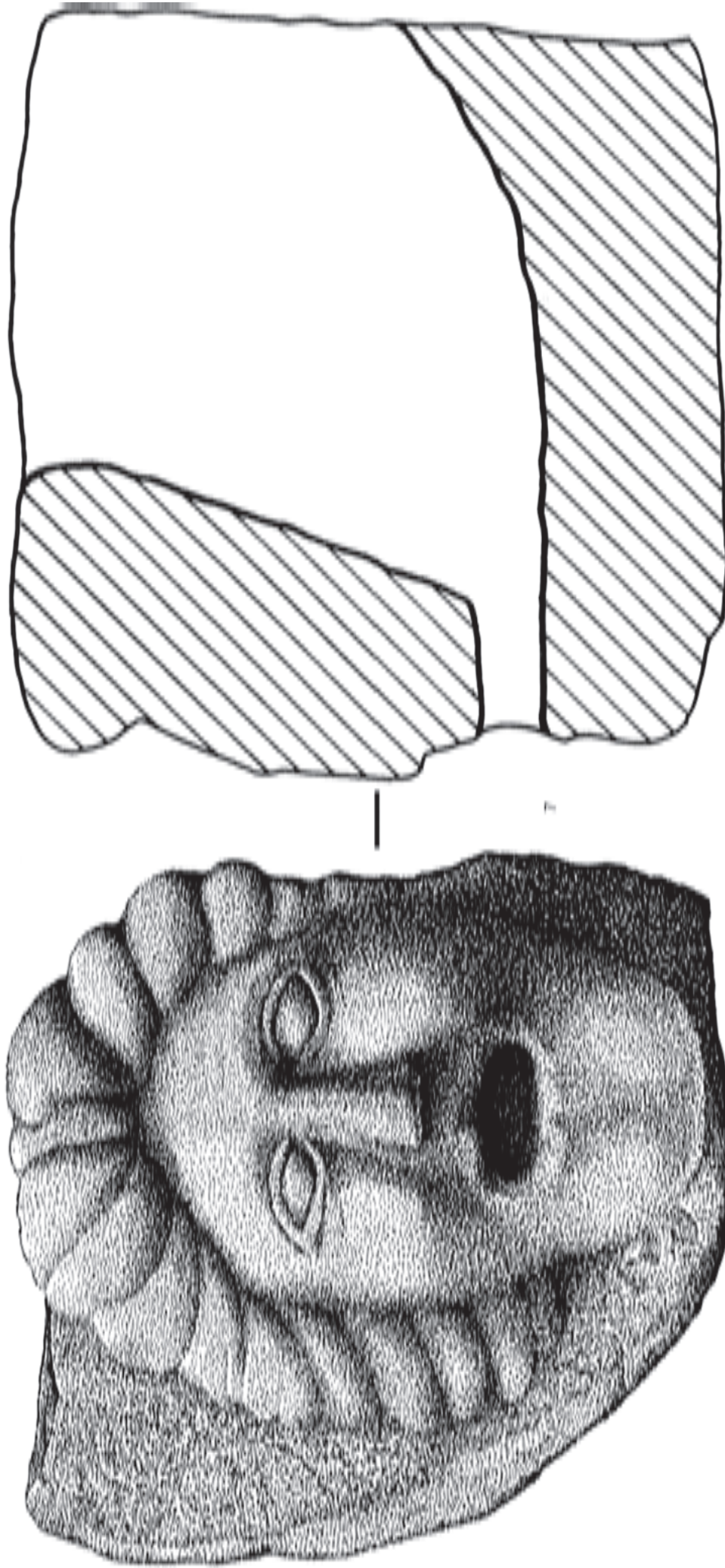


Illustration 5.9  
Stone 7, the fountain head.

of Fortuna found in the commander's baths at Birdoswald on Hadrian's Wall has similar features (Coulston & Phillips 1988: no 15); cf Krüger 1970: no 192.

NK73DR; bath-house, rubble in the cold bath.

7. Fountain head, 250mm×260mm×290mm (illus 5.9 and 5.10). The front is carved to show a human head, with broad, gaping mouth, lentoid eyes, and thick loosely waved hair. The right-hand side is broken away, and slight damage has been sustained to the nose, mouth and chin. The back of the stone is hollowed out to receive water brought to it in a pipe or a channel-stone; water exited through the mouth, presumably into a basin below (cf Keppie & Arnold 1984: no 151). Published: Keppie & Arnold 1984: no 140; Keppie 1998: no 65.



Illustration 5.10  
Stone 7, photograph of the fountain head.

The fountain head recalls those ornamenting public fountains at Herculaneum (Wallace-Hadrill 2011: 168), and is reminiscent of Graeco-Roman theatrical masks. A terracotta antefix from the roof of the legionary bath-house at Exeter exhibits a similarly gaping mouth (Bidwell 1979: 149 pl xviii). The treatment of the eyes and hair here reveals strong Celtic influence, in workmanship resembling no 6 above. Cf Espérandieu 1918: 5543.

NK73; south of bath-house changing-room, unstratified.

8. Building stone, 270mm×185mm×225mm, on which is a crudely incised human figure with a large head, a protruding ear, and deep-set eyes (illus 5.11). The left side of the stone is broken away. The legs terminate in short horizontal strokes representing the feet; the right leg is perhaps bent at the knee. To the right is a vertical pole from which protrude short lines, angled downwards. Published: Keppie & Arnold 1984: no 143; Keppie 1998: 128 no 75.



Illustration 5.11  
Stone 8.

The figure has much in common with incised 'outline' figures usually held to represent Celtic deities. If so, the object on the right may be a tree; cf Brewer 1986, no 15, Coulston & Phillips 1988: no 360; Henig 1993: nos 126-7, 129; Coulston 1997: 119, figs 8.13, 8.14; *RIB* 3189.

NK73; among debris overlying the bath-house.

