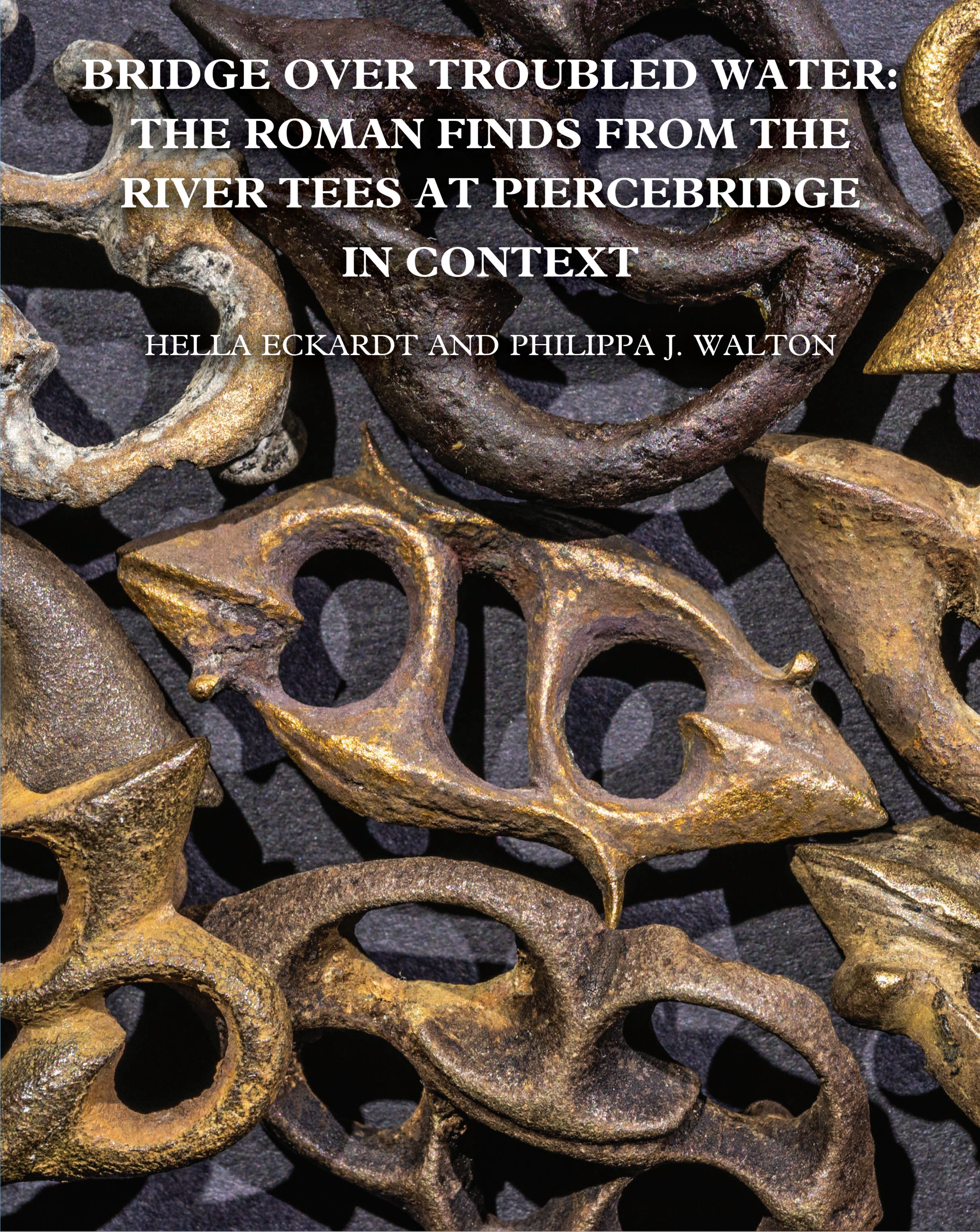
Bridge over troubled water: the Roman finds from the River Tees at Piercebridge in context



BRIDGE OVER TROUBLED WATER: THE ROMAN FINDS FROM THE RIVER TEES AT PIERCEBRIDGE IN CONTEXT

HELLA ECKARDT AND PHILIPPA J. WALTON

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DEDICATED TO THE MEMORY OF ROLFE MITCHINSON
1940–2019

The Piercebridge divers Rolfe Mitchinson and Bob Middlemass holding their model of the Dere Street bridge structure (*Photo: Aaron Watson*)

BRIDGE OVER TROUBLED WATER: THE ROMAN FINDS FROM THE RIVER TEES AT PIERCEBRIDGE IN CONTEXT

By Hella Eckardt and Philippa J. Walton

With contributions by
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Cover illustration: Openwork belt mounts from the riverine assemblage (*Photo: Aaron Watson*)

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CHAPTER 1

INTRODUCTION

By Hella Eckardt and Philippa Walton

In 1790, John Cade wrote to his fellow antiquarian Richard Gough to report that 'a most valuable collection of Roman silver coins has this year been taken up out of the bed of the River Tees, near Darlington. I had about a dozen sent me for inspection; some of Trajan, Gordianus, Hadrian, Severus, Antoninus, Carausius and others. Those that I saw were as perfect as if almost taken from the mint, but the treasure was dispersed into divers hands' (Robertson 2000, 216). Although we cannot be certain, this note may represent the first mention of Roman objects being found in the river Tees at Piercebridge. Since then many more objects have been recovered from the river, including the thousands of artefacts collected by divers Bob Middlemass and Rolfe Mitchinson since the mid-1980s that form the core of this study.

In this book we use the material from the river Tees to critically review interpretative models of deposition in water and then propose methodological advances for the study of Roman river finds more broadly. For the first time, an *entire* riverine assemblage (rather than selected unusual finds) is published, and we have chosen to focus on the identities of the people who deposited the objects rather than just the reasons behind their deposition. Other methodological innovations include the use of Correspondence Analysis to compare the riverine assemblage from the Tees with nearby excavated assemblages, and an attempt to elucidate the fluvial context of these Romano-British finds.

Funding from the Leverhulme Trust from 2017 to 2020 has enabled us not just to consider these broader issues, but also to bring to publication an extremely rich artefact collection from a unique context. Having initially asked John Casey to identify some coins (Casey 1989), in 2003 the divers approached Philippa Walton, then Finds Liaison Officer for the North East, to record the finds with the Portable Antiquities Scheme (Walton 2008). Supported by volunteers, she sorted, packaged and catalogued most of the finds, but lacked the time and resources to fully analyse and contextualise them. The full publication of this assemblage is important not just because of its riverine context but because the finds from the Tees include many unusual object types and provide new insights into life at the northern edge of the Roman Empire. The assemblage was declared Treasure in December 2019 and acquired by the Museum of Archaeology at the University of Durham. An exhibition is planned for 2022 and there is a small display at the George Hotel in Piercebridge adjacent to the findspot. Each object is recorded on the Portable Antiquities Scheme database hosted on its website (finds.org.uk) and throughout the volume, reference is made to these PAS record numbers. Observant readers will note the variation in the prefixes of these numbers, which relate to the different roles undertaken by Philippa Walton while working for the PAS. They include NCL (Finds Liaison Officer for the North East), CAM (Finds Liaison Officer for Cambridgeshire), FAPJW (Finds Advisor for Iron Age and Roman coins) and BH (Finds Liaison Officer for Hertfordshire and Bedfordshire). The prefix FASAM is that of Sam Moorhead who recorded some of the coins, while BM and PAS represent the volunteers who entered data as part of the project.

The volume begins with a consideration of watery deposition and the symbolic role of bridges in the Roman world. Chapter 2 demonstrates how disciplinary boundaries and traditions still affect the ways in which finds from Roman watery contexts are approached (Snodgrass 2006; Bradley 2017). As a broad generalisation, a ritual motivation for the deposition of objects in water is commonly suggested for prehistoric objects (e.g. Bradley 1990), while Roman assemblages have often been interpreted as the accidental losses of travellers or as rubbish deposits revealed by fluvial erosion (e.g. Künzl 1993; Painter 2015). There are also national traditions, with British and Dutch archaeologists apparently readier to embrace ritual interpretations than German and other continental European scholars (Snodgrass 2006; Kappesser 2012; Bradley 2017). The chapter critically reviews approaches to watery deposition in the Roman period, and considers how they might differ from the frameworks applied to prehistoric and medieval finds from rivers. It examines the processes by which material can end up in rivers, and tries to overcome the binary opposition between rubbish and ritual by considering Roman military equipment from rivers as a case study.

The role of Roman bridges in religion and ritual performance is also evaluated. Previous research has concentrated almost exclusively on their architectural form and engineering (e.g. O'Connor 1993) despite the fact that some historical sources indicate that the crossing of rivers was a deeply symbolic act and one which was frequently preceded by sacrifice (e.g. Braund 1996a, 19). Bridges, notably the Pons Sublicius in Rome, played an important part in Roman rituals which included, amongst other things, the throwing of effigies into the Tiber (Hallett 1970, 223). Indeed, the concept of cathartic or votive deposition of objects in rivers occurs in both Roman culture and the indigenous societies of the north-western provinces, where bridges such as those at La Tène played an important symbolic as well as practical role. Bridges continued to have ritual significance in the post-Roman period and featured in both Christian and pagan theology (Dinzelbacher and Kleinschmidt 1984; Lund 2005).

Chapter 3 returns to our case study at Piercebridge, County Durham. The site is located on the river Tees at the point where it is crossed by Dere Street, a major road running from York through Catterick and north to Binchester, Hadrian's Wall and ultimately Scotland (see FIG. 3.1). It is situated to the north-east of the late Iron Age *oppidum* of Stanwick and north of Scotch Corner, a late Iron Age to early Roman site of unusually high status (Haselgrove 2016; Fell 2017; 2020). It is possible that a Flavian fort was constructed somewhere in the vicinity of Piercebridge, and there is certainly a major military presence from the late second century onwards; it is also the location of an early villa and a major civilian settlement (Cool and Mason 2008a). The finds were recovered near one of the three Roman bridges now known to have existed at this location. Chapter 3 summarises the archaeological evidence and places Piercebridge within its Iron Age and Roman landscape and settlement context. It also brings together the scattered archive relating to the earliest, previously unpublished bridge and attempts to interpret the data included in the divers' models, sketch plans and notebooks.

Many studies of Roman period riverine deposits have focused solely on selected artefacts (e.g. Metcalf 1974; Houghtalin 1985) rather than the fluvial environments from which they have emerged. However, rivers are not simply natural but also cultural artefacts; they were widened, dredged, canalised and modified with weirs, bridges and mills; they can only be fully understood if history and archaeology are combined with geomorphology, hydrology and sedimentology (cf. Cooper 2006, 16–22; Edgeworth 2011). Over the last 2,000 years, the river Tees has been subject to significant modification, including weir and mill stream construction (e.g. Wooler 1917, 46; Cool and Mason 2008a), as well as intense episodes of flooding leading to substantial erosion and re-deposition of sediment (Scott 1982, 78–80; Hay 1992; Fitzpatrick and Scott 1999). Chapter 3 therefore also includes geomorphological analysis of the Tees by Chris Green, to consider how the course, depth and speed of the water may have affected depositional processes and the apparent clustering of material.

Three main hypotheses can be offered to account for the deposition of objects in the river Tees:

(A) that the material represents deliberate deposits, most likely made from the bridge(s). This is the view taken by Casey (1989) and Walton in her initial publications (2008; 2016). It is also possible that small islands existed within the Tees in antiquity, and that such sites acted as a focus for ritual activity (Willis 2010, 231).

(B) that the finds represent rubbish washed out from middens located upstream and trapped between decaying oak piles from the bridges (e.g. Bidwell and Holbrook 1989, 110). Riverside rubbish dumps certainly existed at Piercebridge (Scott and Large 2008b, 124–6, figs 6.2 and 6.4; Fitzpatrick and Scott 1999, fig. 2). River erosion could also have exposed hoards such as the small hoard of six *denarii* (Vespasian to Faustina I) found by a metal-detector in the south bank, 30 ft west of the modern bridge (Robertson 2000, 34, no. 171A).

(C) that the assemblage is a mixture of these depositional processes.

To evaluate which of these models is most likely, we are here publishing the *entire* riverine assemblage. Previous work on river finds in the Roman world has usually focused on spectacular finds of vessels and weapons or on coins, often analysed in purely numismatic terms (e.g. Cüppers 1969; Houghtalin 1985; Ruegg 1995; Fontaine 2001; Gilles 2001). More 'ordinary' small finds often remain unpublished, and there is very rarely a record of any associated pottery or animal bone. We recognise that taphonomic factors will have shaped the assemblage, and that the recovery methods of the two divers will also have had an impact. Thus bone artefacts appear to be under-represented, presumably because they float more easily; the animal bone assemblage is dominated by larger bones, possibly because smaller pieces were not retrieved by the divers. However, both divers recovered some very small objects, as well as large amounts of apparently unpropitious iron and lead.

In order to move interpretation of riverine deposits forward, Chapters 4 to 21 therefore present the whole assemblage recovered from the Tees.[1] It is worthy of publication not only because of its unusual findspot but also because it is one of the largest and most diverse artefact assemblages ever found in northern Roman Britain. The assemblage of military belt fittings is particularly impressive and includes numerous mounts which are unparalleled in a Romano-British context, while the collection of equine equipment is larger than that found in any of the excavated cavalry forts on Hadrian's Wall (McIntosh 2019, 95, table 6.5). The support of the Leverhulme Trust has also enabled us to undertake detailed research on a range of artefact categories, particularly militaria, vessels and box fittings (Chs 6–15). This in-depth approach has included a systematic review of the wide-ranging continental literature.

The material is grouped by functional category, a framework applied to most Romano-British excavation reports (Crummy 1983; Cool 2008). The category of personal adornment is dominated by brooches but also contains unusual gold jewellery, as well as inscribed finger-rings (Ch. 4). There is an unusually large number of items of military equipment, as well as large assemblages of lead sealings and coins (Chs 6, 8 and 10). Despite the possible votive function of the deposit, there are only a few objects which explicitly relate to religious beliefs and practices. These include figurines and miniature objects (Ch. 19). Apparently unpromising finds such as lead fishing weights, now shown to be of Roman date, provide insights into activities on the river while tools and household equipment relate to activities at the nearby settlement (Chs 11, 12, 13 and 15). Studying the entire assemblage highlights that most functional categories and object types are represented, although as we will demonstrate, there appears to be some deliberate selection within those categories. Here, we also publish the pottery, animal bone and glass retrieved by the divers, in what we believe to be a first for Roman river assemblages (Chs 16–18). Deliberately included in the analysis is the post-Roman material, to allow us to explore whether deposition continued at the site in the medieval and post-medieval period (Ch. 21).

The processes by which Roman finds ended up in rivers are clearly complicated. The presence of pottery, ceramic building material and animal bone is usually thought to indicate the presence of 'rubbish' or eroded settlement debris, but that does not preclude the possibility that some finds are ritual in nature. Chapter 22 argues that we should employ the kinds of techniques routinely

1 Additional archive reports and tabulated data, notably for the samian pottery and the iron objects, can be found at: https://doi.org/10.5284/1083485

used in numismatic and small finds studies to establish whether there is evidence of selection. Using Correspondence Analysis we compare the riverine assemblage as a whole to the assemblage excavated at Piercebridge, to other assemblages from key sites in northern Britain and to metal-detected finds recorded by the Portable Antiquities Scheme for the region.

The concluding chapter (Ch. 23) presents the key results of our survey of riverine deposition. We combine thinking about *how* these objects were deposited with an investigation of *who* is likely to have been involved in their deposition, thus bringing the identities of the people involved in the use and disposal of the material found at Piercebridge into focus. We hope to demonstrate that careful artefact analysis can reveal a wealth of information about the identities of people living in, and travelling through, northern Britain in the Roman period. Furthermore, by adopting this artefact-centred approach, we provide new perspectives on the religious, social and cultural significance of bridges and river crossings in the Roman landscape and on the identities of the people who used them. The results of this work impact on many key themes current in Roman archaeology, such as the Iron Age to Roman transition, the role of the army in the development of 'Roman' identities and the blending of religious practices in the north-western provinces. It is hoped that the publication of the first entire Roman assemblage from a river in the Empire will stimulate further research, not just on Roman watery deposition but on the theoretical and methodological assessment of riverine finds of all archaeological periods.

FIG. 1.1. The river Tees at Piercebridge looking east from the post-medieval bridge (*Photo: Aaron Watson*)

PART I

WATERY DEPOSITION AND FLUVIAL CONTEXTS

CHAPTER 2

RIVERINE DEPOSITS AND BRIDGES IN THE ROMAN PERIOD AND BEYOND

By Hella Eckardt

INTRODUCTION

Within Roman studies much previous work has focused on formal religious acts taking place within temple structures, while the more *ad-hoc*, apparently haphazard deposition of objects as part of ritual beliefs is poorly understood. This was noted by Merrifield more than thirty years ago (1987, 7): 'It is perhaps in the Roman period that the prejudice of archaeologists against a ritual interpretation is felt most strongly. Its material remains seem so practical, so "modern" in many respects, that there is an almost instinctive reaction against the suggestion of anything "other-wordly" in this context — except of course in the proper place, the temple precinct, where it is acceptable.' More specifically, the suggestion that watery contexts possessed ritual significance as liminal and chthonic places has been slow to emerge in Roman archaeology (Snodgrass 2006; Bradley 2017). While material found in wells and springs is readily interpreted within a ritual framework, even large and unusual assemblages from rivers are often viewed as accidental losses (e.g. Künzl 2001). Conversely, the case for ritual deposition must not be overstated, and some assemblages clearly represent rubbish. More work is required to better understand geomorphological processes, including shifting and eroding river courses. Many Roman artefacts are chance discoveries made during construction work for bridges and riverside structures or were recovered as a result of dredging carried out since the nineteenth century in order to deepen rivers for navigation (Bourgeois 1991, 193–204; Wegner 1995, 264–5; Wirth 2000, 88). Research on dredged river finds to date has concentrated on major rivers and the material is heavily biased towards large objects easily recognised by machine operators and early collectors (Fitzpatrick 1984, 179; Bonnamour and Dumont 1994, 143; Field and Parker Pearson 2003, 172; Kappesser 2012). Because chance finds retrieved in this way lack context and are not in secure associations, they are much harder to interpret than assemblages from springs or wells.

This chapter will briefly review how river finds from the Roman Empire have been analysed, exploring the debates surrounding ritual deposition in particular. Given the military associations of Piercebridge, it will use items of weaponry and armour as a case study to illustrate the different ways in which objects may have ended up in rivers. The subject of watery deposition is a huge one, and a fuller discussion presenting a detailed analysis of *all* the Romano-British data for the first time can be found in Eckardt and Walton (forthcoming).

The chapter concludes with a consideration of bridges, which are all too often seen as purely functional structures, neglecting the important symbolic dimension they had in Roman thought.

HOW DID ROMAN RIVER ASSEMBLAGES FORM?

This section considers the types of assemblages that have been recovered and the processes by which they may have formed (cf. Pauli 1987, 298–302). Having reviewed a range of other explanations for river finds, the chapter will conclude with a discussion of deliberate and possibly ritual deposits.

RUBBISH DEPOSITION NEXT TO AND IN RIVERS

Rivers and river banks provided convenient locations for the disposal of rubbish (Peňa 2020, 17–21; Dupré *et al.* 2000; Thüry 2006, 16). Perhaps the most famous rubbish dump near a river is the 'Schutthügel' located immediately outside the north gate of the legionary fortress at Vindonissa (FIG. 2.1; Ettlinger and von Gonzenbach 1955/6; Pauli-Gabi 2005). Material was dumped on ground sloping down steeply to the river Aare between A.D. 30 and 101 which created a mound even now approximately 200 m long, 80 m wide and 18 m high, containing as much as 50,000 m^3 of soil (Hintermann 2012, 167–70, fig. 1). Multiple excavations since the mid-nineteenth century have produced *c.* 200,000 objects, including many organic finds such as leather shoes, wooden objects and writing-tablets which have been preserved by the wet and anaerobic conditions. Although many of the objects were broken or damaged, there were also some apparently complete items, ranging from pieces of militaria to brooches, all published in a series of excellent reports (e.g. Ettlinger and Simonett 1952; Unz and Deschler-Erb 1997; Fellmann 2009). The material also included building rubble as well as food and stable waste and appears to have been deposited as a series of small individual dumps (Fellmann 2009, 14; Hintermann 2012, 167). Substantial wooden structures discovered within the mound during antiquarian excavations are poorly understood, and may be redundant early fortress defences or attempts to shore up and contain the rubbish (Fellmann 2009, 16). It is easy to envisage material from an enormous rubbish dump such as this ending up in a nearby river, or being swept away by it, especially during seasonal flooding events. Other examples include Carnuntum, where a first-century rubbish mound was discovered *c.* 700 m north-east of the legionary fortress in an area that begins to slope towards the river (Grünewald 1983, 6–9), and the waste dumps from the Rhine at Zwammerdam and Alphen aan de Rijn (Haalebos 1977, 44–5; Nicolay 2007, 183).

In Britain, there are at least two riverside rubbish dumps associated with military installations. At Brough-under-Stainmore, antiquarian accounts indicate that large numbers of coins, brooches, lead sealings, tools and other objects were found in the Swindale Beck, north of the Roman fort. It appears that the river has changed course since antiquity, eroding Roman rubbish deposits (Birley 1958, 35–6, fig. 1). There is also a large but poorly recorded riverside rubbish dump at Piercebridge itself (Scott and Large 2008b, 124–6, figs 6.2 and 6.4; Fitzpatrick and Scott 1999, fig. 2). Located on the southern bank just upstream from the stone bridge, it appears to comprise a large deposit of pottery dumped at the very edge of the ancient river course (see FIG. 3.4). Three post-holes following a north–south alignment were interpreted as supports for a jetty. It seems likely that material from a dump such as this would have been regularly washed away by the river and while this example is downstream from our findspot, there is no reason why similar dumps should not have existed just south of the fort and upstream from the main find site.

Examples of apparently riverine material derived from the erosion of burials or settlement deposits when river channels shift are also attested on the Continent (e.g. Bonnamour and Dumont 1994, 145). A good example is the large assemblage of finds from Augsburg-Oberhausen, a short-lived Augustan military site in an area where the river Lech repeatedly changed course (cf. Torbrügge 1971, 26–8; Wirth 1993, 218). More than 10,000 objects were recovered, including coins, metal artefacts, glass fragments, pottery sherds and animal bone (von Schnurbein 1985). Further examples of river-eroded assemblages from military sites are known from the Netherlands, at Lobith De Bijland, Angeren Looward and Rijswijk (Nicolay 2007, 127–8, 183). However, even amongst these assemblages some material may have been deliberately deposited (Nicolay 2007, 189).

FIG. 2.1. A reconstruction of the 'Schutthügel' at Vindonissa in the Roman period (© *Joe Rohrer, bildebene.ch*)

LAND RECLAMATION

Dumping material in or near rivers for reclamation purposes occurred at several Romano-British towns (Rogers 2013, 86, 200–3). For example, at Lincoln the area between the southern suburb, the river Witham and Brayford Pool is characterised by a series of waterside structures such as docks and quays as well as reclamation and rubbish dumps of third- and fourth-century date (Jones *et al.* 2003, 97–104, figs 7.45–48). These riverside dumps, sometimes held back by rows of stakes, contained very large numbers of small finds, as well as pottery and animal bone. The waterlogging of the site provided excellent preservation conditions for organic materials. The Waterside North West site produced more than 2,200 Roman and medieval small finds, sadly only published in preliminary reports. These highlight the range of artefacts recovered which include leather shoes, items of personal adornment, writing equipment, weapons and tools (Chitwood 1991; Williams 1989). There are also *c.* 500 mainly late Roman coins. The animal bone and insect remains have been published, and provide insights not only into the city's economy but also the nature of the dumping process and local environmental conditions. Dobney *et al.* (1998) suggest that large amounts of primary butchery waste were dumped directly into the river while still fresh, rather than being moved from earlier middens; the invertebrate remains indicate that the water was still or sluggish. Rubbish disposal appears to have been large-scale and organised, and possibly designed to consolidate the northern bank.

The large-scale dumping of apparently complete or at least highly recyclable objects is now also the preferred interpretation of the deposits in and next to the Walbrook stream in London (Marshall and Wardle in prep.). The huge dumps at Vindonissa, Carnuntum and London all belong to the first century A.D., when there was a huge increase in the production and availability of objects.

SHIPWRECKS

A small number of shipwrecks have been located in British river estuaries, indicated by finds of their cargo. The most striking finds include the large quantities of plain samian ware vessels at Pudding Pan in the Thames estuary as well as the Herd Sands finds at South Shields (Bidwell 2001; Jones 2012, 98, 115). Examples of surviving Romano-British ships include the Blackfriars 1 ship in London and the Peter Port ship on Guernsey (Dean 1984; Parker 1992, fig. 15; Walsh 2017).

DELIBERATE DEPOSITION

In contrast to the interpretative frameworks employed in prehistoric archaeology, deliberate deposition as an act of communication between the human and the divine is less frequently considered as an explanation for Roman river finds (cf. Osborne 2004, 1; Ceccarelli 2007, 324). An additional complication is that in the Roman period the term 'votive deposition' is usually taken to have a very specific meaning. Roman religious practice is often argued to have been transactional in nature, with a vow (*nuncupatio*) sometimes recorded in writing and its eventual fulfilment (*solutio*) marked by a votive offering or the erection of an altar (Derks 1998, 215–39; cf. Osborne 2004, 3). An '*ex-voto* is always the result of a promise; thus, it makes a spiritual or supernatural exchange tangible as a token of the relationship forged between humans and their gods' (Weinryb 2016, 3). It is possible to distinguish between objects created as offerings (*ex-voto par destination*) such as miniature objects, figurines or clay models of perishable objects, and those transformed into votives through the act of dedication (*ex-voto par transformation*: Morel 1992; cf. Bourgeois 1991, 125–85; Osborne 2004, 2). The latter could be any object, from a coin to a brooch to a pottery vessel, and the transformation could be marked by a dedicatory inscription. Some types of objects such as brooches and other items of personal adornment may have been chosen more frequently as offerings, perhaps because they were closely associated with the body. Miniature objects are often argued to have been designed to have a ritual function, possibly as cheaper or symbolic substitutes (Kiernan 2009, 6). Anatomical votives representing various body parts were perhaps thought to have specific healing powers (Draycott and Graham 2017; Hughes 2017). Many offerings may have been symbolic — dedicating only a part of an object (*pars pro toto*) might indicate that it was as much the act of giving as the actual object which was considered important. In central Europe, there appears to have been a shift from the high-value offerings of the Iron Age, presumably made only by elites, to the much more common low-value offerings made during the Roman period (Kiernan 2009, 5). We know little about whether it mattered that the dedicant was seen in the act of offering or not — and there are likely to have been differences between a votive deposit made within a temple precinct and one made at a natural location such as a river. However, it is important not to impose modern conceptual divisions between the sacred and the profane onto antiquity (Mitchell 2007; 2006).

Objects acquired meaning through the act of dedication and offering, but unless there is an inscription, this may not be obvious to modern observers; archaeologists therefore usually rely on the context in which objects were found (Osborne 2004; Weinryb 2016). This is relatively straightforward for temple sites, where votive offerings may have been displayed and effectively became the deity's property. When such sites became too crowded, there appear to have been specific rules about how the 'waste' from cult sites was managed (Martens 2004; Ceccarelli 2007, 324; Haynes 2013). However, sanctuaries also acted as banks and stores of wealth, so not every object found during the excavation of a temple is necessarily votive in function (Johns 1996b). The situation is even more difficult when dealing with contexts seen only by some archaeologists as ritual. While many Romanists apply the term 'votive offering' to artefacts found in any 'ritual context, be it a sanctuary, a pit or a body of water' (Ghey 2003, 7; Kiernan 2009, 1), others only accept finds from temples, and ideally only those that bear an inscription (Johns 1996b, 9). The analytical work in this volume will show that some of the finds from the Tees were probably the result of ritual action, but as only a very few artefacts are inscribed, we prefer to use the term 'deliberate offering' (cf. Osborne 2004, 5).

CASE STUDY: WEAPONRY AND ARMOUR

Weaponry represents a distinct category of river find, and one that has seen perhaps the most animated debate, making it a useful case study to explore the interpretative models that have been advanced in previous work. In prehistoric archaeology, interpretation has leaned towards ritual deposition, as exemplified by Laursen (1982, 16). Writing about bronze swords from watery contexts in Italy, he argued that 'deliberate deposition must be the rule, accidents the exception'. The weapons of an enemy may have been perceived as dangerous, as objects that had been in some way cursed and therefore needed to be removed from circulation (Laursen 1982, 20; Randsborg 2002). It may also have been important to prevent a powerful weapon from falling into the hands of unworthy successors, as in the case of Excalibur, thrown into a lake when Arthur was dying. Throwing a sword, the symbol of lordship, into water may have symbolically terminated that lordship (Stocker and Everson 2003, 273). Competitive display and conspicuous disposal to cement relationships with the gods and enhance socio-political prestige are also potential factors (Fitzpatrick 1984, 185–6), as is the possibility that the finds relate to mortuary rituals (Roymans 1991, 26–9; cf. Sperber 2006).

In the Roman period, finds of weaponry tend to be concentrated in the north-western provinces near major military sites. Compared with the number of weapons thought to have been in circulation, very few have been recovered, largely because they were not normally included in burials (e.g. Thiel and Zanier 1994, 62). The proportionally high number of weapon finds from rivers has long been noted, but explained in a number of ways (e.g. Torbrügge 1971, 43–6; Bailly and Bonnamour 1990; Roymans 1993, 43–7, figs 5–6; 1996, 28–37; Haynes 1997, 116–20; Nicolay 2007, 181–9). 'Rational' as opposed to 'ritual' explanations have dominated interpretation until quite recently, essentially because 'the Romans just were not believed to do this sort of [ritual] thing' (Haynes 1997, 117; cf. Coulston 2008, 315).

WEAPONS LOST DURING WARFARE AND BATTLES

Weapons found near bridges or fords are frequently linked to warfare and even specific battles (Torbrügge 1971, 100–2; Field and Parker Pearson 2003, 171). Bridges represent key defensive points, and could be destroyed to prevent an enemy from advancing, as demonstrated by Caesar when he re-crossed the Rhine into Gaul (O'Connor 1993, 140). The historical record sometimes allows for the identification of battles and campaigns associated with a region, which may then explain finds of weapons, for example in the Saône (Bonnamour and Dumont 1994, 145–7). A direct association with military events has also been suggested for the spectacular range of material retrieved during gravel extraction from an old arm of the Rhine at Xanten that appears to have silted up during the third century A.D. (FIG. 2.2). The majority of finds date to the first century A.D. and it is suggested that the militaria in particular were lost during the Batavian wars of A.D. 69/70, either by Roman units attempting to leave the fortress or by Germanic troops losing war booty when crossing the river (Schalles and Schreiter 1993, 56; Schalles 1994, 162). Notably, ritual deposition is considered for Iron Age material from the site but dismissed for the Roman finds (Schalles and Schreiter 1993, 66). In a later paper, Schalles (1999, 215) argues that these finds cannot be ritual in nature because they lack votive inscriptions.

The types of object found may be taken to provide clues; thus Lund (2005, 117) used the absence of Viking defensive weapons and the emphasis on swords near bridges to argue for deliberate deposition rather than battle losses. A similar bias towards swords and daggers is evident in Roman military equipment from rivers; however, helmets are also relatively common and the absence or under-representation of shields may be at least partially due to taphonomic factors (Künzl 2001). Weapons that show signs of significant use, for example those with scratched and nicked blades, may represent battle losses (Testart 2012, 315–24).

FIG. 2.2. Military finds from Xanten-Wardt (*Axel Thünker DGPh; LVR-RömerMuseum in the Archaeological Park Xanten*)

WEAPONS (AND BOOTY) LOST DURING ACCIDENTS

Crossing a river by boat was (and is) a potentially dangerous activity, and accidents must have occurred quite frequently. Even if the ship did not sink, heavy or cumbersome objects may have been washed or thrown overboard. This is exemplified by Tacitus (*Annals* 2.23) who described how, during Germanicus' expedition, ships were caught in a storm on the North Sea: 'it was impossible to set anchor or remove the water that was rushing in; horses, mules and baggage were thrown overboard in order to lighten the hulls which leaked copiously' (cf. Künzl 2001, 551). Where boats were not available and the ford sufficiently shallow, people would have

FIG. 2.3. Scene 26/XXVI (detail) from Trajan's Column depicting a Roman soldier carrying his kit on his shield during a river crossing; to his left, a standard-bearer. From a cast now in the Museo della Civiltà Romana, Rome (Ref.: RBU2011.6998) (© *Roger B. Ulrich*)

crossed rivers on foot. The ability to cross rivers in chest-deep water while carrying equipment aloft was expected of soldiers and is depicted on Trajan's Column (FIG. 2.3; Thiel and Zanier 1994, 65, fig. 4). It is also described by Caesar (*Bellum Gallicum* 7.56): '… he came to the river Loire, contrary to the expectation of all; and having by means of the cavalry, found out a ford, suitable enough considering the emergency, of such depth that their arms and shoulders could be above water for supporting their accoutrements, he dispersed his cavalry in such a manner as to break the force of the current, and having confounded the enemy at the first sight, led his army across the river in safety.' It seems plausible that some weapons and other objects could be lost during such crossings. Two examples of a later date can be added (Sauer 2005, 96). Ammianus Marcellinus (16.11.9) described Roman booty captured from the Alemanni in A.D. 357 which was lost as a result of strong currents in the Rhine and Procopius (*History of the Wars* 6.10.18) reported that when the Ostrogoths withdrew from Rome in A.D. 538, crowding and fighting on a bridge led to many drownings, including of armed men.

In practice, it is very difficult to identify such accidental losses. For example, the *gladii* found in the Rhine near Mainz are argued to predate A.D. 27, the earliest dendro-chronological date for the bridge there. As a result, they are interpreted as accidental losses made during ferry crossings (Robinson 1975, 58 and 68; Künzl 2001, 549). However, while exact findspots are not always known, it is striking that many of the objects were recovered from both sides of the river but not at its middle. Although it is possible that this distribution pattern relates to riverine hydrology, the absence of other items of armour, weaponry and equipment is also notable (Wegner 1976, 64–6; Thiel and Zanier 1994, 65). Furthermore, a pontoon bridge may have crossed the Rhine before the timber bridge was constructed (Bellen 1989, 82, n. 10). The full assemblage from Mainz would clearly repay detailed analysis.

Even good preservation and contextual information does not always lead to a clear-cut interpretation. Thus the find of body armour from the Saône still in its textile wrapping or weapons still in their sheaths (i.e. not drawn during battle) have been interpreted as accidental losses or conversely as evidence for the careful placing of objects into rivers (Künzl 2001, 552–3; Testart 2012, 305–24). Dredging of the Lower Rhine at Doorwerth has recovered (amongst many other things) four or five sets of harness or saddle gear, which judging by the presence of washers and backplates, entered the water still attached to the leather straps. The find is poorly recorded, but there is a suggestion that the assemblage was originally contained in one or two wooden boxes (Brouwer 1982, 147). This unique assemblage was originally associated with the Batavian revolt and interpreted as lost booty but is now regarded as a deliberate offering of booty (Holwerda 1931; Derks 1998, 140; Nicolay 2007, 124–5, 189).

In general, several commentators have also noted a chronological peak in deposition of weapons in the first century A.D., even in areas where the army was active for much longer. This would suggest changing depositional practices rather than a less accident-prone late Roman army (Haynes 1997, 119; Nicolay 2007, 183).

WEAPONS AS RITUAL OFFERINGS

There are some studies of material dating to the Roman period that accept ritual interpretations. Thus, while accidents and warfare are not ruled out, the 54 weapons from the river Saône and its major tributary, the Doubs, have been interpreted as ritual deposits, either offered specifically to the deity of the river, Souconna, or to ensure a safe crossing (Bonnamour and Dumont 1994, 152; Feugère and Bonnamour 1996, 135–6).

It is also possible to use detailed analyses of Roman military data to argue for ritual deposition. Thus, in a study of 196 daggers from northern and central Europe dating from the end of the first century B.C. to the end of the first century A.D., the weaponry was divided into five groups depending on completeness (dagger and sheath; dagger only; sheath only; fragments of dagger; fragments of sheath: Thiel and Zanier 1994, 60–1, fig. 2; cf. Thiel 2000). Although this represents a substantial sample, it is clearly only a fraction of the weapons once in use, with the distribution concentrated in areas with a strong military presence during this period, mainly in Britain, Germania Inferior and Superior, Raetia and Pannonia. The authors systematically recorded contexts as either 'military site', 'river', 'grave' or 'stray find'. They demonstrated that on military sites most finds are of daggers without sheaths, sheaths without daggers or fragments thereof while complete examples are relatively rare (13 per cent); by contrast complete sheathed examples are the dominant category of find in rivers (75 per cent), though it should be noted that the total number of examples found at military sites (146) is much higher than that for river finds (24: Thiel and Zanier 1994, 63, table 2). The carelessness of soldiers and frequent accidents are not considered a sufficient explanatory model and therefore a ritual explanation is preferred (Thiel and Zanier 1994, 65–8). The question of who made these offerings remains unanswered; they may have been Roman veterans and soldiers or their Celtic/Germanic enemies (Thiel and Zanier 1994, 68–9). Rivers as liminal places may have been considered by all these groups as suitable for the deposition either of weapons belonging to defeated enemies or of equipment that had given good service in battle (Coulston 2008, 309). That Roman military equipment could be offered to the gods is, for example, attested by a bronze votive plaque from Tongres (Belgium), on which a centurion dedicates his shield and spear to the goddess Vihansa (Bishop and Coulston 2006, 30–1, fig. 12).

The concept of veterans depositing weaponry has sometimes been rejected on the grounds that equipment was owned by the army and not individual soldiers. However, this has now been disproved convincingly (Pauli 1986, 857–60). The work of Nicolay on the life-cycle of soldiers and their equipment illustrates that items could be sold within the fort by retiring soldiers or their heirs, but that they could also be deposited in burials, cult places and rivers as well as pits and ditches within rural and urban settlements (2007, 157–206, fig. 5.1). In the Netherlands, it has been suggested that both auxiliary and legionary soldiers (or their heirs) may have made such offerings at rivers near their camp, perhaps as part of rites associated with the *missio honesta* or honourable discharge (FIG. 2.4; Derks 1998, 512, fig. 2.7; Roymans 1993, 46–7; 1996, 29; Nicolay 2007, 189).

FIG. 2.4. A Roman soldier making a deliberate offering (© *Peter de Haas*)

On occasion, the deposition of military equipment in rivers may be associated with a specific location or ritual site, as has been argued for two findspots in the Netherlands (Nicolay 2007, 125–7, 185–6). Roman military equipment recovered during dredging work on the river Meuse near its confluence with the river Waal may be associated with a cult place at Kessel. Deposits of late Iron Age human remains from the river have been interpreted as ritual in nature (Scheggett 1999), while poorly-recorded architectural remains on the site may be from a later first- or early second-century temple, thought to be associated with Hercules Magusanus (Roymans 2004, 103–48). A large Roman finds assemblage is also known from the Waal at Nijmegen, which may be associated with a monumental cult building (van Enckevort and Thjissen 2001, 88–91).

In general, a comparative approach that explores long-term spatial and chronological patterns in weapon deposits can establish whether river finds are representative of wider contemporary assemblages; it can also highlight apparent concentrations of deposits along certain stretches of a river such as the Thames, as well as changes in the types of weapons found (Testart 2012, 333–8; Naylor 2015; Clark forthcoming). On the other hand, some scholars have tried to argue from absence. Thus Künzl (2001, 551) cites military sites near rivers where there are no weapon finds; he suggests that people could have made votive offerings but did not and that the absence of finds is because river crossings were not necessary on those sites, and there was therefore a lack of accidents. It has also been suggested that not all finds from rivers were irretrievable, referring to anecdotal evidence from seventeenth-century Denmark where valuables were suspended in a lake or bog using a rope tied to a tree (Randsborg 1980, 139; 2002, 416–17; cf. Johns 1996b, 12–13).

APPROACHES TO ROMAN BRIDGES

Many of the river finds discussed above have been made near fords or bridges, which clearly represented important locations in ancient landscapes. Indeed, Piercebridge is located at a major crossing point over the Tees and the finds are concentrated near the three or more bridges now known to have existed there (Ch. 3). This chapter represents an opportunity to summarise current knowledge of Roman bridge construction and maintenance, but also to reflect on the ways in which Roman, as opposed to prehistoric, bridges have been studied. While the symbolic aspects of a bridge's architectural form or the political significance of its location are sometimes considered, much of the focus remains on aspects of engineering rather than the potential ritual activities associated with bridges. This difference in approach is exemplified by the reconstruction images in FIG. 2.5, images worth bearing in mind as we review the available evidence.

BRIDGE CONSTRUCTION AND MAINTENANCE

Caesar describes timber bridges in Gaul (*Bellum Gallicum* 7.11 and 58; 8.27; cf. Dymond 1961, 142; Schwab 1978, 562) and a number of Iron Age structures have now been excavated (Schwab 1978, 561–74). Wooden bridges are also known from the Roman period, for example at Aldwincle and Fencott in Great Britain (Jackson and Ambrose 1976; Chambers 1986). Timber bridges, usually spanning smaller rivers and streams, were used in areas without good building stone or during the initial phase of the Roman invasion (Dymond 1961, 145; O'Connor 1993, 132–49). Conquest-period bridges clearly provided enormous military advantages. Caesar famously constructed a timber bridge across the Rhine in only ten days (Giles 1969; Mensching 1981, 333–41; O'Connor 1993, 140, fig. 115) and pontoon bridges were used by Xerxes to cross the Hellespont and Alexander the Great the Indus respectively. The method of construction is described by a number of authors, notably Arrian, and depicted on the columns of both Trajan and Marcus Aurelius (*RE* 1952, 2443–7; Dymond 1961, 145; O'Connor 1993, 134–8, figs 107–111; Göttlicher 2009, 101–8).

Roman building technology enabled engineers to span wider and faster rivers with masonry structures (cf. Cüppers 1978). Spectacular bridges such as the Trierer Römerbrücke still stand today, testament to the strength of their design (cf. Cüppers 1969; Ward-Perkins 1984, 189). Perhaps as a result, most research on Roman bridges has focused heavily on aspects of architecture and engineering (e.g. O'Connor 1993; Galliazzo 1995; Goudswaard *et al.* 2001, 485–90; Morriss 2004, 147–84). A similar focus on engineering and construction is evident in the literature about medieval bridges (e.g. Harrison 2004; Preil 2011). Much is written about construction methods and the different elements which make up a bridge, such as abutments, cut-waters, piles and arches, as well as on aspects of technology and engineering, such as the use of concrete and cranes (Dymond 1961, 146–8; Bidwell and Holbrook 1989, 117–33, fig. 86; cf. O'Connor 1993, 44–62; Goudswaard *et al.* 2001). Attempts have been made to estimate the time taken to construct piles and bridges (e.g. Mensching 1981; Kroes 1990; Goudswaard *et al.* 2001, 509–25), while historical documentation associated with medieval bridges provides interesting insights into relative construction and maintenance costs; for example, while timber

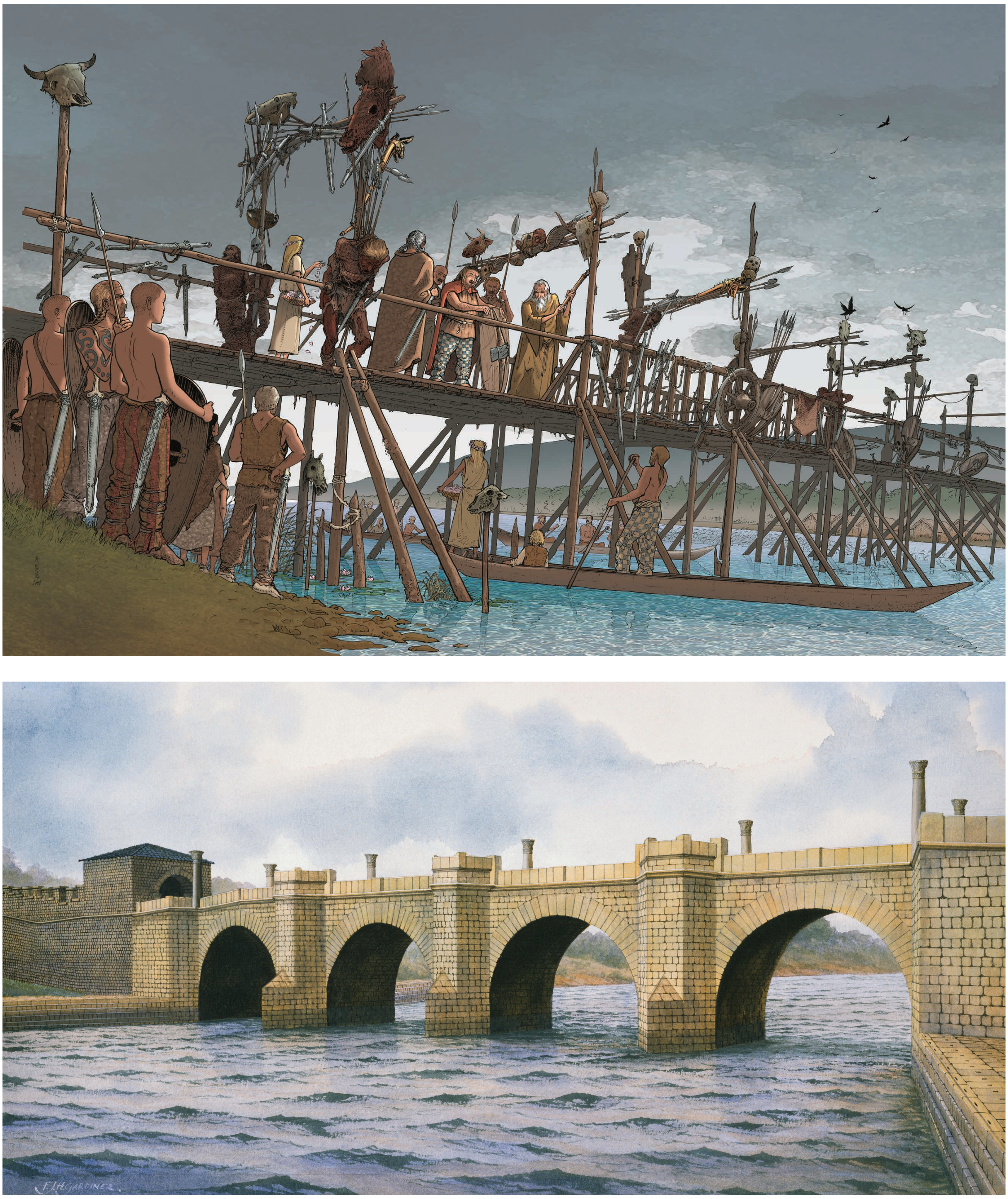


FIG. 2.5. The contrasting ways in which prehistoric and Roman bridges have been reconstructed, showing the late Iron Age bridge at La Tène (© *Climage Audiovisuel*) and the second-century bridge at Chesters (*Heritage Image Partnership Ltd / Alamy stock photograph*)

bridges were cheaper to build than stone bridges, they were costly to repair (Harrison 2004, 176–83).

Bridge construction and maintenance were clearly ongoing concerns for many communities. For bridges with extensive dendro-chronological dating information, it is possible to establish the frequency of repairs, with intervals ranging from eight to forty-five years (Kroes 1990, 104). A bridge at Le Rondet, Switzerland, which was constructed in A.D. 7, was repaired in A.D. 50, 66 and 102, and then again in the third century (Schwab 1973, 338). At Cuijk, in the Netherlands, there were three phases of dendro-chronologically dated timber construction in quick succession (A.D. 347/9, 368/9 and 393: van der Meulen and van der Veen 2015, 34–5).

The reasons for such frequent repairs are usually unknown, but all bridges are affected by flooding and shifts in the river bed (Taylor 2002, 3). The recorded effects of flooding in ancient Rome frequently include damage to bridges (Aldrete 2007, 19–27). Historical records provide insights into the damage to bridges caused by flooding in medieval England (Harrison 2004, 180–1), including the catastrophic impact of floods on stone bridges on the Tyne, Wear and Tees (Rennison 2001). Archaeological evidence is rare, but an Iron Age bridge at Cornaux is thought by some scholars to have suffered a catastrophic collapse, trapping a number of people underwater amongst its timbers (Schwab 1978, 570, fig. 168[2]). The destruction of a bridge was seen as a bad omen in the Roman period, for example when the bridge at Zeugma was damaged during a storm as Crassus tried to cross it (Taylor 2002, 3). Flooding itself could be considered an omen, as is attested for Augustan Rome (Becher 1985; cf. Kamash 2008).

Construction, repairs and maintenance also had financial and legal implications. There are many inscriptions commemorating bridge construction projects by the imperial family or members of the local elite (O'Connor 1993, 35–43; Goudswaard *et al.* 2001, 491). In the later Roman period, there may have been a marked shift away from such euergetism. For example, local landowners had to be ordered to repair bridges in late fourth-century Italy and later Roman law codes appear to show a move towards reducing exemptions from contributions towards road and bridge repairs (Babic 2013, 71; Ward-Perkins 1984, 186–91; cf. Harrison 2004, 187). More is known about the medieval period, when bridge construction and maintenance could be funded through state compulsion, either by making landowners liable or later through taxation, from pontage tolls or charitable donations (Harrison 2004, 184–220; Cooper 2006). It has been suggested that obligations on certain estates to repair and maintain the Roman bridge at Rochester in the medieval period may have had their origins in Roman arrangements (Cooper 2006, 52).

SYMBOLIC AND RITUAL ASPECTS OF ROMAN BRIDGES

Bridges profoundly influence settlement development; they are an integral part of the road system and shape movement and economic activities (Taylor 2002). This is perhaps especially evident in the city of Rome, which by late antiquity had more bridges than any other city (Taylor 2000; 2002, 1).

Bridges could be monumentalised for aesthetic and propaganda purposes and seen as expressions of imperial power (Babic 2013; Taylor 2002, 1–18). Thus, the construction of a bridge across the Bay of Baiae by the emperor Caligula has been interpreted as a symbolic conquest and military feat, perhaps in deliberate imitation of Alexander the Great's bridging of the Indus (Malloch 2001). Caesar's bridge across the Rhine was designed to overawe the barbarians and symbolise a victory over the river god, while Trajan's stone bridge across the Danube literally solidified his conquest of Dacia (O'Connor 1993, 140; Serban 2009). The presence and importance of a bridge can also be reflected in place names such as *Pons Aelius* (Newcastle), where a new bridge had a monumental design to mark the original end of Hadrian's Wall (Bidwell and Holbrook 1989, 101–3). Another example is the second bridge at Chesters, replacing the more utilitarian original, which was far more elaborate than was necessary for an ordinary road bridge and made a clear statement about imperial attitudes to the frontier zone (P. Bidwell, pers. comm.). 'As far as possible, rivers were to be won over and made allies of the empire: otherwise they must be fought, conquered and made to support Roman imperialism' (Braund 1996b, 47; Campbell 2012, 370–83).

The crossing of a river could be a deeply symbolic act in the Roman period; flowing water was 'viewed with fear and foreboding' and as an 'ominous barrier, perhaps separating the living from the dead' (Taylor 2000, 3–4). When crossing a body of water, a variety of rites were required in

[2] For alternative interpretations see: Bradley 2017, 13–16, fig. 3; Ramseyer 2009; Schulting and Bradley 2013, 66.

FIG. 2.6. Scene 99/XCIX from Trajan's Column. Trajan and his attendants conduct the initial libation at a garlanded altar for the sacrifice of a bull in front of the newly-built bridge over the Danube (© *Roger B. Ulrich*)

order to recognise and propitiate its power (FIG. 2.6). These rites, known as *auspicia peremnia* could range from hand-washing accompanied by prayers to formal sacrifices (Holland 1961, 9). Such rites were observed in Rome when magistrates walking from the Forum to the Campus Martius crossed the Petronia Amnis (Holland 1961, 18–20). Crassus failed to observe omens and crossed the Euphrates without the appropriate rites, leading to a famous military defeat. The rituals observed by Caesar when crossing the Rubicon are poorly understood but appear to have involved a herd of horses (Holland 1961, 16–17; Braund 1996a, 19).

More broadly, a range of rituals associated with boundaries was observed during the Roman period. These included the *suovetaurilia*, the purificatory sacrifice of a pig, sheep and bull. In Rome, the ritual began within the civilian boundary of the city (*pomerium*), while the actual sacrifice took place on the Campus Martius; on campaign the sacrifice was held outside the military camp and the ceremony could also be conducted at bridges (Whittaker 1994, 21–3; Istenič 2019, 248). L. Vitellius celebrated the rite on the banks of the Euphrates before embarking on a military campaign in Mesopotamia (Tacitus, *Annals* 6.37), while the Bridgeness Distance slab commemorates a similar event on Rome's most northern border (Breeze 2006, 69–71). That riverine boundaries were the site of rituals is also demonstrated by four votive inscriptions to the 'gods of the border' found in the Vinxtbach, a tributary of the Rhine at the boundary between Upper and Lower Germany (Kolb and Zingg 2016, 12–13). Such acts at symbolic and legal boundaries may be reflected in the type and distribution of finds. Thus the early Roman material from the river Ljubljanica between Nauportus and Emona appears to be concentrated along certain stretches. Some of these concentrations may relate to the history of river management and finds retrieval but others are likely to reflect ancient practice. Istenič (2019, 244–54) suggests that clusters of objects in the river near a boundary stone marking the territories of Aquileia and Emona in the Augustan period are significant. Deposition may have ceased once Emona became a colony and the boundary changed from being that of the Roman state to an internal administrative one.

Closer to home, altars of Oceanus and Neptune from the Pons Aelius at Newcastle have been argued to 'consciously imitate' Alexander's dedications at the river Hydaspes, a branch of the Indus, in both cases marking the limits of both rulers' expeditions and conquests (Birley 1997b, 130–1). It seems eminently possible that the Tees also formed an important boundary at which sacrifices, both official and personal, were made. Unfortunately, there is no specific information on any potential territorial or legal boundary in this area. The question of the territory occupied by the Brigantes in the late Iron Age and Roman period has been much debated, as has the likely existence of many smaller socio-political groupings and the way in which colonial relationships shape both the emergence and study of 'tribes' (see Ch. 3; Hartley and Fitts 1988, 1; Ross 2011; cf. Moore 2011; Haselgrove 2016, 466–81). While the area up to the Tyne may have been seen as populated by the Brigantes, the extent of the civilian *civitas* area was likely much smaller, and may have had the Tees as its northern boundary (Mattingly 2006, 418–22; Haselgrove 2016, 474, fig. 27.3). The Tees crossing at Piercebridge may thus have marked the entry and departure point for the Brigantian *civitas*,[3] or it may simply have represented a symbolic boundary created by a very large and fast-flowing river on the main route north–south. In this context we may note the small figurine depicting the ritual ploughing of a town boundary found at Piercebridge in the nineteenth century (Toynbee 1962, 149–50, pl. 60; Manning 1971).

Because running or 'living' water had special magical and spiritual potency 'the places where bridges cut the bounds, to carry roads over the streams, raised special religious problems, and were critical points in the town's magical defences' (Holland 1961, 7). Building a bridge risked offending the gods. Their offence had to be counteracted by specific rituals and offerings, which in some traditions involved human sacrifice (Edsman 1993, 313; *RE* 1952 XX1.2, 2436–7; cf. Di Guiseppe and Serlorenzi 2010). The custom of offering money to a river that had been injured or offended by the construction of a bridge is still attested in early twentieth-century Germany (Torbrügge 1971, 97). On the other hand, auspices taken at its initial dedication combined with a bridge's inherent magical properties may have given bridges a special inaugurated status, eliminating the need for further action before crossing (Holland 1961, 25; Taylor 2000, 3).

Bridges could themselves be considered sacred entities. Notable in this regard is the Pons Sublicius, the first bridge across the Tiber, which was surrounded by strong taboos and from which effigies were thrown into the river. This ritual took place on the Ides of May when priests, Vestal Virgins, praetors and other selected citizens threw 30 effigies into the Tiber (Hallett 1970, 223). These effigies, which are thought to have acted as proxies for human sacrifice or to represent the fallen comrades of Hercules, were made from bundles of straw and could thus be washed away by the river (Holland 1961, 313–31; Graf 2000; Taylor 2000, 2; Palombi 2017). The taboos surrounding this bridge concerned the exclusion of metal in the bridge's construction and maintenance; the exclusive use of wood may have been intended to highlight the age of the first bridge across the Tiber. This bridge was also associated with the legend of Horatius Cocles, who defended it in 510 B.C. against the Etruscan forces of Lars Porsenna while the bridge was destroyed behind him (Taylor 2000, 2–3; cf. Holland 1961, 234–41).

The Latin term for a priest, *pontifex*, translates as 'bridge maker'.[4] This etymology may indicate that the word '*pons*' signified a metaphorical bridge overcoming mysterious and potentially dangerous powers as much as a physical structure (cf. Holland 1961, 332–42; Hallett 1970, 226; Seguin 1988; Crifo 2010). Priests were perhaps seen as the symbolic bridge between this world and the gods.

Returning to the physical remains of Roman bridges, superstructures are relatively poorly understood, as timber railings, stone parapets and similar features have to be reconstructed from the iconographic evidence, such as bridges depicted on Trajan's Column (Richmond 1962,

[3] It is noted however, that the fort would have had its own *territorium*, an added complication.

[4] An alternative origin from '*posse*' (to be able) has also been suggested (Holland 1961, 332; cf. Crifo 2010); another suggestion is that the word may have meant a 'member of the priestly board of five men' (Kavanagh 2002).

35–7, pl. 13; O'Connor 1993, 133–9; Dymond 1961, 146). Some bridges had defensive towers and monumental decoration could consist of entrance arches and columns as well as statues (Dymond 1961, 144; Bidwell and Holbrook 1989, 26, 41–7; Galliazzo 1995, 488–500, figs 175–177). Of particular relevance to us here is the presence of altars and shrines, as it is possible that objects placed there were periodically cleared into the river, or that people crossing a bridge made offerings to the river near such altars. We know most about the Roman bridge over the Cendere Çay in Turkey, where antiquarian accounts describe three of originally four altars and stelae; these were built into the railing of the bridge 7 m from the south and 31 m from the north bridge entrance (Humann and Puchstein 1890, 393–7, Taf. XLI–XLIII). The stelae and columns bear dedicatory inscriptions made by the sixteenth legion and four cities stating that the bridge was rebuilt in A.D. 200 for the Severan family. It seems likely that the altars were related to the imperial cult (Humann and Puchstein 1890, 396; cf. Rhodes 1991a, 184).

There is also evidence for bridge altars dedicated to specific deities, in particular to sea and river gods. At *Pons Aelius* (Newcastle) two altars to Neptune and Oceanus were found in the Tyne (Bidwell and Holbrook 1989, 99–103; Rhodes 1991a, 184; Mancini 2010, 146–7; *RIB* 1319–1320). Willis (2007, 120) suggests that the altars were found at the tidal head but the circumstances of discovery are poorly recorded and at least one altar may have been re-used in the medieval bridge structure (Bidwell and Holbrook 1989, 101). Given his association with water, it is perhaps unsurprising that both dedications to the god Neptune and sculptural reliefs depicting him are known from bridge contexts. He is shown looking on as soldiers cross the Danube on Trajan's Column (Richmond 1962, 7, pl. 1). Monuments to Neptune are attested at a bridge crossing the Danube at Neuburg and a bridge across the Neckar at Heidelberg (Torbrügge 1971, 109; Pauli 1986, 854; Galliazzo 1995, cat. no. 544; Donderer 1996, 262–3, pl. 51.2; Mancini 2010, 147). At Heidelberg, an inscription dating to the late second century A.D. by the architect of the bridge is dedicated to the imperial family and mentions a shrine to Neptune with a statue within it. The protection of Neptune could also be achieved by carving his image onto the bridge, as at the Ponte della Pietra in Verona; a male fluvial deity is also depicted on top of an arch at the second-century bridge of Imrahor in Turkey (Mancini 2010, 145–8, figs 3 and 4). Other water deities or spirits can also be associated with bridges; for example, a fragmentary inscription, possibly from a platform above a cut-water, from the bridge at Chesters may relate to a shrine to the nymphs (Bidwell and Holbrook 1989, 47 and 141; *RIB* 1547).

Less formal carvings at bridges may also have been created for the ritual protection of the structure and those who crossed it. Phalli occur on the Pont du Gard in Nîmes, the Pont Ambroix and the bridges at Chesters and Willowford (FIG. 2.7; Mancini 2010, 148, fig. 7; Galliazzo 1995, fig. 142, cat. no. 514; Bidwell and Holbrook 1989, 142). A bull's head and a sword on the Ponte Nomentano are thought to be apotropaic in nature and may allude to sacrifice while a *corona civica* transforms the bridge at Rimini into a celebratory monument (Galliazzo 1995, fig. 144, cat. no. 249; Mancini 2010, 150–1). A horned god at Willowford represents an interesting example of what is usually thought to be a 'Celtic' deity represented on a bridge (Bidwell and Holbrook 1989, 142).

While their survival is rare, there may also have been protective designs on the timber structures of bridges. Thus at Cuijk in the Netherlands a timber dated to A.D. 368/9 bears the inscription 'ETERNA', which was interpreted by the excavators as expressing a wish for the eternal survival of the structure (Goudswaard *et al.* 2001, 462). However, van der Meulen and van der Veen (2015), citing other finds of inscribed timbers from the region, often in a military context, argue that the inscription is more likely to be a personal name relating to timber procurement or construction.

There is some evidence for offerings during bridge or ford construction. However, this is rare as it is difficult to retrieve objects from the sites of stone bridges, where the area between piers can be covered by collapsed huge masonry blocks and rubble. At Casaque (Saône) a bronze vessel, an adze and a *gladius* were discovered underneath and between stones which made up the ford's pavement. These objects were interpreted as being votive in nature, perhaps specifically associated with its foundation or construction (Bonnamour and Dumont 1994; Künzl 2001).

FIG. 2.7. Phallus decorating the bridge abutment at Chesters (*Photo: Paul Bidwell*)

At Cuijk, a ceramic vessel found upright amongst piles was recognised as a foundation offering (Goudswaard *et al.* 2001, 480, fig. 31), as was a Republican *denarius*, which was found in a bar-clamp socket that still contained lead and therefore must have been placed there during the construction of the bridge (Goudswaard *et al.* 2001, 482, fig. 33). Coins, possibly selected for their protective reverse images, have also been found in association with wooden and stone bridge foundations in Italy and France (Thüry 2016, 55–6). Finds of iron tools at bridge sites are sometimes interpreted as losses during construction but this is not always convincing given the numbers and types of tools and they may also represent foundation offerings (Pauli 1987, 300; Goudswaard *et al.* 2001, 481, fig. 32).

Small shrines rather than just altars may have existed near bridge entrances; one such shrine, dedicated to Trajan, survives at Alcántara in Lusitania (Galliazzo 1995, fig. 178, cat. no. 754). Chapels on bridges also existed in the medieval period, where they were used primarily as chantries but perhaps also to ensure the safety of travellers; these chapels could be located at one end of the bridge or on a mid-river pier (Cook 1998, 38–42; Harrison 2004, 199–200; Lee 2014, 8). Interestingly, a medieval chapel of this type is attested at Piercebridge (Scott 1982, 81).

In general, bridges have symbolic and religious significance in many cultures, because the physical crossing of thresholds such as rivers or doors is seen to represent symbolic transitions, which often require divine protection (van Gennep 1977; Lund 2005, 119; 2010, 54–6; Ingate 2013; Thüry 2016, 73–4). This is true for Islamic and Buddhist as well as Germanic traditions; in the latter bridges, which were sometimes golden, cross terrifying rivers studded with weapons (Beck 1978; Edsman 1993; Lund 2005, 118). In Christian thought from the sixth century A.D. onwards, bridges symbolised the soul's troublesome journey to the other world (Dinzelbacher and Kleinschmidt 1984; Dinzelbacher 1986). In the dialogues of Gregory I (*c.* A.D. 540–604), there is a vision of a 'bridge under which a dark and stinking river runs, but that leads to the heavenly green meadows and shining mansions inhabited by men in white clothes' (*Dialogues* 4.36; Edsman 1993, 312). In other visions the bridge to paradise is crossed by the righteous while sinners fall into the abyss or river; there are also accounts of bridges studded with nails (as the stylised example depicted in a twelfth-century wall-painting in Chaldon church, Surrey) and of a dangerous bridge that moves itself (ibid.). The concept that bridges are places for the journeying and judgement of souls may be one reason why in Scandinavia Christian rune stones commemorating specific individuals are often associated with bridges and why bridge building may have been viewed as a good Christian deed (Beck 1978; Lund 2005, 120–5). Bridges could also be built as an atonment or for charity (Dinzelbacher and Kleinschmidt, 1984, 256–64; Harrison 2004, 194–9); medieval communities mantained bridges and deliberate damage was punished (Lund 2005, 127). The longevity of ideas about evil spirits, running water and bridges in folklore and legend is evident in the poem Tam o'Shanter written by Robert Burns in 1790 (Holland 1961, 10–11; O'Connor 1993, 3 citing Kinsley 1968 vol. 2, poem 321). Returning from a night out, Tam can only escape the pursuing witches and warlocks by fleeing across the river Doon; unable to cross the stream, they only manage to pull off the tail of Tam's horse Meg.

CONCLUSION

This chapter has highlighted the various ways in which Roman material may end up in rivers, ranging from the erosion of middens to deliberate ritual deposition. Weaponry and armour were used as a case study to explore the various depositional processes and interpretative frameworks employed for Roman river finds. Particular focus was placed on the symbolic and ritual associations of bridges, which may shed some light on the artefacts found next to them. The two interpretations of Roman finds near bridges most frequently offered are foundation deposits and ritual offerings made during the life of the bridge.

It is generally thought that the custom of making an offering while crossing a bridge relates to the appeasement of a threatening and dangerous deity, a practice similar to that made when crossing Alpine passes (Pauli 1986; Wegner 1995, 272); the offering takes place at the point of transitioning a dangerous place, a slightly different practice to offerings made at special places such as springs, rapids or confluences even if the objects deposited are very similar (cf. *RE* 1952 XXI.2, 2436–7; Pauli 1986, 853). Large numbers of what must be deliberate offerings are known from both fords and bridges across the Roman Empire. Examples are the nearly 5,000, 15,000 and 27,000 objects (mainly coins) from the fords at Condé-sur-Aisne, Ramier du Bazacle and Mayenne in France (Giard 1968, 76–8; Bourgeois 1991, 199; Besombes *et al.* 2003/4; Sauer 2005, 97; Thüry 2017, 149–50). From the famous stone bridge at Trier come an estimated 500,000 coins, of which 32,000 are now in the Rheinische Landesmuseum (Gilles 2001, 89–91, fig. 4). There are also several thousand lead sealings (Gilles 2001, 87–9, figs 1–3) and a huge array of small finds (estimates vary between 1,000 and 4,000), of which only the most spectacular are published (Fontaine 2001, 98–118, figs 4–25). They include votive ship prows, figurines (of Attis, a *lar*, a bull), a *tintinnabulum*, a spear with inlaid decoration, gold, silver and copper-alloy jewellery and a range of fittings. These finds were recovered during canalisation and dredging works in the early 1960s and in 1994 and there are indications that most of the material was recovered between the piers and just downstream of the bridge (Thüry 2017, 150, fig. 3; Gilles 2001, 90). While some of the Trier finds are accepted as ritual offerings, the lack of a comprehensive publication makes it impossible to distinguish them from material that may have been thrown into the Mosel as rubbish, or washed from its banks. Similar issues apply to the finds from London Bridge (Rhodes 1991a; Watson *et al.* 2001; Watson 2004). The aim of this book is to address this methodological issue and develop more nuanced interpretations, by drawing together and publishing all the material retrieved from the Tees at Piercebridge.

CHAPTER 3

THE PIERCEBRIDGE ASSEMBLAGE IN ARCHAEOLOGICAL CONTEXT

By Hella Eckardt with Christopher Green

INTRODUCTION

This chapter situates Piercebridge in its wider cultural and historical context and summarises current knowledge about the archaeology of the site and its multiple Roman bridges. It also presents information on how and where the exceptional artefact assemblage was retrieved from the Tees, and how this relates to the fluvial regime of this important river.

ROMAN PIERCEBRIDGE IN ITS WIDER SETTLEMENT CONTEXT

The limited historical sources indicate that by the time of the conquest of northern Britain, the Tees Valley was inhabited by people known to the Romans as the Brigantes (Hartley and Fitts 1988). Tacitus (*Annals* 12.32, 36, 40 and *Histories* 3.45) recounts that there were conflicting attitudes to Rome within the ruling family of the Brigantes. Cartimandua is portrayed as a pro-Roman client ruler, who in A.D. 51 gave up Caratacus, who had fled north to seek her protection. Her consort Venutius broke away to lead an anti-Roman faction, elements of which may have been responsible for a minor revolt in A.D. 47/8. Cartimandua (with her new husband Vellocatus) remained in power until A.D. 69, when she was forced to flee south and the rise of the anti-Roman faction precipitated the military conquest of the North. Despite this chronology of events, it has been suggested that the two stories related by Tacitus may refer to a single event in A.D. 69 (Wheeler 1954, 18–21; Hanson and Campbell 1986; Howarth 2008; Haselgrove 2016, 466–81). Between A.D. 71 and 73, the area was conquered by Petillius Cerialis, with final resistance crushed by Agricola in A.D. 78/9 (*Agricola* 17 and 20). All sources obviously have to be read with caution, and in this case especially so given the likelihood that a female leader is rendered as a cautionary moral tale for an elite Roman audience (Haselgrove 2016, 466). There is clearly also a danger of shoehorning the archaeological evidence into the historical framework and of uncritically accepting ‘tribal territories’. Rather than envisaging bounded units, it is more helpful to explore shifting allegiances of small groups in a colonial contact situation (e.g. Creighton 2000, 11–21; Mattingly 2004, 13; 2006, 418–22; Moore 2011). Recent work has begun to untangle the archaeology of the late Iron Age and early Roman period in the region, suggesting that smaller regional groupings are reflected in settlement morphology, construction technologies and depositional practices (FIG. 3.1; Harding 2004, 23–4; Ross 2011; Sherlock 2012; Haselgrove 2016, 472–7, figs 27.2 and 3).

Our understanding of Iron Age activity in the wider region is dominated by Stanwick, an *oppidum* long associated with Cartimandua, located just 6 km to the south-west of Piercebridge. Excavations in the 1980s established a chronological framework that spans the first century B.C. and first century A.D. (*c.* 80/70 B.C.–A.D. 65/75), rather than the much shorter chronology proposed by Wheeler (Wheeler 1954; Haselgrove 2016). In addition to the huge earthworks which encircle the site, excavation has explored the settlement activity within, which includes

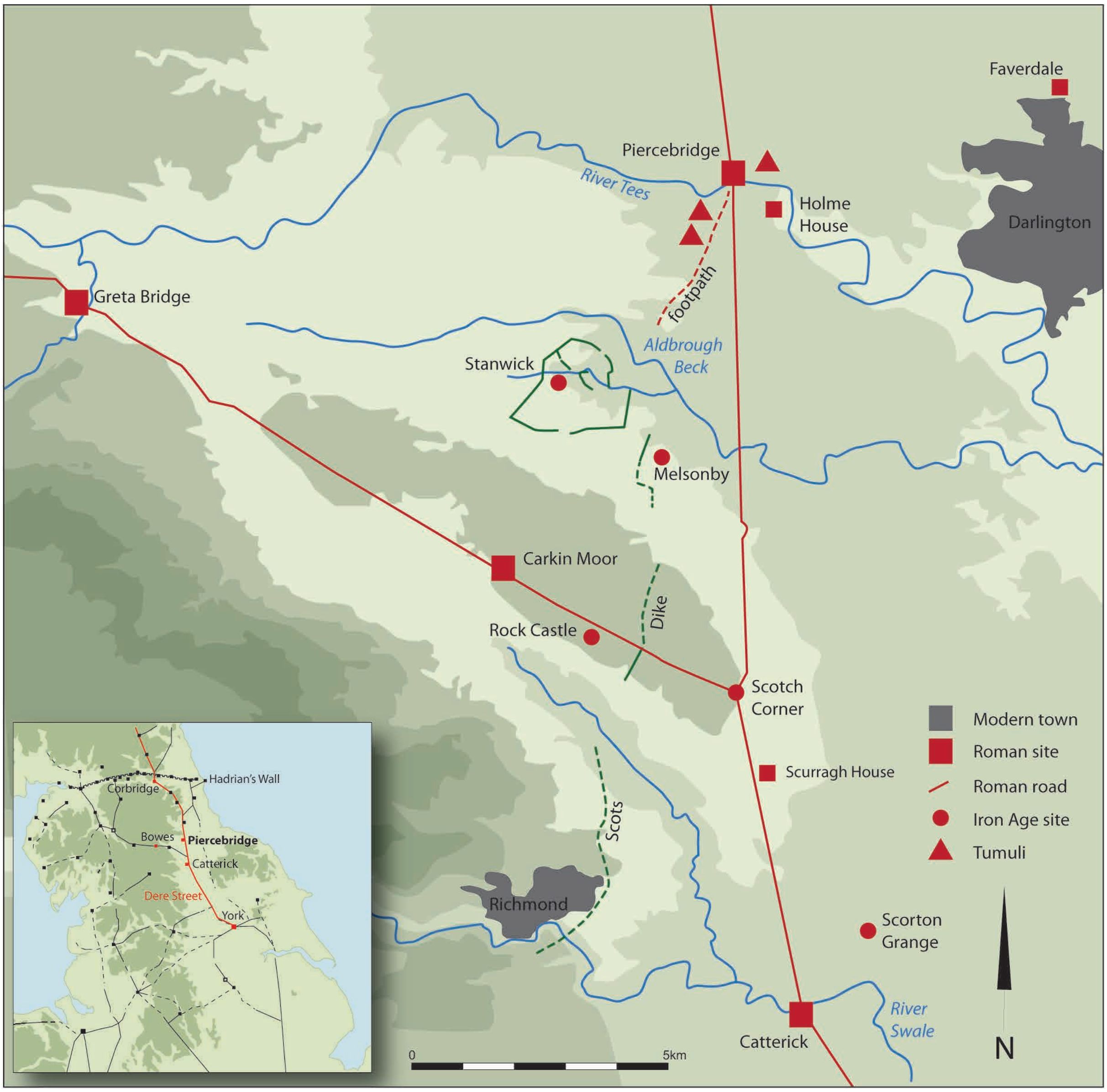


FIG. 3.1. Piercebridge in its late Iron Age and Roman settlement context (after Haselgrove 2016, figs 1.2 and 26.6, with additions from Zant and Howard-Davis 2013)

timber roundhouses replaced by stone-footed equivalents *c.* A.D. 30/40–65/75 (Haselgrove 2016, 392–4). The artefact assemblage includes some very high-status and exotic objects such as an obsidian vessel and several fine glass vessels which have been interpreted as diplomatic gifts. Imports increased markedly from A.D. 45/55 but small amounts of material appear to date as early as the turn of the millennium (first centuries B.C. and A.D.) (Haselgrove 2016, 432–7). Detailed research on the Stanwick finds assemblage has also highlighted trade links across north-eastern England, notably in salt and iron as well as pottery (Haselgrove 2016, 424–30). Haselgrove (2016, 435) suggests that bulky goods destined for Stanwick were shipped to the Tees estuary and then moved up river, although it is uncertain how far inland the river was navigable during the Iron Age or Roman period. A prehistoric routeway extending from Piercebridge to the north-eastern gate of Stanwick may be preserved in a footpath that joins the Tees near the point where the divers revealed an 'early' timber bridge (FIGS 3.1, 3.3 and 3.4; Haselgrove 2016, 24, fig. 2.11 and 459, fig. 26.6). Scots Dike, now firmly dated to the Iron Age, may have extended to the Tees in the same area, possibly to control movement across the landscape, although the assumed stretch between Stanwick and the Tees is not currently archaeologically documented (Zant and Howard-Davis 2013, 118–26, esp. 123, fig. 72; Haselgrove 2016, 23–5).

Survey work in the wider region has mapped a number of Iron Age and Roman settlements in the Tees lowlands, highlighting the fact that settlement was much denser than previously thought (FIG. 3.2; Haselgrove 2016, 358–75, fig. 20.5). In the immediate vicinity of Piercebridge, the evidence for dispersed late Iron Age and early Romano-British occupation is now widespread (Zant and Howard-Davis 2013, 49–92 and 126–38). Of particular interest is Scotch Corner, a location where prehistoric (and then Roman) routes running east–west over the Pennines and north–south converged. From origins in the mid-first century B.C., a settlement with a complex system of enclosures and trackways, numerous roundhouses and rectangular buildings developed here from the mid-first century A.D. At this time, coin pellets were manufactured at the site. There are high-status Roman and continental imports from the pre- and early Claudian period such as an amber figurine and glass vessels. From the middle of the century there are signs of a Roman presence (including 'Romanised' butchery patterns amongst the animal bone assemblage), perhaps suggesting a trading or supply centre. The peak in activity at Scotch Corner is roughly contemporary with Stanwick Period 5 (A.D. 30/40–65/75). The early Flavian conquest led to fundamental changes in settlement layout and settlement at Scotch Corner. The site then declined in the A.D. 80s, as Catterick, just 6 km to the south, became established (Abramson 1995; Fell 2017; Speed and Holst 2018, 363; Fell 2020 and pers. comm.)

The development and dating of the road system in northern Britain, and in particular the stretch of Dere Street running north from Scotch Corner, is clearly complex. It seems likely that the Roman army initially constructed a campaign road, which essentially followed prehistoric routes. Considerable time may have elapsed before the construction of a more permanent road structure in *c.* A.D. 85 (Bishop 2005, 218; Poulter 2009, 4–31, esp. 28–9; Willis 2010, 230; Bishop 2014, 18; Haselgrove 2016, 459; Speed and Holst 2018, 12; Mason 2021). It is difficult to distinguish between the forts and roads developed by Cerialis, Frontinus and Agricola but it has been argued that the main Roman road north in the early A.D. 70s leads from Scotch Corner to Bowes and ultimately Carlisle, while the route directly north to Piercebridge is a slightly later addition (FIGS 3.1 and 3.2; Hanson and Campbell 1986, 80–9, fig. 2; Frere and Hartley 2009; Bidwell and Hodgson 2009, 8–13, figs 3–4; Wilson 2009; Haselgrove 2016, 468).

As yet there is no certain evidence for a Flavian military presence at Piercebridge, although given the site's strategic importance, this seems likely. It is clear, however, that Dere Street and the Tees crossing must have witnessed a great deal of military traffic. By the second century A.D., the immediate area played an important role in the military occupation of the North, with sites occupied, abandoned and re-occupied in relation to activity on Hadrian's Wall and the Antonine Wall, as well as the Severan campaigns in Scotland (e.g. Shotter 1996; Breeze and Dobson 2000; Petts with Gerrard 2006, 43–5; Wilson 2009; Hodgson 2014). Catterick and Binchester, two military sites in close proximity to Piercebridge and occupied during the peak of depositional activity, both also located on rivers, will provide a comparison for artefact assemblages in Chapter 22. Binchester is a military site with a major civilian settlement located at a river crossing on Dere Street. In this case the river is the Wear, *c.* 19 km to the north of Piercebridge (Ferris 2010; 2011; Mason 2010, 26–9). In contrast to Piercebridge, there is clear evidence for a Flavian military presence, with a very large fort (7 hectares) established probably in A.D. 80. This was abandoned *c.* A.D. 125 and reoccupied *c.* A.D. 160 with another substantial fort (4 hectares), with the sequence almost certainly relating to the construction, abandonment and reorganisation of both Hadrian's Wall and the Antonine Wall during this period. Binchester was occupied by cavalry units, including the *ala Vettonum*, as well as detachments of the Sixth legion. Early excavations focused on the commander's house, masonry buildings south-east of the fort flanking Dere Street and the baths, while more recent geophysical survey and excavation by Durham University/Durham County Council have focused on the *vicus* and a number of mortuary enclosures (Durham University Archaeology Department 2020).

The fort of Greta Bridge lies *c.* 13 km west of Piercebridge, on the Roman road that runs from Scotch Corner to Carlisle (Stainmore Road). Rescue excavations documented timber and stone

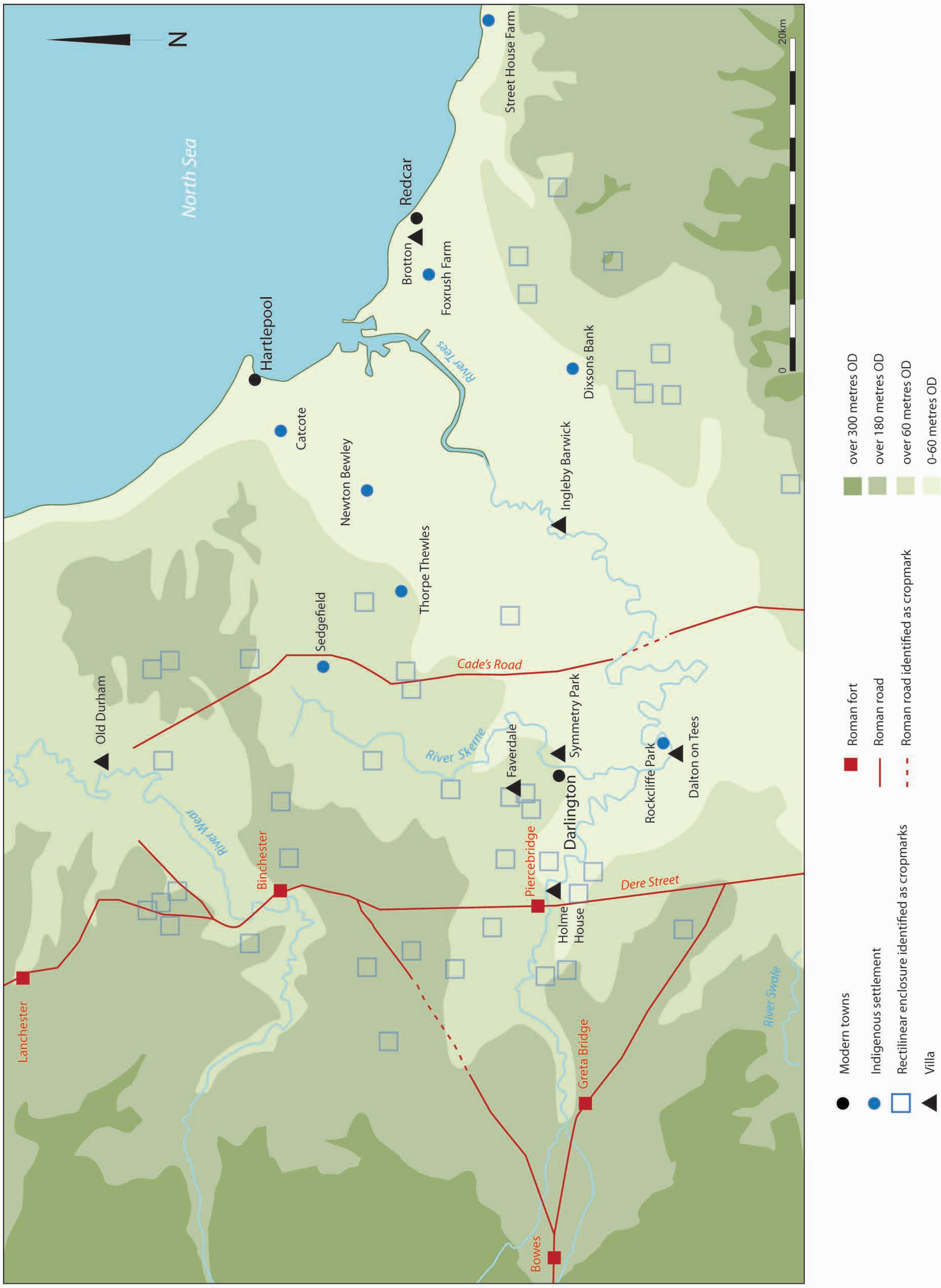


FIG. 3.2. Romano-British settlement in the Piercebridge area (after Proctor 2012, fig. 87, with additions)

buildings in the *vicus* north of the fort and on both sides of the river Greta (Casey and Hoffmann 1998). The fort was occupied from the late Antonine period to the late third or fourth century A.D. It has been suggested that the pottery assemblage at this site is different to those at York and the eastern end of Hadrian's Wall, but similar to Piercebridge, perhaps indicating that goods were transported via the river Tees valley (Croom *et al.* 2008a, 229).

Major settlements in the wider region are at Catterick, located *c.* 6 km to the south, and Corbridge, *c.* 65 km to the north (Wilson 2002; Bishop and Dore 1988; Hodgson 2015). Villas are relatively rare in northern England, making Holme House at Piercebridge an early and unusual example (FIG. 3.2; e.g. Millett 1990, fig. 48; Harding 2004, fig. 6.1, 162–9; Hingley 2004, 333–9; Petts with Gerrard 2006, 52–3; Ottaway 2013, *passim*; Allen 2016, 255–6). Moving east along the Tees there are only two comparable sites: Chapel House Farm, Dalton-on-Tees, and Quarry Farm, Ingleby Barwick (cf. Cool and Mason 2008a, 301–2; Haselgrove 2016, 358–75). While there is very slight evidence for late Iron Age occupation in the form of a circular structure, the villa at Ingleby Barwick was not constructed until the Hadrianic-Antonine period (Willis and Carne 2013). In the late fourth or early fifth century the complex included a stone-built circular building (ibid., 50, fig. 3.28), a feature that has prompted Willis to doubt the stratigraphic sequence of the Holme House example (see below). Only an interim site report has been published for Dalton, but it is clear that this site, like Ingleby Barwick, comprised a winged corridor villa and an aisled building (Brown 1999); though not yet fully analysed, the material culture suggests occupation from the late Iron Age until the end of the fourth century (Proctor 2012, 13). A third possible villa is known at Old Durham, on the eastern side of the river Wear (north of Piercebridge), which is thought to be the most northerly example in Britain (Wright and Gillam 1951, 1953). It was only partially excavated but possessed a bath-house and also probable roundhouses (cf. Proctor 2012, 12). A stone building with hypocaust is also an important feature of the enclosed settlement (and possible villa) at Faverdale, *c.* 7 km east of Piercebridge but located north of the river Tees and occupied mainly during the later first and second century A.D. (Proctor 2012). The use of bath-houses in this region is interesting. Although Holme House had a full suite of hot and cold rooms, the space appears to have been used for high-status dining. Meanwhile, Ingleby Barwick and Faverdale both have small heated buildings of unknown function (Proctor 2012, 173–4). A very recently discovered settlement apparently dating to the late fourth century A.D. is known at Symmetry Park, Darlington (Mason 2021, 427–9). Another important settlement in the region is located to the north-east of Piercebridge along Cade's Road at Sedgefield (Petts with Gerrard 2006, 54, fig. 29; Mason 2010, 25–8). This ladder-style settlement with some high-status finds was occupied from the second quarter of the second century until the fourth century A.D. More villas continue to be identified in the wider region, for example at Leeming Bar (south of Catterick) and Brotton (near Redcar; cf. Petts 2013, 324–5).

An important consideration is the changing interpretative framework for 'native' sites in northern Britain. They have often been described in negative terms, with the relative rarity of 'Roman' finds interpreted as indicating poverty and geographical remoteness (Hingley 2004, 328). More recently, the importance of other forms of wealth and status expression have been highlighted and the model of all Roman objects as automatically desirable rejected (ibid.). Thus Willis and Carne (2013, 154) note the low frequency of finds, including pottery, from north-eastern sites, even villas, but argue that this reflects a deliberate 'cultural choice and embedded regional practice', especially as on some sites the built environment is strongly 'Roman' in style.