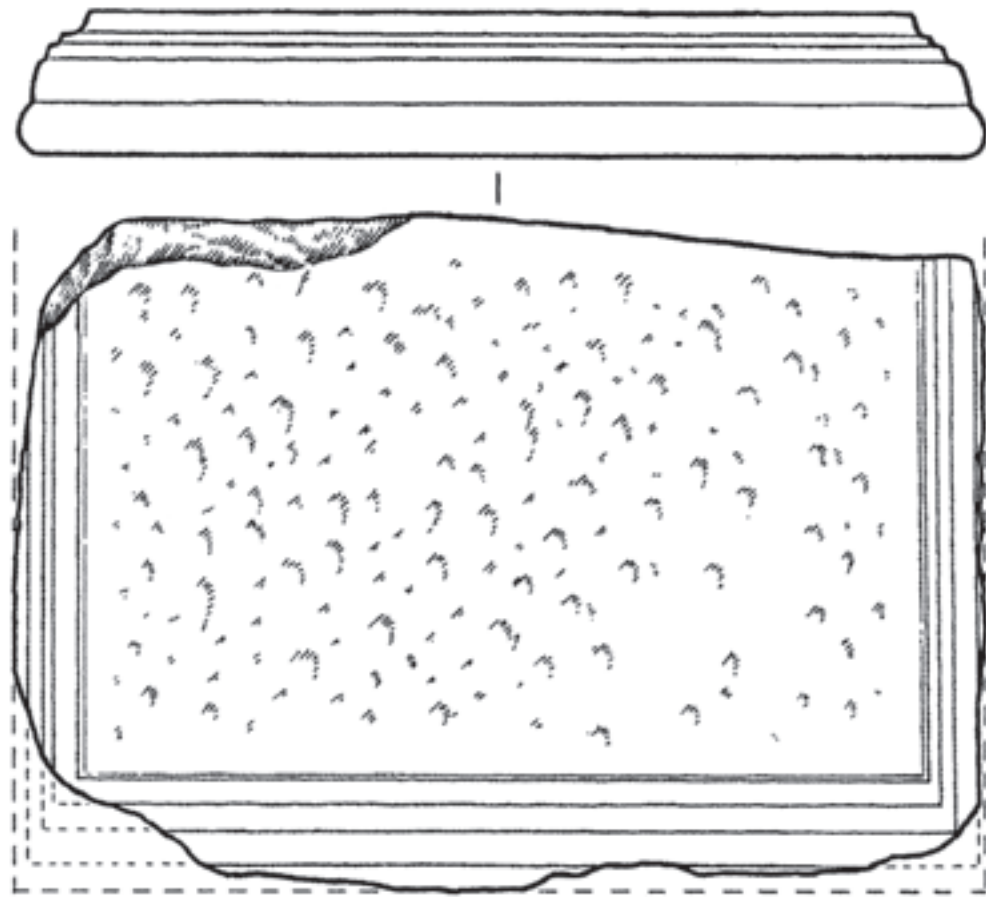
9. Fragment of the decorative border of a sculptured slab, 75mm×145mm×65mm, showing a frieze of leaves and tendrils (illus 5.12). Published: Keppie & Arnold 1984: 51 no 142; Keppie 1998: 130 no 80.

NK73DR; bath-house, cold bath.

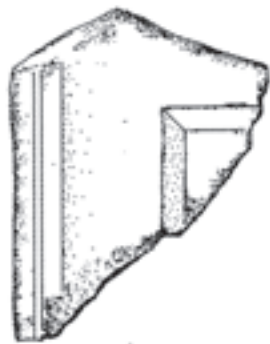


Illustration 5.12  
Stone 9.





10



11



Illustration 5.13  
Stones 10 and 11.

10. Plinth, 620mm × 410mm × 110mm, with plain mouldings round three sides, much damaged and chipped at the corners (illus 5.13). The fourth side, presumably the back which was not intended to be seen, is plain. On the underside two symmetrically placed holes, 20mm–40mm across and 30mm–40mm deep, close to front left and right corner were perhaps designed to receive wooden pegs. Very probably this plinth served as the base for an altar, perhaps for number 4 (above); but there is nothing in the chiselling or the style of mouldings to suggest that they are the work of the same craftsman.

NK73BH; bath-house, topsoil.

11. Corner fragment of a moulded plinth or sculptured panel, 90mm × 220mm × 170mm (illus 5.13).

NK73; bath-house, unstratified.

### 5.2.2 Voussoir stones

- 12–25. Fourteen complete or near-complete voussoirs (no 22 is illus on 5.14), mostly 370mm–390mm square and from 110mm–180mm thick at the widest point, tapering to 90mm–160mm (cf illus 5.15). Each has ledges at the top and is notched close to the bottom of each side to receive horizontal tiles, between which the heat circulated. Two stones are a different size, measuring 460mm × 380 mm × 130mm tapering to 110mm, and 400mm × 160 mm × 160mm tapering to 140 mm, while one exhibited no tapering. Two stones

have a large x incised on one side-face (cf *RIB* III 3304, 3305, 3367–3369); one has an incised V. In one example, a groove 80mm wide and 10mm deep had been cut on the underside (no 20) and in another case there was a shelf 450 mm long and 10mm deep on the underside (no 23). Most were found in the debris overlying the primary bath-house; three (nos 16, 18, 19) overlay the adjacent hot room.

- 26–32. Seven larger fragments belonging to voussoirs, measuring between 235–370mm × 200–370mm × 100–130mm. Most were recovered from the debris overlying the primary bath-house; one was found in the hot room (no 27).

- 33–49. Seventeen smaller fragments, which from their shape, thickness or the presence of ledges or notches, seem to have been parts of voussoirs. Several fragments could belong to the same voussoir. They vary in size from 85–240mm × 100–200mm × 90–145mm. Two were of gritty sandstone (nos 39, 48). Most were found in the debris overlying the primary bath-house; one was in the cold bath (no 40) and another outside the south-east corner of the bath-house in topsoil (no 45).

Voussoirs were an integral part of the vaulted roofing of a bath-house (see Bidwell 1979: 51–5; Zienkiewicz 1986: 1, 10). On the Antonine Wall stone voussoirs have been found in bath-houses at Duntocher in 1775 (Keppie 2004: 186, 188, 194) and at Carriden in 2008 (G Bailey, pers comm with *Britannia* 40 (2009) 228). The former, to judge from antiquarian descriptions, resembled the Bearsden examples, while the

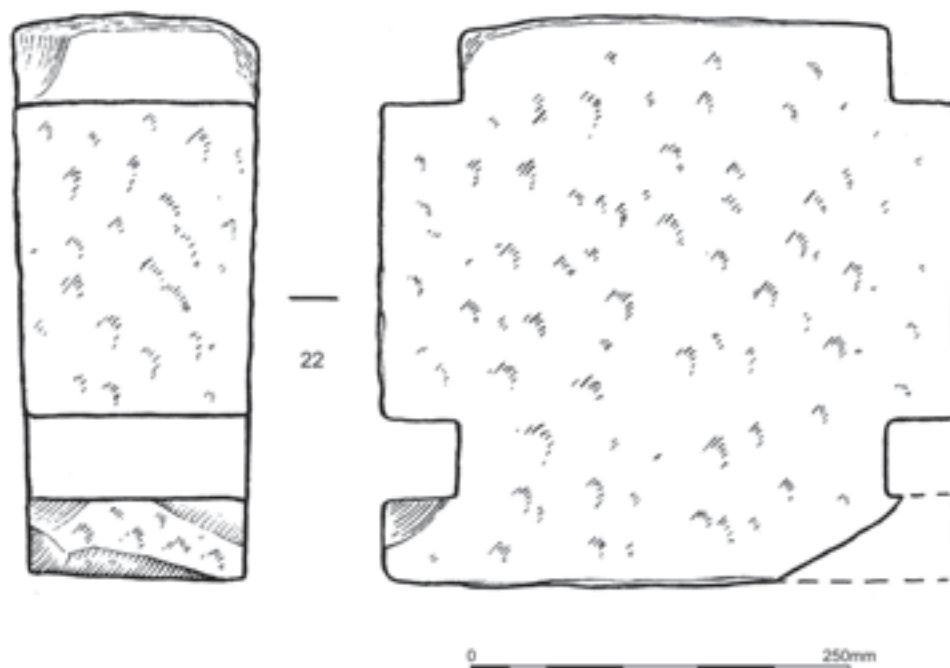


Illustration 5.14  
Stone 22.

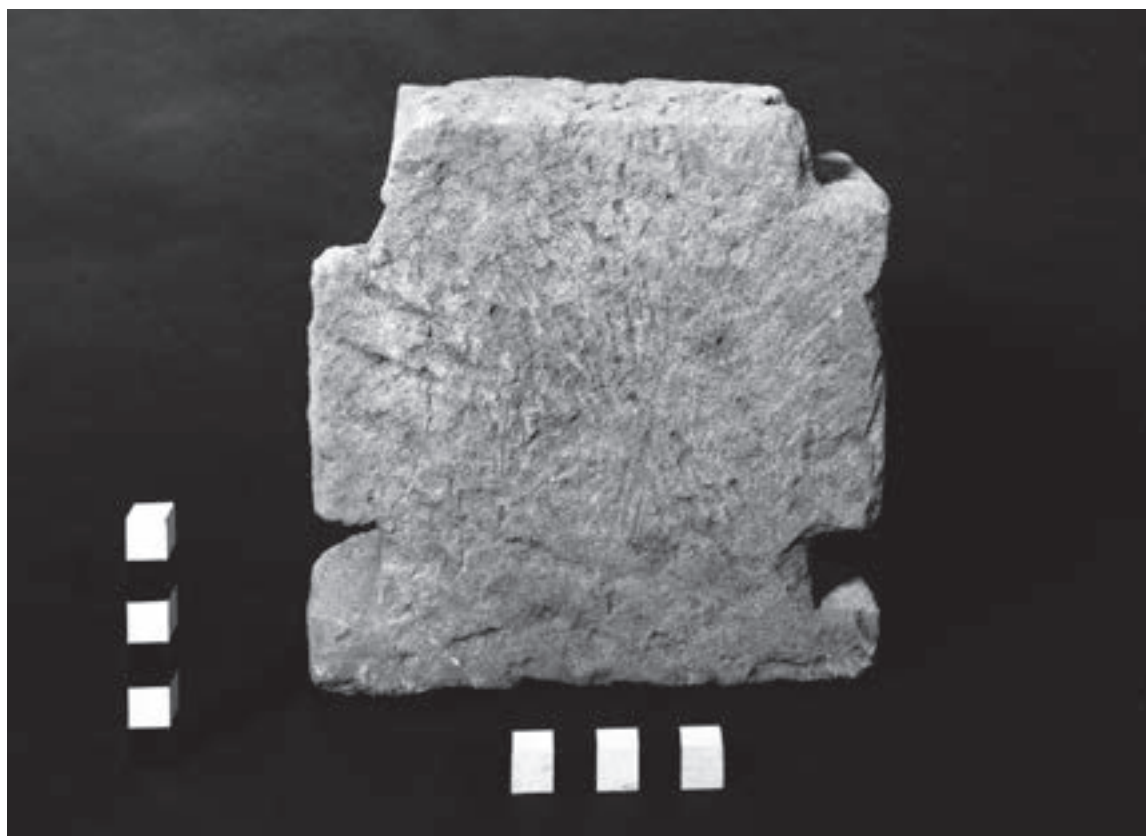


Illustration 5.15  
Photograph of a voussoir.

voussoir from Carriden (and one from nearby Bridgeness; see Macdonald 1937: 383) lacked the lower notches. Both these types occur at Chesters on Hadrian's Wall, the former in sandstone (Macdonald 1931: 223 fig 2; 263) and the latter in lightweight volcanic tufa (Macdonald 1931: 280 with figs 7–8). Sandstone voussoirs were also used at Vindolanda and Great Chesters (Macdonald 1931: 282; Birley, A 2001, 27), and at Corbridge (Bishop 1998: 42). Tufa voussoirs are found in use at Roman villas in southern Britain, as are terracotta voussoirs (Lancaster 2012).

### 5.2.3 Bath-house furniture

50. Bench-top, 780mm × 370mm × 90mm, broken off at the corners and the back (illus 5.16). Centrally placed on the front is a blank ansate panel (350mm × 70mm) with plain borders. Cf Darde 1990, 176, no 2 for an inscribed table top in marble, at Nimes in France; *RIB* 1686 and 3181 for ansate panels carved on the fronts of altar capitals.

Fill of cold bath.

51. Bench-top, 610mm × 400mm × 100mm, with rounded front edge and incised line on top; the front-left corner is broken away (illus 5.16).

In the north-west corner of the second warm room, lying on the floor.

52. Bench-support, 430mm × 120mm × 380mm, with plain mouldings (illus 5.17 and 5.18).

Found with no 51 upright in the north-west corner of the second warm room.

53. Bench-support, 530mm × 160mm × 300mm, with plain mouldings and dove-tailed ledges to support a seat; damaged at back (illus 5.17 and 5.18).

In the basement of the hot room.

54. Bench-support, 530mm × 160mm × 300mm, with plain mouldings and dove-tailed ledges to support a seat; damaged at back (illus 5.17 and 5.18). A twin for no 53.

In the basement of the hot room.

55. Bench-support or moulded plinth, 420mm × 230mm × 320mm.

Cold room.