ROMAN SETTLEMENT AT PIERCEBRIDGE

The archaeological evidence for Roman Piercebridge consists of a fort (partially obscured by the modern village) and a *vicus* (in Tofts Field) to the north of the river Tees; to the south is a villa located east of the road (Holme House) and another small roadside settlement (FIGS 3.3 and 3.4; Scott and Large 2008b). The river gradually crept northwards during the Roman period and has continued to do so, with its south bank now *c.* 100 m north of the south abutment of the Roman bridge (Scott 1982, 79). There were three ancient bridges across the Tees, all situated to

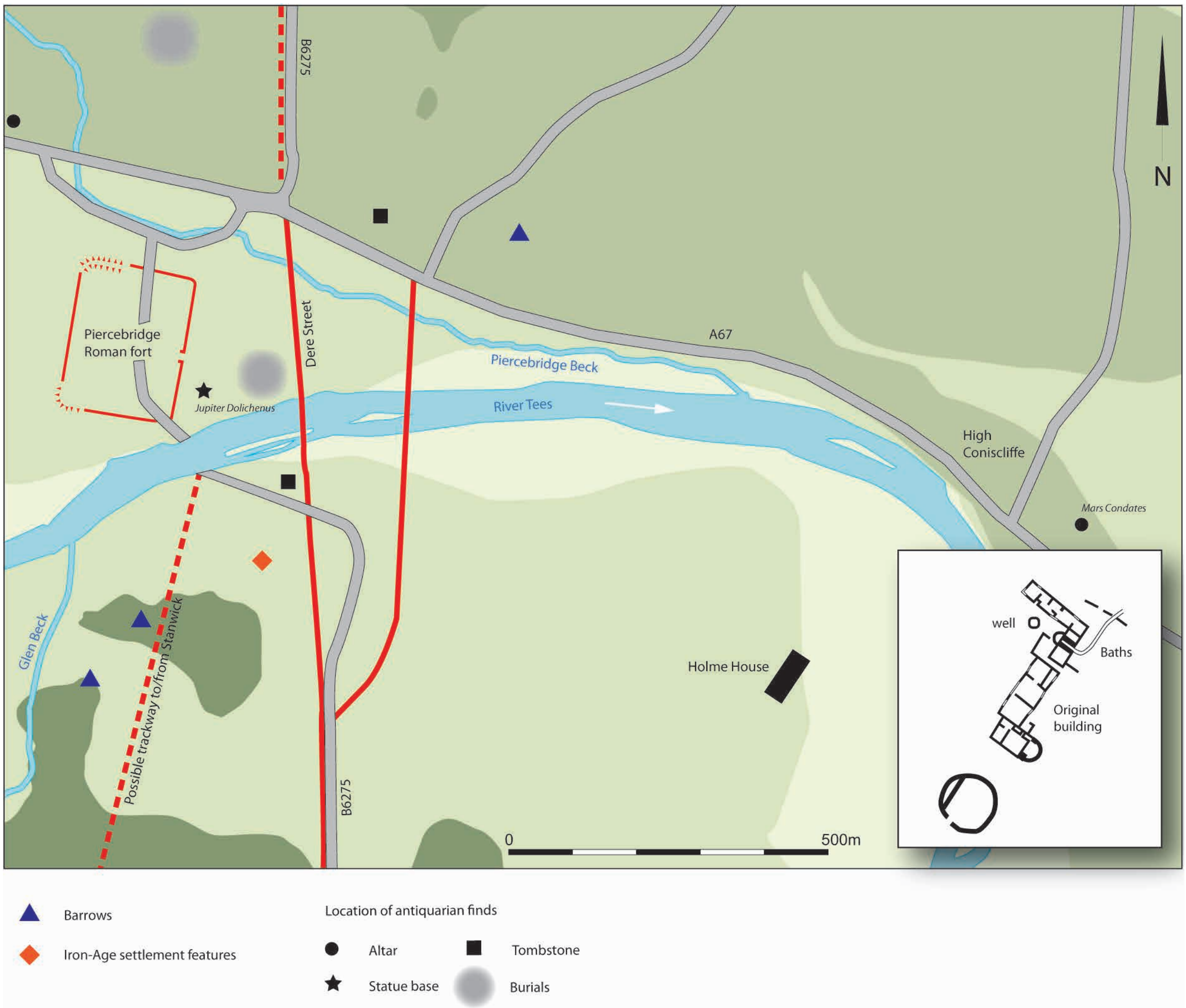


FIG. 3.3. The site of Piercebridge in its immediate context, with the location of antiquarian discoveries and (probably) Iron Age barrows and the possible trackway to Stanwick (after Fitzpatrick and Scott 1999, fig. 1, Scott and Mason 2008, 13, fig. 2.2 and Wessex Archaeology 2010, fig. 2 with additions from OS map and Haselgrove 2016, fig. 20.1)

the east of the early sixteenth-century bridge which still stands today. The northern settlement is bordered by the Piercebridge Beck, a tributary that provided a convenient source of fresh water as well as possibly a defensive advantage. While burials have been identified across the area, the main cemetery appears to have been located to the north of the settlement. The modern name Piercebridge is thought to be derived from the Old English 'bridge where osiers grow' or 'osier bridge'; the Latin name is uncertain, although *Morbium* has been suggested (Rivet and Smith 1979, 420; Cool and Mason 2008b, 309; Bidwell and Hodgson 2009, 145). In terms of Piercebridge's setting in the landscape, the river Tees was crossed here at the point where it emerges from a narrow gorge and before it becomes a meandering river.

In addition to antiquarian and early twentieth-century explorations (cf. Richardson 1934–6, 235–40; Scott and Mason 2008, 13–27), the bulk of archaeological work on Roman Piercebridge was carried out between 1969 and 1981 by Dennis Harding, an academic from Durham University, and Peter Scott, a local businessman. They supervised students, school children and unemployed workers in short seasonal excavations, resulting in rather variable records. Post-excavation analysis was repeatedly interrupted, with an overview publication accompanied by digital reports only completed thirty years after the conclusion of the excavations (Cool and Mason 2008a, 1–9). More recent work at Piercebridge has comprised three separate pieces of work. Field-walking and a small geophysical survey undertaken in Tofts Field in 2003 indicated that the *vicus* extended further than previously thought in the north-western area of the site (Hingley and Rogers 2008; Wilson 2010, 362; Wessex Archaeology 2010). In 2009, a second geophysical survey and six evaluation trenches were carried out by Time Team focusing on the areas to the north-west and east of the fort. Attempts were also made to locate the timber bridge using Ground Penetrating Radar, and Time Team worked with the divers to describe and examine the underwater timber structures; this also resulted in the recovery of samples for dendrochronological[5] and radiocarbon dating (Series 17, Episode 3). A recently completed Lottery-funded project explored the natural and social history of the Tees and summarised archaeological work (Groundwork NE and Cumbria 2020, https://www.riverteesrediscovered.com/resources). In this context, geophysical survey and excavation were undertaken to the west of the fort in 2017 which revealed a trackway which may pre-date the fort (Adams and Daniels 2017).

Evidence for prehistoric settlement at Piercebridge itself is slight but geophysical survey by Time Team in 2009 revealed a potential prehistoric ring ditch and enclosure south of the river in Area 3, Trench 5 (see FIGS 3.4 and 3.5; Wessex Archaeology 2010, 9, fig. 2). This included a large ditch running north-west/south-east. Three barrows at Low Carlbury and Betty Watson's Hill may also be significant in this context (FIG. 3.3; Willis 2010, 231; cf. Haselgrove 2016, 491, fig. 20.1). The earliest substantial occupation revealed is on the Holme House site, but unfortunately, due to the loss of records from Harding's excavations, the stratigraphic summary is not linked to the artefact analysis (Harding 2008). The earliest phase is interpreted as a middle-to-late Iron Age roundhouse set within an enclosure. From the A.D. 60s Roman material culture was used here, and by the end of the first century new architectural fashions were adopted when a rectangular building was constructed. By the mid-second century this building developed into a villa with a bath suite. At this point the site of the roundhouse was redeveloped and a circular stone building erected, thought to be of utilitarian function (Harding 2008, 132). Occupation at Holme House is interpreted as a classic (but very northerly) example of a native elite family responding to incorporation within the Roman Empire. The implication of the very speedy adoption of new ways might be that the people living at Piercebridge, like those at Stanwick, had closer links with the Roman world earlier than previously thought (Cool and Mason 2008a, 296–7). The site appears to have been abandoned in the late second century, possibly because of flooding, although it is interesting that this is also the time when there was a significant military presence in the area. The Holme House area may have been reoccupied at the end of the fourth century A.D. However, as the excavation records for the Holme House site are imperfect, the published evidence could also be interpreted as showing a late Roman stone roundhouse built over a rectilinear structure (Willis 2010, 232). Ottaway (2013, 188, fig. 7.15) argues that the size and construction method of the mid-second-century circular stone structure points to it being a shrine, perhaps linked to ritual activity in the Tees.

It has long been assumed for strategic reasons that there was a Flavian fort securing the river crossing at Piercebridge, just as there were forts at Catterick, Binchester and Corbridge; to date, no conclusive proof has been found (Fitzpatrick and Scott 1999, 114; Cool and Mason 2008a, 298; cf. Bidwell and Hodgson 2009, 147; Willis 2010, 231; Ottaway 2013, 106). We do know that a settlement had developed north of the river by the end of the first century A.D., with a kiln producing mortaria and other pottery. The kiln assemblage is interpreted by Swan as typical of work depots supplying northern military sites in the Trajanic period, and she links its presence to an as yet unlocated fort (Scott and Large 2008a, 84). Cool and Mason (2008a, 301), however, see the overall assemblage as more closely associated with the civilian population in the area. They interpret this northern area of occupation as a trading settlement taking full advantage of the river crossing. The same view had already been espoused by Millett (1990, 147) who argued that the river crossing was the impetus for the development of a 'small town', with the fort being secondary to it (Allen 2016, 247).

[5] Never published and not revealed during the programme.

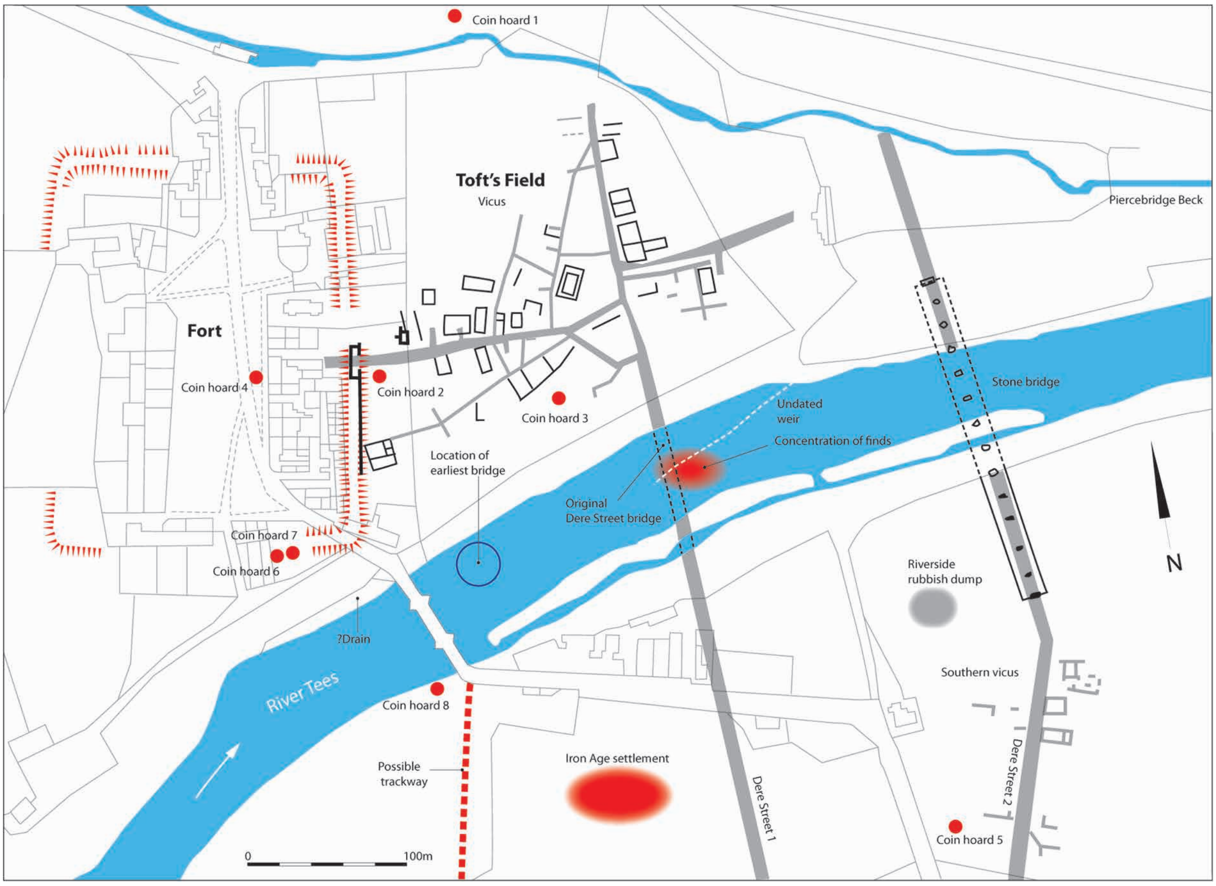


FIG. 3.4. Plan of Roman Piercebridge (after Fitzpatrick and Scott 1999, fig. 2; English Heritage plan of Piercebridge; Scott and Mason 2008, 17 and fig. 2.3; Wessex 2010, figs 1 and 2)

From *c.* A.D. 170/80 there was certainly a military presence at Piercebridge, indicated by a sudden increase in the quantity and quality of material culture and activity, with occupation covering the areas to the north and south of the river. The very late second and early third century witnessed military activity in the region related to the Severan campaigns (Cool and Mason 2008a, 302; Bidwell and Hodgson 2009, 145–50). It is perhaps during this period that the stone bridge was constructed, probably under military direction (see below). It is not certain where these troops were housed, as the stratigraphy and dating of occupation in the area of the later fort are complicated. Excavated masonry structures on that site are not of standard type (a courtyard building and a bath-house), and if there were defences they may have remained unfinished. It is possible that the site was intended to accommodate a large unit, or was built as a storage depot with only a small garrison. The courtyard building may have been a *mansio* or the residence of a commanding officer or official. The extant fort defences are thought to have been constructed *c.* A.D. 260–80 by Cool and Mason (2008b, 302–3), but others have argued for an early third-century date (Bidwell and Hodgson 2009, 147–8; cf. Brickstock 2008, 162).

Epigraphic evidence suggests the presence of soldiers from three legions (*legio II Augusta*, *legio VI Victrix* and *legio XXII Primigenia*). *RIB* 3253 is dedicated by a centurion of *legio II Augusta* who was in charge of vexillations from *legio VI Victrix* and 'the army of the two Germanies' (presumably from at least two other legions). *RIB* 1022 commemorates a centurion from Upper Germany and is datable to A.D. 217 while *RIB* 3258 records a *beneficiarius tribuni* from Upper Germany. *RIB* 1026 is the tombstone of a centurion of *legio XXII Primigenia*, based at Mainz. These stone inscriptions may relate to Caracalla using troops from Germany to quell unrest in northern Britain (Birley 1967). The lead sealings from the river refer to *legio VI Victrix* and auxiliary units in the area (see Ch. 8; Cool and Mason 2008a, 302).

In the later Roman period occupation gradually contracted and by the fourth century was concentrated in the fort. Structural repairs and rebuilding of the eastern fort entrance and of the local water supply took place as late as the end of the fourth century, and small-scale settlement continued into the later fifth or early sixth century. There may have been a cavalry unit here at the very end of the Roman period, and a defended site in such a strategic location is highly likely to have been occupied by a local warlord or chieftain afterwards (cf. Petts 2013). There is some 'Anglian' material culture but Piercebridge was gradually eclipsed by other sites in the region in the eighth and ninth centuries. However, some finds, including a coin of Eadbericht of Northumbria dated to A.D. 737–758, an eighth- or ninth-century bone stylus, a possible ninth- or tenth-century ring-headed pin and a tenth- or eleventh-century dress pin suggest some form of continued activity throughout the early medieval period (Cool and Mason 2008b, 311).

A key research question for this project is the possible votive or ritual nature of the river deposit (cf. Cool and Mason 2008a, xxi). It is therefore relevant that the river itself may have been conceptualised as a deity, or at the very least as a dangerous obstacle. The name Tees is likely derived from its 'surging' quality (Ekwall 1928, 395–7) and eighteenth- and nineteenth-century folk tales refer to Peg Powler of the Tees, a malign river spirit waiting to drown women and children (Westwood and Simpson 2005, 243). River deities and appeasement strategies are discussed in more detail in Chapter 2 but we can here briefly consider the available information on Roman religious activities at Piercebridge.

Four surviving inscriptions from the site refer to Jupiter, with three being dedications to Jupiter Dolichenus in particular. A building in Tofts Field has been interpreted as a temple to him (Scott and Mason 2008, 14–16; Scott and Large 2008a, 101–4). There is an altar to Mars Condates, set up by the *mensor* (surveyor) Attonius Quintianus (Scott and Mason 2008, 14–16; cf. Tomlin 2016, 389–90) and as demonstrated below (Ch. 23), the cult of Mars of the Confluence is local to the area, and may have been focused on Piercebridge. A small statuette of Mercury was found in 1788 in the village and another figurine found in the early nineteenth century (stylistically dated to the second or third century A.D.) probably depicts the ritual ploughing of a town boundary (Toynbee 1962, 149–50, pl. 60; Manning 1971). The objects inscribed with the names of gods or depicting deities from the river will be discussed in Chapters 4 and 19. An apparent concentration of ceramic head pots and coins placed in the fort ditch may point to later Roman ritual activity (Cool and Mason 2008a, 309–10); the site also appears to have a relatively high concentration of coin hoards (FIG. 3.4; Brickstock 2008, 164–7). It is perhaps notable that the area was 'something of a focus for religious establishments in the post-Roman era' (Willis 2010, 231) with the church at High Coniscliffe to the east; there was also a chapel at the north end of the bridge (Scott 1982, 81).

THE RIVER TEES

By Christopher Green

The river Tees in its present setting has evolved in the period since the end of the last (Devensian) glaciation, a period of about 15,000 years comprising the Late Devensian glacial and the Holocene. Near Piercebridge the river flows through a landscape in which evidence of glaciation is widely present — most obviously as glacial till which forms an almost continuous mantle overlying glacial and pre-glacial relief. The river has created a course in this landscape marked near Piercebridge by extensive deposits of sand and gravel arranged in a series of river terraces (cf. Hay 1992, 68). In addition to the alluvium of the modern floodplain, a succession of four River Terrace Deposits (1–4 from lowest to highest) is mapped here by the British Geological Survey (BGS).

These terrace deposits represent periods of river activity dominated by sediment accumulation. They were separated by episodes of downcutting and lateral erosion resulting in episodic lowering of the river channel. Near Piercebridge the highest terrace, River Terrace 4, is at a level of *c.* 64 m OD, about 15 m above the level of the river as it is now and as it was already in the Roman period, indicating downcutting by the river. Similar 'cut-and-fill' sequences are recognised in other valleys in upland and piedmont Britain, e.g. evidence of three Holocene cut-and-fill episodes is present in the middle Tyne valley (Macklin *et al.* 1992). At Piercebridge the deposits of River Terrace 1 form narrow and discontinuous accumulations beside the modern channel. These deposits, 3–4 m in depth, envelop the remains of the Roman late second-century stone bridge at Piercebridge. They are therefore Roman/post-Roman in age and indicate the continuing ability of the river in the historic period to redistribute large volumes of gravel-size sediment on the valley floor. The Roman settlement at Piercebridge and the modern village, including the George Hotel on the south side of the river, occupy ground some 8–9 m above the present river and identified by BGS as remnants of River Terrace 2.

The bedrock surface on which the terrace deposits rest and which underlies the river channel is uneven, as illustrated beneath River Terrace 2 in the meander loop between Piercebridge and Holme House. Here BGS archive boreholes show that the limestone bedrock has a relief amplitude of up to 10 m. They also show that in some places the terrace deposits rest directly on bedrock but in other places they rest on glacial deposits which must occupy depressions in the bedrock surface. Of 21 boreholes put down near Holme House, 15 terminated in bedrock but in 6 boreholes the sand and gravel rested on glacial deposits, which extend below the level of the nearby bed of the river. Thus there is the possibility that the present bed of the river may be formed either of limestone or of glacial till. In some places there are considerable thicknesses of glacial material beneath the river deposits. At Gainford, upstream from Piercebridge, a borehole located on River Terrace 2 penetrated glacial material to a depth of 20.5 m without reaching bedrock. In summary, the course of the river Tees in this middle reach near Piercebridge is evidently emplaced on pre-existing relief, partly of glacial (Devensian) origin and partly older. The action of the river has modified this pre-existing relief by cutting a course through it and burying it in places beneath river deposits, but has not erased it completely.

The regime of the river Tees is significantly influenced by the nature of its headwater catchment, characterised by steep slopes and impermeable bedrock. As a result, the river has always been prone to flash floods and has a long history of destructive flood events. Rennison (2001) describes the destruction of masonry bridges in north-east England in a particularly severe flood in November 1771, including six bridges on the Tees and its tributaries. A walk-mill at Piercebridge was destroyed in this flood and the sixteenth-century stone bridge was severely damaged and 'remained ruined for 26 years; during this period an alternative crossing of the river by ford was created 150 m downstream' (Hay 1992, 68). In the early modern period there was also a ford between Holme House and the church at High Coniscliffe (NZ 223 149; Betteney 2019, 12). Rennison discusses similar damage to bridges in severe floods in 1782 and 1815; for example, in 1815 a wooden bridge over the river Irthing in Northumberland collapsed and was swept several miles downstream.

The exact scale of these historic floods is difficult to judge in the absence of accurate records of discharge and the level reached by the floodwater. For more recent events such records are available and the gauging station at Darlington Broken Scar about 5 km downstream from Piercebridge provides some insights into the regime of the river Tees in its middle reaches for the period 1957–2017 (National River Flow Archive). It must be remembered that the present-day regime reflects extensive management of the catchment, in part specifically to mitigate the effects of flooding. Its current relatively becalmed nature is due to a dam and reservoir constructed after World War II (Scott 1982, 77; Scott and Mason 2008, 17). However, it is still possible to gain some impression of the flashy nature of the river's discharge regime. At Darlington Broken Scar, bankfull stage is a level of 2.6 m, mean discharge is 18.3 m^3/sec and annual maximum discharge ranges from 203.8 m^3/sec to 646.3 m^3/sec. In the 60-year period since records began, bankfull was exceeded on 25 occasions with maximum discharge ranging on those occasions from 408.7 m^3/sec to 646.3 m^3/sec, more than 35 times the mean flow. It is not difficult to understand that in the unregulated context of the Tees in the Roman period, bridges spanning the river will have been subject to very destructive forces and will therefore certainly have required repair or reconstruction on a regular basis.

BRIDGES AT PIERCEBRIDGE

There is a curious account of the local river landscape by Raymond Selkirk (1983, 98–112) who postulates the existence of an engineered water transport structure; he sees the stone bridge as a dam, and the medieval and later mill stream as a canal. His arguments have been thoroughly debunked by Hay (1992, 63–8; cf. Fitzpatrick and Scott 1999, 130), and will not be further explored here, but his work does provide some useful information on timber structures observed in the river. It was Raymond Selkirk who first recruited Bob Middlemass and Rolfe Mitchinson to dive in the Tees near the bridge (Selkirk, A. 1989, 204). The existence of a weir is not in doubt, the remains of which run diagonally across the Tees from the George Hotel on the south bank to Carlbury Vale on the north (FIG. 3.4; Scott and Mason 2008, 17). The date of the weir is unknown, but its presence may have had an effect on the movement of small objects deposited upstream (see below).

Informal survey and excavations have identified at least three bridges: an early bridge 64 m downstream of the modern road bridge which was investigated by Time Team in 2009 (Wessex Archaeology 2010); a bridge thought to have been constructed in *c.* A.D. 90 on the line of Dere Street; and a stone bridge *c.* 200 m downstream thought to date to the late second or early third century A.D., necessitating the road to be re-aligned (FIGS 3.3 and 3.4; Scott 1982; Fitzpatrick and Scott 1999; Hay 1992).

THE EARLIEST BRIDGE

This site is located *c.* 64 m downstream from the modern bridge and is described as two parallel rows of timbers (one row of four and one row of three surviving timbers), located *c.* 18–20 m from the north bank (FIG. 3.5); 9 m to the south of these timbers and 12 m from the southern bank is an area of larger stones and concrete. Unfortunately, both the locational and dating information is somewhat muddled. The plan shows that the most north-westerly of the surviving piles was sampled for radiocarbon dating (Wessex Archaeology 2010, 15, 35–7, fig. 10; cf. Haselgrove 2016, 459). However, page 21 of the same report states incorrectly that ‘one sample was taken from a possible structure to the east of the possible bridge’. The earliest bridge is in fact to the east of the *present* bridge and to the west of the first Dere Street bridge. Also, a draft plan by the divers (2012) appears to show that the sample was taken from the most south-easterly post. The calibrated date is 40 cal. B.C.–A.D. 85 cal. (94.3 per cent probability).[6] Haselgrove (2016, 459, n. 20), citing a personal communication from D. Hamilton, states that the probability that the date was before A.D. 70 is 88 per cent while Wilson (2010, 362), citing information from David Mason, gives a range of A.D. 15–75 cal. (68.3 per cent probability at 1 sigma).

There may therefore have been a timber bridge at Piercebridge pre-dating both A.D. 90 and indeed A.D. 70. Given activity at Holme House and at nearby Stanwick in the A.D. 60s this is altogether plausible, especially as there may have been a trackway connecting Stanwick with the river crossing at Piercebridge. From the north-east entrance of the Stanwick earthworks a modern footpath runs to the Tees, probably echoing an earlier route. It reaches the river just 50 m upstream of the evidence for a timber bridge (FIGS 3.1 and 3.3–3.5; Haselgrove 2016, 24, fig. 2.11 and 459, fig. 26.6). It may have met with a north–south road almost 100 m west of Dere Street, identified during excavations in Tofts Field in 1973 (FIG. 3.5). This road is associated with a pottery kiln and dated to Period 1 (A.D. 80–100), with all the samian pottery manufactured before A.D. 110, and the coarse pottery before A.D. 120 (Scott and Large 2008a, 90–1, fig. 5.9). Cool and Mason (2008b, 301) write that the ‘road’s alignment suggested it originated at the river bank where perhaps there was a jetty enabling the kiln products to be exported down river by boat or barge’. It is possible that rather than a jetty this road linked up with the earliest bridge in the area, although it should be noted that the bank from the river to the field in that location is today very steep (Scott and Large 2008a, 94). Geophysical survey by Time Team at the southernmost edge of Tofts Field revealed three parallel ditches on a north-west/south-east alignment and

[6] The date of 40 cal. A.D. in the text (Wessex Archaeology 2010, 35) is incorrect (pers. comm. Catherine Barnett).

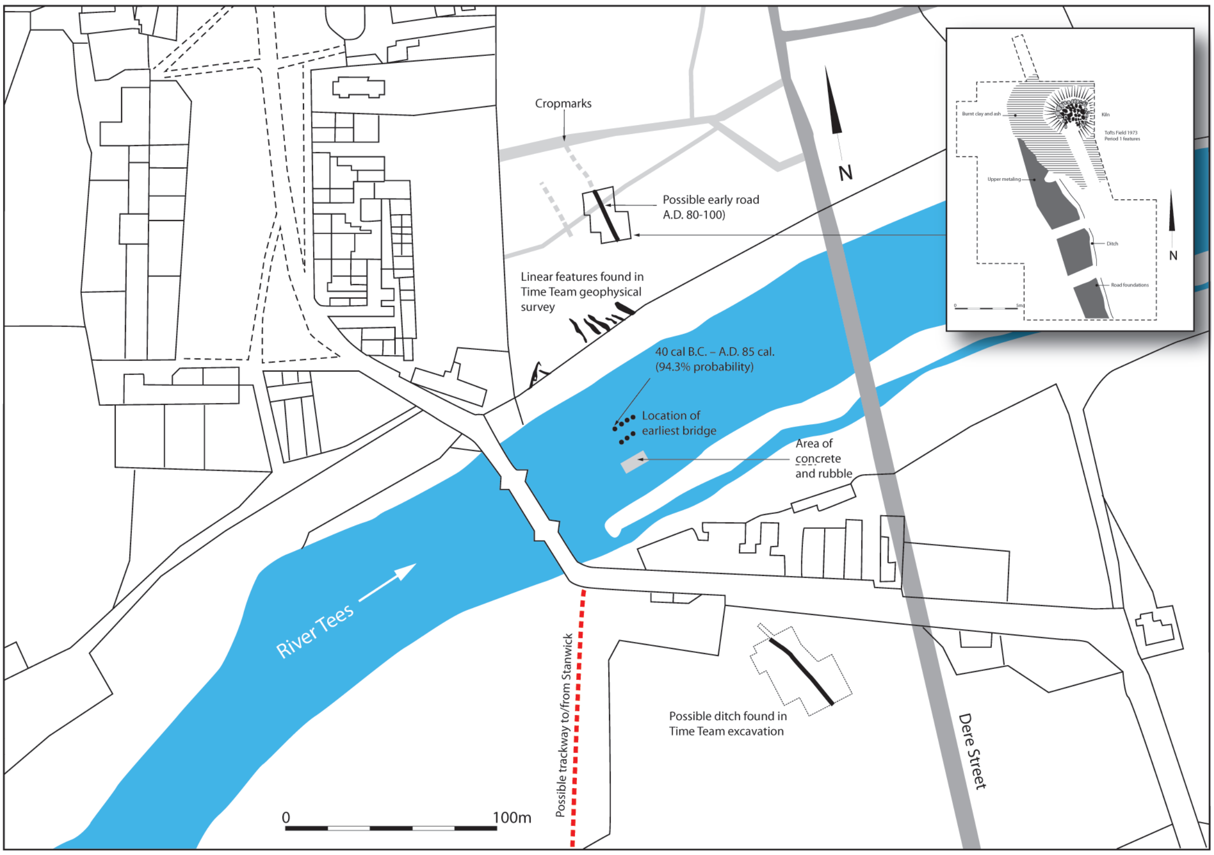


FIG. 3.5. Plan of possible earliest bridge and its context (after hand-drawn plans by the divers; Wessex Archaeology 2010, figs 5 and 9; Scott and Mason 2008, 17, fig. 2.3 and Scott and Large 2008a, 91, fig. 5.9)

continuing to the bank of the Tees (Wessex Archaeology 2010, 14, fig. 5). According to the report, their edges proved difficult to define, but they may align with the location of the earliest possible bridge identified by the divers. The secondary fill of one of the possible ditches contained a *denarius* of Domitian (A.D. 79) and another coin of third-century date was found in a layer above it; a supine inhumation burial was cut into one of the other possible ditches. The summary of the excavations supplied to *Britannia* suggests the presence of a sunken way with cobbled surface and masonry revetment walls, leading down to the river and 'presumably a ford alongside the bridge' (Wilson 2010, 362).

A small group of finds was recovered by the divers from the vicinity of this early bridge. The finds which include a button-and-loop fastener and an iron arrowhead could not be closely dated. However, seven coins were recovered in 2009 from the spoil associated with the sampling of a pile for radiocarbon analysis; they range in date from a Republican issue to a radiate of Tetricus II, although the majority are Antonine issues (see Ch. 10). The coins are therefore significantly later than the single radiocarbon date provided by the timber. Instead, they belong to a period when the Dere Street 1 bridge was in operation. This could indicate that very old timbers were recycled in the construction of a later bridge or jetty, that there was a later jetty or bridge on the site as well as an earlier bridge or that the coins were washed downstream from the fort and are not associated with the construction of the structure at all.

The concrete described by the divers is in deeper water and was not accessible at the time of our survey, but irregular sub-round boulders were observed in 2018 on the south side of the river along a short reach approximately equivalent to the frontage of the George Hotel. The easily recognisable boulders are strung out along the riverward side of the island, which may conceal a more extensive spread of 'concrete' debris. There could also be smaller pieces of 'concrete', more susceptible to traction, on the bed of the river further downstream. The boulders are heavily water-worn and the matrix has suffered abrasion leaving the aggregate, mainly of well-rounded gravel clasts, protruding from it. Roman stone bridge construction in northern Britain seems to have avoided the use of concrete, presumably because of the availability of good building stone (P. Bidwell, pers. comm.); Kevin Hayward (pers. comm.) examined a sample and suggested it was likely to be medieval or post-medieval in date.

BRIDGE(S) IN LINE WITH THE ORIGINAL DERE STREET

There is substantial evidence for a Roman bridge with a span of *c.* 60–70 m at the point where the earliest route of Dere Street crosses over a relatively narrow section of the river (FIGS 3.4 and 3.6; Fitzpatrick and Scott 1999, 115–18, fig. 3). Here the banks are estimated to have risen 9 m above the river (Hay 1992, 68). The evidence for timber bridge structures consists of antiquarian observations and partial excavation. Remains of oak piles were visible in this area until a major flood in 1771, and 32 were observed in some detail during a drought in 1933 (Richardson 1934–6, 238, 240–2, plan 2; cf. Scott 1982, 77, pl. 1; Scott and Mason 2008, 16). A large group of piles near the south bank was observed to be pointing downstream and towards the middle of the river, with some joined together by cross members (cf. Jackson and Ambrose 1976, 47–9; Scott 1982, 80;). Oak piles in the river were again investigated by Selkirk in the 1980s (Selkirk, A. 1989; Selkirk, R. 1983, 102–10). Iron shoes for piles[7] and some masonry fragments were also recovered, but it is uncertain whether the latter relate to a stone superstructure or later bridges in the area (Scott 1982). The oak piles observed on these occasions and mapped by Fitzpatrick and Scott (1999, fig. 3) may, of course, relate to several, rather than just one, bridge. Thus Bidwell and Holbrook (1989, 110) argue that the oak piles relate to at least two phases — an initial timber bridge when Dere Street was first created and a second (Hadrianic/Antonine) bridge which, based on the arrangement of oak piles, had stone piers and abutments.

The divers recorded this area extensively, producing a series of sketch plans and two detailed models. Two distinct but adjacent areas were identified by them on the northern side of the Tees: one was characterised by upright posts to the north and another was described as a platform. The former area has up to six rows of timbers running north–south, with the northernmost line containing seven posts (FIG. 3.6). The information is not consistently recorded on the various plans, but it is clear that there are both round and square timbers, possibly indicating multiple phases. The platform is described and drawn as consisting of seven horizontal timbers and the exposed and recorded area as measuring *c.* 2.5 m north–south and between 7.3 and 8.1 m west–east (FIG. 3.7); each plank measures 25.5 cm by 25.5 cm. These horizontal timbers each have paired rectangular cut-outs spaced evenly along their length and set *c.* 2.1 m apart; the cut-outs measure 30–41 cm in length and 12.5 cm in width and appear to have held timbers set at a 40 degree angle. From the model (FIG. 3.8) it appears that the uprights on the western and eastern edges are thought to have been larger and set at an angle while the ones in the centre of the structure were smaller and upright. In amongst the horizontal elements are what appear to be both circular and square upright posts, which may predate this structure — or relate to it. It is possible that this 'platform' represents the northern bridge abutment, indicating that the Tees moved northwards in this area as well as downstream (P. Bidwell, pers. comm.).

Two radiocarbon dates were funded by Durham County Council in 2010 (Mason pers. comm.). The results were initially calibrated using OxCal 4.1 and IntCal09 giving dates of A.D. 6–129 (95.4 per cent probability) and A.D. 127–253 (95.4 per cent probability); recalibration using OxCal 4.3 (Bronk Ramsey 2009) and the IntCal13 curve (Reimer *et al.* 2013) essentially confirms the dates A.D. 8–130 (95.4 per cent probability) and A.D. 127–252 (95.4 per cent probability) (Russ, pers. comm.).

The divers' sketch plans (2007; 2012) note that the earlier date was for a horizontal timber from the 'platform' and the later for a square upright (the sixth post in the most northerly line of timbers). The former might indicate that the 'platform' was part of the original bridge constructed

[7] Goudswaard *et al.* 2001, 461–2, fig. 18 with further references.

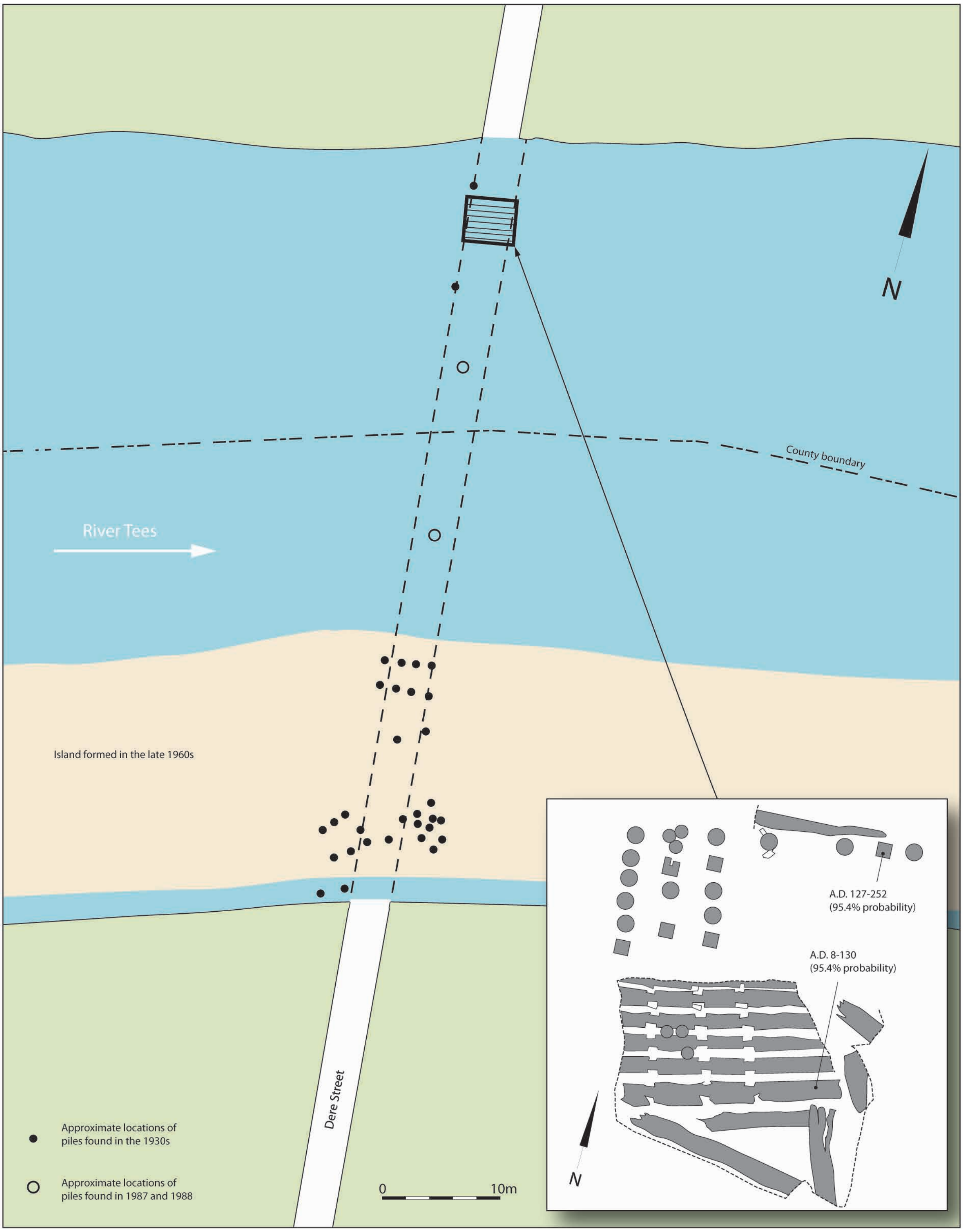


FIG. 3.6. Evidence for the bridge on the original Dere Street alignment (after Fitzpatrick and Scott 1999, fig. 3 and divers' hand-drawn plans)

shortly after conquest in A.D. 70. The latter suggests ongoing maintenance just before or at a time when the stone bridge is generally thought to have been built (in the late second/early third century A.D., see below).

In the absence of full excavation and a thorough programme of radiocarbon dating, dates for the construction of this bridge must also rely on the dating available for Dere Street itself.

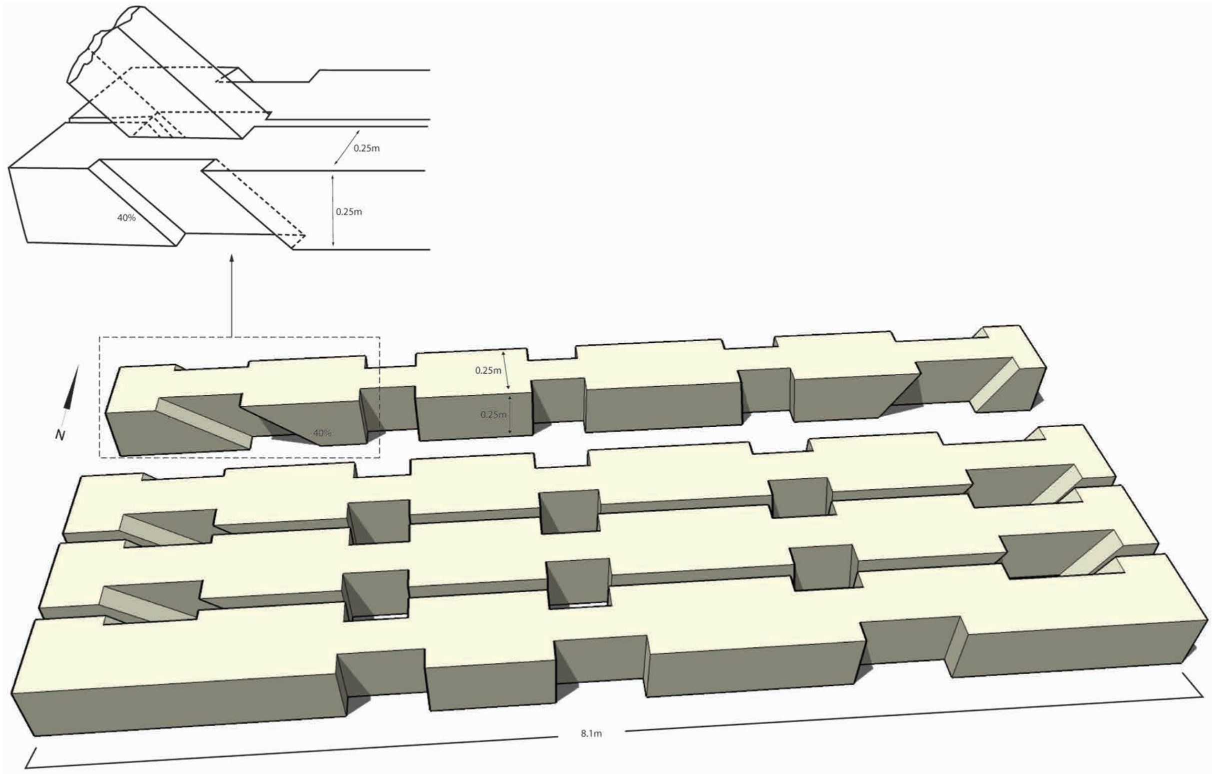


FIG. 3.7. Drawing of the 'platform' produced by the divers

FIG. 3.8. Reconstruction model by Bob Middlemass of possible bridge structure based on timbers recorded on the riverbed

Excavation north of the river in Tofts Field suggests that the road was established in A.D. 90, and then resurfaced repeatedly (*c.* A.D. 130, 180 and 200: Fitzpatrick and Scott 1999, 115). A slightly different chronology is offered by Scott and Large (2008a, 96–101), who suggest construction in the first quarter of the second century but broadly agree with the phasing of the road repairs. The last two resurfacings in A.D. 180 and 200 are of much poorer quality than the first one, perhaps indicating a shift from military to civilian control; the last one in A.D. 200 also coincided with the construction of an east–west road, running towards the new line of Dere Street. This would suggest that the stone bridge and the realignment of Dere Street occurred in the very late second to early third century A.D.

THE STONE BRIDGE ON THE REALIGNMENT OF DERE STREET

The stone bridge (NZ 215 155) was excavated by Peter Scott in 1972 in advance of gravel extraction and under difficult conditions. It is located on the south side of the river *c.* 200 m downstream from the first Dere Street bridge; the northern abutment has never been located, although there have been stray finds of worked stone (FIGS 3.4 and 3.9; Fitzpatrick and Scott 1999, 118–29). The remains on the south bank consist of an abutment, a stone pavement and five masonry piers; in a later phase (*terminus post quem* of A.D. 320) a causeway replaced the bridge up to the third pier. The causeway became necessary when the southern parts of the bridge began to silt up as a result of sedimentation on the inside of the river bend caused by a combination of erosion and rock falls from the limestone outcrop upstream of the present road bridge (Hay 1992, 70). At the same time the river shifted northwards (Scott 1982, 80). It is likely that the bridge superstructure was of timber (ibid., fig. 8), and that the bridge had a width of 6.1 m and a span of *c.* 200 m. It is thus much longer than the earlier Dere Street bridge because it had to span considerable areas of floodplain; on the other hand, the location and construction methods would have lessened water pressure on the bridge structure compared to the narrow area further upstream. There is no artefactual dating evidence for the construction of the bridge. However, in addition to the dating of Dere Street resurfacings in Tofts Field (see above), pottery dates for the ribbon settlement which formed along the new course of Dere Street to the south of the river suggest a construction in the very late second or early third century A.D. One possible historical context for such a substantial (and almost certainly state-sponsored/military) building project is the period of Severan campaigning in the north of Britain. Bidwell and Holbrook (1989, 76–7) suggested that the Chesters 2, Corbridge and Willowford 3 bridges might have been constructed during this period, possibly in response to widespread flooding in the North in A.D. 160–80. That severe flooding is likely to have affected a whole region rather than a single river is attested by events in later periods, such as the major floods recorded in 1771 and 1815 (see above; Bidwell and Holbrook 1989, 76). However, the Chesters 2 and Corbridge bridges are now thought to date to the mid-second century, casting doubt on a direct causal link between a potential imperial building programme and catastrophic flooding (Fitzpatrick and Scott 1999, 128–9). Nevertheless, the campaigns of Severus provide a plausible backdrop for a major infrastructure project, and a military presence is attested at Piercebridge in the early third century. It is even possible that the surveyor Attonius Quintianus who dedicated an altar to Mars Condates (*RIB* I 1024) was at Piercebridge to supervise the construction of the stone bridge (Cool and Mason 2008a, 302). The change in the position of the river crossing combined with the construction of a new length of Dere Street, would have caused considerable disruption to settlement and activity in the area (cf. Edgeworth 2011, 60).

It is uncertain how long the stone bridge survived, but we know from evidence at Pier 4 that it was eventually destroyed by flooding (Fitzpatrick and Scott 1999, 129); accounts of the sixteenth to eighteenth century that mention the damaged remains of a stone bridge may refer to the Roman bridge or perhaps more likely a medieval bridge (Richardson 1934–6, 239; Scott 1982, 80–1; Bidwell and Holbrook 1989, 112). The present bridge at Piercebridge was built soon after 1500 (cf. Scott 1982, 80; Harrison 2004, 97, pl. 22) but an assizes roll of 1243 mentions the

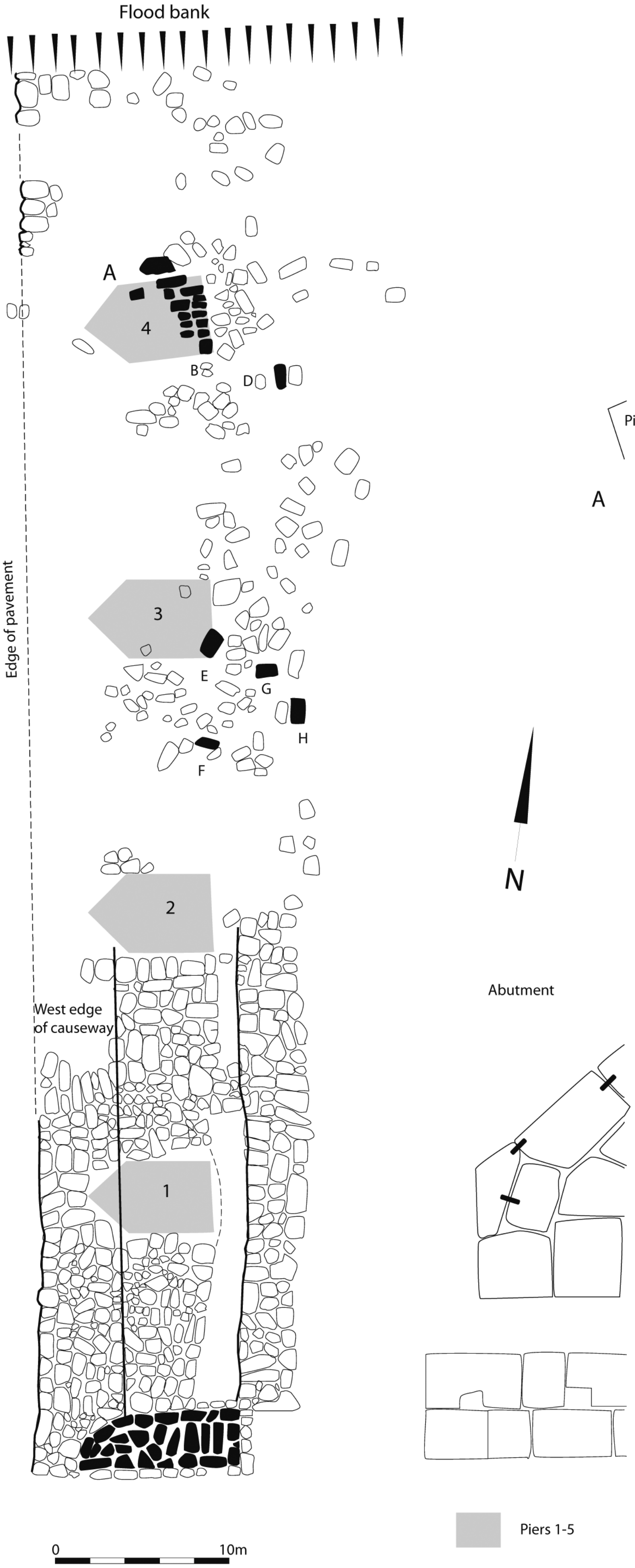


FIG. 3.9. Plan of the stone bridge at Piercebridge (after Fitzpatrick and Scott 1999, fig. 4)

existence of a bridge at Piercebridge, while Leland described it in 1540, as formerly having five arches, 'but late made new of three arches' (Leland 1542, cited in Scott and Mason 2008, 16).

THE FINDS FROM THE RIVER TEES AT PIERCEBRIDGE

As part of the investigations instigated by Selkirk in the 1980s Bob Middlemass and Rolfe Mitchinson began diving in the Tees (Casey 1989; Walton 2008; 2016). The original aim was to identify and record the timber remains of bridges but gradually the retrieval of finds became more important, resulting in the collection of the exceptional assemblage presented in this volume. That this stretch of the Tees contained rich Roman finds was already known in the eighteenth century, when there is an antiquarian account of a dozen silver coins from the river bed (Robertson 2000, 216). It is more than likely that other finds were recovered both before and after this date. The retrieval of finds from the Tees at Piercebridge was clearly well-intentioned, as both divers were members of the Northern Archaeological Group. However, their excavation and documentation did not follow modern guidelines (e.g. Wilke 1999; Bonnin 2000; Bowens 2009). Both men undertook dives between eight or ten times a year, depending on the river conditions, which can change quickly depending on rainfall upstream. The divers kept a diary, which records the initial sampling of different areas, and then the increasing focus on the timber platform and posts along the line of the original Dere Street bridge. Within that section of the river, they retrieved finds from the most productive area (the platform and timbers and the area immediately downstream from them), over the years gradually expanding the search area from 8 by 4 m in 1987–1990 to 27 by 24 m in 2015 (FIG. 3.10). Both divers have indicated that the majority of artefacts were found downstream of the Dere Street bridge, but objects were also found amongst the timbers and slightly upstream.

The divers explored the wider area as far downstream as the stone bridge and upstream past the current bridge. There, they noted the outlet of a drain from the fort (see FIG. 3.4), which may have transported some material into the river, including a small assemblage of coins (see Ch. 10).

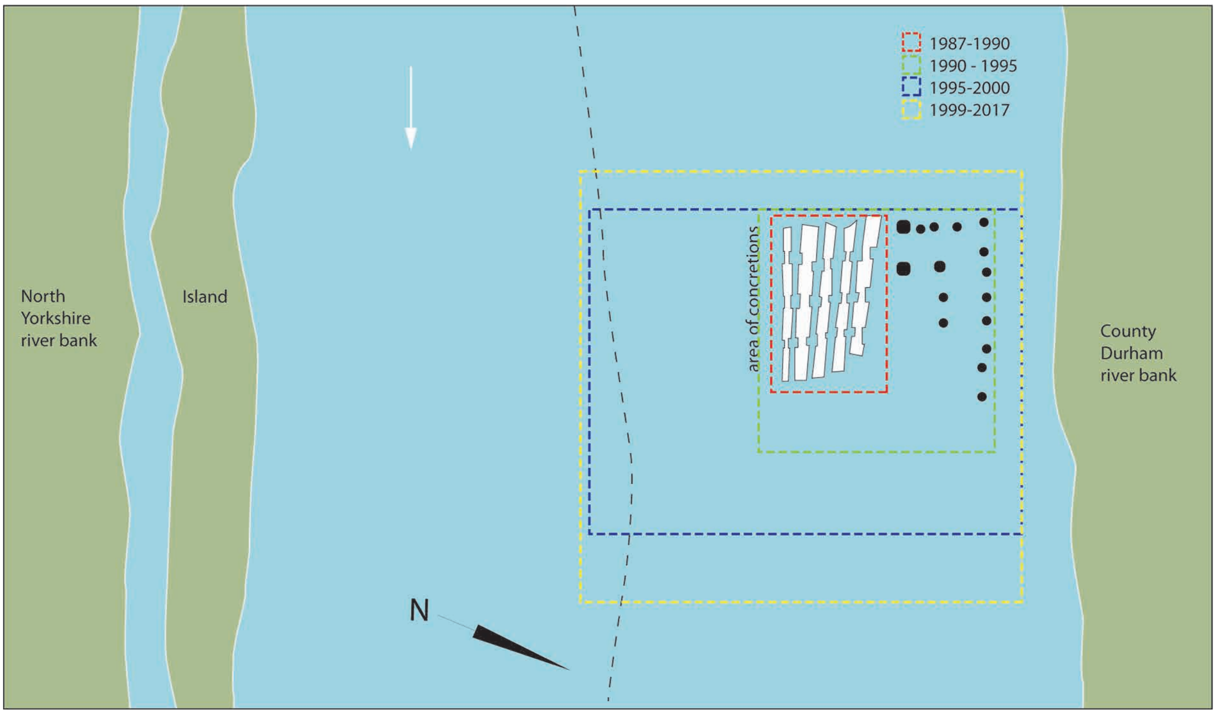


FIG. 3.10. The main area of finds concentration, sampled between 1987 and 2017 (after divers' sketch plans) but note that finds cannot be linked to the year in which they were recovered and that the number of posts varies from other plans

In terms of their methods, both divers describe that they would normally mark out the area to be excavated, then remove deposits moving north–south across the river; they would then return to the beginning of the line once the sediments had settled and remove any finds. Finds were recovered through a combination of underwater metal-detecting and ‘eyes only’ retrieval; some sieving also took place. Some objects were taken directly from the exposed areas of riverbed, but there is no consistent record of whether these finds were located within gravel and sand or underlaying clay. On at least one occasion post-medieval lead shot was found underneath Roman material, but this may have been the result of the disturbance caused by the divers’ excavation methods.

Other finds were found encased within concretions comprising organic material and iron corrosion products, which secured them to the riverbed. Iron-rich concretions or conglomerates are attested as contexts for Roman riverine finds elsewhere, for example in the Mosel at Trier (Löhr 2001, 80, fig. 17) and the Tiber in Rome,[8] as well as at London, Dorchester and Kirkby Thore (Smyth 1846, 287; Shotter 1978, 19–22; Roach Smith 1841–2, 154–8; Robertson 2000, 89, no. 410; King and Woodward 2003, 152). This appears to be a consequence of corrosion and decay which occurred when iron objects and organic material were deposited together (Eckardt and Walton forthcoming). At Piercebridge, the main area of concretions identified by the divers was to the south of the platform (FIG. 3.10) but there is now no exact record of which objects were found in this area, although differing corrosion products are still visible on some of the artefacts. On occasion, large blocks of this material were removed and ‘excavated’ away from the river (e.g. July 1987). Unfortunately, the diary (FIG. 3.12) does not record the exact dive position systematically or consistently, and the original labelling of areas in the diary does not correspond to the labelled areas on later plans of 2007 and 2012. It is thus only very occasionally possible to match individual, distinctive objects with their original findspots. These include the ram figurine which was found near the southern end of the ‘platform’ (see FIG. 3.11).

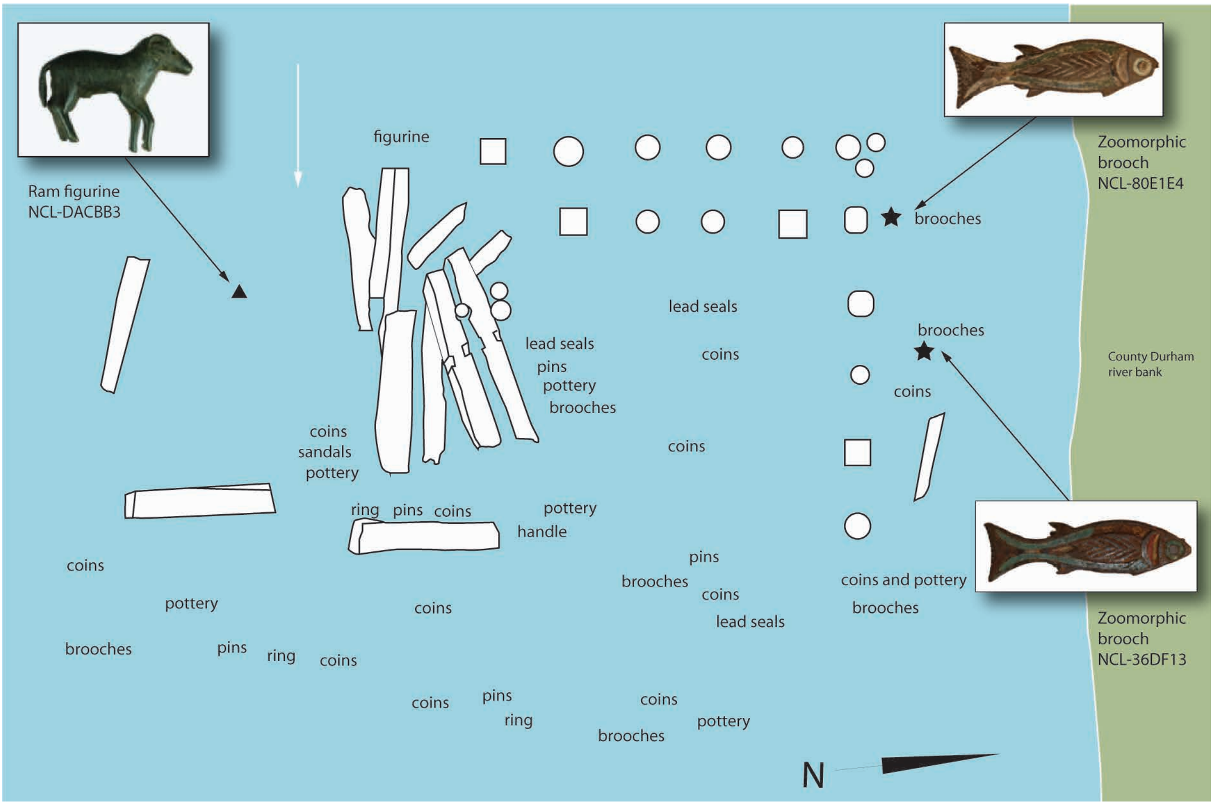
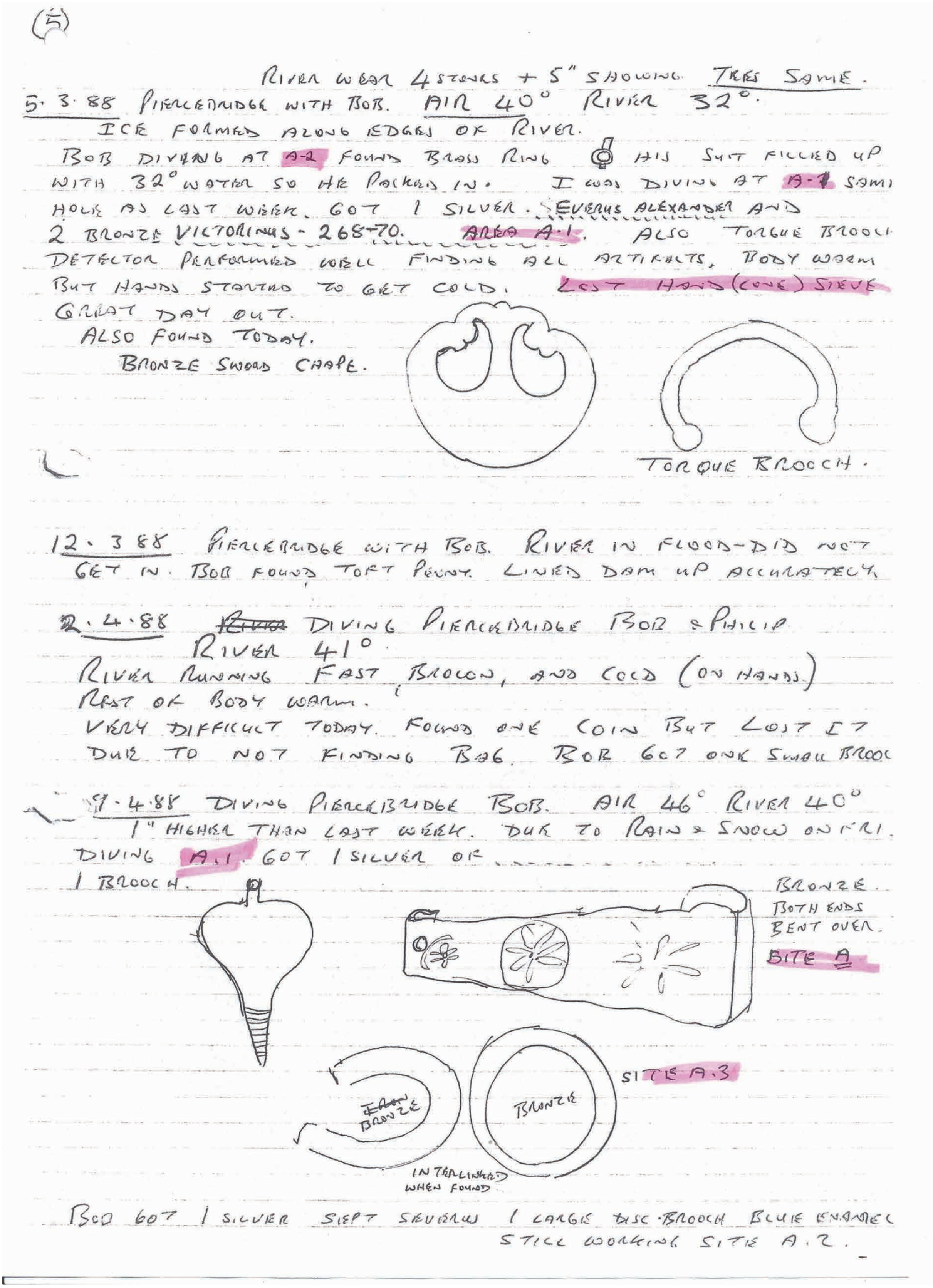


FIG. 3.11. Plan based on sketches made by the divers noting locations of some finds recovered between 1987 and 1990 during early explorations of the platform. The only identifiable objects are the ram figurine (NCL-DACBB3) and the fish brooches (NCL-80E1E4 and NCL-36DF13)

8 Accessed 22.06.20: http://www.uniroma2.it/eventi/monete/n_tev_3.htm.


(5)

RIVER WEAR 4 STONES + 5" SHOWING. TEES SAME.
5. 3. 88 PIERCEBRIDGE WITH BOB. AIR 40° RIVER 32°.
ICE FORMED ALONG EDGES OF RIVER.
BOB DIVING AT A-2 FOUND BRASS RING HIS SUIT FILLED UP WITH 32° WATER SO HE PACKED IN. I WAS DIVING AT A-1 SAME HOLE AS LAST WEEK. GOT 1 SILVER. SEVERUS ALEXANDER AND 2 BRONZE VICTORINUS - 268-70. AREA A.1. ALSO TORQUE BROOCH DETECTOR PERFORMED WELL FINDING ALL ARTIFACTS, BODY WARM BUT HANDS STARTED TO GET COLD. LOST HAND (CONE) SIEVE
GREAT DAY OUT.
ALSO FOUND TODAY.
BRONZE SWORD CHAPE.

12. 3 88 PIERCEBRIDGE WITH BOB. RIVER IN FLOOD - DID NOT GET IN. BOB FOUND TOFT PENNY. LINED DAM UP ACCURATELY.

2. 4. 88 ~~RIVER~~ DIVING PIERCEBRIDGE BOB & PHILIP
RIVER 41°.
RIVER RUNNING FAST, BROWN, AND COLD (ON HANDS)
REST OF BODY WARM.
VERY DIFFICULT TODAY. FOUND ONE COIN BUT LOST IT DUE TO NOT FINDING BAG. BOB GOT ONE SMALL BROOC

9. 4. 88 DIVING PIERCEBRIDGE BOB. AIR 46° RIVER 40°
1" HIGHER THAN LAST WEEK. DUE TO RAIN & SNOW ON FRI.
DIVING A.1. GOT 1 SILVER OF ......
1 BROOCH.

BOB GOT 1 SILVER SEPT SEVERUS 1 LARGE DISC BROOCH BLUE ENAMEL
STILL WORKING SITE A.2.

FIG. 3.12. Sample diary entry

Despite the shortcomings in recording even very small artefacts (e.g. medieval dress pins) were retrieved. There may, however, be other biases in the types of objects now available for study. The assemblage is dominated by copper-alloy finds, followed by other precious metals and iron. Some of the iron is quite well-preserved, and the assemblage includes large numbers of nails, suggesting that even unpromising objects were collected (see Ch. 14). Very significant amounts of lead were also recovered, not all of which were entered onto the database.[9] The early diaries note a concentration of lead near the stone bridge (December 1988). At least 40 leather shoes were recovered but all but three were reburied because of concerns over conservation costs. The animal bone assemblage is dominated by, but does not consist entirely of, large bones (Ch. 18); significant amounts of pottery were also available for study (Ch. 16). However, it is not entirely clear whether either of these represent sampling by the divers or total retrieval as for the metal finds.

A series of related questions are key to our understanding of the assemblage. Were the objects recovered close to their original point of deposition or were they washed downstream? Why and how did they survive on the riverbed given the fast-flowing nature of the river Tees, the bed of which can change radically from one flood to the next, with large amounts of gravel and sediment moved and re-deposited (cf. Scott 1982, 80; Fitzpatrick and Scott 1999, 117). For example, the divers have noted that iron scaffolding clamps from the modern road bridge were washed down to the site of the Roman stone bridge during flooding. However, they argue that the finds retrieved from the area of the Dere Street bridge were thrown into deep still water and have not moved far (diary November 1987 and pers. comm.).

There is some anecdotal evidence for the distances the force of a river can transport artefacts. In 1648, silver vessels from a ship that sank in the river Inn (a fast-flowing and forceful river originating in the Swiss Alps) were found several kilometres downstream, with one recovered 7 km from the site of the accident (Torbrügge 1960, 18–19; Wegner 1976, 21). In another case, the force of the river Lech during a catastrophic flood in 1910 moved a bell weighing 31 kg nearly 1.5 km downstream (Wirth 1993, 215–16, fig. 3; Wegner 1995, 266). This was an exceptional flood and the bell possessed an oak suspension structure that may have buoyed it slightly. However, large stone blocks were also moved considerable distances in this fast-flowing river near Augsburg (Wirth 1993, 216). In contrast, objects are unlikely to have moved far in slow meandering rivers, and factors such as the amount of gravel and sand deposited and the depth of the river may also play a role. In addition, the river's incline and water speed, as well as the shape and weight of the objects, would obviously have had an impact (Wirth 1993, 216). For example, it has been argued for the Ljubljanica river, a low-energy lowland river, that objects generally did not move far (Gaspari 2003, 46).

THE FLUVIAL CONTEXT OF ARTEFACT DEPOSITION AND PRESERVATION

By Christopher Green

Interpreting the depositional history of the artefacts recovered from the river Tees at Piercebridge presents a number of separate but related problems:

1. Were the artefacts originally deposited at or close to the point of recovery, or did they wholly or partly reach the area of deposition from elsewhere?
2. What was the fluvial depositional environment in the area of artefact accumulation during the period in which accumulation occurred?
3. What circumstances allowed the artefacts and their enclosing sediments to remain undisturbed, apparently for hundreds of years, on the bed of a river with a history of high energy flood events and active sediment transport including a coarse, gravel-rich bedload?

[9] Some rolled lead and all identifiable lead objects were recorded on the Portable Antiquities Scheme database, but there were an additional 2.5 kg of unidentifiable lead objects and waste.

ORIGINAL DEPOSITION

The predominantly Roman origin of the artefacts, the proximity of the area of artefact accumulation to the Roman settlement at Piercebridge, and the coincidence of the date range of the artefacts with the period during which the Roman settlement at Piercebridge flourished (second and third centuries A.D.), all point to original deposition of most of the assemblage within or close to the area of artefact recovery. The unabraded condition of many of the artefacts, both metalwork and pottery, and the survival in the assemblage of delicate objects also suggest that they have not been significantly redistributed in the bedload of the river since their deposition. The area of artefact recovery is adjacent to the bridge carrying Dere Street on its original alignment over the river Tees. The bridge might therefore have provided a platform from which domestic rubbish or votive offerings were deposited directly into the river. In trying to understand the nature and history of deposition in the river, it is relevant to consider how the practice of deposition might have been affected by the condition and functionality of the bridge. Dere Street was diverted away from its original route by the end of the second century and by then was carried over the Tees by a stone bridge about 200 m downstream from the original crossing point. However, judging by the datable artefacts recovered from the river, deposition in the area of artefact recovery continued well into the third century. This seems to indicate that the site of deposition remained attractive for that purpose after the construction of the new stone bridge. It also indicates that deposited material continued to be protected from entrainment in the bedload of the river and redistribution downstream. Does this mean that the remains of the bridge, possibly a masonry pier or abutment, survived well into the third century, as may also be indicated by the radiocarbon dates obtained by Time Team? None of the arguments set out above in favour of a local origin for the bulk of the artefacts completely preclude the possibility that some material may have a more distant provenance and may have reached Piercebridge from upstream in the bedload of the river.

While most of the artefacts are Roman in origin, the assemblage includes small numbers of both pre- and post-Roman objects. The position of these objects in the artefact-bearing sediment is unclear from the available evidence. It remains uncertain therefore whether the sediment body preserves its primary stratification and structure or has suffered post-depositional re-working.

THE FLUVIAL ENVIRONMENT OF ARTEFACT DEPOSITION

The bedrock beneath the channel of the river Tees in the immediate vicinity of Piercebridge is the horizontally bedded Raisby Formation, a dolostone of Permian age (formerly known as the Magnesian Limestone). Bedrock is visible forming the bed of the channel both upstream and downstream from the area of artefact recovery, swept clean of sediment at the time of investigation. However, in the reach in which the artefacts have been recovered the bedrock is at a lower level, forming a ‘pool’, reportedly up to 4.9 m deep in the middle of the channel. The sediments enclosing the artefact assemblage occupy an irregular area of about 5 m by 5 m on the northern margin of this ‘pool’, near the present north bank of the main channel of the river. The origin of the ‘pool’ remains to be established. It might be a product of fluvial scour, but most recorded scour hollows are in non-cohesive sediment, such as those responsible for the destruction of wooden bridges across the Trent at Hemington in the medieval period (Ripper and Cooper 2009; see also Goudswaard *et al.* 2001, 495–509). In contrast, the depression in which the artefact-bearing sediments are preserved is in bedrock limestone. It seems possible therefore that this hollow is a feature of the sub-glacial relief that shapes much of the wider landscape around Piercebridge.

There is little detailed information about the stratigraphy, structure or fabric of the sediments enclosing the artefact assemblage, but the sediment sequence reported by the divers comprises, from the bedrock upward, clay overlain by sand and gravel with a surface lag of coarser cobbles forming the present-day bed of the river. In places the sand and gravel is concreted in a dark coloured cement probably rich in iron compounds. There is no record of the thickness of the sediment sequence or of the individual beds within it. Most of the artefacts have been recovered from the sand and gravel but some have been found on the surface of the clay or embedded in it.

It seems clear that these sediments occupy a bedrock depression and it seems likely that the sand and gravel and the cobble lag were washed into the depression as part of the normal sediment load of the river being transported on or close to the bed of the river during flood or other high-stage events. The origin of the clay is more problematic. If fluvial in origin, it must indicate a period of deposition from standing or very slow-moving water. Such conditions seem inherently unlikely in this reach of the river. Alternatively, and more likely, the bedrock depression may be as noted above subglacial in origin, in which case the clay is likely to be a remnant of glacial till similar to remnants recorded elsewhere in the middle reaches of the Tees beneath fluvial deposits. This possibility is supported by the presence here of bridge foundations in the form of oak piles, dated to the Roman period. The survival of these piles can best be explained if they are emplaced in a substantial thickness of clay.

The reported position of the artefacts within the sediment body suggests that prior to the accumulation of the artefact-bearing sand and gravel, bedload moved freely through this reach of the river. This in turn suggests that river behaviour in this reach may have changed at about the time that deposition of artefacts began, from the free movement of bedload through the reach, to a predominantly depositional regime with aggradation of sediment in a depression in the bed of the river, floored with glacial till occupying a deeper depression in the bedrock limestone.

The lengthy time period, over 200 years, represented by the datable artefacts in the assemblage, and the presence of pre- and post-Roman material, makes it likely that accumulation took place progressively during the time period represented or some considerable part of it. Although there is no record of how, if at all, the artefacts are stratified in the sediment, their reportedly patchy incorporation in the sediment points to their sporadic deposition.

If all the assumptions made in the preceding paragraphs are correct, perhaps the most striking feature of the sediment record in the area of artefact deposition is the presence on the bed of the river of a body of largely erodible sediment which remained undisturbed during a period of accumulation of at least 200 years and which has subsequently survived undisturbed for a further 1,700 years. The lack of disturbance during the period of sediment and artefact accumulation suggests the possibility that the site of deposition was sheltered in some way from the more energetic erosive currents within the channel. Such shelter might be provided either by the natural morphology of the channel, for example in a backwater protected by a gravel bar, or by an artificial structure within the channel. The creation of such sheltered conditions would account for the change, noted above, from the free movement of bedload through the reach to a predominantly depositional fluvial regime in the area of artefact accumulation.

SURVIVAL OF THE ARTEFACT-BEARING DEPOSITS

Having argued above that the accumulation of the artefact-bearing sediment probably took place in a sheltered area of the riverbed, it follows that the survival of these sediments indicates ongoing, long-term protection from erosive currents within the river channel. Such protection might be provided in one or more of the following ways.

1. Erosive currents may have been diverted away from the site of deposition by an obstruction upstream from the site. Such an obstruction might be natural in the form of a gravel bar, or it might be artificial in the form of a structure or the remains of a structure sited in the river itself. The two bridges of Roman date of which datable remains survive to the present day in the river bed might have formed an effective obstruction. Bidwell and Holbrook (1989, 110) argue that the closely-spaced oak piles here are more likely to have acted as the foundations of a stone bridge pier rather than a wooden superstructure. The presence of angular stones with lewis holes in them in the bed of the Tees exactly in line with Dere Street, recorded in 1933 by Richardson (1934–36), supports this idea. A stone pier close to the north bank of the river would have provided exactly the sheltered conditions in which sediment accumulation could take place.

2. The site of artefact deposition may have been buried for significant parts of its history either beneath the collapsed remains of artificial structures or by gravel bars such as those of which there are plentiful examples in the present-day river as well as others known from historical records. The cartographic representation of the river near Piercebridge during the past 200 years (FIG. 3.13) shows that such bars can form and be destroyed in relatively short periods of time, measurable in decades and centuries rather than millennia. It seems likely, for example, that the oak piles seen at various times near the south bank of the river on the original Dere Street alignment (Richardson 1934–36; Fitzpatrick and Scott 1999) and described as well down in the gravel were in fact buried beneath the gravel bar that formed between the 1850s and 1892 and which survives here to the present day. The extension and management of this gravel bar on the south bank of the river caused by a cliff collapse upstream in the 1960s is described by Scott (1982, 80).

3. The intensity of erosive currents may have been mitigated by ponding of water over the site of artefact deposition due to the presence of obstructions downstream from the site. Of particular interest in this respect is the evidence for a substantial weir extending from the north bank of the river at a point about 90 m downstream from the site of artefact recovery and adjacent to the inlet to the mill leat serving Carlbury Mill, with which the weir was presumably associated. The masonry foundations of the weir can still be traced here on the bed of the river and the weir is shown on mid-nineteenth-century Ordnance Survey Maps (e.g. OS Six Inch, Yorkshire Sheet 14, 1854; see FIG. 3.13) extending for *c.* 150 m upstream, obliquely across the river and therefore 'enclosing' the area of artefact recovery. Carlbury Mill was destroyed by fire in 1889

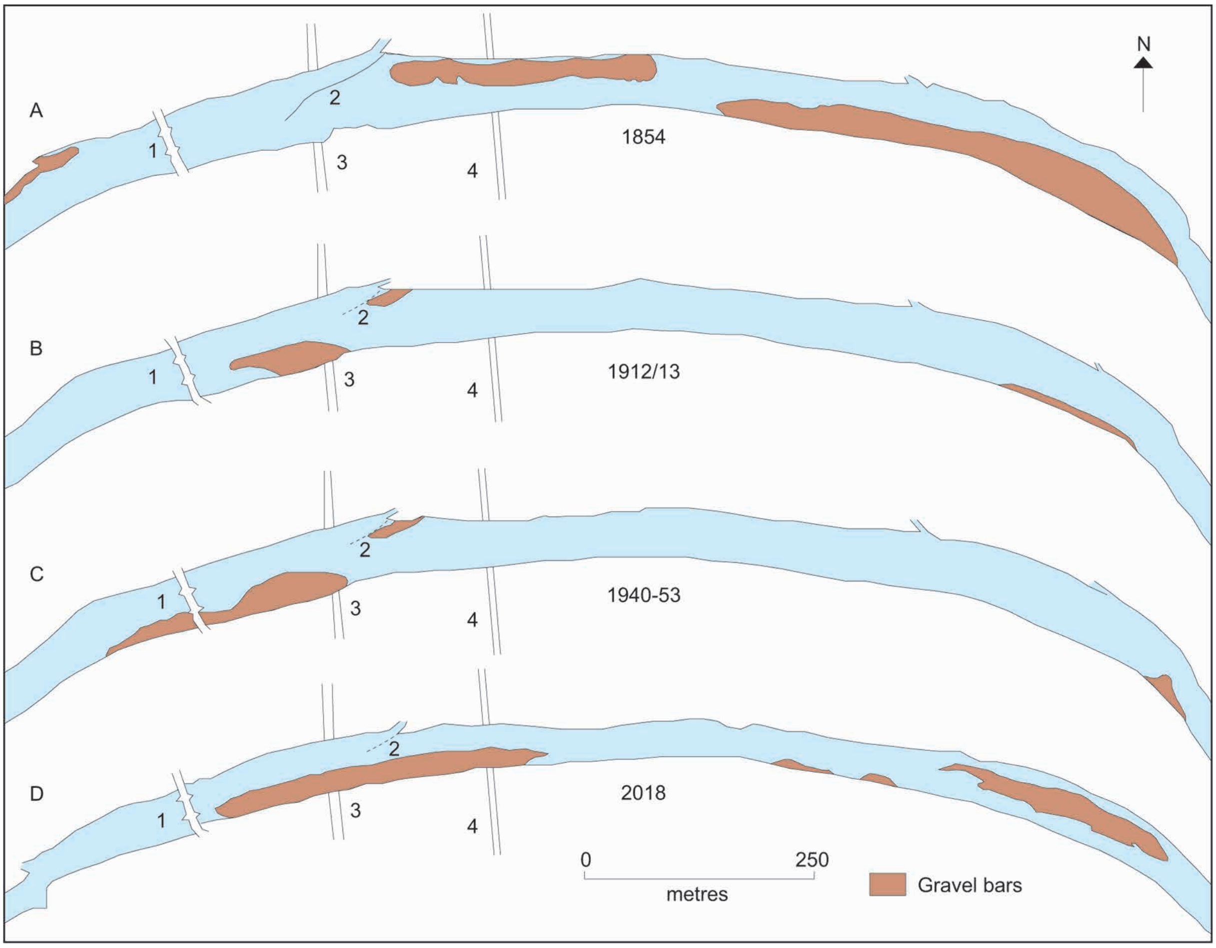


FIG. 3.13. Shifting gravel bars in the Piercebridge area: 1: modern bridge; 2: weir; 3: Dere Street bridge; 4: stone bridge (*Christopher Green based on OS maps from 1854, 1912/3, 1940–53 and 2018 and Google maps 2018*)

but its earlier history, including that of the weir, remains to be established, though Scott and Mason (2008, 16) hint at a seventeenth-century date. Also downstream from the site (at NZ 21860 15656) and indeed the weir are a series of square rock-cut holes; these could represent a footbridge like the one known at Hartburn, Northumberland (Frere *et al.* 1990, 320, pl. XXIX; Moorwood and Hodgson 1992, 244; Davies 2002, 93).

4. The condition of the artefact-bearing sediment may itself have rendered it less susceptible to erosion. Miall (1996, 167) makes the point in relation to scour hollows, but it is relevant for any sediment filled depression on the bed of a river channel, that 'because scours result in deposition below mean channel depth, they have a high preservation potential'. Such potential will have been enhanced by the presence of a cobble lag across the surface of the artefact-bearing deposits, flush with the adjacent limestone bed of the river. In addition, the formation of iron-rich concretionary horizons within the sediment body may also have provided significant protection from erosion. It is relevant to notice that at the present time these are the only features affording protection to the artefact-bearing sediment. There are no obvious features external to it, natural or otherwise, upstream or downstream providing any form of protection.

None of these protective conditions need have been in place continuously since the Roman period but any of them singly or in combination could have been in place at various times during the past 1,700 years providing a substantial measure of protective continuity. To gain a better understanding of the assemblage of Roman artefacts in the river at Piercebridge we need a much more detailed record of the bedrock morphology of the channel, of the sediment sequence overlying the bedrock and of the distribution of the artefacts in those sediments.

CONCLUSION

This chapter has summarised current knowledge of Piercebridge and the wider region, discussed where and how the huge artefact assemblage was retrieved from the Tees and explored some of the potential fluvial mechanisms by which it may have been deposited and preserved.

While the strategic importance of the Tees crossing for Rome's advance north has long been clear, even if a Flavian fort at Piercebridge itself remains elusive, recent work in the hinterland of Stanwick and by the divers in the Tees has identified a likely late Iron Age/early Roman crossing here. This could date to the middle of the first century A.D. when Holme House, Stanwick and Scotch Corner saw significant activity or even earlier. Alternatively, it could date to the Roman campaigns of the A.D. 70s, or even represent 'a gift of infrastructure to Cartimandua' by Roman engineers (Mason 2021, 342–3). The evidence in Tofts Field is not conclusive, but some first-century features may align with the early bridge. A pre-existing road continuing north of the river from this early bridge could also explain why the fort lies to the west and at a 14 degree angle to Dere Street, and why the same differing alignment occurs in the Holme House enclosure and modern field boundaries (Willis 2010, 231; Haselgrove 2016, 459–60). This view would see the river crossing at Piercebridge as 'important in the symbolic geography of the area' in the very late Iron Age (Haselgrove 2016, 491). In this context the early settlement phases at Holme House are perhaps not surprising, indicating the adoption of 'Roman' styles of living by native families from the late Neronian period onwards. North of the Tees a thriving native settlement, almost a small town, developed; in A.D. 170/80 Piercebridge really took off as an important site with access to high-status goods (Cool and Mason 2008a, 307). The exact nature of the military presence here remains somewhat obscure, but legionary and auxiliary forces are attested, and the major developments are likely linked to the Severan campaigns in the North. In general, there must have been a huge amount of military and civilian travel up and down Dere Street. Analysis of the artefact assemblage in this volume can now throw more light on the origins of these individuals.

The sequence of Roman bridges at Piercebridge is clearly more complicated than previously thought. There were at least two bridges associated with the original Dere Street alignment as well as the late second-century stone bridge. It is important to note that the bridge on the original line of Dere Street did not necessarily fall completely out of use once the stone bridge was constructed. The single late radiocarbon date hints at the possibility that it remained in use for foot traffic, or possibly as some kind of religious structure or jetty.

This chapter has also summarised information on the recovery of the substantial finds assemblage from the Tees, and highlighted the difficulties caused by the inadequate recording of this material. We can no longer identify findspots, the stratigraphic sequence is poorly understood and any associations between groups of objects, or between oak piles and objects is now lost. A geomorphological assessment of the fluvial context has provided some possible mechanisms by which the objects may have been deposited and preserved. A huge amount of material was recovered, and the divers were exceptionally diligent in retrieving even very small and 'low-value' objects. Chapters 4 to 21 will consider the finds in their own right, to extract the maximum amount of information about the people who used them, even if it is difficult or impossible to establish how they ended up in the Tees.

PART II

THE FINDS FROM THE RIVER TEES AT PIERCEBRIDGE

Edited by Hella Eckardt

CHAPTER 4

OBJECTS OF PERSONAL ADORNMENT

By Philippa Walton
with contributions by Elizabeth Greene and Roger Tomlin

This category of material comprises a total of 377 objects and includes brooches, hairpins, bracelets, finger-rings, earrings, and other items of jewellery such as beads as well as shoes. See Table 4.1 for a summary of the total number of objects of personal adornment by type. Objects of personal adornment provide insights not only into the date of activity at Piercebridge, but also the identities of those involved in that activity. These are *personal* possessions worn close to the body; they project and reflect something of a person's identity and by being worn may become imbued with the 'essence' of that person (Eckardt 2005, 141; Swift 2011, 206). They may relate to one or more aspects of identity, such as origin, gender, age, status, profession and religious beliefs (e.g. Ivleva 2016a, 246). Thus some brooch or bracelet types might be associated with incoming groups and certain categories of personal adornment such as hairpins and bracelets are strongly associated with only one gender. Gender and age are also reflected in the size of finger-rings and bracelets, and the frequency and type of jewellery might have strong associations with younger individuals, as has been argued for Lankhills Roman cemetery (Cool 2010, 307). Status can simply be taken as wealth, and we will examine the relative proportions of precious metals represented at Piercebridge to assess this. However, it could also relate to professional and in particular military identities manifested through the selection of particular materials, decoration or object types (i.e. Bayley and Butcher 2004). Personal religious beliefs may also be expressed through the choice of particular decorative motifs such as snake bracelets, or enacted through the very act of offering items of personal adornment to the gods.

TABLE 4.1. OBJECTS OF PERSONAL ADORNMENT FROM THE RIVER

Object type	**Total number of examples from the river**
Brooch	133
Hairpin	80
Bracelet	34
Finger-ring	56
Earring	5
Bead	4
Necklace	23
Pendant	3
Gold jewellery fragment	35
Shoe	4
Total	**377**

Objects of personal adornment usually make up the largest category of small finds on excavated sites, but they are especially prominent at temple and other ritual sites (Cool and Baxter 2002, 366; Woodward and Leach 1993, 323–33; Wheeler and Wheeler 1932, 41–2; Swift 2011, 217). 'It is easy to accept personal or toiletry objects like brooches, pins, finger rings, nail cleaners, or tweezers as votive gifts because such objects, representing the individual, might seem appropriate to establish a personal relation (*sic*) to the divine force' (Cunliffe 1988, 360). Votive offerings as a means of activating contact between humans and the divine are discussed in general in Chapter 2. Here, we will review each category of personal adornment in turn, before comparing the river assemblage as a whole to other sites. Particular attention will be paid to fragmentation and repair, all too often neglected in small find research. We will also use material that can be dated on typological grounds to inform our understanding of activity in Piercebridge in general.

BROOCHES

In northern Britain, items of personal adornment tend to be found only at sites with military associations or at nodal points in the landscape, such as roadside settlements and towns (Smith *et al.* 2018, 33). Therefore, the recovery of brooches from the riverbed at Piercebridge is not entirely unexpected. However, the size of the assemblage is unusual, comprising a total of 109 Roman examples, as well as 20 brooch pins, three spring mechanisms and a possible lead-alloy brooch pattern. Not only is it much larger than the assemblage recovered from the excavations at Piercebridge (Cool 2008, 250–1) but also those from nearby military and urban sites including Catterick (Cool 2002), Binchester (Ferris 2010) and Aldborough (Bishop 1996).

FIRST-CENTURY TYPES

Brooches dating to the first century A.D. are not well-represented in the assemblage, with only two examples recorded (FIG. 4.1). They include a Nauheim-derivative brooch of flat bow type (BM-B012B8) and an Aucissa brooch (NCL-B98361; FIG. 4.1A). Both are traditionally assigned to the Claudio-Neronian period, with the latter brooch type frequently, but not exclusively, associated with the Roman army in its first phase of conquest (Bayley and Butcher 2004, 151; Eckardt 2005, 151–2; Mackreth 2011, 132–3). While their presence is interesting, particularly as no examples were recovered from the excavations of the fort and *vici* (Cool 2008, 250), there are too few to convincingly argue for an early military presence. Nor can they be seen as conclusive evidence of first-century activity, as it is clear that such brooches were worn or curated for considerable periods of time (Eckardt 2005, 150–4, figs 7–9).

There are twelve examples of penannular brooches in the river assemblage; see FIG. 4.1B for an example. As these possess a broad early to mid-Roman date range, it is possible that at least some of them represent first- or early second-century activity, particularly as penannular brooches seem to have been chosen over bow brooches at other sites in northern Britain (Cool 2008, 250).