Stone benches and tables were a familiar feature of Roman bath-houses, matching the furniture in bronze, wood or marble which adorned private houses. Some bench-supports are

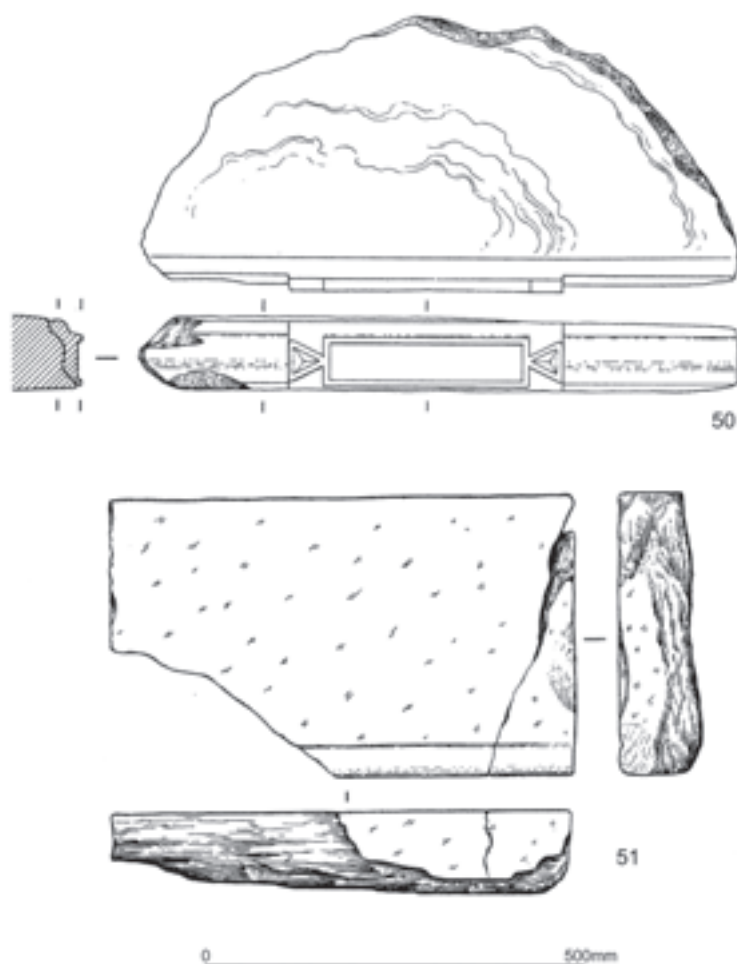


Illustration 5.16  
Stones 50 and 51.

elaborately decorated, in the form of animal-legs (see Richter 1926: 141 with figs). Simple bench-supports are known on the Antonine Wall in bath-houses at Balmuirdy (Miller 1922: 44, pl 18A) and at Mumrills (Macdonald & Curle 1929: 414, fig 11b, 453), as well as at Cramond (Holmes 2003: 122). Others are on-site at Corbridge and at Chesters. Notice also the elaborately ornamented 'sideboards' discussed by Cunliffe and Fulford 1982: xiv.

#### 5.2.4 Worked building stones

Twenty-six building stones with particular features were individually recorded.

56–65. Ten simple building stones measuring 90–175mm × 180–650mm × 205–370mm. Some have the front face decorated with diamond-broaching.

66–72. Seven stones with one edge bevelled, measuring 105–190mm × 210–350mm × 130–370mm (illus 5.19).

73. Building stone, corner block, 120mm × 320mm × 220mm.

74. Building stone, 120mm × 305mm × 230mm, with two adjacent edges bevelled, perhaps from a base or a plinth.

75. Building stone, 270mm × 120mm × 190mm, with moulded edge.

76. Tapered building stone, 135mm × 280mm × 275mm, in whitish buff sandstone, having front face chiselled with vertical and horizontal lines, in a pattern of squares, and criss-cross lines incised on upper and lower faces (illus 5.20).

77. Building stone, 145mm × 375mm × 270mm, in whitish buff sandstone, having front face chiselled with vertical and diagonal strokes.