SECOND-CENTURY TYPES

Late first- and second-century brooch types occur in relatively large numbers and account for approximately 39 per cent of the riverine assemblage. They include bow types common in northern Britain such as the Trumpet, Thealby and Headstud brooches, as well as a range of plate types (FIG. 4.1). Their presence confirms that the activity focused on the river either commenced or intensified at some point during the second century A.D. However, as brooches of the period had long use-lives (Cool and Baxter 2016), it is impossible to pinpoint exactly when during the second century this happened. It may be that most were worn and then deposited by

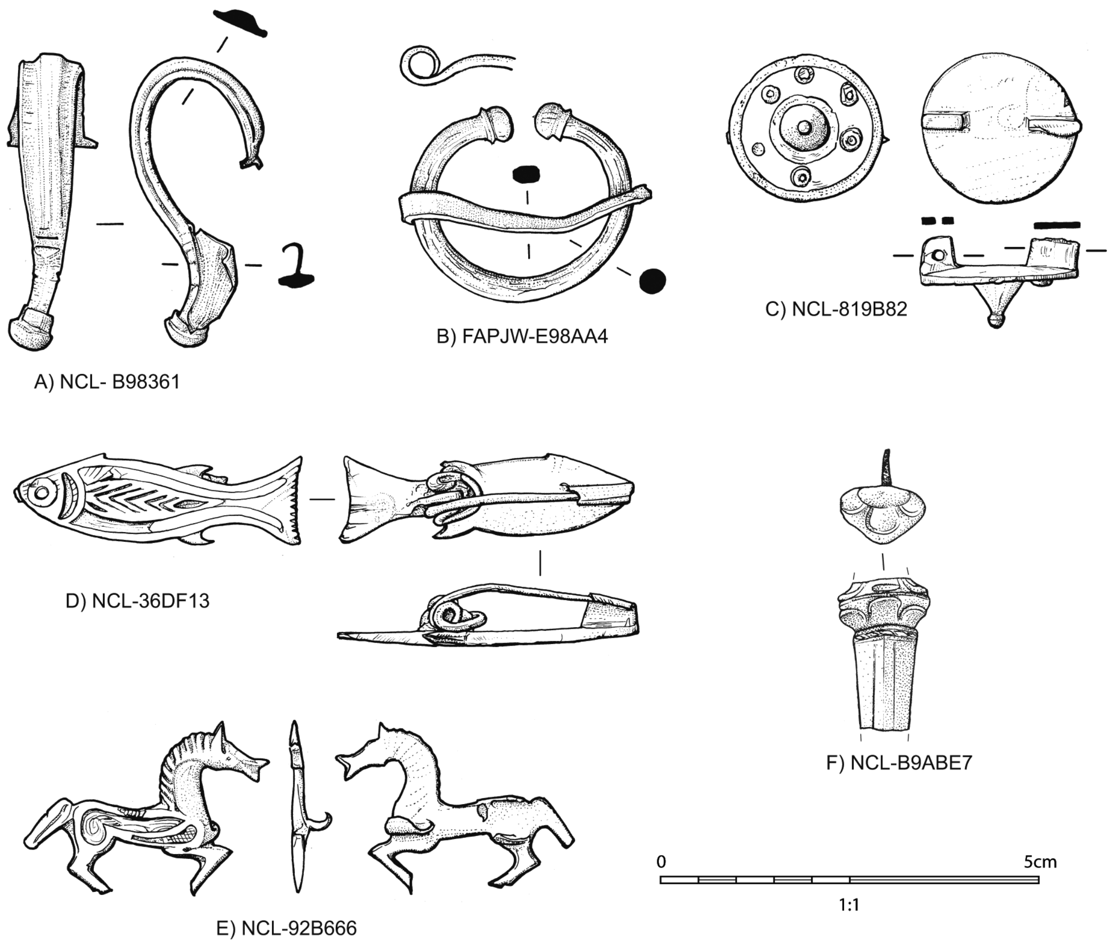


FIG. 4.1. First- and second-century brooches from the river

the military community arriving in the later second century A.D., although earlier deposition by the native population is also possible (Cool 2008, 251).

Of particular interest is the high proportion of plate brooches dating to the second century in the riverine assemblage. Nearly half (49 per cent) of the late first- and second-century brooches are plate types, including enamelled discs, zoomorphic and skeuomorphic forms. This compares with 8.1 per cent of the excavation assemblage (Cool 2008, 250–1), 33 per cent of the Catterick assemblage (Cool 2002, 29), 28 per cent of the Aldborough assemblage (Bishop 1996, 49–61) and 10 per cent of the Binchester assemblage (Ferris 2010). It may be that this pattern is the result of retrieval bias, with the divers locating and recovering plate brooches more easily than other types. Alternatively, it is possible that such brooches were either deliberately selected for deposition or that the sub-section of society most involved in the deposition of brooches had a preference for wearing plate types.

Certainly, it appears that some plate brooches had religious resonances. Zoomorphic types are frequently found in ritual contexts and are argued to have acted as 'pilgrim badges' or souvenirs signalling devotion to a particular deity (Johns 1995, 104; Eckardt 2005, 150; Crummy 2007; Fillery-Travis 2012; Allason-Jones 2014). Examples in the riverine assemblage include a horse (NCL-92B666; FIG. 4.1E), a horse-and-rider (NCL-174CD3) and two fish (NCL-80E1E4; NCL-36DF13; FIG. 4.1D). Horse brooches have a marked military distribution (Allason-Jones 2014, 72–3) and may be linked to Epona, a Gallic deity associated with mares and fertility who was popular amongst the Roman cavalry in Gaul and Germany (Irby-Massie 1999, 154). Given the large quantities of horse harness and cavalry equipment in the assemblage (discussed in Ch. 7), such an association would be apt. However, horse-and-rider brooches have a very different distribution and are more often found on Romano-Celtic temple sites in southern Britain (Allason-Jones 2014, 73–5), particularly in Leicestershire, Somerset-Wiltshire and Suffolk-Norfolk-Cambridgeshire (Mackreth 2011, 182 and 241; Fillery-Travis 2012). NCL-174CD3 is the northernmost example recorded by the Portable Antiquities Scheme[10] and thus like so many other objects in the assemblage is a geographical outlier. Although fish brooches are frequently associated with Christianity, they are also particularly appropriate offerings in a riverine context. Other examples, with a few exceptions on the Isle of Wight, avoid coastal areas 'suggesting perhaps the wearers had riverine fish in mind' (Allason-Jones 2014, 78–9).[11]

It has also been noted that disc brooches were connected with depictions of masculinity and were particularly favoured in sculptural and funerary depictions of soldiers (Hoss 2016, 48; Ivleva 2016b). Their highly visible positioning at the shoulder on military dress indicates that they were worn to be seen (Ivleva 2016b, 121). It is therefore possible that at least some of the enamelled discs had military connotations and although very small in size, at least some resemble round shields (NCL-819B82; FIG. 4.1C and FAPJW-877F73). They may have acted as colourful badges for particular units communicating messages about their 'positions, affinities and preferences' (Ivleva 2016b, 122) to each other.

THIRD-CENTURY TYPES

By the later second or early third century A.D., only military personnel and officials wore brooches in any quantity (Cool 2008, 250; Mackreth 2011, 236) and so the large number of brooches dating to this period (57 per cent of the assemblage) supports the hypothesis that there was a strong military presence in Piercebridge by *c.* A.D. 170–180 (Cool 2008, 302). Among these brooches several unusual types are well-represented. Particularly striking are the eight repoussé plate brooches depicting elaborate *triskele* motifs (FIG. 4.2A), which are entirely absent from the excavation assemblage; historically these have been dated to the late first or second century A.D. (Bayley and Butcher 2004, 173). However, recent analysis of their distribution suggests a date between A.D. 150 and 250 and a particularly strong relationship with Severan campaigning in northern Britain (Mackreth 2011, 155 and 196).[12] The trumpet motifs incorporated within their designs can be paralleled in contemporary military studs and belt fittings. It is possible that just like their second-century predecessors, these disc brooches were also linked with the projection of military status and identity (Ivleva 2016b; Hoss 2016).

There are also a range of continental imports such as the Divided bow, the P-shaped (Mackreth 2011, 196) and the Knee brooch (FIG. 4.2B, C and D). The Knee brooch, of which there are 26 examples, is associated with Germanic garrisons stationed along the Rhenish and Danubian frontiers (Cool 1983, 30; Eckardt 2005, 156). In Britain, the presence of the Knee brooch in site assemblages is argued to signify not only a Roman military identity but also a Germanic origin for its wearer. At Catterick, Knee brooches were seen to represent the arrival of a significant new population at some time between A.D. 150 and 225 (Mackreth with Bayley 2002, 154).

This interpretation is complicated somewhat by the observation that many Knee brooches appear to be Romano-British copies (Mackreth 2011, 190). Although four examples in the riverine assemblage are certainly continental types as classified by Mackreth (Mackreth 2011, 191; BH-FC9B09; FAPJW-FD5267; NCL-430847 and NCL-8AADB6), the remainder may be Romano-British in origin. It is tempting to relate the continental examples to the initial movement of people and trade and the Romano-British examples to subsequent copying by local producers and users (Eckardt 2005, 154–6; Mackreth 2011, 189–92; Eckardt 2014, 30). Alternatively,

[10] Query undertaken on Portable Antiquities Scheme 2020 (https://finds.org.uk) for Object Type: Brooch; Description: Horse and Rider on 17.04.20.

[11] It also appears that the image of the fish may have military resonances; for example, all examples of signet rings with intaglios depicting fish found in Roman Britain come from military sites (Marshman 2015, 121).

[12] Four examples were recovered from the early excavations at South Shields (Allason-Jones 1983, fig. 70, no. 50; Allason-Jones and Miket 1984, 118). Three are known from the relatively small assemblage of 38 brooches from *Segedunum* (Allason-Jones 2016, 134–6, fig. 25.02, nos 25, 26 and 27).

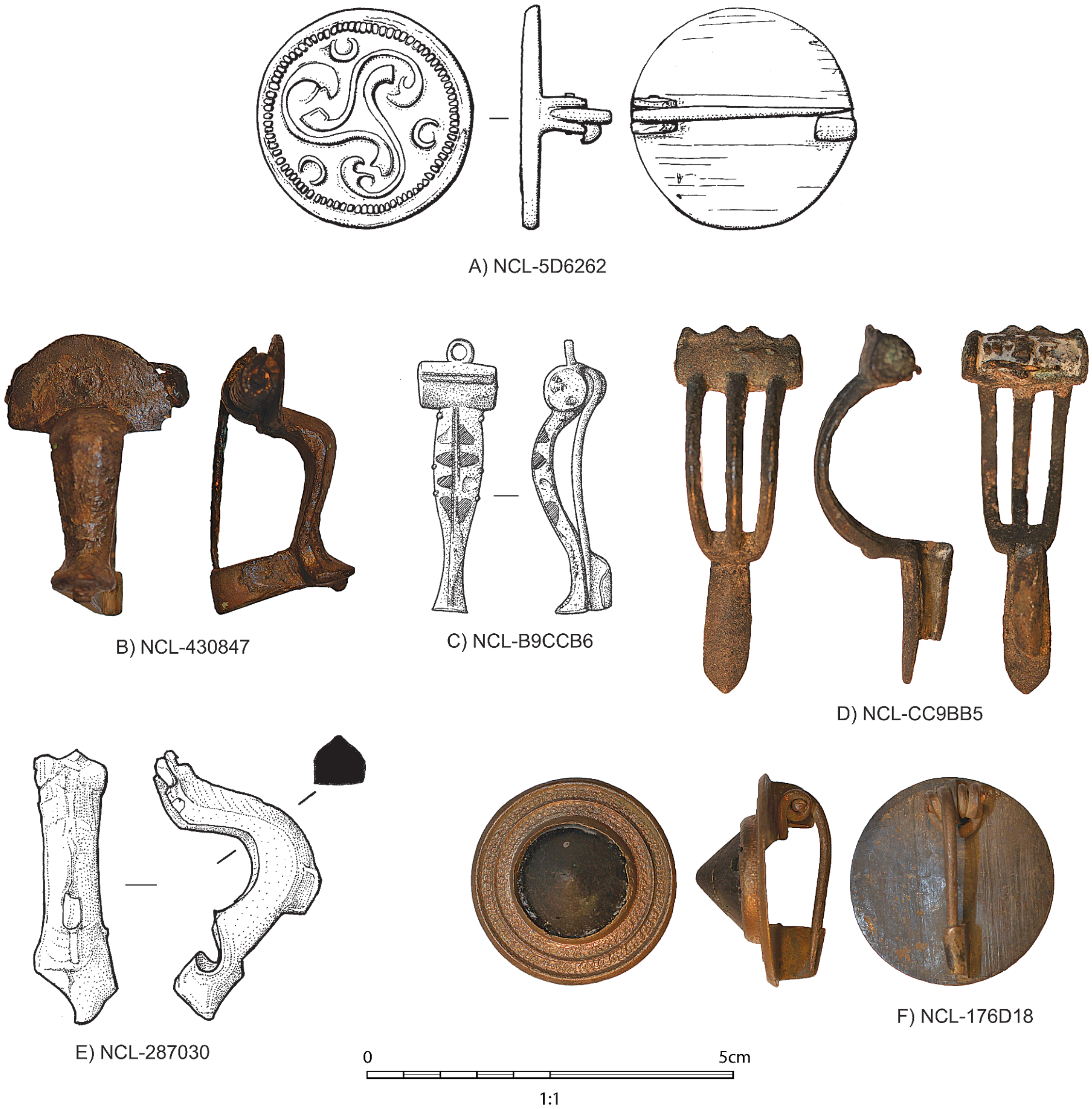


FIG. 4.2. Third- and fourth-century brooches from the river

general wear and tear while on campaign may have meant there was a significant demand for replacements of continental originals, which were perhaps produced by military *fabricae*. Certainly, the presence of a lead bow brooch pattern (NCL-287030; FIG. 4.2E) amongst the riverine material, which could feasibly be a model for the bow of a Knee brooch, suggests brooch manufacture in or around Piercebridge. A recent unpublished study of lead brooch patterns (McIntosh unpub.) has demonstrated their rarity and shown that more than half of the published examples known from Roman Britain are from temple or votive contexts such as Lydney, Glos. (Wheeler and Wheeler 1932, 15, pl. VIa) and Poole's Cavern, Derbys. (Bayley and Branigan 1989). It is therefore likely that they possessed ritual resonances as well as being practical objects.

THIRD- OR FOURTH-CENTURY TYPES

Brooch use was rare in late Roman Britain and again almost exclusively associated with the army or officialdom. The fact that there is only a single gilded boss brooch dating to the later third or fourth century A.D. (NCL-176D18; FIG. 4.2F) in the riverine assemblage would therefore suggest either that the military presence at Piercebridge diminished in the late Roman period or that soldiers were no longer participating in the deposition of objects there.

UNUSUAL FEATURES IN THE BROOCH ASSEMBLAGE

There are several things that are unusual about the brooch assemblage from the river. The sheer number of examples recovered has already been remarked upon. The date range of those examples is also interesting, particularly as it is not paralleled in the material from the excavations at Piercebridge or at other sites in the region, such as Catterick (Cool 2002) or Binchester (Ferris 2010). The riverine material has an earlier emphasis than the other sites, with the exception of Catterick, while the late second- or early third-century peak in brooch deposition seen in the river appears unique.

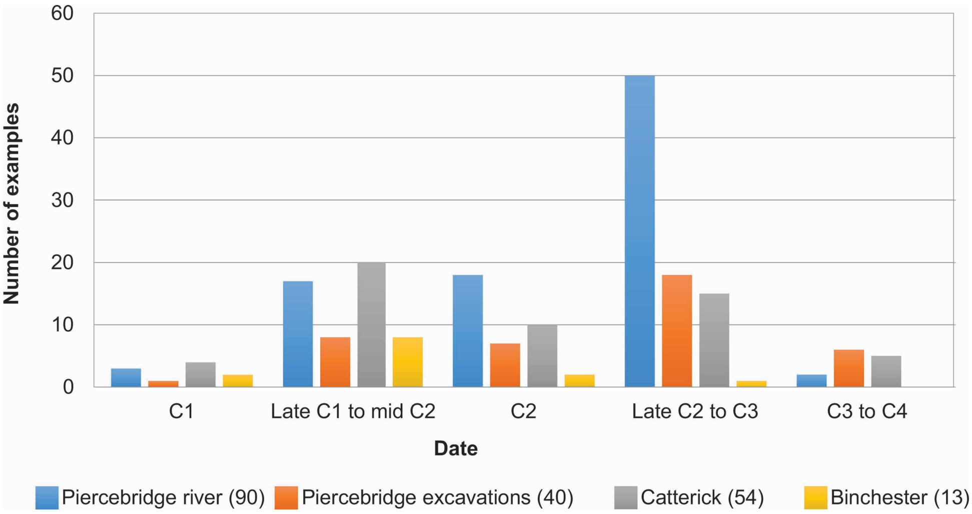


FIG. 4.3. The size and dating of the brooch assemblage compared with other sites in the region

It is not only the size and composition of the brooch assemblage which suggest a deliberate deposition in the river Tees. Nearly a quarter (24.7 per cent) of the brooches deposited in the river were complete with their pins and spring mechanisms intact, in comparison with only 12 per cent of the excavation assemblage. This may suggest that they were selected for deposition rather than discarded as rubbish.[13] It does appear that higher proportions of complete brooches are found in temple assemblages than at other site types. For example, at Uley 48 per cent of the brooch assemblage comprised complete brooches (Butcher 1993, 148–59), while at Springhead 22.9 per cent were complete (Schuster 2011a). However, while there are hints that brooches were deliberately selected, it is unlikely that they were made specifically for deposition. Many show signs of wear and others have been subject to small repairs. For example, two brooches (FAPJW-A67042 and NCL-430847) had their pins replaced using pins recycled from other brooches.

There is also some indication that brooches were deliberately broken or bent, with 24 examples surviving in a fragmentary state. Interestingly, 14 of these examples are later second- or third-century types; the cutting and mutilation of coins from the site also concentrates in this period. This could indicate a genuine peak in the practice, or simply reflect the increase in finds during that period. As with wear patterns, intentional versus natural damage is not always easy to identify and it is possible that some breakages are the result of accidental post-depositional damage. However, a Trumpet brooch in an unusual alloy has clearly been cut (NCL-B9ABE7; FIG. 4.1F), whereas three Divided Bow brooches (BH-F03B38; FAPJW-003CE6; NCL-38B476) have been broken and deliberately distorted. The breaking and mutilation of objects is associated with 'ritual killing' and relinquishment and is a common feature of object assemblages from temple

[13] 20 brooch pins were also found. These may have been deposited individually. However, if they became detached from their respective brooches after deposition, 43 per cent of brooches from the river would have been complete.

and sanctuary sites in Britain and on the Continent. For example, at Springhead 47 brooches were deliberately broken and 12 deliberately bent (Schuster 2011a, 290).

HAIRPINS

80 Roman pins were recovered from the river. They include two silver examples, 49 in copper alloy, one in lead alloy and 28 in bone. Numerous fragments of copper-alloy wire were also recovered which may be part of hairpins. However, as they possessed no diagnostic features they have been excluded from discussion here.

FIG. 4.4. A selection of bone pins from the river; from left to right: NCL-171B62; NCL-1706C5; BM-A256CC; NCL-8D6DB7; NCL-3BBCB6; NCL-8D1435; NCL-E0CFE1; NCL-29BB73; BM-C7BEE8; NCL-91BE93; NCL-3B6B97; NCL-5D9AF8; NCL-2F15E7; BM-F2FC5D; NCL-3D6251; BH-FE2FD8; BM-C78F07 (*Photo: Aaron Watson*)

While the size of the Roman pin assemblage is relatively large given the small area from which it was recovered, it is the ratio of bone pins to copper-alloy ones that is particularly striking. In Britain, bone examples survive in the archaeological record in far greater numbers than metal ones (Cool 1990, 149; Eckardt 2007, 147). A survey of pins from five sites in northern Britain illustrates this (Table 4.2), with bone examples outnumbering copper-alloy ones in every case. A particularly large number of bone pins was recovered during the excavations at Piercebridge, where they account for more than 89 per cent of the pin assemblage. However, in the riverine assemblage metal pins outnumber bone examples. As with the brooch assemblage, it is possible that this pattern is the result of survival and retrieval biases. Alternatively, copper-alloy pins may have been deliberately selected for deposition or the sub-section of society most involved in the deposition of objects wore them more frequently than bone examples. Certainly, at other Romano-British sites, it has been suggested that larger proportions of metal pins could act as an indicator of wealth and access to expensive materials (Cooper 2000, 84–5).

Only 38 of the pins could be classified using the typologies established for hairpins in southern Britain (Crummy 1983; Cool 1990). Even so, it is clear that both early and late forms are represented. In contrast to the material from the excavations, a variety of first- and second-century types are present and these are slightly more common than third- to fourth-century types. This indicates that 'Roman' hairstyles were being adopted by women in the Piercebridge area before the army arrived in the late second century A.D. Furthermore, the total number of early Roman pins should probably also be supplemented by at least some of the pins which could

TABLE 4.2. THE COMPOSITION OF PIN ASSEMBLAGES FROM PIERCEBRIDGE AND COMPARATIVE SITES

Composition	**Piercebridge river**	**Piercebridge excavations**	**Catterick (Cool 2002, 27)**	**Binchester (Ferris 2010)**	**South Shields (Allason-Jones & Miket 1984)**	**Aldborough (Bishop 1996, 16–27)**
Silver	2 (2.5%)	1 (0.38%)	0	0	0	0
Copper-alloy	49 (61.25%)	8 (3.1%)	22 (18.48%)	43 (27.38%)	57 (12.86%)	18 (15.65%)
Lead-alloy	1 (1.25%)	0	0	0	0	0
Bone	28 (35%)	230 (89.14%)	84 (70.58%)	99 (63.05%)	359 (81.03%)	97 (84.34%)
Glass	0	2 (0.77%)	3 (2.52%)	3 (1.91%)	2 (0.45%)	0
Jet or shale	0	5 (1.93%)	7 (5.88%)	10 (6.36%)	17 (3.83%)	0
Bone and jet	0	12 (4.65%)	3 (2.52%)	0	8 (1.8%)	0
Iron	0	0	0	2 (1.27%)	0	
Totals	**80**	**258**	**119**	**157**	**443**	**115**

not be classified. With an average length of 112.88 mm, many are long enough to be used in the elaborate hairstyles of the period (Cool 1990, 173) and have decorative heads designed to be seen (Cool 1990, 174).[14]

However, while there are indications that some of the unclassified pin dataset may be early Roman in date, establishing their chronology is not straightforward as several do not appear to have parallels either in Roman Britain or beyond. For example, NCL-211106 (FIG. 4.5B) possesses spiral-grooved decoration and niello inlay consistent with a Roman date, while BM-0E48D9 (FIG. 4.5A) has a head-loop of a type which is found in pins with spangled heads dating to the fifth and sixth centuries A.D. (Ross 1992, 167) and indeed is paralleled by a pin found in an Anglo-Saxon grave at Brough Hill, Daventry (Ross 1992, 169 and fig. 5.8c). It is perhaps significant that four of the pins recovered during the excavations at Piercebridge were noted as unusual and seemed 'more at home in the Anglian tradition of dress pins', though it was stressed that none were typical of that period (Cool 2008, 243).

The dearth of parallels might also suggest the local manufacture of pins with a function specific to Piercebridge in the Roman period. Cool has noted that axe-headed pins, which are frequently found at temple sites, may have had a specialised religious function rather than simply being items of dress (Cool 1990, 168). Although there are no axe-headed pins in the Piercebridge assemblage, four copper-alloy pins and a possible lead-alloy example (BM-363BD3; BM-0DCBED; BM-E063E7; NCL-6A11A1; NCL-8FCAE3) may be intended to represent spears (FIG 4.5C and FIG. 4.6). Certainly, their form is reminiscent of the miniaturised spears found in numerous votive contexts in Roman Britain (Kiernan 2009, 97–105), particularly those with pierced blades from Great Walsingham (Bagnall-Smith 1999, 34, no. 25, pl. 6) and Uley (Henig 1993b, 131). Were it not for the presence of terminals decorated with turquoise glass spheres (BM-E063E7; NCL-6A11A1; FIG. 4.5C and FIG. 4.6), they may have been classified as such. Another pin possesses a delicate copper-alloy wire decorated with two dark blue glass beads threaded through its perforation (BM-363BD3; FIG. 4.5D).[15] While these pins could have been used to secure elaborate hairstyles or head-dresses, they may have been used in other ways. At Lydney, it was suggested that bone pins were fixed to the temple wall (Wheeler and Wheeler

[14] In southern Britain, over 90 per cent of pins dating to the first two centuries measure more than 80 mm in length (Cool 1990, 173).

[15] The pins with glass orbs at their terminals could relate to Cool's Group 14 (Heads with glass insets) where glass orbs are held in place by claw settings or inset in the heads. These date to the mid-second to fourth century A.D. (Cool 1990, 164 and fig. 9).

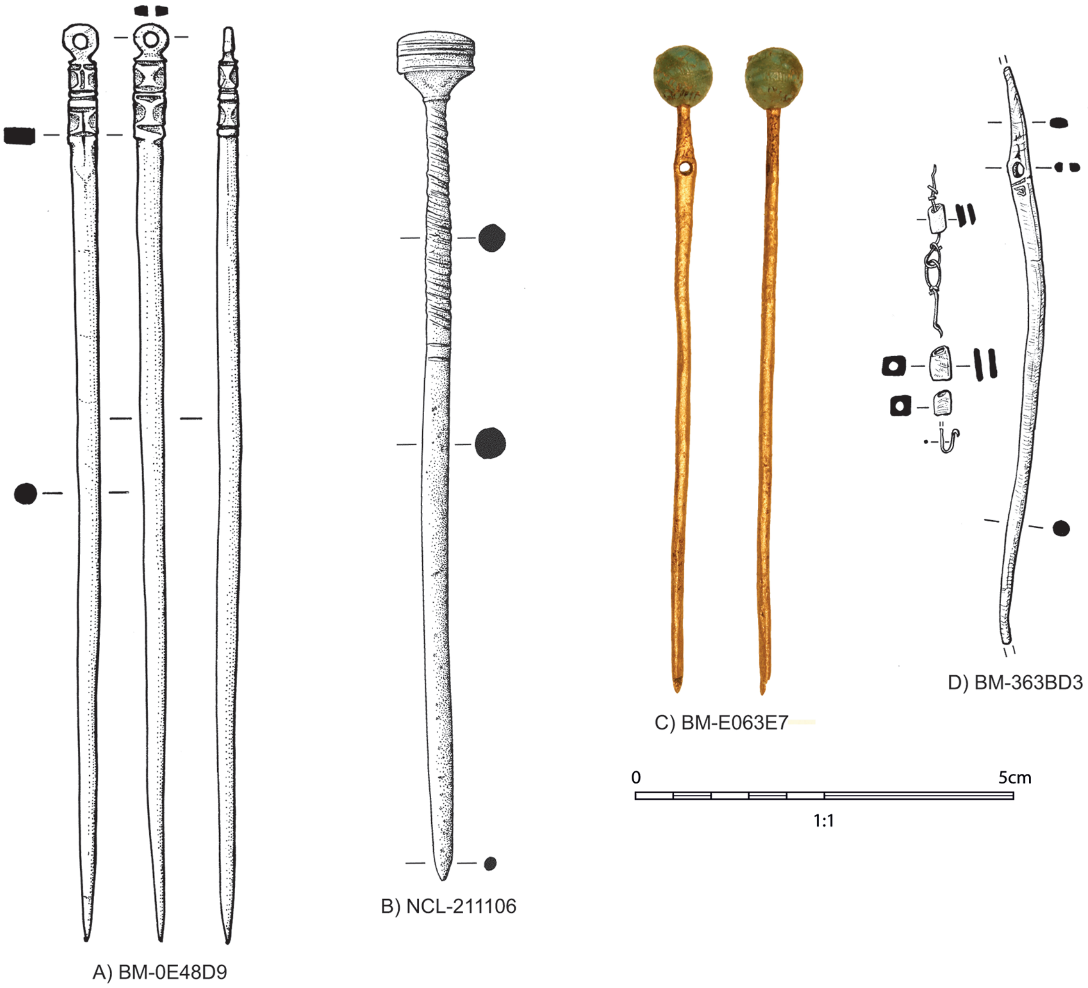


FIG. 4.5. Copper-alloy pins from the river

FIG. 4.6. A selection of perforated pins from the river; from left to right: BM-E063E7; BM-DDF4CA; BM-0E7B74; BM-0E48D9; NCL-8F7FE0; NCL-6A11A1 (*Photo: Aaron Watson*)

1932, 41–2). The head-loops and shaft perforations on the examples from Piercebridge would certainly have enabled attachment to another object or architectural feature.

BRACELETS

34 bracelets or fragments thereof were recovered with a date range spanning the late first to fourth centuries A.D. (FIG. 4.7). Although occasionally male individuals in burials are found wearing bracelets (see Cool 2002, 41 for examples from Catterick, Cirencester and London), most are associated with women (Swift 2000). At Lydney, the large numbers of bracelets recovered during the excavations there were interpreted as being votive offerings (Wheeler and Wheeler 1932, 43).

The earliest bracelets in the assemblage are nine fragments of an unusual polychrome wire cable type (cf. Cool 1983, 120–9, group I; Riha 1990, 59–60, type 3.23), dating to the late first or second century A.D. (Marshall and Wardle in prep.). They are not a common type in Roman Britain and therefore their presence at Piercebridge is interesting, particularly as they are not represented in the excavation assemblage.[16] There is also a fragment of a base-silver penannular bracelet with a terminal in the form of a snake's head (BH-F19EFD) dating to the second century A.D. Such bracelets are argued to have apotropaic qualities and religious resonances, being associated not only with Asclepius, but also with Mercury and various mystery religions (Cool 2000, 34). The presence of these early Roman bracelets strongly suggests activity centred on the river throughout the second century A.D.

Later Roman bracelet styles including the cable-twist (6 examples; FIG. 4.7A and 4.7B), penannular (4 examples) and rarer torc twist (4 examples; FIG. 4.7D) also occur. Also present is a gold element, probably a pin fastener from a bracelet dating to the second or third century

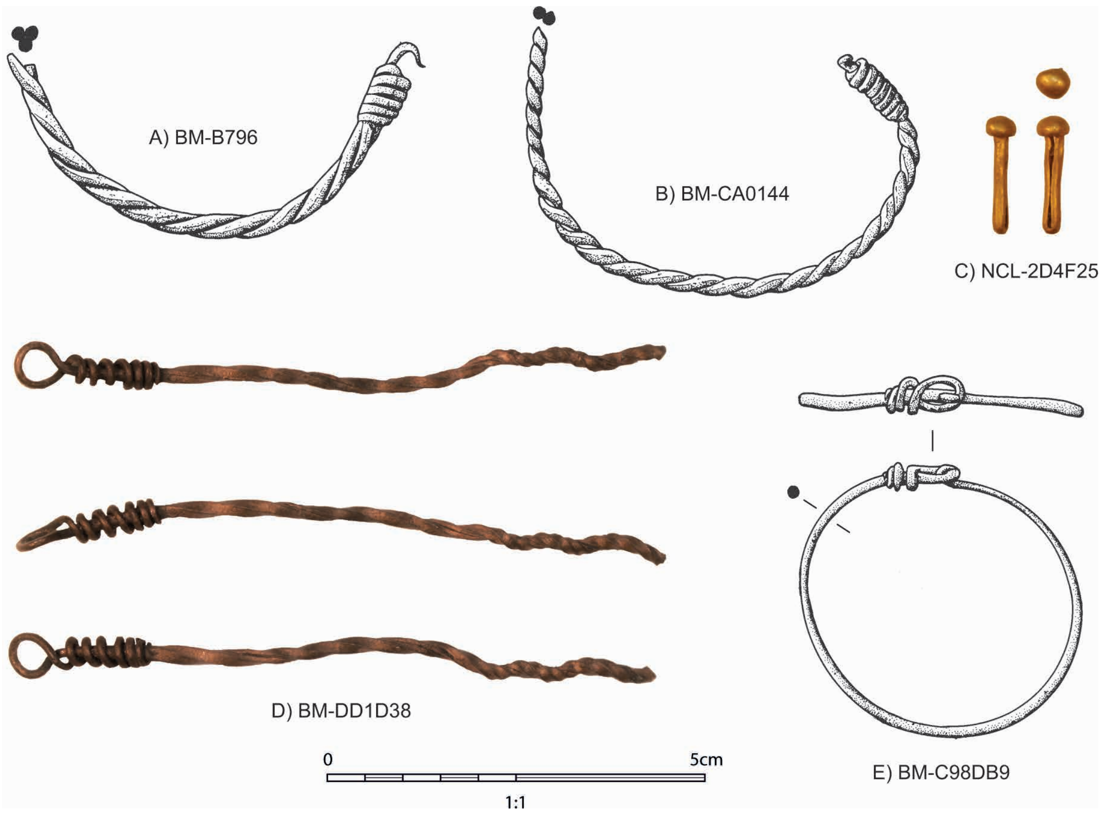


FIG. 4.7. Bracelets from the river

[16] A fragment of a bracelet comprising 'five strips of copper-alloy wire around an iron core' is listed in the archive small finds report (Allason-Jones 2008, 11.14, SF 73, HS 70, Circular structure 13). However, it is not clear from the description or illustration whether this bracelet is of the same type.

TABLE 4.3. COMPARING THE PROPORTIONS OF COMPLETE AND INCOMPLETE BRACELETS FROM PIERCEBRIDGE AND COMPARATIVE SITES

Complete versus incomplete	Piercebridge river	Piercebridge excavations (Allason-Jones 2008)	Catterick (Cool 2002)	Binchester (Ferris 2010)	South Shields (Allason-Jones & Miket 1984)	Uley (Woodward & Leach 1993)	Colchester 1971–9 (Crummy 1983)	Nettleton (Wedlake 1982)	Springhead (Schuster 2011a)
Complete bracelets	2 (16%)	11 (10.57%)	8 (13.79%)	0	15 (10.56%)	3 (4.29%)	50 (66.66%)	4 (6%)	0
Incomplete bracelets	32 (94%)	93 (89.43%)	50 (86.1%)	55 (100%)	127 (89.44%)	67 (95.71%)	25 (33.33%)	62 (94%)	18 (100%)
Total bracelet assemblage	34	104	58[17]	55	142	70	75[18]	66[19]	18

[17] Although table 90 (Cool 2002, 29) indicates that 91 bracelets were found at Catterick, of which 61 were copper-alloy, only 58 copper-alloy bracelets are discussed further in the text. Therefore, the figures presented here refer only to the complete and incomplete copper-alloy bracelets discussed in the text.

[18] 42 of the 75 bracelets recorded from Colchester came from grave deposits.

[19] These figures are tentative as Wedlake 1982, 212–14 does not provide a catalogue but rather notes that 'a large number (55) of fragmentary (copper-alloy) bracelets were found …' (ibid., 212). However, only 33 are illustrated (213, fig. 90 and 214, fig. 91) of which three are clearly complete.

A.D. (NCL-2D4F25; FIG. 4.7C). Pin fasteners of this type are certainly not common in Roman Britain, although parallels can be found in Germany and Moesia (Ruseva-Slokoska 1991, 154, cat. no. 144a). The presence of these bracelet styles indicates that bracelets continued to be deposited into the later Roman period. Despite this, it is notable that the bracelet assemblage dating to the third and fourth centuries is far smaller than that recovered from the adjacent fort excavations and includes none of the jet or shale examples that are such a prominent feature there. This *may* suggest that bracelets, particularly in some materials, were not deemed appropriate offerings or that the individuals who wore them were not as heavily involved in depositional activity.[20] However, it is more likely that it provides hints about the chronology of deposition. Copper-alloy bracelets are at their most common in third- and fourth-century contexts (Crummy 1983, 37; Riha 1990, 53), the very time-frame when it appears that the activity focused on the river was dwindling.

As with other categories of material in the riverine assemblage, most of the bracelets are broken, with 94 per cent being fragmentary in nature. It is difficult to ascertain with any certainty whether these breakages are deliberate or accidental. However, bracelets are relatively fragile objects and most bracelet assemblages are dominated by broken items (see Table 4.3).[21] Despite this, there are indications that some bracelets were subjected to unusual treatment. For example, three of the torc-twisted bracelets (BM-CB0232; BM-DD1D3B; BM-0FC5F7) have been straightened to form objects resembling pins. Interestingly, a bracelet from the Piercebridge excavations (SF 49; HS 77.39.856) was also deliberately straightened in the same manner (Allason-Jones 2008, 11.10). One bracelet (BM-C98DB9) is noticeably small, and may have been intended for a child (FIG. 4.7E).

FINGER-RINGS

56 Roman finger-rings have been recovered from the river. A full range of types is represented including signet rings, inscribed and dedicatory rings and finger-ring keys. The earliest type represented is a spiral finger-ring (BM-DE1974), which is usually dated to the pre-Roman Iron Age,[22] but the majority of the rings date to the second or third century A.D., with only two examples dating to the fourth century (NCL-D99A78; BM-A74D09). This contrasts with the slightly smaller assemblage of 46 finger-rings from the excavations where the majority are late Roman in date. There are no jet, shale or bone rings from the river, whereas there were seven examples from the fort and four from the *vici* (Cool 2008, 254).

Numerous aspects of the finger-ring assemblage stand out as being unusual. First, the assemblage appears to be dominated by examples designed to be worn by women or children. As finger sizes vary according to age and sex, an analysis of ring size can provide an insight into the identity of their owners. For example, a study of finger-rings from Augst used modern finger-rings as a point of comparison and suggested that Roman adult men's rings should have a modal average of 19.1 mm and occur in sizes between 19 and 24 mm, while adult women's rings should have a modal average of 17.5 mm (Furger 1990, 49). Swift, meanwhile, concluded on the basis of Roman burial data that 15 mm, 17 mm and 20 mm were the most commonly occurring sizes for children, adult women and adult men (Swift 2017, 167). FIG. 4.8 illustrates the range of internal ring diameters of the 39 complete finger-rings from the river. Using Swift's sizings, it appears that the majority of complete finger-rings in the riverine assemblage were designed to be worn by children (10) or adult women (27), with only two examples large enough to be assigned to adult men.

[20] Jet and shale may be less likely to survive in the river environment, although they are present in other watery contexts such as the deposit from Coventina's Well where seven jet and shale objects were found (Allason-Jones and McKay 1985, 34).

[21] For example, 89 per cent of the bracelet assemblage from the Piercebridge excavations is fragmentary, while more than 95 per cent of the bracelets from both Uley and Nettleton were broken.

[22] Although traditionally associated with Iron Age material culture, the spiral finger-ring type was found in second- to fourth-century contexts at Catterick and so its dating is by no means secure (Cool 2002, 30).

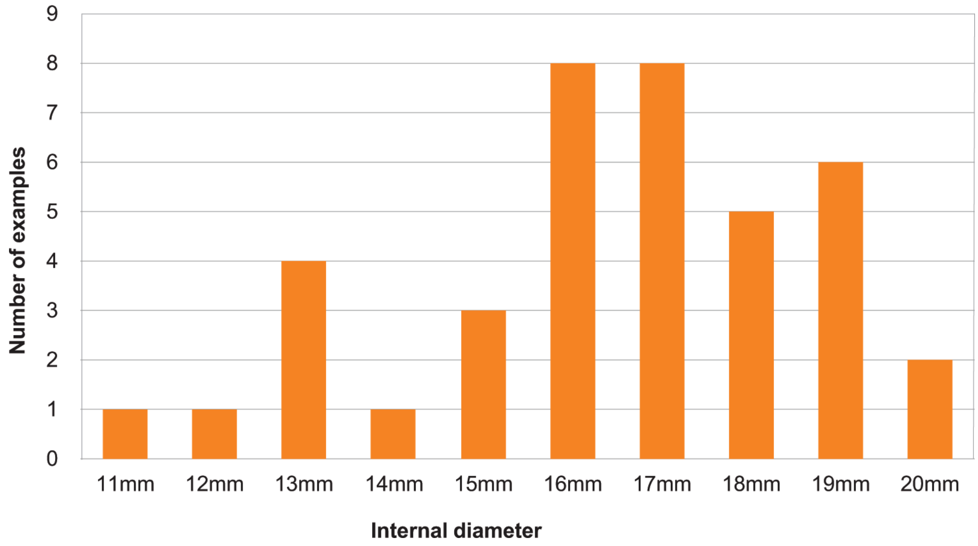


FIG. 4.8. The internal diameters of finger-rings from the riverine assemblage (sample size = 39)

As so few catalogues of Roman finger-rings record internal diameter measurements, it is difficult to ascertain how this pattern compares with other sites throughout the province. However, it is interesting that at the temple site at Great Walsingham in Norfolk, all but one of the finger-rings were in the masculine size range. This was interpreted as indicating the worship of a male deity by men (Swift 2017, 185).

However, various factors including range of finger sizes and diversity of practice need to be taken into account (Swift 2017, 152). 'Woman'-sized finger-rings may also have been worn by child or adolescent males, while stone funerary reliefs from the Rhine and Danubian *limes* make it clear that men, often soldiers, wore rings on the middle joint of the fourth or little finger of their left hands (Marshman 2015, 34). This practice would result in higher numbers of smaller internal ring diameters. It is therefore possible that at least some of the finger-rings identified as belonging to women in the riverine assemblage could actually be the property of younger males, including servants or soldiers adopting a regional way of wearing finger-rings.

Second, the proportion of precious metal examples seems quite high, with nearly a quarter (23.22 per cent) of the finger-rings made from gold or silver. This contrasts with Catterick, where all examples were base-metal (Cool 2002, 30), 3.26 per cent precious metal rings from South Shields (Allason-Jones and Miket 1984) and 14.28 per cent from Aldborough (Bishop 1996). Amongst these precious metal finger-rings are two gold examples. The right to wear a gold ring was an important indicator of rank in Roman society, at first restricted to senators and magistrates, then granted to all who were of equestrian status, although much later the privilege was also bestowed upon soldiers by Septimius Severus (Marshman 2017, 139). They are all the more remarkable as their size suggests that they were made for children.[23] NCL-914391 is set with a garnet and possesses granulated decoration on the shoulders representing bunches of grapes, a motif that may have had Bacchic resonances (FIG. 4.9A). The garnet is one of the rarer gems in Roman jewellery and tends to be found only at legionary fortresses and large urban centres (Guiraud 1988, 26–7; 1995).

The second gold finger-ring, FAPJW-AB59E5, does not fit within established typologies (FIG. 4.9B). This is understandable given the fact that the bezel appears to have originally formed part of a third-century earring of Allason-Jones Type 11 (Allason-Jones 1989a, 9). An earring from the *vicus* at Vindolanda offers a particularly close parallel (Allason-Jones 1989a, 59, no. 67 and fig. 3). In addition to re-purposing an earring, FAPJW-AB59E5 is also set with a blue glass sphere or hemisphere dating to the late Iron Age (Elizabeth Foulds, pers. comm.). It is possible that this long-curated object gave the finger-ring an amuletic significance, as has been suggested

23 NCL-914391 has an internal diameter of 15.88 mm, while FAPJW-AB59E5 has an internal diameter of 13.5 mm.

for other prehistoric objects such as axes and coins in Roman contexts (Bowsher and Marshall 2013, 3–4).

In contrast to the excavations at Piercebridge, where six signet rings were found (Cool 2008, 251; Henig 2008),[24] twelve signet rings were recovered from the river, with seven still retaining their engraved gemstones. Throughout the Roman world, signet rings acted as physical markers of an individual's identity and were used by both men and women to seal contracts, letters and wills (Swift 2011, 210; Marshman 2015, 35). To relinquish one's signet ring would represent the relinquishment of one's identity (or replacement with another) and therefore is only likely to have happened at significant transitions in life (e.g. marriage; retirement from the army) or after death. It is therefore particularly interesting to note that two of the gemstones have been deliberately defaced (NCL-919146 and FIG. 4.9C; BH-12BEF9), thus rendering them useless as seal matrices.[25] There is also damage to the shoulders and settings of two signet rings missing their intaglios, suggesting that they had been removed prior to deposition, perhaps to be re-set in new rings (BH-12A254; BM-A7A487). Only one signet ring is within the male size range (BH-12BEF9), with the remainder within the female size range.

Roman signet rings could embody not only the identity of their wearer but their relationship with the divine (Marshman 2015, 37). The depiction of deities on intaglios may have been viewed as a way to impart a god or goddess' sacred power to the wearer (Platt 2006, 234–5), while intaglios engraved with a particular god or goddess have been found at temple sites associated with that deity (Henig 2007, 19–20; Swift 2011, 217). However, no particular motif appears to be favoured among the legible intaglios from the river, which include depictions of a man milking a goat (BM-B477B9 and FIG. 4.9D),[26] Jupiter enthroned (BM-B37817), the *dextrarum iunctio* motif (NCL-919146), Bonus Eventus[27] (NCL-908827) and a satyr (NCL-D9AD75).

A more concrete link with the divine can be seen in a dedicatory silver finger-ring with a bezel reading 'DM/ΛRT': 'To the God Mars' engraved *en pointillé* (BM-42989D and FIG. 4.9E; Hassall and Tomlin 1989, 337, no. 29). The biographies of dedicatory finger-rings are unclear; for example, it is not known whether they were purchased specifically to offer as votive gifts or were worn by their owners to signal their allegiance to a particular deity prior to deposition. It is possible that Mars Condates was the god of the river at Piercebridge (cf. *RIB* 1024 and Ch. 23) and rings inscribed to Mars have been found in the Rhine at Mainz (*CIL* xiii 10024.13) and at Benwell (Wright 1947, 181, no. 12).

Two further finger-rings are inscribed. The first (BM-B4E753 and FIG. 4.9F) has the personal exhortation: 'ΛVE ΛMΛ': 'Greetings! Love (me)' stamped on the bezel (already published as Hassall and Tomlin 1989, 337, no. 28). The inscriptions '*Ave*' and '*Ama*' are relatively common on finger-rings (see *CIL* xiii 10024.39ff. for examples). A gold ring with the inscription 'AVE MEA VITA' is known from Ribchester (*RIB* II.3, 2423.7) and one with the inscription 'AMA ME' from Carlisle (*RIB* II.3, 2422.2). BM-B4E753 has substantial and irregular wear to the base of the hoop, suggesting it had been worn for a considerable period before deposition in the river.

The second is a copper-alloy finger-ring (BM-B1A12C and FIG. 4.9G) with a coating of white metal on its bezel incised with the legend: 'ƆLMI' '(*centuria*) L(uci) M(...) I(...)' 'The century of Lucius M(...) I(...)'. While finger-rings incised with the three initials of a Roman citizen's *tria nomina* are quite common, the only other instance of the initials being preceded by a centurial sign seems to be *RIB* II.3, 2422.51, which reads 'ƆMAV'. There is no instance in *CIL* xiii 10024 (*anuli et gemmae*), nor in Henkel's (1913) survey of Roman finger-rings from the Rhineland.

[24] There is also an antiquarian find from Piercebridge of a large gold signet ring weighing 12 g, described as a 'thumb-ring' and therefore probably within the male size range. It possessed a hammered hoop and an oval facet-engraved intaglio depicting a male and female head facing each other (Scott and Mason 2008, 14).

[25] Nero's one time favourite, Petronius, broke his signet ring before committing suicide so that the (unauthorised) use of his device would not put others in danger (Tacitus, *Annals* 16.19).

[26] Goats are a popular motif at Caerleon as elsewhere on military sites (Marshman 2015, 206). Satyrs are the most common motif at fortresses whereas Bonus Eventus is most common in forts (Marshman 2015, 158). Jupiter is three times more common at forts as fortresses (Marshman 2015, 158).

[27] Bonus Eventus is the most common image on intaglios from Roman Britain (Marshman 2015, 141).

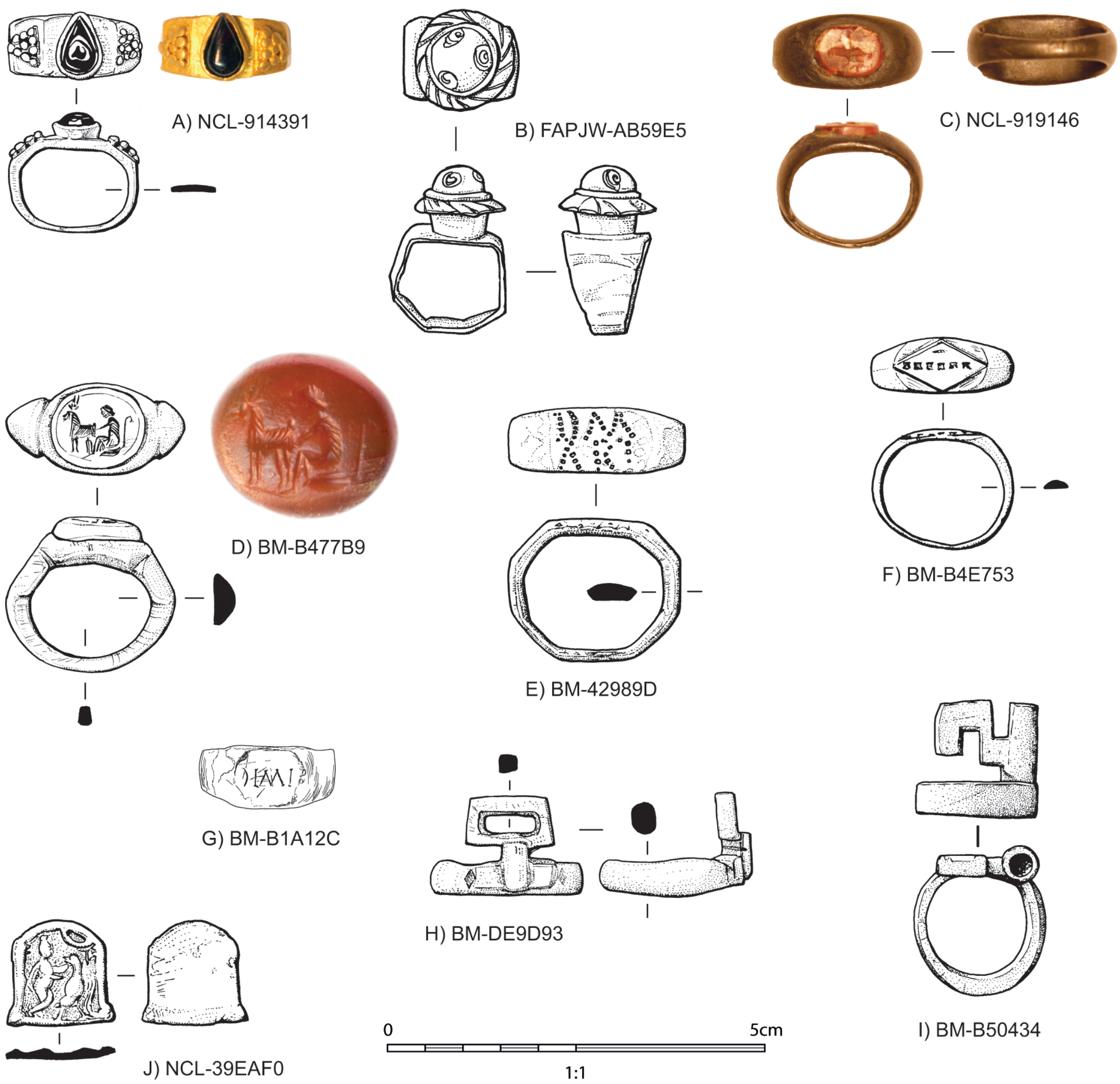


FIG. 4.9. Finger-rings from the river

The purpose of the inscription is unclear. Since it is retrograde and very shallow, it cannot have been used to sign lead sealings. Perhaps the owner was simply asserting his membership of the century, but it should also be noted that the ring is rather small for a man's finger-ring, falling more comfortably within the female size range.[28] Again, it is a possibility that this finger-ring belonged to a male servant within the military community.

Given that no examples were found during the excavations at Piercebridge, it is notable that fourteen finger-ring keys were recovered from the river (FIG. 4.9H, 4.9I and 4.9J). The finger-ring key is the most common ring type from the river and together they represent one of the largest assemblages of finger-ring keys known from Roman Britain. As Guiraud noted, finger-ring keys tend to be found more frequently in urban settings (Guiraud 1989, 193); 21 are known from Colchester, 29 from London and nine from Richborough (Swift 2017, 238–9). On the Continent, similar-sized assemblages are known from Nijmegen (23) and Vindonissa (59) (Swift 2017, 239–40). Although frequently argued to be non-functional, finger-ring keys have been found in association with boxes and lock fittings (cf. Crummy 1983, 84–8, cat. no. 2195 and fig. 90; Johns 1996a, 55; Swift 2017, 22). At least one example from the river shows signs of wear to the hoop (BM-DE8496). There are also three lead-alloy copies (BM-DD8791; BM-

[28] The identification, transcription and interpretation of the legends on the inscribed finger-rings were undertaken by R.S.O. Tomlin.

B5D436; BM-C4BA42). They may have acted as patterns for the production of finger-ring keys, although it is also possible they were intended as votive models, with ritual resonances, perhaps symbolically providing access to locked places.

Swift (2017, 23) noted that the distribution of sizes clusters around female sizing with a peak at 17 mm, with only 7 per cent of examples falling within the child range and 17 per cent within the male range. While only nine of the riverine finger-ring keys survived sufficiently to take measurements, they seem rather smaller in size with four of the examples falling within the child size range. As the kinds of items kept in lockable boxes are mainly associated with adults, it has been argued that these rings were not worn by children (Furger 1990) but this is clearly not always the case (Swift 2017, 189).

A clearly non-functional sub-type of the finger-ring key is Guiraud Type 5, which is found in urban and military settings throughout the entire Roman period. Type 5e is very rare, essentially only manufactured in gold or silver and typically found only in north-east Gaul (Belgium) (Guiraud 1989, 193). Type 5e finger-ring keys are argued to date from the second half of the second century into the third century based on one example from a dated context at Augst (Swift 2017, 28; Riha 1990, 38–9). The silver example from the river (NCL-39EAF0 and FIG. 4.9J) depicts the abduction of Ganymede by Jupiter in the guise of an eagle.

EARRINGS

In addition to the re-purposed gold earring discussed above, five further earrings were recovered from the river. They are most common on military and urban sites in Roman Britain (Swift 2011, 210) and attest to the introduction of a new cultural practice. There are two gold examples (BM-489856; BM-91F36C), one silver (BM-80EE16) and two copper-alloy (BH-7AEA76; BM-C94EC1). A further three fragments of gold jewellery may represent earring elements (BM-807DED; BM-F489B0), although this is not altogether certain. The complete examples all fit within Allason-Jones' (1989) typology and can be classified as Allason-Jones' Type 13a, Type 1 and Type 2d respectively, all of which are broadly Roman in date. The Type 1 and Type 2d earrings are paralleled by three examples recovered during the excavations at Piercebridge (Allason-Jones 1989a, 142 and no. 398).

A fragment of an elaborate earring dating to the second or third century A.D. (BM-91F36C) represents an exception (FIG. 4.10A). This type of earring has no known parallels in Roman Britain, instead being popular in Moesia and Thrace (cf. Ruseva-Slokoska 1991, 123–4, cat. nos 50a, 50b, 51a, 51b). Along with the gold bracelet fastener discussed above, such an 'exotic' piece is certainly out of place in the northern frontier zone and may form part of an array of gold jewellery worn by a wealthy woman with continental links.

While earrings were recovered from the excavations at Piercebridge in small numbers, there are no gold examples. Gold earrings are particularly rare in Roman Britain with the last major survey cataloguing only 82 examples from the entire province (Allason-Jones 1989a), with their distribution clearly concentrating on the military areas of the North (Allason-Jones 1989a, 37). The presence of five gold earrings in the Piercebridge assemblage therefore strongly suggests the presence of women belonging to the upper echelons of the military community.[29]

BEADS

Only four glass beads were recovered from the river. They include a cylindrical bead (BM-DD8A2E and FIG. 4.10B), a hexagonal-sectioned bead (BH-F0DD64 and FIG. 4.10C) and two square-sectioned beads (BH-523DD9/FIG. 4.10D and NCL-3EE707). The cylindrical bead (BM-DD8A2E) is opaque and yellow and can be classified as a Guido Class 8 (Guido 1978, 73).

[29] It is worth noting that there is still some debate regarding whether earrings were worn exclusively by women; if worn by men, their presence may be related to the 'non-Roman' practices of provincial soldiers who served in the army (Allason-Jones 1989a, 17–18).

Eleven similar beads have been found at Vindolanda from contexts in the third-century bath-house (Birley and Greene 2006, 31). They have also been found at many other sites in northern Britain, including Housesteads (Guido 1978, 212), Birdoswald (Price and Cottam 1997, 275, nos 22–25) and Piercebridge (unpub.).

Hexagonal-sectioned beads, like BH-F0DD64, were in use throughout the Roman period and were most common in the fourth century (Guido 1978, 96–7, nos 8–9, fig. 37). Strings of these beads have occasionally been identified. For example, a length of gold chain with four green hexagonal beads was found at Marlowe Car Park, Canterbury (Johns and Garrard 1995, 1066–7, no. 660, fig. 460) and a length of cord from Dalton Parlours villa, Yorks., was found with 15 blue hexagonal beads (Price 1990b, 103, 105, no. 43, fig. 79).

Two dark green square-sectioned beads were identified (BH-523DD9 and NCL-3EE707). A small number of beads of this type have been noted in second-century contexts (Guido 1978, 96, 212–15, nos 6–7, fig. 37), but they are most commonly found in late third- to late fourth-century contexts. They are frequently found singly or in small groups on occupation sites, although they may have been part of more complex jewellery; for example, a gold earring with a green square-sectioned bead held in its centre with a length of soldered gold wire was found in a fourth-century context at Birdoswald (Summerfield 1997, 282, no. 77, fig. 191, pl. 11).

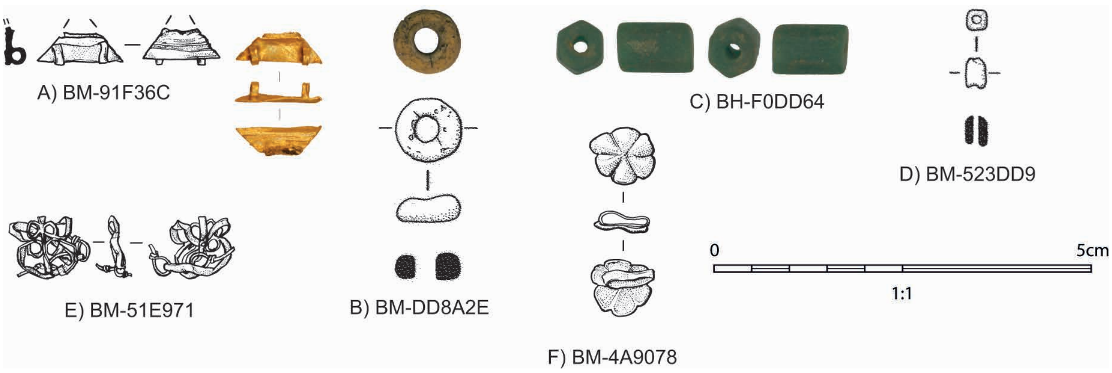


FIG. 4.10. Other jewellery from the river

OTHER JEWELLERY

23 fragments from at least eight gold necklaces dating to the Roman period were recovered from the river (FIGS 4.10 and 4.11). As is the case with so many other objects in the assemblage, there are strong indications that these fragments were deliberately cut or broken, with particular elements favoured for deposition. Necklace clasps dominate, with eight hooks (BM-923C91; BM-81D696; BM-81A55C; BM-804966; BM-7EA7E5; BM-7E7273; BM-495F62; NCL-124148) and three eyes present (BM-8147FC; NCL-963FC5; NCL-40BA62); seven chain links (BM-91DD93; BM-7F7D8D; NCL-81D760; NCL-91ED05) and three lengths of gold chain (NCL-41F574; BM-7FBA2C; BM-DE820D), each with a different construction technique, were also found. A further two gold items (BM-51E971/FIG. 4.10E; BM-4A9078/FIG. 4.10F) may be decorative elements from necklaces, although without parallels this is far from certain. Although Roman gold necklaces tend to be decorated with gems or glass beads, none were found in association with the fragments. In addition, there were 32 cut fragments of gold sheet and wire. These fragments may represent offerings of bullion or may even parallel a practice recorded in the temple of Isis and Magna Mater in Mainz, where small fragments of gold were placed in pottery vessels alongside other ritual offerings (personal observation at Taberna Archaeologica, Mainz).

Other items of personal adornment from the river include a pendant of uncertain date made from copper alloy with a black glass setting (NCL-D9C287) and two objects that appear to

FIG. 4.11. A selection of gold jewellery from the river. Outer circle clockwise from top left: BM-DE820D, NCL-41F574, BM-8147FC, BM-7E7273. Inner circle from top left (earring): BM-489856, NCL-2D4F25, NCL-914391, FAPJW-AB59E5, BM-4A9078 (*Photo: Aaron Watson*)

depict phalluses (BM-3AD788; BM-A0BEB2). BM-3AD788 is made from lead while BM-A0BEB2, less certainly identified as a phallus, is made from silver. The phallus as a protective device permeated Roman life, and phallus amulets are often associated with children (cf. Plouviez 2005; Crummy 2010, 51–2; Swift 2017, 169).

SHOES

By Elizabeth Greene

Fragments of four leather shoes were recovered from the river (BM-4AD3CB; BM-821747; BM-751115; NCL-3B44B3). They represent only a small sample of the actual shoe assemblage found by the divers who estimate that they located a further 45 examples. Unfortunately, these were all re-buried due to concerns about the cost of preservation before any observations could be made about their style and date (Middlemass and Mitchinson pers. comm.). As the shoes which were retrieved were selected at random, it is hoped that they may reflect the composition of the larger assemblage.

All four preserved examples date to the later second or third century A.D. and comprise the cowhide soles or insoles of shoes rather than the uppers.[30] Despite the absence of the uppers, two of the shoes can be assigned a type. One is a sandal, marked clearly by the slit near the toes into which a thong would have been inserted (BM-821747), while the other is a military-type boot with a utilitarian nailed tread-sole designed for heavy use (BM-751115). Their sizing

FIG. 4.12. A leather shoe from the river (BM-4AD3CB)

[30] Shoe sole units are commonly made with thick layers of cowhide, but it has been noted that different types of leather dominate the assemblages on different sites. Cowhide dominates in the assemblage from Vindolanda (van Driel-Murray 2001, 186), whereas goat skin is the preferred material in the large leather assemblage from Valkenburg in the Netherlands (van Driel-Murray 1977, 249). No general deduction can be made about the Piercebridge shoes on such a small sample.

suggests they were all made for men, with the military boot being particularly large. However, the impression of the actual foot-fall on the insole of one of the shoes (NCL-3B44B3) measures between 200 and 210 mm indicating that despite its size (253 mm), the actual wearer may have been female. Interestingly, three out of four of the shoes were made for the left foot, perhaps indicating deliberate selection, a practice noted in shoe deposition in watery contexts (van Driel Murray 1999, 137). The single shoe made for the right foot (BM-4AD3CB) has a tread-sole decorated with an elaborate nail pattern dating from *c.* A.D. 170 (van Driel-Murray 2007, 351).

Elsewhere in Britain, shoes are found chiefly in rubbish deposits such as fort ditches (van Driel-Murray 1993) and pits or discarded in domestic spaces (e.g. Vindolanda, van Driel-Murray 1998; Greene 2013). However, increasingly the presence of shoes in ritual contexts such as springs (e.g. Coventina's Well: Allason-Jones and McKay 1985, 37) or in wells associated with temples (e.g. Matagne-la-Petite: De Boe 1982, fig. 19) has led to a reassessment of their ritual resonances (van Driel Murray 1999). Shoes may symbolise travel and more broadly journeys to the afterlife (van Driel Murray 1999, 131). Worn shoes take on the shape of the person who wears them and are therefore deeply personal in nature, while the footprint leaves clear unequivocal proof of the existence of a living person and thus can function as a signature or substitute for that individual (van Driel Murray 1999, 135ff.). That shoes form a pair invites their use in contractual situations, primarily as a pledge of mutual obligation and so it is even possible that they played a part in the Roman ritual of the vow. It has been suggested that some of the rather exceptional shoes from the Saalburg (Busch 1965, nos 220, 221) may be evidence of this practice (van Driel Murray 1999, 136).

CONCLUSION

In summary, the assemblage of objects of personal adornment from the river at Piercebridge provides a number of insights, in particular with regards to dating and identities.

Some of the very early brooches indicate limited late first- to early second-century activity, while some hairpins could be evidence of local female deposition prior to the arrival of soldiers. There was clearly an increase in activity during the course of the second century but it is not posssible to establish exactly when this occurred. There is certainly more evidence of second-century activity near the bridge than was found during excavations at Piercebridge. In the late second or early third century there is an explosion in the number of objects recovered before a late Roman decline.

Women are very strongly represented by objects of personal adornment, not just by objects such as bracelets, hairpins and earrings usually associated with women, but also in the finger-ring assemblage, particularly signet rings which one might have expected to be dominated by larger, masculine ring sizes. There is also limited evidence for the presence of children amongst the finger-rings, the phallic pendants and possibly the bracelets. However, there are clearly also numerous men, probably mostly soldiers, represented by shoes and various types of brooches.

At Catterick, it was suggested that there might be a link between the presence of Knee brooches and the Sarmatian cavalry. The presence of gold and glass beads has also been used as supporting evidence (Cool 2002, 43), while tiles stamped with the legend BSAR possibly to be read as *Eq(uites) Sar(matae)* have been found near Bainesse (*RIB* II.3, 2479). Jewellery with parallels in Moesia might give some further weight to the theory, as the province's northern frontier borders the territory of the Iazyges from whence the Sarmatian cavalry originated (Frere 1987, 146). Whatever their specific origin, many of the objects hint at the long-distance movement of people from the Continent.

There also seems an unusual level of wealth reflected in the assemblage, something which is rare in northern Britain, particularly in settlement or cemetery contexts (Cool 2008, 253). There are numerous precious metal finger-rings, as well as gold earrings and jewellery, many of which appear to be associated with very high-status women living in a military milieu in northern Britain. A comparison of the quantities of precious metal items (including coins) found at four sites in northern Britain confirms this (see Ch. 22).

CHAPTER 5

TOILET, SURGICAL OR PHARMACEUTICAL EQUIPMENT

By Philippa Walton

INTRODUCTION

This chapter discusses 69 objects associated with personal grooming, wellbeing and bodily representation recovered from the river. They include items such as tweezers and nail-cleaners which are commonly found in sets, as well as a variety of spoons, probes, spatulas and scoops which may have fulfilled a cosmetic, pharmaceutical or medical function (Crummy 1983, 55). Table 5.1 gives a summary of the objects found in the river in this functional category alongside those from the excavations at Piercebridge. Although frequently categorised as being evidence for a civilian or even a female presence at a site, it is clear that many, but not all, of these items were used by both soldiers and civilians and by men and women alike. For example, the finds from excavated turrets on Hadrian's Wall included nail-cleaners, needles and tweezers despite the fact that the majority of turrets were only occupied for 60 years in two relatively clear-cut stages and then only for military purposes (Allason-Jones 1988, 822). As a result, we must be very careful about using them as an indicator of occupation or gender identity.

MIRRORS

One certain and one possible mirror fragment were amongst the assemblage. The first, NCL-F1CEF4 (FIG. 5.1A), may represent the earliest object retrieved from the riverbed. It is an incomplete iron mirror handle of a type particularly common in East Yorkshire. The type is usually dated to between 400 and 150 B.C. (Fox 1949, Type IB; Joy 2010, table D2), although two are also known from first- or early second-century contexts (Brecon Beacons and Carlingwark Loch: Piggott 1952, fig. 8). Its presence in the assemblage is important. As a clear piece of 'native' material culture, it provides tentative evidence for a local pre-Roman origin for depositional practice. Although categorised as a cosmetic item, it is also possible that it was used in a ritual or magical capacity (Joy 2010, 50) and may provide a potential indicator of the presence of women at the site (ibid., 74–5).

The second fragment (NCL-26E7A5 and FIG. 5.1B) may represent the remains of a copper-alloy mirror handle. It is similar to an example from South Shields (Allason-Jones and Miket 1984, 166, cat. no. 3.429) which was tentatively identified as such, although a further parallel from the excavations at Piercebridge has been described there as the possible handle from a medical instrument with detachable blades or needles (Allason-Jones 2008, 11–30, cat. no. 210 and fig. D11.22).

TABLE 5.1. A SUMMARY OF THE COSMETIC, PHARMACEUTICAL AND SURGICAL IMPLEMENTS FOUND AT PIERCEBRIDGE

Site	**Piercebridge river**	**Piercebridge excavations (Cool 2008, 256, tables 11.15 and 11.16)**
Mirror	2	0
Cosmetic mortar	1	0
Pyxis	1	0
Tweezers	10	10
Nail-cleaner	3	2
Scraper	1	0
Rod	0	1
Comb	0	6
Shears	2	0
Razors	4	0
Spoon probe/*ligula*	27	16
Toilet spoon/*cyathiscomele*	12	3
Epilation forceps	1	0
Probe	5	2
Medical hook	0	1
Tongue depressor	0	1
Tattoo or surgical tool	0	1
Scalpel handle	0	1
Cautery	0	1
TOTAL	**69**	**46**

OBJECTS ASSOCIATED WITH THE STORAGE AND PREPARATION OF COSMETICS[31]

Another example of 'native' material culture is NCL-2BE823 (FIG. 5.1C), a copper-alloy end-looped cosmetic mortar. Probably used to grind small quantities of cosmetics, objects of this type are broadly dated to the first to third century A.D., although they appear to have been particularly popular in the late first and early second century A.D. where they appear alongside a range of 'Roman' cosmetic equipment (Jackson 2010, 69). With their distinctive styling, it is possible that they were used by those who wished to express or emphasise a British or Romano-British identity rather than a Roman one (Eckardt and Crummy 2008, 72; Jackson 2011, 267) and were accordingly selected as grave goods and more occasionally as temple offerings (Jackson 2011, 266). Interestingly, this mortar represents an outlier in the distribution pattern for end-looped cosmetic mortars and is therefore likely to have travelled some distance before deposition in the river. Indeed, the distribution pattern focuses on south-eastern Britain with a particular emphasis on East Anglia (Jackson 2010, 58, map 4). Along with an example found during the excavation of the fort and *vicus* at Kirkby Thore in Cumbria (Jackson 2010, 143, cat. no. 300), it represents the northernmost example of the type.

A copper-alloy lid (BM-DD24DC and FIG. 5.1D) decorated with concentric rings of enamel was also found. Dating to the second or third century A.D., it likely formed the upper part of a copper-alloy *pyxis* used to store cosmetics. A cylindrical container with a similar diameter from

[31] Excluding the seven 'possible medical instruments' found in the excavations recorded in table 11.16 (Cool 2008, 256).

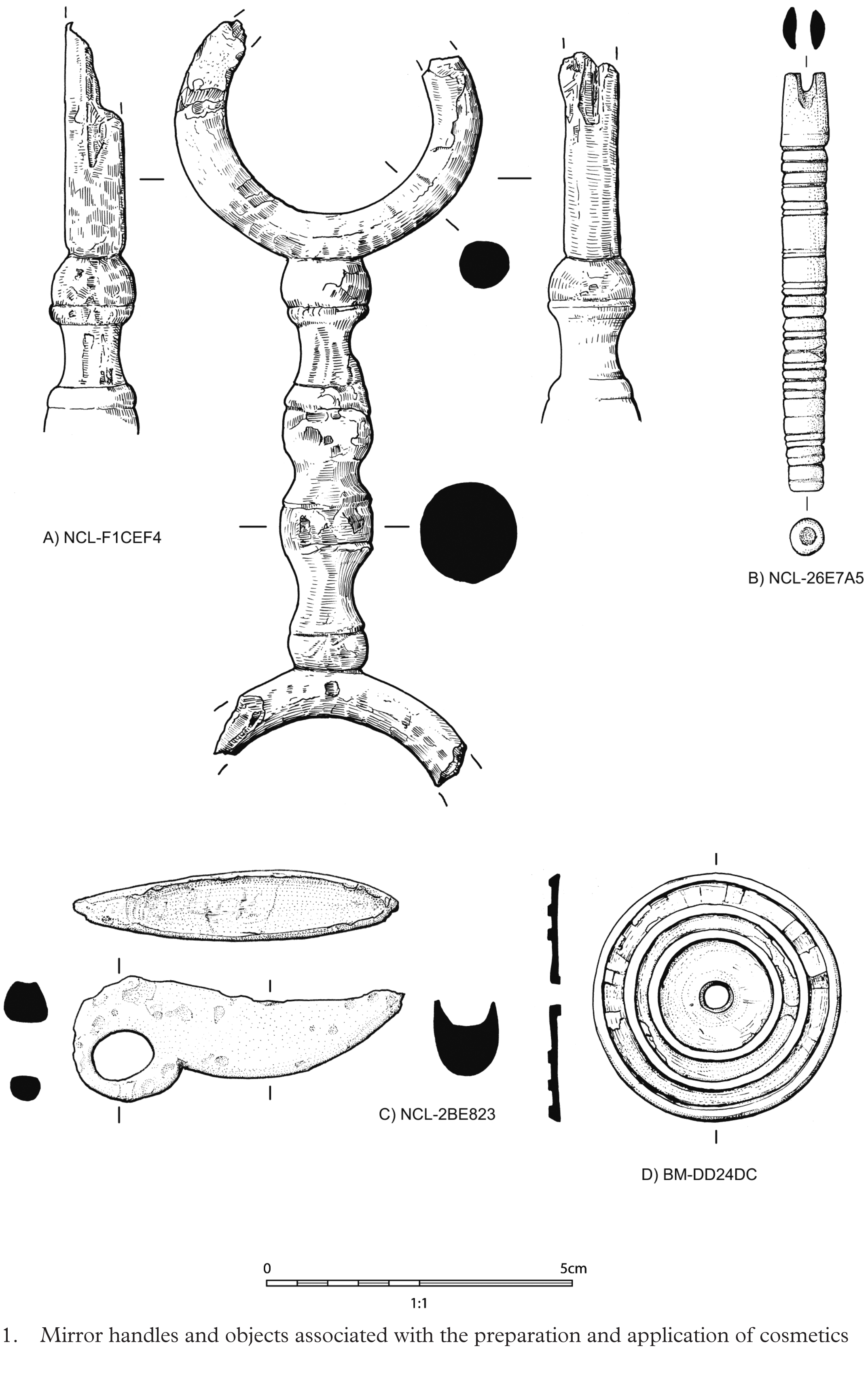


FIG. 5.1. Mirror handles and objects associated with the preparation and application of cosmetics

Carlisle was found to contain a blue substance thought to be make-up (Hobbs 2005, 15; Eckardt and Crummy 2008, 27), although other enamelled boxes known throughout the Roman Empire have been identified as inkwells (Eckardt 2017, 61).

TWEEZERS AND NAIL-CLEANERS

Ten pairs of tweezers and three nail-cleaners were recovered from the river. All of the tweezers are straight-armed and of a type relatively common on northern and military sites (Eckardt and Crummy 2008, 61). While it is possible that they formed part of small personal grooming sets, three possess sliding loops to secure the blades (NCL-972B03 and FIG. 5.2A; NCL-ABF097; BM-056371) which may indicate that they served a medical function (Eckardt and Crummy 2008, 158). However, the presence of the nail-cleaners is unusual. Although a distinctively Romano-British object type, they are rare in northern Britain, particularly at sites associated with the army (Crummy 2001; Eckardt and Crummy 2008, 57 and 71). Two of the examples (NCL-F1C187and FIG. 5.2B; BM-05491A) can be dated to the mid-first to second century A.D. (Crummy 1983, 58), whilst the third, with its elaborate moulded decoration (BM-1EC96D and FIG. 5.2C) is dated to the late fourth or even the fifth century A.D. (Eckardt and Crummy 2008, 134). Strikingly, it is one of the few late Roman objects to be recovered from the river.

A further object (BM-F9F269 and FIG. 5.2D), which may represent an unusual type of toilet instrument, was also found. With a flat head and three prongs, it can be paralleled by examples from Silchester, Birdoswald (Summerfield 1997, 287, no. 106 and fig. 199) and the Continent. Its precise function remains unknown, although it is likely to be typologically and functionally related to the nail-cleaner (Eckardt and Crummy 2008, 20, fig. 2e; Miron 1989, Abb. 5, 18).

SHEARS

The remains of two pairs of shears were recovered from the river (BM-0438F9; BM-03FBC8 and FIG. 5.2E). Being made entirely of copper alloy, both examples are extremely unusual and it may be that they are not Roman in date. However, a pair of copper-alloy shears of a similar form to BM-03FBC8 is known from Corbridge[32] (Swift 2017, 68–9 and fig. 2.23), while other shears combining iron blades with copper-alloy springs are known throughout the Roman world (cf. Bolla 2004, 208, no. 33 and 216, no. 44 for grave finds from Aquleia). Both of the Piercebridge shears are relatively small and although scholars of ancient medicine associate copper alloy with surgery (Borobia Melendo 1988, 288), it is likely that they could also have been used for personal or domestic purposes (Manning 1985a, 34; Eckardt and Crummy 2008, 37; Swift 2017, 56–101).

RAZORS

The handles of four small knives or razors were also recovered (BM-B691DA; NCL-920745; BM-DC6171; NCL-9FFE11). Because of their size, they are usually considered to have been used in grooming, although a range of other functions is also possible. The first (BM-B691DA and FIG. 5.2G) comprises an incomplete two-piece bone handle of a type which is relatively common in second-century contexts. For example, a similar two-piece handle was recovered from the excavations at nearby Catterick (Wilson 2002, 184–5, cat. no. 38 and fig. 318). The second (NCL-920745 and FIG. 5.2F) is a copper-alloy handle in the form of a three-dimensional left leg and foot. Similar objects are known from a number of military sites in Britain (Worrell 2005, 453; Cool 2008, 265), although they are usually identified as box supports or furniture fittings, rather than razor handles. It is a high-quality piece, with the sock and sandal rendered as incised and moulded decoration.

[32] The pair from Corbridge is one-piece, raising the possibility that the spring attachment on BM-03FBC8 is a repair.

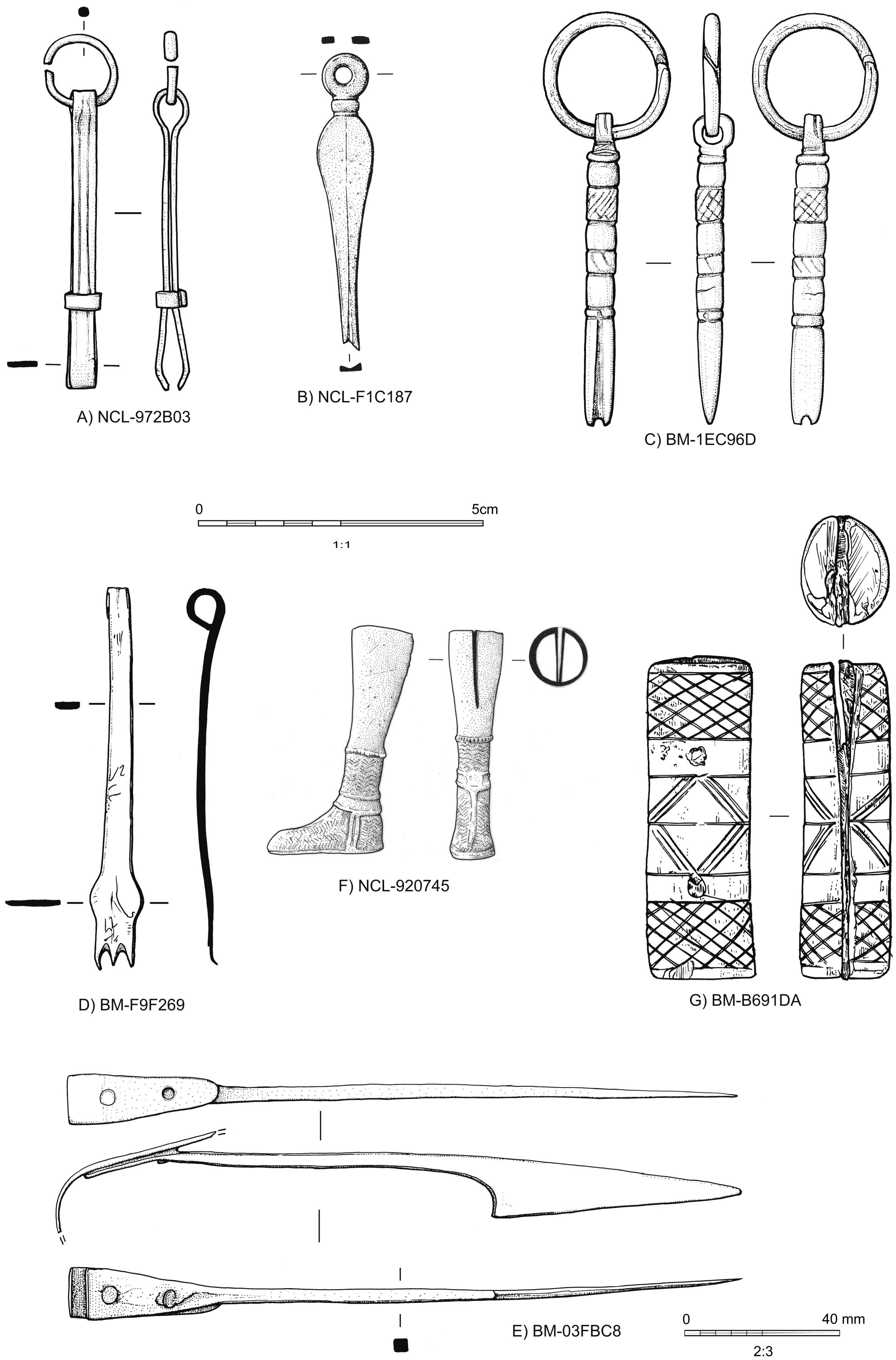


FIG. 5.2. Tweezers, nail-cleaners, razors and shears

Two of these handles (BM-DC6171 and NCL-9FFE11) do not fit into Manning's typology. The first, BM-DC6171 (FIG. 5.3A) was made from the unworked antler of a roe deer; parallels are scarce and come from burial contexts. Grave goods in a burial of uncertain date found at Piercebridge in the mid-nineteenth century included 'a piece of stag's horn *c.* 150 mm long thought to be a knife handle' (Scott and Mason 2008, 14), while a similar knife with its corroded blade intact has recently been discovered during the excavation of a burial provisionally dated to the late first or early second century A.D. in the western cemetery associated with the *canabae* at Aquincum in Pannonia (O. Lang, pers. comm.).

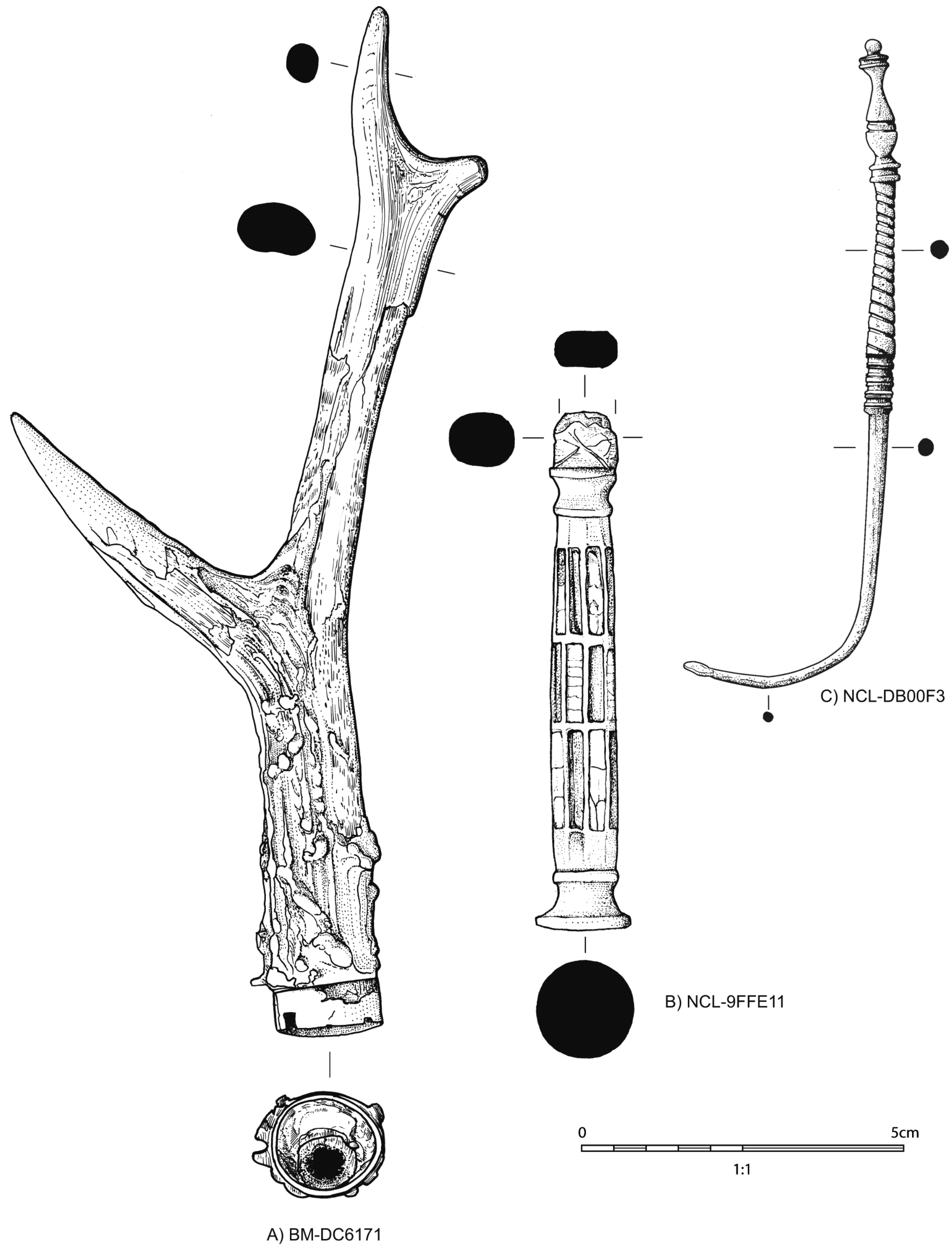


FIG. 5.3. Knife handles and a *ligula*

The second (NCL-9FFE11 and FIG. 5.3B) is an elaborate copper-alloy and enamelled handle. Its design is similar to a type known from *Augusta Raurica* which has a facetted handle with elaborate decoration, although they do not appear to be enamelled (Kaufmann-Heinimann 1998, 33 and Abb. 9). Kaufman-Heinimann notes that the type dates from the mid-first century onwards with findspots focused on northern and western Switzerland, the Rhine *limes* and Britain. They appear to have an overwhelmingly military distribution (ibid., 32).

TOILET ARTICLES (SPOONS, SPATULAS AND SCOOPS)

39 toilet articles were recovered from the river, nearly twice the number recovered from the excavations at Piercebridge (Cool 2008, 253). All are items which could have been used for either medical and pharmaceutical purposes, or for mixing and applying cosmetics (Künzl 1982; Crummy 1983, 60; Eckardt and Crummy 2008). They include 24 *ligulae*, 12 *cyathiscomele* or spoon probes and three *ligula* hybrids. Although the spoon probes are all of types commonly found throughout Roman Britain (see, for example, NCL-428735 and FIG. 5.4D), the assemblage of *ligulae* is more unusual. One (NCL-DB00F3 and FIG. 5.3C), with its elaborate mouldings and niello inlay, is of extremely high-quality manufacture and may be part of a surgical set, while another (BM-BA5886 and FIG. 5.4C) is pierced, presumably for suspension.

Three unusual copper-alloy objects (BM-F64D61; BM-F5ADAA and FIG. 5.4A; BM-F722A3) were recovered from the river. They appear to combine the scoop of a Roman *ligula* with a hooked chain attachment reminiscent of a steelyard. Few parallels are known for this object type. An object from London possesses a *ligula* scoop and two perforations in the stem, but has decorative pendants looped through the perforations (Marshall and Wardle in prep., SF 469). An example identified as a steelyard was found at South Shields fort (Allason-Jones and Miket 1984, 172, SF 3.468), while another was recovered during the excavations in Tofts Field, Piercebridge (Allason-Jones 2008, 11–31, cat. no. 212; Cool 2008, 253).[33] Given the paucity of parallels, it is likely that they had some specialised use which was in some way unique to the region and to Piercebridge in particular. The scoop and hook arrangement may suggest a dual purpose enabling the measurement and weighing of ointments or pastes (Allason-Jones 2008, 11–31) or the attachment of an organic item, now decayed.

SURGICAL AND MEDICAL IMPLEMENTS

The excavations at Piercebridge, particularly those in the southern *vicus* area, produced a relatively high concentration of surgical tools, possibly hinting at some specialised activity on the southern side of the river (Cool 2008, 253–4). However, this is not reflected in the river finds. In addition to the *ligula* mentioned above, only one certain surgical instrument, a pair of corroded copper-alloy epilation forceps (BM-1F8675 and FIG. 5.4B) was recovered from the river. Whilst simple tweezers were common tools used in everyday grooming sets (Eckardt and Crummy 2008, 48), this tool, decorated with mouldings, is similar to others found in continental medical sets (Gostenčnik 2002, Abb. 3, 2; 2013, Abb. 2, 3–4; Jackson and La Niece 1986, fig. 1, 10–11). The jaws of BM-1F8675 are lost to corrosion, but both smooth and serrated types exist, some of which may have had specialist medical functions, such as removing tonsils or haemorrhoids, although smooth examples could have more varied uses.

Two *spathomele* (NCL-42AB01; NCL-42DCF2 and FIG. 5.4F) and three spatula probes (NCL-DC5CC1 and FIG. 5.4E; NCL-8CD556; BM-2D5D3D) of undefined types were also found. The *spathomele* was generally used for pharmaceutical purposes such as mixing and applying ointments (Crummy 1983, 63), while spatulas such as NCL-DC5CC1 often formed one end of a double-ended instrument incorporating a scalpel.

[33] Five further *ligulae* recovered from the excavations at Piercebridge also had perforated necks, although they did not possess hooks and chains threaded through them (Cool 2008, 253).

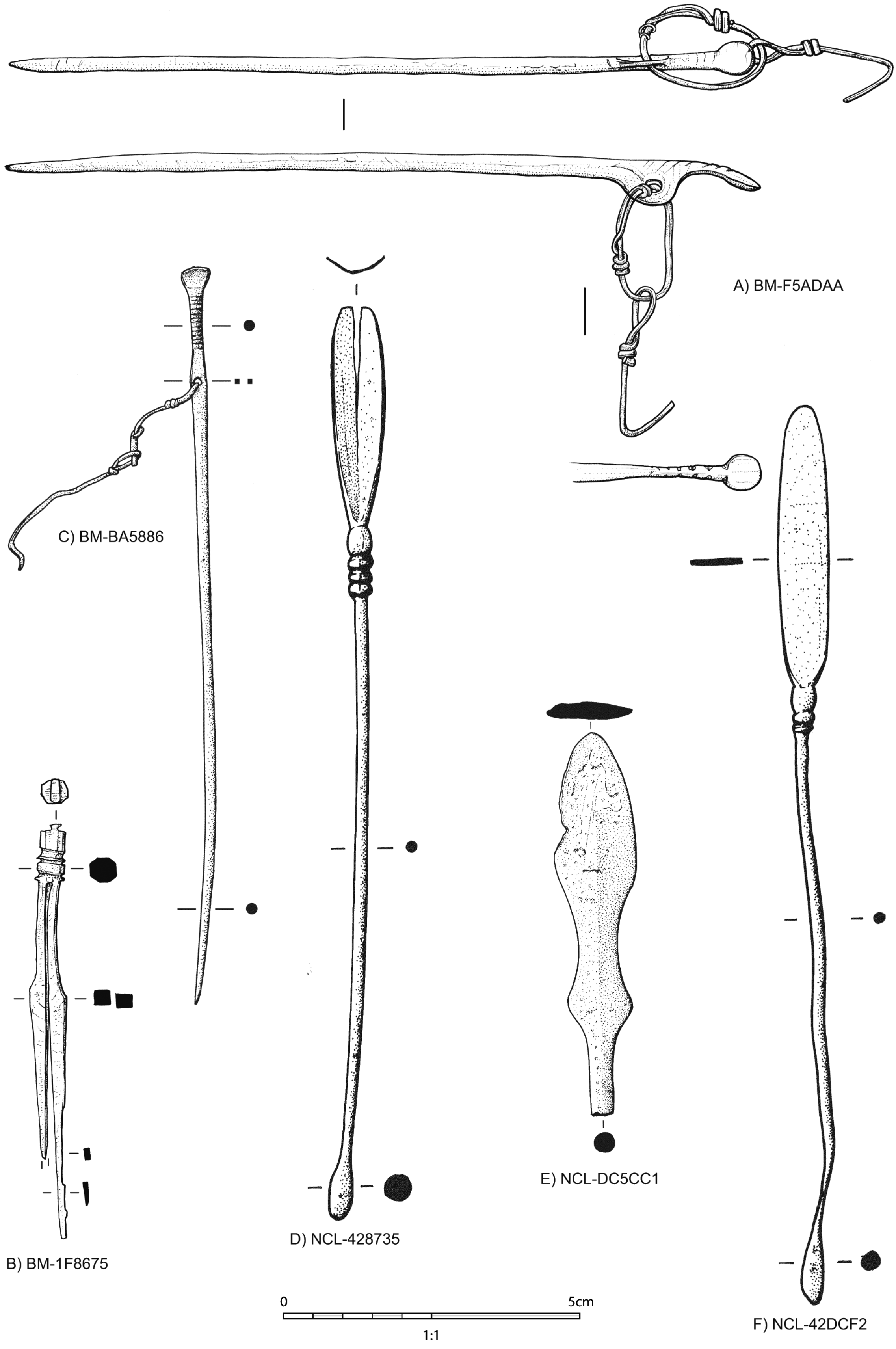


FIG. 5.4. Cosmetic, toilet, pharmaceutical or surgical equipment

CONCLUSION

Many of the objects discussed in this chapter can only be broadly dated to the Roman period. However, where narrower date ranges can be assigned, it appears that the material has a slightly earlier character than many of the other functional categories recovered from the river. The late Iron Age mirror handle is extremely significant, particularly as it represents the earliest datable find from the river, while other objects such as the cosmetic grinder and two of the nail-cleaners suggest at least some activity in the first and second centuries A.D. It is also notable that these early objects are almost entirely absent from the excavations at Piercebridge (see Table 5.1) and are associated with the creation and maintenance of 'native' rather than Roman modes of bodily representation. They may indicate 'local' involvement in deposition, either before or alongside military elements. The material culture of the late Roman period is poorly represented, with only a single object, a nail-cleaner, possibly dating to the fourth or fifth century A.D. The absence of bone and antler combs, which are unusually well-represented in the excavation record (Cool 2008, 251–2), may suggest that the deposition or disposal of objects in the late Roman period was sporadic or reflect taphonomic processes.

While it is possible that these objects were discarded as rubbish, it is notable that the majority of objects in this functional category are not damaged in any way and therefore it is conceivable that, like other objects associated with the body, they were imbued with some form of ritual significance, particularly in watery contexts (Eckardt and Crummy 2008, 103). For example, in London, a large number of intact objects associated with personal grooming were found concentrated in the Middle Walbrook valley in contrast to their deposition pattern across the city and suburbs (Crummy with Pohl 2008, 218–19). Medical implements may have had increased importance because of their association with a specific person or sick body. Alternatively, they may have been considered polluted if used in an unsuccessful operation or by an unsuccessful practitioner and deliberately deposited to keep them from 'infecting' people or places (Baker 2001, 58).

CHAPTER 6

MILITARY EQUIPMENT AND MILITARIA

By Philippa Walton

INTRODUCTION

Many of the object types discussed elsewhere in this volume suggest a military element to the activity focused on the river Tees at Piercebridge. The lead sealings allude to a network of contacts with both legionary and auxiliary troops, and the large number of third-century brooches are of types worn almost exclusively by soldiers. However, there are also 165 objects which can be categorised either as military equipment or more broadly as militaria. These include examples of offensive and defensive weapons, armour, items of personal adornment and tools. Table 6.1 provides a summary of the militaria from the river alongside material recovered from the excavations. It is acknowledged that the separation of material culture into 'military' and 'civilian' categories by use alone is problematic (Allason-Jones 1999; Bishop and Coulston 2006, vii) and so this chapter will discuss objects that can certainly be identified as being military in nature as well as those that might well be (Allason-Jones 2001; Bishop 2011, 115). Their study adds substantially to our understanding of the changing intensity of activity at the site and provides some of the strongest hints about the identities of those involved.

WEAPONRY

The average Roman soldier's life was not entirely taken up with fighting and as a result finds of weaponry at Roman forts and military installations are not as numerous as one might expect (Allason-Jones 2002, 821). The assemblage of weaponry from the river is small, comprising six spearheads, four ballista bolts, eighteen scabbard fittings, two arrowheads and an ear lath from a composite bow.

Unlike the five functional examples recovered from the excavations at Piercebridge (Allason-Jones 2008, 11.101), none of the four classifiable spearheads recovered from the river could have been used as effective weapons. The largest example (NCL-D10B58 and FIG. 6.1A) has a blunted leaf-shaped blade which is paralleled in a spear from Caerleon (Chapman 2005, Da15) but does not fit comfortably within existing typologies. The blade has been modified along one edge with the addition of least two semi-circular perforations or cut-outs. Pierced spears are known from a number of sites in Roman Britain, including Broomlee Lough, Northumberland (Manning 1976, 20 and 46, fig. 13, no. 19), London (Ranieri *et al.* 2017, 82A; Marshall 2018, 33) and *Ariconium* in Herefordshire (Cool 2012, 152–3 and fig. 4.40). The Broomlee example may be related to a ceremonial *beneficiarius* lance while the piercing on the example from *Ariconium* may have accommodated a pendant so that the spear could be used as a rattle or *sitra* (Cool 2012, 152–3 and fig. 4.40 referencing Wheeler 1930, 108, pl. XLVIII, nos 1–3). Whatever their precise function, miniaturised spears with piercings are also known from temple sites such

TABLE 6.1. SUMMARY OF MILITARY EQUIPMENT AND MILITARIA FROM PIERCEBRIDGE

Category	**Type**	**Piercebridge river**	**Piercebridge excavations (Cool 2008, 258, tables 11.17 and 11.18)**
Weapons	Dagger fittings	0	1
Weapons	Scabbard fittings	18	7
Weapons	Spearhead	6	5
Weapons	Arrowhead	2	5
Weapons	Ear lath	1	0
Weapons	Bolt head	4	2
Armour	Cuirass fittings	0	11
Armour	Scale armour	36	36
Armour	Helmet fitting	0	1
Armour	Shield edging	6	0
Uniform	Apron pendant	0	3
Uniform	Buckles and ring buckles	4	9
Uniform	Belt and strap fittings	88	33
Miscellaneous	Bead	0	2
Total		**165**	**115**

as Great Walsingham, Norfolk (Bagnall-Smith 1999, 34–5) and Uley (Henig 1993b, 131, find 4002) suggesting that the practice has some ritual resonances.

The remaining three (BM-A182A9; NCL-E0B693; NCL-E09415 and FIG. 6.1B) have the narrow, blunt blade and base expansion characteristic of Manning's Group 3 (Manning 1976, 19). Like the spear discussed above, the function of spears of this type remains elusive but clearly they would have been ineffective as weapons. It has been argued that they had a ceremonial function, symbolising military strength and authority (Alföldi 1959; Marchant 1990, 4) and they are frequently referred to as 'standard tips' (e.g. Casey and Hoffmann 1998, 135) due to their resemblance to a silver object found at Caerleon (Boon 1972, 67, fig. 38). At Chesters, an unparalleled 22 examples were recovered, with their prevalence over other items of weaponry linked to the site's status as a cavalry fort (McIntosh 2019, 90–4). It was suggested that they may have been used in cavalry parades and exercises such as the *hippika gymnasia* (ibid., 94). A fragmentary example from South Shields fort was found buried with a selection of third-century military equipment as part of a votive boundary deposit, perhaps indicating some religious significance (Croom 1995, 51; Haynes 1997, 122).

Four ballista bolts of Manning's Type 1 (Manning 1985a, 170–1) were also recovered from the river (BH-8D3E7F/FIG. 6.2B; BM-DFC612; BH-386ACB and NCL-DCA265/FIG. 6.2A), with the first containing remains of the wooden bolt-body within the socket. One further possible ballista bolt (BH-384F07) could not be assigned a type. Two similar examples were found during the excavations of the fort at Piercebridge (Allason-Jones 2008, 11.102, cat. nos 137–8). While the use of artillery by third-century auxiliary troops has been argued on the basis of two inscriptions from High Rochester which mention *ballistaria*, it is likely that catapults were also operated by legionary personnel (Bishop and Coulston 2006, 170). Their presence therefore cannot reliably provide an indication of the identity of the troops responsible for their deposition.

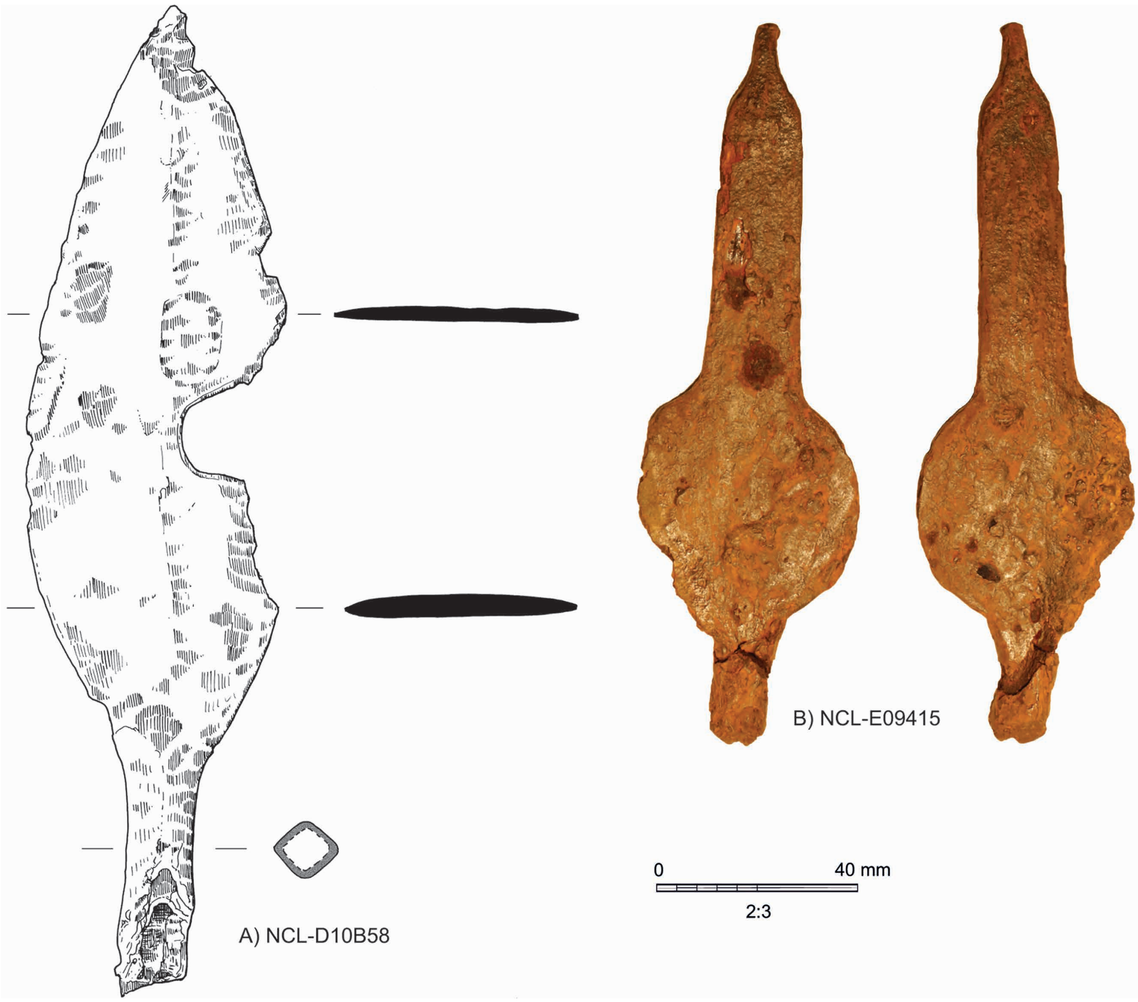


FIG. 6.1. Spears from the river

Although occasionally Roman swords and daggers are recovered from watery contexts (Torbrügge 1971, 43–6; Bailly and Bonnamour 1990; Thiel and Zanier 1994; Haynes 1997, 116–20; Nicolay 2007, 181–9), none were found at Piercebridge. However, a number of scabbard fittings were recovered, forming elements of at least 18 scabbards. They comprise a single copper-alloy peltiform chape (NCL-149847 and FIG. 6.3C) of *Novaesium* type (Miks 2007, 335–8) and 18 scabbard slides (FIGS 6.2 and 6.3). Using Miks' 2007 typology, it is clear that both the chape and the slides possess a date range which spans the mid-second to mid-third century A.D., although the most well-represented scabbard slide type, the *Ringkopf*, is almost exclusively found in third-century contexts (Miks 2007, 284–319). The chape is damaged as are the majority of the slides, while the uneven polishing on the surface of the bone scabbard slide (BM-33B695 and FIG. 6.2E) is clearly the result of constant rubbing against the sleeve of the left arm. Whatever processes led to their deposition, these were used objects.

Scabbard slides are relatively common finds at military sites in Roman Britain but finding 18 in a single assemblage is unusual. In fact, the examples from the river appear to represent the largest collection known from any military installation in northern Britain. For comparison, six[34] were found during the excavations at Piercebridge, seven at Corbridge and nine at South Shields (Allason-Jones 2008, cat. nos 511–16; Miks 2007, 798 and 872–3). The near absence

[34] Four scabbard slides were found in the fort, one in the northern *vicus* and one in the southern *vicus*. A possible seventh fragmentary scabbard slide is recorded as cat. no. 517. This has not been included as there is no illustration of the artefact and the identification is noted as tentative (Allason-Jones 2008, 11–65, no. 517).

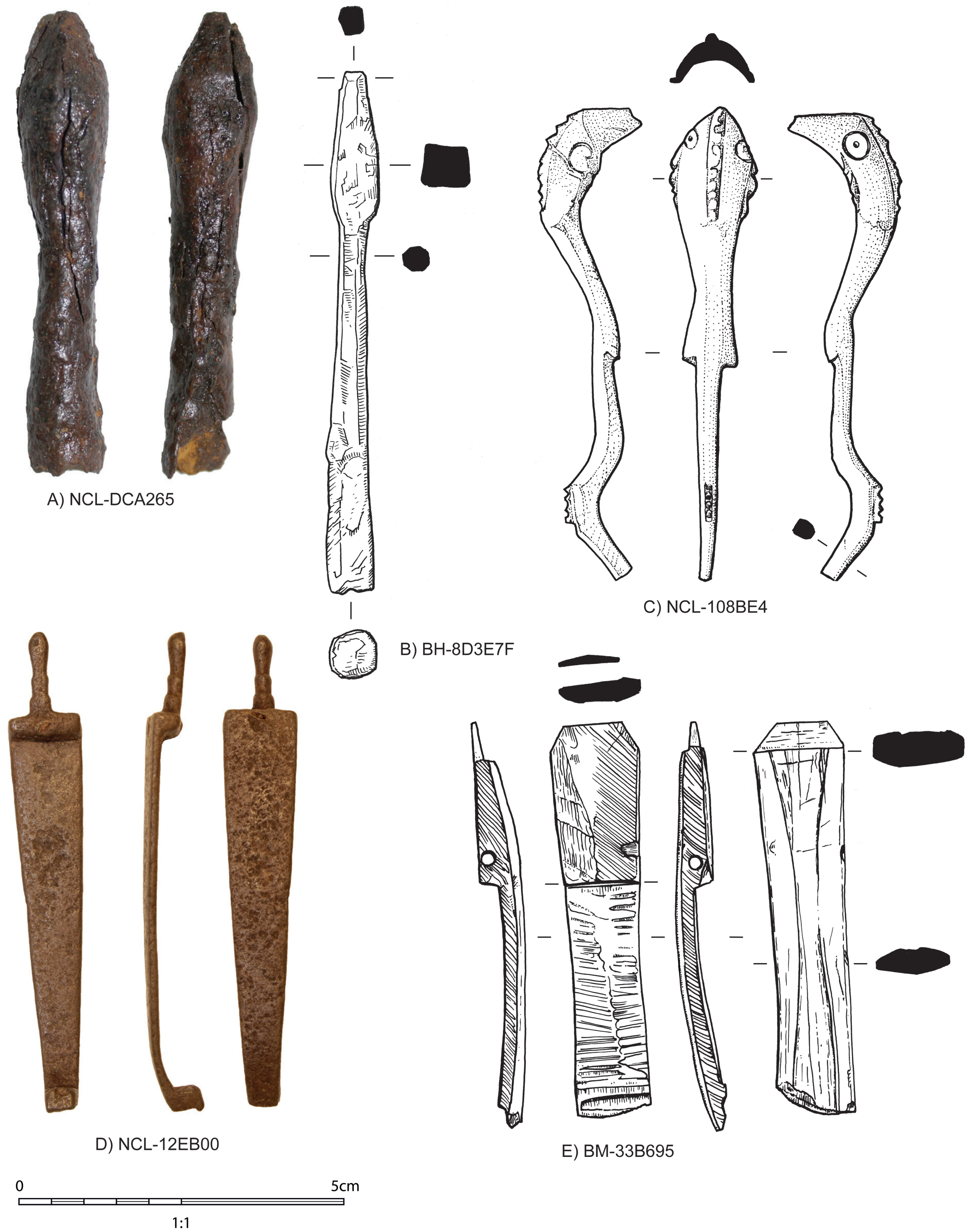


FIG. 6.2. Projectiles and scabbard slides from the river

of other scabbard fittings such as chapes in the riverine assemblage is also telling, particularly as at other sites they are usually as numerous as, if not more than slides (Table 6.2). It therefore appears possible that scabbard slides found within the riverine assemblage were being deliberately selected for deposition. They may have been intended as a *pars pro toto* gesture to represent the whole scabbard and the sword within.[35]

[35] A copper-alloy ring found in grave no. 8 at Apulum, was interpreted as being deliberately deposited to represent the entire suspension system for a weapon (Ciugudean 2012, 116–17).

TABLE 6.2. ASSEMBLAGES OF SCABBARD SLIDES AND CHAPES FOUND AT A SELECTION OF MILITARY SITES IN BRITAIN

Site	Copper-alloy scabbard slides	Bone/ivory scabbard slides	Copper-alloy chapes	Bone chapes
Piercebridge river	16	1	1	0
Piercebridge (Allason-Jones 2008)	6	0	1	0
South Shields (Miks 2007, 872–3)	6	3	8	7
Chesters (Miks 2007, 795)	5	0	1	0
Caerleon (Miks 2007, 789–92)	24	1	14	16
Vindolanda (Miks 2007, 795)	1 + 1 iron	0	1	0
Corbridge (Miks 2007, 798)	7	0	3	0

Two iron arrowheads (BM-CAB596; BH-FE91D6) and an incomplete bone ear lath (NCL-3B0544 and FIG. 6.3B) provide some evidence for the presence of archers at Piercebridge. BH-FE91D6 is too corroded to classify, but BM-CAB596 is an iron 'trilobate tanged' example of a type that was widely used by the Roman army (Manning 1985a, 177–8 Type 2; Coulston 1985, 264). In Britain, they tend to be found in pre-Antonine contexts (Coulston 1985, 264–5), although it is clear that they continued in use throughout the third century (cf. Manning 1976, 6 versus Bishop and Coulston 2006, 166–7 and fig. 106). Three were recovered during the excavation of the fort at Piercebridge (Allason-Jones 2008, 11.102, nos 133–5). Meanwhile, the ear lath would originally have formed part of a pair which strengthened the tip of a composite bow (Lóránt 2014, 100) and probably dates to the second or third century A.D. Composite bows are usually associated with auxiliary troops, although finds of ear laths in legionary fortresses may suggest that they were used more broadly (Lóránt 2014, 100; Mikler 1997, 17; Bishop and Coulston 2006, 166, fig. 105, nos 1 and 4; Coulston 1985, 227–9).

ARMOUR

The assemblage of armour from the river comprises 18 pieces of scale armour of varying size and six fragments of binding usually identified as shield reinforcement. Unlike the excavations at Piercebridge which produced 11 cuirass fittings (Cool 2008, 258, tables 11.15 and 11.16), no *lorica segmentata* fittings were recovered from the river. Instead, the armour assemblage comprises 18 pieces of *lorica squamata* including single scales as well as riveted portions of two, four, five and seven scales (FIG. 6.4A).[36] Unlike *lorica segmentata*, *lorica squamata* armour was worn by both legionaries and auxiliaries, although it is more frequently associated with the latter (Bishop and Coulston 2006, 95).

The assemblage of armour can be supplemented by three certain fragments of binding from shields (BM-BC2EE3; BM-015A2B/FIG. 6.4D; BM-34195D) and three possible fragments (BM-00D3F5; BM-00F978; BM-011453). One (BM-BC2EE3/FIG. 6.4B) represents a small portion of copper-alloy binding from a hexagonal shield. Such shields were part of the equipment of auxiliary cavalry units and funerary reliefs commemorating cavalrymen frequently depict them (Bishop and Coulston 2006, 91). The other fragments of binding are probably to be associated with rectangular shields (BM-015A2B; BM-34195D), although it is not possible to establish whether they reinforced curved rectangular shields used by legionaries or flat rectangular types

[36] This contrasts markedly with the *lorica squamata* armour assemblage recovered from the excavations which comprised numerous individual scales, 'many neatly folded into small square packages and/or torn from their links, suggesting that they were intended for melting down in small crucibles.' (Allason-Jones archive report, ch. 11.45.)

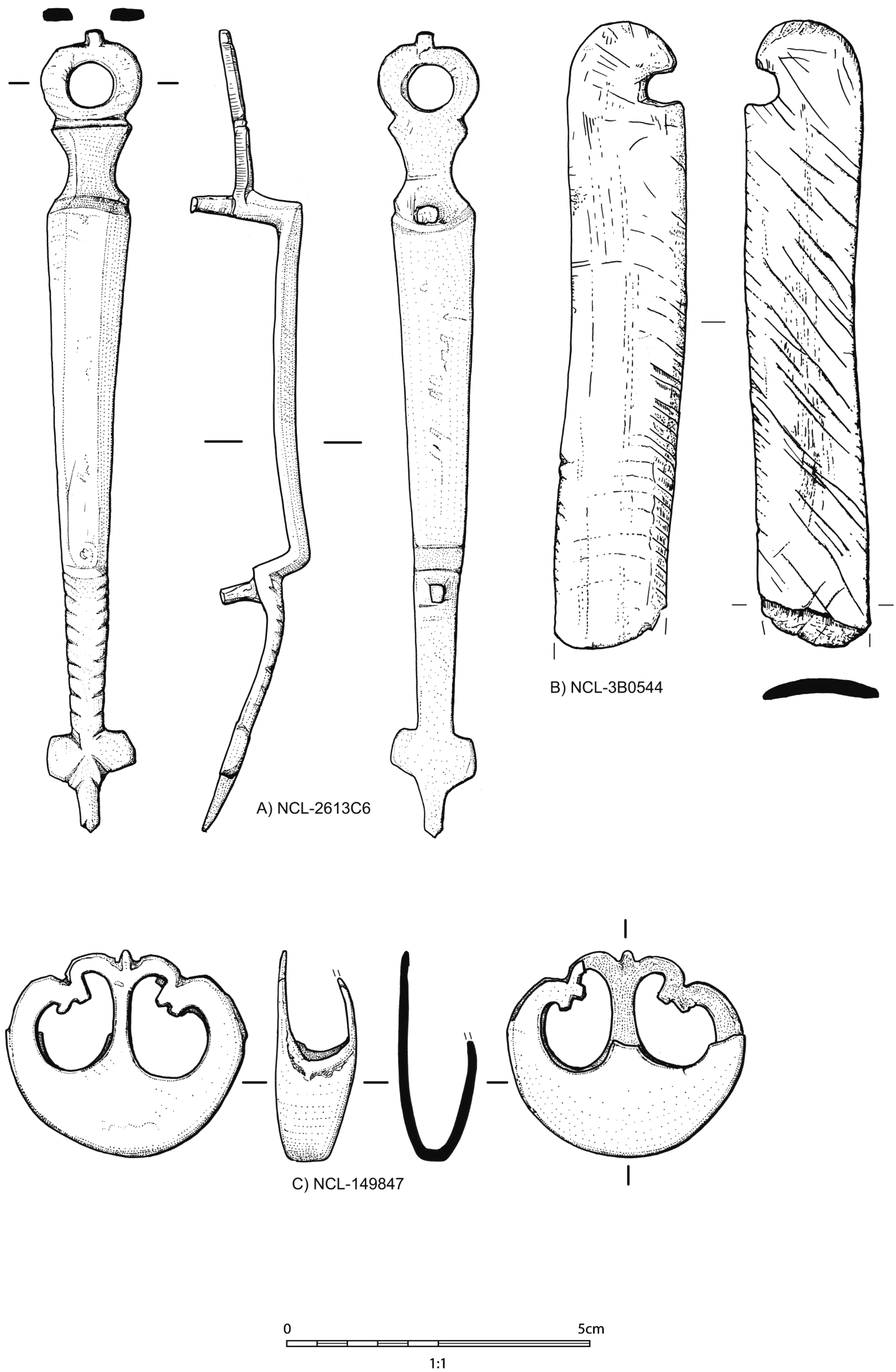


FIG. 6.3. Scabbard fittings and a bone ear lath from the river

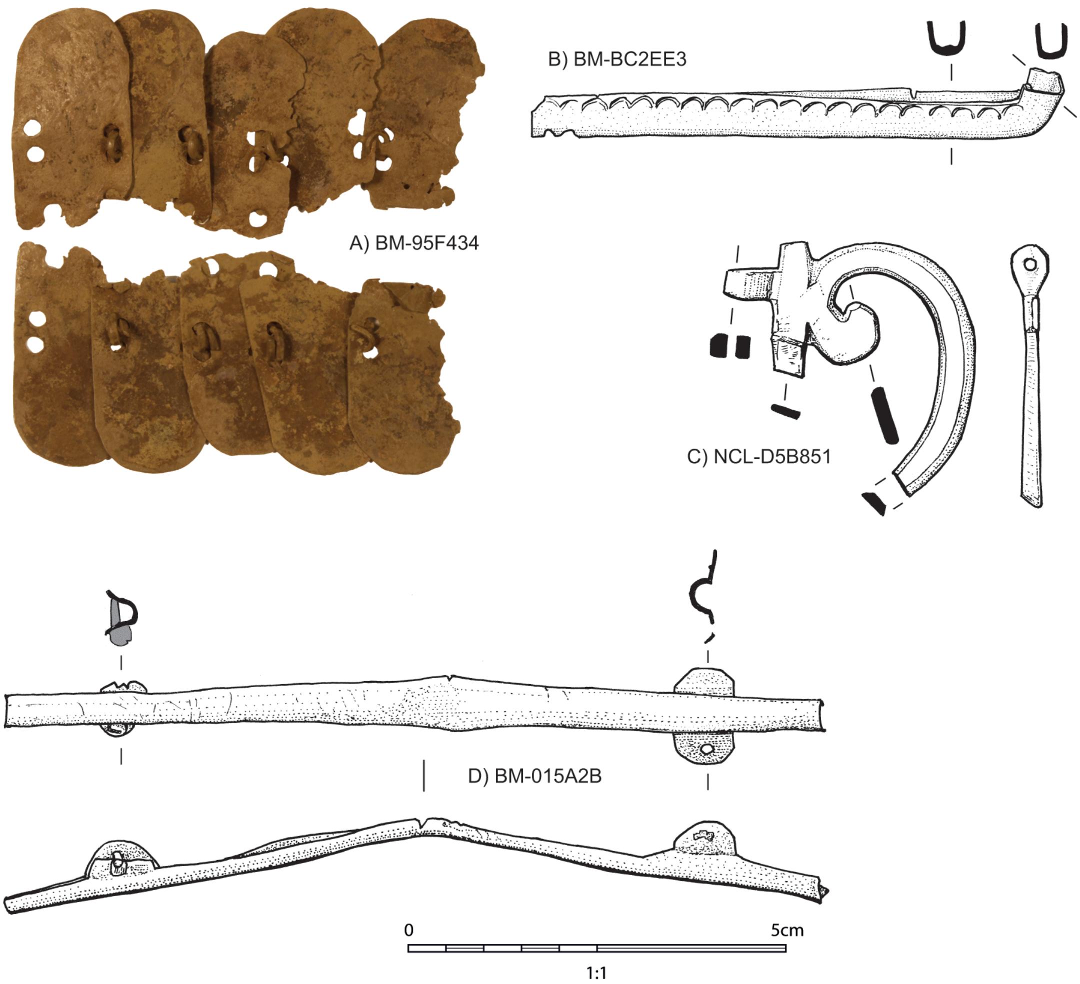


FIG. 6.4. Armour, shield edging and belt fittings from the river

used by auxiliaries.[37] However, it is clear that they come from shields dating to the first or second century A.D., as metallic reinforcements of this type are not found on third-century shields (Bishop and Coulston 2006, 179). This is an important observation given the third-century date of most of the military equipment and other material in the assemblage and attests to at least some earlier military activity at the site.

PERSONAL ADORNMENT

Chapter 4 has already noted the presence of a large number of third-century brooch types likely to have been worn predominantly, if not exclusively, by soldiers. While these brooches may give some indication of the profession of their wearers, the belt was probably the most distinctive signal of a soldier's military identity after his weaponry. Both waist and shoulder belts worn by men came to represent military authority (Hoss 2011, 30) and therefore the presence of at least 92 fittings from both belt types amongst the assemblage confirms the participation of soldiers in the deposition of objects. They may also suggest that the depositional process had a symbolic and personal element.

[37] There is some debate about the identification of shield bindings in the archaeological record (cf. McIntosh 2019, 90), but the riverine examples compare well with published finds (Bishop and Coulston 2006, 93, fig. 49, no. 2 from Spettisbury). 12 examples of binding from the Piercebridge excavations were catalogued but were thought too narrow to enclose the thickness of a shield (Allason-Jones 2008, 11.65).

WAIST BELT FITTINGS

Fittings from multiple waist belts account for the majority of belt fittings and include two buckle frames, two ring buckle fittings, 15 belt mounts, 20 belt plates or belt plate elements and 44 strap ends.

Given the large numbers of waist belt fittings from the river, it would be logical to suppose that whole belts were being deposited in the river. However, the fact that only two buckle frames (NCL-D5B851 and BM-8C2C20) were recovered from the river at Piercebridge makes this scenario unlikely, although the presence of mineralised leather on the underside of many of the fittings (see, for example, BM-9A3577) may suggest that cut portions of leather belt were deposited. FIG. 6.5, a heat map comparing the numbers of fittings from different parts of the belt amongst the river assemblage, illustrates that selection is likely.

In contrast to the mid-Roman emphasis of most of the material from the river, it is notable that one of the buckles, NCL-D5B851 (FIG. 6.4C), appears to date to the Flavian period or the early second century (Hoss, pers. comm.). On the Continent, most examples of the type come from Claudio-Neronian contexts, with a particular emphasis on military sites along the Rhine (Hoss 2014, 10). In Britain, some examples are known from Flavian contexts such as Caerleon (Lloyd-Morgan 2000a, cat. no. 159, 374, fig. 92). This buckle, along with the Aucissa brooch (NCL-B98361) discussed in Chapter 4, may therefore provide some evidence for the presence of soldiers at Piercebridge in the later first century A.D. However, it is worth noting that this type

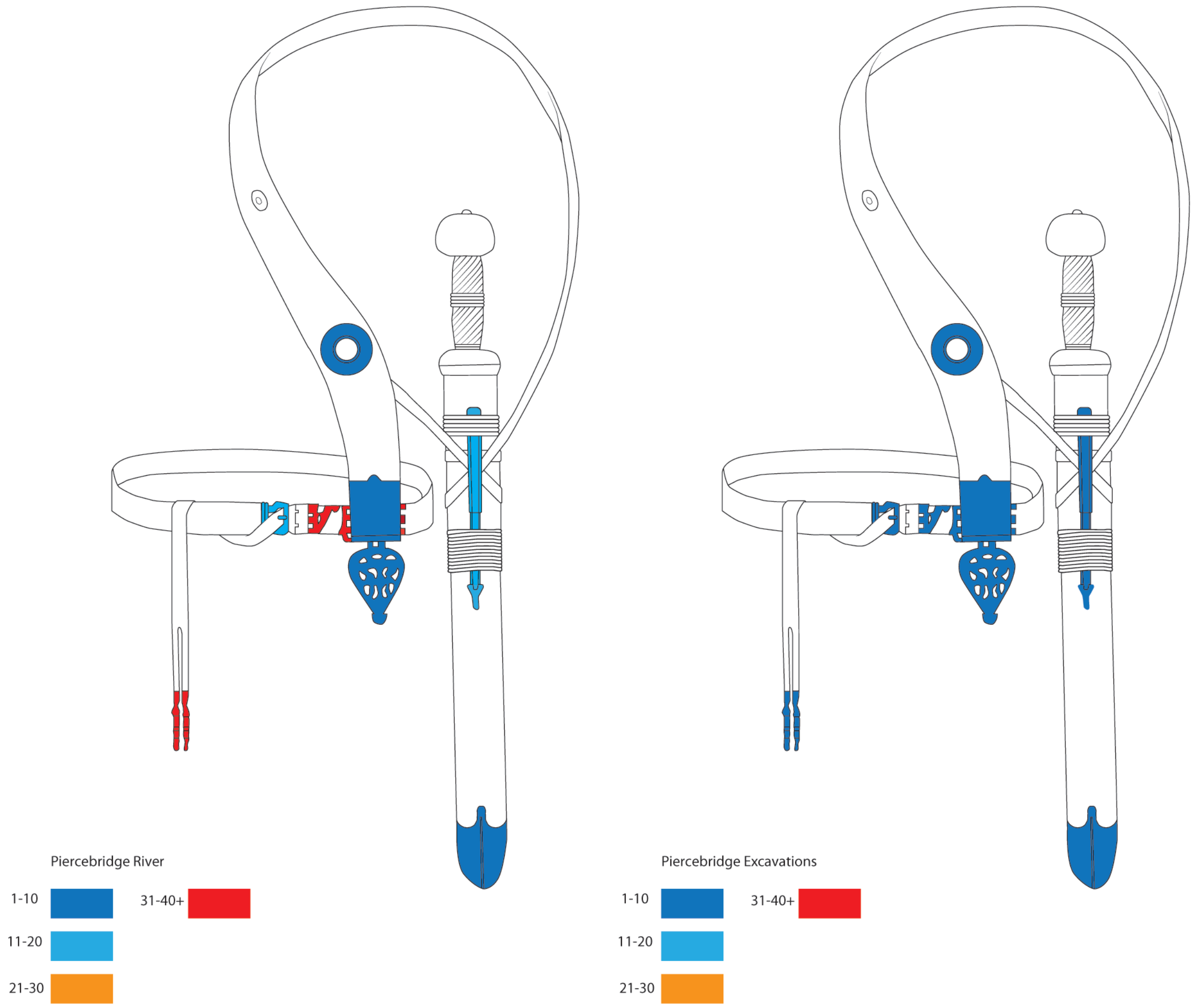


FIG. 6.5. A comparison of the number and type of belt fittings from the river and those from the excavations at Piercebridge (*Drawn by Mark Hoyle*)

of buckle frame could be curated for long periods of time, as demonstrated by an example from the temple *cella* at Lydney Park deposited after A.D. 364 (Wheeler and Wheeler 1932, 86).

The second example, BM-8C2C20 (FIG. 6.7A), dates to the mid-second to mid-third century A.D. and is of a type commonly found on military installations in the frontier regions of the Roman Empire. It is particularly common on Hadrian's Wall, the Taunus-Wetterau *limes* and the Danube *limes* (Hoss 2014, 41). A similar example is also known from the excavations at Piercebridge (Cool 2008, 259, fig. 11.8, no. 541). At Catterick, it was suggested that two similar trapeziform buckles (ch. 15.2.3, nos 158–9, 204) were examples of types normally considered to be auxiliary equipment, especially typical of cavalry units (Bishop and Coulston 2006, 191, fig. 124), though others have urged caution (Webster 1992, 120; Cool 2002, 32).

In addition to these buckle frames, two further possible buckle fittings were found. One is a fungiform stud (BH-9811E0 and FIG. 6.7B) which possesses the appropriate dimensions for it to be associated with securing ring belts (Gschwind 2004, 169–70). The other is a ring buckle mount (BM-9A3577 and FIG. 6.7D) dating to the period A.D. 175 to 250 and is paralleled by an example found as part of a belt set in the *contubernium* of a barrack in the legionary fortress at Lauriacum, Austria (Ubl 2002, 177, n. 11). As so few of these mounts have been found, it is difficult to comment authoritatively on their distribution. However, no other examples are known from Roman Britain; instead they primarily appear to cluster along the Danubian *limes* (Hoss 2014, 209–10).

15 strap mounts dating to the mid-second to mid-third century A.D. were recovered. 14 employ distinctive opposing trumpet motifs and are of a type found throughout the Roman world with particular concentrations along the Danubian *limes* (Hoss Type B.21: Hoss 2014, 175). Although ten fit within the measurement range of 21 mm to 29 mm suggested for belt fittings, it is worth noting that mounts with trumpet motifs were also popular on horse harness (Barkóczi 1948, pl. XXX, especially no. 12 and pl. XXXII, especially nos 1 and 3) and even leather bags (Hoss 2014, 175). Whatever their use, it is striking that none were found during the excavations at Piercebridge, which hints at their deliberate selection for deposition. Interestingly, two are cast from the same mould (BM-B75D68/FIG. 6.7C and NCL-935E21) and may have come from the same belt, while one example (BM-75E468) appears to have been cast from the same mould as a mount found in a barrack block at Caerleon (Chapman 2005, 126, no. Sr14). This strongly suggests a link with the troops stationed there (*legio II Augusta*) or at least with the *fabrica* that supplied them.

In addition to these belt mounts, 20 belt plates or belt plate elements were also recovered from the river (FIGS 6.6 and 6.7). Although with twelve examples, later second- and third-century types dominate, there are also eight mid- to late second-century examples. They include five central elements or bars from Lechinţa de Mureş belt plates (NCL-299513; NCL-286324; BM-3B6E5B; BM-3B603D; BM-3B3427/FIG. 6.7F). No other belt plates of this type are known from Roman Britain and again their distribution pattern concentrates on the Danubian *limes* and particularly modern-day Romania (Hoss 2014, 156). It is notable that only the central bars of the Lechinţa de Mureş type have been found. This may indicate that they were deliberately removed for deposition or that they fell out of their settings easily.

Some other types of belt plate dating to the mid- to late second century A.D. are represented by single examples. They include NCL-2914D4, a small rectangular belt plate with pierced pelta-shaped terminals. Like the belt plates described above, it is of a type most common in Romania, although it is also found in Bulgaria, Hungary and Germany (Hoss Type B.15: Hoss 2014, 158). Another belt plate (NCL-42E596/FIG. 6.6A) has openwork decoration depicting vine leaves and is of a type found on Hadrian's Wall, as well as along the Rhine and Danube *limes* (Hoss 2014, 134). It is of particular interest as it was originally secured using rivets rather than lugs with end-plates. Such fixings are a feature of second-century belt plates and may suggest a mid-second-century date (Hoss, pers. comm.). Finally, there is BM-429BE9 (FIG. 6.6D), a fragment of a very rare type of openwork belt plate spelling out the letters [...ES] which probably originally formed the word SPES or SERVES on the basis of the few parallels known (Hoss 2014, 146); as so few examples are known, they have been dated on stylistic grounds to mid-second to mid-third

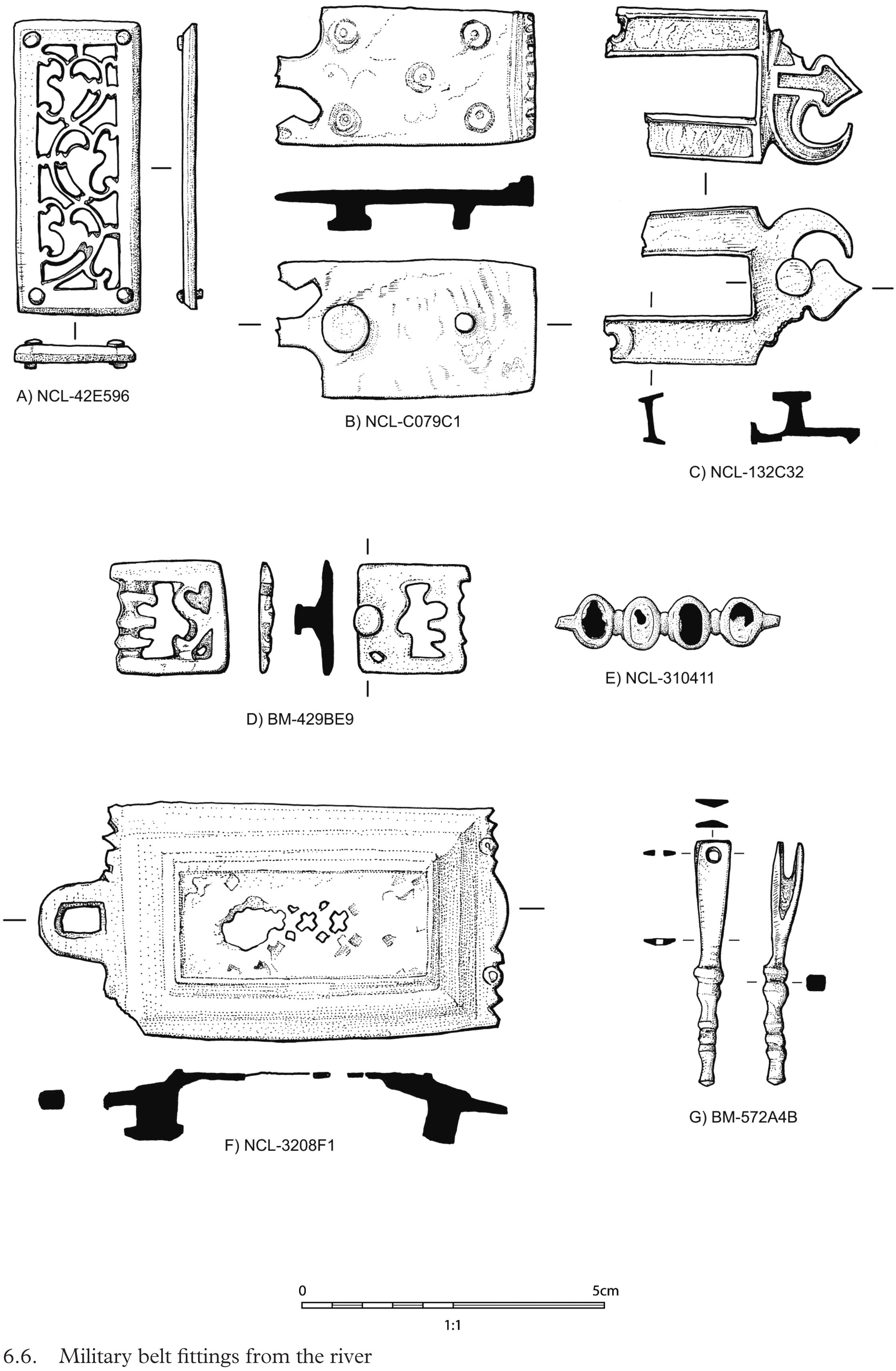


FIG. 6.6. Military belt fittings from the river

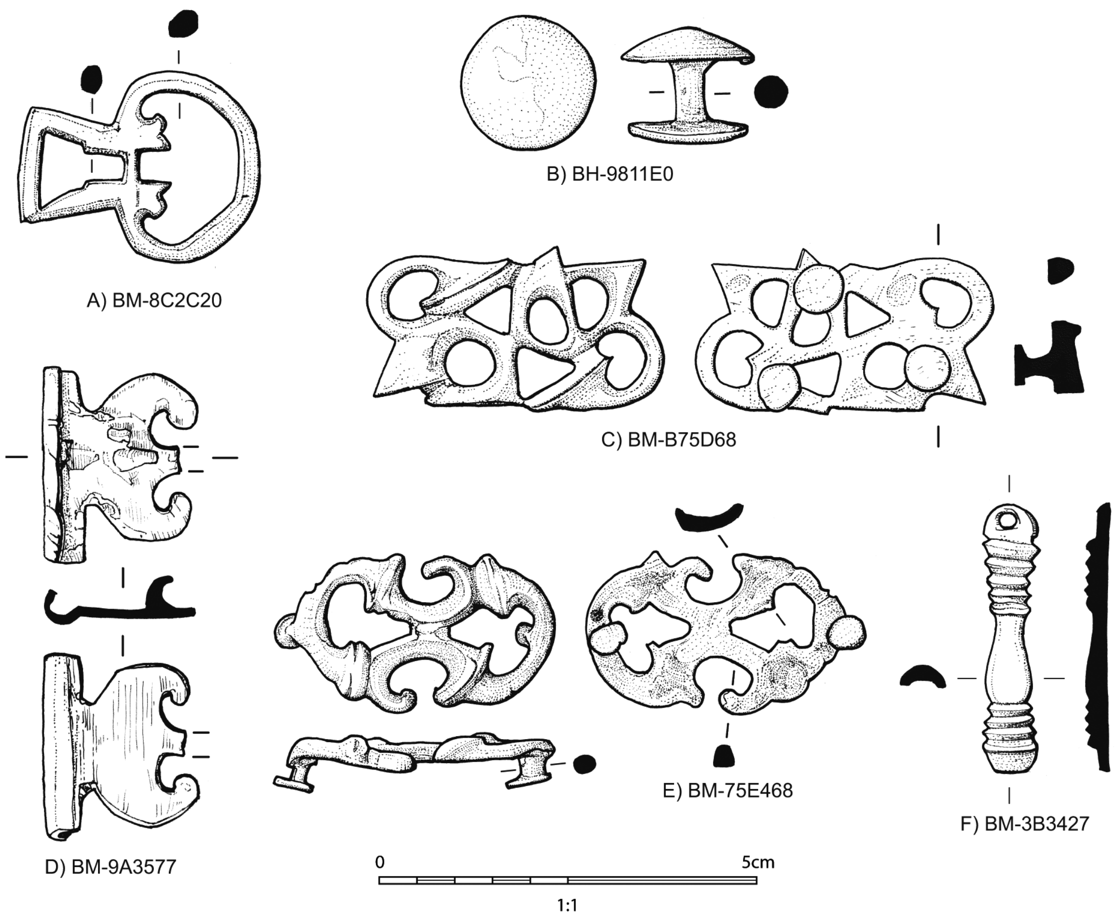


FIG. 6.7. Military belt fittings from the river

century A.D. Other examples are known from Britain at sites such as Caerleon, Chesters, Kirby Thore and South Shields as well as along the Rhine *limes*.

The third-century belt-plate assemblage is dominated by variants of the 'South Shields' type (also known as Hoss Type B.24) (Hoss 2014, 195), with nine examples recovered. This type is common at military sites in northern Britain. The examples include four enamelled central bar elements (NCL-310411/FIG. 6.6E; BH-3760CE; NCL-812743; BM-D9FC64) and five fragmentary belt plates (BM-D56A64; BM-369324; NCL-132C32/FIG. 6.6C; NCL-3E1976; BM-C8DAFB). Two of the belt plates appear to have been deliberately cut and bent (BM-369324; NCL-132C32). The latter example is decorated with an arrow-pelta terminal, which has been found as decoration on the tunics of officers (Pásztókai-Szeőke and Paetz gen. Schieck 2016) and may therefore provide some indication of the identity of its owner.

44 strap ends were also recovered from the river (FIGS 6.6 and 6.8). Although they are occasionally found in assemblages of horse harness (Palágyi 1997), they are most frequently associated with the waist belts of soldiers, where they were worn in pairs to weigh down strap terminals (Hoss 2014, 262; Radman-Livaja 2008, 301). The earliest examples belong to Hoss Type H.2 (e.g. BM-572A4B/FIG. 6.6G) and date to the mid- to late second century A.D. (Hoss 2014, 275). However, the majority date to the late second or third century with Hoss Type H1 (e.g. NCL-DA07A5/FIG. 6.8A)(Hoss 2014, 262) dominating the assemblage. Six strap ends (BM-D16A64; NCL-2966A5; NCL-4B42D2/FIG. 6.8B; NCL-4E6DD6; NCL-93D9D2; NCL-96D868) do not fit comfortably within Hoss' typology and are not paralleled elsewhere. Possessing openwork decoration comprising two opposing trumpets, they were presumably worn alongside waist belt mounts that also employed the motif. These are dated to the period A.D. 150 to 250 by both Oldenstein (1976) and Hoss (2014, 175).

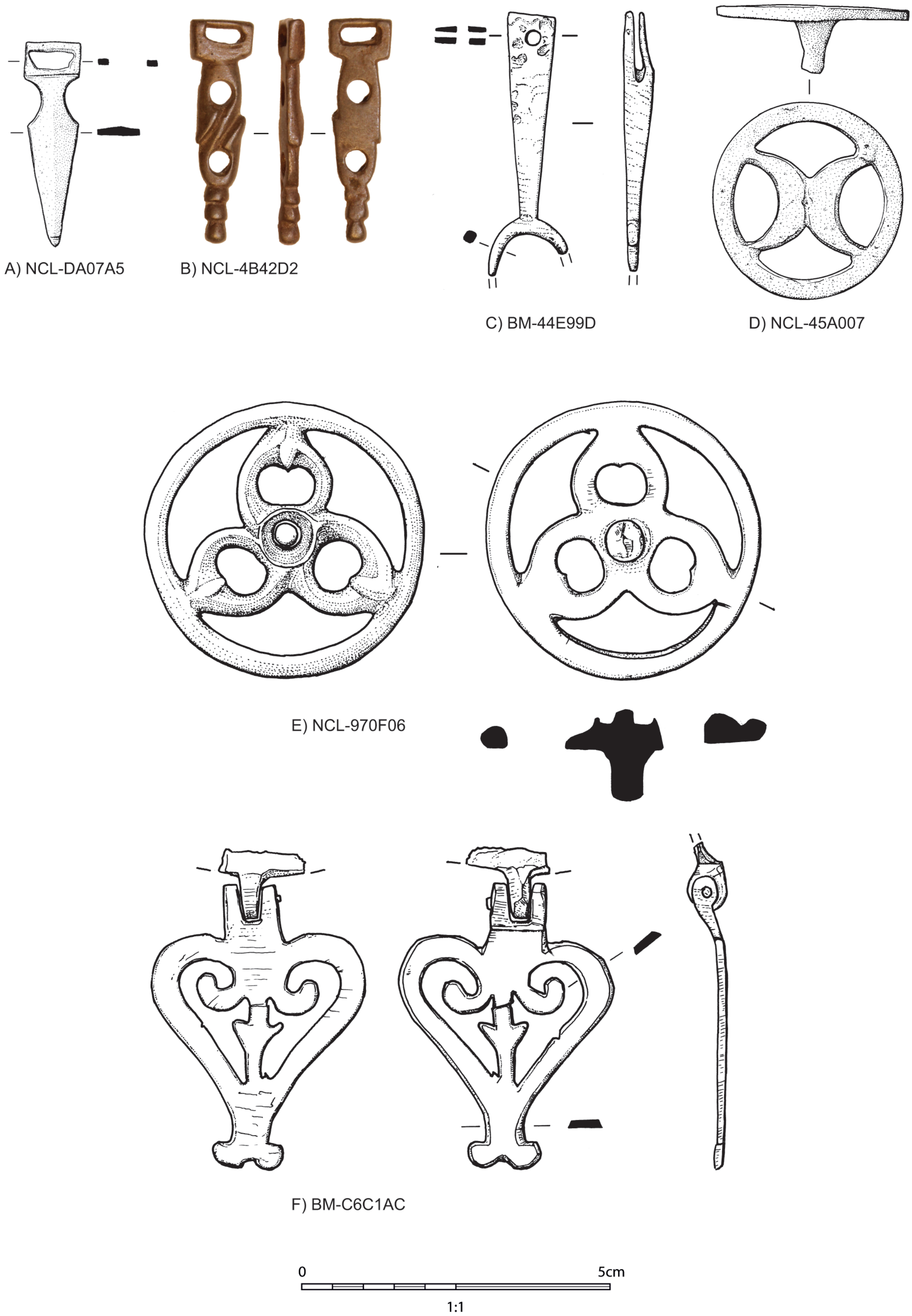


FIG. 6.8. Military belt fittings from the river

Nearly all the strap ends show some signs of wear (e.g. NCL-4B5590), but very few are actually broken at the attachment loop (NCL-40F773; BH-133B6F; NCL-93F162) or on the body (BH-FB6AF7; NCL-9FD0C6; NCL-DAB875). Although several strap ends are very similar in appearance, none are pairs, suggesting selection of individual belt pieces or accidental loss rather than disposal of whole belt sets.

Like the belt plates discussed above, one of the strap ends (BM-44E99D/FIG. 6.8C) strongly hints at the origin or ethnic affiliations of its wearer. BM-44E99D is of a type which terminates in a ring; these objects are traditionally referred to as 'Germanic belt fittings/*Germanische Riemenendbeschläge*' (Oldenstein 1976, pl. 37). However, Hoss' comprehensive catalogue of the type (which she categorises as her Type 4) illustrates that while they are found in Germany and Austria (13 and 6 examples respectively), the largest number come from Romania (22). Only three other examples are known from Roman Britain (Hoss 2014, 279).

SHOULDER BELT FITTINGS

Given the large number of waist belt fittings and scabbard slides recovered from the river, it is perhaps surprising that only nine elements from the shoulder belt have been found. They comprise two *phalerae* (NCL-45A007/FIG. 6.8D and NCL-970F06/FIG. 6.8E), two attachment loops from *phalerae* (BM-B674D8; BM-B78D21) and five belt terminal plates or pendants (BM-DE19DB; NCL-920007; BM-C6C1AC; BM-DF3DF7; BM-D5BD71).

One of the *phalerae* (NCL-45A007/FIG. 6.8D) is decorated with an openwork motif of two opposing crescents and is likely to date to the second or third century A.D. The other (NCL-970F06/FIG. 6.8E) with an openwork design of three pointed oval 'petals' is rather harder to date. Given its 'native' styling and resemblance to poorly understood late Iron Age 'fobs' (Jope 2000, 285), a first-century date is not impossible.

The fragmentary terminal plate (BM-DE19DB) is a third-century type and like many of the objects in the assemblage appears to have been deliberately bent and broken. Similar terminal plates are known from Aldborough (Bishop 1996, 68–9, no. 424 and 426, fig. 37), Silchester and Zugmantel (Bishop and Coulston 2006, 159, fig. 100, nos 9 and 10). The complete example from Zugmantel contained writing soliciting Jupiter's protection over the unit of the wearer (Bishop and Coulston 2006, 162). There are also four openwork terminal pendants (NCL-920007; BM-C6C1AC/FIG. 6.8F; BM-DF3DF7; BM-D5BD71). Heart-shaped and openwork in design, there is some uncertainty about their function. Some scholars classify them as harness pendants (Oldenstein 1976, 124–36) whilst others associate them with the sword belt, pointing to the hinged hangers in 'Numerum Omnium' *balteus* sets (Schmitz 2011, 18, 39–42).

CONCLUSION

A number of conclusions can be drawn from the overall assemblage of militaria. In terms of chronology, the date range of material suggests military activity in the second and third centuries with a definite emphasis on the period between A.D. 175 and 250. This emphasis corresponds with the much smaller amount of material recovered from the excavations. In addition, there are also some very minor hints of earlier military activity, but no fourth-century material was found.

The material also gives us some insights into military identities. For example, the presence of *lorica squamata*, spears and a fragmentary binding from a cavalry shield suggests that we are dealing with the possessions of auxiliary troops and cavalry. Furthermore, although attempts to identify military units through the material culture they leave behind have usually been unsuccessful (Allason-Jones 2002, 821), it is interesting to note that some items of militaria from the Tees do suggest that at least a proportion of the troops had links with the Danubian *limes*. Of course, there are well-documented problems with publication bias. These may skew our perception of artefact distributions towards the Danubian provinces, where various object types are found more frequently in graves (Swift 2000, 7). However, many of the belt fittings recovered from the river are particularly associated with that region with several representing the first examples found in Roman Britain. This suggests that their 'exotic' nature is real.

Epigraphic and historical evidence attest to the presence of troops from the Danubian *limes* in northern Britain in the early third century A.D. They include, for example, the First Cohort of Dacians who were stationed at Birdoswald (Coulston 1981; Oltean 2009). The *Notitia Dignitatum* mentions Sarmatians in Britain at *Morbium*, but this site has not yet been located (Richmond 1945, 18; Sulimirski 1970, 176; Eckardt 2014, 47), although it is suggested that it is Piercebridge. However, given the location of Piercebridge on the main communication artery between York and the northern frontier, it would be unwise to assume that the objects were necessarily the possessions of those stationed at Piercebridge. The items may equally well have been lost or deposited by soldiers from a variety of units with different ethnic origins and histories journeying north or south along Dere Street.

The composition of the assemblage also provides some insight into potential processes of deposition. While the assemblage of weaponry and armour is relatively modest, the number of belt fittings is remarkable. Not only are comparable fittings almost completely absent in the excavation archive from Piercebridge, but the river finds appear to represent one of the largest assemblages of such objects from any site in Roman Britain. This would suggest that there is something unusual about the manner in which they came to be deposited. Military equipment was not lost casually under normal circumstances. Furthermore, soldiers were not normally buried with their military equipment, although this became more common in the later Roman period (Bishop 2011, 115–19). It therefore seems likely, given the symbolic significance of the belt, that these objects were deliberately deposited as personal offerings of individual soldiers. Detailed analysis has highlighted that selection of particular elements was at play, with scabbard slides and belt plates favoured over buckles and chapes, suggesting a *pars pro toto* approach.

As finds of Roman military metalwork in watery contexts are extremely rare in Britain, the presence of such large quantities at Piercebridge is highly significant. Indeed, it may point to the adoption of and continued adherence to a ritual practice originating in Gaul or Germany, where numerous deposits of weaponry and military equipment have been found during dredging work, particularly along the Rhine (Nicolay 2007, 183) and Saône (Bonnamour and Dumont 1994). Along with deposits from temple sites such as Empel in the Netherlands, these finds have been interpreted as the offerings of veterans from auxiliary units to deities who had protected them during their service (Derks 1998, 52; Franconi 2014, 149). The equipment acquired great symbolic value because of the martial experiences associated with it and its deposition signified a 'rite of passage' marking the conclusion of one stage of life and entry into the next (Derks 1998, 75). While this parallel may be instructive, it should be noted that there are some significant differences in both the chronology and types of military metalwork deposited at Piercebridge. The continental examples mainly date to the first century A.D. and are characterised by large prestige items such as helmets and swords, while the material from Piercebridge is mostly second and third century in date and is dominated by smaller pieces of metalwork associated with military dress.

CHAPTER 7

EQUINE EQUIPMENT AND OTHER OBJECTS ASSOCIATED WITH TRANSPORT

By Philippa Walton

INTRODUCTION

192 items of equine equipment and objects associated with transport were recovered from the river. They comprise 183 pieces of horse harness including bridle and saddle strap-fittings, as well as a range of studs, pendants and beads (Table 7.1). Dating to the late first to third centuries A.D., they represent one of the largest assemblages of Roman horse harness found in Britain despite being largely absent from the excavations at Piercebridge (Cool 2008, 257). These items were accompanied by a further nine objects associated with a variety of wheeled vehicles (Table 7.2). It is not clear whether these were for heavy haulage pulled by oxen or light passenger vehicles pulled by horses (Casson 1974, 24 and 181).

TABLE 7.1. A SUMMARY OF EQUINE EQUIPMENT FROM THE RIVER AND EXCAVATIONS AT PIERCEBRIDGE

Equine equipment	**Piercebridge river**	**Piercebridge excavations (Cool 2008, 260 and tables 11.20 and 11.21)**
Bridle bit	1	0
Bridle chain link	1	0
Strap distributor	6	2
Junction loop	3	7
Phalera	1	0
Strap slide	10	0
Harness pendant	23	2
Harness pendant suspension	3	0
Miscellaneous strap fittings	0	4
Hipposandal	0	1
Spur	0	8
Stud	71	0
Button-and-loop fastener	11	2
Bead	53	16
Total	**183**	**42**

Mid-Roman harness fittings are well-attested in the archaeological record. Catalogues of single finds from sites such as Dura Europos (James 2004) and Eining (Gschwind 1998) can be supplemented by discoveries of groups from both inside and outside the Empire. These include

TABLE 7.2. A SUMMARY OF THE OBJECTS ASSOCIATED WITH TRANSPORT FROM THE RIVER AND EXCAVATIONS AT PIERCEBRIDGE

Objects associated with transport	Piercebridge river	Piercebridge excavations (Cool 2008, 260, tables 11.20 and 11.21)
Linch pin	4	2
Bolt	1	0
Rein holder	0	1
Terret	4	2
Total	**9**	**5**

FIG. 7.1. A selection of terrets, strap slides and strap distributors from the riverine assemblage. From top middle: (a) NCL-DD1C05; second row: (b) BM-077CAA, (c) BH-F10CE6; third row: (d) BM-0838A1, (e) NCL-A195D4, (f) NCL-DC2A17; fourth row: (g) NCL-924954, (h) BM-0000A0; fifth row: (i) BM-D7569C (*Photo: Aaron Watson*)

the impressive assemblages from the villa at Wange, Belgium (Lodewijckx *et al.* 1993), the burials at Celles-les-Waremmes, Belgium (Massart 2000) and Brigetio, Hungary (Barkóczi 1948) and the votive deposit at Thorsberger Moor, Germany (Lau 2014). All provide some indication of the positioning of particular elements on the bridle and saddle straps while at the same time illustrating the sheer number and stylistic variety of fittings which might appear on a single set of horse harness. However, it is still difficult to establish with any certainty the function of some items, or indeed whether they were necessarily exclusive to horse harness. A comprehensive survey of the material equivalent to Bishop's study (1988) of early Roman horse harness is certainly needed and would supplement current attempts at detailed reconstructions (cf. Junkelmann 1996). Here, where possible, the material has been grouped by its association with either the bridle or the saddle, before discussing objects which are more ambiguous in function.

The presence of large quantities of equine equipment acts as an important indicator of identity. Finds of harness are usually attributed to the auxiliary cavalry (either *alae* or *cohortes equitatae*), although both legionary detachments and mounted officers must also have used similar fittings (Bishop 1988, 112 and 116). The 'flashing strap junctions and jangling pendants will have served to enhance the impression made by an approaching cavalryman' (James 2004, 69) and are likely to have symbolised their special identity in much the same way as the sword belt fittings did for the infantry soldier (Haynes 2013, 266). However, their use as status identifiers made them 'attractive to non-soldiers' (Haynes 2013, 266) and it is worth noting that harness fittings have been found in civilian contexts in Britain and on the Continent (Worrell and Pearce 2012, 387–8; Nicolay 2007, 44–60). We cannot rule out the possibility that some of the material from the river may have been worn by civilian mounts, particularly as it is not possible to distinguish between military and civilian equine equipment by the early third century (James 2004, 66). Nevertheless, both the size of the assemblage and its association with other items of military dress suggest a strong link with the Roman army.

EQUINE EQUIPMENT

OBJECTS ASSOCIATED WITH THE BRIDLE

Although it is frequently difficult to reconstruct the position of individual fittings, nine objects are certainly associated with the bridle. They include an iron bit (BM-1B2EE9 and FIG. 7.2A), one bridle chain link (NCL-3747A5 and FIG. 7.2B) and six strap distributors (NCL-A195D4; BM-0000A0; NCL-2DB4E1; BM-FF6B38; BM-01BC89; NCL-595617/FIG. 7.2C). The iron bit (BM-1B2EE9) is of a type which could be incorporated into both simple snaffle and manoeuvrable curb bits (Manning 1985, 66–7) and as a result, it is not possible to determine whether it was used on a cavalry mount or a draught animal (cf. Feugère 1993, 136, fig. 183; James 2004, 68). The chain link (NCL-3747A5), although poorly cast, appears to be part of a Vimose-type bridle dating to first or second century A.D. (Lau 2014, 20 and 22, Abb. 14–15). Lau's distribution map (2014, 40, Abb. 29) does not include any examples from Britain, with most examples concentrated in Scandinavia and the Roman province of Pannonia, and so if its identification is correct, the presence of NCL-3747A5 in the riverine assemblage would point to long-distance movement.

The remaining bridle-related objects all date to the later second or third century A.D. They include four strap distributors (NCL-A195D4; BM-0000A0/FIG. 7.2E; BM-01BC89; NCL-595617) and two possible strap distributor variants (NCL-2DB4E1; BM-FF6B38). Of both cruciform and circular types, they are found throughout the Roman Empire (cf. James 2004, 98, no. 341; Ratkovic 2008, 801–2) and although there is some debate about their function, they are usually identified as bridle mounts designed to link the reins on the head of the horse (Ratkovic 2008, 801–2).

OBJECTS ASSOCIATED WITH SADDLE STRAPS

Four fittings likely to be associated with the saddle were also found. They include three strap junction loops (BM-00B14E; BM-E124FE; BM-0040E9/FIG. 7.3A) dating to the first or early

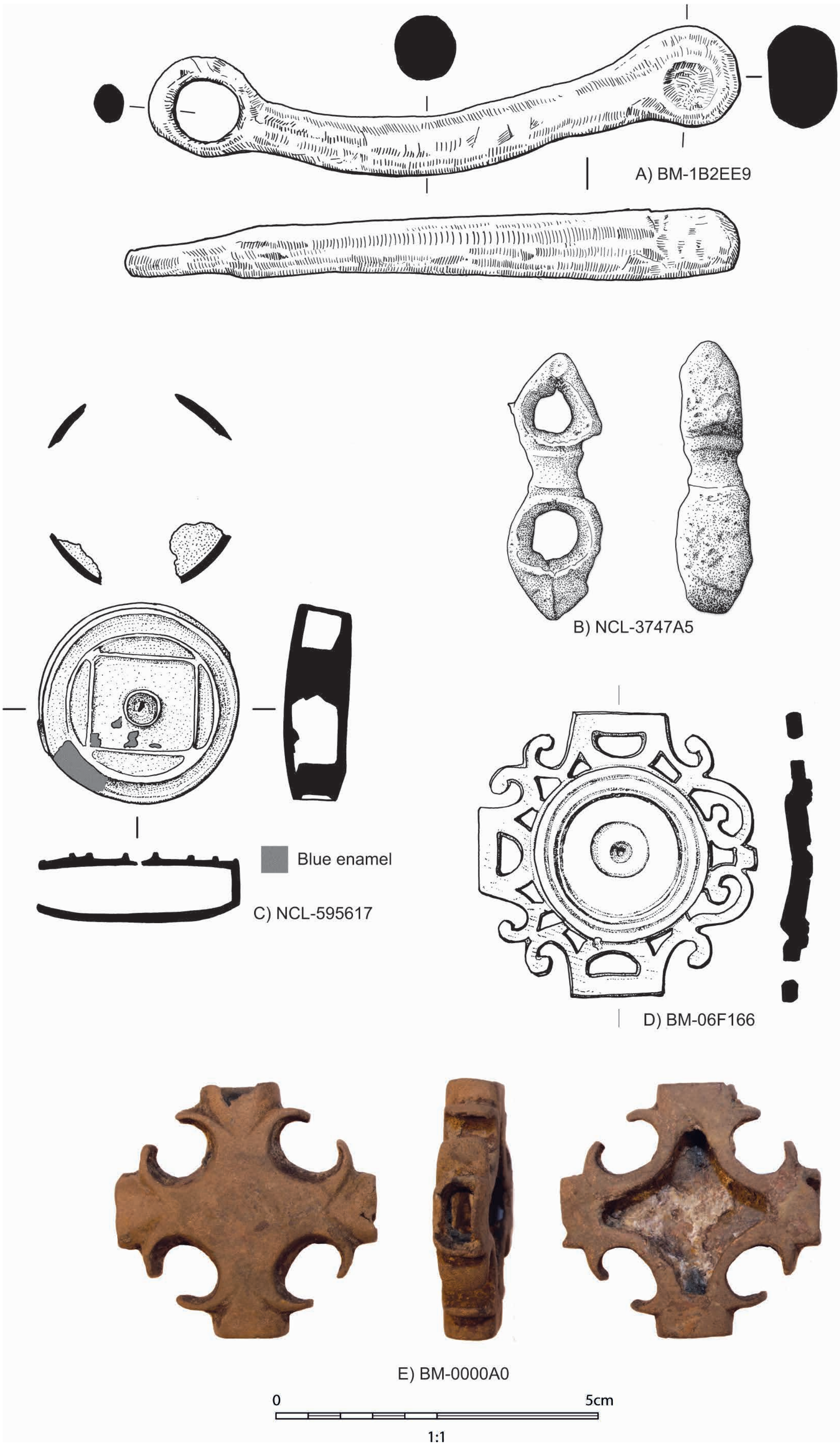


FIG. 7.2. Harness fittings from the river

second century A.D. (Nicolay 2007, 366, pl. 55, no. 257.11; Bishop and Coulston 2006, 190) and a single elaborate openwork *phalera* (BM-06F166 and FIG. 7.2D) probably dating to the mid-second century A.D. Its three junction loops indicate that it is likely to have acted as a breast junction with one strap running downwards to join the saddle strap and the remaining two to the shoulder straps (Bishop 2015, 2; Radman-Livaja 2009, 1503; James 2004, fig. 34, 69; for a reconstruction see Lau 2014, 173, Abb. 111).

HARNESS FITTINGS FOR BRIDLE OR SADDLE STRAPS

Strap slides

Ten strap slides in a range of styles were recovered. Although such slides are frequently identified specifically as bridle mounts, it is clear that they could also have secured a variety of other harness straps. They include three square slides with hemispherical mouldings (BM-075A95/FIG. 7.3B; NCL-924954; BM-077CAA[38]), two plain circular examples (BM-1A976C; NCL-81EB05), two 'boss-and-petal' examples (NCL-DC2A17/FIG. 7.3D; NCL-DD1C05/FIG. 7.3E), a circular openwork example (BM-0838A1) and a fragmentary slide (NCL-DC2A17) of undetermined type which appears to have been deliberately broken.[39] Perhaps most distinctive are the square slides with hemispherical mouldings which are identified elsewhere as bridle mounts (Gschwind 1998, 115; James 2004, 99). Dating to the third century A.D., they are comparatively rare in Roman Britain being found only at Elms Farm, Brough-on-Humber, Verulamium and Gorhambury, although numerous examples are known from the German and Danubian *limes* (Gschwind 1998, 115). They form part of a suite of harness fittings possessing the same ribbed motif as two studs found in the riverine assemblage (BM-4311C3; NCL-9285C1). Studs of the same type were found located in the area of the horse's ribs in the Brigetio burial and have been reconstructed as being part of the decoration associated with the saddle straps (Barkóczi 1948, fig. 2, nos 13, 14, 16, 18 and 174, fig. 4).

Harness pendants

Another distinctive feature of the assemblage are the 23 harness pendants and three suspension mounts for pendants (e.g.NCL-DCE8E5 and FIG. 7.3I) which may have adorned either the bridle or saddle straps. Although such pendants enhanced the appearance of the horse, they were not purely decorative. Instead, they were 'powerful magical symbols' (Bishop 1988, 107) which served an apotropaic function in warding off the evil eye. It may be that their apotropaic resonances made them particularly attractive as offerings.

Although leaf-shaped (BM-D540E1; BM-C4B6A4; BH-131504), lunular (BM-D58F1A; BM-B7F440/FIG. 7.3H) and openwork (NCL-C06230; BH-6328A8; BH-FE10AF; BM-D714D6; BM-AFEE35; BM-FFE178) pendants are all present, it is examples of the phallic type which are most common (NCL-DAA754/FIG. 7.3C; NCL-391A44; NCL-39AB01; NCL-364331; NCL-58F840; NCL-922042; BM-45071A; BM-523238; BM-530DC8/FIG. 7.3F; BM-C38B5E; BM-EC3F36; BH-F31E4C). Ten are of a single type[40] which can be dated to the second or third century A.D. (Nicolay 2007, 404) whilst a further example (BM-530DC8/FIG. 7.3F) depicting an erect phallus (and possessing a very worn suspension loop) has a similar date range. Of particular interest is an example of a relatively rare type depicting a flaccid phallus (BH-F31E4C/FIG. 7.3G). Broadly dated to the first to third century A.D., it is one of only six

[38] BM-077CAA is not technically a slide, possessing small triangular lugs rather than a loop. However, a similar example from Dura Europos was also classified as a bridle mount (James 2004, 99, nos 351–2).

[39] A tenth strap slide (BH-3B14CB) is so small that it is unlikely to have been used on horse harness.

[40] They are paralleled in a single example from the excavations at Piercebridge, although it is incorrectly identified as a steelyard weight there (Allason-Jones 2008, 11.41, no. 304).

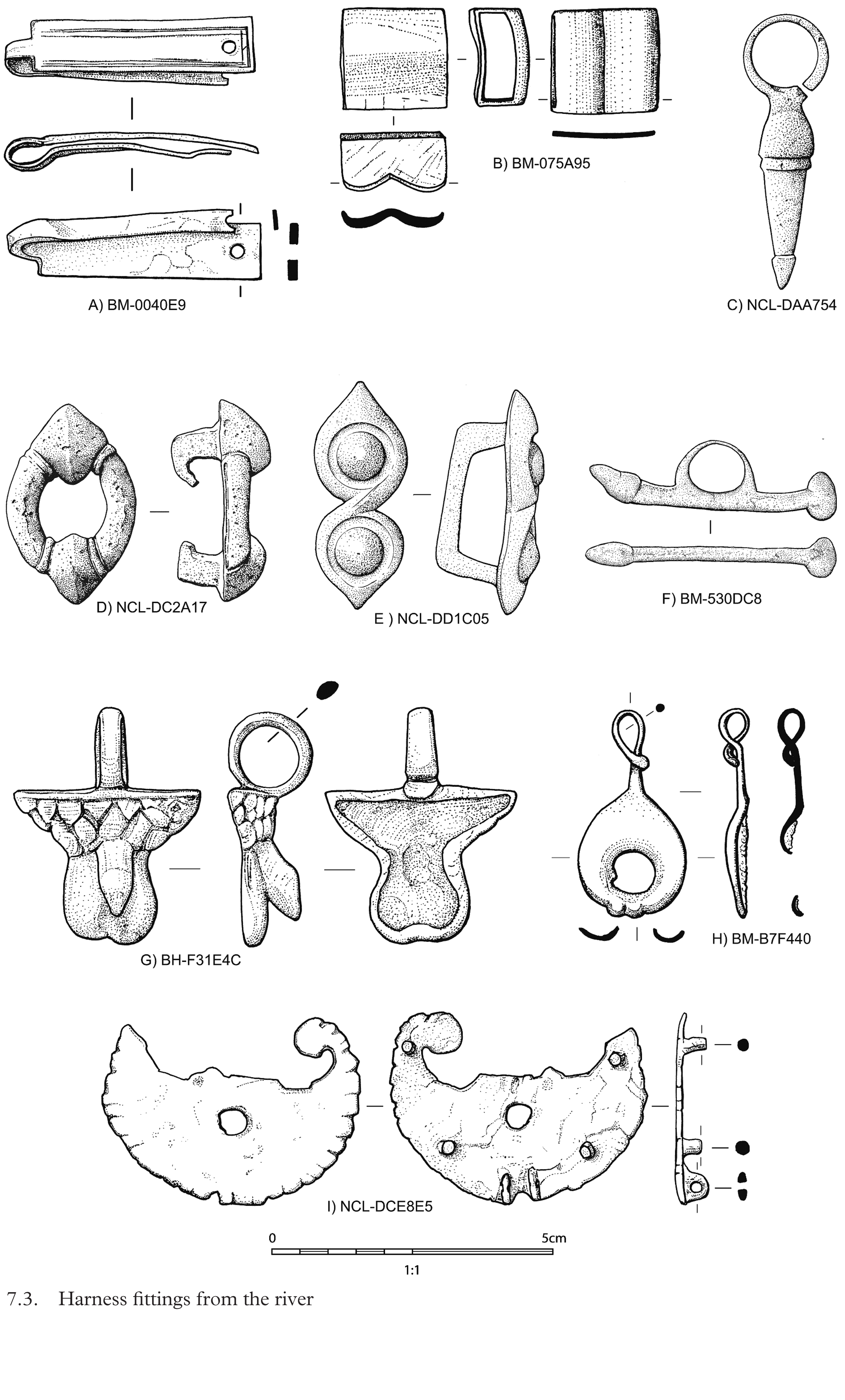


FIG. 7.3. Harness fittings from the river

recorded examples from the province.[41] Given its size and weight, it has been suggested that the type may have adorned the harness of a baggage animal rather than a horse (Bishop 2017, 152).

Strap studs and mounts

71 studs intended for use on leather straps were recovered from the river (FIG. 7.4). 29 are simple in form, possessing circular heads and either one or two flat circular end-plates. A further nine are rectangular or square in plan, including four 'caterpillar' studs (BM-C4FD58; NCL-11D301; BM-C4FD58; BM-425EBA) as well as two ribbed examples reminiscent of the third-century strap slides discussed above (NCL-9285C1; BM-4311C3). The remainder include examples

FIG. 7.4. A selection of studs from the riverine assemblage. From top row: (a) NCL-458D62, (b) BM-ED3D5B; second row: (c) BM-396FF4, (d) BM-41C3E8, (e) BM-764EFF; third row: (f) BM-C72E04, (g) NCL-916AA2, (h) BM-425EBA, (i) NCL-5B36A5, (j) BM-8BA078; fourth row: (k) BM-B8C0A8, (l) BM-B5D6AB, (m) NCL-924954, (n) BM-587CF1; fifth row: (o) BH-C8C46B, (p) BM-704BBC (*Photo: Aaron Watson*)

[41] Three are recorded by the PAS as KENT-E3D152, GLO-221C74 and DENO-C0709A (query of www.finds.org.uk, viewed 10.12.19), whilst a fourth was found during excavation at Healam Bridge, North Yorks. (Bishop 2017, 154–5, fig. 224, no. 22). A similar phallic pendant was found at Corbridge and is held in the Corstopitum Museum collection (Acc. no. 75.515) (see Aldhouse-Green 1978, 58, no. 31 and pl. 142).

employing the trumpet (BM-F0855C) and leaf motifs (BM-C72E04) also seen amongst the late second- and third-century belt mounts. Not all are necessarily associated with horse harness but the majority would fit harness straps which on average measured 20 mm in width (Bishop 2015, 1) and have diameters (16–19 mm) and lug heights (16–19 mm) within the range suggested by Gschwind (2004, 169–70).

Perhaps most striking is a variety of studs with amuletic significance which along with the harness pendants discussed above, were designed to protect the wearer from the evil eye (Hoss 2018). Two depict the 'pelta' motif (BM-B5D6AB; BM-AEAA1B) but most can be categorised as representing human genitalia. While some studs depicting phalluses are present (NCL-5B36A5; BM-ABA269; BM-459231; BM-42B67E), those associated with female genitalia dominate the assemblage. They include seven 'vulvate' or 'cowrie shell' studs (Hoss 2018) dating to the second or third century A.D. (Gschwind 1998, 115) (BH-F094AD; BM-42E141; BM-8BA078; BM-8A9669; NCL-BFF114; NCL-92A846; NCL-916AA2/FIG. 7.5A; BM-36E6B6), two lentoidal studs also thought to depict stylised vulvas (BM-B89022/FIG. 7.5C; BM-41C3E8) and a single scallop-shaped stud (BM-764EFF/FIG. 7.5B[42]). A large number of identical scallop-shaped studs decorated the brow-band of a bridle found in the early third-century burial at Celles-les-Waremmes, Belgium (Massart 2000, 512 and fig. 2).

It is perhaps significant that overall neither 'male' or 'female' *apotropaia* dominate. There are twelve 'male' pendants and four 'male' studs, as opposed to two 'female' pendants and ten 'female' studs. It has been suggested that a dominance of one type might be an attempt to 'align the protection with the horse's own sex with *phalli* used for stallions and geldings and *lunulae*, scallops and cowrie shells for mares. But it may be that the use was meant to be complementary instead, seeking to balance out the sexual forces …' (Hoss 2018, 96–7).

OBJECTS THAT MAY BE HARNESS-RELATED

Button-and-loop fasteners

Eleven button-and-loop fasteners, including seven complete examples and four attachment loops were recovered from the river. The complete examples include three of Wild's Class II 'Ring-headed' (BM-024592; NCL-814393; NCL-625592/FIG. 7.5F), two of Wild's Class III 'Teardrop or petal-headed' (NCL-7D5175/FIG. 7.5D; NCL-6FCE82), one of Wild's Class VIb 'Square-headed' (NCL-42CC47) and a single unclassified type (NCL-D91F16/FIG. 7.5E). Although they are discussed here alongside equine equipment, their function remains far from clear and an association with dress is also possible (Wild 1970, 145; Oldenstein 1976, 186; Allison *et al.* 2004, 8.2.2a; Worrell 2008; Swift 2011, 202; Gui 2015, 233–4). Few are found in context and so the discovery of eleven openwork button-and-loop fasteners 'in close association with a series of harness fittings' in an equipment store in the auxiliary fort of Porolissum, Dacia (Gui 2015, 231) may provide an indication of at least one of their uses.

Common in north-eastern Britain, they are found frequently, but by no means exclusively on military sites (Wild 1970; Allason-Jones 1989b, 17; Worrell 2008) and so their presence in the riverine assemblage is not unexpected. However, their traditional first- or early second-century dating (Wild 1970; Worrell 2008; Schuster 2011b, 304) seems slightly at odds with the mid-Roman emphasis of the majority of the assemblage and may either indicate earlier activity or the need for a reassessment of their dating.

[42] Scallop-shaped studs such as BM-764EFF are found only in mid-third- to mid-fourth-century contexts, although according to Gschwind (1998) this may be connected to the dearth of well-dated finds from the first half of the third century A.D.

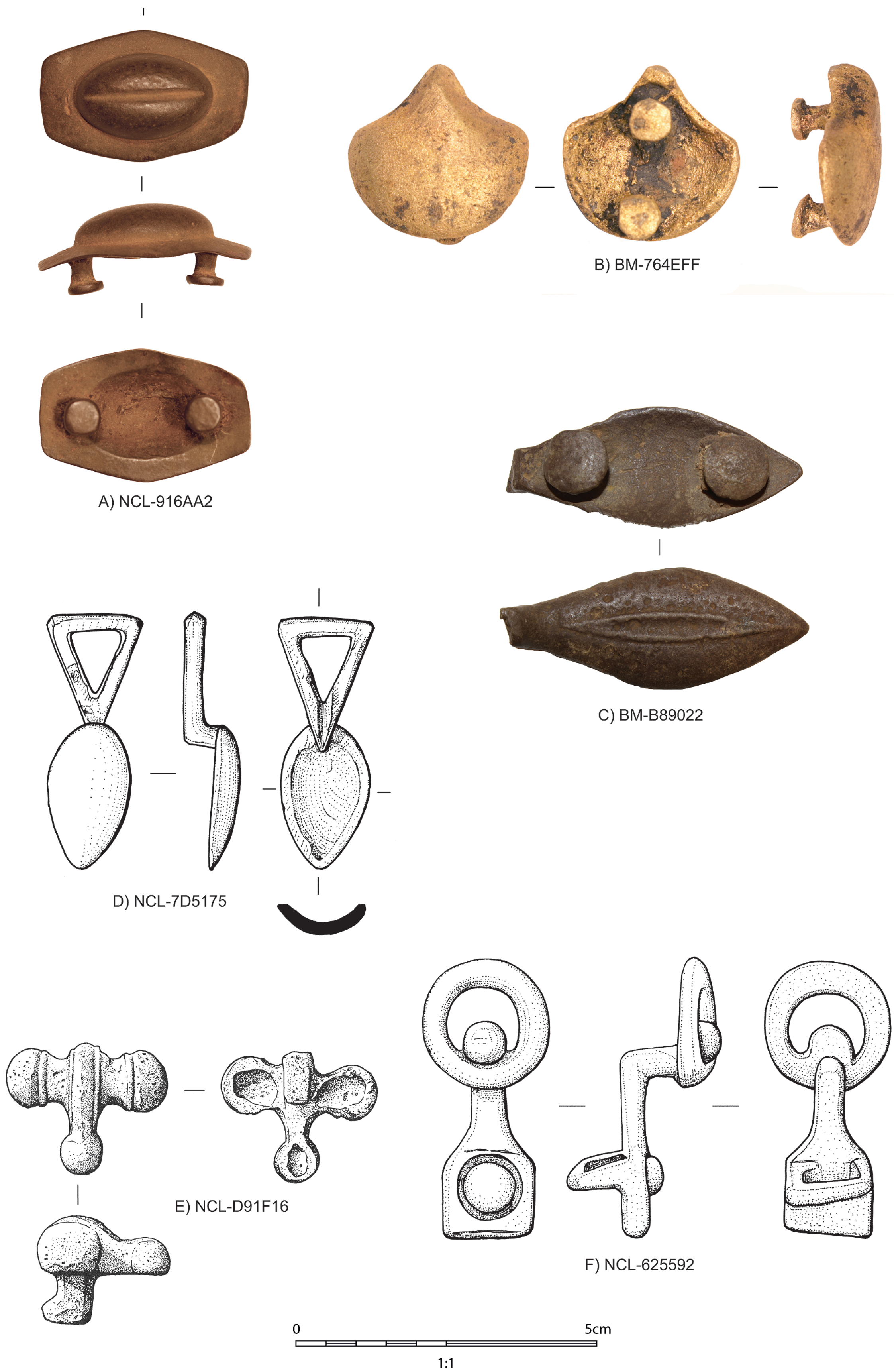


FIG. 7.5. A selection of studs and button-and-loop fasteners from the river

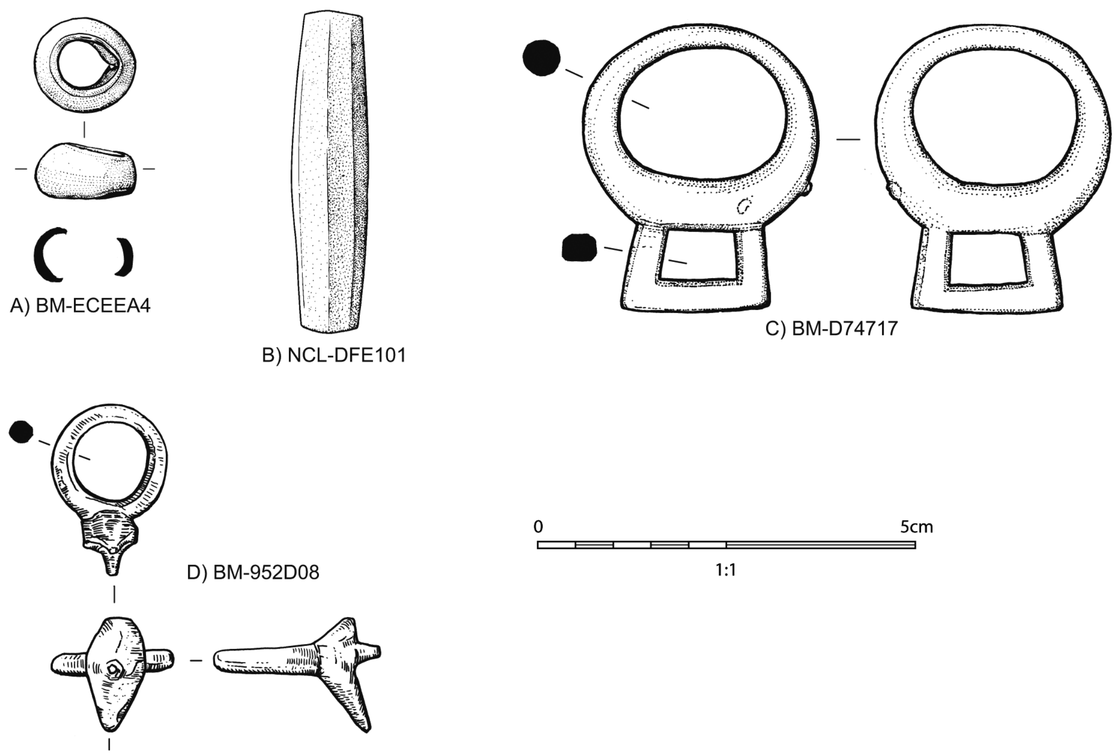


FIG. 7.6. Possible harness fittings and terrets from the river

Copper-alloy beads

53 copper-alloy beads were recovered from the river, 33 being doughnut-shaped (cf. FIG. 7.6A) and the remainder (20) facetted tubes (FIG. 7.6B).[43] Their function remains unknown, although like the button-and-loop fasteners described above, they may have an association with horse harness, either as spacers on harness or as rein weights (McIntosh 2019, 96–7 and fig. 6.6).[44] Certainly the facetted examples have been found at a range of military sites in northern Britain including Catterick (Wilson 2002, 109, nos 13–16), Old Penrith, Cumbria (Mould 1991, 693–4, fig. 97) and Vindolanda (Bidwell 1985, fig. 42, 57 and 58; Birley and Greene 2006, 50), with stratified examples coming from third- or fourth-century deposits (Birley and Greene 2006, 50). Whatever their function, wear patterns particularly on the doughnut-shaped beads suggest repeated use over time.