78. Building stone, 195mm × 135mm × 150mm, with parallel mouldings on one side.

79. Block of reddish-buff sandstone, 270mm × 230mm × 120mm with deep hollow in one end.

80. Shaped block, 200mm × 360mm × 310mm, with possible embossed human head or roundel, and with one side hollowed out.

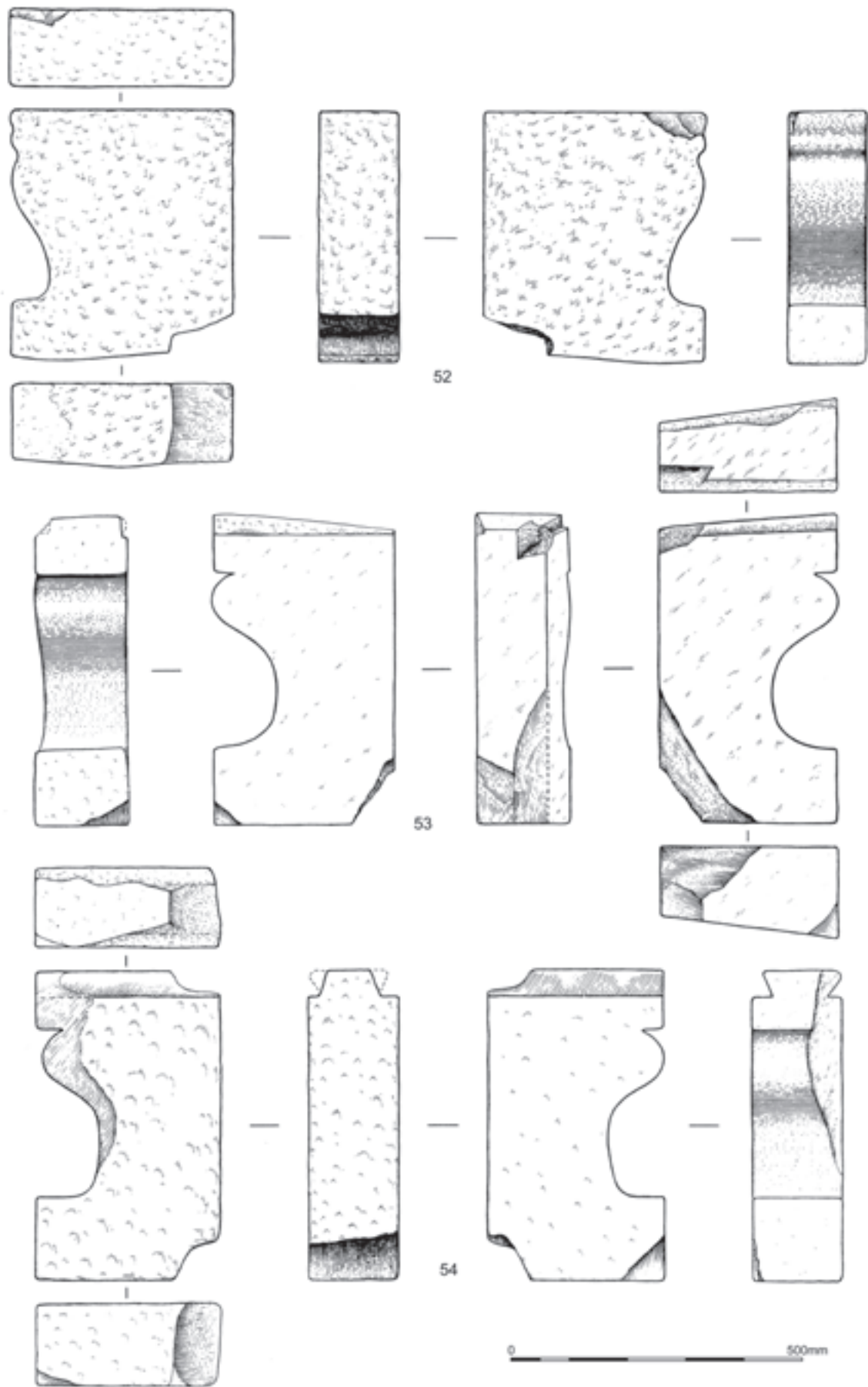


Illustration 5.17  
Stones 52–54.

81. Circular stone, diameter 145mm, with domed surfaces, smoothed by water action.

All these stones were found in and around the bath-house, unstratified.

5.2.5 Slabbing, flooring and paving

82. Fragment of flat slab, 160mm×140mm×30mm thick, scratched with diagonal lines to create a frame-work for playing a board game, probably *ludus latruncularum* (the 'bandits' game') (illus 5.20 and 5.21). Such 'gaming boards', often incised on slabs or fragments thereof, are found at many sites, including Inveravon (Dunwell & Ralston 1995: 562, illus 26), Birrens (Robertson 1975: 100 no 55, fig 26), on Hadrian's Wall, and at Exeter (Holbrook & Bidwell 1991: 279, fig 135). For the game, see Austin 1934; Liversidge 1968: 349–50; Crummy et al 2007: 187, 217, 352–75.

NK75Cy; building 4, rubble.

83–5. Three paving slabs, one complete 540mm×700mm×80mm thick; two fragments of others, one with fossil fern impressions, identified as *lepidodendron* (of the Carboniferous Age, c 330 million years ago).

Bath-house, second warm room.

86. Fragment of paving slab, 200mm×180mm×80mm, with man-made hollows in top and bottom faces, perhaps the beginnings of a perforation.



Illustration 5.18  
Stones 52–4, bench-supports.

87. Fragment of slab, 200mm×150mm×110mm, with raised border and bevelled edge.

88. Fragment of channel stone, 110mm×220mm×200mm.

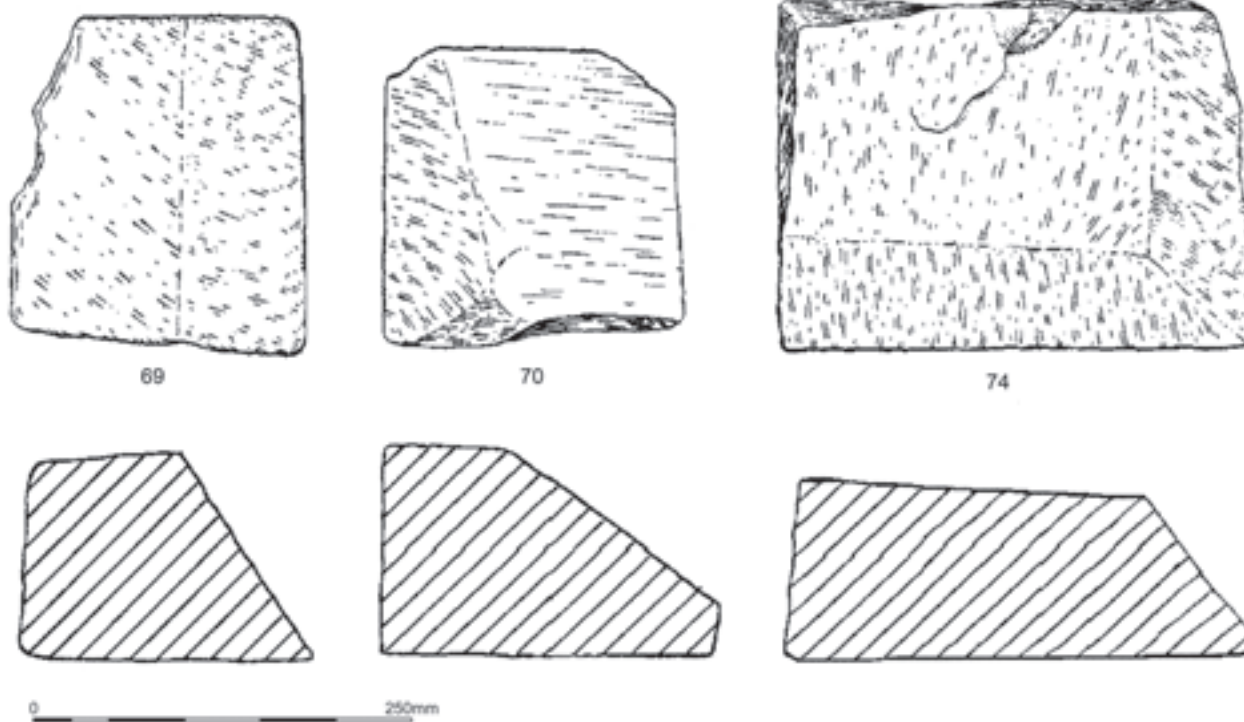


Illustration 5.19  
Stones 69, 70 and 74.

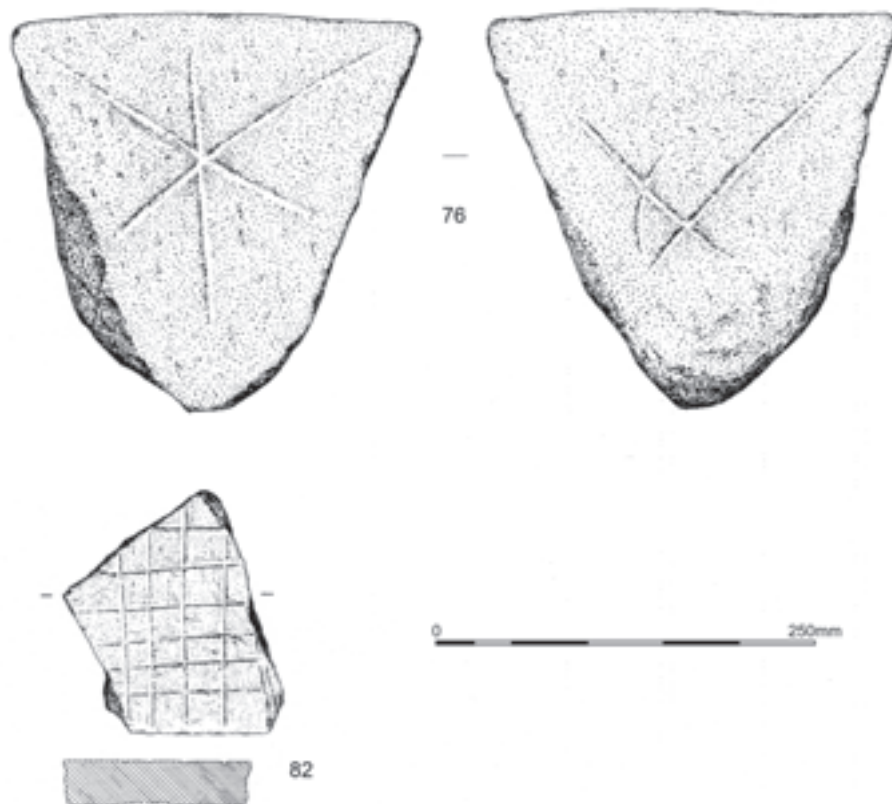


Illustration 5.20  
Stones 76 and 82, a worked stone and the gaming board.

89. Fragment of ?channel stone, 160mm × 150mm × 280mm.  
Drains south of the bath-house.

### 5.2.6 Miscellaneous

90. Shaped keystone for arch, 430mm × 180mm × 120mm,  
tapering to a point.



Illustration 5.21  
Stone 82, photograph of the gaming board.

91. Fragment preserving half of a roughly finished circular block, 120mm × 310mm × 190mm, with a central semi-perforation 30mm wide at the top narrowing to 10mm, and a second perforation begun from the bottom. The stone, which may have broken during the work of perforation, could have been intended as the upper stone of quern.
92. Block, 170mm × 450mm × 300mm, with subcircular edging, 250mm in diameter with depression 100mm deep on the upper surface, perhaps to receive a door pivot.
93. Building stone, 110mm × 250mm × 280mm, with chisel marks on outer face, and rough hole gouged in top, 80mm in diameter, 35mm deep, perhaps for a door- or post-pivot.
94. Counterweight, 300mm × 300mm × 150mm, tapering to 65mm (illus 5.22), with central, subcircular perforation, 100mm × 80mm (cf above no 3). There is evidence of wear by ropes in two places.  
Bath-house, unstratified.

## 5.3 THE MILLING STONES

ADAM T WELFARE

### 5.3.1 Introduction

Six fragments of quernstone were retrieved from disparate locations within the fort and annexe, but upon inspection, two

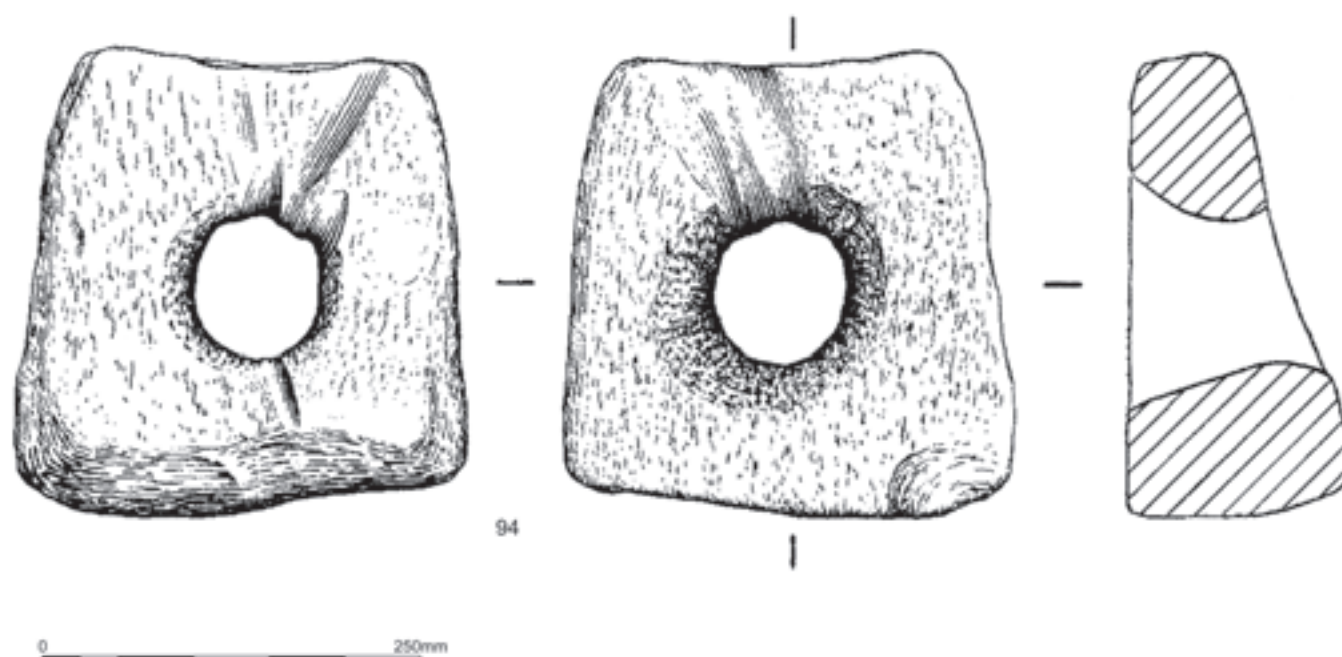


Illustration 5.22  
Stone 94, the counterweight.

of these were found to be conjoining (4). In addition, a further fragment of worked stone which was cautiously identified as a milling-stone upon its recovery possesses too few characteristics to sustain this classification with certainty (6). Thus the collection consists of only five distinct quernstones, of which, three are upperstones (1, 2 and 5) and two are lowerstones (3 and 4).