VEHICLE FITTINGS

Despite the proximity of the riverine deposit to a major Roman thoroughfare, very few objects associated with wheeled transport have been recovered. The small number of finds include five fittings associated with wheels and four with reins.

OBJECTS ASSOCIATED WITH WHEELS OF VEHICLES

Four linch pins were recovered from the river (BH-5FB55B; BH-5FB814; BH-5FBDAA; BM-F68FF3). Linch pins were used to prevent the wheel of a vehicle from slipping off. They are passed through a hole in a vehicle's axle in front of the wheel (Hanemann 2014, Abb. 220),

[43] Five facetted tubular beads and eleven doughnut-shaped beads were found during the Piercebridge excavations. While the tubular beads were found almost exclusively in the *vicus*, the doughnut-shaped examples were found in trenches excavated in the fort, villa and *vicus* (Allason-Jones 2008, 11.77 to 11.79 and fig. D11.53).

[44] Similar beads were found on a bucket handle from Rey, near Montagne, France (Tassinari 1975, 55, no. 122 and pl. XXVII) and so it is possible that they served multiple functions.

and most Roman examples have loops, allowing them to be tied in place (Manning 1985a, 74). Manning (1985a, fig. 20) provides a typology of iron linch pins, which is also followed by Hanemann (2014, Abb. 222). All four examples from Piercebridge are of Type 2B, the most common type (Manning 1985a, 74), but they are not closely comparable in form or size. They were therefore almost certainly made separately, and probably derive from separate vehicles. This type was manufactured on the Continent from the Augustan period (Hanemann 2014, 266), and examples from Blackburn Mill (Piggott 1952, fig. 11, B4) and Newstead (Curle 1911, pl. LXX, 1, 3, 6, 8) attest an early introduction to Britain (Manning 1985a, 74). However, the type was most common in the third and fourth centuries (Hanemann 2014, 266).

In addition, an iron bolt (BH-388D24) was also recovered, most likely used as a connecting pin in a wheeled vehicle (Hanemann 2014, 269–72; Manning 1985a, 126). It is at the shorter end of the spectrum, corresponding to Hanemann's (2014, Abb. 229) Type 2. As it lacks the perforation seen on some examples, it cannot have been mounted horizontally, and must therefore have been dropped vertically to secure two rotating elements together. Comparable finds come from Hod Hill and may suggest a first-century date for this find (Manning 1985a, R6-7).

OBJECTS ASSOCIATED WITH THE REINS

Four terrets of first- to third-century date were found, three in copper alloy (BM-D7569C; BM-D74717/FIG. 7.6C; BH-F10CE6) and a fourth in iron (BM-952D08/FIG. 7.6D). Terrets are rings mounted on a piece of harness, such as a bridle or yolk, which act as guide rings for reins, preventing them becoming tangled (Hanemann 2014, Abb. 268). They are especially important on vehicles powered by teams of animals (Hanemann 2014, 307). Whilst they are usually made of copper alloy, a few iron examples are known (Hanemann 2014, 310), including a very similar example from Blackburn Mill (Piggott, 1952, fig. 11, B5).

CONCLUSION

The assemblage of equine equipment provides important insights into the date and nature of activity at Piercebridge, as well as into processes of deposition.

Like other categories of material, the objects predominantly date to the late second or early third century A.D., although objects like the chain bridle link and the button-and-loop fasteners may hint at limited early Roman activity. The absence of melon beads which were worn by horses until the early second century A.D. (Hoss 2018) may suggest that any depositional activity did not begin until at least A.D. 150. However, glass objects appear to be under-represented in the assemblage as a whole, so other factors may be at play.

While we cannot be certain that all of the finds belonged to military cavalry rather than civilian horsemen, the size of the assemblage makes an association with the army very likely. It is also difficult to be sure whether these are the possessions of a few cavalry officers or of many. Although the range of fittings is large, the Brigetio horse burials demonstrate the sheer number and stylistic variety of fittings which might appear on a single set of horse harness (Barkózci 1948).

Whatever the case, the number of objects recovered is still remarkable. Very little equine equipment was found during the excavations at Piercebridge and even the excavated sites on Hadrian's Wall which accommodated *cohortes equitatae* have only produced a total of 164 harness fittings (McIntosh 2019, 95 and table 6.5). The absence of such items in the archaeological record is usually interpreted as an indicator that great care was taken with harnesses (Allason-Jones 2002, 821; Speidel 1989) and so either the cavalry at Piercebridge were unusually careless with their equipment, or it was being deliberately selected for deposition. The nature of the assemblage, with its focus on elaborate harness fittings, apotropaic pendants and studs over plainer more functional objects like terrets and bits, may also lend weight to the hypothesis that objects were deliberately selected. Like the belt fittings, they symbolise a special kind of military identity and yet could easily be replaced.

As Piercebridge has sometimes been identified as the *Morbium* of the *Notitia Dignitatum* (Rivet and Smith 1979, 420), it might be tempting to associate the assemblage with the *praefectus equitum catafractariorum*, a unit of heavily armed cavalry stationed there at least in the later Roman period (Cool and Mason 2008b, 309).

CHAPTER 8

OBJECTS ASSOCIATED WITH WRITING AND COMMUNICATION

By Philippa Walton with Owen Humphreys and Roger Tomlin

INTRODUCTION

A total of 70 objects associated with writing and communication were recovered from the river. They include 46 lead sealings, ten seal-box elements, six styli, six elements from possible wax spatulas, a marking tool and an inkwell lid. Along with three examples of graffiti on pottery vessels discussed in Chapter 16 and the inscribed finger-rings discussed in Chapter 4, they provide archaeological evidence for literacy, a network of trade and communication links, and the presence of the Roman army at Piercebridge.

SEALINGS

By Roger Tomlin

46 sealings were recovered from the river (FIG. 8.1). While the metal composition has not been analysed, it appears to be lead, probably alloyed with tin to lower the melting-point and sharpen the impression. Such sealings were once attached to cords securing goods in transit. What these were is never stated, whether for instance they were heavy objects such as metal ore or ingots, stone, timber, tools and military equipment, or bulky consignments such as leather, textiles and foodstuffs bundled up in bales or sacks (see *RIB* II.1, 2411 (Lead Sealings) and Michael Still's thesis (1995)).

Some, like the three 'D N' sealings (NCL-36C8B2; BM-E0396B; BM-D44087 and FIG. 8.1A, B and C), refer directly to the emperor, but this need not mean that he was the sender, nor that the goods were intended for an imperial 'expedition'; more likely, they mark consignments which were 'imperial' or 'official' in some special way. In Roman Britain, the majority of sealings are 'official' rather than 'private', since they refer explicitly to military units, or at least to persons who seem to be officers or officials. Only a minority, indeed quite a small minority, are undoubtedly 'private'. These generalisations apply in particular to the large Piercebridge sample. Sealings can be seen as naming in abbreviated form the unit or person responsible for an item, who despatched or authenticated it. The unbroken cord with their seal would guarantee that goods had not been tampered with in transit, distinguish them from others in the same consignment, and assert a claim to 'official' transport and storage facilities.

The 46 Piercebridge sealings are the second-largest such assemblage from a single site in Britain. South Shields has 45 (27 entries in *RIB* II.1, 2411, and others published since in *Britannia*), but like Piercebridge it is outnumbered by Brough under Stainmore, with 188 entries in *RIB* II.1, 2411. The Brough sealings were apparently discarded with other rubbish from the fort, even though they might have had some value as scrap metal at the time, and did indeed have later.[45] This implies that sealings were not recycled by the Romans, but we cannot be sure

[45] When they were first discovered, before being collected as antiquities, they were sold to the local blacksmith.

this was always so. Recycled sealings would naturally disappear from the record, and it is even possible that the Brough sealings were a dispersed 'hoard', but isolated finds do occur at many sites. Although the Piercebridge sealings were probably discarded like those at Brough, it is conceivable that their coin-like nature sometimes prompted deposition in the river 'for luck'. It may also be possible that the goods the sealings were attached to were deposited in the river.

The strategic location of Piercebridge where Dere Street crossed the river Tees, rather more than midway from York to Hadrian's Wall, is reflected by some of the sealings. 13 originated from the Sixth Legion Victrix at York (**4–16**), three from auxiliary units based at Binchester (**20**, cf. **26–28**) and two from Vindolanda (**21–22**). It should also be noted that the legion based a detachment at Piercebridge, at least during the reign of Caracalla (*RIB* III, 3253). But the sealings are not addresses; they do not state where goods were being sent. There is no telling whether goods were despatched expressly to Piercebridge, or were in transit when they were opened there and re-directed.

The legends are all too abbreviated to indicate the grammatical case (briefly discussed in *RIB* II.1, 2411, at p. 88). This was either nominative (such as the unit or person 'despatching' or 'authenticating' the item) or genitive (such as the property 'of' the emperor, an officer 'of' the unit named), and it is usually impossible to tell which. This catalogue expands the case conventionally as the nominative, unless there is good reason, as with the three 'D N' sealings (NCL-36C8B2; BM-E0396B; BM-D44087; **1–3**; FIG. 8.1A, B and C), to prefer the genitive. With personal names, which have usually been abbreviated to the three initials of a Roman citizen's full name, his *tria nomina* (praenomen, nomen and cognomen), the nominative is likely: the officer or official concerned was 'despatching' or 'authenticating' the item, not asserting ownership. The unit to which he belonged might then be regarded as genitive, but this is almost never explicit; the only exceptions, but not from Piercebridge, are two sealings of an *ala* with its title expressed in the genitive, *al(a)e II As(turum)* from Carlisle (*RIB* II.1, 2411.83) and *al(a)e Sab(inianae)* from Corbridge (ibid., 87).

The 35 epigraphic sealings — those with lettering — are grouped in the same categories as in *RIB* II.1, 2411, but omitting categories which are not represented at Piercebridge, and adding a sub-category of *beneficiarius consularis*. They are followed by 13 figural sealings — those with figures, including second entries for the four which are also epigraphic.

In measurements, width comes first, then height. The terms 'obverse' and 'reverse' are used to distinguish sealings with two faces, most of which were made by melting the metal and pouring it into an inscribed box ('matrix'), then pressing a second die into the surface. 'Obverse' is used to distinguish the more important die, for example that of a military unit, if specified; or if not, that of the person responsible.

Epigraphic conventions

Ạ	letter incomplete or damaged; the reading is probable but not certain
A͡B	letters linked by ligature
7	centurial sign
°	medial point
.	trace of letter, not identified
[.]	letter lost
[abc]	letter(s) lost, now restored
(abc)	letter(s) omitted for abbreviation, now restored
?	probable, but not certain, expansion of an abbreviation

1. EPIGRAPHIC SEALINGS (35 sealings)

(a) **Imperial sealings** (3 sealings)

(**1**) NCL-36C8B2 (FIG. 8.1A)
21 x 6 mm, 4 mm thick. Rectangular die
obverse: D N no reverse

(**2**) BM-E0396B (FIG. 8.1B)
23 x 9 mm, 2.29 mm thick. Rectangular die
obverse: D N no reverse

(**3**) BM-D44087 (FIG. 8.1C)
18 x 6 mm, 2.61 mm thick. Rectangular die
obverse: D N no reverse
d(omini) n(ostri). '(Property) of Our Lord (the Emperor).'

These three sealings, although very similar, seem to have been struck by different dies. NCL-36C8B2 (**1**; FIG. 8.1A), although it is too corroded to be certain, may have been struck by the same die as *Britannia* 30 (1999), 383, no. 20 (South Shields). Two further sealings with the legend D N within a rectangular die have been found since at South Shields (*Britannia* 46 (2015), 412, nos 57 and 58). Sealings with the legend D N within a rectangular die have also been found at Aldborough (*Britannia* 21 (1990), 376, no. 68) and Corbridge (*Britannia* 33 (2002), 369, no. 27), making a total of eight. A ninth, said to be from Colchester, was seen by Michael Still (1995, no. 0009A).

As an imperial title, *dominus noster* cannot be closely dated. After being applied informally to Commodus, it was increasingly used by Septimius Severus and his successors, until it became a formal title. Since D N (not the plural DD NN) implies that there was only one emperor at the time, the sealings are probably later than Severus, who usually had a colleague.

(b) **Military sealings**

These are sealings which name military units, and/or officers such as centurions, decurions or *beneficiarii consularis*. Three further instances of abbreviated *tria nomina* will be found under 'Miscellaneous', but they are not explicitly those of military officers (NCL-7CCD42; BM-D4D36C and NCL-2B0BF5; **25**, **29** and **30**; FIG. 8.1R, T and U). If the unit is named, its die has been called the 'obverse'; for the Sixth Legion, but not the two auxiliary units, this was a square or rectangular matrix into which the metal was poured. The 'reverse' bears the initials of the officer concerned; where this is explicit, he is either a centurion (NCL-7DBF23; NCL-3D8115 and BM-E2D6CE; **6**, **7** and **17**; FIG. 8.1F, G and J) commanding a century in a legion, or a decurion (NCL-7DD3F6; **20**; FIG. 8.1M) commanding a troop (*turma*) in an auxiliary cavalry regiment (*ala*). The centurial sign follows the initials and may be taken to mean *centurio* ('centurion') rather than *centuria* ('century'). BM-D3C2BA (**18**; FIG. 8.1K) is exceptional in naming a century with the centurial sign followed by a cognomen in the genitive, but it does not specify the legion. The *beneficiarius consularis* (NCL-384415 and *Britannia* 22 (1991), 302, no. 33 (**23** and **24**; FIG. 8.1P and Q)) was a legionary officer junior to the centurions, who had been seconded for service in the staff of the provincial governor; his duties might then consist of supervising communications at a strategic point (*statio*, 'posting') in the road-network.

Using the initials of *tria nomina* was a neat, space-saving way to identify an officer. The ten most common initials of praenomina (A, C and G, D, L, M, P, Q, S, T) and the eight most common initials of nomina and cognomina (A, C, F, I, M, P, S, V) would in themselves produce 640 combinations. But there were only 60 centurions in a legion, so there must have been few ambiguities at any one time. It happens that two centurions with the initials CIM are known in the Sixth Legion — Gaius Iulius Maximinus (*RIB* 1305) and Gaius Iulius Maritimus (*CIL* viii 2907, a centurion in all three British legions) — as well as legionaries at Caerleon (*RIB* 573) and Chester (*RIB* 532), but there is no reason to suppose these centurions overlapped. However, it is possible that an extra letter was added to one reverse (centurion's) die (NCL-364FF2 and BM-E2126C; **4** and **5**; FIG. 8.1D and E) to avoid such an ambiguity.

Possible expansions of Piercebridge initials are discussed below, but it has not been possible to link any of them to a known centurion of the Sixth Legion, in the way that CVA at Vindolanda (*RIB* II.1, 2411.260) and MAM at Leicester (ibid., 286) might just possibly be Gaius Vitellius Atticianus (*RIB* 1199) and Marcus Aufidius Maximus (*RIB* 143) of that legion.

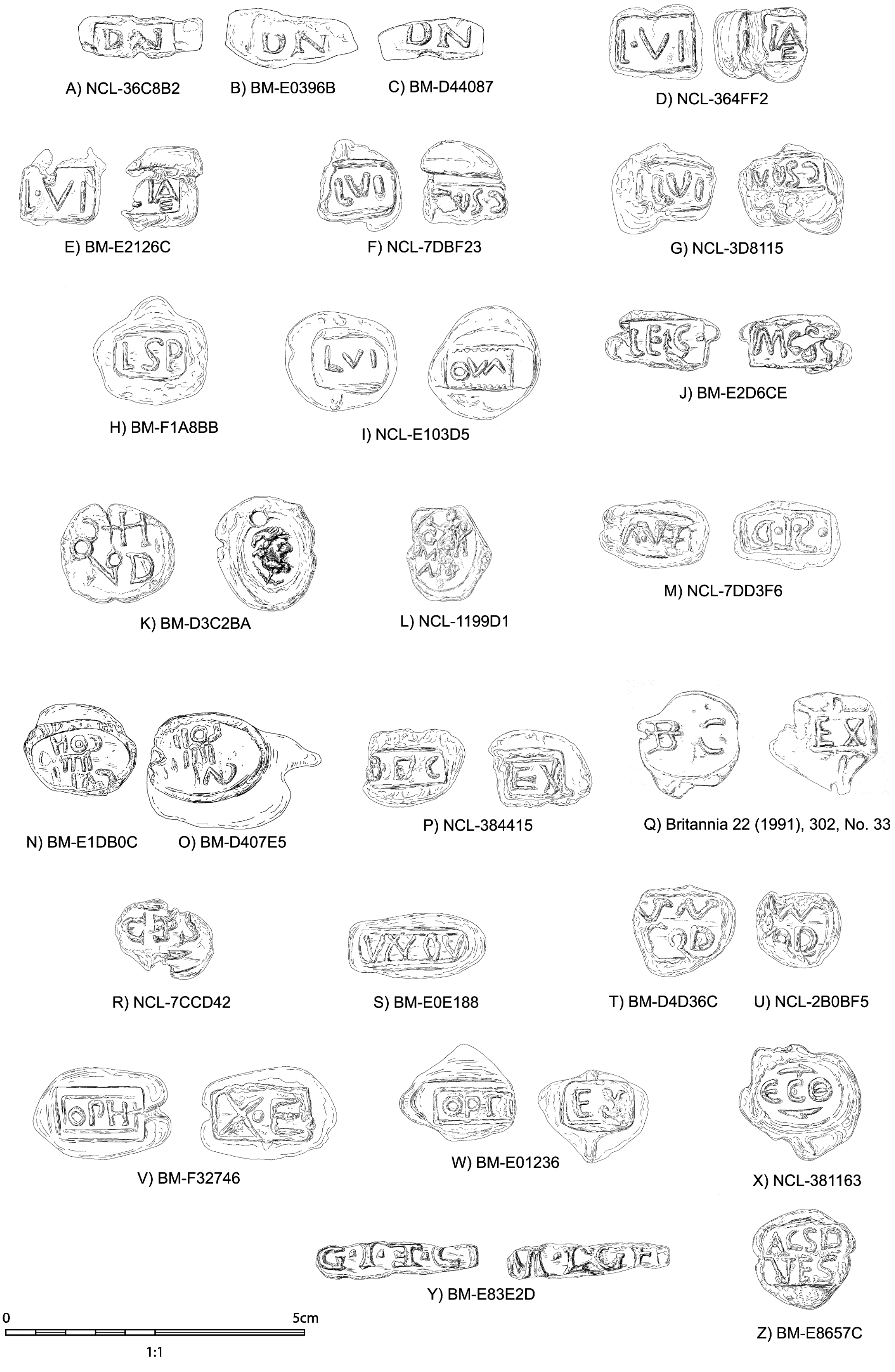


FIG. 8.1. Lead sealings from the river (*Drawn by Roger Tomlin*)

(i) *Sixth Legion* (13 sealings)

These sealings fall into four groups (1–4), each with a different obverse (legionary) die, including BM-F1A8BB and BM-E2EE55 (**11** and **12**; fig. 8.1H) which now lack their obverse side but can be attributed to the Sixth Legion by sharing a reverse (centurion's) die with NCL-E133D6 and NCL-7E0FD8 (**8** and **9**; not illus.). With the possible exception of NCL-7DBF23 and NCL-3D8115 (**6** and **7**; fig. 8.1F and G), each obverse die is used with the same reverse die. This suggests that obverse and reverse dies were made in pairs, each centurion matching his die to his own 'legionary' matrix, rather than using a common matrix.

This need not imply that centurions did not have access to a common matrix simply because they were on detachment from headquarters at York, but the possibility of detachments (*vexillationes*) like the one at Piercebridge itself (*RIB* III, 3253) should be borne in mind. However, it may be assumed in general that legionary sealings marked goods sent north from York.

Group (1)

(**4**) NCL-364FF2 (fig. 8.1D)
17 x 13 mm, 5 mm thick; rectangular dies
obverse: L°VI reverse: [.]IA|E

(**5**) BM-E2126C (fig. 8.1E)
15 x 14 mm, 5 mm thick; rectangular dies
obverse: L°VI reverse: ḶIA|E
l(egio) VI *L(ucius) I(...) Ae(...)*

This obverse die separates L from VI with a medial point, unlike the other three LVI obverse dies below (**6–16**) and those in *RIB* II.1, 2411.68–75. Two obverse dies have been published since which also separate L from VI, but each in a different way: *Britannia* 29 (1998), 439–40, nos 28 and 29 (duplicates found 'in North Yorkshire'), L *leaf stop* VI; and no. 30 (found 'near York'), L°VI°V.

The reverse of both NCL-364FF2 and BM-E2126C (**4** and **5**; fig. 8.1D and E) is damaged by the breaking-out of the binding-cord, but the tip of L survives in **5** (fig. 8.1E). With the help of this, a trace of the left-hand edge of L can be recognised in **4** (fig. 8.1D). Despite the damage, it is clear that the same pair of dies was used for both.

The most likely nomen in *I(...)* is *Iulius*, although it is most often associated with *Gaius*. Other possibilities are *Ianuarius*, *Iunius* and *Iuventius*. E was neatly inserted below A, as if to reduce the number of possible cognomina from *A(...)* to *Ae(...)*, and perhaps implying that it was necessary to distinguish between two centurions who both had the initials LIA. The most likely cognomen is *Ae(lianus)* or *Ae(milianus)*, and at least two legionaries called *Lucius Iulius Aemilianus* are known (*CIL* viii 2556 at Lambaesis; *AE* 1955, 238 at Alexandria).

Group (2)

(**6**) NCL-7DBF23 (fig. 8.1F)
15 x 15 mm, 5 mm thick; rectangular dies
obverse: LVI reverse: .VS 7
l(egio) VI | *.(...) V(...) S(...) (centurio)*

The obverse die is the same as that of NCL-3D8115 (**7**; fig. 8.1G), the letters deeply cut and standing proud. It does not match any of the other LVI dies. The reverse die also is probably the same as that of NCL-3D8115 (**7**; fig. 8.1G), but in view of the praenomen this cannot be quite certain. Both dies are rectangular, bounded by horizontal lines above and below. In both the centurial sign (a reversed C) and the S of the cognomen are identical; and so probably is the V of the nomen although corroded in NCL-3D8115 (**7**; fig. 8.1G); but the traces of the praenomen are different. In NCL-7DBF23 (**6**; fig. 8.1F) it is largely lost, but there seems to be a horizontal bar appropriate to T or possibly C. In NCL-3D8115 (**7**; fig. 8.1G), the letter looks like V (impossible as a praenomen) or perhaps M.

The pairing of legionary obverse and reverse dies noted above, with the implication that each centurion used his own 'legionary' matrix, further suggests that NCL-7DBF23 and NCL-3D8115 (**6** and **7**; fig. 8.1F and G) embody the same (centurion's) reverse.

The most likely nomen is *Valerius*, but there are other possibilities such as *Ulpius*. The officer is explicitly a centurion, as in NCL-3D8115 (**7**; fig. 8.1G) and BM-E2D6CE (**17**; fig. 8.1J). There are other instances of legionary sealings explicitly 'signed' by a centurion: for the Sixth Legion, *RIB* II.1, 2411.71 and 72; *Britannia* 19 (1988), 499, no. 51; *Britannia* 29 (1998), 440, no. 30; for the Second Legion Augusta, *Britannia* 22 (1991), 298, no. 11; *Britannia* 38 (2007), 351, no. 9; and for a *primus pilus*, legion not stated, *Britannia* 21 (1990), 369, no. 22. But quite often legionary sealings do not include a centurial sign in the reverse.

(**7**) NCL-3D8115 (fig. 8.1G)
18 x 16 mm, 5 mm thick; rectangular dies
obverse: LVI — reverse: .ṾS 7
l(egio) VI | *.(...) V(...) S(...) (centurio)*

As noted above, the obverse die is the same as that of NCL-7DBF23 (**6**; fig. 8.1F); and the reverse die is so similar that it is probably the same, but this cannot be quite certain because of the different state of the praenomen. In NCL-3D8115 (**7**; fig. 8.1G) it is poorly preserved, but resembles V or perhaps M, if there is a shallow vertical stroke to the left. As also noted, the most likely nomen is *Valerius*, but there are other possibilities such as *Ulpius*.

Group (3)

(**8**) NCL-E133D6 (not illus.)
18 x 13 mm, 8 mm thick; rectangular dies
obverse: LVI — reverse: LSP

(**9**) NCL-7E0FD8 (not illus.)
19 x 15 mm, 6 mm thick; rectangular dies
obverse: LVI — reverse: LSP
leg(io) VI | *L(ucius) S(...) P(...)*

NCL-E133D6 (**8**; not illus.) is better preserved than NCL-7E0FD8 (**9**; not illus.), especially in the reverse, but it is clear that both come from the same pair of dies. NCL-810A22 (**10**; not illus.) is probably the same obverse die.

(**10**) NCL-810A22 (not illus.)
18 x 14 mm, 5 mm thick; rectangular die
obverse: LVI — no reverse

The obverse is faint, but just recognisable. It looks the same as NCL-E133D6 (**8**; not illus.) and NCL-7E0FD8 (**9**; not illus.). The reverse is damaged by the course of the binding-cord, and too corroded for any trace of a die to be seen.

Two further sealings in this group, BM-F1A8BB and BM-E2EE55 (**11** and **12**; fig. 8.1H and not illus.) have lost their obverse entirely.

(11) BM-F1A8BB (fig. 8.1H)
20 x 18 mm, 6 mm thick; rectangular die
no obverse — reverse: LSP

(12) BM-E2EE55 (not illus.)
21 x 14 mm, 6 mm thick; rectangular die
no obverse reverse: LṢ[.]

L(ucius) S(...) P(...)

The reverse of BM-E2EE55 (**12**; not illus.) is badly damaged, with only the tail surviving of S, but the die seems to be the same as that for the reverse of BM-F1A8BB (**11**; FIG. 8.1H). (L is shorter in BM-E2EE55 (**12**; not illus.) than in BM-F1A8BB (**11**; FIG. 8.1H), but this may only be an accident of registration.) The die also seems to be the same as the reverse of NCL-E133D6 (**8**; not illus.) and NCL-7E0FD8 (**9**; not illus.), but the state of preservation is different. BM-F1A8BB (**11**; FIG. 8.1H) was cast in a rectangular matrix, and its underside is gouged, as if it were levered out. BM-E2EE55 (**12**; not illus.) is more or less flat-bottomed, but there is no trace of lettering.

The two 'North Yorkshire' sealings of the legion already cited (*Britannia* 29 (1998), 439–40, nos 28 and 29) bear the initials LSS on the reverse, and the coincidence of letters with LSP raises the possibility that both men were *L(ucius) S(eptimius)*, a combination adopted by some legionaries who gained citizenship in the reign of Septimius Severus. But many other expansions are possible, and Lucius Servaeus Sabinus provides a cautionary instance: he was certainly a centurion of the Sixth Legion Victrix (*CIL* iii 14398), but this was before it came to Britain, since he later became a centurion of its predecessor, the Ninth Legion Hispana (*AE* 1930, 109). And likewise, neither of the Sixth Legion centurions mentioned above with the initials CIM can be linked to the leather off-cut stamped CIM found at Vindolanda (*RIB* II.4, 2445.1): this belongs to the period A.D. 97–103, at least 15 years before the legion came to Britain.

Group (4)

(**13**) NCL-E103D5 (FIG. 8.1I)
18 x 19 mm, 7 mm thick; rectangular dies
obverse: LVI reverse: OVA

(**14**) NCL-E11FD7 (not illus.)
15 x 16 mm, 5 mm thick; rectangular dies
obverse: LVI reverse: OVA

(**15**) NCL-3D2907 (not illus.)
20 x 15 mm, 8 mm thick; rectangular dies
obverse: LV[I] reverse: [O]VA

(**16**) NCL-7C6E33 (not illus.)
19 x 22 mm, 9 mm thick; rectangular dies
obverse: LVI reverse: OVA

leg(io) VI | AVO retrograde; probably *A(ulus) V(...) O(...)*

The obverse die is different from the other three LVI dies above (**4–10**). The reverse die is bordered, top and bottom, by a row of pellets. NCL-3D2907 (**15**; not illus.) is badly damaged, but it is clear that the same pair of dies was used for all four sealings. The same pair seems also to have been used for the only other example of this combination, *RIB* II.1, 2411.70 (South Shields).

The first letter of the reverse is undoubtedly O, not Q or reversed C. Since OVA is impossible as the initials of *tria nomina*, and there is no name attested in *Ova(...)*, the die should be read retrograde as AVO. *RIB* expands this to *a(la) Vo(contiorum)*, but the two sealings explicitly of this unit (*RIB* II.1, 2411.90 and *Britannia* 47 (2016), 393, no. 6) abbreviate its name to AVOC. There is no independent evidence to associate this *ala* directly with the legion, so as to cause them to issue joint-sealings, nor any other legionary sealing that associates an *ala* with a legion.

Legionary sealings are quite common (*RIB* II.1, 2411.42–80), but their reverses all consist of the EXP formula, or the initials of *tria nomina*, sometimes explicitly those of a centurion. Although *a(la) Vo(contiorum)* is possible, therefore, a more likely expansion is *A(ulus) V(...) O(...)*. Once again the most likely nomen would be *Valerius*, but there are other possibilities such as *Ulpius*.

(ii) *Legionary, but not explicit* (3 sealings)

(**17**) BM-E2D6CE (FIG. 8.1J)
18 x 10 mm, 5 mm thick; rectangular dies
obverse: LE *palm* G reverse: MCS 7
leg(io) | *M(arcus) C(...) S(...) (centurio)*

The third letter of the obverse resembles C, but has a shallow diagonal 'tail' which makes G acceptable. The reading of LEG for *leg(io)* is supported by the palm branch (for 'Victory'), and confirmed by the centurial reverse. The legion is not fully identified, probably for want of space, but the Sixth Legion is most likely (cf. **4–16**).

On the reverse, the rounded ends of the second letter survive, showing that it is a small C, not an incomplete O. The third letter has been damaged by the course of the binding-cord, but can only be S. The centurial symbol is another small C (now broken) continued downward by a short vertical stroke.

The most likely nomen is *Claudius*, but there are many other possibilities such as *Caecilius*, *Calpurnius*, *Cassius*, *Cocceius* and *Cornelius*.

(**18**) BM-D3C2BA (FIG. 8.1K)
21 x 19 mm, 4 mm thick; oval dies
obverse: 7 TITI | ΛNITD reverse: *two eagles fighting a snake*
Probably *(centuria) Titiani t(ussum) d(edit)*, 'The century of Titianus struck and issued (this).'

A round hole has been driven through the sealing, near the left edge of the obverse, as if to pierce it for attachment. The obverse was first read as 7Ḥ|ND (*Britannia* 20 (1989), 337, no. 31), but this did not take account of the crossbar of 'H' extending further to the left and right, nor of the upward extension of the second vertical of N; nor is HND possible as the initials of *tria nomina*. A better reading was suggested by Michael Still (Still 1995, 414, no. 0759) and accepted in *Britannia* 26 (1995), 389 (d). The two 'crosses' (++) are TI ligatured twice; the upward extension of N indicates NI ligatured, which must be assumed to incorporate an open (unbarred) A; the slight leftward extension of the top of D indicates TD ligatured, like TD in *RIB* II.1, 2411.94, and equivalent to TVD on some other sealings. A *centuria Titiani* is inscribed on a lead tag from Chester (*RIB* II.1, 2410.7, with note). Compare *RIB* 593 (Ribchester), the building stone of a legionary *centuria Titiana*, the century recently commanded by Titius or Titianus. For the motif of eagle and snake, see Henig 2017.

(**19**) NCL-1199D1 (FIG. 8.1L)
15 x 17 mm, 6 mm thick; oval die
G | M | A vertically; to the right of these letters, Victory
G(aius) M(...) A(...)

Winged Victory stands on the globe, holding out a wreath; with her other hand she holds something which looks more like a cornucopia than the expected palm branch. Her presence makes inevitable the military association, although it is not explicitly legionary. The initials of *tria nomina*, even if there is no centurial sign, would suit a legionary centurion.

The praenomen *Gaius* was conventionally abbreviated to C, as in NCL-7CCD42 (**25**; FIG 8.1R), BM-D4D36C (**29**; FIG. 8.1T) and NCL-2B0BF5 (**30**; FIG. 8.1U), but G is occasionally found instead: in Britain, on stone (*RIB* 373, 812) and in clay (*Britannia* 40 (2009), 321, no.

14, the man's own signature). However, when *tria nomina* were reduced to their initials, this convention of C for *Gaius* evidently became less general: in the index of 'probable initials of tria nomina' in *RIB* II (*Epigraphic Indexes*, 18, Index 2.2) there are 10 instances of G as the initial of a praenomen, as against *c.* 20 of C. They include the sealings *RIB* II.1, 2411.272 (GLS) and 273–4 (GMS).

(iii) *Sealing of an ala* (1 sealing)

(**20**) NCL-7DD3F6 (fig. 8.1M)
19 x 11 mm, 6 mm thick; rectangular dies
obverse: Λ°V$\widehat{\text{ET}}$ reverse: °S°L°D retrograde
a(la) Vet(tonum) | *S(...) L(...) d(ecurio)*

The *ala* is conventionally described as the obverse, but this sealing was made by pouring the metal into a matrix incised with the decurion's initials; the surface was then impressed with the *ala* sealing. A is open (unbarred) and separated from V by a medial point. E is ligatured to T. In cutting the decurion's initials retrograde, the mould-maker inadvertently inserted the medial points after the letters, so that they printed *before* them, not after (cf. the reverse of BM-F32746 (**31**; not illus.)). Instead of three initials, the decurion (troop-commander) has only two, as also in *RIB* II.1, 2411.84 (Stanwix) and 88 (South Shields). Although conceivably he was not a Roman citizen, and this was his name and patronymic, it is more likely that, for want of space, only his nomen and cognomen were abbreviated; thus, explicitly, a decurion of the *ala Vocontiorum* in *RIB* II.1, 2411.90 (Leicester) is named as *Fl(avius) Sim(ilis) d(ecurio)* without praenomen.

This is the first sealing of the *ala Hispanorum Vettonum*, which is attested at Binchester (*Vinovia*), the next fort to the north from Piercebridge, by *RIB* 1028, 1035 and III, 3260; it was there in the late second and third centuries, but its presence cannot be more closely dated. The three VNOV sealings (BM-E0E188; BM-F1C88D and NCL-369E56 (**26–28**; fig. 8.1S and not illus.)) may also refer to Binchester.

(iv) *Sealings of a cohort* (2 sealings)

(**21**) BM-E1DB0C (fig. 8.1N)
21 x 16 mm, 8 mm thick; oval die
obverse: COH | IIII | G̣AḶ retrograde no reverse

(**22**) BM-D407E5 (fig. 8.1O)
32 x 21 mm, 6 mm thick; oval die
obverse: COH | IIII | G̣AḶ retrograde no reverse

coh(ors) IIII Gal(lorum)

The numeral is marked by a suprascript bar which has registered better in BM-E1DB0C (**21**; fig. 8.1N) than BM-D407E5 (**22**; fig. 8.1O). The lower part of GAL has registered badly in both, and G resembles C. The lettering in general is rather shallow and worn, but the same die was clearly used for both sealings.

They are the first sealings of the Fourth Cohort of Gauls. After being stationed on the Antonine Wall and at Risingham, it became the garrison of Vindolanda in the reign of Septimius Severus (*RIB* 1685, 1686, 1687, 1688, 1705, 1706, 1710, *Britannia* 46 (2015), 393, no. 11), where it remained (*Not. Dig. Occ.* XL, 41).

(v) *Sealings of a beneficiarius consularis* (2 sealings)

(**23**) NCL-384415 (fig. 8.1P)
17 x 14 mm, 7 mm thick; rectangular dies

obverse: B F̣ C reverse: EX
b(ene)f(iciarius) c(onsularis) | ?*ex(pedivit)*

(**24**) No longer in assemblage (FIG. 8.1Q)
Britannia 22 (1991), 302, no. 33 19 x 20 mm; oval and rectangular dies
obverse: B(*barred*) C reverse: EX
b(ene)f(iciarius) c(onsularis) | ?*ex(pedivit)*

Probably 'The *beneficiarius consularis* has despatched (this)'.

The obverse dies are different, NCL-384415 (**23**; FIG. 8.1P) being rectangular and **24** (FIG. 8.1Q) oval. Also *beneficiarius* is differently abbreviated. In NCL-384415 (**23**; FIG. 8.1P) it is BF, but the lettering is shallow and incomplete: B has lost the left edge of its vertical, and the horizontal strokes of F are confused by a diagonal just to the right, which is possibly a feature like that in *RIB* II.1, 2411.246 (Brough), a vertical stroke dividing BF from C, which Michael Still has suggested (Still 1995, 206–7 = no. 0524) might represent the distinctive lance borne by a *beneficiarius*. Another possibility would be a palm branch. In **24** (FIG. 8.1Q), B is divided by a medial horizontal stroke which extends to the left and right, perhaps a ligatured F, but amounting to a sign or symbol also found on the tombstone of a *beneficiarius* at Caerleon (*RIB* III, 3098).

There is a horizontal line drawn above EX on the reverse of NCL-384415 (**23**; FIG. 8.1P), a feature which seems to be lacking in the reverse of **24** (FIG. 8.1Q), where also the letters are slightly different. The dies are thus different, but related, consisting of a matrix incised with the letters EX, into which the metal was poured when molten. BM-F32746 (**31**; not illus.) and BM-E01236 (**32**; FIG. 8.1W) were made in the same way, but again the dies seem to be different. The only other instances of EX being associated with BFC are two sealings from Brough: *RIB* II.1, 2411.246 (just cited), which is probably from a different die, and *RIB* II.1, 2411.267, which is now lost. Two further instances of EX, but from different dies, are found with BM-F32746 (**31**; not illus.) and BM-E01236 (**32**; FIG. 8.1W).

In all these instances, EX is surely a variant of EXP, which is associated with the Second Legion (*RIB* II.1, 2411.44–54 with note, and perhaps 66–67), and also with the Sixth (ibid., 75). There are a few instances of EXP from Gaul (Still 1995, nos 0425, 0427, 0428) and Syria (no. 0443) but they have no obverse, so their association is unknown. The expansion of EX and EXP is uncertain, but *RIB* accepts Richmond's *ex(pedivit)* and *exp(edivit)*, '... has despatched', which makes good sense. A general formula even if self-evident seems more likely than a specific, limited category such as *exp(ensus)* ('expended') or *exp(editionalis)* ('for a military expedition').

The *beneficiarius consularis*, as already noted, was a junior officer seconded to the staff of the provincial governor, who might be posted to a strategic point in the road-network. To these four sealings of a *beneficiarius consularis*, two from Piercebridge and two from Brough, a fifth should probably be added: *RIB* II.1, 2411.247 (Aldborough), reading B F V. But probably not three others: *RIB* II.1, 2411.250 (Brettenham), reading $\mathrm{C^{o}}$BFEC, and 268–9 (Brough), reading F C F S.

(c) **Miscellaneous sealings** (11 sealings)

These are sealings which are not explicitly military, although it is often likely. NCL-7CCD42 (**25**; FIG. 8.1R), BM-D4D36C (**29**; FIG. 8.1T) and NCL-2B0BF5 (**30**; FIG. 8.1U) carry *tria nomina* abbreviated to their initials, which may well be those of centurions. BM-F32746 (**31**; not illus.) and BM-E01236 (**32**; FIG. 8.1W) carry the formula EX, which is associated with *beneficiarii consularis* and is surely a variant of EXP associated with legions (NCL-384415 (**23**; FIG. 8.1P) and **24** (FIG. 8.1Q) with note). BM-E0E188, BM-F1C88D and NCL-369E56 (**26**–**28**; FIG. 8.1S and not illus.) abbreviate a possible place-name (VNOV) associated with a *beneficiarius consularis* and an *ala*. But two at least seem to be civilian and 'private', an apparent partnership BM-E83E2D (**34**; FIG. 8.1Y) and, unusually, one in Greek NCL-381163 (**35**; FIG. 8.1X).

(**25**) NCL-7CCD42 (FIG. 8.1R)
18 x 13 mm, 4 mm thick; oval die
GE͡PS no reverse
G(aius) Ep(...) S(...)

The nomen is probably *Epidius* or *Eppius*. Another possibility, *Eprius*, is rare and has occurred only once in Britain, even if nearby at Binchester (*Britannia* 45 (2014), 440, no. 12). There is an elliptical space-filler below the letters, too damaged for identification.

(**26**) BM-E0E188 (FIG. 8.1S)
24 x 11 mm, 6 mm thick; rectangular die
obverse: VNOV reverse: *possible traces*

(**27**) BM-F1C88D (not illus.)
25 x 10 mm, 5 mm thick; rectangular die
VNO[V] no reverse

(**28**) NCL-369E56 (not illus.)
30 x 12 mm, 5 mm thick; rectangular die
[V]ṆOṾ no reverse

?*V(i)nov(ia)*

These three sealings were cast in a flat-bottomed matrix, and impressed with the same die. On BM-F1C88D (**27**; not illus.) and NCL-369E56 (**28**; not illus.), there is no sign that the matrix was anything but flat-bottomed; but on the underside of BM-E0E188 (**26**; FIG. 8.1S), where the upper die is the best preserved and confirms the restoration of the other two, there are possible traces of two letters with a space between them, perhaps P (*or* S) and D. But the traces are slight and ambiguous.

The die cannot be interpreted as an abbreviated personal name, but perhaps *V(i)nov(ia)* was intended, the Roman place-name of Binchester; *i* may have been reduced after *u*, or simply omitted. Binchester was the posting of a *beneficiarius consularis* (*RIB* 1031, 1032) and the likely source of the *ala Vettonum* sealing NCL-7DD3F6 (**20**; FIG. 8.1M). Compare also *RIB* II.1, 2411.307 (Buxton), VIN | OEN, which Mark Hassall suggested might be *Vino(vi)en(ses)*, for the inhabitants of *Vinovia* (Binchester).

(**29**) BM-D4D36C (FIG. 8.1T)
18 x 16 mm, 6 mm thick; rectangular die
snake | C̣QD no reverse

(**30**) NCL-2B0BF5 (FIG. 8.1U)
15 x 13 mm, 6 mm thick; rectangular die
snake | C̣QD no reverse

G(aius) Q(...) D(...)

Before both sealings were impressed, the metal was run into a little uninscribed box to which four grooves led, presumably to accommodate the binding-cords (cf. NCL-381163 (**35**; FIG. 8.1X)). The same die was used for both sealings, but its left-hand edge did not register. Its other three edges are well preserved in BM-D4D36C (**29**; FIG. 8.1T).

BM-D4D36C (**29**; FIG. 8.1T) was first published as *Britannia* 20 (1989), 337, no. 33, reading: V(*or* N)N|C̣QD. But by collating it with NCL-2B0BF5 (**30**; FIG. 8.1U), it is clear that the 'zigzag' above is continuous; and although it could be interpreted as some combination of N, M and V ligatured together, it is better seen as a snake advancing right. Its head is quite clear in BM-D4D36C (**29**; FIG. 8.1T). For this motif compare *RIB* III, 3257, a building stone from Piercebridge, on which the initials of *tria nomina* are accompanied by a similar zigzag figure representing a snake; as noted there, this was 'a good symbol associated with a man's *genius*'.

Only the tip remains of C in both sealings, but it looks as if S can be excluded. The tail of Q is well preserved, and excludes O.

(**31**) BM-F32746 (not illus.)
24 x 16 mm, 7 mm thick; rectangular dies
obverse: OPH reverse: E°X retrograde
Oph(...) | ?*ex(pedivit)*
Probably 'Oph(...) has despatched (this)'.

Obverse and reverse dies are both well preserved, and the reading is certain. In the obverse, the horizontal of H continues to the right, but there is no other sign of its being part of a ligatured letter such as E; since it crosses the rectangular border which frames the letters, it is probably an accident of cutting. This obverse is the same in style as that of BM-E01236 (**32**; FIG. 8.1W), three letters framed by a line drawn above, below and on either side. The first two letters, O P, are even the same, but this is presumably a coincidence; the dies are not identical. The obverse of BM-F32746 (**31**; not illus.) cannot be read as an abbreviated *tria nomina*, whether rectograde (OPH) or retrograde (HPO); nor is it a military unit; so it is surely an abbreviated cognomen, and as such would be distinctive: names in *Oph(...)* such as *Ophelimus* are very uncommon.

The reverse can hardly be two words abbreviated *X(...) E(...)* or (retrograde) *E(...) X(...)*, so the medial point is either redundant as in *RIB* II.1, 2411.305 (Richborough) or, more likely, it has been misplaced as in the reverse of NCL-7DD3F6 (**20**; FIG. 8.1M): the mould-maker (working retrograde) should have placed it the other side of X so that it printed *after* both letters. EX would then be a variant of the EXP formula, for which see the note to NCL-384415 (**23**; FIG. 8.1P) and **24** (FIG. 8.1Q). Except in BM-F32746 (**31**; not illus.) and BM-E01236 (**32**; FIG. 8.1W), EX is explicitly linked to *beneficiarii consularis*, and EXP to legions, which strongly suggests that EX / EXP was an 'official' term abbreviated. The divergence may even suggest that the form EX was used by *beneficiarii consularis*, EXP by centurions; the only possible exception would be *RIB* II.1, 2411.67, where the reading is in doubt. At all events, OPH on BM-F32746 (**31**; not illus.) and OPT on BM-E01236 (**32**; FIG. 8.1W) were surely officials, and probably legionary officers; perhaps even *beneficiarii* rather than centurions, especially if BM-E01236 (**32**; FIG. 8.1W) shares a reverse die with **24** (FIG. 8.1Q) (see further, below).

BM-F32746 (**31**; not illus.) and BM-E01236 (**32**; FIG. 8.1W) were made like NCL-384415 (**23**; FIG. 8.1P) and **24** (FIG. 8.1Q), by pouring the metal into a matrix incised with EX in some form, which was then impressed by the obverse die bearing an abbreviated name. The reverse dies (the matrices), although obviously related, are mostly different. BM-F32746 (**31**; not illus.) is a reversal of BM-E01236 (**32**; FIG. 8.1W), and like **24** (FIG. 8.1Q), they both lack the suprascript line of NCL-384415 (**23**; FIG. 8.1P). But **24** (FIG. 8.1Q) looks the same as BM-E01236 (**32**; FIG. 8.1W) (see note to BM-E01236 (**32**; FIG. 8.1W)).

(**32**) BM-E01236 (FIG. 8.1W)
20 x 17 mm, 7 mm thick; rectangular dies
obverse: OPT reverse: EX
?*Opt(atus)* | ?*ex(pedivit)*
Probably 'Optatus has despatched (this)'.

The obverse with its rectangular border and plain letters is the same in style as that of BM-F32746 (**31**; not illus.), but is not identical. Taken by itself, since there is no praenomen in *O(...)*, it might be read retrograde as T P O, *T(itus) P(...) O(...)*, but comparison with BM-F32746 (**31**; not illus.) makes an abbreviated cognomen more likely. This would almost certainly be *Optatus*, since *Optimus* and names derived from *Optatus* are quite rare. Two lead sealings from Kirkby Thore (*Britannia* 19 (1988), 499, no. 51; *RIB* II.1, 2411.98 corrected in Frere and Tomlin 1991, 311 (*f*)) name a centurion of the Sixth Legion called *Optatus* who might be the same man, but the cognomen is fairly common.

The reverse is not well preserved, but E is certain and there is sufficient trace of X. There is no sign of any medial point. The die is not the same as those of NCL-384415 (**23**; FIG. 8.1P) and BM-F32746 (**31**; not illus.), but looks the same as **24** (FIG. 8.1Q), even if side-by-side comparison is not possible. Letter-forms and measurements seem to coincide. If so, it would imply that OPT was a *beneficiarius consularis*, or at least a colleague in the same posting (*statio*).

(**33**) BM-E8657C (FIG. 8.1Z)
19 x 18 mm, 5 mm thick; rectangular die
ACSD | VES no reverse

Already published as *Britannia* 20 (1989), 337, no. 30. *RIB* II.1, 2411.243 (Brough), now lost, is evidently from the same die.

Its expansion is beyond conjecture. ACS is acceptable as *tria nomina*, but not D as *d(ecurio)* since there is no reference to an *ala*. CSD is even more acceptable as *tria nomina* since *Gaius* is a more common praenomen than *Aulus*, but this does not account for the preceding letter A. This would be redundant whether it were the preposition *a* ('from'), or an abbreviated term such as *a(gente)* ('by agency of'), *a(uctore)* with ablative and *a(uctoritate)* with genitive (both meaning 'by authority of'). But if EX / EXP is no more than *expedivit* ('has despatched', see note to **24** (FIG. 8.1Q)), it too is almost redundant. Another guess is that VES is for *ves(tiarius)* ('relating to clothes'), a term quite frequent in epitaphs and other inscriptions which apparently has the sense of 'clothes-dealer'.

(**34**) BM-E83E2D (FIG. 8.1Y)
29 x 7 mm, 4 mm thick; rectangular dies
obverse: G ◦ I ◦ $\widehat{\text{ET}}$ ◦ C reverse: M ◦ LGF̣
G(...) I(...) et C(...) | *?m(anu) L(uci) G(...) F(...)*
Probably 'G(...) I(...) and G(...) C(...)' | 'by the hand of L(ucius) G(...) F(...)'.

This sealing is unparalleled in form at Piercebridge and also in *RIB* II.1, 2411. It is long and narrow, too narrow for the edges of the dies to register. The capital letters are unusually well-formed and in high relief, the medial points are neat little triangles. It is not clear which should be called the 'obverse' and which the 'reverse'; the distinction drawn here supposes that one face named two persons, business-partners (*socii*), and the other named the person directly responsible. For such a partnership, compare Still 1995, no. 1085 (?Lyon), MCP ET TNM.

Although G I naturally suggests *G(aius) I(ulius)*, it is followed by *et C(...)*, which would suggest that the obverse carries the abbreviated names of two persons who shared the same nomen, *Gavius* or *Gabinius* for example, but bore different cognomina, *I(...)* and *C(...)*; most likely father and son, brothers or fellow-freedmen, but by implication business-partners (*socii*). There is support for this idea on the reverse, since M is separated from LGF by a medial point, and LGF is surely the initials of *tria nomina*. The nomen evidently began with G, suggesting that this man was related to the partners, whether as their patron (if they were his freedmen) or as a fellow-freedman, father, brother or son. M can be understood as an abbreviation for *m(anu)* ('by the hand of'), as quite often in the stamps of samian potters. Another guess would be *m(isit)*, 'has sent', which would have much the same sense.

(**35**) NCL-381163 (FIG 8.1X)
24 x 19 mm, 7 mm thick; oval die
εcθ no reverse
(In Greek letters) 'esth(...)'

There is a foliate space-filler above and below. The metal was run into a hemispherical matrix to which four grooves led, presumably to accommodate the binding-cords; rather like BM-D4D36C (**29**; FIG. 8.1T) and NCL-2B0BF5 (**30**; FIG. 8.1U), but wider.

First published as *Britannia* 20 (1989) , 337, no. 32 with *Britannia* 21 (1990), 378(g), this is the only Greek sealing from Piercebridge. Greek sealings are understandably rare in Britain, since they imply goods imported from the Greek-speaking East. The only other examples of Greek sealings are *RIB* II.1, 2411. 41 (Ickham, duplicated in Dorset: *Britannia* 29 (1998), 437, no. 14; 265 (St Albans); 278 (London)).

Presumably a personal or place-name, but there is no obvious expansion. Possible elements include εcθλoc ('good'), εcθηc ('clothing') and even αιcθηcιc ('perception') with ε for αι.

2. FIGURAL SEALINGS (13 sealings)

(i) Figural sealings, epigraphic (4 sealings)

Martin Henig has kindly commented on photographs. Note that the four figural sealings with epigraphic content are fully described above.

(**18**) BM-D3C2BA (FIG. 8.1K)
21 x 19 mm, 4 mm thick; oval dies
obverse: 7 T͡IT͡I | A͡NIT͡D reverse: *two eagles fighting a snake*
probably *(centuria) Titiani t(ussum) d(edit)*, 'The century of Titianus struck and issued this'

(**19**) NCL-1199D1 (FIG. 8.1L)
15 x 17 mm, 6 mm thick; oval die
G | M | A vertically; to the right of these letters, Victory
G(aius) M(...) A(...)

(**29**) BM-D4D36C (not illus.)
18 x 16 mm, 6 mm thick; rectangular die
snake | C̣QD

(**30**) NCL-2B0BF5 (not illus.)
15 x 13 mm, 6 mm thick; rectangular die
snake | C̣QD

G(aius) Q(...) D(...)

(ii) Figural sealings, entirely non-epigraphic (9 sealings)

(**36**) BM-E29CAD (not illus.)
25 x 12 mm, 6 mm thick; round dies
Only half the sealing, which has been cut or broken. The image on both faces is the same, but from different dies. In the border: trace of pellets. In the apex: a crescent, C-shaped moon between two small spheres (perhaps planets). Below, and in the centre: the radiate orb of the sun. Much the same motif as the obverse of NCL-5A79D3 (**37**), but in different proportions.

(**37**) NCL-5A79D3 (not illus.)
13 x 12 mm, 2 mm thick; round dies
obverse: an orb (for the sun, but not radiate) embraced by a larger crescent (for the moon), within a ring of seven small spheres (perhaps the sun and moon again, with the five planets). Cf. BM-E29CAD (**36**).
reverse: a radiate orb rather like those of BM-E29CAD (**36**), which in view of the obverse is presumably the sun. But Martin Henig notes that if the rays to left and right were extended downwards into handles, it would resemble the globular vessel containing sprigs, perhaps poppy heads, set into a ring from Wroxeter (Henig 2007, app. 199).

(**38**) NCL-7C3D72 (not illus.)
18 x 16 mm, 6 mm thick; oval die (no reverse)
Lion standing or walking towards the right. As in a glass die from Lydney Park (Henig

2007, no. 635), there is a suggestion that he is carrying something in his jaws, a dead animal perhaps, but the impression is defective here.

(**39**) BM-E2B0BB (not illus.)
16 x 9 mm, 3 mm thick; ?oval die (no reverse)
The impression is badly worn and incomplete. Perhaps a horse and rider, advancing to the left; the angle even suggests the horse is jumping.

(**40**) NCL-3C2EC2 (not illus.)
18 x 12 mm, 6 mm thick; oval die (no reverse)
Part of the edge of the die remains, and two pellets, but otherwise completely worn away.

(**41**) BM-E31152 (not illus.)
13 x 11 mm, 5 mm thick; ?oval die (no reverse)
Very worn and indistinct.

(**42**) BM-E098CA (not illus.)
22 x 16 mm, 9 mm thick; oval die (no reverse)
Very worn. Perhaps a crouching quadruped.

(**43)** BM-E1AF26 (not illus.)
16 x 16 mm, 5 mm thick; round die (no reverse)
Very worn, and incomplete because of the breaking-out of the binding-cord. The lower half of a figure walking left probably holding something. Martin Henig compares a glass die from Dragonby (Henig 2007, no. 166), a satyr walking right, holding a *lagobolon* (hare-hitting staff) and a dead hare.

(44) BM-E39FAE (not illus.)
21 x 12 mm, 6 mm thick; rectangular die (no reverse)
Too worn and damaged for anything to be recognised.

(**45**) BH-966F24 (not illus.)
Sub-oval sealing with obverse depicting helmeted bust, possibly Mars facing right. It may be paralleled in an example in Still (1995, 468, no. 1105) (see *CIL* xiii pars 3, fäsc.2, 10029.140; Dissard 1905, no 162, pl. ffl- (14) Coll. Récamier) from Lyon.

(**46**) BM-B094CC (not illus.)
30 x 28 mm, 7 mm thick; weight *c.* 40 gm
Circular sealing with possible legend around circumference. Too worn for anything to be recognised.

SEAL BOXES

Ten seal-box elements including two complete examples, six lids and two bases were recovered from the river (BM-DFD04A; BM-DFAA95/FIG. 8.2A; BM-A1EEBF; BM-D3A57D/FIG. 8.2C; BM-43EB3F; NCL-402E02; NCL-94C828; NCL-5AEF30; NCL-407216/FIG. 8.2B; NCL-A322D2). All are of leaf-shaped types with enamelled decoration and date to the second or third century A.D. (Andrews 2012; cf. Furger *et al.* 2009). Two (NCL-407216/FIG. 8.2B and BM-43EB3F) bear phallic designs, perhaps for added apotropaic protection.[46] The bias towards decorated lids (as opposed to bases) may suggest deliberate selection in antiquity or (less likely) by the divers.[47]

[46] Only nine examples (WMID4220; ESS-861674; NCL-407216; NMS-1BA274; NMS-6FF112; HAMP-069741; NMS-985BE7; BM-43EB3F and WILT-959A66) of seal boxes with applied phalli were recorded on the Portable Antiquities Scheme database (finds.org.uk) on 31.7.19, two of which are the Piercebridge examples.

[47] Of the 401 seal-box elements recorded on the Portable Antiquities Scheme database (finds.org.uk) on 31.7.19, 281 were lids (70 per cent), 75 were bases (19 per cent) and 45 (11 per cent) were complete.

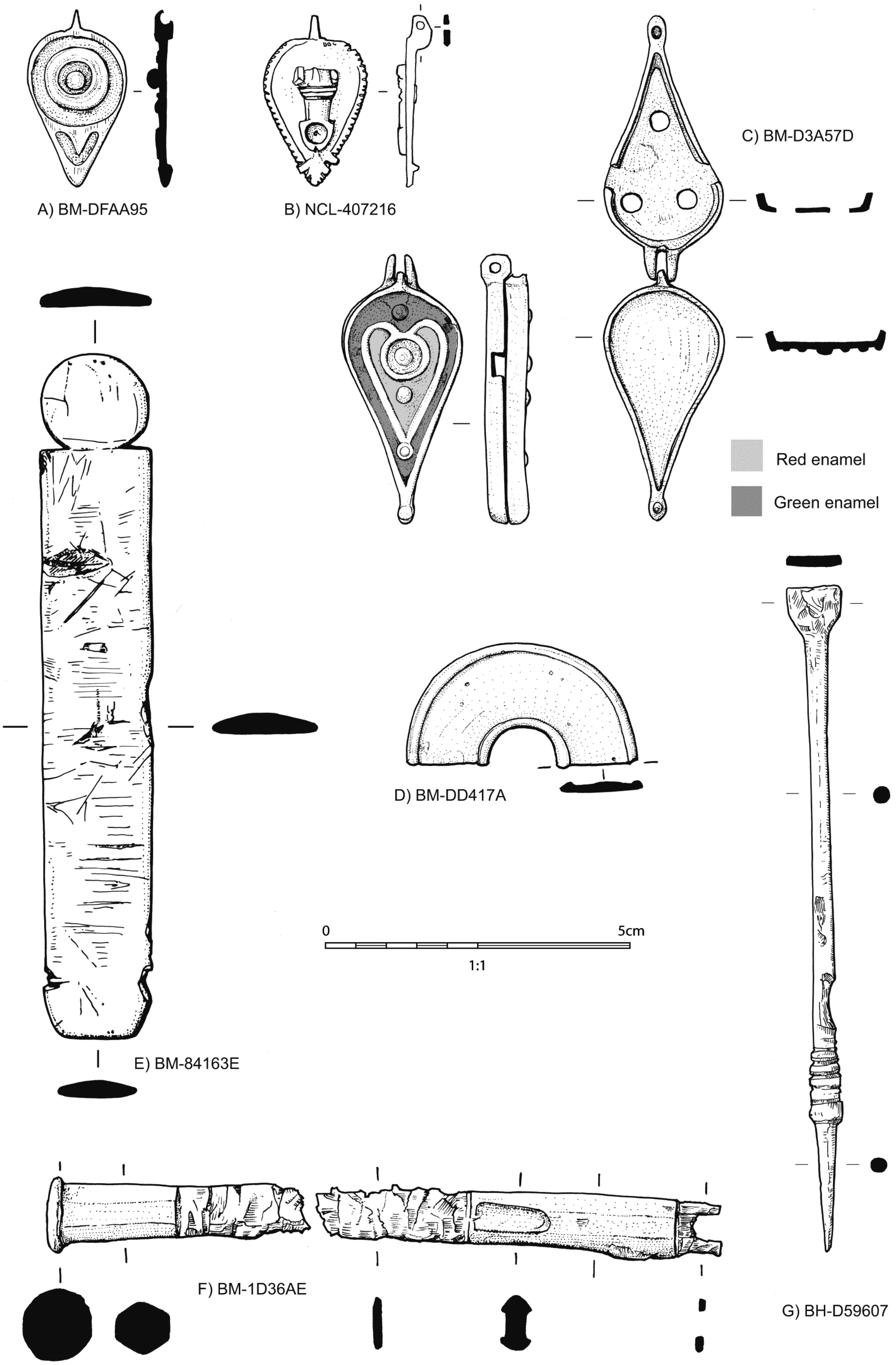


FIG. 8.2. Seal boxes and objects associated with writing from the river

Traditionally interpreted as devices designed to protect the wax seals used on private letters, they have been used as a proxy for literacy (e.g. Derks and Roymans 2002), with several scholars suggesting that their presence at temple sites is evidence for their use in the Roman ritual of the vow (Bagnall-Smith 1999, 21; Derks 1998, 224–31). However, recent experimental work suggests that they may also have been used to seal leather or cloth bags containing valuable items such as coins and jewellery (Derks and Roymans 2002, 91; Derks 2010, 725; Andrews 2012, 80–92; Eckardt 2017a, 23–4), and therefore a direct association with writing and communication remains unproven.

Whatever their exact function, their social distribution shows a very marked bias towards military sites and major urban centres both in Britain (Eckardt 2014, 185) and on the Continent (Derks and Roymans 2002, 96, fig. 7.7). In the northern frontier zone, only Corbridge (25) and South Shields (24) have yielded more examples than found in the river and during excavation (7 examples) at Piercebridge (Andrews 2012, 68–71, map 33b; cf. Cool 2008, 263, table 11.30).

STYLI

By Philippa Walton with Owen Humphreys

Six iron styli used for writing on wax tablets were recovered from the river. With the exception of BM-B1590B which dates to the period 20 B.C. to A.D. 120 (Schaltenbrand Obrecht 2012, Abb. 92), all appear to date to the second or third century A.D. They include BH-D59607 (FIG. 8.2G) which conforms to Schaltenbrand Obrecht's (2012) Type P54, NCL-907852 of Schaltenbrand Obrecht's (2012) Type P52 and BH-8DABBC which although poorly preserved, appears to belong to Schaltenbrand Obrecht's (2012) Family H or P. A further object, NCL-3F3FC1, may be a stylus of Schaltenbrand Obrecht's (2012) Type W95 which dates to the third or fourth century A.D. However, this identification is made suspect by the fact that the 'eraser' is pierced by a crude hole. Another pierced iron 'stylus' identified by Manning (1985, N9) was reinterpreted by Schaltenbrand Obrecht (2012, Abb. 85) as a needle (see Crummy 1983, 65, Type 2), but NCL-3F3FC1's rectangular-sectioned shaft and crude appearance make this identification seem less likely.

Their presence at Piercebridge is not entirely unexpected as styli are frequently found at military and urban sites, with, for example, more than 200 styli recorded at Vindolanda and more than 160 at Silchester. However, they also occur on villa and rural sites (cf. Hanson and Conolly 2002, 155 n. 35; Crummy 2012, 111–12; Eckardt 2017a, 26).

WAX SPATULAS

Elements of six possible wax spatulas were recovered from the river, although only one (BH-EFF1B5) may fit within existing typologies (Eckardt 2017a, 24, fig. 2.2). It is a plain example, comparable to some finds from London (Humphreys 2021b, pl. 68, WXS26-34) and may be of Feugère's (1995) Type B2. This type is frequently found in association with writing equipment in graves, and can confidently be associated with wax-tablet writing. However, the corrosion pattern may indicate that it is more recent in date, and is perhaps simply a bar with flattened ends.

The remaining examples cannot be paralleled elsewhere. They include four composite terminals (BM-1A35F5; BM-CFB5B4; BM-CFDDF5; BH-FC2E39), one composite handle (BM-CF72AB) and one object which appears to combine both elements (BM-1D36AE and FIG. 8.2F). While it is possible that they form part of razors or small toilet knives (see Garbsch 1975; Boon 1991), they do bear some similarity to plain wax spatula handles. The terminals can be compared with the copper-alloy handle attached to an iron spatula blade from Tumulus 26 at Berlingen (Fünfschilling and Ebnöther 2012, 171, Abb. 5, no. 4; Eckardt 2017a, fig. 2.5e) and the handle elements from Lank-Latum, Germany (von Boeselager 1989, 229, Abb. 12). While not identical to any of the examples presented in Feugère's 1995 typology, the angular appearance of the A3 and A4 wax spatula terminals to these fragmentary objects is striking (1995, fig. 1, 322).

If the identification of these objects as plain wax spatula handles is correct, these examples add substantially to the corpus of examples from the province, where wax spatulas with highly decorative Minerva handles dominate (Eckardt 2017a, 24).

INKWELL

A fragment of the lid of a possible inkwell (BM-DD417A and FIG. 8.2D) was recovered from the river. It appears to have been deliberately cut in half. Copper-alloy inkwells are relatively rare finds across the Empire and complete examples usually come from rich graves. Fewer than 40 examples have been recorded from Britain, mostly from the southern part of the province, although there are two unpublished examples from Vindolanda (Eckardt 2017b, nos 428–9) and an unpublished example from Corbridge (F. McIntosh, pers. comm.) The design is paralleled by an unpublished example from Colchester (Eckardt 2017b, no. 474).

MARKING TOOL

A bone spatulate strip (BM-84163E and FIG. 8.2E) was also recovered from the river. These are rare objects, with only 27 other examples known from Britain. They possess an overwhelmingly southern distribution with at least eleven coming from London (Davis 2016, 11, fig. 8). Although their exact function remains unknown, both iconographic and funerary evidence indicate that they were associated with writing. They may be smoothing tools for parchment, labels for writing short notes (von Boeselager 1989, 227), or perhaps rulers (Božič 2001). Most have horizontal use-wear marks on their upper surfaces, which may provide some clues regarding their function. This example, however, also has two worn notches situated at the base of the strip which are not paralleled elsewhere.

CONCLUSION

In many respects the assemblage from the river is comparable with that recovered from the excavations at Piercebridge. For example, similar numbers of seal boxes (7) and styli (6) were recovered, although the latter are likely to be under-represented in the excavation material due to the lack of x-radiography for iron (Cool 2008, 263). However, the presence of so many lead sealings, an artefact type completely absent from the excavation assemblage, suggests that there is something unusual about depositional or taphonomic processes in the river.

CHAPTER 9

OBJECTS EMPLOYED IN WEIGHING AND MEASURING

By Philippa Walton

INTRODUCTION

The 30 objects within this category comprise elements of two steelyards and two dual balances, an omega-shaped hook, a plumb bob and 24 copper-alloy and lead weights. Although the balances can be dated to the mid-first to late second century A.D. on typological grounds, the majority of weights are undiagnostic and so it is possible that at least some date to later periods.

The excavations at Piercebridge produced three balances, two steelyards, four weights and one plumb bob (Cool 2008, 263, table 11.30) and so in terms of size, the assemblage of weighing equipment from the river is not particularly remarkable. However, the presence of fragments of two rare dual balances and the numerous lead weights may highlight some differences in the nature of activity focused on the river or in their depositional processes. It is possible that they represent the disposal of objects associated with metalworking or commercial activity undertaken in the vicinity, perhaps on a small jetty proposed at the riverside (ibid., 263). Alternatively, there could be a deliberate element to the deposition of these objects. Although rare, weighing equipment is known from other watery contexts such as Coventina's Well and Chelmsford (Smither 2016b, 82) and it is therefore possible that in certain places and at certain times, it acquired ritual or religious resonances, perhaps associated with Mercury, the god of merchants and tradesmen.

STEELYARDS AND BALANCES

Five elements from Roman steelyards or balances were recovered from the river. They include an arm (NCL-E1A196 and FIG. 9.1A) and a counterweight (BM-C99010 and FIG. 9.1B) from two separate steelyards, as well as a complete pair of arms (NCL-E18835 and FIG. 9.1C) and a fragmentary scale arm (BM-0A38FC and FIG. 9.2A) from two dual balances. An 'omega-shaped' hook (BM-96BE0C) may be associated with either a steelyard or a dual balance.

In northern Britain, finds of weighing equipment are almost invariably associated with military sites (Smither 2016b, 71, fig. 49). Steelyards were used to weigh large quantities of material or foodstuffs, while dual balances are thought to be associated with fine metalworking, particularly the production of jewellery (Smither 2016a, 24–5; Smither 2017, 50). While steelyards are relatively common finds, dual balances are rare. Only 11 other examples are known from Roman Britain, all from urban centres (Smither 2017, 46) and so their presence in the river is notable. It raises the possibility that there was a jewellery workshop in Piercebridge, either run by the army or catering to its needs. The dual balance BM-0A38FC is of high-quality manufacture with its scale arm inlaid with silver. This seems a particularly appropriate form of decoration for an object which may have been used to weigh out small quantities of precious metals for jewellery production.

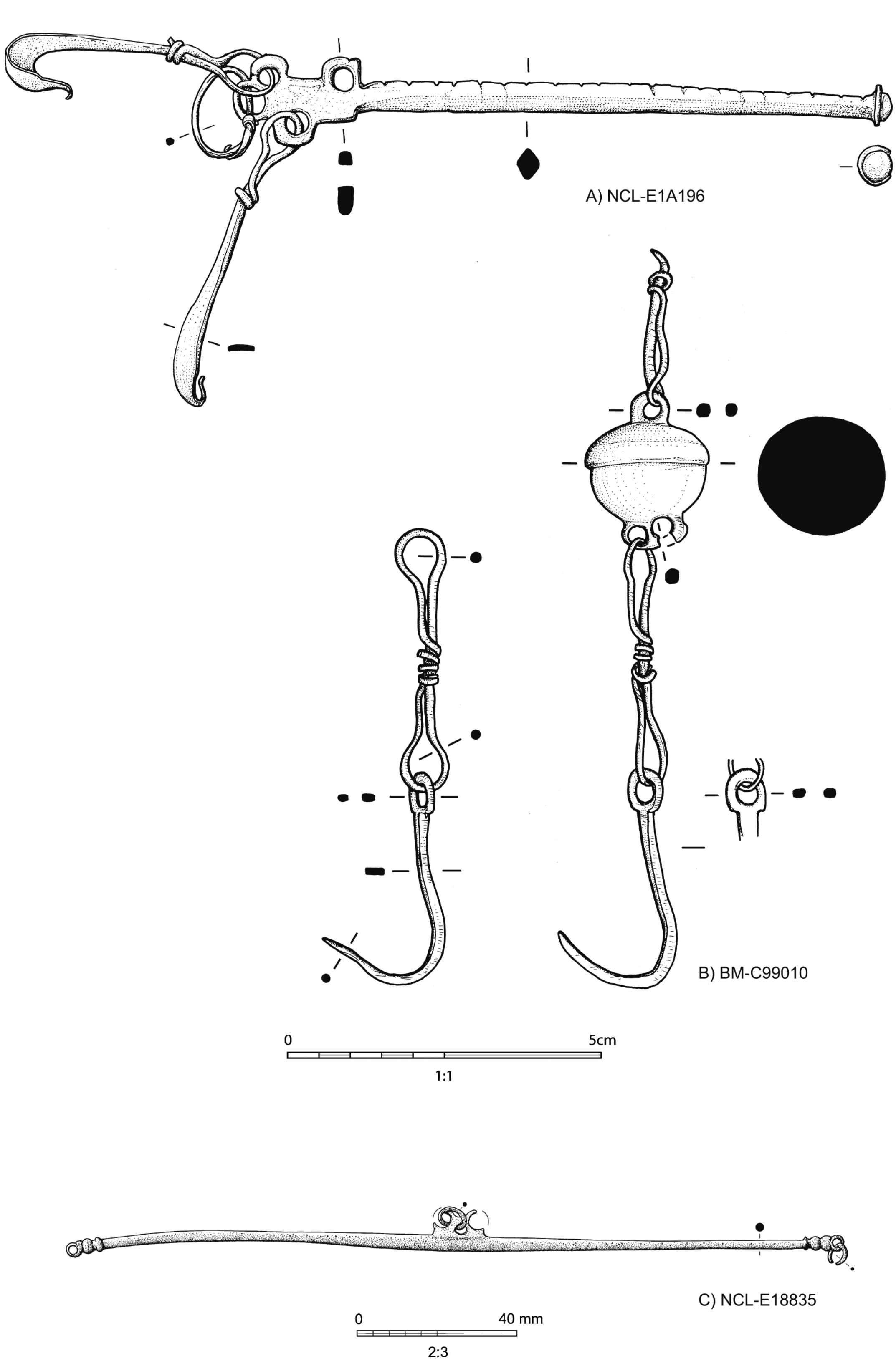


FIG. 9.1. Weighing equipment from the river

WEIGHTS

One copper-alloy weight and 23 lead weights were recovered from the river.[48] They include both steelyard and pan weights for use with equal balances, although examples associated with the steelyard dominate. A copper-alloy steelyard weight (NCL-E15D17 and FIG. 9.2B), weighing 25.35 g (possibly intended to represent an *uncia* at 27.4 g), is in the shape of an acorn. It is of the most common type of figurative steelyard weight in Roman Britain (Smither 2016b, 52, table 18). Interestingly, it does not appear in Franken's (1994) continental typology suggesting that it may be peculiarly Romano-British in design and use.

Although lead weights cannot be dated accurately, the remaining 24 lead weights have been classified using a typology devised for dealing with a large assemblage of lead weights from the Romano-British site at Elm's Farm, Weybridge (Tyrrell 2015). Table 9.1 summarises the range of types present in the assemblage. With the exception of NCL-949811, all weigh under 100 g. In fact, the majority of examples cluster between 10 g and 29 g suggesting that whatever they were intended to weigh, relatively small quantities were involved.[49] Six possess iron suspension loops (Type B) making them suitable for use with steelyards, while three may be pan weights (Type C) suitable for use with equipoise or dual balances. Unsurprisingly, the average weight of the Type B examples (56.9 g) is greater than that of the Type C examples (18.28 g). This reinforces the idea that steelyards were used to weigh larger amounts than equipoise or dual balances.

TABLE 9.1. A SUMMARY OF THE WEIGHTS FROM THE RIVER BY TYPE

Tyrrell type (Tyrrell 2015)	Description	Quantity	Average weight (g)
Type A1	Disc-shaped with circular perforation	5	18.4
Type A2	Domed with circular perforation	4	26.5
Type A4	Conical with circular perforation	2	37.07
Type B	Acorn-shaped with iron attachment loop	1	78.4
Type B2	Spherical with iron attachment loop	1	30.52
Type B4	Bi-conical with iron attachment loop	2	100.31
Type B5	Domed with iron attachment loop	1	8.4
Type B8	Cylindrical with iron attachment loop	1	23.46
Type C	Conical with no attachment loop	1	12.7
Type C1	Disc-shaped with no attachment loop	2	21.07
Unclassified		3	–
Total		**23**	

By contrast, only four weights were recovered during the archaeological excavations at the site. It is impossible to be certain whether this reflects the retention policy for lead objects during the excavations or a depositional focus on weights in the river. It was noted that certain categories of material recovered during the Piercebridge excavations, such as ironwork, appear to be under-represented while worked bone, jet and shale appear over-represented (Cool 2008, 242–3). However, no observations were made regarding the lead assemblage. At both Catterick and Piercebridge, lead-alloy objects accounted for only 2 per cent of all material recovered (ibid., 243, table 11.1).

[48] A further 98 weights can be identified as net sinkers or fishing weights (Tyrrell 2015 Type C4s) and are discussed in Chapter 11.

[49] No attempt has been made to relate the ancient and modern weights of these examples. Estimations of ancient weights vary; for a discussion, see Evans' (2000, 416–19) work on the lead weights from the Mill Street sites in Caerleon.

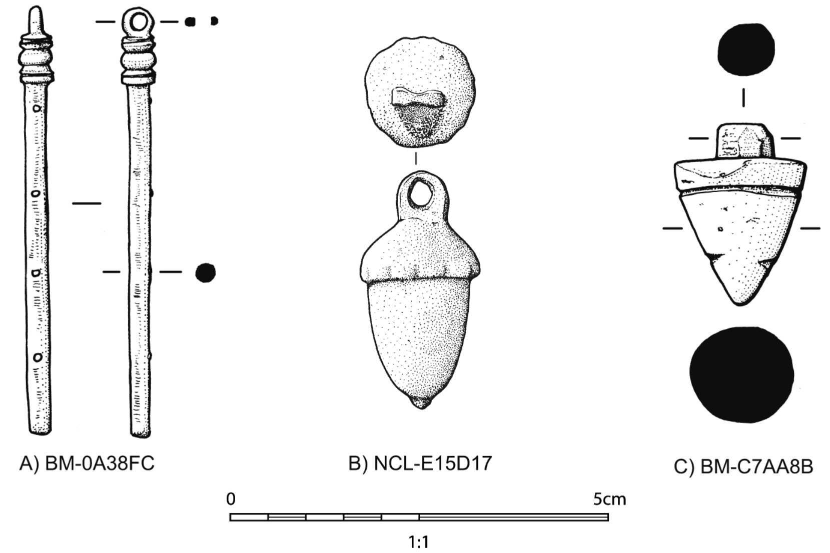


FIG. 9.2. Weighing and measuring equipment from the river

PLUMB BOB

An incomplete or unfinished copper-alloy plumb bob dating to the Roman period (BM-C7AA8B and FIG. 9.2C) was also found. The plumb bob formed part of a surveyor's equipment and was used with a *groma* to survey straight lines and right angles and hence to lay out roads and the grid plans of forts and towns. A surveyor dedicated an altar to Mars Condates at Piercebridge (*RIB* I 1024; see Ch. 23).

CONCLUSION

The small assemblage of equipment associated with weighing and measuring indicates that Piercebridge was a focus for commerce and manufacture, most likely associated with the Roman army. Although many of the objects provide nothing more than the usual evidence for mercantile activity, the presence of fragments from two dual balances is notable. They suggest that the manufacture and/or sale of high-quality metalwork was occurring somewhere in the vicinity. The large number of items of precious metal recovered from the river, some of which appear to have been cut up, may represent further evidence for the manufacture of jewellery (see Ch. 4).

CHAPTER 10

THE COINAGE

By Philippa Walton with Jemma Moorhouse

INTRODUCTION

A total of 1,427 Roman coins, five Greek or Roman Provincial issues and four possible coin blanks were recovered from the bed of the river Tees, representing more than one third of all the artefacts found there. The coins were discovered over the course of a 30-year period and as a result have been discussed on numerous occasions, with each publication commenting upon an ever-increasing dataset. Casey (1989) catalogued a total of 166 coins while Walton discussed 586 coins in 2008, 1,021 in 2012 and 1,319 in 2016.

The vast majority of the coins were found dispersed around, and slightly downstream, of the wooden structures associated with the Dere Street bridge. However, the assemblage does include two much smaller concentrations of material. The first was found upstream of the current bridge (NZ 2105 1553) and comprised seven *aes* issues dating to the first and second centuries A.D. which the divers prised from cracks in the bedrock of the riverbed (Table 10.1). Their issue dates pre-date the adjacent fort by approximately 100 to 150 years and even accounting for the long circulation life of such coins, they must be associated with earlier activity on the site rather than the establishment of the military installation.

TABLE 10.1. COINS RECOVERED FROM THE RIVER UPSTREAM OF CURRENT BRIDGE

PAS no.	Emperor	Denomination	Date	Reverse type
NCL-F78617	Vespasian	*As*	A.D. 69–79	Illegible
NCL-F6B230	Trajan	*Sestertius*	A.D. 104–111	S P Q R OPTIMO PRINCIPI reverse depicting triumphal arch
NCL-F75725	Trajan	*Sestertius*	A.D. 98–117	Unclear reverse depicting figure left
NCL-F76936	Trajan?	*Dupondius*	A.D. 98–117?	Illegible
NCL-F79F23	Faustina II or Lucilla	*Dupondius* or *As*	A.D. 147–175	Illegible
NCL-F797A6	Uncertain	*As*	1st–2nd century A.D.	Illegible
NCL-F70632	Antoninus Pius	*As (limes falsum)*	A.D. 230–250	BONO EVENTVI reverse depicting Bonus Eventus sacrificing from patera over altar

The second concentration was recovered in 2009 from the spoil associated with the sampling of a pile from the 'early bridge' undertaken during the Time Team excavations in 2008 and comprised seven coins (Table 10.2). These include a single Republican *denarius* issued by P. Servilius Casca Longus as well as coins of Antoninus Pius (A.D. 138–161) through to Tetricus I

(A.D. 271–274). These coins are thus significantly later than the assumed date for this structure, which is based on a single radiocarbon date of 40 B.C. to A.D. 85 (Ch. 3).

TABLE 10.2. COINS RECOVERED FROM THE 'EARLY BRIDGE' SITE

PAS no.	Emperor	Denomination	Date	Reverse type
BM-DEC086	P. Servilius Casca Longus	Republican *denarius*	43–42 B.C.	BRVTVS IMP reverse type depicting Victory advancing right. *RRC* 507/2
BH-72D794	Faustina I	*Denarius*	A.D. 141–150	AETERNITAS reverse type depicting Juno standing left holding sceptre. Mint of Rome. *RIC* III, p. 69, no. 344
BH-72ECC4	Marcus Aurelius (as Caesar)	*Sestertius*	A.D. 148–149	TR POT III COS II S C reverse type with PIETAS in exergue depicting Pietas standing left holding sceptre and extending right hand over child standing left. Mint of Rome. *RIC* III, p. 180, no. 1294
BH-750649	Antoninus Pius	As	A.D. 138–161	LIBERTAS [...] S C reverse type depicting Libertas standing left holding a *pileus*. Mint of Rome. This is a coin of British association. *RIC* III, no. 920 or 932.
BH-7549E3	Julia Soeamias	*Denarius*	A.D. 218–222	VENVS CAELESTIS reverse type depicting Venus left holding apple and sceptre. Mint of Rome.
BH-751C8D	Tetricus II	Radiate	A.D. 271–274	SPES AVGG or SPES PVBLICA reverse type depicting Spes advancing left.
BH-73003A	Faustina II?	*Dupondius* or *as*	A.D. 147–175	Uncertain reverse depicting figure left

The earliest analysis of 166 coins from the Dere Street bridge area (Casey 1989) concluded that they represented the remains of a votive deposit and the author has repeated this hypothesis in subsequent analyses (Walton 2008; 2012, 152–66; 2016, 191–2). Certainly, offerings of substantial numbers of coins are a feature of watery votive deposits throughout the Roman world and the assemblage is large, particularly when compared with that recovered during excavations between 1973 and 1975 from the area immediately adjacent to the river known as Tofts Fields, when 63 coins were found (Brickstock 2008). That coin deposition occurred at a significant rate at Piercebridge generally is demonstrated by the 2,597 site finds and 696 hoard coins excavated from the site (ibid., 159). There are also hints that at least some of the assemblage was deliberately deposited. For example, the divers commented that on one occasion they found several coins along with a pipe-clay figurine (NCL-8C8C21) underneath the upper half of a greyware vessel (Middlemass and Mitchinson, pers. comm.). However, the lack of detailed stratigraphic and relational contexts makes more definitive comment on the nature of activity and processes of deposition very difficult. This chapter will therefore explore the character of the numismatic data and ask what it can contribute to our understanding of the dating and function of the riverine deposit. This will be attempted by combining a traditional applied numismatic approach with one which embraces coins as archaeological objects.

THE DATE RANGE OF THE ASSEMBLAGE

Due to anaerobic conditions on the riverbed, the majority of coins in the assemblage are remarkably well-preserved, with many retaining their original uncorroded appearance despite a lack of cleaning or conservation. As a result, it was possible to assign 1,294 coins to individual Reece periods and the remainder to broader periods of issue. Table 10.3 summarises the chronological composition of the assemblage, using the established numismatic framework of Reece periods (Reece 1972). 'Coins per thousand' or 'per mill' values have then been calculated, enabling the numismatic data to be displayed graphically and to be compared with both regional and site profiles.

TABLE 10.3. THE CHRONOLOGICAL COMPOSITION OF THE RIVER AND EXCAVATION ASSEMBLAGES AT PIERCEBRIDGE ALONGSIDE VALUES FOR THE NORTHERN MEAN

	River assemblage		**Excavation assemblage**		**Northern mean values**	
Date (Reece period)	**Total coins**	**Per mill values**	**Total coins**	**Per mill values**	**Total coins**	**Per mill values**
Pre A.D. 41 (1)	25	19.32	1	0.42	489	10.88
A.D. 41–54 (2)	2	1.55	0	0	100	2.22
A.D. 54–69 (3)	11	8.5	0	0	245	5.45
A.D. 69–96 (4)	76	58.73	16	6.73	2550	56.73
A.D. 96–117 (5)	62	47.91	16	6.73	3173	70.58
A.D. 117–138 (6)	84	64.91	16	6.73	3439	76.50
A.D. 138–161 (7)	152	117.47	18	7.58	4255	94.65
A.D. 161–180 (8)	58	44.82	11	4.63	1799	40.02
A.D. 180–192 (9)	25	19.32	2	0.84	479	10.66
A.D. 193–222 (10)	282	217.92	56	23.57	1280	28.47
A.D. 222–238 (11)	151	116.69	12	5.05	412	9.17
A.D. 238–260 (12)	67	51.77	18	7.58	466	10.37
A.D. 260–275 (13)	149	115.15	841	353.96	6555	145.82
A.D. 275–296 (14)	81	62.59	534	224.75	3188	70.92
A.D. 296–317 (15)	6	4.64	17	7.15	1041	23.16
A.D. 317–330 (16)	6	4.64	19	7.99	1546	34.39
A.D. 330–348 (17)	25	19.32	121	50.93	6910	153.72
A.D. 348–364 (18)	15	11.59	504	212.12	3057	68
A.D. 364–378 (19)	7	5.41	127	53.45	3409	75.83
A.D. 378–388 (20)	2	1.55	7	2.95	174	3.87
A.D. 388–402 (21)	8	6.18	40	16.84	386	8.58
Total	**1294**	**1000**	**2376**		**44953**	

The dates of the coins within the assemblage range from the first century B.C. to the early fifth century A.D., with the earliest being a Republican *denarius* issued by L. Titurius Sabinus in 89 B.C. (FAPJW-1D45E5) and the latest a clipped *siliqua* of Arcadius minted between A.D. 395 and 402 (NCL-F06331) but almost certainly clipped after A.D. 402 (Bland *et al.* 2013; Walton 2012, 110–12). However, as FIG. 10.1 indicates, the majority of the coins were issued between the Flavian and late Severan period, with particularly large peaks in Reece Period 7 (A.D. 138–161) and Reece Periods 10 to 12 (A.D. 196–260). In contrast, very few coins issued between Reece Periods 15 and 21 (A.D. 306–402) were found in the river.