### 5.3.2 Catalogue

#### *Imported continental manufacture*

##### UPPERSTONES

1. A single fragment representing about 26% of an upperstone, having an estimated diameter of about 460mm (illus 5.23.1). Thickness at the circumference 91mm–95mm. Part of a sub-rectangular socket measuring 40mm×23mm is inset from the raised margin that circumscribes the hopper. It is 23mm in depth, and the side proximate to the hopper is slightly undercut. No traces of a lead fixative are evident within it. A single striae on the raised margin adjacent to the socket is all that survives of the original pattern of dressing once present over the upper surface. At the bottom of the hopper is part of the central circular eye; estimated diameter about 88mm. Here the thickness of the stone is reduced to 35mm–40mm. Faint traces of vertical striae survive about the side of the stone, while the dressing on the depressed face takes the form of furrows set in rudimentary harps. The maximum wear is found about the eye, where two light concentric score-marks are etched into the face.

Hand specimen: a blue-grey vesicular lava, with a large quartz inclusion (62mm×20mm) present upon the raised margin (Mayen).

Condition: very weathered and friable.

NK75BT; incorporated in the east intervallum road next to buildings 6 and 7.

2. A single fragment representing about 15% of an upperstone, having an estimated diameter of about 400mm (illus 5.23.2). Thickness at the circumference, 56mm–64mm. The raised margin circumscribing the hopper has an estimated diameter of about 310mm. The eye and every trace of the original dressing upon all of the surfaces of the stone are lost. The grinding face is depressed.

Hand specimen: a blue-grey vesicular lava (Mayen).

Condition: very weathered and friable.

NK76AH; building 4, topsoil.

##### LOWERSTONES

3. A single fragment representing about 45% of a lowerstone, having an estimated diameter of about 400mm (illus 5.23.3). Thickness at the circumference, 36mm–40mm. The elevated face is set with furrows arranged in rudimentary harps and these remain sharply cut. A portion of a biconical eye survives at the centre of the face, estimated diameter about 43mm. Thickness at the eye, 53mm. Much wear has occurred about the eye and this has led to the development of a pronounced boss; but the lands at the skirt are also



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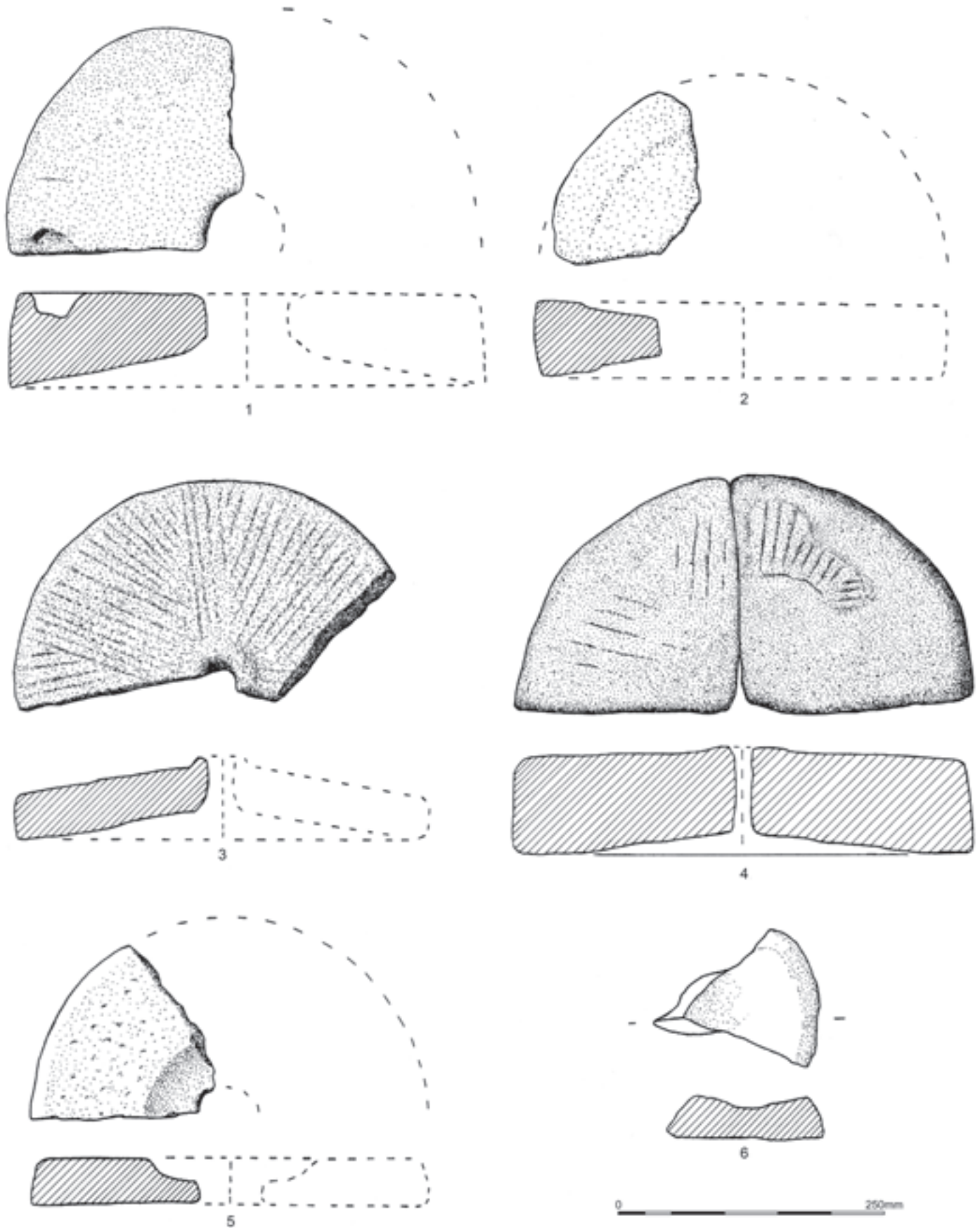


Illustration 5.23  
Querns.

much rubbed, displaying a flattened profile. A sequence of well-defined vertical striae are etched about the side of the stone, but these do not conform to the furrows engraved upon the face. The depressed base is neatly dressed to shape.

Hand specimen: a blue-grey vesicular lava (Mayen).

Condition: unweathered.

NK78CP; outer west ditch, silt.

4. Two conjoining fragments representing about 50% of a lowerstone, having an estimated diameter of about 460mm (5.23.4). Thickness at the circumference, 85mm–94mm. The elevated face is set with furrows arranged in rudimentary harps, and at its centre is found the remnants of a biconical eye. Thickness at the eye, 85mm. The wear appears to have been evenly distributed over the face. Traces of the dressing of vertical striae survive around the sides of the stone. The depressed, convex base is neatly dressed to shape.

Hand specimen: a blue-grey vesicular lava (Mayen).

Condition: both fragments are very weathered; the surface of the face is in an advanced state of exfoliation.

NK78BD; the two fragments were found divorced from one another in the turf tumble of the west rampart just south of the water tank in the intervallum west of building 4.

#### *Roman-British Manufacture*

5. A single fragment representing about 16% of an upperstone, having an estimated diameter of about 400mm (illus 5.23.5). Thickness at the circumference, 40mm. The upper surface is neatly dressed with pock-marks, but this has been subsequently erased or smoothed adjacent to one fracture of the fragment. Estimated diameter of diminutive circular hopper, about 180mm. Estimated diameter of fragmentary eye, about 70mm. The sides of the stone are slightly convex and pock-dressed; but, as on the upper surface, small areas have been subsequently smoothed. Traces of iron oxide adhere to the surface. The almost horizontal face is dressed with furrows, but they only stretch to within 45mm of the eye due to subsequent wear. Within the furrow-free zone are lightly etched concentric striae, but the maximum wear appears to have occurred at the skirt where the profile of the lands is severely abraded.

Hand specimen: a fine-medium grained, yellow-brown gritstone.

Condition: a chip has been detached from the upper edge of the stone, immediately above the iron-staining.

Bath-house, unstratified.

#### *Miscellaneous*

6. A fragment of worked stone displaying a smoothly dressed outer edge, akin to the upper surface of a beehive upperstone (illus 5.23.6). Thickness, 35mm–50mm.

Hand specimen: a fine-medium yellow-brown gritstone.

Condition: unweathered.

NK73CE: in rubble above bath-house.

#### **5.3.3 Discussion**

Four of the fragments are fashioned from a blue-grey, vesicular lava (1–4), and this, together with their design, mark them as typical products of the great quarrying industry centred upon Mayen in the Eifel. By contrast, the remaining stone in the collection is fashioned from a more local gritstone (5), although direct analogies for its design can be found in Northern Europe. It is also likely to have derived from a formal quarry.

Although the collection is small, it is not devoid of interest. The two designs represented are perhaps the most common within the assemblages from military sites in northern Britain; and, despite their differences of detail, both incorporate the most crucial of the technological developments made upon the continent (Welfare 1985). That so few milling-stones were retrieved, in spite of the size of the area investigated, is more curious. Watermills were already current in the province, but there is no evidence that these were to be found so far north at such an early date; and while it would perhaps have been possible to import meal or flour from further south, the problem of its transport and its keeping-properties would hardly have justified the necessary infrastructure. In addition, there is nothing to indicate that other forms of geared mill were available to the garrison. Doubtless, many of the milling-stones employed and discarded during the occupation of the site may have been taken away during episodes of robbing after abandonment; but, equally, the very shortness of the duration of the occupation may be a significant factor. The lengthy and complex historical sequences witnessed at many of the military installations that provide the fullest assemblages of milling-stones, in combination with the problems associated with the nature of the occupation and the suitability of a stone for re-use as raw material, serve not only to disguise and displace the floruit and longevity of a design, but also to obscure the relative frequency with which such were discarded. Thus, it may be that the dearth of discoveries here provides a more accurate index of incidence than can normally be perceived. Plainly, all the fragments derived from querns that were in use in the mid-second century, but such is the wear exhibited by most of the Mayen examples that they must have already seen lengthy service and were close to the end of their working life. Those that were still useable at the end of the occupation will have been taken away upon orderly withdrawal unless conditions were exceptional.

Unfortunately, most of the Rhenish fragments have suffered from weathering in the soil (1, 2 and 4); but the lowerstone retrieved from near the bottom of the silt within the outer west ditch of the fort is unusual in that its fabric has maintained its original character, allowing the surface detail to remain sharply defined (3). Originally, each of the lava fragments will have constituted a part of a quern which would have been broadly comparable in design to those from Binchester and Newstead, (Hoopell 1891: 40; Curle 1911: 145–6; Plate x VII). Neither of the

upperstones, however, now discloses any trace of the iron-fittings with which such stones were generally equipped. The larger of the fragments (1) does exhibit a portion of a sub-rectangular socket within its raised margin – a position where the ‘elbow-shaped’ perforation provided for an iron spike-loop handle-fitting is typically found. However, too little of this survives to discount the possibility that it may have formed part of a socket for a simpler kind of upright handle, or alternatively a sinking intended to hold one terminal of a heavy bar-rynd of the type that can be seen in a stone of comparable design from Housesteads. In addition, the fragment exhibits two light concentric scorings on its face around the eye, which are likely to have resulted from the quern being poorly set-up and carelessly maintained in the latter part of its life. Both of the lava lowerstones (3 and 4) display the same wear pattern around the eye of the spindle in the centre of the face; but that in the larger fragment has developed into a pronounced boss (3). This is a feature that can either arise from careless maintenance, or from the gross miss-match of stones. However, the performance of neither quern is likely to have been seriously compromised.

The smaller of the two fragments (4) is of interest in one further respect: the vertical striae decorating its circumference bear very little relationship in their number and disposition to the layout of the furrowing displayed upon the face. This is relatively unusual in Mayen stones where the correspondence is often close, allowing the inference to be drawn that such striae were sometimes used as a guide when recutting the furrows in

their rudimentary harps. In this instance, the vertical striae have not been used in this way.

The upperstone of Romano-British manufacture seems typical of its design, but also lacks any clear indication of the fittings with which it was equipped. The rubbed areas about its circumference and the traces of iron oxide in the vicinity could imply that it was formerly fitted with a handle attached to an iron hoop. However, such stones were often provided with a lateral handle-chase inset from the upper surface.

#### 5.4 THE FLINT FLAKE

EUAN W MACKIE

##### *Description*

This is a narrow, parallel-side struck flake – technically a blade of honey coloured flint; the top end, including bulb of percussion and striking platform, appears to have been snapped off. Both long edges have been secondarily trimmed by fine pressure flaking, using the flake surface as a platform, to give the flint a neat D-shaped cross section and convert it into a small knife blade, presumably of Neolithic age.

Dimensions: length 51mm; max width 17mm; max thickness 6mm.

NK78AG; drain through annexe east rampart.