In isolation, the riverine coin profile provides some clues to the chronology and intensity of activity in or near the river. The presence of two Claudian copies (BM-F4B171 and NCL-0A0082) which circulated from the mid-50s A.D. until about the A.D. 140s implies activity within this date range (Walton 2012, 85), whereas the recovery of 22 issues of Commodus may reflect deposition in his lifetime if indeed there was a partial rejection of his coinage after his death (Casey 1989, 40). However, as most coins could remain in circulation for long periods of time, their dates of issue should not be conflated with dates of use and loss. Bronze issues of the Trajanic to Antonine period are frequently found in much later contexts in northern Britain (Casey 1989, 40) and indeed, the pattern of use-wear for most issues of this date in the riverine assemblage is consistent with deposition in the late second or early third century A.D. (Casey 1989, 40).

PLACING THE ASSEMBLAGE IN A REGIONAL CONTEXT

Some wider context for the riverine coin profile can be provided by comparing it with patterns of coin loss for northern Britain and more specifically for Piercebridge itself. Comparison with a set of Northern mean values calculated using a combination of numismatic data downloaded from the Portable Antiquities Scheme (www.finds.org.uk) and published excavation assemblages, indicates that in the early Roman period the coin profile for the river is broadly comparable with that for the region as a whole (FIG. 10.1).[50] In the early Roman period, the primary users of coinage were the army and therefore most forts, military installations and associated urban foundations have patterns dominated by early coin loss (Reece 1995; Moorhead 2001, 88; Walton 2012, 163). As such, the early to mid-Roman emphasis of the riverine assemblage would suggest that it has a military or urban character. This suggestion is strengthened by the results of D-Max-based Cluster Analysis undertaken in a previous study of the assemblage. This compared the composition of the riverine assemblage with that of Romano-British coin assemblages from sites with known functions. The analysis indicated that the assemblage was most similar to those from military sites in the province and had little in common with temple assemblages (Walton 2012, 163–4).

The river profile diverges significantly from the regional 'norm' from the late second century A.D. onwards, with the abundance of coinage between Reece Periods 10 and 12 (A.D. 192–260) particularly striking. It is tempting to link the high levels of Severan coinage with troop mobilisations associated with Septimius Severus' campaigns in Scotland (Cool and Mason 2008b, 302). Other northern military installations such as Vindolanda (Brickstock 2005) and Greta Bridge (Casey and Hoffmann 1998) exhibit high *per mill* values for the same period. However, their values are not of the same magnitude as those at Piercebridge and such an explanation

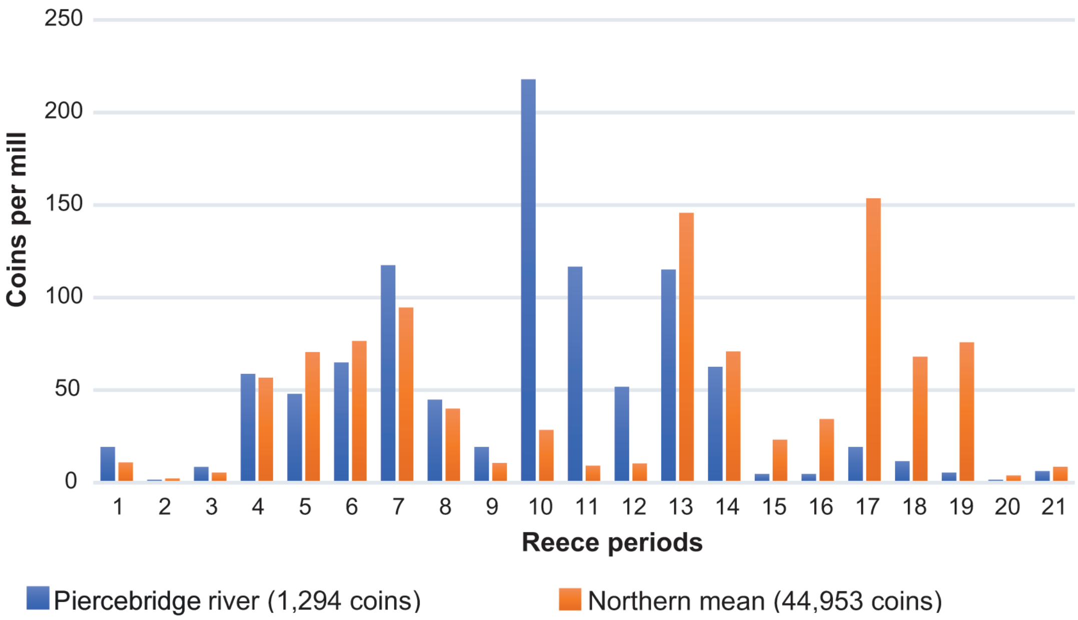


FIG. 10.1. The coin profile for the river compared with the Northern mean

[50] The Northern mean is an attempt to create a profile for average coin loss in northern England (Scotland was excluded). It was created by combining numismatic data from 64 site/excavation assemblages in Cumbria, Northumberland, Teeside, Tyne and Wear, County Durham, Cheshire, North, East and South Yorkshire (see Walton 2012, appendix A, 199–211 for a list of sites used, resulting in a total of 29,018 coins) with data from the North-East, North-West and Yorkshire and Humber regions downloaded from the PAS on 2.7.18 (15,935 coins).

would not account for the loss of coins dating to the period between A.D. 222 and 260 (Reece Periods 11 and 12). Instead, this may suggest the presence of unusual activity focused specifically on Piercebridge.

COMPARISON WITH EXCAVATION DATA

A comparison of the composition of the riverine assemblage with the coins recovered during excavations at Piercebridge (Brickstock 2008) gives weight to the hypothesis that there is something unusual about the riverine coin profile. FIG. 10.2 illustrates the *per mill* profile for each assemblage. The lack of similarity between the two assemblages is immediately apparent. Unlike the riverine material, the excavation coin profile is essentially late Roman in date and there are very low levels of first- to third-century coinage. This contrast suggests that the assemblages were formed in very different ways: that is to say, the riverine coin assemblage is unlikely to simply represent a sample of site finds washed out of the riverbanks.

However, the way in which the excavation profile has been compiled obscures some broader patterns of similarity in coin loss in particular parts of Piercebridge. For example, the high *per mill* values for Reece Periods 13, 14 and 18 are almost exclusively associated with activity within the fort, rather than the northern and southern *vici*. 96 per cent of the Period 13 radiates were found inside the fort, as were the majority of Period 18 *FEL TEMP REPARATIO* copies. The latter are so numerous that they were argued to represent either a concealed hoard or evidence of a counterfeit production centre (Brickstock 2008, 164). In contrast, the pattern in the northern and southern *vici* sites is similar to that of the riverine assemblage where deposition decreases markedly after the mid-third century A.D., suggesting either a cult of dwindling importance or a decrease in population levels (Cool and Mason 2008b, 307). And so there is an apparent contradiction in the evidence. Despite exhibiting a profile consistent with military coin use at a national level, the riverine assemblage has more in common with the civilian, 'small town' area of the site.

This contradiction is lessened somewhat by the observation that the composition of the coin assemblage from the excavations does not accurately reflect the broader chronology and intensity

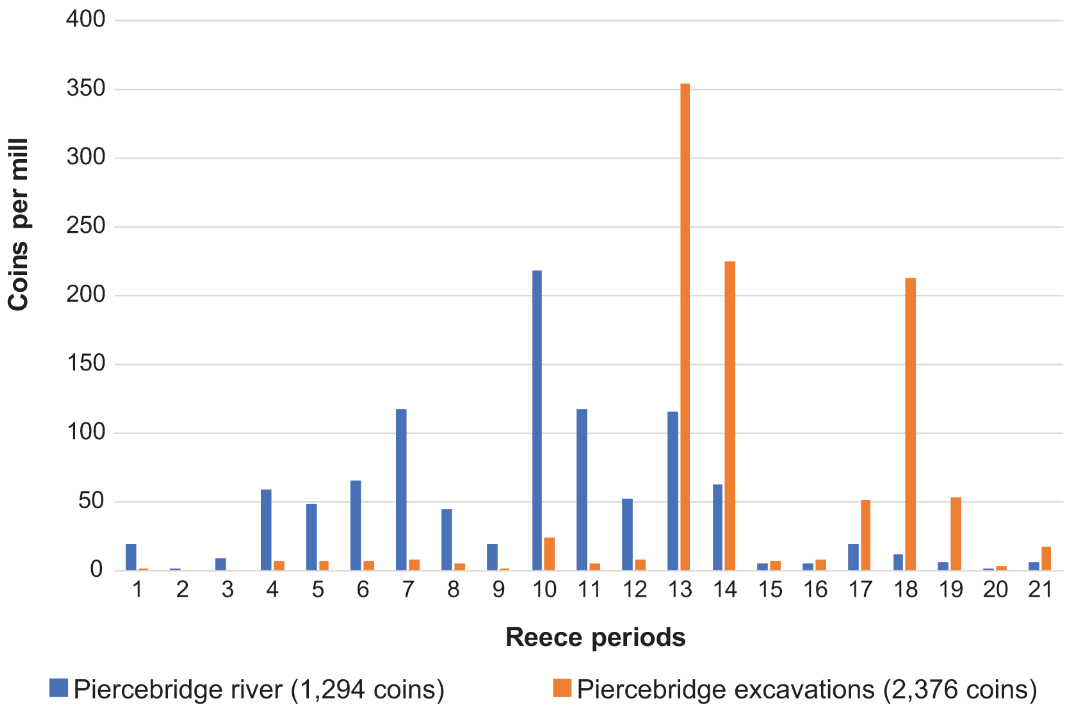


FIG. 10.2. The riverine and excavation coin profiles compared (after Brickstock 2008)

of activity at Piercebridge in the late second and early third centuries A.D. The excavations demonstrated that the period from *c.* A.D. 180 was characterised by a dramatic increase in the volume and quality of material culture across the site (Cool and Mason 2008b, 299) with the phenomenon interpreted as marking the arrival of a military unit, or at least an official presence (Cool and Mason 2008b, 302). With this in mind, and particularly because the army were among the main users of coinage, the relative absence of coins of a similar date amongst the excavation material is puzzling. Although it might sound unlikely, it is almost as though the coinage which should have been used and lost throughout Piercebridge in the late second and third century was systematically removed from the circulation pool and deposited in the river in either a single event or multiple events over a short period of time.

THE IMPLICATIONS OF THE DOMINANCE OF THE DENARIUS

The denominational composition of the assemblage may support the hypothesis for such a depositional event or events in the third century A.D. As FIGS 10.3 and 10.4 illustrate, the ratio of silver to bronze coinage recovered from the river is high, particularly when compared with the excavation material. In previous analyses, both Casey (1989, 42) and the author (Walton 2012, 160–1) suggested that the presence of so many *denarii* was a direct result of the deliberate selection of precious metal coinage for votive purposes. Although it was noted that this would be unusual in a Romano-British context, it was argued that this preference for silver might indicate something about the importance of the depositional activity at Piercebridge as well as the wealth and status of those involved in it.[51] It was also suggested that it might represent another piece of evidence for the military character of activity at Piercebridge, as larger proportions of high value coins are found at military installations than at civilian sites, while military provinces such as Britain, Upper and Lower Germany and Pannonia appear to have received more silver coinage than civilian ones such as Gaul and Italy (Hobley 1998, 128).

However, it is also likely that the dominance of the *denarius* reflects the date at which the bulk of the coins were deposited. After A.D. 196, bronze denominations did not arrive in Britain in any quantity and therefore for a time the *denarius* represented the lowest value denomination regularly supplied to the province. Even at Coventina's Well and the Sacred Spring at Bath where it is clear that there was a preference for the deposition of *aes* coinage, Severan period *denarii* are common. Given the substantial peaks from Reece Periods 10 to 12 (A.D. 196–260) in the riverine assemblage, the large number of *denarii* of all periods may simply reflect the fact that they were selected from an early to mid-third-century circulation pool.

THE DELIBERATE SELECTION OF COPIES OR RITUAL MINTING?

While it is not clear whether silver coinage was deliberately selected for deposition, there are hints that other forms of value judgement may have affected the assemblage's composition. For example, 260 copies have been recovered from the river. FIG. 10.5 illustrates the proportion of official coinage to copies by Reece period. As with any assemblage which spans the Roman period, there are large numbers of barbarous radiates (Reece Period 14) and *FEL TEMP REPARATIO* copies (Reece Period 18). However, more unusual is the clustering of copies in the period A.D. 196 to 260 (Reece Periods 10 to 12), where counterfeit coinage makes up nearly 30 per cent of the assemblage (FIG. 10.5). This can be compared with the excavation assemblage where only 3 per cent of coinage dating to the same period are copies (FIG. 10.6).

[51] Coin offerings at other watery sites such as Coventina's Well (Allason-Jones and Mackay 1985) and the Sacred Spring at Bath (Walker 1988) were almost entirely composed of bronze denominations and at Bourbonnes-les-Bains there was a strong preference for the lowest value bronze denominations including *quadrantes* and halves (Sauer 2005, 79). However, could the dominance of bronze denominations in other assemblages be a reflection of the removal of higher value issues to spend on the cult? This is suggested by the mosaic at Lydney (*RIB* 308) which records that the proceeds of offerings were devoted to the building itself and Isserlin 2007, 109 suggests this occurred at Bath.

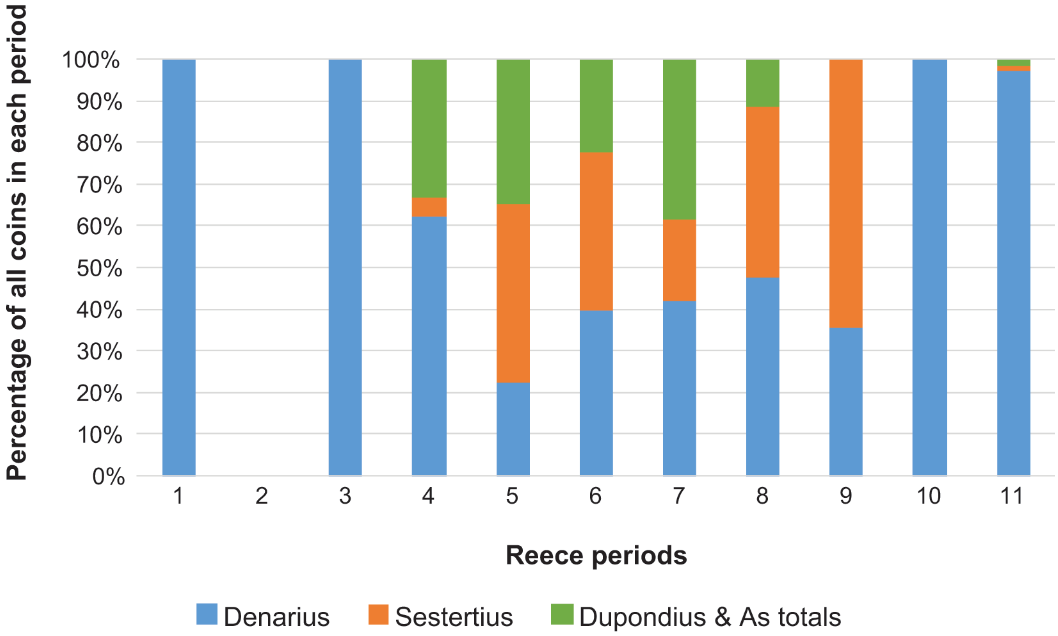


FIG. 10.3. The percentage of each denomination present in the riverine assemblage between Reece periods 1 and 11

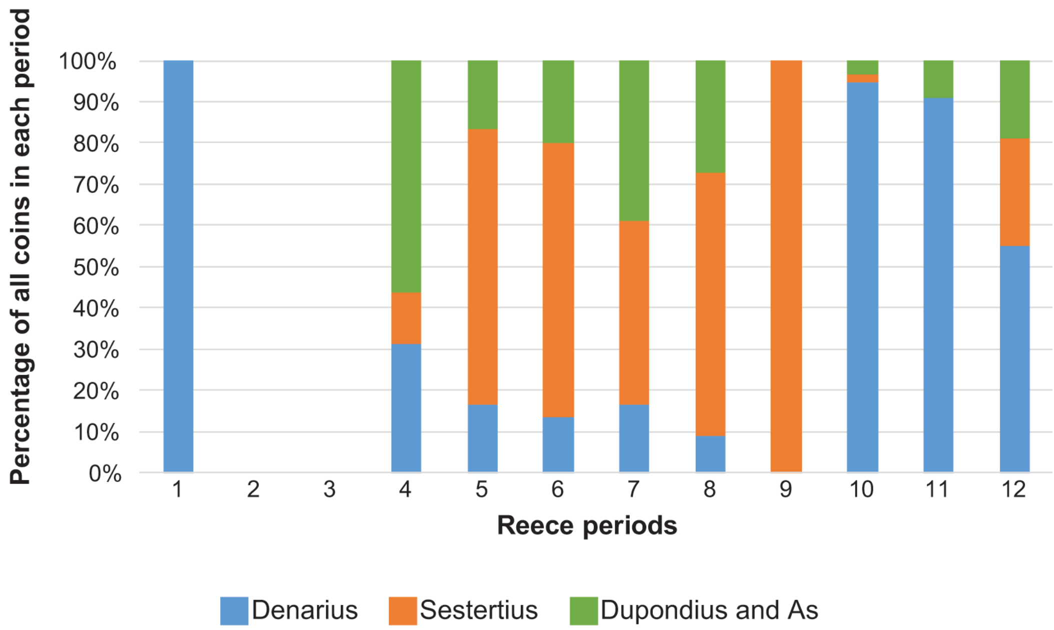


FIG. 10.4. The percentage of each denomination present in the excavation assemblage between Reece periods 1 and 11 (after Brickstock 2008)

As coin copies are found in greater quantities in votive contexts than at other types of site, this contrast may be significant for our understanding of the riverine assemblage. In Britain, large numbers of copies are known from both the Sacred Spring at Bath (Walker 1988, 285, 291–2, 305–6) and Coventina's Well (Allason-Jones and Mackay 1985), and at the Martberg and Castellberg sanctuaries in Germany analysis has demonstrated that the coin finds were skewed towards copies when compared with coin finds from nearby settlements and with hoards. Traditionally this emphasis on copies has been argued to illustrate the deliberate discard of worthless or low value issues by devotees keen to fulfil their religious obligations at a discount (Casey 1989, 41; Kaczynski and Nüsse 2009, 99). However, recent research has suggested a ritualised context for the production of at least some copies at times of stress and change when

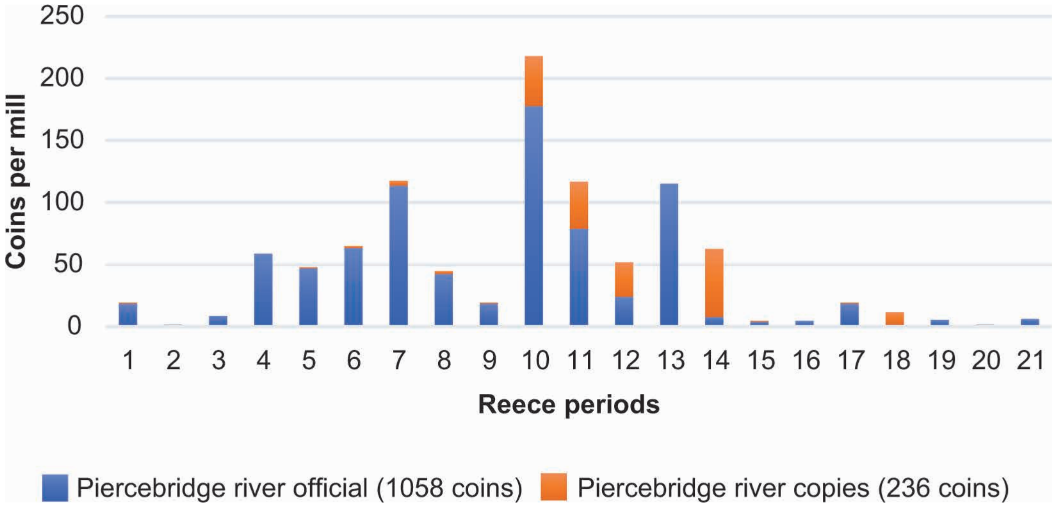


FIG. 10.5. The proportions of official coinage and copies in the riverine assemblage

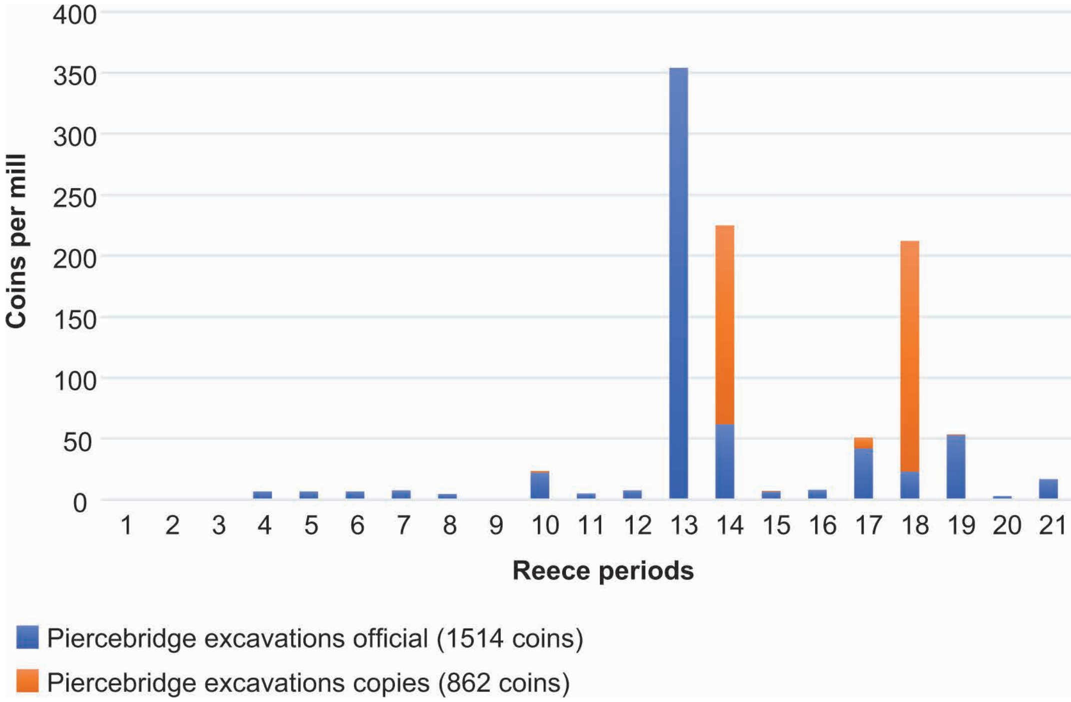


FIG. 10.6. The proportions of official coinage and copies in the excavation assemblage (after Brickstock 2008)

the population, or sectors within it, felt it necessary to (re)-create or (re)-articulate their identity (Kemmers 2018, 203–5). In the case of Piercebridge, such an idea could apply equally well to the experience of the local population faced with the arrival of the Roman military *c.* A.D. 180 or to the Roman army on the cusp of military campaigning in the North.

In addition to four possible coin blanks, two distinctive types of copies may provide evidence for the presence of a local counterfeit mint. The first is a small group of 15 heavily leaded counterfeit *denarii*, which, where legible, copy issues of the second and third century A.D. (NCL-A96172; NCL-ACB601; NCL-0164F6; NCL-123055; NCL-125BD7; BM-F458E7; BM-F48526; BM-EECFD3; FAPJW-5F9846; BM-EF6217; FAPJW-36EE15; PAS-0EFE5A; PAS-0F2776; NCL-610E71; NCL-02DB08). Although their size and decoration suggest they were clearly intended to imitate coins, their metallic composition and execution make it unlikely that they would have passed as official currency. Instead, their leaded composition may provide a clue to their function. Lead clearly held a special place in Roman ritual and magic (Nickel 1999, 156–7), with its malleability making votive acts such as inscribing, bending and nailing relatively easy. It is notable that 11 out of 15 examples from Piercebridge have been subjected to some form of mutilation. It is therefore possible that these copies possess votive or ritual resonances and were minted locally specifically for deposition. While the relative sophistication of the Piercebridge examples is not paralleled elsewhere, lead coin substitutes are known at continental temple and sanctuary sites such as Karden on the Moselle (Nickel 1999), Digeon (Delplace 2001) and Vendeuil-Caply (Hollard *et al.* 2015).

A group of ten cast copies of Antonine and Severan bronzes of a type known as *limesfalsa* (BM-5171C2; BM-F90C88; FAPJW-2F2776; NCL-074A47; NCL-F70632; FAPJW-5F78B4; BM-771863; FAPJW-3AA512; NCL-205BF4; FAPJW-B98353) is also worthy of note. *Limesfalsa* have been found in large numbers at the legionary fortress of Carnuntum and along the Danubian frontier and are categorised as a continental military product dating to the A.D. 230s or 240s (Boon 1974, 107). If this is the case, then their presence in the river at Piercebridge may reflect the arrival of troops from the Continent, something which is also attested epigraphically at the site. However, recent finds of two examples from the same mould in Hertfordshire (BH-386FB5 and BH-989326) may suggest that at least some were cast in Britain. If so, might it be possible that these coins served a ritual function or were at least linked with the creation and maintenance of military identity in a ritual context? Indeed, cast copies of *asses* of Nero to Hadrian were also found amongst the coins from the Sacred Spring at Bath and were presumed to be the product of a local 'Casting Mint'.[52] While Walker noted that their weights and metallic composition indicated that 'profit was not the primary motive for the production of these coins' (Walker 1988, 292), he somewhat contradictorily suggested that they were produced with the aim of 'increasing the volume of the smallest bronze denomination in circulation in Britain' (Walker 1988, 292). Perhaps, instead these, too, could be interpreted as another type of ritual or votive product.

THE DELIBERATE SELECTION OF 'EXOTIC' COINS AND COINS OF BRITISH ASSOCIATION

In addition to the prevalence of copies, there is also some evidence in the assemblage that particular coin types were selected for deposition. These include 14 'coins of British Association' (BH-750649; FAPJW-1E3013; BM-51C242; BM-EE6752; BM-F49586; NCL-CA6D76; NCL-875C34; NCL-FEC425; NCL-C2FF92; NCL-EF5DA1; NCL-70EB47; NCL-F9B505; NCL-C25043; NCL-750649), a range of second-century bronze issues which are closely associated with Britain and seem to have circulated almost exclusively within the province (Walker 1988, 290). The examples from Piercebridge are dominated by the Britannia *a*s (*RIC* III, no. 934) which depicts Britannia seated left with a shield and sceptre. These 'Coins of British Association' were found in large numbers in the Sacred Spring at Bath where they were argued to reflect the peculiar pattern of Romano-British coin circulation (Walker 1988, 294). However, a recent study combining published sources, Portable Antiquities Scheme data and grey literature data notes that far from being a widespread Romano-British phenomenon, they instead appear to possess a distinct pattern of distribution and in some cases an association with watery contexts such as wells (e.g. Coventina's Well). The study suggests that some may have been deliberately removed from circulation or selected for deposition (Brown and Moorhead in prep.), although it does not offer an explanation as to why. Certainly the number of examples recovered from the river at Piercebridge is far larger than other sites which have produced similarly-sized coin assemblages.

Even more unusually, five worn Greek or Roman Provincial coins were recovered from the river. These include a bronze of Juba II of Numidia dating to 25 B.C.–A.D. 24 (FASAM-21AFB5), a Provincial bronze of Septimius Severus (FAPJW-4A3D65) and three further worn bronze

[52] Walker suggests that the numbers of *asses* from the 'casting mint' imply a 'lawful rather than unlawful mint' (Walker 1988, 292).

issues which could not be identified with any certainty (FAPJW-BA1586; FAPJW-399866; BH-37F324). Such coins are occasionally found in large site assemblages, particularly those from temple, shrine and votive deposits such as Coventina's Well (Allason-Jones and Mackay 1985, 54), the Sacred Spring at Bath (Walker 1988, 285 and 320) and Trier (Gilles and Weisser 2007). It is possible that it is the size of such assemblages rather than their votive nature that leads to the inclusion of an occasional oddity, although it is perhaps significant that no such coins were found in the excavation assemblage. Just as with copies, there are both pragmatic and ritual explanations for their presence. While some argue for their disposal because they did not constitute legal tender (Walker 1988, 285), it is also possible that they were imbued with a special significance and selected precisely because they were 'exotic' or different.[53] A Greek sealing (NCL-381163) for labelling consignments of goods from the eastern Mediterranean (discussed in Ch. 8) clearly illustrates the cosmopolitan nature of Roman Piercebridge. It is even possible that these coins might represent the offerings of merchants or officials from these regions.

THE DELIBERATE SELECTION OF REVERSE TYPES

By Jemma Moorhouse

In an earlier study of the coinage from Piercebridge, it was noted that there appeared to be an unusually high number of coin issues of imperial women. It was suggested that this might reflect the deliberate selection of coinage for deposition, perhaps illuminating a feminine element to the activity focused on the river (Walton 2008, 289). Although it is likely that the female emphasis of the assemblage is a function of the late second- and third-century date of the assemblage, the broader notion of deliberate selection is worth exploring further.

Several studies have indicated the possible selection and deposition of coins with particular reverse types in funerary contexts both in Britain (Crummy 2010) and on the Continent (Alfödy-Găzdac and Găzdac 2009, 170–2; Găzdac 2014) presumably for their amuletic value. It has also been suggested that deliberate selection could occur within coin deposits and hoards (Ellithorpe 2017) and within assemblages from Romano-British temple sites (Legg 2020). Of course, identifying the selection of coins with particular iconography in the archaeological record is difficult, as is attributing the intentions behind that selection. It is important to remember that a range of issues, both ancient and modern, may influence the types of coinage recovered from any site. Monetary supply and circulation patterns must be taken into account, as well as military, geographical and political factors, while methods of recovery, recording and publication may introduce further biases.

Bearing these issues in mind, the 97 *denarii* of Septimius Severus (A.D. 193–211) from the riverine assemblage were chosen as a case-study to assess whether there is any evidence for the selection of reverse types at Piercebridge in the late second and early third centuries. The number of each reverse type in the assemblage was compared with those in three datasets in order to establish whether any appeared more frequently. These datasets include the 1,602 *denarii* of Septimius Severus recorded on the PAS database (www.finds.org.uk), the 1,060 *RIC* types for *denarii* of Septimius Severus recorded on the Online Coins of the Roman Empire website (http://numismatics.org/ocre/) and the 1,494 *denarii* of Septimius Severus found within the Shapwick hoard (Abdy and Minnitt 2002). Clearly, all are subject to a series of biases and constraints which may make them unreliable as sources from which to gain a picture of Severan coin circulation. For example, the PAS data have a rural bias and may reflect selective recording while the Shapwick hoard, as with all hoards, may have been subject to elements of selection (Aitchison

[53] The material from Coventina's Well included a Siculo-Punic issue, Hellenistic bronzes from Syracuse and Neapolis as well as a bronze copy of a stater of Philip II of Macedon and a Provincial bronze of Gallienus from Asia Minor (Allason-Jones and McKay 1985, 54 and 66). From the Sacred Spring at Bath, there was an Antioch *tetradrachm* of Elagabalus and a coin of Diadumenian as Caesar from Byzantium (Walker 1988, 285 and 320). At the roadside settlement and shrine of Westhawk Farm, an Augustan *dupondius* from Pergamon (28–15 B.C.) and an extremely unusual Roman Provincial bronze from Cius in Bithynia issued for Elagabalus were recovered (Guest 2008, 135).

1988, 273). However, it is hoped that together they may provide some tentative indications about the presence or absence of deliberate selection.[54]

What is immediately apparent is that the proportions of each reverse type in the riverine assemblage are very similar to those in the other three datasets. No deity or personification is over-represented in the riverine assemblage, although reverses depicting either captives or the emperor are slightly more common at Piercebridge than elsewhere. It is difficult to establish whether this observation is significant. While it is tempting to interpret these reverses as the deliberate choices of military personnel keen to secure or celebrate imperial victories during the Severan campaigns, it is equally possible that they simply reflect the fact that coins dating to the period A.D. 195–201 are far more common in the riverine assemblage and that the majority of reverses depicting captives or the emperor date to this period. Although Severan *denarii* make up a significant proportion of the coins recovered from the river, this case-study only represents a snapshot of one particular period and one particular denomination. There is clearly scope for further research across the entire assemblage and the province using a robust statistical methodology.

THE TREATMENT OF INDIVIDUAL COINS

The date range and denominational composition of the assemblage, as well as the presence of distinctive counterfeit coinage, together indicate that some type of unusual activity focused on the river Tees and/or its environs occurred during the mid-Roman period. The treatment of individual coin issues further suggests that this unusual activity may have had a religious or ritual element. Mutilation is a well-documented feature of late Iron Age and early Roman coin assemblages from temple sites on the Continent where it has been convincingly argued to have ritual significance (e. g. Aubin and Meissonnier 1994; Wigg-Wolf 2018). In Britain, it is documented at only three sites, the Thames at London Bridge (Rhodes 1991a, 184), Hayling Island and the Sacred Spring at Bath (Kiernan 2001, 27–8) with the latter two sites clearly having ritual associations. As on the Continent, it appears to be associated with the early years of Roman occupation. Unfortunately, the unusual treatment of coinage is not always remarked upon in excavation coin reports. It is likely that these three sites represent the tip of the iceberg and as a result it is difficult to fully contextualise the material from Piercebridge within a Romano-British context.[55] Nevertheless, the fact that 142 coins, amounting to approximately 10 per cent of the assemblage have been broken, defaced or mutilated seems remarkable and worthy of more detailed investigation. FIG. 10.7 provides an indication of the proportions of each type of treatment using categories proposed by Kiernan (Kiernan 2001) with some adaptation, while Tables 10.4 to 10.9 describe each form of treatment in more detail.

54 coins ranging in date from the Republican period through to the reign of Postumus were deliberately halved or portioned (FIG. 10.8A, B and C). They account for more than a third of all 'mutilated' coins in the assemblage. Although there are a few cut halves and quarters, there appears to be no clear pattern to the breakages with the majority broken into irregularly-shaped fragments. As intentional versus natural damage is not always easy to distinguish, it is possible that some breakages are the result of accidental post-depositional damage. However, it seems unlikely that all can be interpreted in this way, particularly as no adjoining fragments of coins have as yet been recovered.

If the majority of *denarii* and radiates had been cut into regular fractions, it might have been possible to argue that the action was undertaken to create small change when bronze coinage was in short supply in the early third century A.D. Although no parallels for creating fractional denominations from the *denarius* could be found, the halving of first-century *aes* coinage is known throughout Gaul and Germany at sites including Nijmegen (Kemmers 2006, 86), Bourbonne-les-

[54] More detailed analyses of the reverse types, graphs and tabulated data are available on the ADS https://doi.org/10.5284/1083485

[55] For Bath, Walker (1988) does not record any unusual treatment, although it is mentioned in passing by Henig (1988, 5) and explored in more detail by Kiernan (2001, 19).

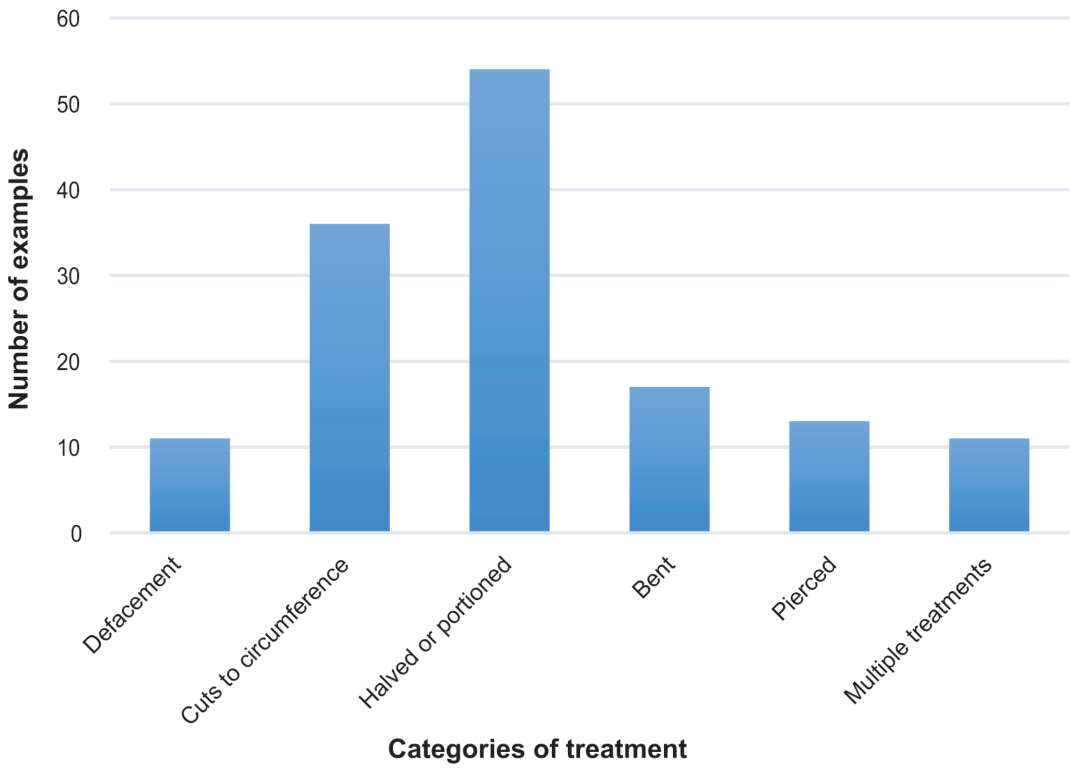


FIG. 10.7. A summary of the types of coin treatment in the riverine assemblage (total: 142)

Bains (Sauer 2005, 58), Vindonissa and Novaesium (Buttrey 1972, 31). However, it is the lack of uniformity in the cutting and breaking of these coins that seems crucial to their interpretation. The action of breaking or cutting the coin may have been as, if not more, important than the result. Indeed, the act of breaking could be viewed as a form of ritual killing or sacrifice, with the violence of the action akin to the sacrifice of an animal (Zehnacker 1986, 54). Parallels may also be drawn with the 'fragmentation' of objects in the Neolithic (Chapman, J. 2000), the 'ritual killing' of weaponry and other objects in the Bronze and Iron Ages (Kiernan 2001, 33; Fontijn 2019) and the dismemberment of statuary in the late Roman period (Croxford 2003, 1).

Some of the breakages could be the result of attempts to bend the coins, as there are also 20 examples which show signs of having been deliberately bent, rolled or squeezed with tongs (cf. FIG. 10.8C). While again few parallels could be found for the practice either in Roman Britain or further afield in the Roman Empire,[56] it is clear that 'bowed' or 'crooked' coins had apotropaic value in the medieval period (Houlbrook 2018, 94ff.) and this may provide some anthropological perspective on the practice. Pennies were folded in half as a 'common sickbed rite' (Finucane 1977, 94), to ensure the welfare of the king's hawks (ibid., 94) or to provide protection from witchcraft (Merrifield 1987, 162). Strikingly, they were also used to both invoke and gain the intercession of a saint (Kelleher 2011, 1494ff.) and were made as offerings at pilgrimage sites following the fulfilment of a vow (Spencer 1978, 248; Walsham 2011, 213).

In addition to the halved and portioned coins, there is a group of 27 *denarii* and radiates with small semi-circular notches in their circumference. Chop- or cut-marks have sometimes been interpreted as attempts to test the purity of coins and to identify any plated coins, but for sites such as the Martberg, it is now argued that such treatments represent ritual acts (Thoma *et al.* 2008, 609–11; Wigg-Wolf 2018, 17). In the majority of cases, there are one or two notches in

[56] A rolled *denarius* of Domitian is known from the Nettleton area (PUBLIC-49EA94) and a folded *denarius* of Tiberius has been found in London (Julian Bowsher, pers. comm.). Bent Roman coins are also known from the river Liri in Italy where they were hammered into the packing of wooden bridge piles, and were interpreted as foundation deposits (Houghtalin 1985, 68).

the circumference (FIG. 10.8E), but a *denarius* of Antoninus Pius (NCL-BF7241) possesses at least 11 separate cut-outs giving it the appearance of a Republican *denarius serratus* (FIG. 10.8D). Again, this treatment appears to be directed at the coin as an object, rather than a targeted defacement of its obverse or reverse image.

Eleven coins dating from the Flavian period to the mid-third century have been subject to defacement, whether that be surface scratching, surface filing or repetitive gouging (FIG. 10.8F and G). Table 10.5 details the exact form this takes on each coin. At other sites, such defacement has been interpreted as a comment on imperial rule, with the the symbolic attack on the emperor's portrait having a real magical effect. At Villeneuve-au-Chatelot coins were mutilated with deep cuts mostly forming a cross affecting the imperial portrait, a pattern that is seen as a political statement, a revolt or, at least, a ritual act aimed at promoting the downfall of Roman rule in Gaul (Sauer 2005, 83; Zehnacker *et al.* 1984, 85–7; 92; Zehnacker 1986). Berger (1996, 55) also suggests that marks were applied to coins by individual Roman soldiers to express their unhappiness with their ruler.

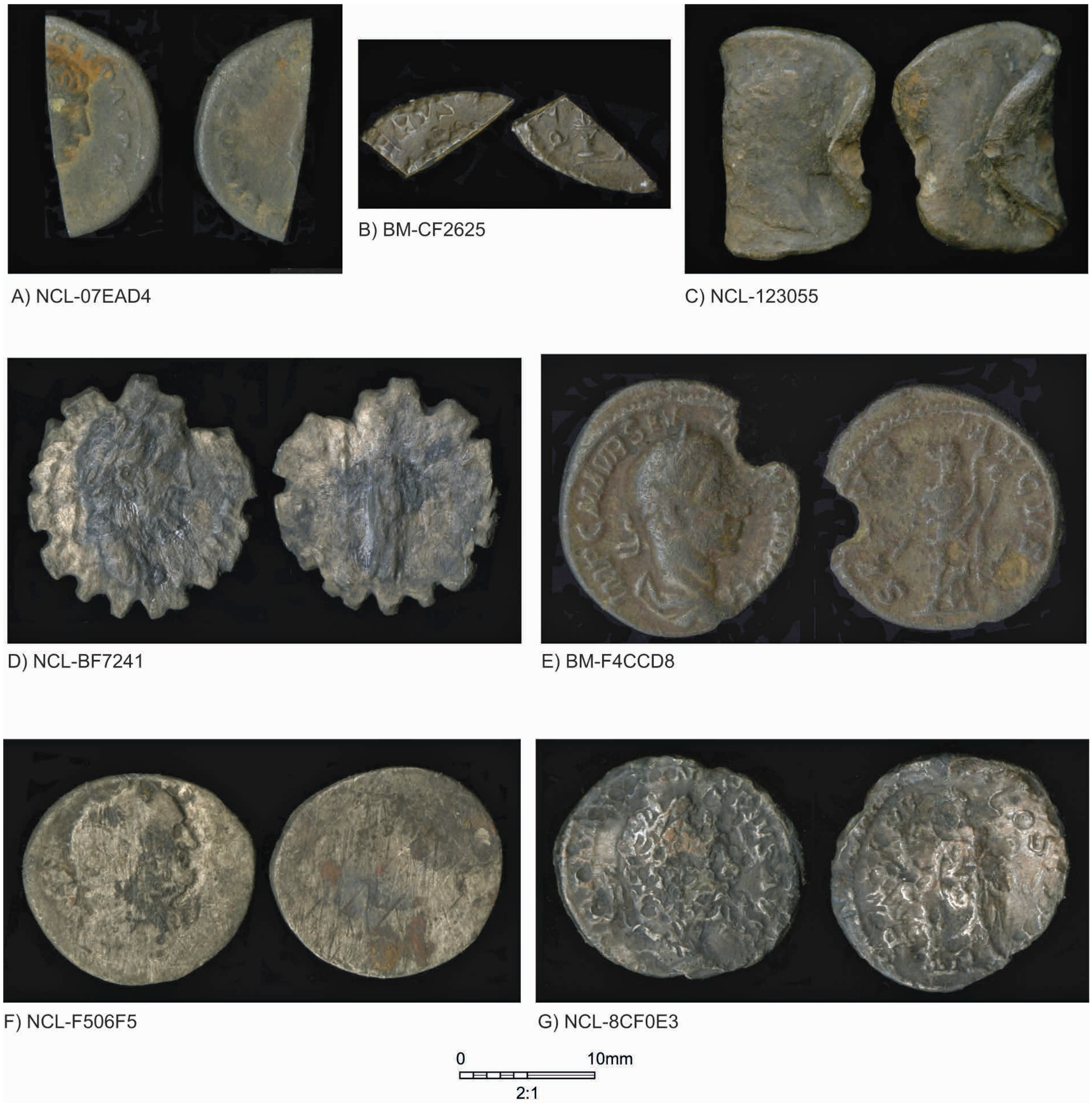


FIG. 10.8. Cut, bent and defaced coins from the river

However, at Piercebridge, no clear patterns in the nature of defacement could be identified; the scratching, filing and gouging are not concentrated exclusively on the emperor's portrait and while emperors subjected to *damnatio memoriae* such as Elagabalus and Severus Alexander (see Kienast 1990) are present in the sample, so are others. As is the case with the cut coins, it appears that it was the action rather than the result that was important — defacement appears to have been a symbolic negation of the monetary value of the coin rather than a targeted protest against imperial rule. A similar argument was made to account for the defacement of early Roman coinage at Bourbonne-les-Bains (Sauer 2005, 82).

Finally, 12 coins with a date range from Vespasian through to Gallienus were found to be pierced. The majority of examples are *denarii* and possess circular perforations close to their circumferences. Despite the fact that they were likely to have been worn as necklace pendants, there is no discernible pattern in the positioning of the piercings, suggesting that the orientation of the image when suspended may not have been of primary importance. It is possible that particular coins were chosen for their imperial portraits or the deity depicted on their reverses, but again no obvious patterning could be observed. There is speculation that offerings in religious contexts were displayed on walls, furniture or features such as trees and so it is also possible that these perforations enabled coins to be nailed up. This is certainly the most plausible explanation for the worn *as* (BH-0F4387) with a central square perforation.

In summary, these various forms of mutilation marked the coins out as different, negated their monetary value (Wigg-Wolf 2018, 20; Sauer 2005, 86) and thus secured their status as religious gifts. It is worth noting that the practice is not restricted to coinage, but can be observed in other classes of artefact recovered from the river Tees, including jewellery, brooches and copper-alloy vessels (see Chs 4 and 15).

CONCLUSION

This chapter has explored the character and chronology of the assemblage of Roman coins from the river at Piercebridge. It has suggested that although the numismatic profile is more consistent with general military and urban rather than specific religious activity, the proportion of copies, the presence of unusual coin types and the prevalence of mutilation, all point to a ritual or religious element to activity. As has been assumed for other large assemblages of coins in watery contexts, the coins may represent the material evidence for a vow — a form of economic transaction with the gods, following the same basic rules as secular exchange (Appadurai 1986; Houlbrook 2018, 98). More broadly, the 'extramonetary powers' (Maguire 1997, 1053) of coinage as 'devotional instruments' (cf. Myberg Burström and Tarnow Ingvardson 2018) should be acknowledged. It is possible that when deposited, these coins provided a link between the sacred and the profane, the living and the dead (Kemmers and Myrberg 2011, 101).

The chronology of deposition is also crucial to our understanding of the site. It seems probable that some coinage was deposited in the river from at least the mid-second century A.D., but that deposition increased substantially between A.D. 180 and *c.* 260. The deposition of coinage then appears to taper off just at the time when it is argued by Cool and Mason (2008) that the fort was built at Piercebridge, around A.D. 260, again suggesting that the early third century date suggested by Bidwell and Hodgson (2009, 147–8) may be correct. Regardless of the debates surrounding the construction of the third-century fort, these dates have tremendous implications for our understanding of the sequence of bridges at the site. Given the location of the finds, they must have been deposited from the Dere Street bridge and given their date, it appears that this bridge was still in use well into the third century A.D. Traditionally, it has been argued that the Dere Street bridge was replaced in the late second or early third century by the large stone bridge downstream. The coin data appear to suggest that this is not the case, as may the limited radiocarbon evidence (see Ch. 3).

TABLES

TABLE 10.4. COINS WHICH HAVE BEEN HALVED OR PORTIONED

PAS no.	Emperor	Denomination	Date	Treatment
NCL-0175E7	Mark Antony	Republican *denarius*	32–31 B.C.	The coin has been deliberately cut or broken twice.
NCL-0CC511	Vitellius	*Denarius*	A.D. 69	The coin is broken, but it is not clear whether the damage is deliberate.
BM-51F938	Domitian	*Denarius*	A.D. 90–91	The coin is broken diagonally leaving the bottom half of the bust visible.
BM-779506	Domitian	*As*	A.D. 77–78	The coin is irregularly broken leaving the bust visible.
FAPJW-6375E3	Vitellius	*Denarius*	A.D. 69	The coin is broken with a small portion missing behind the bust.
BM-EFBAA2	Trajan	*Denarius*	A.D. 103–111	The coin is broken diagonally behind the bust and a portion is missing above the bust.
NCL-07EA.D.4	Trajan	*Denarius*	A.D. 103–111	The coin is broken in half vertically.
NCL-FC5FE3	Hadrian	*Denarius*	A.D. 125–128	The coin is broken with the bottom left quarter of the obverse of the coin missing.
FAPJW-3AC6E1	Antoninus Pius	*Denarius*	A.D. 152–153	The coin is broken in half and may originally have had a large central piercing or cut-out.
NCL-0933E0	Antoninus Pius	*Denarius*	A.D. 151–156	The coin is broken with the bottom right-hand quarter of the obverse of the coin missing.
NCL-1FBBE7	Diva Faustina I	*Denarius*	A.D. 141–161	The coin is broken vertically to the right of the portrait on the obverse.
NCL-7177C3	Antoninus Pius	*Denarius*	A.D. 152–153	The coin is broken respecting both the emperor's bust on the obverse and the figure of Annona on the reverse. Only a small portion of the circumference of the coin remains. This appears to be notched in the manner of a *denarius serratus*.
FAPJW-5FF348	Commodus	*Denarius*	A.D. 190–191	The coin is broken both vertically and diagonally, with the right half and bottom right quarter of the coin missing on the obverse.
PAS-34FA5A	Commodus	*Denarius*	A.D. 188–189	The coin is broken with the bottom third of the coin missing on the obverse.
BM-5297E2	Julia Domna	*Denarius*	A.D. 196–211	The coin is broken with the bottom half and left third of the coin missing on the obverse.
BM-60FAE0	Uncertain	*Denarius*	Early third century?	The coin is broken with only the bottom third of the coin on the obverse remaining.
BM-66CCF1	?Elagabalus	*Denarius*	A.D. 218–222	The coin is broken diagonally with the bottom half missing on the obverse.

PAS no.	Emperor	Denomination	Date	Treatment
BM-86A216	Caracalla	*Denarius*	A.D. 196–198	The coin is broken diagonally with the bottom right of the coin missing on the obverse.
BM-CF2625	Septimius Severus	*Denarius*	A.D. 204–208	The coin has been cut at least twice leaving only a small portion of the left side of the obverse.
BM-EF4293	Julia Maesa	*Denarius*	A.D. 218–222	The coin is broken with the bottom third of the obverse of the coin missing.
BM-EF4C41	Julia Domna	*Denarius*	A.D. 196–211	The coin is broken with a small portion of the left-hand circumference missing on the obverse.
BM-EF5E90	Septimius Severus	*Denarius*	A.D. 194	The coin is broken diagonally with a small portion of the bottom of the circumference of the coin on the obverse missing.
CAM-EAB486	Caracalla	*Denarius*	A.D. 215	The coin has been cut twice at a right angle behind the bust on the obverse leaving just over a quarter of the coin.
FASAM-21D833	Septimius Severus	*Denarius*	A.D. 194–196	The coin has been broken diagonally with the bottom half of the coin missing on the obverse.
FASAM-21F035	Didius Julianus	*Denarius*	A.D. 193	The coin has been broken in half vertically on the obverse.
FASAM-2369C1	Caracalla	*Denarius*	A.D. 201–206	The cut has been made at a right angle behind the bust on the obverse leaving just over a quarter of the coin.
FASAM-23DDD4	Septimius Severus	*Denarius*	A.D. 194–196	The coin is broken diagonally above and below the bust on the obverse.
NCL-030EB1	Septimius Severus	*Denarius*	A.D. 202–210	The coin is broken diagonally with the top right quarter of the obverse missing.
NCL-128D32	?Septimius Severus	*Denarius*	A.D. 193–211	The coin is broken with only a small portion of the bottom third of the coin surviving.
NCL-76FEA3	Caracalla	*Denarius*	A.D. 214	The coin is broken vertically with a portion below and behind the bust on the obverse missing.
NCL-7CBA46	Geta	*Denarius*	A.D. 198–200	The coin is broken with a small portion missing from the upper circumference above the bust on the obverse.
NCL-8D3DB1	Elagabalus	*Denarius*	A.D. 221–222	The coin is broken in half diagonally with the upper right half of the bust visible on the obverse with further breaks above and below the bust.
NCL-C2EAE1	Septimius Severus	*Denarius*	A.D. 194	The coin is broken with a small portion missing behind the bust on the obverse.
NCL-EE3195	Caracalla	*Denarius*	A.D. 206–210	The coin is broken on the obverse with the break respecting the profile of the bust.
NCL-EEE104	Geta	*Denarius*	A.D. 203–208	The coin is broken diagonally with the bottom left of the coin missing on the obverse.

PAS no.	**Emperor**	**Denomination**	**Date**	**Treatment**
PAS-A2F0D9	Caracalla	*Denarius*	A.D. 206–217	The coin is broken at approximately right angles respecting the bust on the obverse leaving just over a quarter of the coin.
FAPJW-2D45E7	Septimius Severus	*Denarius*	A.D. 197	The coin is cut diagonally in half with the lower right-hand side missing.
FAPJW-426105	Caracalla	*Denarius*	A.D. 199–205	The coin is broken with a small portion to the right and above the bust missing on the obverse.
FAPJW-E12087	Caracalla	*Denarius*	A.D. 212	The coin is broken with a small portion to the right of the bust on the obverse missing.
BM-EECFD3	Severus Alexander	*Denarius* (copy)	A.D. 231	The coin is broken with a small portion above the bust on the obverse missing.
BM-EF8E21	Julia Mamaea	*Denarius*	A.D. 222–235	The coin is irregularly broken in the area behind the bust on the obverse.
NCL-0C3962	Severus Alexander	*Denarius*	A.D. 223	The coin is broken diagonally above and below the bust.
NCL-11DD91	Maximinus	*Denarius*	A.D. 235–238	A fragment of the coin comprising a portion to the left of the bust on the obverse.
NCL-6119C0	Maximinus	*Denarius*	A.D. 235–238	The coin is broken with the break respecting the bust on the obverse.
NCL-EE4461	Severus Alexander	*Denarius*	A.D. 228	The coin is broken in two directions leaving just under half remaining. The lower part of the bust is visible on the obverse.
NCL-F50AB5	Severus Alexander	*Denarius*	A.D. 231–235	The coin is broken with a small portion missing behind the bust on the obverse.
FAPJW-B711D3	Severus Alexander	*Denarius*	A.D. 228–231	The coin is broken with a small portion to the right of the bust missing on the obverse.
FAPJW-CC1452	Severus Alexander	*Denarius*	A.D. 222–228	The coin is cut or broken respecting the head of the bust on the obverse with most of the top left quarter missing.
FASAM-24D144	Uncertain	Radiate	A.D. 238–260	The coin is broken diagonally with just over a quarter remaining.
CAM-EAD9C4	Postumus	Radiate	A.D. 260–269	The coin is broken in two directions leaving most of the bust visible on the obverse.
FAPJW-38EBD7	Gallienus (sole reign)	Radiate	A.D. 260–268	The coin is broken in half with the lower part of the bust visible on the obverse.
FAPJW-630F70	Postumus	Radiate	A.D. 260–269	The coin is broken in half with the lower part of the bust visible on the obverse.
FASAM-240E43	Postumus	Radiate	A.D. 260–269	The coin is broken with both the portion above and below the bust missing on the obverse.

TABLE 10.5. COINS WITH CUTS INTO THEIR CIRCUMFERENCES

PAS no.	**Emperor**	**Denomination**	**Date**	**Treatment**
BM-865906	Vespasian	*Dupondius* or *As*	A.D. 69–79	A small triangular cut-out positioned at 2 o'clock on the obverse.
NCL-9F4CB7	Marcus Aurelius as Caesar	*Dupondius* or *As*	A.D. 153–154	A small notch at 4 o'clock on the obverse.
NCL-BB4664	Diva Faustina I	*Denarius*	A.D. 141–161	There are two triangular notches positioned at 7 o'clock and 12 o'clock on the obverse. They may be deliberate, although it is also possible that they were caused during the striking process.
NCL-BF7241	Antoninus Pius	*Denarius*	A.D. 138–161	The circumference of the coin has at least 11 semi-circular cut-outs giving the coin the appearance of a Republican *denarius serratus*.
NCL-D45387	Faustina II (under Marcus Aurelius)	*Denarius*	A.D. 161–175	A semi-circular cut-out between 5 and 6 o'clock on the obverse.
BH-7549E3	Julia Soaemias	*Denarius*	A.D. 218–222	A semi-circular cut-out between 7 and 8 o'clock on the obverse.
BM-084B64	Caracalla	*Denarius*	A.D. 206–210	A triangular notch at 3 o'clock on obverse. Has more of look of silver test?
BM-F9FC33	Septimius Severus	*Denarius* (copy)	A.D. 196–211	Two semi-circular cut-outs at 3 and 9 o'clock on the obverse.
FAPJW-6053B3	Elagabalus	*Denarius*	A.D. 218–222	Possible slight semi-circular cut-out at 10 o'clock on obverse.
FAPJW-BAF9A2	Elagabalus	*Denarius*	A.D. 218–222	There is a vertical cut at 12 o'clock on the obverse from the circumference as far as the bust.
FAPJW-62DC47	Caracalla	*Denarius* (mule)	A.D. 198–211	The coin has a semi-circular cut-out at 6 o'clock on the obverse.
FAPJW-648465	Caracalla	*Denarius*	A.D. 196–211	Possible slight semi-circular cut-out between 1 and 2 o'clock on the obverse.
NCL-08C6D7	Severan empress	*Denarius* (copy)	A.D. 193–235	A semi-circular cut-out at 6 o'clock on the obverse
NCL-0CDB86	Julia Domna	*Denarius* (plated copy)	A.D. 196–211	A semi-circular cut-out at 9 o'clock on the obverse.
NCL-1AF662	Caracalla	*Denarius*	A.D. 209–210	A possible slight semi-circular cut-out at 4 o'clock on the obverse.
NCL-24FA81	Julia Maesa	*Denarius*	A.D. 218–222	A possible slight semi-circular cut-out at 8 o'clock on the obverse.

PAS no.	**Emperor**	**Denomination**	**Date**	**Treatment**
NCL-8165A8	Geta	*Denarius* (copy?)	A.D. 210–212	A semi-circular cut-out at 11 o'clock on the obverse.
NCL-AABCE5	Geta	*Denarius*	A.D. 202–210	Two semi-circular cut-outs between 1 o'clock and 2 o'clock on the obverse.
NCL-BCB681	Caracalla	*Denarius*	A.D. 201	A semi-circular cut-out at 12 o'clock on the obverse.
NCL-D33574	Caracalla	*Denarius* (copy)	A.D. 198–217	The coin appears to have been cut at 2 o'clock on the obverse with the cut reaching as far as the bust's nose.
NCL-EE9968	Geta	*Denarius*	A.D. 203–208	A semi-circular cut-out between 5 and 6 o'clock on the obverse.
BM-F437D3	Severus Alexander	*Denarius* (plated copy)	A.D. 222–235	Two merged semi-circular cut-outs between 1 and 2 o'clock on the obverse.
BM-F4CDD8	Severus Alexander	*Denarius*	A.D. 222–228	A semi-circular cut-out between 1 and 2 o'clock on the obverse.
FAPJW-613252	Severus Alexander	*Denarius*	A.D. 222–228	Four semi-circular cut-outs, two at 2 o'clock and two at 6 o'clock.
FAPJW-615328	Severus Alexander	*Denarius*	A.D. 222–238	A large trapezoidal cut-out between 7 and 10 o'clock on the obverse.
NCL-068052	Maximinus	*Denarius*	A.D. 235–236	Two semi-circular cut-outs at 6 o'clock on the obverse.
NCL-9DD9B5	Severus Alexander	*Denarius* (copy)	A.D. 233	A small semi-circular out-out at 5 o'clock on the obverse.
FAPJW-CDB462	Volusian	Radiate (copy)	A.D. 253	A small triangular notch at 7 o'clock on obverse.
BM-F42AE4	Aurelian	Radiate	A.D. 270–275	A semi-circular cut-out at 6 o'clock on obverse.
FASAM-747105	Uncertain	Radiate	A.D. 260–275	A semi-circular cut-out at 8 o'clock on the obverse.
NCL-CD3802	Victorinus	Radiate	A.D. 269–271	A large semi-circular cut-out at 5 o'clock on the obverse.
FAPJW-E5F997	Gallienus (sole reign)	Radiate	A.D. 260–268	A small semi-circular cut-out at 7 o'clock on the obverse.
NCL-CD2D31	Uncertain	Radiate (copy)	A.D. 275–285	A small semi-circular cut-out at 3 o'clock on the obverse.
BM-5194F1	Uncertain	*Dupondius* or *As*	A.D. 43–260	Two possible semi-circular cut-outs at 1 and 3 o'clock on the obverse, although the coin is very worn making definitive comment difficult.
NCL-017E57	Uncertain	*Denarius* (plated copy)	1st–3rd century A.D.	A small, semi-circular cut-out at 12 o'clock on the obverse.

TABLE 10.6. COINS WHICH HAVE BEEN DEFACED OR SLASHED ON THE OBVERSE OR REVERSE

PAS no.	**Emperor**	**Denomination**	**Date**	**Treatment**
NCL-F506F5	Vespasian	*Denarius*	A.D. 69–79	The reverse has been filed down so that the legend and design are not visible and there is a cross-hatched pattern of file marks.
BM-F00F46	Antoninus Pius	*Denarius*	A.D. 148–149	The obverse and reverse have been repeatedly jabbed with a small sharp tool, obscuring but not obliterating the detail.
NCL-A11DC1	Lucilla	*Denarius* (copy)	A.D. 164–169	The obverse has been repeatedly jabbed with a small sharp tool, obscuring but not obliterating the detail.
NCL-F64593	Elagabalus	*Denarius*	A.D. 218–222	There are a series of superficial slashes to the portrait on the obverse and to the body of Elagabalus sacrificing on the reverse.
NCL-8CF0E3	Elagabalus	*Denarius*	A.D. 220–222	The obverse and reverse of the coin appear very pitted and appear to have been defaced with a small sharp tool creating crescental indents. The coin is also bent.
BM-EE7DD5	Severus Alexander	*As*	A.D. 235	The obverse has been defaced with a blunt circular object, creating a circular depression at 9 o'clock on the obverse.
NCL-764311	Julia Mamaea	*Denarius*	A.D. 222–235	The reverse has been filed down, obliterating all detail.
PAS-0F2776	Uncertain	*Denarius* (copy)	Early 3rd century A.D.	The obverse and reverse appear to have been defaced with a small sharp tool, rendering the obverse illegible and the reverse detail poor.
PAS-CA7050	Uncertain	*Dupondius* or *As*	1st-3rd century A.D.	The obverse and reverse have been repeatedly scratched obliterating all detail.
FAPJW-227893	Uncertain	*Dupondius* or *As* (copy)	1st-3rd century A.D.	The obverse and reverse have been repeatedly jabbed with a small sharp tool.
BM-F5C005	Uncertain	*Denarius*?	1st-3rd century A.D.?	The obverse and reverse have been filed down with prominent vertical file marks visible on both the obverse and reverse.

TABLE 10.7. BENT, FOLDED AND DISTORTED COINS IN THE RIVERINE ASSEMBLAGE

PAS no.	**Emperor**	**Denomination**	**Date**	**Treatment**
NCL-2A7AE2	Tiberius	*Denarius* (copy)	A.D. 36–37	The coin is slightly bent on the vertical axis inwards on the bust.
BM-60A2A3	Vespasian or Titus	*Dupondius* or *as*	A.D. 69–81	The coin is slightly bent on the vertical axis inwards on the reverse.
NCL-123055	Marcus Aurelius as Caesar?	*Denarius* (copy)	A.D. 139–161	The coin has been bent into a reverse ‘S’ shape and squeezed with a small tool.
BM-52BA06	Faustina II	*Denarius*	A.D. 160–175	The coin has been bent.
BM-51ED43	Septimius Severus	*Denarius*	A.D. 196–198	The coin is distorted and appears to have been subjected to extreme heat.
BM-EEA050	Elagabalus	*Denarius* (copy)	A.D. 218–222	The coin has been rolled to form a tube with the obverse facing out. There is evidence that it has been squeezed with a small tool.
NCL-29D3E6	Julia Maesa	*Denarius* (copy?)	A.D. 218–222	The coin is bent diagonally with the obverse forming the outer surface. It also appears to have been subjected to intense heat.
NCL-EE08A3	Julia Domna	*Denarius* (copy?)	A.D. 196–211	The coin is slightly bent inwards on the vertical axis with the obverse forming the outer surface. It also appears to have been subjected to intense heat.
NCL-36AFD0	Julia Mamaea	*Denarius* (copy)	A.D. 222–235	The coin is bent inwards on the vertical axis with the obverse forming the outer surface.
FASAM-7571A4	Gordian III	Radiate	A.D. 240	The coin is slightly bent on the vertical axis with the reverse forming the outer surface. It also appears to be cut respecting the outline of the emperor’s bust.
FASAM-75E402	Gallienus (sole reign)	Radiate	A.D. 260–268	The coin is slightly bent diagonally, with the obverse forming the outer surface.
BM-85A2F4	Uncertain	*Dupondius* or *as*	1st-2nd century A.D.	This coin is bent on the vertical axis with the obverse forming the outer surface.
BM-EF6217	Uncertain	*Denarius* (copy)	3rd century A.D.?	The coin is bent to form a tube. The axis is not apparent as both obverse and reverse are illegible where visible.

PAS no.	Emperor	Denomination	Date	Treatment
FAPJW-36EE15	Uncertain	*Denarius* (copy)	3rd century A.D.?	The coin has been bent on its vertical axis so that the obverse forms the outer surface and obscures some of the reverse.
NCL-125BD7	Uncertain	*Denarius* (copy)	3rd century A.D.?	The coin has been bent diagonally with the obverse forming the outer surface.
FAPJW-2F5C34	Uncertain	*Denarius* (copy)	3rd century A.D.?	The coin has been folded in half with the outer surface illegible.
BH-FDE27E	Uncertain	Uncertain	Uncertain	A lead-alloy disc folded in half, possibly intended to represent a coin.

TABLE 10.8. PIERCED COINS FROM THE RIVERINE ASSEMBLAGE

PAS no.	Emperor	Denomination	Date	Reverse type	Description
NCL-A98616	Vespasian	*Denarius*	A.D. 72–73	AVGVR TRI POT reverse type depicting wine jug, ladle, sprinkler and *lituus*	Circular piercing from obverse to reverse positioned at 3 o'clock on the obverse. Also notched between 7 and 8 o'clock on obverse.
BM-77FF43	Domitian	*As*	A.D. 88–89	Unclear reverse depicting Fortuna or Moneta	Circular piercing from obverse to reverse positioned between 11 and 12 o'clock on obverse.
NCL-AB68B2	Hadrian	*Denarius*	A.D. 125	COS III reverse type depicting Virtus or Rome right	Circular piercing behind bust.
BH-0F4387	Uncertain	*As*	1st–2nd c.	Illegible	Central rectangular piercing.
BM-F8C1D6	Septimius Severus	*Sestertius*	A.D. 193–196	Unclear reverse depicting figure with spear or sceptre	Central circular perforation positioned through cheek of bust and body of reverse figure.
NCL-A96172	Julia Domna	*Denarius* (copy)	A.D. 196–211	Reverse depicting Venus	Circular piercing positioned at 2 o'clock on the obverse just to the right of bust. The coin is also defaced on the obverse and reverse.

PAS no.	Emperor	Denomination	Date	Reverse type	Description
PAS-36E5BC	Severus Alexander	*Denarius*	A.D. 229	P M TR P VIII COS III P P reverse type depicting Mars advancing right with spear and trophy.	Circular piercing from obverse to reverse positioned just to left of bust on obverse.
BM-77CDC7	Severus Alexander	*Denarius*	A.D. 222–235	Illegible	Small circular piercing positioned between 11 and 12 o'clock on the obverse.
BM-60C380	Severus Alexander	*Denarius* (copy)	A.D. 222–228	PAX AETERNA AVG reverse type depicting Pax standing left with olive branch and sceptre	Circular piercing probably from obverse to reverse positioned at 3 o'clock on the obverse to right of bust.
NCL-610E71	Uncertain	*Denarius* (copy)	Early 3rd cent.	Illegible	Circular piercing situated towards middle of coin. The coin is folded in half.
NCL-8BEDA3	Uncertain	*Denarius* (copy)	Early 3rd cent.	Illegible	Small circular piercing situated at 11 o'clock on obverse. The obverse and reverse are defaced.
CAM-EAED03	Philip I	Radiate (plated copy)	A.D. 249	LIBERALITAS AVGG II reverse type depicting Liberalitas standing left holding abacus and cornucopiae.	Very small sub-rectangular piercing at 10 o'clock on obverse.
NCL-B75EB2	Gallienus (sole reign)	Radiate	A.D. 260–268	PIETAS AVG reverse type depicting Pietas standing left with hands raised; at feet, an altar.	Very small circular piercing at 1 o'clock on obverse, avoiding bust.

TABLE 10.9. COINS WITH MULTIPLE TREATMENTS FROM THE RIVERINE ASSEMBLAGE

PAS no.	Emperor	Denomination	Date	Treatment
FAPJW-5F9486	Commodus	*Denarius* (copy)	A.D. 181–182	A small semi-circular cut-out at 10 o'clock on the obverse. The coin has also been folded over and squeezed.
FAPJW-63C081	Septimius Severus	*Denarius* (copy?)	A.D. 193–194	The obverse and reverse appear to have been repeatedly jabbed with a small sharp tool. The coin also appears melted and bent.
FAPJW-64E265	Caracalla	Radiate	A.D. 215–217	The coin is broken two ways but respecting the bust on the obverse. There may also be a small, semi-circular cut-out at 6 o'clock.
FASAM-235848	Julia Domna	*Denarius*	A.D. 196–211	The coin is cut in half horizontally leaving the lower portion of the bust visible on the obverse. There is a small semi-circular cut-out at 6 o'clock on the obverse.
NCL-610E71	Uncertain	*Denarius* (copy)	3rd century?	The coin is folded in half and squeezed. There is circular piercing visible on one half of the coin.
NCL-A96172	Julia Domna	*Denarius* (copy)	A.D. 196–211	The coin is defaced on both the obverse and reverse with a series of small semi-circular jab marks. There is circular piercing at 2 o'clock on the obverse.
FASAM-7657E1	Gordian III	Radiate	A.D. 240	The coin is broken with a small portion missing to the right of the bust on the obverse. The coin is also bent.
FAPJW-CF25A7	Uncertain	Radiate	A.D. 238–269	The coin has been cut in half and is slashed on the obverse.
NCL-8BEDA3	Uncertain	*Denarius* (copy)	3rd century A.D.?	The coin is defaced on both the obverse and reverse with a series of small semi-circular jab marks. There is circular piercing at 11 o'clock on the obverse.
PAS-A159D6	Uncertain	Radiate (copy)?	3rd century A.D.?	The ?coin has been folded and possibly pierced.

CHAPTER 11

OBJECTS ASSOCIATED WITH AGRICULTURE AND FISHING

By Hella Eckardt, Philippa Walton and Owen Humphreys

INTRODUCTION

A total of 102 objects associated with agriculture and fishing were found, comprising two rake or harrow tines, one ploughshare, 98 fishing weights and a single fishing hook. Given the riverine context of the finds, the recovery of a relatively large collection of fishing tackle is not surprising. Fishing with nets was widespread in antiquity and a variety of techniques and forms (e.g. dragnets and throw nets) are attested. It could be carried out from boats, river banks or bridges (Alfaro Giner 2010; Marzano 2013, 28–38). However, the presence of several agricultural implements, particularly the substantial ploughshare, seems rather more unusual.

AGRICULTURE

The objects associated with agricultural practices include two possible rake or harrow tines (BH-EF9CB1; BH-3827D7) and a substantial iron ploughshare (BM-504C5A). The tines are both of the double-ended type (FIG. 11.1A; Humphreys 2021b, 271, fig. 14.55) and while not closely dateable, they could be Roman, with similar objects known from a range of Roman sites in London (Humphreys 2021b, pl. 50, RAK45-49) and at Wilcote (Hands 1998, fig. 24, 53). The ploughshare can be dated much more certainly to the Roman period (FIG. 11.1B). It can be classified as a Hanemann (2014) Type 2F and would likely have replaced the entire wooden portion of a ploughshare. Similar examples are known from the Continent (Hanneman 2014, 163).

While these objects could be considered purely functional in nature, their deposition is unusual in a Roman context, with the ploughshare in particular a feature of ironwork hoards (Humphreys 2017). Indeed, the act of ploughing had strong religious resonances in the Roman world. For example, in the *pomerium* ceremony, a bull and cow ploughed the furrow which marked out the boundary of a new town. It may not be a coincidence that a copper-alloy figurine depicting a plough-group thought to be a depiction of the *pomerium* ritual has also been found at Piercebridge (Toynbee 1962, 149, no. 54; Manning 1971, 125–36; Aldhouse-Green 1978, 66; Scott and Mason 2008, 14). The apparent ritual deposition of ploughshares has also been noted in the early medieval period (Thomas *et al.* 2016, 753–6).

FISHING

A single copper-alloy barbed fishing hook (BM-D13231) was recovered along with 98 lead rolls. Given its form, the hook cannot be closely dated, although a Roman date is possible. Hooks with a similar form have been found at a variety of Roman sites in the Netherlands (Dütting 2016,

FIG. 11.1. Objects associated with agriculture and fishing

393–4). The size of the hook is determined by the type of fish being sought and this example was clearly intended for a small catch (Steane and Foreman 1988).

The 98 lead rolls have been identified as fishing line or net weights (cf. FIG. 11.1C). A small number resemble curse tablets in size and shape despite being uninscribed[57] and similar objects have also been interpreted as sack closures (Tyrrell 2015). While there has been some research on lead fishing weights in the Mediterranean (e.g. Cool 2016, 221–5, fig. 7.13), finds from the provinces tend to be assigned a post-Roman date. For example, lead fishing weights found in the river Mosel in Trier are described as modern (Cüppers 1974, 167–8, fig. 14) despite the recovery of huge numbers of Roman objects from the same area. Similarly, in British scholarship, lead fishing weights are often presumed to be early medieval or indeed post-medieval in date (Dütting and Hoss 2014, 440; cf. PAS ESS-597784 and LEIC-F9408C), although it is increasingly acknowledged that they also appear in Romano-British contexts (see Tyrrell 2015 for examples). However, a Roman date can only be confirmed where contextual evidence is available. Fishing weights occur in very similar forms in later periods, such as those associated with a fifteenth-century wreck in the Thames at Blackfriars, London (Evans and Loveluck 2009, 249; cf. Steane and Foreman 1988, 162, fig. 15).

In the Netherlands, where the most research on Roman fishing weights has been undertaken, most examples date to the first or second centuries A.D., although finds from Oudenburg came from late Roman contexts and at Mainz in Germany 21 folded lead weights were found associated with the fourth-century Ship 4 (Dütting and Hoss 2014, 439–40; Witteyer 1984, 139, fig. 5).

The size of the U- or V-shaped section provides information on the size of the line, while the length relates to the spacing between knots. If the diameter is *c.* 1 mm, the weight is thought to be associated with a casting net, which is not designed to bear a heavy pulling load; Galili *et al.* (2002, 197) state that such nets may have weighed between 3 and 5 kg and modern equivalents have an average of 320 lead sinkers. Heavier weights with a wider diameter were fixed to much stronger lines used to weigh down other types of nets (e.g. beach seines). In the Netherlands lengths range from 1.5 to 5 cm and the normal weight range appears to be between 6 and 25 g (Dütting and Hoss 2014, 437). The lead fishing weights from Mainz had an average length of 1.5 cm, an interior opening measuring 0.4 cm and a weight of 11.47 g (Witteyer 1984, 139, fig. 5). For the 98 examples recorded at Piercebridge, length ranges from 1.1 to 7.8 cm and weights from 1 to 110 g; the average length is 2.2 cm and the average weight 9.1 g. The internal diameters, which are difficult to record due to their irregular shape and 'gaping' (Cool 2016, 223), range from 0.1 to 1 cm; the average is 0.46 cm. The Piercebridge examples thus appear to relate to casting nets.

Fishing weights have been recovered from rivers and harbours in Roman urban, military and rural contexts and often form part of waterlogged rubbish deposits. Because of the way lead weights were attached, they appear to have been discarded with the nets rather than recycled (Dütting and Hoss 2014). It therefore seems likely that the examples from Piercebridge derive from nets discarded in the vicinity of the bridge, possibly because they became snagged on the submerged timbers of the bridge structures. The date of these nets has to remain uncertain, due to the undiagnostic form of the lead weights. However, given that the bulk of the Piercebridge material is Roman, they are likely to date to the same period.

[57] A sample of six lead rolls were unfolded by the Cardiff University Conservation Department. While one was found to possess a series of repetitive markings resembling the Roman numerals 'XXI', Roger Tomlin (pers. comm.) did not think that they represented an inscription.

CHAPTER 12

OBJECTS USED IN THE MANUFACTURE OR WORKING OF TEXTILES

By Philippa Walton

INTRODUCTION

A small assemblage of 36 objects recovered from the river may provide limited evidence for the manufacture, working or repair of textiles at Piercebridge during the Roman period. They include 15 spindlewhorls and 21 needles. No bobbins or spindles were recovered although these are a feature of the excavation assemblage (Cool 2008, 262, table 11.27). A pair of copper-alloy shears (BM-03FBC8) may have been used to cut thread or prepare textiles (Manning 2011, 85), although this is by no means certain. They are discussed in Chapter 5, as shears were also used for grooming.

SPINDLEWHORLS

15 objects which may be classified as spindlewhorls, using Alberti's (2018) guidelines regarding weight and diameter of perforation,[58] were recovered from the river. They include ten lead examples (BH-FEB8C4; BM-C7F3AE; BM-C7E8D7; BM-C7D0C7; BM-C65D27; BM-C56F3C; NCL-C02FB7; NCL-7BCA51; NCL-1849C4; NCL-41C707) and five ceramic ones (BH-78192E; BH-78230B; BM-C52D3A/FIG. 12.1A; BM-C51E8B; BM-C4E5D4). While they have all been classified as spindlewhorls, it is acknowledged that some may have served other purposes. For example, it has been suggested that a number of the perforated ceramic objects found during the excavations at Piercebridge may have acted as 'gaming tallies, used both as playing men and to keep count of scores by threading on a stick' (Allason-Jones 2008, 11.2). Interestingly, only one spindlewhorl made of recycled samian pottery was found (BH-78192E) despite the fact that they made up 15 of the 20 examples recovered during the excavations at the site (Cool 2008, 262 and table 11.27) while only one lead spindlewhorl was found during the excavations (Allason-Jones 2008, 11.85, cat. no. 9).

However, if their identification is correct, they provide some evidence for spinning at Piercebridge during the Roman period. This is hardly a ground-breaking observation as spindlewhorls are found on the majority of Romano-British sites (Manning 2011, 84) with 20 examples recovered during the excavation of the site (Cool 2008, 262 and table 11.27). However, given that spinning was considered an exclusively female occupation in the Roman period (Allison 2013, 94–5), the spindlewhorls could allude to the presence of women and their

[58] Alberti 2018 notes that spindlewhorls can weigh between 2 and 60 g. A typology created for pre-Roman Italy illustrates that they can take a variety of forms (Gleba 2008, 105). However, to function, a spindlewhorl needs a central perforation with a diameter of between 3 and 12.2 mm. Crummy's (1983, 67) criteria stated that 'the perforation should be a minimum of 5 mm in diameter' but Liu (1978, 97) has recorded whorls with a perforation diameter of 3 mm.

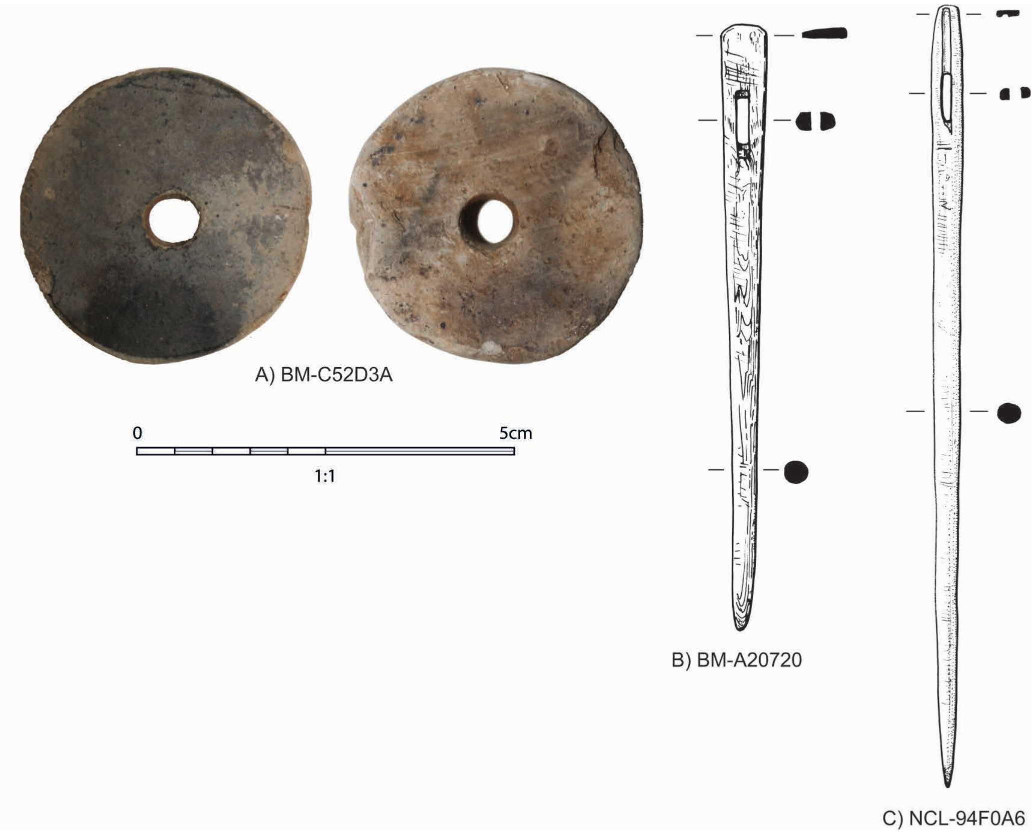


FIG. 12.1. A spindlewhorl and needles from the river

involvement in activity focused on the river. Indeed, it is worth noting that the spindlewhorl was not only a functional object but also had symbolic gendered resonances, representing both womanly virtue and the values of the *matrona*. They are depicted on gravestones throughout the Roman Empire (Philips 1977; Pásztókai-Szeöke 2011) and buried with women as grave goods (cf. Lankhills, Winchester: Booth *et al.* 2010). If deliberately deposited, these objects may have been *pars pro toto* offerings or representative of their owners' (female) identities, in the same way as the sword and scabbard fittings discussed in Chapter 6.

NEEDLES

Eight bone needles (cf. FIG. 12.1B), 12 copper-alloy (FIG. 12.1C) and one possible iron example were recovered from the river, of which 14 were complete enough to be classified using Crummy's typology (Crummy 1983, 65–7). It is worth noting that both Crummy Type 1 and Type 3 needles are found in post-Roman contexts, so we cannot be certain that the needles from the river are Roman in date. A further six copper-alloy examples remain unclassified. They possess much longer shafts and have damaged heads and it is possible that they represent an unusual type of pin, rather than needles.

While commonly identified as 'needles', the function of these objects remains a subject of some debate. It is clear, for example, that bone needles could only have been used for sewing coarse cloth with a very open weave (Crummy 1983, 65) and few show the signs of wear one might expect if used for sewing (Gostenčnik 2010, 82). Other possibilities include their use in Nålebinding (a type of fabric creation) or net-making or in the creation of elaborate hairstyles, as evidenced by their discovery in graves around or below the skull or at the chest (Stephens 2008, 112–13; Gostencnik 2005, 101–7, nn. 409–10 and 412; 2010, 82). Indeed, three of the bone 'needles' (BM-3097A6; BH-12CD0E; BM-E0B563) meet Stephens' criteria as 'needle and thread' hairstyling tools (Stephens 2008, 121).[59]

For comparison, nine copper-alloy and 16 bone needles were found during the excavations (Cool 2008, 262, table 11.27). An absence of detailed descriptions for these examples prevents their classification using Crummy's typology. However, as has been observed in the pin assemblage, copper-alloy needles outnumber bone examples. They are also more complete than their counterparts in the excavation assemblage. This may be due to specific depositional practices or taphonomic factors.

[59] Stephens notes that needles measuring 5–10 mm in diameter and more than 100 mm in length are best suited to hairdressing (Stephens 2008, 121).

CHAPTER 13

TOOLS

By Owen Humphreys and Philippa Walton with a contribution on the stone objects by Ruth Shaffrey

INTRODUCTION

45 tools were recovered from the river. As is common in many Roman site assemblages, knives and cleavers are the most numerous objects, although items associated with woodworking, metalworking and leatherworking are all represented in small quantities. Together, they provide an insight into the range of craft activities undertaken at Piercebridge in the Roman period. While some effort has been made to discuss these objects by category, it is clear that many of the tools were multi-functional in nature and so any conclusions based on the assignment of categories must be tentative. Table 13.1 summarises the number and types of tools recovered from the river, alongside those from the excavations.

TABLE 13.1. COMPARING THE TOOL ASSEMBLAGE FROM THE RIVER WITH THAT FROM THE EXCAVATIONS AT PIERCEBRIDGE (using data from Cool 2008, 261, tables 11.22 and 11.23)

Category	**Type**	**Piercebridge river**	**Piercebridge excavations**
Woodworking	Axe	1	1
Woodworking	Chisel	3	5
Woodworking	Saw	1	1
Woodworking	Drill bit	1	0
Woodworking	Wedge	1	0
Woodworking	Gouge	1	0
Blacksmithing/metalworking	Set	0	1
Blacksmithing/metalworking	Tongs	0	2
Blacksmithing/metalworking	Hammer	2	0
Blacksmithing/metalworking	Punch	3	0
Leatherworking	Awl	5	1
Stone masonry	Wedge	0	1
Stone masonry	Chisel	0	1
Turf cutting	Turf cutter	0	1
General	Anvil?	1	0
General	Knife	19	29
General	Shears[60]	0	1
General	Cleaver	4	5
General	Hone	3	10
General	Handle	0	7
TOTAL		**45**	**66**

[60] Arms from two pairs of copper-alloy shears were recovered from the river (BM-03FBC8 and BM-0438F9), although these are thought to be associated with male grooming and are discussed in Chapter 5.

METALWORKING TOOLS

Five tools primarily associated with metalworking were recovered from the river. They include two possible hammers (BH-CC2BB4; BH-5EFC4B) and three possible punches (BH-EF79C5; BH-EF803B; BH-EF8884). The hammers are all similar in form and may be classified as examples of Hanemann's (2014) Type 2. The type was common throughout the Roman period and is usually associated with metalworking, although given their ubiquity and distribution within London, where several have been found in demolition deposits (Humphreys 2018, 177), their use as general-purpose household tools cannot be excluded. However, BH-CC2BB4 is one of the smallest Hanemann Type 2s ever found[61] which may suggest that it was designed for fine metalworking.

The possible punches are of two different types. BH-EF79C5 and BH-EF8884 are hot punches, used to create holes in red hot metal, while BH-EF803B appears rather different. Although its identification must remain tentative due to its state of preservation, it is potentially a fragment of a fine metalworking punch, used for making chased decoration on the surface of a metal object. Unfinished or miscast artefacts were found in the river and metalworking is attested in Tofts Field, close to or in the bath-house excavated at Glen View and around *vicus* Building 2 (Cool 2008, 258).

WOODWORKING TOOLS

Eight woodworking tools were recovered from the river, namely one axe (NCL-9F7911), one saw blade (BM-AF446A), one drill bit (BM-37916A), three mortise chisels (BM-542503; BM-538B72; BM-4F653A), one wedge used for splitting timbers (BH-F1C449), one possible adze (BM-4F8D78) and one possible gouge (BH-0DD381). It is possible that some of these tools were associated with bridge construction and maintenance.

The axe (NCL-9F7911; FIG. 13.1A) is particularly notable for its unusual form. Its basic outline is that of a Hanemann (2014, Abb. 294) Type 3A (Manning 1985a, fig. 3, Type 2), albeit with a slightly curved front face, but this tool is distinguished by having a long rectangular-sectioned extension at the butt. The narrow rectangular lugs around the eye may suggest a first-century date (Pietsch 1983, Abb. 26), but the closest parallel is an undated example from Saint-Martin-en-Campagne, on the north coast of France (Champion 1916, pl. II, 18173; Hoffman 1985, pl. XX, 34). It is therefore possible that NCL-9F7911 was imported to Britain from the Continent, although it is no less likely that the Saint-Martin-en-Campagne example moved from Britain to the French coast.

The purpose of the extended poll is unclear. An extended 'hammer' poll is not unusual on Roman axes, although only a few have deliberately-formed hammer heads at the butt (Goodman 1964, fig. 14b; Holmes 2003, illus. 107; Pietsch 1983, Taf. 2, 31). These were presumably used for driving in nails, or as striking surfaces for driving the axe like a wedge, but are usually much shorter and stouter than on the present object, and are rarely heavily burred. Rare 'marking axes' (Baratta 2007, fig. 5; Hanemann 2014, Abb. 294, Type 10) have raised letters at the butt, allowing them to act as dies, although no letters were observed on the butt of NCL-9F7911. Some forms of *dolabra* or pickaxe very strongly resemble woodworking axes, but with extended pick blades on the poll (Curle 1911, pl. LVII; Hanemann 2014, Abb. 357, Type 1B; Pietsch 1983, Taf. 3, 42). These are associated with the military, and may have been used for clearing land, digging or rolling logs (Manning 1970, 19; 1976, 28; Rees 1979, 312; Hanemann 2014, 419). It is notable that the Saint-Martin-en-Campagne example follows a similar curve to *dolabra* picks and it may therefore be a military or woodsman's tool, although this does not explain the burring at the tip. Hoffman (1985, 24) has suggested that this type of axe may have been a butcher's pole axe; a combination tool with a narrow pin at the poll for stunning the animal, and

[61] It is comparable in size to an example from Avenches (Duvauchelle 1990, no. 9), but larger than one from London (Humphreys 2021b, table 14.56, pl. 36, HAM07).

an axe blade for removing the hoofs (Salaman 1975, 50). However, given the apparent burring at the butt of NCL-9F7911, it seems likely that the extension acted as a hammer head for striking hard materials. Narrow pin polls are also present on some modern shipwright's adzes, where they are used to drive nails below the surface of the wood (Salaman 1975, 28–9), and it is possible that NCL-9F7911 was used in the same way as a maintenance tool.

Another unusual find is BM-AF446A, a copper-alloy saw blade of uncertain date (FIG. 13.1B). Although it could be Roman, copper-alloy saw blades are rare in that period. Gaitzsch (1980, 197–8) suggests that copper alloy was used for surgical saws, although it is not clear on what evidence this suggestion is based. A possible example from London (Humphreys 2021b, pl. 51, SAW15) may be a decorative strip rather than a tool. The heavily curved edge may have been suitable for use as a cooper's croze, although the Piercebridge find does not resemble other Roman tools of this type (Hedges and Wait 1987).

LEATHERWORKING TOOLS

Five possible awls were found at Piercebridge. They include BM-4FC27F, a solid-handled type of Humphreys Type 1.2 (Humphreys 2021b, fig. 14.6) which is usually interpreted as a leatherworking awl (FIG. 13.1C). However, the tips rarely survive and the majority of objects of this type from London appear instead to be woodworking bradawls. Similarly, BH-37E56B, which conforms to Humphreys Type 2, may have functioned as a metalworking scriber or woodworking marking awl rather than as a leatherworking awl. Meanwhile BH-37F0E9, BH-380EAB and BH-3823D1 are small double-ended objects. Double-ended awls have been used in leatherworking from the Roman period to the present day, and can be distinguished based on their section shape, with Roman double-ended awls (Humphreys Type 9) being square or round in section, and later awls often having diamond-shaped sections. Unfortunately, BH-37F0E9 and BH-380EAB are obscured by corrosion and concretions, and it is therefore difficult to identify the shape of their sections.

MISCELLANEOUS TOOLS

Two further iron objects may represent fragmentary tools although they cannot be identified with any certainty. The first, BH-ED6800, is identical in form to an object recovered from the Roman fort at Maryport which was identified as a fragment of a post-medieval chisel (Jarrett 1976, 5, fig. 20). The fact that it so closely resembles BH-ED6800, which is not obviously broken, suggests that both objects are complete. They may have been small wedge-shaped anvils, perhaps comparable to very small mosaicist's hardies. The second, BH-4DCD81, may be a ferrule or collar from the handle of a tool, although no convincing Roman parallels could be found.

KNIVES

19 knives were recovered from the river.[62] Most knives would have been multi-purpose tools, used for preparing food and eating, as well as in everyday life. As with many iron object types, the knives from the river are difficult to date. However, 15 are likely to be Roman and have been categorised according to the typology of knives developed by Manning (1985a, figs 28–9). Given the mid-Roman emphasis of the majority of finds from the river, it is striking that nearly half of the closely dateable knives are of solidly first- or early second-century date. They include three (BH-38426B; NCL-35A771; NCL-358CE3) with the straight back of Manning's Type 11A as well as an example of a rare Type 8 (BM-5036CB). A further knife of Manning's Type 23

[62] Four objects which could be identified either as the handles of small knives or razors on the basis of their size and decoration are discussed in Chapter 5. They include the bone handle of a Manning Type 7 knife (BM-B691DA), a bone handle decorated with ring-and-dot (NCL-172C33), an elaborate copper-alloy and enamelled handle (NCL-9FFE11), and a copper-alloy handle in the form of a foot (NCL-920745).

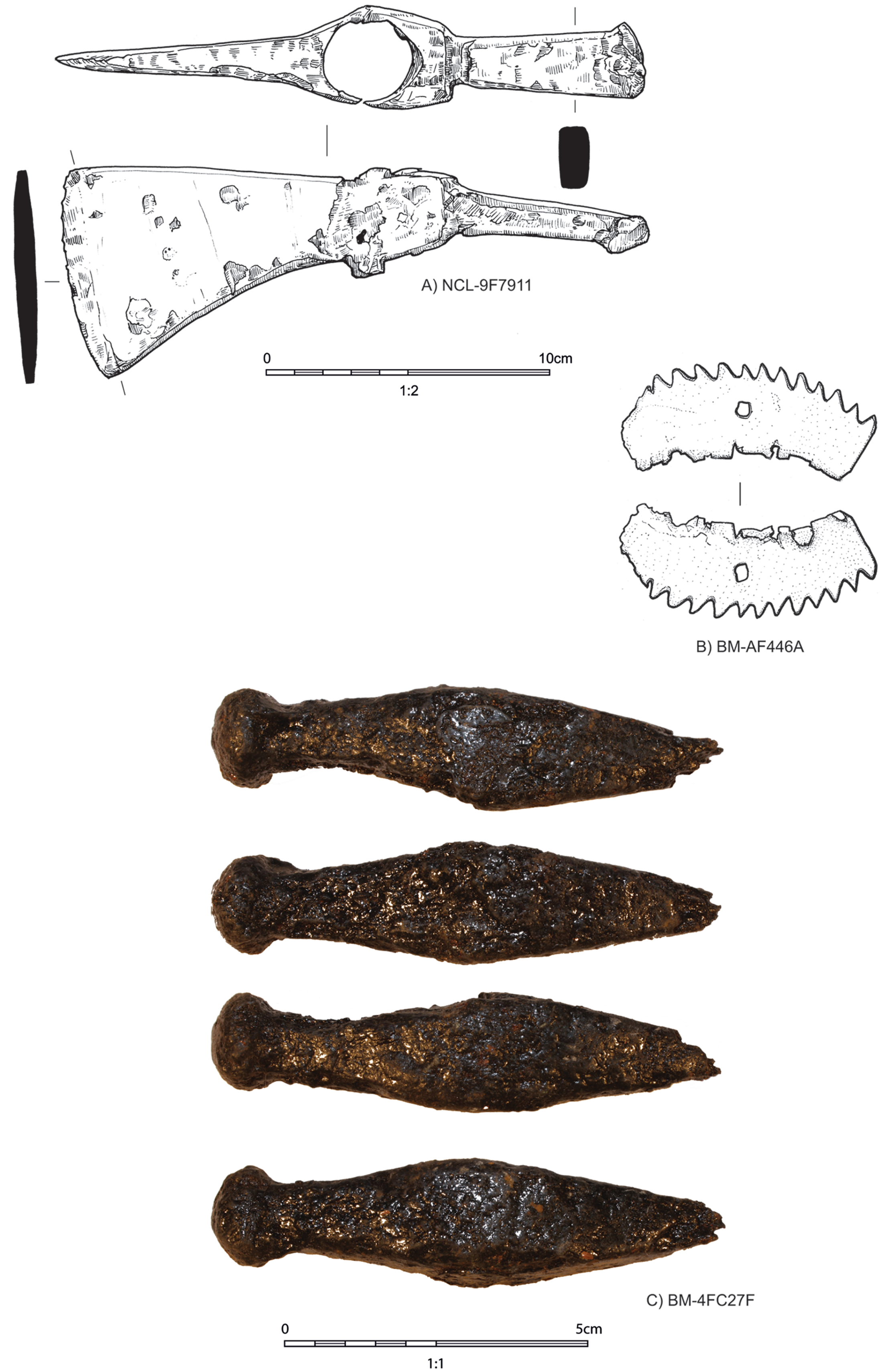


FIG. 13.1. Woodworking and leatherworking tools from the river

(BH-D037BC) could even be a late Iron Age object, although finds from Newstead and London suggest the type continued in use into the Flavian period (Manning 1985a, 118).

The remainder of the dateable knives probably date to the mid- to late Roman period. BH-5FA5AE, BM-1ABCC1 and BH-D01F78 are all very corroded, but their tangs' position in the centre of the blade suggests that they belong either to one of the most common types, Manning's Type 15, or to the rarer Types 20 or 21. However, the possibility remains that these knives are much later in date, as some medieval knives also have central tangs (Goodall 1980, fig. 10). BM-4F56B1 may be a fragment of a Type 18 knife which Manning suggests is a predominantly late type (Manning 1985a, 117).

CLEAVERS

Four fragmentary iron objects probably represent the remains of cleavers rather than household knives (BH-AFA747; BH-5FACB8; BM-1D51FE; BM-CEEA3D). Cleavers were a Roman introduction and were predominantly used in urban and military settings for butchery, cooking and sacrifice (Mould 2011, 168–9; see also Cool 2006, 89). Only BH-AFA747 can be classified with any certainty (FIG. 13.2). It is the most complete example and conforms to Manning's Type 2a. This is the most common type of cleaver and the one usually represented as the sacrificial knife on the sides of altars (Manning 1985a, 122).

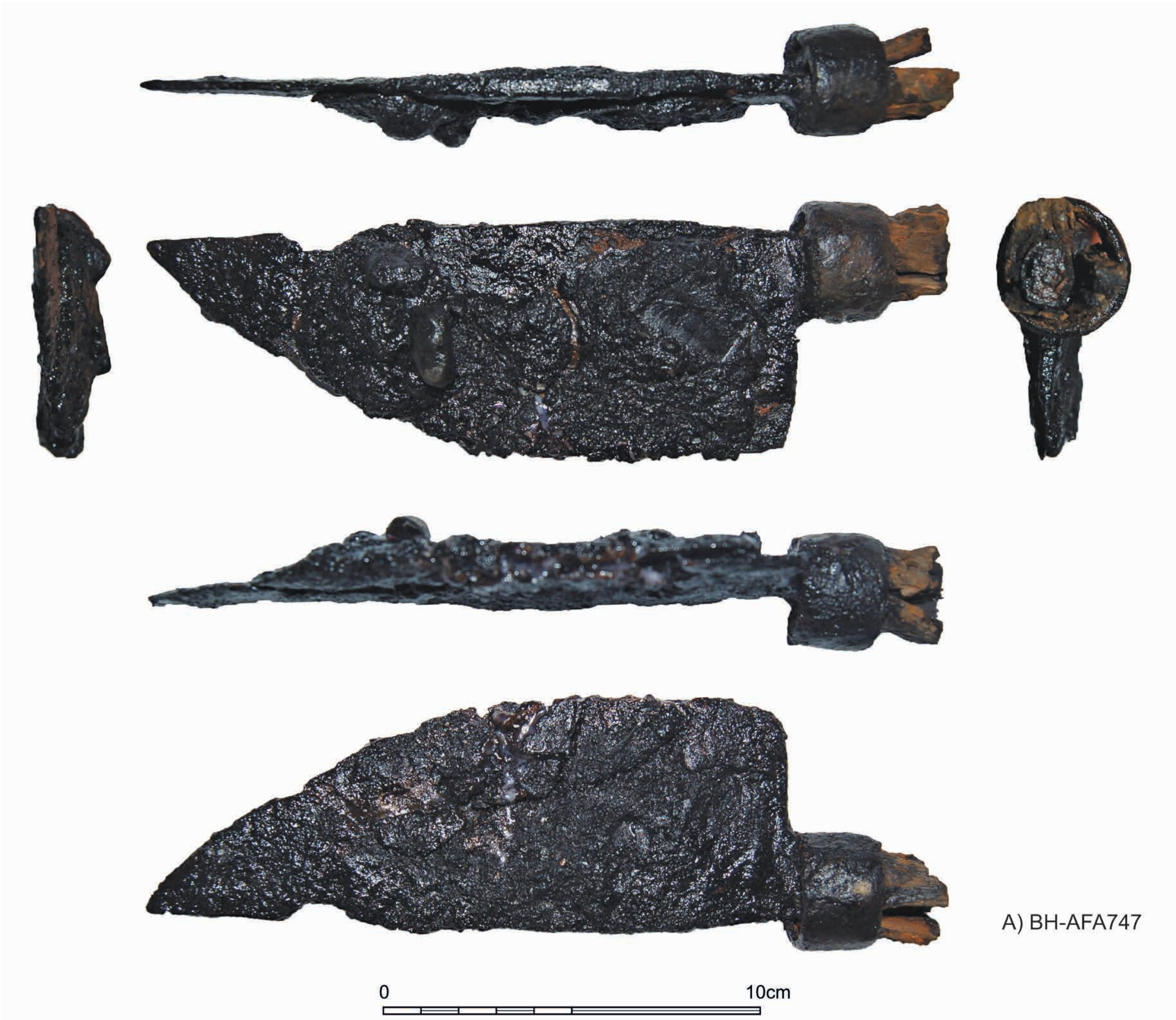


FIG. 13.2. A cleaver from the river

HONES

By Ruth Shaffrey

Two unshaped cobbles (BM-CF77A2; BM-CFB553) appear to have been used as hones on which to sharpen tools. BM-CF77A2 has evidence for sharpening on all four of its faces while BM-CFB553 has some faceting across one end. A further piece of worked stone is possibly part of a large mortar (BH-FE73E7) but an architectural function is also possible. The top of the rim is very smooth indicating secondary use as a hone. None of the examples have been used extensively and they cannot be definitively dated. However, there is no reason to dispute a possible Roman date.

CONCLUSION

The tool assemblage shares many of the features of a 'normal' Roman site find assemblage, although the presence of some unusual finds such as the axe, the saw blade and the antler knife handle as well as the early Roman emphasis of the knives are noteworthy. Together, they indicate that a range of craft activities including metalworking, woodworking and leatherworking, as well as everyday activities such as butchery, were being undertaken in the vicinity of the river. The assemblage of tools from the fort is similar in both its size and the range of craft activities it represents (see Table 13.1). However, this comparison cannot be given too much weight given the problems with the under-representation of iron in the excavation assemblage as a whole (Cool 2008, 258).

CHAPTER 14

STRUCTURAL FIXTURES AND FITTINGS

By Owen Humphreys, Philippa Walton and Sally Worrell

INTRODUCTION

570 structural fixtures and fittings and three fragments of window glass were recovered from the river. A large proportion of the assemblage comprised iron nails, but a range of other objects associated with structural carpentry was also found. Although difficult to date, most of the objects conform to typologies for Roman fixtures and fittings established by Manning.

FITTINGS ASSOCIATED WITH STRUCTURAL CARPENTRY

Eleven large iron staples of a type primarily used to join timbers together were found. They comprise examples of both of the major Roman types identified by Manning (1985a, 131), although it is clear that they were also used in the medieval period (Goodall 1980, figs 66–9). The majority are of the more robust type (BH-F04108; BH-F02224; BH-F02F8E; BH-F03871; BH-F04108; BM-DF3C54; BM-9358DB; BH-D06BFC), with only three examples (BH-F000A5; BH-F00CC8; BM-937138) of the more slender U-shaped variety. A large joiner's dog or cleat was also found (BH-D04A61). Whilst smaller versions of this type of fitting may have been used to reinforce the soles of shoes, the size of this example suggests a role in structural carpentry.

In addition to these fittings, which could conceivably be associated with the construction and maintenance of the bridge, there are others which are more likely to be associated with buildings in the vicinity. These include three T-clamps (BH-F04EE8; BH-FDD3EB; BH-FDDCE1), structural fittings which appear to have been used primarily to secure cladding to the walls of buildings (Manning 1985a, 131–2) and two wall hooks (BH-F1AF64; BH-ED5A6B), a type of structural fitting that allows things to be hung up on a wall. There are also two further clamps of a different type (BH-FDE656/FIG. 14.1A; BH-FDD8EA). They would have served to join together two objects, one of which was flat, the other heavily curved, but their function beyond this is uncertain. It has been suggested, for example, that such fastenings were used in the construction of vehicles (Manning 1985a, 133–4), but identical rivets can be seen on scythes from Newstead (Manning 1985a, 49–50) whilst Goodall (1980, fig. 76) shows similar fittings on the cover from a medieval well.

The Piercebridge assemblage also contained seven pintles (BH-EEC4F4; BH-EF2FE3; BH-EF34E3; BH-EF4009; BH-EF4764; BH-EF56A5; BH-EF5C8B/FIG. 14.1B). Pintles are iron objects around which large drop hinges, such as those used on doors or window shutters, can pivot (Goodall 1980, 109; Manning, 1985a, 127). All of the examples from Piercebridge are of the most common type: an L-shaped object with a tapering rectangular-sectioned tang set at right angles to a circular-section pivot. The tang would be inserted into the wood or masonry of the door frame (Manning 1985a, 127). This object type was used in the Roman period, but also occurs in the medieval period and beyond (Goodall 1980, 109). Two drop hinge loops (NCL-

FIG. 14.1. Structural ironwork from the river

27BA46; NCL-277406) and a possible hinge strap (NCL-28A3B5), which would have been attached to a wooden door, were also found.

MULTI-FUNCTIONAL STRUCTURAL FIXTURES AND FITTINGS

There are also a considerable number of structural fixtures and fittings which cannot be assigned a specific function. For example, the assemblage contains 111 copper-alloy rings and 17 iron examples (BH-EFA70C; BH-EFAE8B; BH-EFB431; BH-EFC034; BH-EFD115; BH-EFE834; BM-FB36A7; BM-A7CD28; BM-A7D50B; BM-9349E9; BM-A881E1; BM-A87C8A; BM-A888CC; BM-A7C678; BM-A8932B; BM-8F6F50; BM-91C1CA). They possess external diameters measuring between 12 mm and 70 mm, with the majority clustering between 20 mm and 30 mm. These objects are ubiquitous finds on Roman excavations (Manning 1985a, 140) but are indistinguishable from finds of more recent date (Goodall 1980, fig. 126, 277–84). Unfortunately, it is not possible to assign them a definite function as rings fulfilled a variety of uses, from harness fittings, buckles and chain links to furniture handles (Manning 1985a, 140; James 2004, 69; Hoss 2014, 58). It is worth noting that on some Roman sites, large assemblages of rings and other circular objects have been regarded as indicative of specifc kinds of ritual activity (Marshall and Wardle forthcoming; Gurney 2011). For example, at the temple site of Uley, Glos., the large numbers of copper-alloy rings were interpreted as votive tokens (Woodward and Leach 1993, 135–54, figs 114–15); they were also considered to be votive in nature at Springhead, Kent (Schuster *et al.* 2011a, 286–9). BH-EFA70C (FIG. 14.1C) is nevertheless notable, being significantly larger than the others and being triangular rather than circular in section. Its size would tend to suggest that it was employed as some sort of handle. It is larger than known ring handles from cauldrons (Joy 2014, appendix E), but comparable in size to the 'door handles' from a Roman Iron Age temple in Sweden (Larsson 2007, 17). Its triangular section is unusual, however, and may indicate that it is not Roman in date.

Seven double-spiked loops (BH-CBC415; BH-CBCEA6; BH-CBD5AF; BH-CBF0B8; BH-CBF6DE; BH-CC0E13; BM-93F695) and four loop-head spikes (BH-3AAF94; BM-8F4D33; BM-91E80A; BM-8F99B1) were recovered. These objects were used to secure ring or drop handles to a range of furniture or to structures (Grew and Frere 1989, fig. 88, 182; Manning 1985a, 129–30, R2; 2014, fig. 154, 244).

NAILS

403 nails or nail fragments were found, making them by far the largest single category of iron object recovered from the river. These nails are all of types used in the Roman period, and as such are categorised based on Manning's (1985a) ten-part nail typology (See Table 14.1 for a summary). However, it is far from certain that all are Roman in date, as identical nails have continued to be used ever since. Type 1 nails, by far the most common type of Roman nail, are well-represented with no other type present in any quantity. However, the recovery of 19 examples of nails of Types 7, 8 and 9 is interesting (BH-D9A07D: 6 examples; BM-8F2598; BM-940FF2; BH-D9A07D: 5 examples; BH-D9C3CD: 2 examples; BH-FF015C). These types were probably used primarily in furniture and upholstery, with examples found in the construction and decoration of several wooden boxes from the Butt Road cemetery, Colchester (Crummy 1983, fig. 90, 2183).

FIG. 14.2 shows the lengths of the 186 complete nails from Piercebridge. Whilst there is no absolute understanding of how nails of different sizes were used in the Roman period, the nails from Piercebridge can be compared to those from other excavations where their function is better understood.

One of the largest collections of Roman nails is that from the fortress of Inchtuthil, where over 1,000,000 nails were deposited in a pit (although only a sample was recorded). These nails are thought to have been retrieved during the destruction of timber buildings on the site, presumably at the time of the fortress's abandonment (Manning 1985b). The nails ranged in size from

TABLE 14.1. NAILS FROM THE RIVER WHICH COULD BE ATTRIBUTED TO MANNING'S (1985A) TYPOLOGY

Manning Type	Description	Total number of examples
Type 1a	Square-sectioned tapering stem with conical or pyramidal head, above 15 cm in length	3
Type 1b	Square-section tapering stem with flat, sub-rectangular or rounded head, below 15 cm in length	147 complete and 61 incomplete
Type 2	Rectangular-sectioned tapering stem and triangular head	4
Type 3	T-shaped head no wider than stem	18
Type 4	L-shaped head no wider than stem	1
Type 5	Spike without a distinct head	0
Type 6	Circular-section stem with round, slightly domed head	0
Type 7	Short stem and wide discoidal head	8 certain and 5 possible
Type 8	Short stem and domed head	2
Type 9	Globular head	4
Unclassified	n/a	150

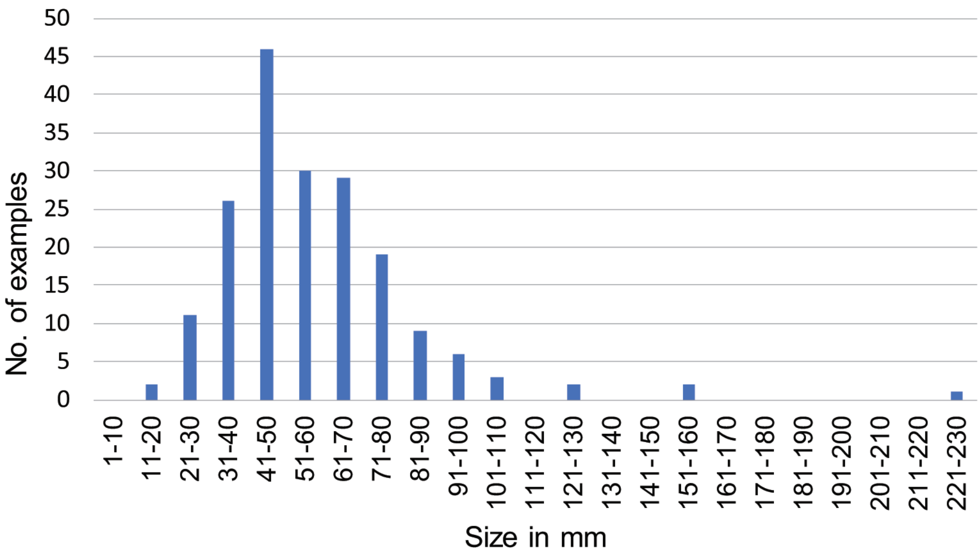


FIG. 14.2. Lengths of the complete nails from the river (total: 186)

11 mm to 371 mm, but the most common by far were small nails measuring between 38 and 70 mm in length. Manning (1985b, 291) interpreted these as nails which were used primarily for attaching the cladding to timber buildings. Powell (2010) has recently studied the nails from the Lankhills cemetery, Winchester, where the majority derived from coffins. Here, the average length of coffin nails was 79 mm, but the range varied greatly, from 18 mm to 275 mm. A wooden chest from Butts Road, Colchester, produced only two complete iron nails, 51.5 mm and 58 mm long (Crummy 1983, 87), whilst at Corbridge the nails used in the chest's construction ranged in length from 21 mm to 170 mm (Allason-Jones and Bishop 1988, 61–9). Looking at these collections, it is immediately clear that there is considerable overlap in the lengths of structural nails and those used to construct portable artefacts. The nails from Piercebridge all fit within the

range of nail sizes used for both of these purposes, and it is therefore not possible to assign a clear function to the bulk of them.

TABLE 14.2. AVERAGE NAIL LENGTH FROM PIERCEBRIDGE BY TYPE

Type	Average length (mm)
All nails	56
Type 1A	178
Type 1B	57
Type 2	76
Type 3	62
Type 4	32
Type 5	0
Type 6	0
Type 7	30
Type 8	37
Type 9	62

As already noted Types 7, 8 and 9 are thought to have been decorative upholstery or furniture nails, and this is borne out by the average lengths of Types 7 and 8, which are generally shorter than other nail types (Table 14.2). However, we can observe that the average length of all nails from Piercebridge (with the exception of Type 1A, which is defined by its long length) is low in comparison to all of the other sites cited above. The Piercebridge nails are also on average slightly smaller than those from London or the Brading villa (Rhodes 1991b, fig. 94), although the exact function of these nails is unknown. This possibly indicates that a number of the less distinctive Piercebridge nails (Types 1B, 3 and 4) were derived from portable wooden artefacts, such as boxes or chests, rather than timber structures.

Clenched nails allow us to examine the thicknesses of the timbers used at Piercebridge (FIG. 14.3). These nails indicate the use of thin boards, representing a continuous spectrum from

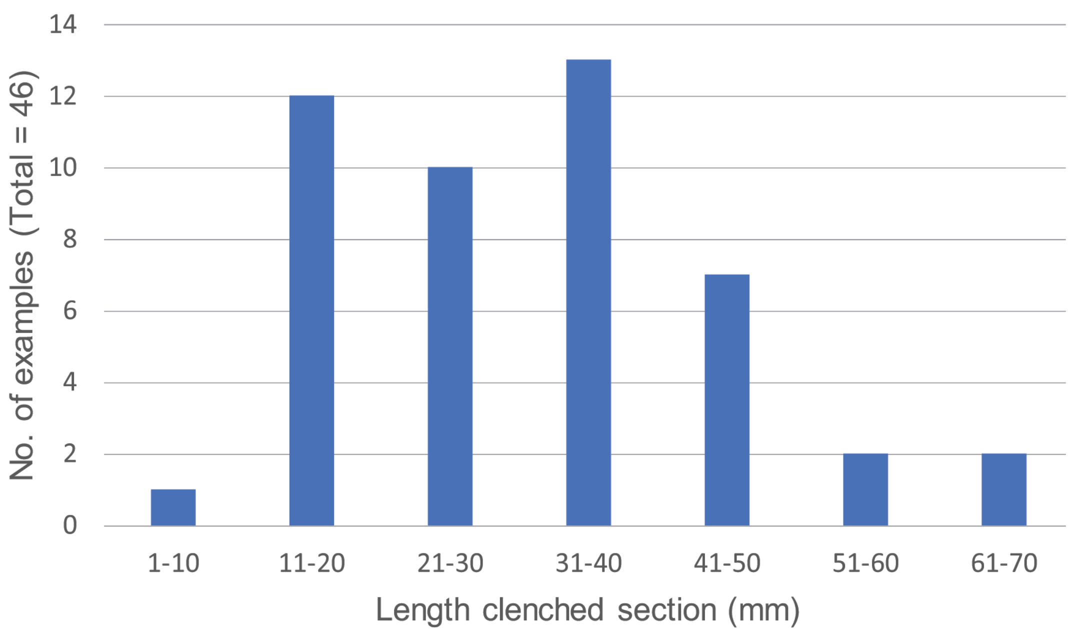


FIG. 14.3. Lengths of the clenched nails from the river (total: 46)

only 10 mm to 52 mm thick. Two were outliers at 70 mm. Of course, this is complicated by the fact that nails are fasteners; they may have been used to join two or more timbers together, and therefore reflect the combined thicknesses of these individual boards. These narrow thicknesses may again suggest the presence of portable furniture rather than timber structures in the river.

The Piercebridge nails are not well preserved, and most are not clean, limiting our ability to assess their condition. Nevertheless, it is notable that the majority are straight, with no obvious deformation to the shaft or head (although the heads are rarely well preserved, and damage can be seen on some nails, e.g. BM-540E7E; see FIG. 14.1D). This indicates that most nails were either deposited unused, or were deposited within the timbers they had been driven into. This is not the case for all nails, however, and several are clearly deformed. Most were probably deliberately clenched, indicating that they were used before disposal. Others, however, have slightly curved shafts, indicating that they were deformed during extraction (see Rhodes 1991b for the criteria for identifying deformed nails).

WINDOW GLASS

By Sally Worrell

Two fragments of blue/green cast window glass and a single fragment of blown greenish/colourless window glass were recorded (BH-500F54; BH-517371; BH-5527E8).

Cast window-glass panes are relatively thick with a characteristic flat, rough underside and a glossy, slightly undulating upper surface, frequently with tooling marks and a rounded edge (Boon 1966). Window glass first appeared around the middle of the first century A.D. in Britain and became increasingly common on Flavian and later military sites as well as in villas and other domestic buildings. It is probable that window glass was made close to the site rather than being transported over a long distance. It may have been made from re-cycled blue/green vessel glass or from fragments of raw glass (Price 1996, 397). Sometimes traces of mortar survive on edge fragments, indicating where the pane was fixed into an aperture or frame (though they do not survive in this case). The thickness of cast panes enabled them to withstand considerable wear and tear and some remained in use during the fourth century.

Blown window glass was produced from the third century onwards and its colour and quality is consistent with that of fourth-century vessels, occurring in greenish and yellowish/green colours with many bubbles and specks, typical of the late Roman period. It was generally blown as a long cylinder which was then opened out to form a double glossy pane (Harden 1961). Buildings occupied during the late third and fourth century often contained both cast and blown fragments.

CONCLUSION

The assemblage of structural fixtures and fittings appears to include some items, such as door pintles and window glass, which must be associated with buildings in the vicinity and others which may be associated with the construction and maintenance of the bridge. Despite the unpromising appearance of the nail assemblage, it is striking how much information close study can provide. The presence of some special nail types (Types 7–9) may represent evidence for the deposition of complete items of furniture, presumably boxes or chests. Furthermore, the small average size of the more common Type 1 nails and the timber dimensions implied by clenched examples, also support the idea that many derive from furniture rather than large timber structures such as bridges. Whilst a small number may have been extracted from timbers before deposition, the majority were either unused, or deposited as part of complete wooden objects.

CHAPTER 15

HOUSEHOLD OBJECTS MADE FROM METAL

By Philippa Walton and Hella Eckardt, with Owen Humphreys, Leslie Rimmel and Ruth Shaffrey

INTRODUCTION

This chapter deals with the 323 objects recovered from the river which were employed within a household environment. They include items associated with lighting, heating and furnishing the home, as well as those associated with the storage, preparation and presentation of food and drink. Presumably, the majority originated in homes situated in the *vicus* and fort in Piercebridge, although it is possible that items came from further afield.

LIGHTING

In Britain objects associated with lighting are scarce with most found in large military sites or major urban centres (Eckardt 2002; 2011, 182–92). The use of artificial lighting therefore appears to represent the overt adoption of a 'Roman' form of material culture. The presence of five fragmentary candlesticks (BM-D222BD/FIG. 15.1A; BM-BBD22E; BM-BBBA45; BM-4F4573; BM-A0A497) and a lantern hanger (BM-272101/FIG. 15.1B) in the riverine assemblage is a clear indication of the wealth and character of the settlement in the late second and early third century A.D. (Cool 2008, 264).

Three of the candlesticks (BM-D222BD/FIG. 15.1A; BM-BBD22E; BM-BBBA45) are of an unusual type made from lead. Dated to the second or third century A.D., the majority of examples have been found in civilian contexts in Essex or Suffolk (Eckardt 2002, 149–50, figs 71 and 121; Atkinson and Preston 2015, nos 13–15, fig. 456), a distribution at odds with other forms of lighting equipment (Eckardt 2011, 190). A further two lead candlesticks of the same type were found during the excavations at Piercebridge, making the site a significant northern outlier in their Romano-British distribution pattern (Cool 2008, 264, nos 713 and 714; 265, fig. 11.11, no. 714). With the exception of BM-BBBA45, the northern examples lack the raised dots and line decoration typical of the southern finds, suggesting that they were the product of a different workshop.

The identification of the two other examples is more tentative. A copper-alloy terminal in the shape of a lion's paw (BM-A0A497) may be part of a support from a candlestick or other small item of furniture and is similar to a silvered paw found during excavations at Piercebridge (Cool 2008, 265, no. 251 and 266, fig. 11.11). The distinctive 'curls' on an iron object (BM-4F4573) are paralleled by decoration on a candlestick from Bainbridge (Eckardt 2002, no. 1471), although the length of BM-4F4573's shaft may preclude its use as a candlestick.

The copper-alloy lantern element (BM-272101/FIG. 15.1B) dates from the first to third century A.D.; the element enabled the suspension of a lantern from a chain (Feugère and Garbsch 1993, 156, Abb. 4; Eckardt 2011, 191). Lanterns are extremely rare finds in Roman Britain with the few examples known coming from sites with strong military associations (Eckardt 2002, 229, fig. 101).

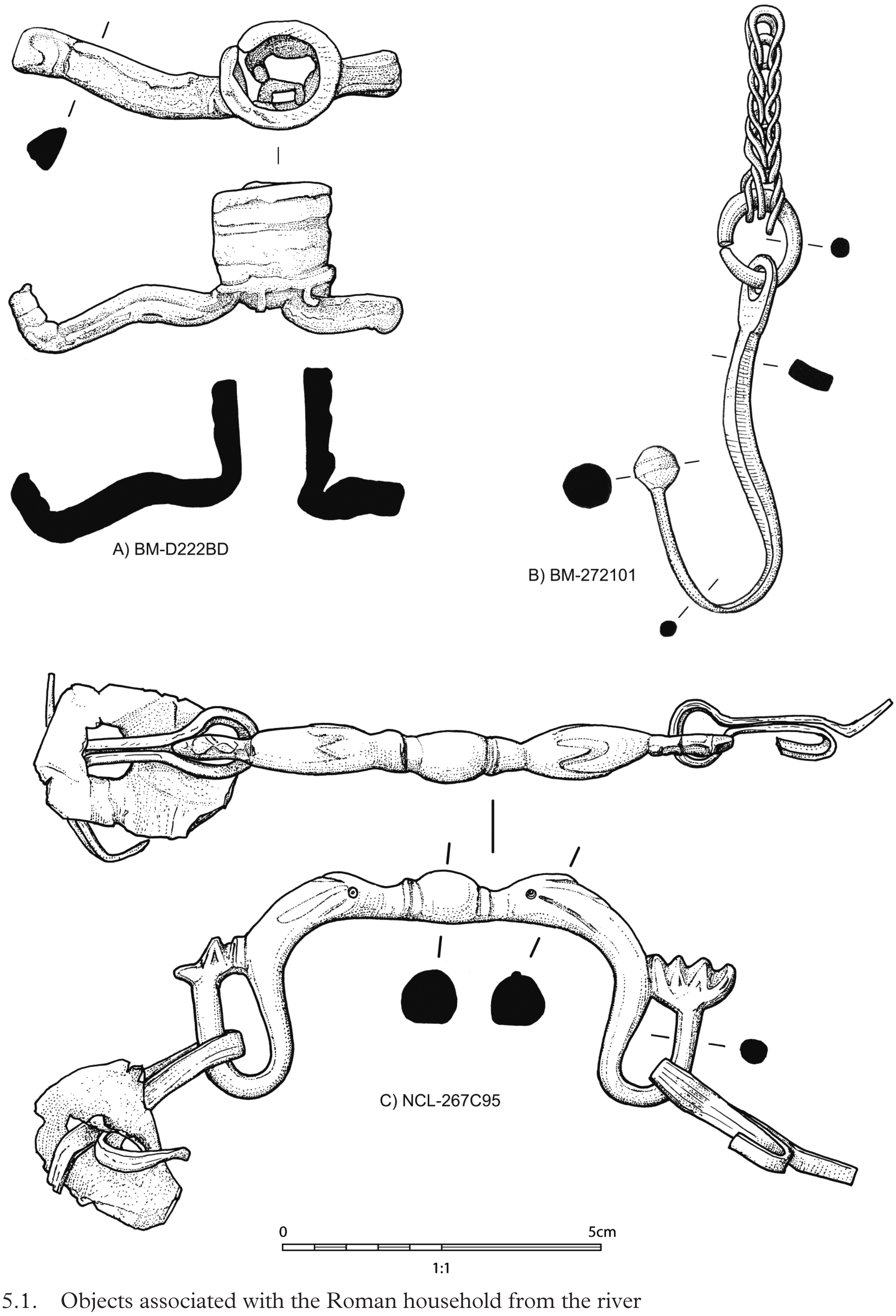


FIG. 15.1. Objects associated with the Roman household from the river

HEATING

A small copper-alloy zoomorphic fitting in the form of a leg and hoof (BM-CA5E3D/FIG. 15.2A) was recovered from the river. While zoomorphic feet (usually feline) are found on Roman boxes, couches, lampstands and vessels (e.g. Kaufmann-Heinimann 1977, pls 131–4; Crummy 2011, 160), this example is likely to have come from a small brazier or censer. It is very closely paralleled by an example from Bavay, France (Deloffre 2007, 262 and fig. 29) and similar to another from Pompeii, which has cloven and pointed hooves as supports (Ward Perkins and Claridge 1976, no. 212; also lamp stand no. 126a). Braziers appear to have been used for both heating and food preparation (Eckardt 2011, 181), while censers were used as miniature altars for burning aromatic substances in religious ceremonies.

FURNITURE

A remarkable number of furniture fittings (229) have also been recovered from the river. They include twelve handles, five box bindings, four mounts and 197 decorative studs, the majority of which appear to be associated with chests and boxes.[63] Chests and boxes were common items used in a wide range of contexts and, depending on size, could be relatively easily transported. Larger chests from Pompeii and Herculaneum contained money, silver, glass and pottery vessels and written sources make frequent reference to their use to store textiles. Smaller boxes may have held jewellery and toilet equipment (Mols 1999, 63; Riha 2001, 16–17; Croom 2007, 138–43). Boxes are also found in high-status burials of the later first century to mid-second century A.D. containing cremated remains and grave goods, and in the later Roman period within inhumation burials. In Roman Britain, this custom appears most prevalent in the South-East, although nailed caskets are also known from Brougham (Borrill 1981, 304–21; Crummy *et al.* 1993, 148; Mould 2004, 393–6). Boxes in funerary contexts across the Empire are commonly but not exclusively found in female graves (Radnóti 1957, 248–50; Borrill 1981, 317; Gáspár 1986, 39; Mols 1995, 399; Riha 2001, 16).

An elaborate strong-box from Pompeii was adorned with more than 700 studs as well as portrait busts and sheets of iron and copper alloy (Pernice 1932, 76–93, pls 46–58; cf. Roberts 2013, 83–6), but generally decorative metalwork appears to be more common on the smaller boxes. Unless found in burials or, very rarely, as well-preserved ensembles in settlement contexts, box fittings are often not recognised and are therefore poorly published (but see Radnóti 1957; Gáspár 1986; Riha 2001). The situation is complicated by the fact that elements such as handles and bell-shaped studs which adorned boxes also had a range of alternative functions. Although it is impossible to be certain that all the objects discussed here are from boxes, the sheer number of fittings, particularly when compared with the numbers recovered during the excavations at Piercebridge (Cool 2008, 264–5), makes it tempting to suggest that complete boxes or chests were deposited on the riverbed, possibly with their contents intact. However, if this is the case, the lack of evidence for suites of matching mounts or handles is somewhat puzzling.

DROP-HANDLES

Twelve drop-handles were recovered from the river, including six copper-alloy examples (NCL-267C95; NCL-5B0503; BM-D2E7EC; BM-D289CA; BM-003ED8; BM-AAFF30) and six iron ones (BH-5F0880; BH-5F0314; BM-D25079; BH-5F0C36; BH-ED5A6B; BH-ED6181). Drop-handles were attached to small wooden boxes and chests (Crummy 1983, 80; Manning 1985a, 124), but also vessels, helmets, gridirons and wooden tubs (Riha 2001, 23–4; Hanemann 2014, Abb. 55, 81). Given the number of examples present, it is likely that they came from several items of furniture, although it is possible that BH-5F0880 and BM-D25079 belong together. The majority of the handles show significant signs of wear indicating that the items they were attached to were used objects.

Of particular interest is NCL-267C95 (FIG. 15.1C), an elaborate dolphin and globe drop-handle, a type argued to be exclusively associated with boxes (Riha 2001, 24–7, pl. 6). It still retains its copper-alloy split-spike attachment loops, giving some idea of the thickness (*c.* 20 mm)

[63] Cupboards were expensive pieces of furniture and were used to store pottery and glass vessels or as household shrines (Mols 1999, 55–62; Croom 2007, 124–37). Copper-alloy fittings and locks associated with cupboards are rare finds.

of the material to which it was originally attached. Dolphin drop-handles occur in Augst from the first century onwards, although in Britain examples are found in second- and third-century A.D. contexts, such as South Shields (cf. Allason-Jones and Miket 1984, 164, 3.411 and 3.412).

BOX BINDINGS

Six box bindings were recovered from the river. They include three corner braces (BH-EDE3E7; BM-263B03/FIG. 15.2B; NCL-2AD9A4/FIG. 15.4A) and three binding mounts (BM-251514/FIG. 15.2E; BH-EE0DE9; BH-EDCF4B).

The iron corner brace (BH-EDE3E7) is of a type that can be paralleled in both the Roman and medieval periods (Goodall 1980, fig. 79, 438, 446). Roman examples include the braces on the Milton Keynes chest (Musty and Manning 1977, fig. 4; Manning *et al.* 1987, fig. 58), as well as fragmentary pieces from Great Chesterford (Manning 1985a, S128) and Sandy (Manning 1985a, S129). On the Continent, numerous examples are known from Augst (Riha 2001, 66–8, pl. 39), which has also produced copper-alloy fittings like BM-263B03 (FIG. 15.2B) which served the same function (Riha 2001, 64–6, pls 36–8). In addition, thin sheet corner fittings such as NCL-2AD9A4 (FIG. 15.4A) served a more decorative function and are also closely paralleled at Augst (Riha 2001, 69–71, pl. 41, nos 515–18), where they occur in first-century contexts.

The binding mounts are more difficult to parallel in Roman contexts. Similar objects to the two iron binding strips BH-EE0DE9 and BH-EDCF4B are known from Brancaster (Hinchliffe 1985, fig. 35, 81, 89), although closer parallels come from the medieval period (Goodall 1980, fig. 81, 538–49). The distinctive copper-alloy mount BM-251514 (FIG. 15.2E) appears unique at present, raising the possibility that it is also post-Roman in date.

DECORATIVE BOX FITTINGS

Four copper-alloy sheet mounts recovered from the river are likely to have come from boxes (NCL-9FAD15; BM-00FDA5; BM-DD6913; BM-3DC993). Two possess openwork decoration (NCL-9FAD15; BM-00FDA5) similar to that found on belt fittings dating to the second or third century A.D. and paralleled by box fittings from Augst (cf. Riha 2001, 62–3, pl. 35). A further strip of copper alloy (BM-B12E88) with remnants of blue enamelling within a lozenge and pelta motif may be a veneer from a small item of furniture.

One of the most unusual and striking finds from the river is a sheet metal mount with elaborate repoussé decoration depicting a central male bust flanked by four cupids (BM-3DC993/FIG. 15.2D). The bust, with its long hair and elevated gaze, may depict a hero or god. He appears to be wearing a headdress or possibly a lion-skin and could therefore represent Bacchus (Susan Walker, pers. comm.) or Hercules. The cupids, meanwhile, are engaged in a variety of activities including striking coins and metalworking in a scene reminiscent of the fresco from the east wall of Room Q in the House of the Vettii in Pompeii (Monteix 2016, with extensive earlier literature). A band of dark staining on the reverse appears to represent the remains of an adhesive,[64] while a small perforation in each of the corners of the sheet would also have aided attachment.

Decorated sheet metal elements from boxes are rare finds in Britain, although a copper-alloy mount from a casket with repoussé decoration depicting biblical scenes was recovered from the temple site at Uley (Henig 1993a, 108–11). Repoussé sheets from boxes dating to the third and especially the fourth century are particularly common in the Danube provinces and were possibly produced in the border area of Moesia Superior and Pannonia Inferior (e.g. Radnóti 1957; 1958; Buschhausen 1971; Gáspár 1986, pls IX–LIX; Mols 1995, 399). However, these decorative sheets typically show gods, heroes, busts and Christian motifs and are set within *aediculae*, rectangular or occasionally circular fields. None adopt the free composition of the Piercebridge sheet. Winged figures interpreted as *genii* or cupids do occur on these late Roman sheets but are

64 There is not much evidence for organic material on the reverse of sheet metal elements, but see Gáspár 1986, 57, no. 566 for a rare survival of leather.

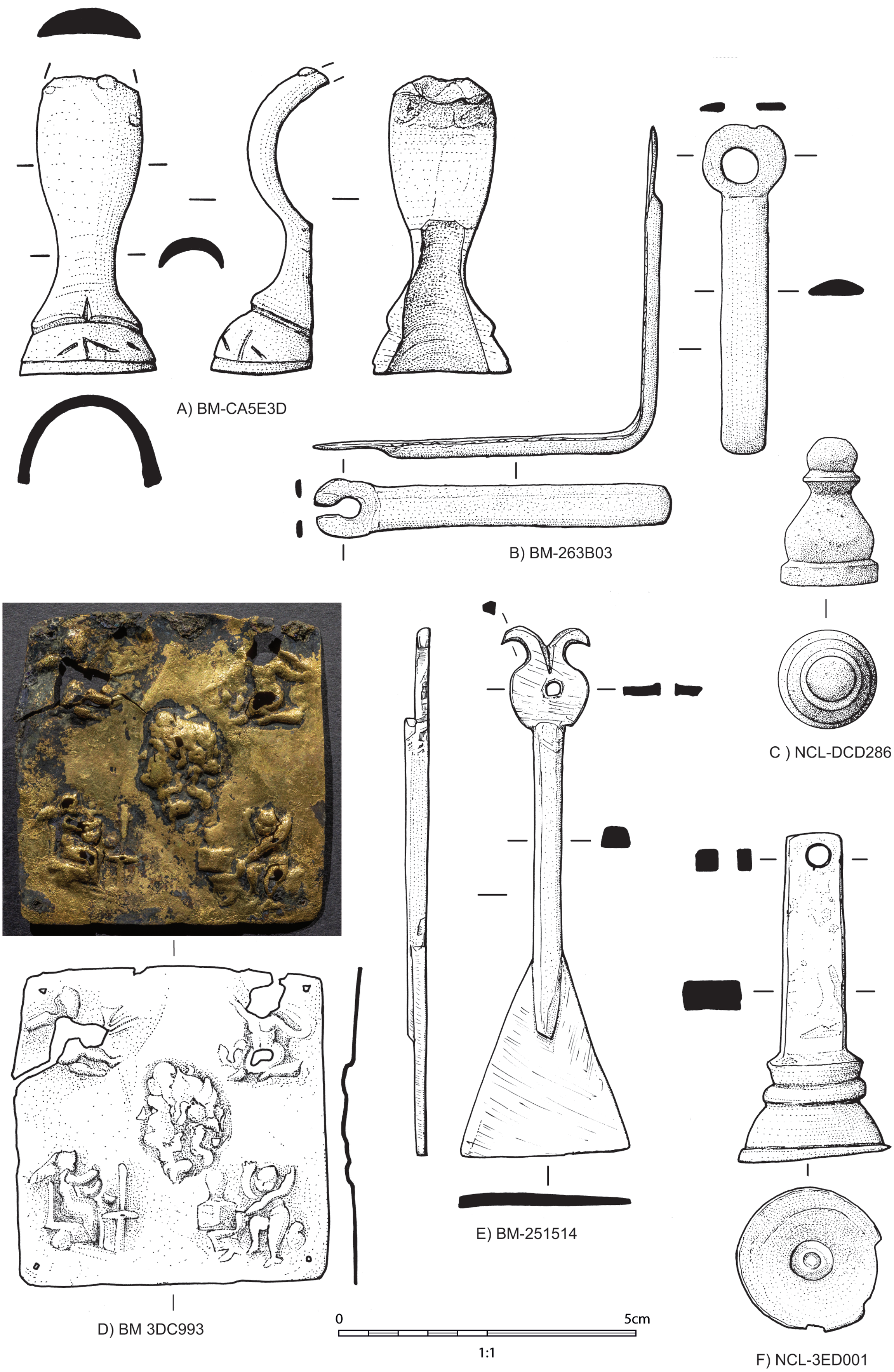


FIG. 15.2. Furniture and box fittings from the river

not common. They include an example of unknown provenance (Mols 1995) and one on a box from Cologne, now in Bonn (Buschhausen 1971, 155–6, no. A83, pls 94–5).

There are some examples of earlier, second-century decorative sheets from cosmetic boxes and mirror cases which were possibly produced in Cologne. However, these also tend to depicts gods within clearly defined *aediculae* or circular frames (Werner 1941, 10–22, pls 8–10; Werner 1943; Menzel 1986, 190–1, pls 157–8). Given the possibly Neronian or early Flavian appearance of the central bust, the iconographic similarity with Pompeiian wall painting and the lack of published parallels amongst second- to fourth-century decorative box mounts, it is likely that BM-3DC993 comes from a late first-century box made in Italy or from another object of that date.

STUDS

A range of types are represented amongst the 197 studs recovered from the river. They include examples with moulded terminals (BM-2CFF27; NCL-287ED4; NCL-DCD286/FIG. 15.2C) and with enamelled decoration (NCL-2D0614; NCL-D8DCF5; NCL-2A48D1), both of which are likely to have adorned pieces of furniture. However, most common are the composite and bell-shaped varieties, with 135 and 38 examples respectively.

Composite studs, with their copper-alloy sheet heads, lead caulking and iron shafts, are known from military sites in northern Britain (Allason-Jones and Miket 1984, 249–50, 3.998–3.1027; Allason-Jones 1985, 95). At Piercebridge, they range in diameter from 8 mm to 43 mm, although there is a clear clustering around the 15–19 mm diameter range with 52 examples. Although their exact function remains unknown, their weight and size would suggest that they decorated boxes, furniture or doors rather than being associated with horse harness (see FIG. 15.3).

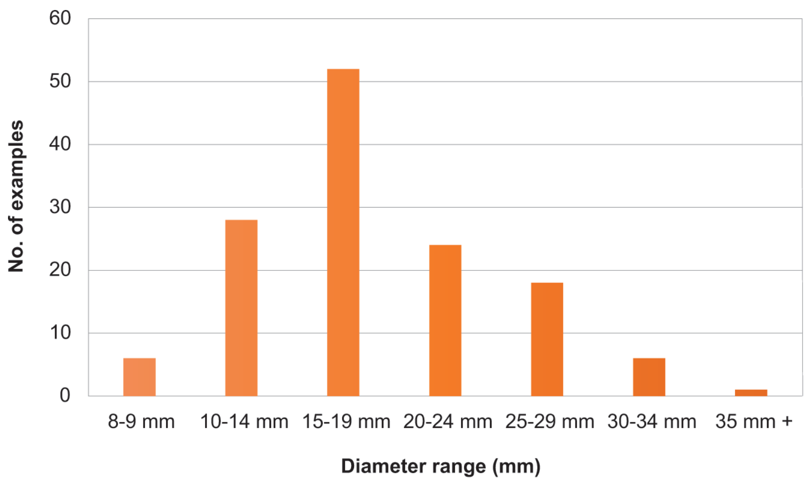


FIG. 15.3. A summary of the diameters of 135 composite studs recovered from the river and composite stud BH-7AB477

Meanwhile, both types of bell-shaped studs (cf. FIG. 15.2F) as defined by Allason-Jones are present, each possessing a distinctive type of shaft (Allason-Jones 1985). Although superficially similar in appearance, each type may have been affixed to very different objects. The majority of Type 1 studs, of which there are 27 in the riverine assemblage, come from military contexts (Allason-Jones 1985, 97) and may have fulfilled a variety of functions from dagger pommel to *dolabra* sheath hinge (Allason-Jones 1985, 100). It is suggested that Type 2 studs, of which there are 11 examples, were 'intended to be used as box fittings of one sort or another' (Allason-Jones 1985, 97) and these are found in both military and civilian contexts (Allason-Jones 1985, 102; Birley 1997a, 30–1, fig. 11). The association of Type 2 bell-shaped studs with boxes, despite the difficulties of envisaging quite how they worked, is confirmed by continental finds (e.g. Gáspár 1986, 274–5, no. 1337, pls 70–7; Riha 2001, 73–5, fig. 41, pl. 46).

The bell-shaped studs range in diameter from 12 mm to 43 mm and none are identical, suggesting that either they were affixed to different items or that symmetry was not an important consideration. Interestingly, this is also the case at other sites in northern Britain. For example, there are no matching examples amongst either the 49 studs found at South Shields or the seven found in Coventina's Well (Allason-Jones 1985, 100).

SECURITY

LOCK FITTINGS

Two lock-plates (BM-C148F7; BM-269E77) and two hasps (BM-256EE4; BM-E44758) were recovered from the river.

No parallels could be found for the first of the lock-plates (BM-C148F7/FIG. 15.4B) which would have been used in conjunction with a rotary lock, and its patina suggests that it may not be Roman in date. The second, a fragmentary circular plate with rectangular perforation (BM-269E77) can only very tentatively be identified as a lock-plate. Hasps were used as attachment points for padlocks, bolts and other structural or furniture locks. Both hasps (BM-256EE4; BM-E44758/FIG. 15.5A) are derived from locks operated with a tumbler-lock slide key (cf. Riha 2001, 50–4). BM-256EE4 is a simple undecorated copper-alloy hasp typical of boxes (cf. Riha 2001, pl. 29). A substantial but incomplete iron hasp (BM-E44758/FIG. 15.5A) was presumably part of a complex locking mechanism in a padlock or structural lock. Presumably it would have fitted around the corner of a right-angled object, but as there are no mounting holes this is not certain. Owing to its unusual form and construction, it is unclear whether this is a Roman or later object.

KEYS AND PADLOCKS

By Philippa Walton with Owen Humphreys and Leslie Rimmel

In addition to the 14 finger-ring keys which are discussed in Chapter 4, 21 keys were recovered from the river. They include eight slide keys, six 'fleur-de-lis' key handles, four lift keys and two rotary lock keys (FIG. 15.5). Along with the padlock (BH-AFAB8E) and other locking mechanisms discussed above, their presence clearly demonstrates a preoccupation with security, while their sizes suggest that most of the keys were intended for locking boxes or chests.

The lift keys include three iron examples (BM-E0D742; BM-DE2295; BM-1C8161) and a single copper-alloy one (NCL-29FAA7/FIG. 15.5B) of a type used from the late Iron Age onwards on the Continent, and possibly in Britain as bolt-sliders or tumbler lock lifters (Manning 1985a, 90). The size of BM-E0D742 may suggest that it was used to secure an external door (Rimmel 2015, 68–70), while BM-DE2295 and NCL-29FAA7 are smaller, and may therefore have been used to lock boxes.

The tumbler slide keys include seven iron examples (BH-F3754C/FIG. 15.5C; BM-DD4F12; BM-E40AF3; BM-E11C30; NCL-8F0CC0; NCL-8EF7F4; NCL-39C9B4) and a single copper-alloy one (NCL-909390/FIG. 15.5E). NCL-909390, NCL-8F0CC0 and NCL-8EF7F4 can be classified as Manning's Type 2. This is one of the most common Roman key types, and

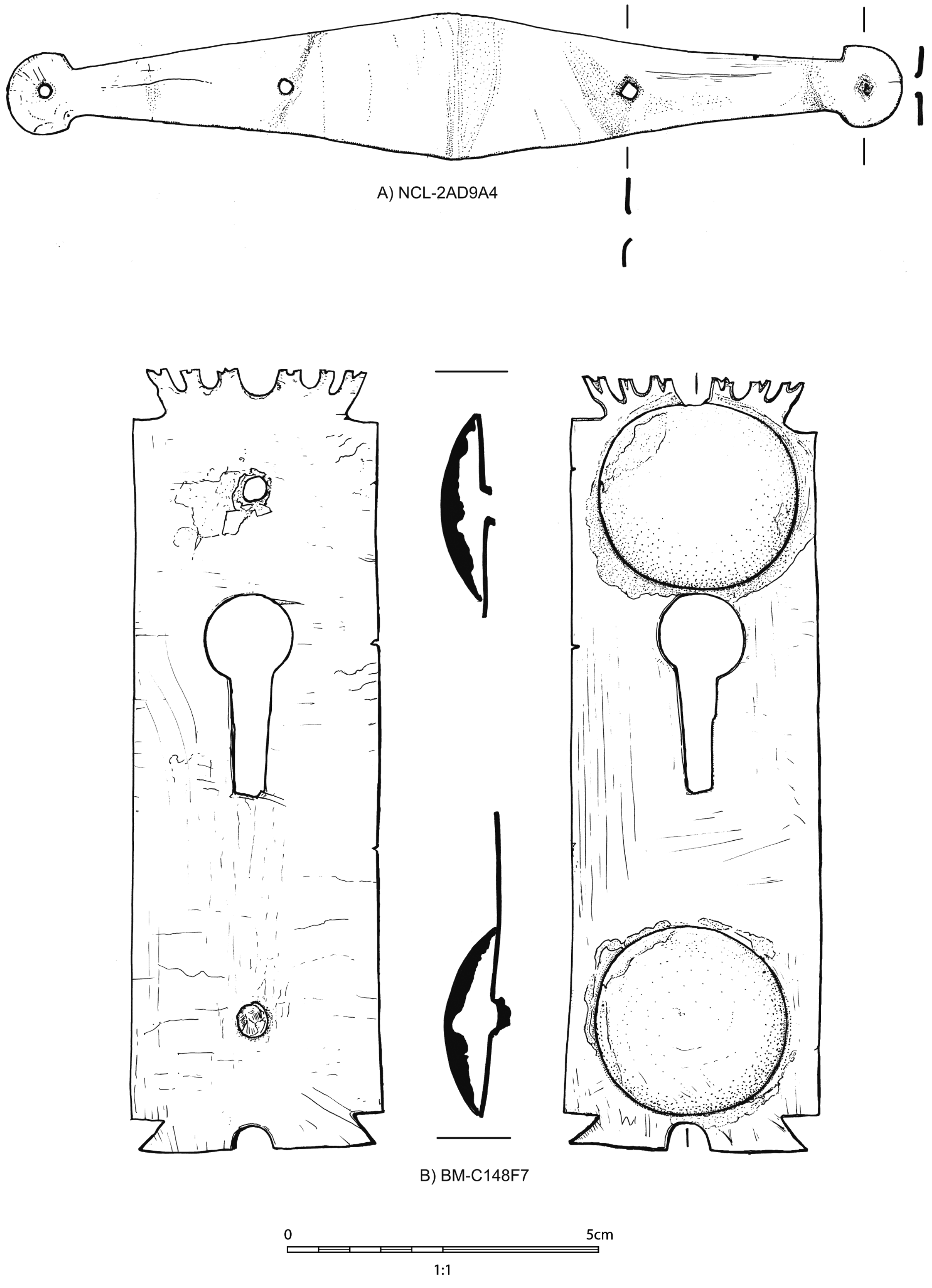


FIG. 15.4. Box fittings from the river

is likely to have been used for securing items of furniture rather than doors, as the nature of the mechanism may have prevented the key from being withdrawn whilst the lock was open (Manning 1985a, 93; Rimmel 2015, 62–4). Only the very large iron slide key BH-F3754C (FIG. 15.5C), measuring 205 mm in length, may be from a door. BM-E11C30, NCL-39C9B4 and

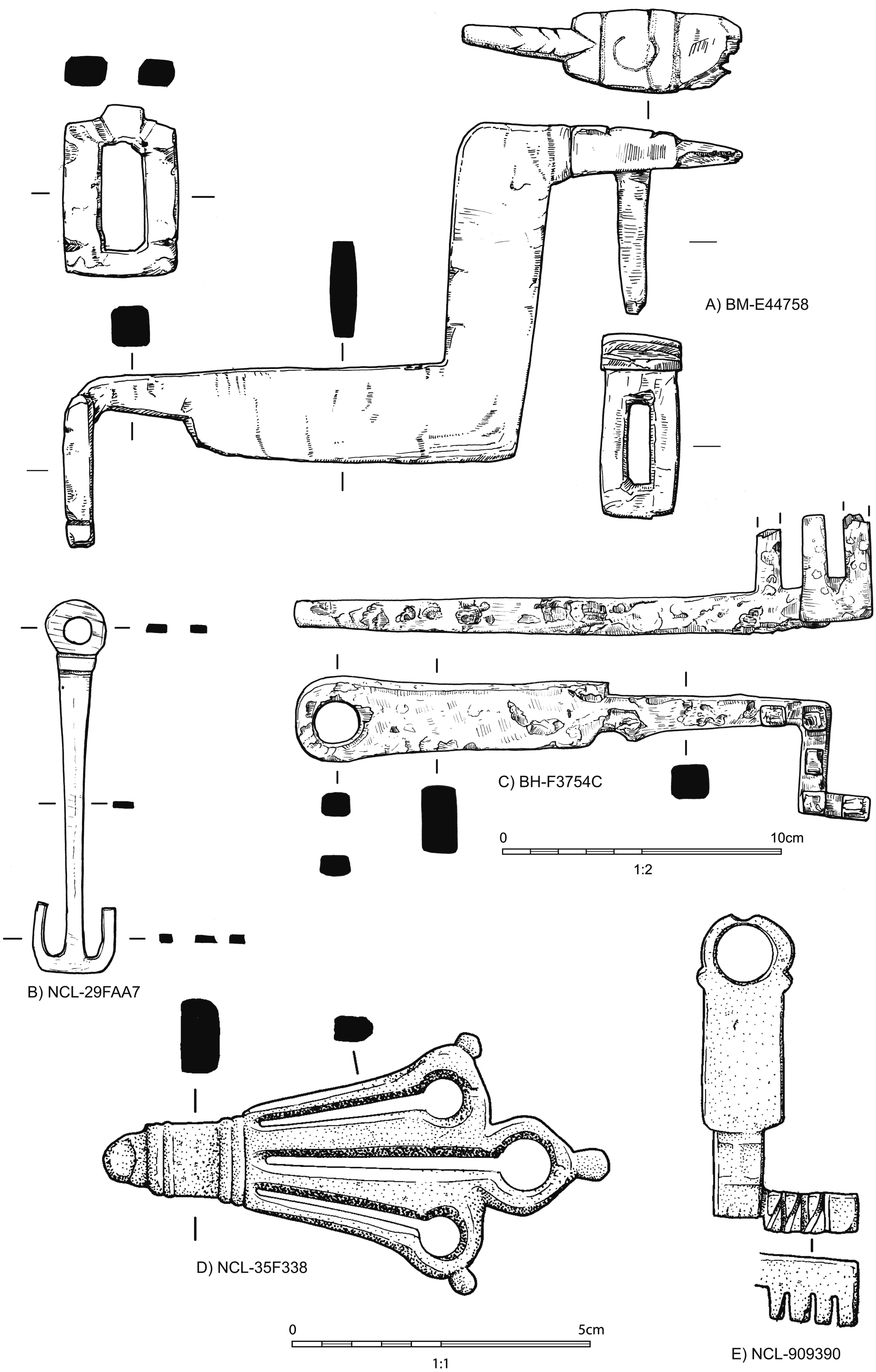


FIG. 15.5. Keys and locking mechanisms from the river

BM-E11C30 are also L-shaped tumbler slide keys, but are too corroded for the form of the teeth to be visible. BM-E40AF3 survives only as a handle fragment, but may be from a tumbler slide key of indeterminate form.

Two keys (BM-DF8FAC; BM-DFB966) are for warded rotary locks, suitable for furniture and padlocks. Although a small number of Roman examples are known (Manning 1985a, O57–64; Rimmel 2015, 66, 443–55), such keys are difficult to date as they were the most common type of key used in the medieval period and beyond (Goodall 1980, figs 101–8). Similarly, the casing of a barb-spring padlock complete with an attached chain (BH-AFAB8E) may be Roman or later in date (Manning 1985a, 95–7).

Although it is possible that the keys were lost or discarded, their number (which is more than twice that found during the excavations) may suggest deliberate deposition either with boxes or in their own right. There is some written evidence for the use of keys as votive objects. In his *De verborum significatu*, Festus notes that offerings of keys were made by women in order to facilitate an easy childbirth (Festus, *De verborum significatu* 49.1L) with the key symbolising the opening of the womb (Aubert 1989, 446; Bettini 2013, 71 and 264). Keys were also deposited as offerings to ask or give thanks for an easy delivery (Dasen 2013, 32; Dasen and Ducaté-Paarman 2006).

THE PREPARATION, PRESENTATION AND CONSUMPTION OF FOOD AND DRINK

This section examines another aspect of the Romano-British household, namely objects associated with the preparation, presentation and consumption of food and drink. Table 15.1 summarises the objects in this category.

TABLE 15.1. SUMMARY OF OBJECTS ASSOCIATED WITH EATING AND DRINKING FOUND AT PIERCEBRIDGE (incorporating data from Cool 2008, 264, tables 11.31 and 11.32)

Category	**Object type**	**Piercebridge river**	**Piercebridge excavations**
Food preparation	Cauldron hanger	1?	6
Food preparation	Stone disc	1	0
Tableware	Pewter vessels	4	1
Tableware	Copper-alloy vessels	2	10
Tableware	Bowl escutcheons	3	0
Eating	Spoons	18	7
Eating	Multi-functional utensil	2	0
Drinking	Tankard handles	4	0
Drinking	Casseroles	2	0
Drinking	Jugs	1	0
Drinking	Strainers	2	0
Drinking	Bucket escutcheons	5	1
Vessel repair	Pot mends	10	?
Vessel repair	Sheet rivets	10	8
Vessel repair	Sheet	1	?
Vessel repair	Dovetail rivet	4	?
Total		**69**	**33**

FOOD PREPARATION

By Philippa Walton with a contribution on the stone objects by Ruth Shaffrey

Two objects associated with food preparation were found amongst the material recovered from the river. The first is an iron handle (BM-D28487) which, although unusual in form, may have been used to hang a small cauldron used for cooking over an open fire (see Keppie 1975, fig. 31,15 and Hanemann 2014, Abb. 69–70 for examples). Despite their portrayal as utilitarian cooking vessels, cauldrons are surprisingly rare in domestic contexts in the Roman period. Instead, they appear to be associated with feasting, communal celebrations and ritual activity (Mould 2011, 167). Indeed, they are sometimes found as containers for votive hoards which were deliberately deposited in lakes and pools (Cool 2006, 48–54; cf. Joy 2014). Six cauldron fittings were recovered from the excavations at Piercebridge, which was considered to be extremely unusual (Cool 2008, 264). The second is a perforated stone disc (BH-DBD5EF) which is burnt on one face. The type of burning present on this disc was caused by direct exposure to flames (rather than just extreme heat) and it seems likely that the disc was used as a pot base, or more likely a pot lid. The perforation would allow for the release of some steam from a cooking vessel. Discs, of both small counter size and larger pot base/lid size, are relatively common finds on Roman sites, typically found in multiples and sometimes in large groups, as at Crosskirk broch where 34 were recovered (Fairhurst 1984, 126–7). However, a Roman date is by no means certain, since discs of all sizes are also found on medieval and post-medieval sites such as Whitefriars, Coventry and Finzel's Reach, Bristol (Woodfield 1981, 105; Shaffrey 2015).

TABLEWARE

Four fragments of lead-alloy or pewter vessels were recovered from the river. Two are undiagnostic body fragments (BM-3D852B; BM-F40781) while BM-DDD64C is the base of a vessel, possibly a small cup. Too little survives to identify its form and it is entirely possible that it is not Roman in date. While also heavily fragmented and apparently deliberately cut up, the decoration and profile of the other fragment (BM-118869) suggests that it is part of the rim of a shallow dish or plate (Lee 2009, 208, fig. 96 and 210, fig. 98) probably dating to the third or fourth century A.D. (Lee 2009, 75). If the identification as a dish is correct, it would represent a northern outlier (Lee 2009, 71, fig. 23).

Two rim fragments from copper-alloy plates or dishes (BM-BFA326; BM-F2C3D6) were also recovered. They are undiagnostic in form and appear to have been deliberately cut up.

Three copper-alloy escutcheons (NCL-181572; NCL-2D9F91; BM-749729) associated with vessels used for serving food were also found. The first two are extremely simple in form and can be paralleled by leaf- and almond-shaped examples attached to a variety of large bowls and basins intended for keeping food warm throughout the Roman period (cf. den Boesterd 1956, pl. VIII, nos 189, 192, 196 and 197; Koster 1997, 53). BM-749729 (FIG. 15.6A), however, is far more elaborate in form and depicts a naked figure reclining under a tree. While no close parallels could be found, similar escutcheons with integral handles can be found on bowls made in Campania and throughout the provinces in the first and second centuries A.D. (den Boesterd 1956, 52, no. 172, pl. VIII; Eggers 1951, Type 102).[65] Pictorial representations of such bowls suggest that they were used for serving food or as fruit bowls. What is particularly interesting about the example from the river is its secondary modification. Damage to the edge of the escutcheon suggests that it was deliberately prised from its vessel, its integral handle removed and remodelled to resemble a tree stump; a ritual motivation for this reworking cannot be ruled out.

[65] An escutcheon from Trier depicting reclining Tritons represents the closest parallel (Menzel 1966, 104, no. 258 and Taf. 76).

EATING

A total of 18 spoons and two multi-functional eating utensils were recovered from the river. Amongst the spoons, examples of all three major forms are present (round bowl; pear-shaped bowl; mandolin-shaped bowl; cf. Crummy 1983, 69). One bears the inscription FELIX (NCL-CCC324/FIG. 15.6D). Eight[66] can be dated to the first or second century A.D. with the remainder being broadly Roman (Riha and Stern 1982; Crummy 1983, 69). During the early Roman period, spoons are most common on military and urban sites and their presence here is likely to represent the adoption of 'Roman' eating habits (Cool 2004, 29–30). Interestingly, far fewer spoons were found during the excavations at Piercebridge. Two examples were found in the fort and five examples from the *vici* and villa (Cool 2008, 264, tables 11.31 and 11.32).

Of particular note are six lead-tin-alloy spoons with decorated bowls and iron handles (BH-B05DE8; BH-1294DD; BH-8C29BB/FIG. 15.6B; BM-DEA345; BM-DE9416). They are of a rare type, with the only other examples known from London and Suffolk (Blurton and Rhodes 1977, 58; Jones 1983, 49; Jones and Sherlock 1996, 166–74, fig. 20.1, no. 12; Marshall and

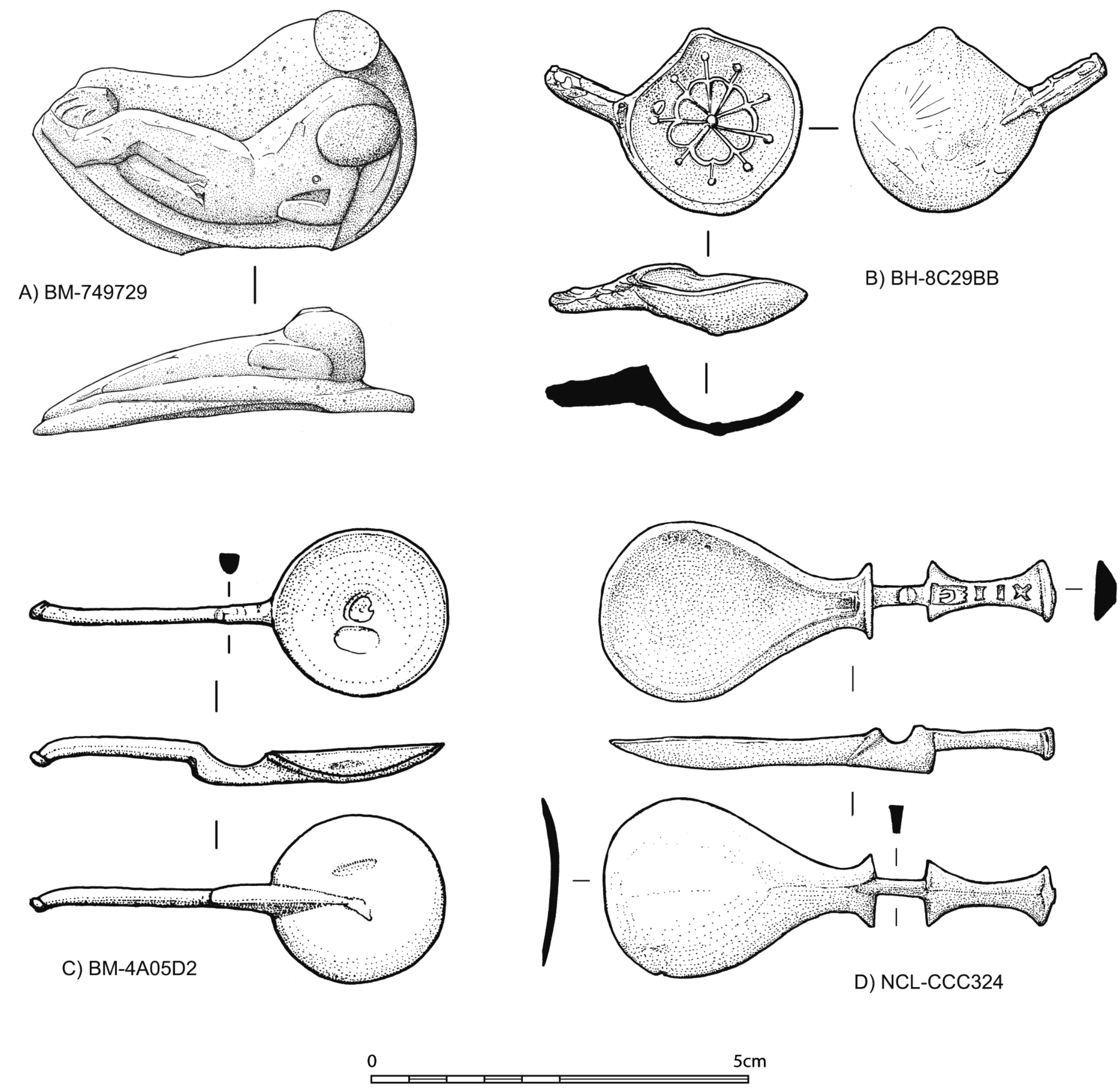


FIG. 15.6. A modified vessel mount and spoons from the river

[66] BH-B05DE8; BH-1294DD; BH-8C29BB; BM-1CE5B4; BM-1CA543; BM-DEA345; BM-DE941C; BM-4A05D2 date to the first or second century A.D. NCL-CCC324/FIG. 15.6C; NCL-8D6AC2; NCL-8EAD92; NCL-2A3256; BM-DCF08D; BM-362120; BM-BAB309; BM-DEDAF4; BM-4C55C3; BM-DEE126 are broadly Roman.

Wardle in prep., S867, fig. 99). Although they were argued by Jones and Sherlock (1996) to be mid-first to mid-second century in date, all decorated spoons found in context in London date to the second century A.D. (Marshall, pers. comm.)

Two multi-functional eating utensils (BM-75628C;BM-1C600F and FIG. 15.7A and B) which combine several implements including a folding knife and spoon were recovered from the river. With their distinctive feline handles, they date to the second or third century A.D. and are relatively rare objects in Britain. Elements of only 24 other examples are known from the province, with the majority found in eastern Britain (Sherlock 1976; Sherlock 2007; see table 2). Although often compared to the modern Swiss army knife, they do not appear exclusively in military contexts and their distribution pattern gives few hints about their users.

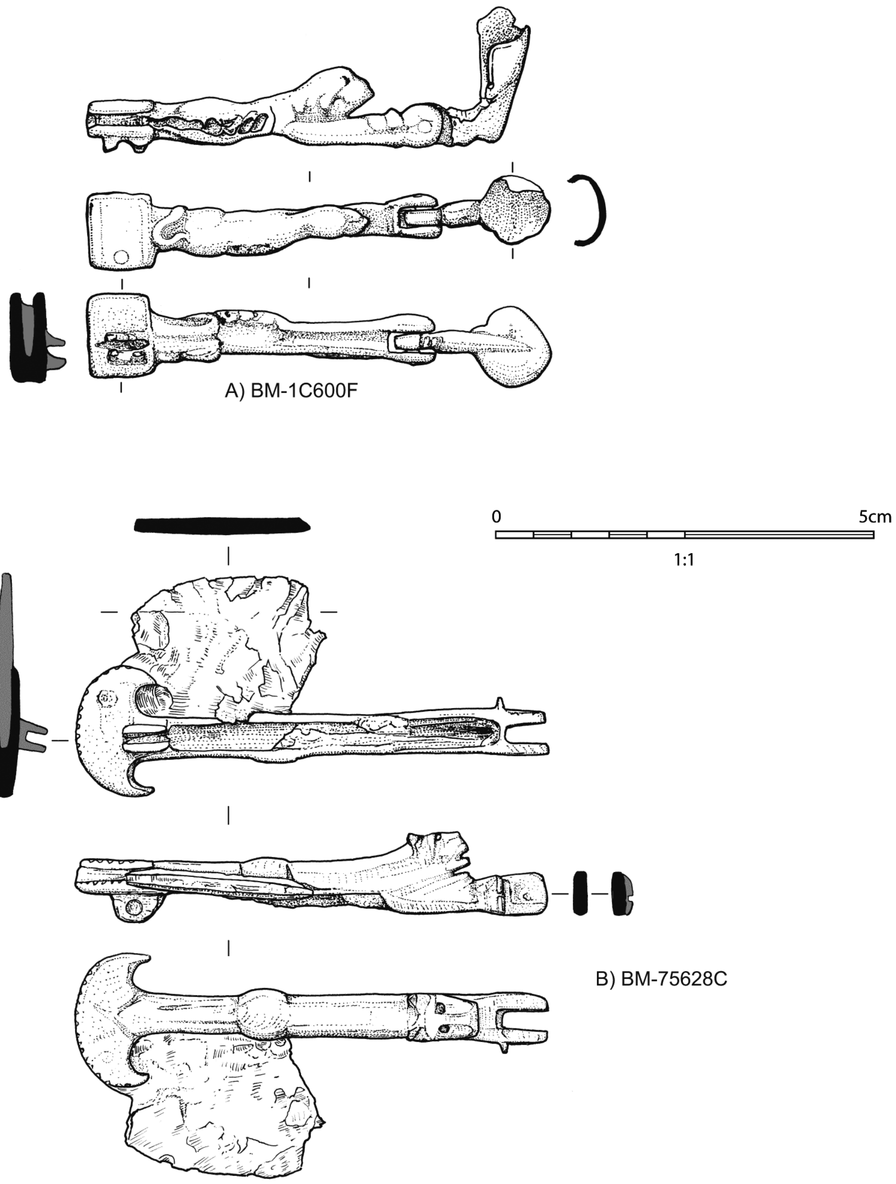


FIG. 15.7. Multi-functional eating utensils from the river

DRINKING ALE

Four handles which would originally have adorned large wooden tankards used for drinking ale were recovered from the river. They include a sheet metal example (BM-09B044/FIG. 15.8A) dating to the period A.D. 70 to 140 and three pointed oval examples dating to the second century

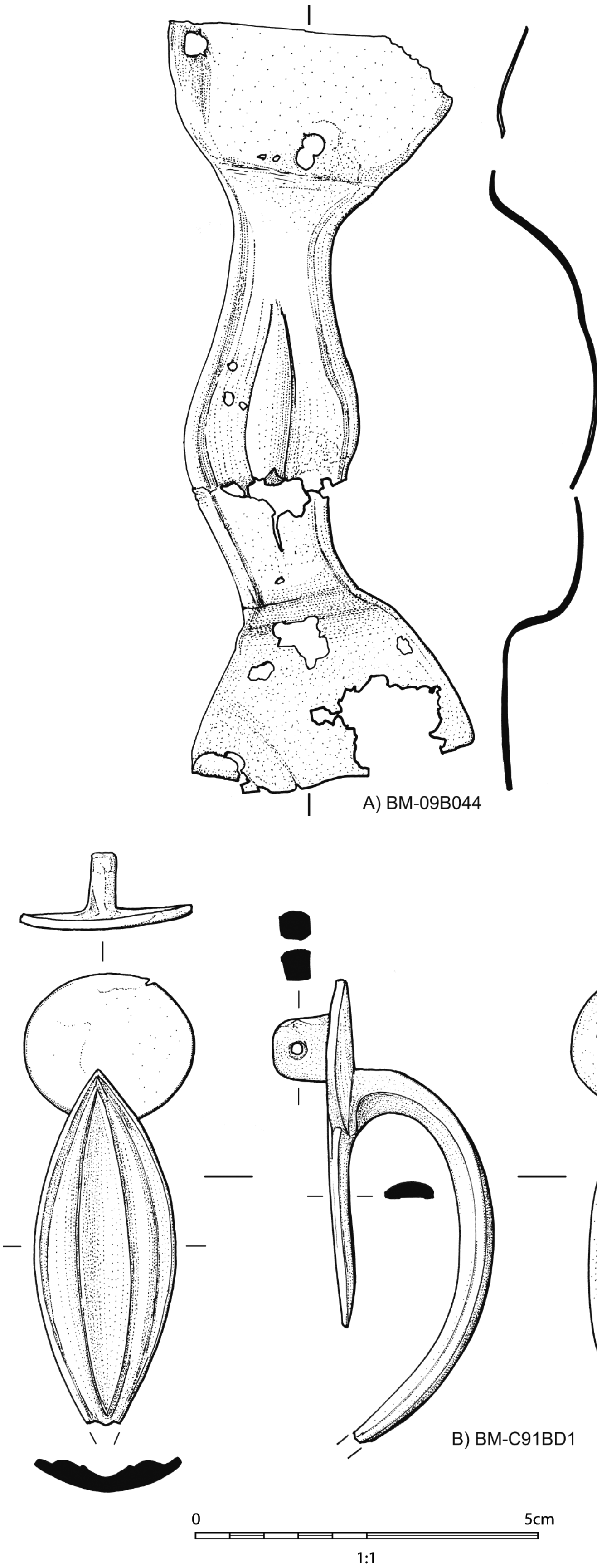


FIG. 15.8. Tankard handles from the river

A.D. (BM-C91BD1/FIG. 15.8B; BM-116C35; BM-D1A09D). While tankards have frequently been seen as alien to northern Britain and peculiarly British/native in character (Cool 2002, 43), a recent study has demonstrated that they appear in both Roman fort and settlement contexts. The pointed oval type, in particular, is 'overwhelmingly associated' with Roman military sites in northern Britain (Horn 2015, 326–8). They complement evidence provided by the Vindolanda tablets for the consumption of ales by the Roman army (Horn 2015, 333)[67] and may suggest the occurrence of communal drinking ceremonies (Sands and Horn 2017).

The majority of tankard handles from Roman forts and settlement sites are found in a fragmentary state, indicating discard after breakage, whether deliberately or through use. However, some were also deposited in structured deposits, such as pits and wells, and within hoards (Horn 2015, 332).

DRINKING WINE

Nine elements from vessels associated with the preparation and serving of wine were recovered from the river. They include a vessel foot (BM-261D42/FIG. 15.9A), a possible casserole (BH-12FDE3/FIG. 15.9B), a lid from a jug (BM-49C101/FIG. 15.9C), a strainer handle (BM-9A395B), a strainer insert (BM-DEFD44/FIG. 15.9D) and four bucket escutcheons (BM-AD4291; BM-2A7C51; BM-4A2749; BH-5F1628).

The vessel foot (BM-261D42/FIG. 15.9A) is probably from a casserole dating to the mid-first century A.D. (Eggers 1951, Type 13; Koster 1997, 56).[68] Slightly later in date is a further casserole (BH-12FDE3/FIG. 15.9B) with a flaring foot. Although crushed, fragmentary and very small in size, it appears to be of a type made in Campania and Gaul in the later first or second century A.D. (den Boesterd 1956, 10, nos 25–9). Casseroles were primarily used to mix wine, water and herbs as part of the drinking service, but may also have been used for cooking and eating (Koster 1997, 56). Together, they represent two of the few early Roman objects in the assemblage and may hint at the early adoption of Roman dining and drinking habits.

The three remaining objects are later in date. The copper-alloy lid (BM-49C101/FIG. 15.9C) decorated with a bird, probably a duck, comes from a sheet metal jug of a type produced in northern or eastern Gaul in the late second or early third century A.D. The presence of lime-scale in complete examples indicates that they were used to heat water rather than to contain wine or oil (Koster 1997, 30).

The strainer elements come from two different types of vessel. The first, BM-9A395B, appears to represent a fragment of the handle of an Eggers (1951) Type 161 strainer. Produced in Gaul and the Rhineland, such strainers date to the mid-second to third century A.D. (Radnóti 1938, 79; den Boesterd 1956, 22, no. 58; Koster 1997, 48) and were used in conjunction with casseroles to strain mixed wine. The second, BM-DEFD44 (FIG. 15.9D), may be an element from a copper-alloy spouted strainer with a half-lid dating to the first half of the third century A.D. These are found almost exclusively in northern Gaul and Germany with good parallels known from Heddernheim (Kohlert-Nemeth 1990, 72–3) and Niederbieber (Menzel 1986, 197, no. 540 and Taf. 172); they were clearly used to strain herbs or spices from liquid.

The escutcheons comprise four copper-alloy examples from buckets (BM-AD4291; BM-2A7C51; BM-4A2749; BM-1B5565) and a single iron example (BH-5F1628). Although all the copper-alloy examples are likely to be of second- or third-century date, they are of different types and clearly come from different vessels. With the exception of BM-1B5565, which possesses rivets, they were all originally attached using solder. As this would melt when heated, they are unlikely to have been part of cooking vessels and instead probably formed part of the drinking service for wine or beer (Koster 1997, 49). BM-AD4291 is from a bucket of a type produced in Gaul or the Rhine provinces during the second half of the second century to the middle of the third century A.D. (den Boesterd 1956, 153; Kurnow 1983, 19; Eggers 1951, 36: Typus

[67] See <http://vto2.csad. ox.ac.uk/> for tabs 182, 186, 190, 482, 581 and 628.

[68] The unfinished appearance of the foot may suggest local manufacture, possibly as a replacement for a broken foot.

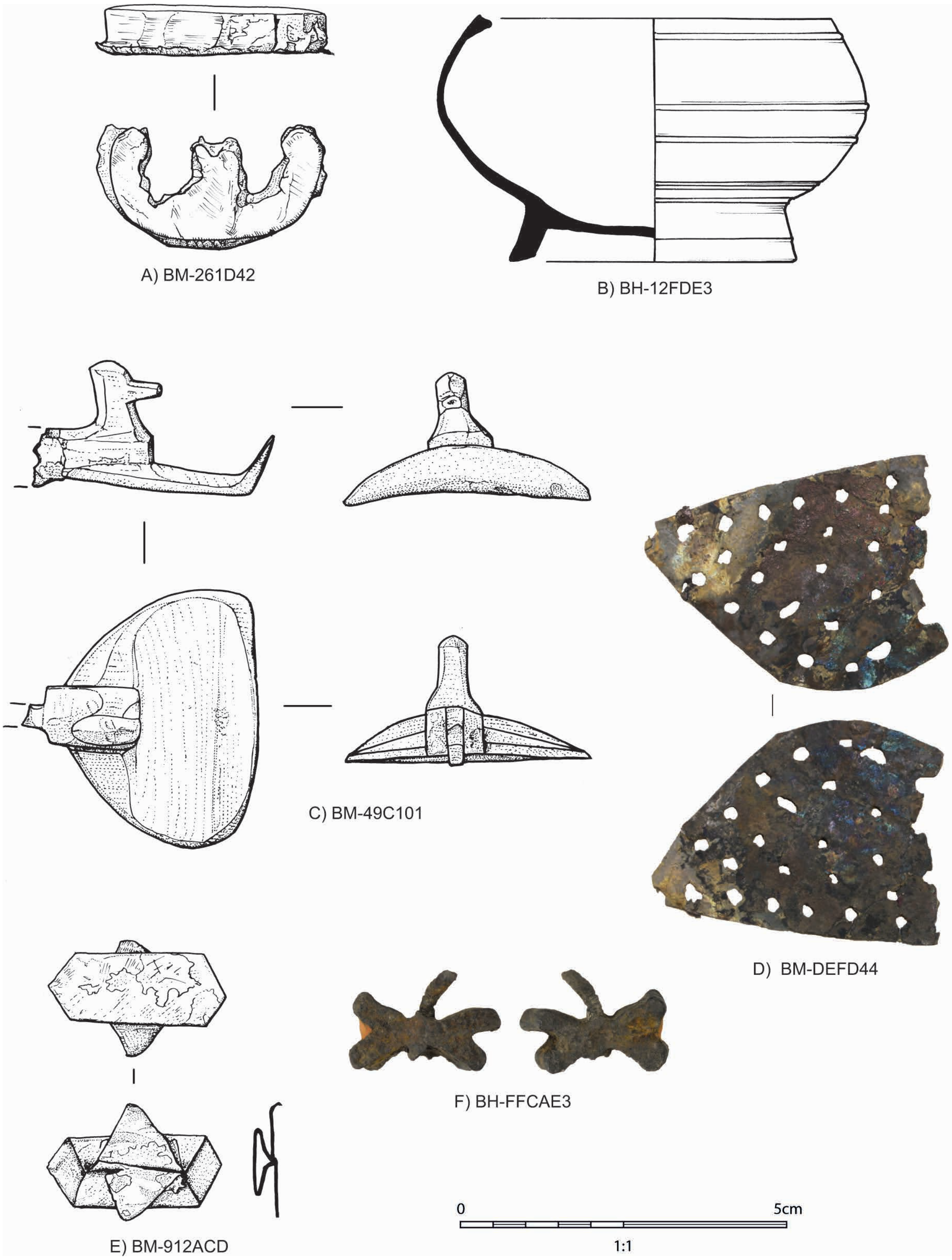


FIG. 15.9. Elements of vessels from the river and their repairs

Vaengegaard). BM-2A7C51 is a fragmentary escutcheon depicting a female bust (see Eggers 1951, Taf. 4 and 5, Types 24–28 and 35 for the range of bucket types), while BM-4A2749 is of a stylised bovine type (den Boesterd 1956, 47–8). BM-1B5565 is more unusual. A similar object identified as 'an eyelet' was recovered from the excavations at South Shields (Allason-Jones and Miket 1984, 211–12, no. 3.721) where it was identified as some form of bucket escutcheon. Parallels are particularly common on northern military sites but examples are also known from southern urban sites.

Finally, the iron example, BH-5F1628, is of a type common on sites in Roman Britain, including Dragonby (Manning and McDonald 1996, fig. 11.38, 69) and Dorchester (Manning 2014, fig. 153, 233), although they were also used in the medieval period (Goodall 1980, fig. 120, 148–52). When complete it would have either been riveted to one or more bands of the bucket, or hooked under its base (see Manning, 1974, fig. 79 for a complete example).

VESSEL REPAIRS

There is substantial evidence for the repair of both metal and ceramic vessels amongst the finds recovered from the river. They include a copper-alloy sheet repair (NCL-1176C1), 11 lead pot mends (BM-2A49B6; BM-829195; BM-B01012; BM-ADA415; BM-AC238D; BM-6FF986; BM-F1FE68; BM-E28895; BM-E157C5; BM-DFFF94; NCL-27F702), four dovetail rivets to repair samian vessels (BH-0000DF; BH-FFEC14; BH-FFE1D0; BH-FFCAE3/FIG. 15.9F) and ten sheet rivets in both copper alloy and lead (BH-101280; BM-8F9BC7; BM-8F8394; BM-8F4F2A; BM-8F3E27; BM-8F2CE3; BM-912ACD/FIG. 15.9E; BM-8FE6EB; BM-A04C65; BM-9152CC). Sheet rivets, with their characteristic hexagonal form, were used to fill small splits in sheet vessels such as cauldrons. Although they are usually dated to the medieval period (Egan 2010, 176 and fig. 144) they have also been recovered from an increasing number of late Iron Age and Roman contexts (Burns 1969, 33 and fig. 2; Wrathmell and Nicholson 1990, fig. 72, nos 51-7; Heirbaut and van Enckevort 2009, 65, fig. 6.2, no. 9; Schuster 2011a, 246–8, fig. 107, no. 196; Baldwin and Joy 2017, 57 and fig. 74). It is therefore likely that these examples are repairs for Roman period vessels.

A preoccupation with vessel repair can also be seen in the material from the excavation of the fort and northern *vicus*, where eight sheet rivets, identified in the archive report as folded parcels of scale armour, were found (Allason-Jones 2008, 11.48 and 11.49, cat. nos 358–65).

CONCLUSION

The majority of household material is second to third century in date, but there are indications of some earlier activity (late first to second century), provided particularly by the presence of casseroles.

The objects found in the river include relatively unusual heating and lighting equipment as well as a considerable number of vessel fragments, and presumably reflect the character of the nearby military and urban settlement, although it is possible that some objects were brought to the Tees from further afield. Several elements from the vessels are either unparalleled or rare in Roman Britain and the candlesticks and decorated spoon represent outliers of predominantly southern distribution patterns in Britain. These finds indicate an unusual level of wealth and access to luxury goods at Piercebridge, something noted in the excavated material and paralleled at Scotch Corner at an earlier date (Cool and Mason 2008b, 306; Fell 2017; 2020).

There is clearly some concern with maintaining security, largely in the form of boxes or chests rather than locked doors, and in general the wealth of fittings and studs may hint at the deposition of complete boxes and perhaps even their contents. It is regrettable that the exact location of these box fittings can no longer be established. More broadly, detailed research on box fittings from across the province would be a very worthwhile project.

Although there is little evidence for food preparation amongst the finds, there is some for the presentation and consumption of food. The vessel assemblage from the river can be compared to that excavated in the fort, *vicus* and villa (Table 15.1). The site material appears to be slightly more utilitarian in nature, but copper-alloy tableware is strongly represented in the fort. By contrast, evidence for the drinking of wine and beer is almost entirely absent from the excavation assemblage, but elements from the wine service and tankard handles are very well-represented in the riverine material. Is this a reflection of the type of activity focused on the river (libations;

feasting; drinking) or of the type of people whose 'rubbish' it might be (officers)? Or does it simply reflect the survival of lead alloys and fragile pieces in waterlogged contexts?

With the exception of a fragmentary casserole, only elements of vessels have been recovered from the river. This is unlike continental watery depositional practice where complete or near-complete vessels are often found, for example at Xanten and Neupotz (Schalles and Schreiter 1993; Künzl 1993). This might support the 'rubbish' argument and suggest the discard of vessels when they were beyond repair, reinforced perhaps by the presence of multiple patches, rivets and mends. But the elements recovered are not altogether run-of-the-mill items and some exhibit signs of deliberate cutting such as the spoon (BM-1CA543) or secondary modification such as the elaborate bowl escutcheon (BM-749729); this could suggest deliberate selection and deposition.

CHAPTER 16

THE POTTERY ASSEMBLAGE[69]

By James Gerrard, J.M. Mills and Enikő Hudák

INTRODUCTION

The pottery assemblage recovered from the river Tees is a reasonably large collection of material (1,885 sherds, 59.586 kg, 56.73 EVEs). Unfortunately, the circumstances of its recovery preclude any reconstruction of its distribution on the riverbed; this means that the group should, to all intents and purposes, be considered as unstratified within its riverine context.

More broadly its riverine context is important. It is clear that ancient communities throughout later prehistory and into the Roman and medieval periods deposited objects in 'watery' places, such as bogs, rivers, springs or wells. Good and persuasive arguments have been made to explain these acts of deposition as elements of ritual or religious belief (Bradley 1990). Typically, or perhaps 'stereotypically', the objects recovered from these wet locations are items that are seen as being either unusual or 'rich', with weaponry, martial gear and items of wealth figuring prominently. This presents the first challenge. Pottery is rarely seen as being either 'high status' or unusual. Indeed, Reece (1988) in his discussion of hoarding drew an explicit distinction between the ways groups of objects manufactured in different materials, including pottery, have been treated by archaeologists. Would a group of pots found in a river, attract the same antiquarian or archaeological attention as a group of swords or coins (for instance Booth *et al.* 2007, 217–20)? The lack of clear contextual comparanda for the pottery from Piercebridge remains a fundamental problem.

This is not to say that pottery vessels were inappropriate as votive offerings. Aldhouse-Green (1998) has examined the deposition of metal cauldrons in watery places and other forms of metal vessels have been recovered from explicitly religious contexts, such as the spring at Bath, or from wells (Gerrard 2011). That there was some overlap between metal vessels and ceramic pots is perhaps suggested by the rare ceramic cauldrons that are known from a few sites (Lyons 2009). Wells, perhaps, offer the best potential for thinking about the ritual deposition of pottery. Many such features include complete pottery vessels in their fills (Beasley 2006; Seeley and Wardle 2009). In some cases these are likely to be the result of accidents drawing water, but in others it is clear from either the vessel forms or associated finds that pots served some chthonic function.

The second major interpretive challenge is a simple one. There is no reason that all the finds from a single context will be the product of a single human action. Coins, jewellery and other items might be cast into a river with a 'votive' intention but pottery, or ironwork, might find its way into the same location through more prosaic actions.

The background of this work precludes any objective assessment of the assemblage and tries to address the challenges presented above. The following discussion is therefore divided into two sections: the first presents an empirical description of the assemblage and the second explores and tests the hypothesis that the pottery was deposited in the river (either as vessels or sherds) with a ritual intent.

[69] This report was commissioned and completed in 2014 when the pottery assemblage was accessible and was funded by a grant from the British Museum Research Fund.

THE ASSEMBLAGE

METHODOLOGY

The assemblage was passed to the author and the Centre for Interdisciplinary Artefact Studies and Newcastle University in 2013. The pottery was then examined, catalogued and quantified. Fabrics were examined using x20 magnification and where possible assigned codes from the National Roman Fabric Reference Collection (Tomber and Dore 1998). Vessel forms were catalogued using a variation on the Museum of London's classification system (Davies *et al.* 1993). This is a hierarchical system and has the advantage of classifying forms according to the vessel class (flagon, jar, beaker, bowl, dish, etc.) before assigning a sherd to a specific type. Where possible individual vessel forms were recorded with reference to the established typologies and previous work on pottery from Piercebridge (Croom *et al.* 2008a; 2008b).

The pottery was quantified by the two standard measures of sherd count and weight. These are both advantageous in that they are a rapid and easily reproducible means of quantification. However, it has long been recognised that both measures are statistically biased, with large heavy vessels such as amphorae being over-represented in weight statistics and thin-walled fragile vessels, such as fineware beakers, being under-represented in weight statistics but over-represented in fragment counts. The assemblage was, therefore, also quantified by Estimated Vessel Equivalents based on recording the surviving percentages of vessel rims. This is widely accepted as an unbiased measure, although it is not without its problems (Orton *et al.* 1993, 166–81).

The samian assemblage was examined by J.M. Mills and quantified using the same methodology but she also recorded Minimum Numbers of Vessels (see archive report: https://doi.org/10.5284/1083485). The mortaria were examined by Enikő Hudák as part of her MLitt research on these vessels in the northern frontier. This work was supervised by the author and the vessel identifications were mentored by Mrs Kay Hartley (see archive report: https://doi.org/10.5284/1083485). The amphora assemblage was small in size and of common types. They have been discussed by the main author.

FABRICS

39 fabrics and fabric groups were identified. Of these groups, one (PMED) contained post-medieval ceramics and the remainder are of Roman period date. Many of the fabrics are of well-known type and full details of the fabric codes, their expansions and references can be found in Appendix 1. Quantification of the pottery by fabric is presented in Table 16.1.

Table 16.1 provides a number of surprises. The various samian fabrics account for almost a fifth of the pottery by count, 14.7 per cent by weight and 30 per cent by EVE. These statistics place the assemblage in Willis's (2011, tables 1 and 2) military and extramural groups but also indicate that samian makes up a greater percentage of the total assemblage than it did for the excavated Piercebridge sites (where approximately 7,000 samian sherds were recorded in an assemblage of approximately 50,000 sherds).This pattern may be partially explained by the relative lack of late Roman material (common at the excavated sites), which would depress the samian percentage.

Equally surprising is the strong showing of LNV CC, which is the most common fabric by sherd count. This fineware fabric accounts for 7 per cent of the assemblage by weight and 11.6 per cent by EVE. In contrast the coarseware DOR BB1 accounts for 8 per cent by sherd count, just over 10 per cent by weight and just over 18 per cent by EVE. Local greywares (GREY1 and GREY2) together account for 25.7 per cent by count, 18.6 per cent by weight and 11.9 per cent by EVE. The remaining fabrics are all relatively minor components in the assemblage.

The emphasis on finewares (samian, LNV CC and some other fabrics) in this assemblage is noteworthy and is discussed further below.

TABLE 16.1. THE POTTERY QUANTIFIED BY FABRIC (the data are organised from the most common (by sherd count) fabric to the least common)

	Sherd count	**Weight (g)**	**EVE**	**% Sherd count**	**% Weight**	**% EVE**
LNV CC	424	4299	6.39	22.49	7.21	11.26
LEZ SA2	307	6412	12.64	16.29	10.76	22.28
GREY1	244	5170	2.62	12.94	8.68	4.62
GREY2	240	5611	3.9	12.73	9.42	6.87
DOR BB1	153	6182	9.97	8.12	10.37	17.57
OXID	77	1369	1.91	4.08	2.30	3.37
MISC	61	370	2	3.24	0.62	3.53
MOS BS	54	275	1.5	2.86	0.46	2.64
RHZ SA	51	1607	3.2	2.71	2.70	5.64
GREY3	47	1202	0.62	2.49	2.02	1.09
MAH WH	39	5321	3.63	2.07	8.93	6.40
BAT AM2	33	10203	0.09	1.75	17.12	0.16
CRA RE	31	2641	1.13	1.64	4.43	1.99
CNG BS	17	186	0.51	0.90	0.31	0.90
TRI SA	17	539	0.48	0.90	0.90	0.85
LNV WH	16	1408	0.99	0.85	2.36	1.75
BB2	9	191		0.48	0.32	0.00
PMED	8	67		0.42	0.11	0.00
HUN CG	7	475	0.68	0.37	0.80	1.20
SAM	6	145	0.45	0.32	0.24	0.79
BBS	10	1022	2.12	0.54	1.72	3.74
CAT MORT	5	234	0.34	0.27	0.39	0.60
OXF WH	4	547	0.6	0.21	0.92	1.06
AMPH	3	442	0.13	0.16	0.74	0.23
White Slip	3	131		0.16	0.22	0.00
MORT	2	128	0.24	0.11	0.21	0.42
SAM EG	2	19	0.1	0.11	0.03	0.18
SAND	2	45	0.1	0.11	0.08	0.18
RHL WH	2	900	0.08	0.11	1.51	0.14
DAL SH	2	109		0.11	0.18	0.00
GAL AM1	2	89		0.11	0.15	0.00
SOL WH	1	2050	0.2	0.05	3.44	0.35
NOG WH4	1	45	0.11	0.05	0.08	0.19
ARG SA	1	27		0.05	0.05	0.00
CRA PA	1	9		0.05	0.02	0.00
LGF SA	1	3		0.05	0.01	0.00
NAF AM	1	35		0.05	0.06	0.00
MORT	1	78	0	0.05	0.13	0.00
TOTAL	**1885**	**59586**	**56.73**	**100.00**	**100.00**	**100.00**

SAMIAN *By J.M. Mills*[70]

The samian amounts to 385 sherds (8752 g, 16.87 EVEs); a single sherd of first-century date from La Graufesenque was identified. The vast majority (80 per cent) of sherds were from Central Gaul, most likely all from Lezoux, with 18 per cent from East Gaul (see Mills, Archive

[70] Archive report deposited with the ADS: https://doi.org/10.5284/1083485

Report, table 1). All of the East Gaulish material is late second- to mid-third-century in date. No East Gaulish vessels of Hadrianic or early Antonine production were identified. The range of vessel forms (see Mills, Archive Report, table 2) suggests that the assemblage dates largely from the later second to the mid-third century. The presence of a single sherd from southern Gaul and a handful of forms which are thought to have ceased in production around A.D. 160, such as Dr 18/31 and the rouletted variant Dr 18/31R, along with the absence of the early cup Dr 27, gives a background level of material produced in the first century and the first half of the second. There are six vessels categorised as Dr 18/31 or Dr 31, and a substantial number as Dr 18/31R or Dr 31R. These are mostly rim sherds and differentiation is almost impossible. It is likely that the majority belong to the later forms; the diagnostic sherds give the ratio of earlier to later forms (18/31 + 18/31R : 31 +31R) of *c.* 1:12. The predominance of samian dating to the second half of the second century is confirmed by examination of the closely-dated vessels, that is the decorated and stamped wares. The plot (FIG. 16.1) of samian loss in five-year intervals peaks at *c.* A.D. 170 and 86 per cent of this group falls in the second half of the second century. There is a long tail to the distribution, accounting for about 8 per cent of the closely dated vessels, showing the low but constant level of samian supply up to the mid-third century when imports ceased.

Individual sherds range in weight between 1 g and *c.* 200 g; the mean for the collection is *c.* 23 g. In the writer's experience, excavations in rural areas and small towns usually produce samian of a mean sherd weight of *c.* 5–15 g whilst major urban sites, for example London and Southwark, tend to yield a larger sherd size of *c.* 20–25 g. There might be a bias introduced into large urban assemblages where often only samian from Roman deposits is quantified and published, omitting the more degraded sherds from later deposits, a factor which would lower the mean sherd weight of an assemblage. The mean sherd weight of 23 g is therefore at the higher end of the range usually recorded and may support the hypothesis that this assemblage was subject to selection bias. A further factor to consider is sherd size (see below). It is interesting to note that the degree of abrasion is very variable, but in general few sherds appeared to be very rolled or battered, perhaps indicating that water action has played little or no part in reducing sherd size post-deposition. A number of sherds were blackened and had an almost tar-like deposit in places. 28 sherds (*c.* 7 per cent) were noted as burnt, five heavily so; and a further 19 sherds warranted a note of 'black deposits' in the record, two of these also had ferruginous encrustations. The samian from excavations in Piercebridge (Ward 2008) seems to have had a consistently high proportion of burnt sherds (commonly 10–20 per cent). The nature of the tar-like deposits on the sherds is a matter for future research for in many cases it had a similar appearance to (birch bark) glue which has been recorded on samian and Roman coarseware vessels (Brown and Seager Smith 2012).

There are three examples of post-firing graffiti; one is a simple 'X' scored on the underside of a cup base (Appendix 2, No. 12), the other two were scratched on the inside of the vessel.

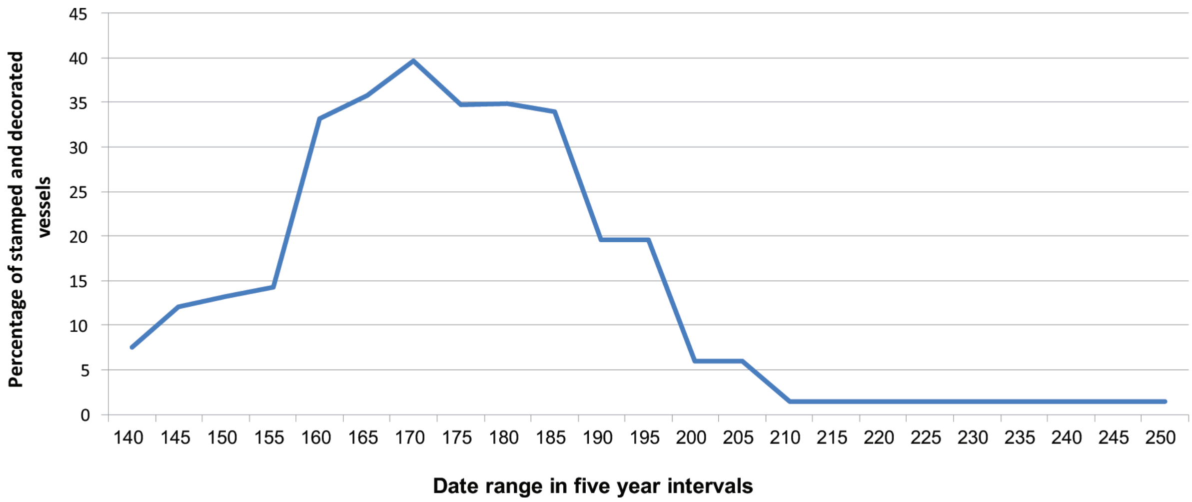


FIG. 16.1. Percentage of samian stamped and decorated vessels discarded shown in five-year intervals

It is extremely unusual for graffiti to be on the inside of vessels. All 15 of the graffiti previously recorded from Piercebridge (Ward 2008, ch. D9) are either on the underside of the base or on the external wall. Most are just one or two letters, V or Λ being the most common with three examples; one is the large part of a name, reading]AVGVSTI[(Ward 2008, fig. D9.6 no. 45). These graffiti are usually taken to be marks of ownership but could be literate abbreviations or perhaps even evidence of illiteracy. The two internally placed examples are both on vessels from eastern Gaul but are quite different. One is of two letters, the other a name or part of a name (or longer graffito). The two-letter example occurs on what amounts to half a Dr 36; there are two joining sherds and the graffito is on the smaller sherd at the base of the wall. The break is not recent, but obviously it is not possible to tell if the pot was deposited in one or two pieces. This vessel is of third-century date, stamped Verus vi (cf. Appendix 2, No. 18 (ID 258); see FIG. 16.5, although unfortunately the graffito was not drawn). The graffito on the second example, a sherd from a Dr 37, is in a similar position along the curving base of the wall. The bowl, a Lavoye product, is of late second-century date, and is very abraded (cf. Mills Archive Report, No. 11, ID 272). The graffito appears to read CAṚṬVS with the R and T ligatured; however, the sherd has many small scratch marks, although none as deep as the lettering, and the line which extends left and right across the top of the R and joins the top of the V may not be deliberate.[71] Both are open forms and it would have been very easy to inscribe the graffiti whilst the pots were complete. An example from Brougham *vicus* has the owner's name inside the upper wall of a later Antonine CG Dr 33 (M. Ward, pers. comm.).

A total of 24 sherds had at least one letter of a potters' stamp extant; one of these, a Dr 37 from Rheinzabern, had two different stamps within the decoration. Full details of these stamps can be found in Appendix 2. Five of the stamps were too incomplete to be identified. Only one vessel was recorded for each potter; many are new stamps for Piercebridge, although they have been recorded previously at sites such as Lincoln, Corbridge, Vindolanda, South Shields, York and Catterick. Stamps of Verus vi are not very common in Britain; Hartley and Dickinson (2012, 213–17) do not list another British example of die 2b; die 2c occurs at Wroxeter and Lancaster, and 3f at Old Penrith and Lancaster. Further, the only example of Verus vi stamping a form Dr 36 is a vessel from Trier with die 2c. The identification of Victorinus ii is uncertain; although prolific, few vessels with his stamp are recorded in Britain; most are in London, but there are examples from Carlisle, Lincoln and Brougham (Hartley and Dickinson 2012, 237–48). There is only one other record for die 7c. Stamps for Atilianus i, Marcus v, Martinus iii, Maternianus i, Paterclinus and Paternus v (II) have been recorded previously at Piercebridge. The same dies on the same forms are recorded for Marcus v (3), Maternianus i (1) and Paternus v (3); and the same die is recorded for Martinus iii but on a form Dr 31, and Atilianus die 1d is recorded on a Dr 33.

The date range for the stamped vessels is similar to that for the decorated wares, A.D. 140–250, and the greatest concentration, seven examples, date to the last three or four decades of the second century, following the distribution shown in FIG. 16.1.

Overall, the samian vessels found in the river are similar to the material excavated nearby in terms of production centres, date, vessel form and frequency of repairs and burning, but show less evidence for modification and alteration.

MORTARIA *By E. Hudák*[72]

There are 70 sherds in the mortarium assemblage, weighing 10,661.4 g, and representing 6.19 EVE. More than two thirds (48 sherds / 69 per cent) of the assemblage are rim sherds; body and base sherds are almost equally represented within the remaining 31 per cent.

[71] Unfortunately, the sherds with graffiti were not accessible for the duration of the project. It is envisaged that they will be examined by Roger Tomlin in 2021 and published in *Britannia*.

[72] https://doi.org/10.5284/1083485

It was possible to assign all sherds but one to Romano-British or continental production centres. Nine different fabrics have been identified, four Romano-British, four continental, and one 'indeterminate' represented by a single unidentified sherd. The assemblage is dominated by Mancetter-Hartshill products and most can be dated to the third century A.D. There is only one stamp, a barely noticeable name panel on the rim of the Verecundus ii mortarium from Soller (FIG. 16.2F).

The mortaria were in a surprisingly good condition, apart from some discolouring and rust from other objects on the surface of the sherds. Only one sherd, from the Oise/Somme area (NOG WH4), was badly damaged by the water. It was disintegrating to the touch, which occurs to this fabric when deposited in acid or wet conditions (Hartley 2009, 245). Most sherds show signs of heavy usage — abrasion marks and burning (even after fracture); one of the base sherds (MAH WH) was riveted.

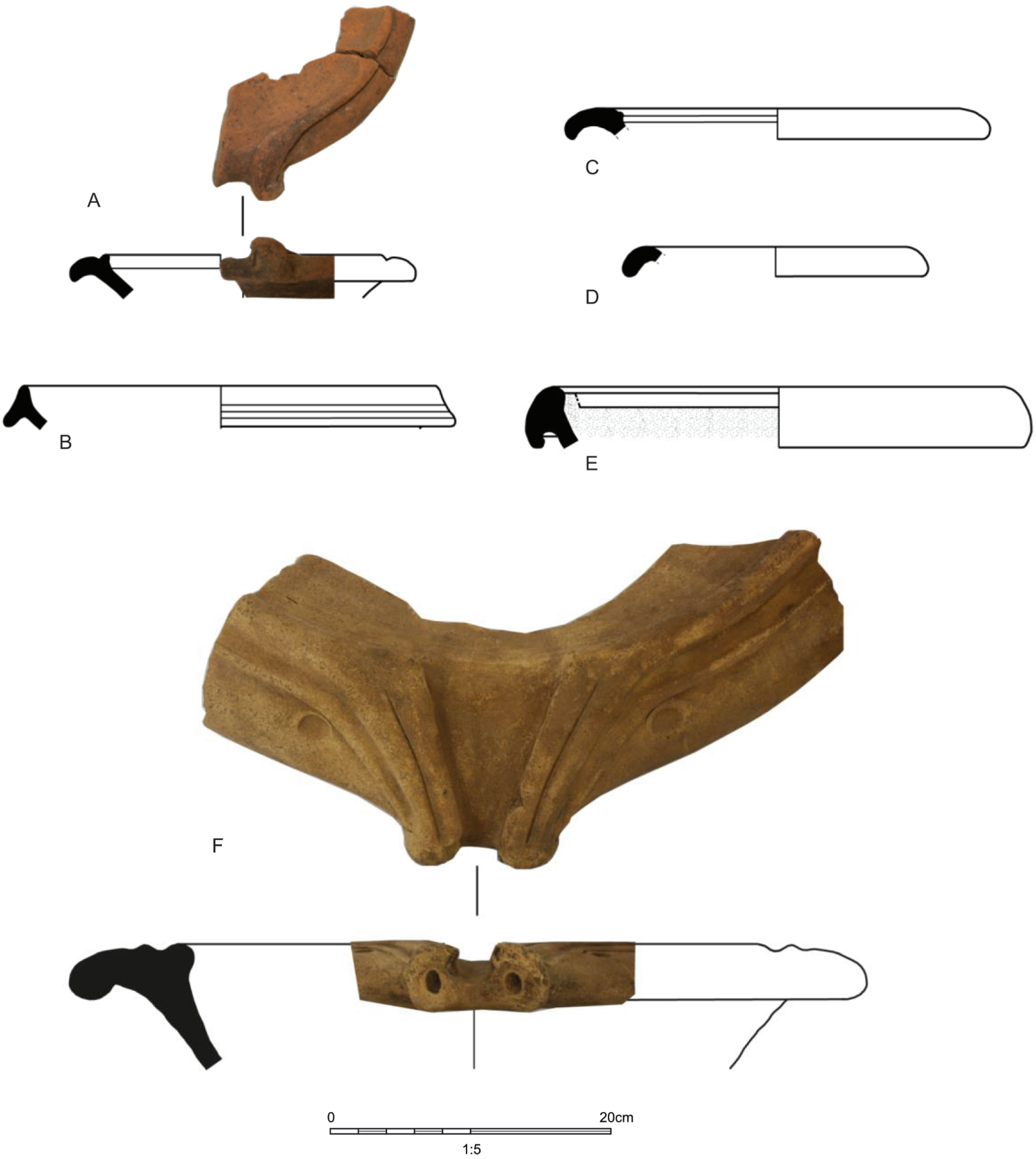


FIG. 16.2. Mortaria from the river Tees made in Catterick (A–B), Oise/Somme (C–D), Rhineland (E) and Soller (F) (*Drawn by Enikő Hudák*)

AMPHORAE

The amphorae account for just over 2 per cent of the assemblage by sherd count, over 18 per cent by weight and 0.4 per cent by EVE. This is a little low given the 'military' context. Most of the assemblage is comprised of large fragments of Dressel 20 olive oil amphorae (BAT AM2) and this explains the significant weight percentage. The remaining sherds include a single fragment of North African amphora (NAF AM), two fragments of Gauloise wine amphorae (GAL AM1) and three sherds of unsourced amphorae (AMPH), including a rim. There is nothing atypical in this assemblage and it fits neatly with previous work on the excavated material from Piercebridge (Croom *et al.* 2008a).

FORMS

The pottery assemblage was divided into nine broad functional classes for ease of analysis and this demonstrates that the assemblage is dominated by bowls/dishes (37 per cent EVE) and drinking vessels (26 per cent EVE). Jars form just under a fifth of the assemblage (19 per cent EVE), with mortaria, flagons and amphorae accounting for the remainder. Comparison with the statistics produced by Evans (2001, figs 4–7) would suggest that these kinds of figures might be indicative of an 'urban' rather than a rural milieu. Given the association with the fort and extramural settlement this is perhaps unsurprising.

The assemblage of flagons is a small one accounting for just over 4 per cent of the whole assemblage by EVE. This is not a product of the quantification method as EVEs tends to over-represent jug and flagon forms and there were relatively few flagon body sherds present in the assemblage, although these included the base of a relatively rare SAM LZ flagon. The Piercebridge type series includes few flagon forms (Croom *et al.* 2008b), so their poor showing in the river assemblage reflects this broader pattern. This in turn might be related to the site's chronology. The fort is a third-century foundation and flagons and jugs appear far less common in the late Roman period.

The jars account for 18.6 per cent of the assemblage by EVE. The majority of these vessels are in local greyware fabrics (GREY1–3) that are well-paralleled in the existing Piercebridge type series (Croom *et al.* 2008b). Also present are significant numbers of DOR BB1 jars and far fewer of the later jars in CRA RE and 'Huntcliff type jars' in HUN CG. Interestingly, a large number of base sherds and complete base sherds were recovered.

Beakers account for 14.7 per cent of the assemblage by EVE. Most of these vessels are well-known LNV CC forms but MOS BS and CNG BS vessels form a small but important sub-group. Some of the vessel fragments are large and fresh.

Bowls form the largest single component of the assemblage (19.76 per cent EVE). Samian bowls comprise 2.98 EVEs, primarily forms Dr 37 and Dr 38. Coarse ware bowls include late Roman flanged bowls in DOR BB1, wide-mouthed CRA RE vessels and a small number of greyware (GREY1–3) vessels paralleled in the Piercebridge type series.

Dishes comprise a significant element within the group (17.22 per cent EVE). Samian dishes form 6.25 EVEs, primarily forms Dr 18/31, Dr 31, Dr 31R and LudSb. The rest of the group is comprised of DOR BB1 and CRA RE 'dog dishes'.

The cups are with a single exception all samian forms. The vast majority are Dr 33s but some other forms are also present (Dr 35, WA 80, Dr 30, OandPLV, 13). A single CNG BS two-handled cup (Symonds 1992, no. 161) was also present in this group.

The mortaria assemblage accounts for 12.04 per cent (EVE) of the group. The mortaria assemblage includes vessels from the Oise/Somme region (FIG. 16.2C–D), Rhineland (FIG. 16.2E) and Soller, which are all of first- or second-century date. The Soller mortarium (FIG. 16.2F) is of some note as it is clearly a product of Verecundus ii. This potter always impressed his stamp along the flange (in this case the stamp is illegible), and sometimes also used thumb impressions on the spout to give the look of the eyes and snout of a pig (Hartley 1984, 471).

Most of the assemblage is formed of late Roman mortaria. The Mancetter-Hartshill mortaria include both early (curved flange) and late (hammer-headed, multi-reeded flange) forms, but the majority date to the third century (Hartley 1973, 144; Tyers 1996, 123; for forms see Tyers 1996, 119). The Oxfordshire mortaria are forms M17 and M18, which are dated to A.D. 240–300 (Young 1977), and the Nene Valley sherds are likely to be of a similar date (K. Hartley, pers. comm.; for forms see Upex 2008, illus. 18 and Tyers 1996, 126). The few sherds of Catterick area fabric have been dated to either the second century (A.D. 140–180, curved flange) or the third and fourth centuries (concave flange).

The amphorae are typically under-represented by EVEs in this assemblage. The only diagnostic sherds were an abraded rim from a Dressel 20 (BAT AM) and an unsourced amphora (AMPH) rim.

The final category, 'other forms', is by definition a rather mixed bag. It includes fragments of a LNV CC Castor box and lid, as well as a large piece of a red-slipped unguentarium and a CRA RE cheese press. A small and abraded fragment of a tazza is also present (Croom *et al.* 2008b, fig. D9.39 47-51).

TABLE 16.2. THE POTTERY ASSEMBLAGE QUANTIFIED BY VESSEL FUNCTION

Form	Flagons	Jars	Beakers	Bowls	Dishes	Cups	Mortaria	Amphorae	Other	Total
%EVE	4.39	18.60	14.70	19.76	17.22	11.42	12.04	0.48	1.39	100
EVE	2.49	10.55	8.34	11.21	9.77	6.48	6.83	0.27	0.79	56.73

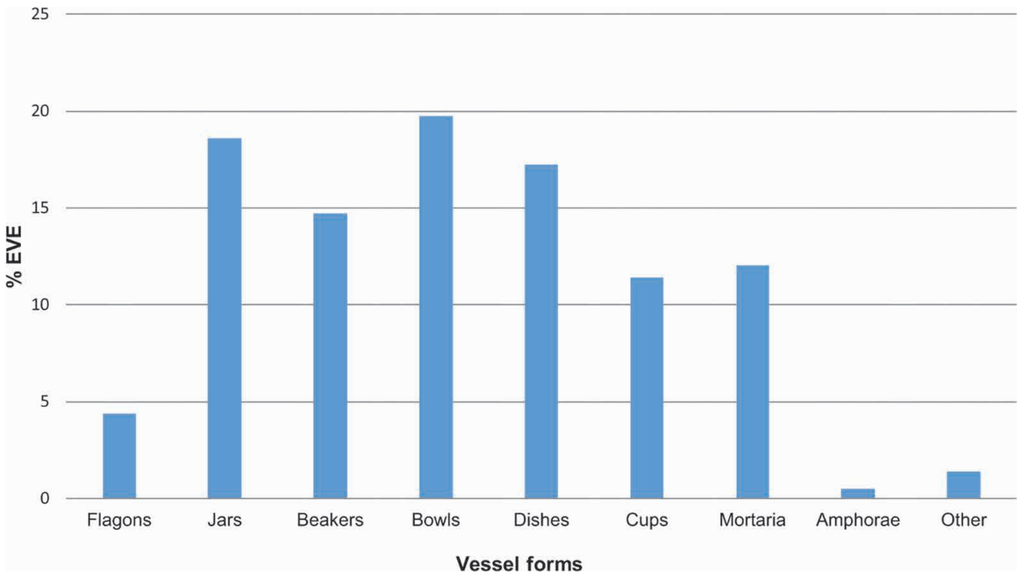


FIG. 16.3. Quantification of vessel forms from the river by EVE

SHERDS WITH MOULDED FIGURAL DECORATION

The assemblage contains three sherds decorated with figures and implements (FIG. 16.4 V1–3). These vessels are best paralleled by the group of pots decorated with religious scenes discussed by Webster (1989). They thus offer reasonably unequivocal evidence of 'ritual' or religious activities.

Vessel 1

A single sherd of LNV CC beaker depicting the torso of a moulded semi-naked figure. The individual appears naked apart from a triangular loincloth and three parallel lines on one wrist; these lines may be intended to depict a bracer (Bishop and Coulston 2006, 168) or bracelets.

The figure is holding two separate objects. The first is probably a spear, while the second is an indeterminate object, possibly intended to represent a whip (FIG. 16.4 V1).

The vessel and its decoration are well-paralleled by Webster's (1989) corpus. Similar figures, argued to represent *venationes* (or staged beast hunts), occur on a number of vessels and include individuals wearing triangular loincloths, holding spears and whips (Webster 1989, fig. 1).

Vessel 2

A single sherd from a large, sand-tempered greyware jar. The lower part of the vessel was burnished but an unburnished zone was decorated with appliqué tools. One of these survives only partially and may be a hammer, an axe or some other tool. The other tool is clearly an axe, or perhaps more accurately an axe-hammer (Manning 1985a, fig. 3). If the latter identification is correct, then Alcock's (1995, 75–7) suggestion that axe-hammers functioned as tools, symbols of royal power and ritual implements used in sacrifice is of interest. Webster (1989, fig. 5.49 and fig. 6) illustrates a number of pots decorated with tools but these are mainly tongs and hammers associated with depictions of smith-gods (FIG. 16.4, V2).

Vessel 3

A single sherd from a fine, sand-tempered orange (but burnt black-grey in places) jar. The exterior is decorated with a raised rib and curvilinear combing, as well as a moulded hooked tool or implement. Additionally, there are two parallel but discontinuous incised lines made before firing. The hooked tool is difficult to parallel but is reminiscent of the tongs accompanying Webster's (1989) smith-gods. It is unfortunate that so little of this vessel survives (FIG. 16.4, V3).

CHRONOLOGY

Establishing the chronology of the river assemblage is relatively straightforward. The virtual absence of early samian fabrics (such as La Graufesenque) and forms (such as Dr 18, Dr 27) and the near absence of forms such as Dr 18/31, which ceased production *c.* A.D. 160, is significant. New forms (such as Dr 31R, WA79/79R and WA80 and mortaria) entered the samian repertoire around this time and were imported from the East Gaulish kilns around Trier and Rheinzabern. These vessels are present in the assemblage in quantity and the decorated vessels also include late Lezoux potters Casurius, Doeccus, Ivstus, Ivllinnus, Paternus II and Banvus; in addition, one vessel attributed to Tocca of Lavoye was identified and two Comitialis bowls from Rheinzabern. This would seem to indicate a late second- or third-century start date for the assemblage.

The other pottery supports a late second- or early third-century start date. There are a handful of early Roman sherds, including the flanged bowl forms sometimes referred to as the 'pie-dish' and 'reeded rim' bowls. All of these are appropriate to a second-century date but are present in only very small quantities. Of far greater significance are late Roman DOR BB1 forms that include everted rim jars (or cooking pots) with obtuse lattice decoration, flanged bowls with incipient beaded rims (Gillam 1970, no. 226) and bowls with dropped flanges. The Gillam 226 form is usually seen as a third-century form and the late Roman flanged bowl is typical of the latter half of the third and fourth centuries. Other third-century pottery includes the significant group of LNV CC vessels, which conform to the third- or early fourth-century forms published elsewhere; late second- or early third-century CNG BS; third-century MOS BS (Symonds 1992); and third-century mortaria (OXF WH) (Evans *et al.* 2008, 203).

Some of the DOR BB1 and LNV CC vessels could date as late as the fourth century and some fourth-century activity is perhaps suggested by small quantities of CRA RE, HUN RE and perhaps some of the greywares (Croom *et al.* 2008a, 229–30). Nevertheless, it seems clear that most of the pottery deposition in the river had ceased in the early fourth century. This would appear to correlate with the coin loss pattern, which shows an apparent decline in the fourth century (Ch. 10).

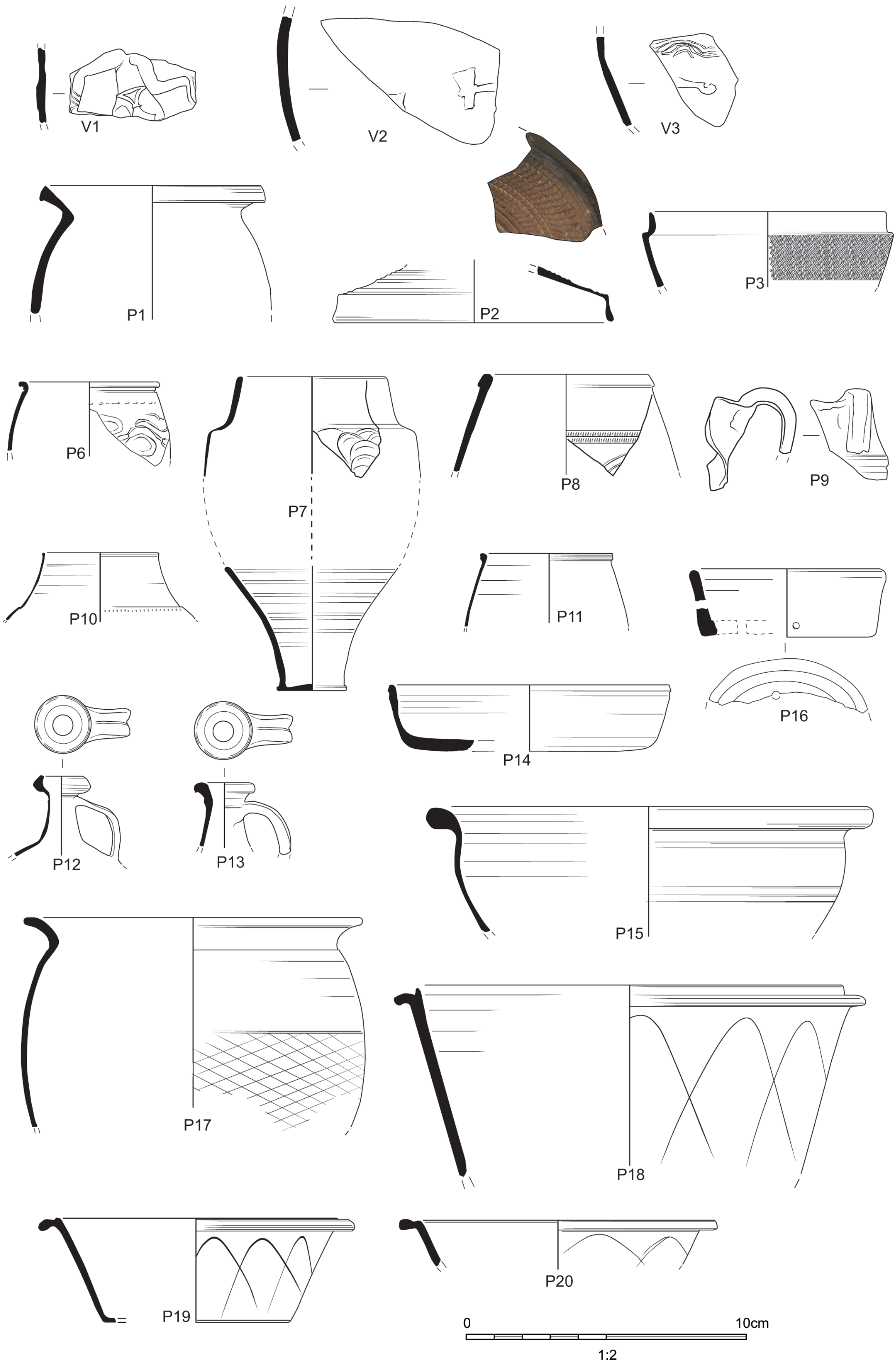


FIG. 16.4. Pottery from the river Tees. Sherds with moulded figural decoration (V1–3) and a selection of noteworthy fragments (P1–20) (*Drawn by Mark Hoyle*)

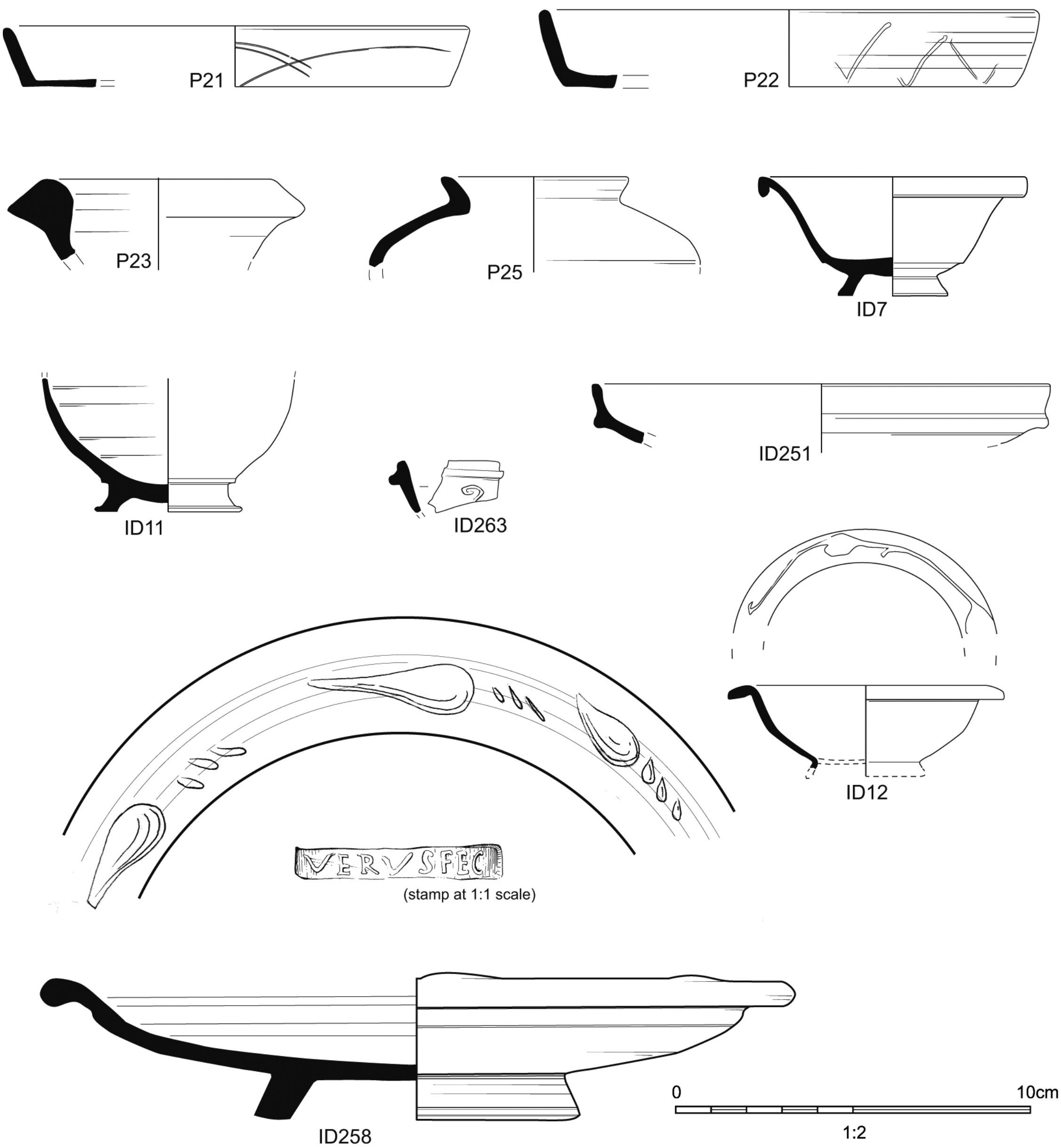


FIG. 16.5. Pottery from the river Tees. A selection of noteworthy fragments (P21–25; ID7, 11, 12, 252, 258, 263) (*Drawn by Mark Hoyle*)

ILLUSTRATED SHERDS (FIGS 16.4 and 16.5)

P1 DAL SH hooked rim and lid seated jar. This form is a little atypical.

P2 LNV CC 'Castor box lid' with rouletted decoration (Perrin 1999, fig. 33, 42). The vessel form suggests a third-century date (Perrin 1999, 98–100).

P3 LNV CC 'Castor box' with rouletted decoration (Perrin 1999, fig. 33, 41). The vessel form suggests a third-century date (Perrin 1999, 98–100).

P6 LNV CC cornice-rimmed beaker with underslip barbotine ivy trail decoration (Perrin 1999, fig. 60.145). Third century.

P7 LNV CC funnel-necked indented beaker with underslip scale decoration (Perrin 1999, fig. 61, 166). Third century.

P8 LNV CC cornice-rimmed beaker with barbotine ivy trail decoration beneath a rouletted band (Howe *et al.* 1980, fig. 3.30). Late second century.

P9 LNV CC flagon (Howe *et al.* 1980, fig. 6.64–65). Fourth century.

P10 MOS BS beaker (Symonds 1992, fig. 24). Third century.

P11 CNG BS beaker (Richardson 1986, 1.105; Tyers 1996, fig. 146.5). Late second or early third century.

P12 Small fine whiteware (MISC) one-handled flagon with internal ledge. Second to third century (Bell and Evans 2002, fig. 174).

P13 Small slightly gritty whiteware (MISC) flagon with pinkish, buff-brown surfaces, one handle and an internal ledge. Second to third century (Bell and Evans 2002, fig. 174).

P14 CRA RE 'dog dish' with an incised groove just below the rim (Corder 1989, pl. III.52). Fourth century.

P15 CRA RE globular bowl with a double groove running around the girth (Corder 1989, pl. VI. 157). Fourth century.

P16 CRA RE cheese press (Corder 1989, pl. VII.188–189).

P17 DOR BB1 everted rim jar decorated with a band of obtuse lattice (Holbrook and Bidwell 1991, fig. 2, 20.1). Late third or fourth century.

P18 DOR BB1 conical 'dropped' flange bowl decorated with burnished arcs (Holbrook and Bidwell 1991, fig. 31, 45.1g). Late third or fourth century.

P19 DOR BB1 flanged bowl with grooved rim and decorated with burnished arcs (Gillam 1970, no. 226; Holbrook and Bidwell 1991, 43.6). Third century.

P20 DOR BB1 flanged bowl with grooved rim and decorated with burnished arcs (Gillam 1970, no. 226; Holbrook and Bidwell 1991, 43.6). Third century.

P21 DOR BB1 straight-sided dish decorated with burnished arcs (Holbrook and Bidwell, 1991, fig. 32, 59).

P22 DOR BB1 straight-sided dish decorated with burnished arcs (Holbrook and Bidwell, 1991, fig. 32, 59).

P23 BAT AM Dressel 20 rim. Late second century (Peacock and Williams 1986, fig. 66).

P25 Grey 1 (fine smooth grey fabric). Greyware jar decorated with incised lines and two bands of wavy lines on the shoulder (Croom *et al.* 2008b, no. 577).

ID7 Atilianus i, 1a, OandP LV, 13, Lezoux. *c.* A.D. 170–200.

ID11 Central Gaulish (SAMCG) flagon similar to the disc-mouthed flagon recorded by Oswald and Pryce (1920, LXXXIII, 2). *c.* A.D. 170–200/210.

ID251 Massenfund 8b, a large rim sherd from this shallow dish form. The form was recorded at the Massenfund in Trier (Huld-Zetsche 1971, fig. 10, 8b). *c.* A.D. 220–260.

ID263 Ludovici SMb/c rim. Probably third century.

ID12 35/36 hybrid between cup Dr 35 and dish Dr 36. Late Antonine.

ID258 Approximately half of a shallow Dr 36 dish with stamp (VERVS FEC) in a Rheinzabern fabric (SAMRZ). A.D. 210–250.

A DISCUSSION OF THE DEPOSITION OF POTTERY IN THE RIVER TEES

The most important question concerning this assemblage is the one highlighted in the introduction: by what process or processes did the pottery come to be deposited in the river Tees? Four potential hypotheses may provide answers to this question:

1. That the assemblage was eroded out of its primary place of deposition by the action of the Tees over time and was redeposited in the river.
2. That the assemblage was deliberately dumped in the river as refuse.
3. That the assemblage was deliberately placed in the river for religious or ritual reasons.
4. That some combination of hypotheses 1–3 led to the pottery finding its way into the river.

Hypothesis 1 (re-deposition) is superficially attractive. Settlement activity nearby or upstream could have been disturbed by the river and any associated pottery might easily have been washed into the river and come to rest further downstream. This hypothesis can, however, be quickly dismissed. The average sherd weight is in excess of 30 g suggesting abnormally large sherds and many of the fragments display reasonably fresh breaks. There are also very few rounded, abraded and water-rolled sherds that might be expected had this assemblage been transported by water over any distance. Of course, the collection of the pottery by divers in difficult circumstances may have precluded the recovery of smaller, rounded sherds but we might still expect many of the recovered fragments to be in a worse state than they are.

Hypothesis 2 is an attractive explanation. Rivers have often formed and continue to serve as convenient sewers for the noisome effluent produced by human habitation. Throwing broken, soiled or spoilt vessels into a watercourse along with other rubbish would be an easy way of disposing of waste. Here it may be noted that the assemblage appears to be very similar to that recovered from the excavations of the fort and *vicus* and this may lend support to the idea of rubbish disposal.

Hypothesis 3 is the interpretation that has been advocated for the other categories of finds from the river. The pottery assemblage, however, does not provide unequivocal support for this interpretation.

The strongest evidence for ritual activity comes from the sherds decorated with moulded figural designs and it can be argued that all of these vessels had religious connotations (Webster 1989). In the samian assemblage a large base sherd, probably part of a disc-mouthed flagon, is a form often found in 'votive' contexts (Bird 2013, 330) but there is no clear evidence for the 'killing' of samian vessels, or selection of decorated samian vessels with religious themes.

The stereotypical indicators of a 'ritual' pottery assemblage might include intact vessels, vessels with deliberate damage (so-called ritual killing), unusual vessel forms or unusual proportions of vessel forms. The river assemblage has provided us with no complete vessels, or obviously ritually killed vessels. However, the large sherd size and semi-complete nature of some vessels might suggest that some intact, or nearly intact, vessels entered the river.

The assemblage lacks 'unusual' vessels. With the exception of the samian flagon base and the decorated sherds discussed above, the remainder of the group looks firmly domestic. Tazze, sometimes associated with ritual activities, are represented by a single abraded fragment. Triple vases are absent. This point is reflected more broadly by the poor showing of 'other' vessel forms in FIG. 16.3. It is also difficult to argue that the assemblage has an unusual composition of vessel forms. There is, perhaps, a slight emphasis on drinking, but this is far from exceptional in a military/urban context. The strong showing of beakers and cups may, however, be set against the poor showing of flagons. The absence of flagons might be significant, but it could also reflect the general decline in flagon use in the later Roman period.

We may conclude by suggesting that hypothesis 3 is an attractive one but on its own the pottery cannot support or refute it. In many respects this strikes at the heart of the ritual/rubbish debate that has been under discussion in Romano-British archaeology for some decades. A jar containing burnt porridge cast into a river might be rubbish disposal but the same river could also be the focus of veneration and religious worship that involved believers casting coins, brooches and other objects into the waters. Equally, the same or a similar jar, packed with coins, flowers or food placed beneath the river's surface with reverence could be a ritual offering. Discriminating between these human actions archaeologically is challenging. Given this ambiguity it might be safest to adopt the fourth hypothesis outlined above. Some combination of factors probably led to the pottery being deposited in the river and the interpretation of how the pottery came to be deposited in the river might be best guided by the interpretations of the other artefact classes.

APPENDIX 1. POTTERY FABRIC CODES AND EXPANSIONS

Amphorae

AMPH

Unattributed amphorae.

BAT AM2

The extremely common Baetican fabric associated with Dressel 20 olive oil amphorae (Tomber and Dore 1998, 85).

GAL AM1

The extremely common Gaulish fabric associated with wine amphorae (Tomber and Dore 1998, 95).

<u>NAF AM</u>

North African amphorae (Tomber and Dore 1998, 101–2).

Samian

<u>SAM</u>

Unattributed samian.

<u>ARG SA</u>

Samian from the Argonne region of eastern Gaul (Tomber and Dore 1998, 34). The sherds here are products of the Lavoye kilns.

<u>SAM EG</u>

Unattributed East Gaulish samian.

<u>LEZ SA2</u>

Central Gaulish samian from the kilns at Lezoux (Tomber and Dore 1998, 32).

<u>LGF SA</u>

South Gaulish samian from the kilns at La Graufesenque (Tomber and Dore 1998, 28–9).

<u>RHZ SA</u>

East Gaulish samian from the kilns around Rheinzabern (Tomber and Dore 1998, 39).

<u>TRI SA</u>

East Gaulish samian from the kilns around Trier (Tomber and Dore 1998, 41).

Mortaria

<u>MAH WH</u>

Mancetter-Hartshill White Ware mortaria (Tomber and Dore 1998, 189).

<u>LNV WH</u>

Lower Nene Valley White Ware mortaria (Tomber and Dore 1998, 119).

<u>OXF WH</u>

Oxfordshire White Ware mortaria (Tomber and Dore 1998, 174).

<u>NOG WH4</u>

The Noyon Group in the Oise/Somme area, northern France (Tomber and Dore 1998, 75–6).

<u>RHL WH</u>

Rhineland White Ware mortaria (Tomber and Dore 1998, 78).

<u>MORT</u>

A soft orange fabric with orange surface, probably slightly discoloured due to the water, source uncertain. The surface feels smooth and powdery; the fracture is irregular. Inclusions are abundant, ill-sorted, fine to very coarse in size, rounded to angular, and in colour brown, black, white, quartz and mica. Grits are up to 3 mm in size, red, black and white in colour (probably quartz). Grits can be seen on the bead of the rim and the flange.

<u>CAT MORT</u>

Hard fabric, with dark grey core and orange-red margin and cream slipped surface, which is discoloured to dark grey, probably due to the water. The surface feels harsh, and the fabric fractures roughly. Inclusions are abundant, ill-sorted, rounded to angular, very fine to medium, red, quartz and mica. Grits are very coarse (2 mm+), angular, and black-brown in colour.
Similar to Catterick fabric MB16 (Hartley 2002, 358).

SOL WH

Soller White Ware mortaria (Tomber and Dore 1998, 79).

MORT

Unattributed mortaria.

Coarse and fine wares

LNV CC

Lower Nene Valley Colour Coated Ware (Tomber and Dore 1998, 118).

DOR BB1

South East Dorset Black Burnished Ware (Tomber and Dore 1998, 127).

CRA RE

Crambeck Reduced Ware (Tomber and Dore 1998, 197).

CRA PA

Crambeck Parchment Ware (Tomber and Dore 1998, 196).

GREY1–3

Three broad greyware fabric groups were identified. GREY1 (fine), GREY2 (intermediate) and GREY3 (coarse). Given the unstratified nature of the assemblage it was felt uneconomic to attempt to sub-divide these groups further and the assemblage probably includes sherds approximating to Croom *et al.*'s (2008b) Throlam, brown margin grey ware and gritty grey ware.

HUN CG

Huntcliff Calcite Gritted Ware (Tomber and Dore 1998, 201).

BB2

Black Burnished Ware Type 2 (Tomber and Dore 1998, 135 and 165–6).

BBS

'Black Burnished Style' vessels. These vessels might be products of the kiln at Catterick or another local production centre (Busby *et al.* 1996).

CNG BS

Central Gaulish Black Slipped Ware (Tomber and Dore 1998, 50).

DAL SH

Dales Shell Tempered Ware (Tomber and Dore 1998, 157).

MISC

Miscellaneous wares. This is a 'catch-all' code for a number of unsourced fabrics represented by single sherds.

MOS BS

Moselkeramik Black-Slipped Ware (Tomber and Dore 1998, 60).

OXID

Unsourced oxidised wares.

PMED

Post-medieval sherds.

APPENDIX 2. SAMIAN POTTERS' STAMPS

THE CATALOGUE

Each entry gives: potter's name (i, ii etc., where homonyms are involved), die number, vessel form, production centre (fabric code if die not attested at the kiln site), reading, comments, date, archive record ID number.

1. Atilianus i, 1a, OandP LV, 13, Lezoux. OF·ATILIANI In a circular cartouche with a central 8-petalled rosette. A stamp which seems to have been used exclusively on Curle 23 and the matching cup, as here. *c.* A.D. 170–200. ID 7 (see FIG. 16.5).
2. Attillus v, 2a, Dr 33, SAMCG. AT· TILLIM *c.* A.D. 160–200. ID 71.
3. Cinnamus ii, 5b, Dr 37, Lezoux. CIN[NAMI] ← At the base of the decoration. *c.* A.D. 145–75. ID 318 and 319.
4. Comitialis iv, 5a tab, Dr 37, Rheinzabern. COMITI[ΛᏓISF]← Mould stamp within the decoration with RE[P] stamp also on the same bowl (cf. stamp no. 15). *c.* A.D. 175–220. ID 264.
5. Latinnus, 1a tab, Dr 37, Rheinzabern. [ᏓA]T[IN]N[I]← Retrograde mould stamp within the decoration of a bowl decorated in Comitialis v style. The end of the die is characteristically jagged. A.D. 170–240. ID 267.
6. Magio i (Magionus), 1a, Dr 31, Lezoux. ·MΛCIONI· In shaped cartouche. *c.* A.D. 160–200. ID 123.
7. Malliacus, 3f, Dr 18/31?, SAMCG. MLLIACI *c.* A.D. 140–175. ID 122.
8. Mansuetus ii, 2a, Dr 33, Lezoux. MΛ˙S[V·ETIc] *c.* A.D. 160–175. ID 74.
9. Marcus v, 5a, Dr 33, Lezoux. ·M[AR˙CI]M ˙ ← A base sherd with the foot-ring removed, possibly trimmed around the edge removing all of the wall. The sherd is worn and the stamp difficult to read; however, the high dot at the end of the stamp is very clear. This is not shown in Hartley and Dickinson (2009, 280); however, in discussions with Brenda Dickinson she noted that there are examples of this stamp with faint dots at the beginning and the end, although there are far more examples without dots as in the published illustration (ibid.). A.D. 160–210. ID 78.
10. Martinus iii, 7a, Dr 33, Lezoux. [M·]ΛRTIИ This stamp actually reads]ΛRTI˙Λ where the И has not registered completely. *c.* A.D. 170–200. ID 75.
11. Maternianus i (Maternnianus), 3a, Dr 33, Lezoux. MΛIERΛIΛIIΛI *c.* A.D. 170–200. ID 69.
12. Osbimanus, 7a, Dr 33, SAMCG. OSB[IM I:–] Graffito X on underside of base (post-firing). A.D. 155–185. ID 73.
13. Paterclinus, 4a, Dr 31R, Lezoux. [P]ΛTERCLINI *c.* A.D. 150–180. ID 100.
14. Paternus v, 7a, Dr 37, Lezoux. PΛ[RNI:] ← *c.* A.D. 160–190. ID 323 and 324.
15. Rep- ii, 1a tab, Dr 37, Rheinzabern. RE[P]← Stamped within the decoration in addition to a mould stamp of Comitialis (cf. stamp no. 4). *c.* A.D. 175–220. ID 264.
16. Saturninus ii, 1b, Dr 33, Lezoux. [SATV]RNNIO Foot-ring very little worn. *c.* A.D. 160–200. ID 72.
17. Venerandus, 5a, Wa 80, Lezoux. ·VENERΛND· *c.* A.D. 155–185. ID 2.
18. Verus vi, 2b, Dr 36, Rheinzabern. VERVSFEC *c.* A.D. 210–250. There are two letters of post-firing graffiti scratched near the edge of the dish either XV or ΛX. There is a slightly less convincing vertical line which cuts across the arm of the V next to the X. ID 258.
19. Victorinus ii, ?7c, ?Lud Sb, SAMRZ. VIC[TORIИVS] The slightly curving base to the initial V is distinctive; however, it is not easy to be certain of the precise die used here as the central kick is quite damaged and the T seems not to have registered at all. Dickinson and Hartley admit that the dies are difficult to identify as the dies 'tended to wander in the middle, when being impressed' (2012, 246). The form is equally uncertain as the sherd is only from the base of the vessel. *c.* A.D. 210–250. ID 268.

Incomplete, unidentified stamps:

20.]MΛ Dr 33, SAMCG. Hadrianic or Antonine. ID 76.
21.]M Dr 33, SAMCG. Hadrianic or Antonine. ID 68.
22.]NI Dr 33, SAMCG. Hadrianic or Antonine. Foot-ring very little worn. ID 67.
23.]NVS[with clear serifs. Cup, SAMRZ. Late second–early third century A.D. ID 281.
24. One letter possibly]И or И[? SAMTR. Dr 31/Lud Sa. Late second to early third century A.D. ID 250.

APPENDIX 3. PIERCEBRIDGE DECORATED WARES

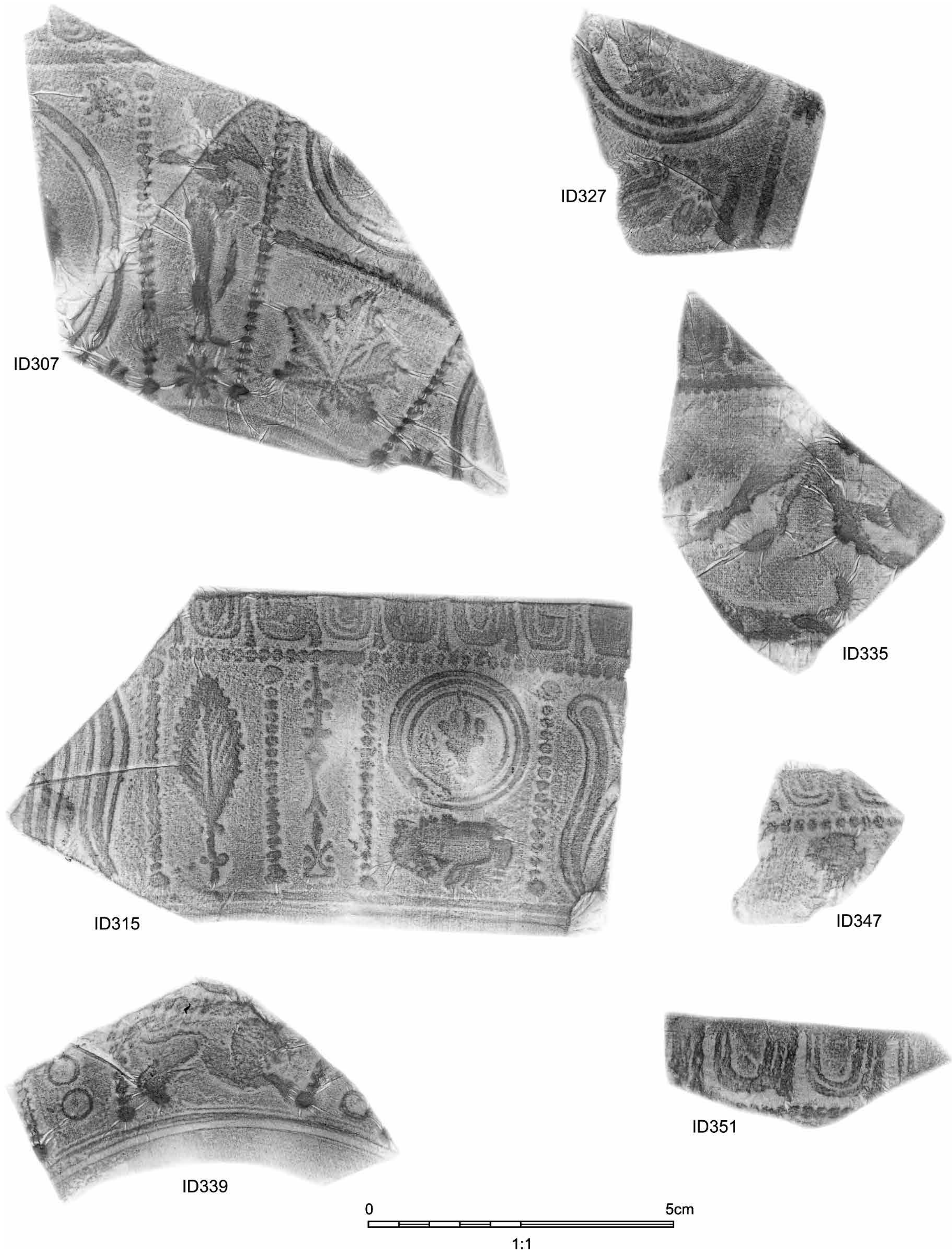


FIG. 16.6. Decorated samian from the river Tees (*Rubbings by J.M. Mills*)

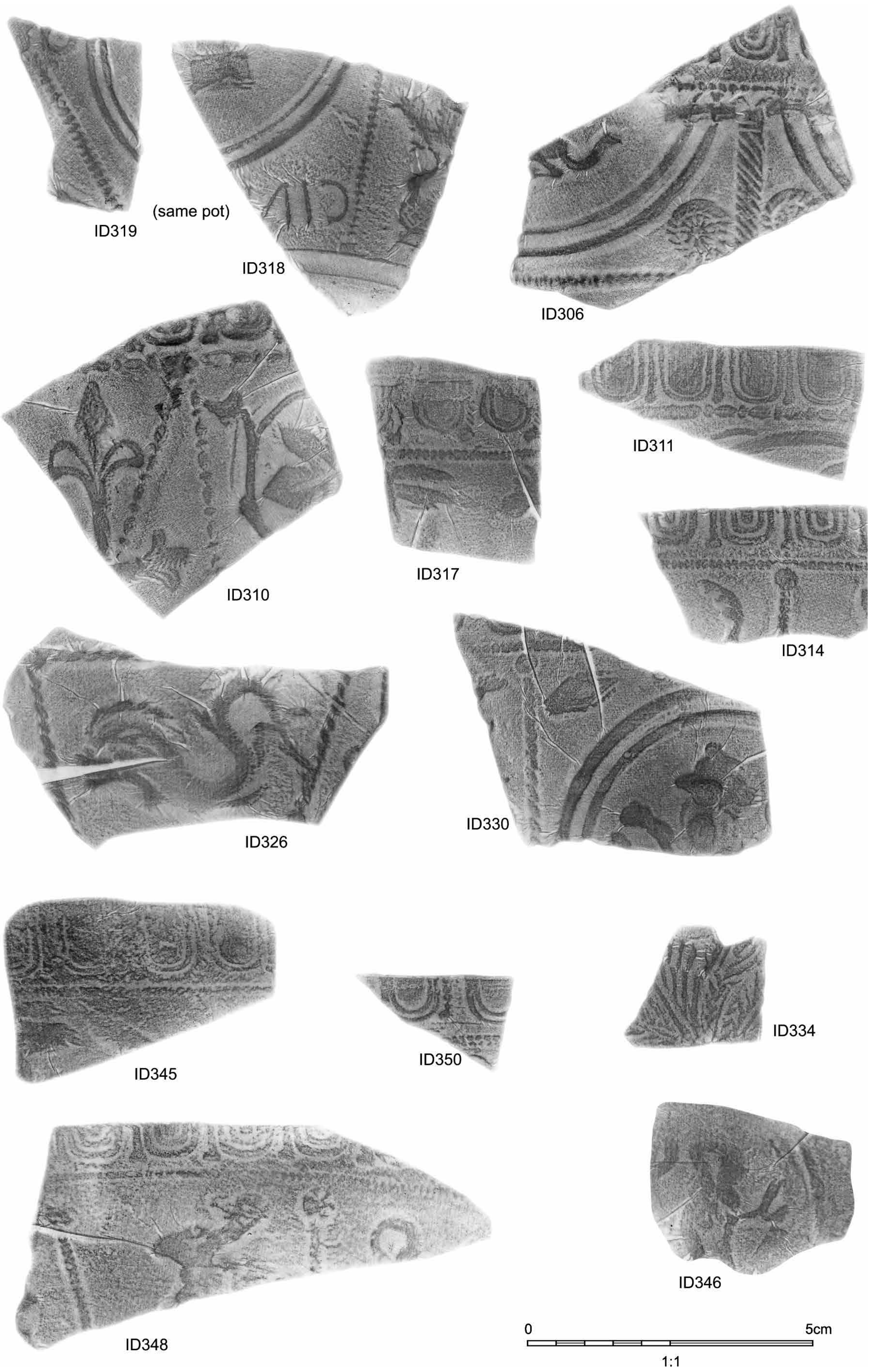


FIG. 16.7. Decorated samian from the river Tees (*Rubbings by J.M. Mills*)

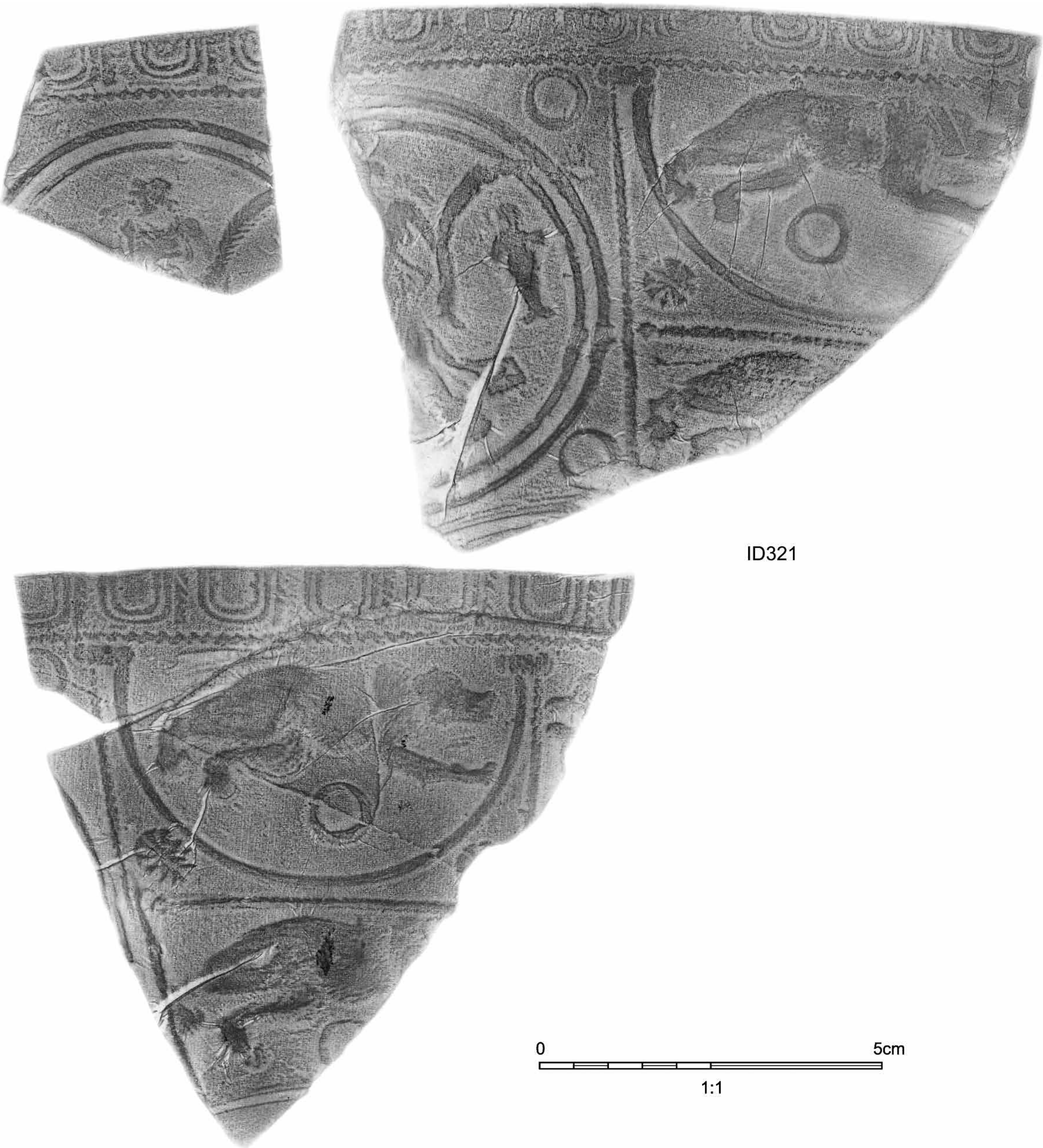


FIG. 16.8. Decorated samian from the river Tees (*Rubbings by J.M. Mills*)

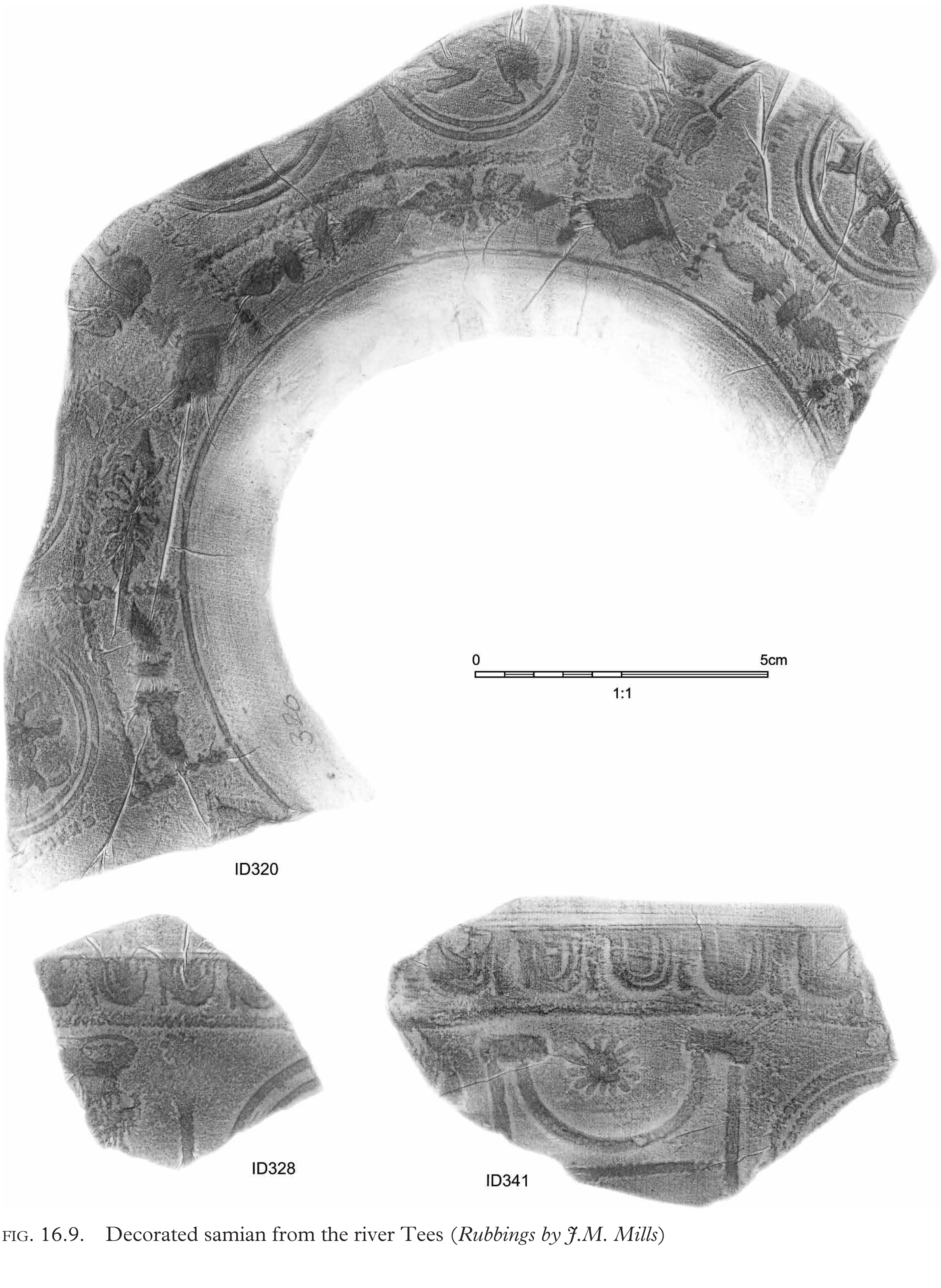


FIG. 16.9. Decorated samian from the river Tees (*Rubbings by J.M. Mills*)

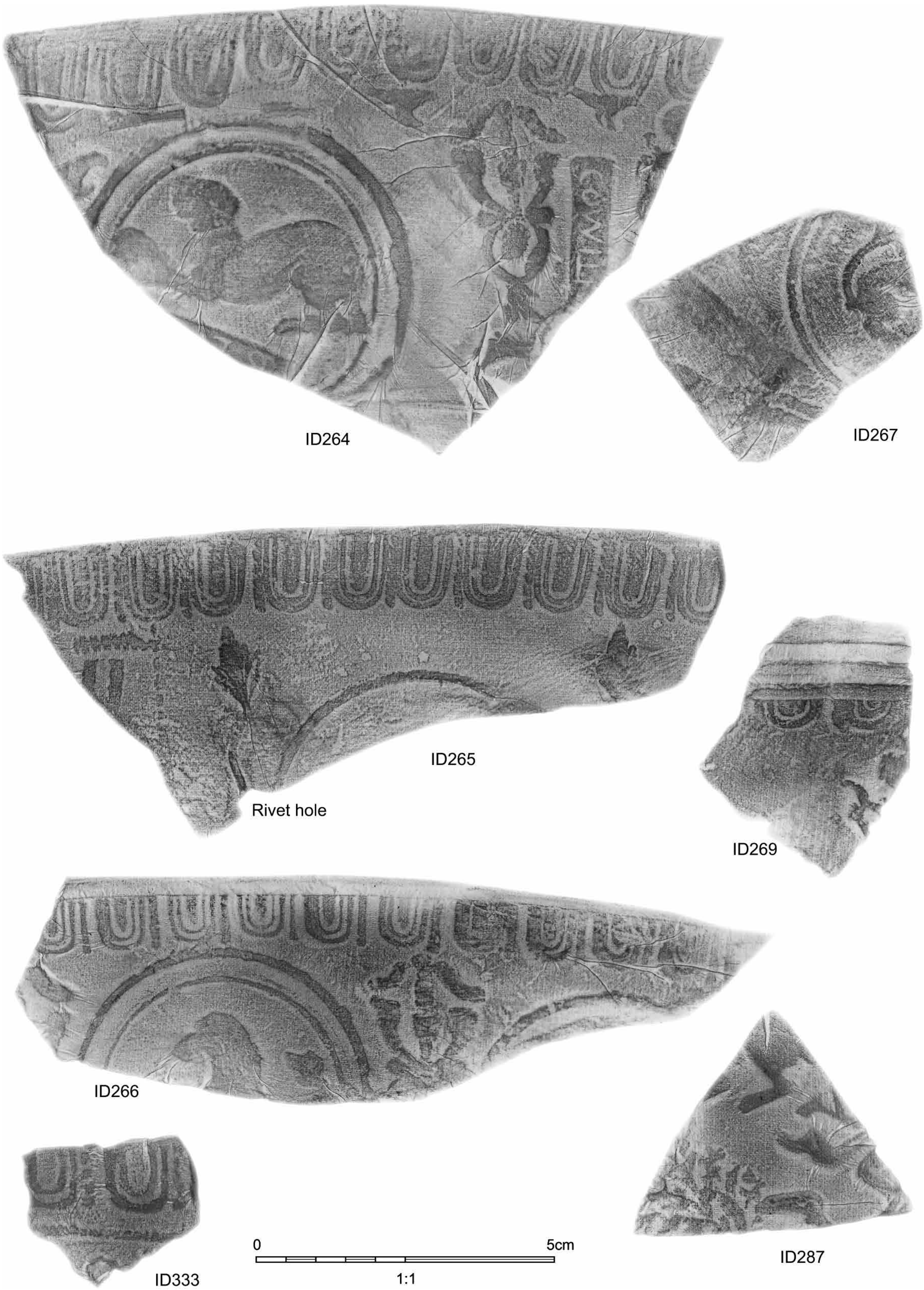


FIG. 16.10. Decorated samian from the river Tees (*Rubbings by J.M. Mills*)

Cinnamus ii: two non-joining body sherds apparently from the same bowl; one with an incomplete Cinnamus mould stamp at the base of the decorated zone. The panelled decoration includes large double-bordered medallions and dolphin stand Rogers Q58. A.D. 145–175, ID 318 and 319 (FIG. 16.7).

Cinnamus ii-style: sherd with ovolo Rogers B231 with a bead row below. The only figure is perhaps a pair of deer's ears. Mid-Antonine, ID 317 (FIG. 16.7).

Banvus: body sherd with ovolo Rogers B157, used exclusively by Banvus. The decoration includes a vase (Rogers T13), a vertical beaded divider with a terminal rosette which ends below the ovolo, and a double-bordered medallion. All the elements are on a bowl from Exeter with Banvus' mould stamp (Samian Research Project 2014, 0010392). A.D. 170–210, ID 328 (FIG. 16.9).

Banvus: body sherd with ovolo Rogers B153 with indistinct bead row below. A single-bordered festoon with a large spikey rosette (Rogers C241) within is comparable with that on a bowl from Lezoux (Stanfield and Simpson 1990, pl. 104, 8). A.D. 170–210, ID 341 (FIG. 16.9).

Casurius: body sherd from a relatively small Dr 30 (decorated zone *c.* 50 mm high). The ovolo (Rogers B176) has a row of large beads below. The vertical panels are divided using the same bead rows with a larger bead at each end. The panels (from L to R) contain gadroons Rogers U151; leaf Rogers J40 balanced on sprig-like motif similar to the top of Rogers motif U295 which is the motif in the next panel; small triple-bordered medallion containing leaflet Rogers G259, with another figure or motif below it; this one is very worn, but may be a mask; the last panel contains the gadroon again and suggests a repeating pattern around the bowl. This bowl is small and simple and contains many of the motifs characteristically used in Casurius' designs. A.D. 160–190, ID 315 (FIG. 16.6).

Casurius: scrap with ovolo Rogers B176 with row of large beads below and head of an unidentified figure. A.D. 160–190, ID 347 (FIG. 16.6).

Casurius: sherd from bottom of panelled decoration with dividers of large beads with a larger bead at the ends of the rows. The only extant figure is lion O.1403A in a small panel between narrow panels of small rings. The lion was used by several potters including Casurius and Doeccus who also used the large beads. The small rings are on a bowl with one of Casurius' ovolos (Stanfield and Simpson 1990, pl. 136, 48). A.D. 160–190, ID 339 (FIG. 16.6).

Casurius: scrap with ovolo Rogers B223 with row of large beads below. Burnt. A.D. 160–190, ID 351 (FIG. 16.6).

Casurius?: sherd from a Dr 37, only a scrap of ovolo with large squashed beads below remains. The figures include ox O.1886, which is listed as having been used by Casurius, Servus iii and P-18; with a small dog running to the left below. Casurius and Servus iii had several figure types in common; however, it is possible that the ovolo on this sherd is Rogers B223 which Casurius used, and the beads are more like his. A.D. 160–190, ID 335 (FIG. 16.6).

Doeccus: body sherd from bowl in Doeccus' style with panels divided by rows of large rounded beads. Venus (O.331) stands in a narrow panel between one with a large medallion and to the right a festoon with leaf Rogers H110 below it and another large medallion panel to the right of them. Large 8-petalled rosette (Rogers C167) flanks the medallions and one is impressed below the figure. A.D. 165–200, ID 307 (FIG. 16.6).

Doeccus: small body sherd with a medium-sized double-bordered medallion containing leaf Rogers H110 with mask O.1214 below the medallion. A.D. 165–200, ID 327 (FIG. 16.6).

Doeccus: body sherd from Dr 30; the finish seems very matt, but this is probably post-depositional. Only a scrap of the ovolo remains, but it looks like that used by Doeccus. The design includes two shallow, double-bordered festoons, apparently flanked by the rosette-in-ring motif (Rogers C99) with a striated pillar with tiny foliate capital between. The pillar is on a bowl stamped by Doeccus from Richborough (Bushe-Fox 1928, pl. XXVIII, 2 and 2a) and the roundels on a stamped Dr 30 from Silchester (May 1916, pl. XXVI, 47). A small crouching lion or sphinx inhabits one of the festoons. A.D. 165–200, ID 306 (FIG. 16.7).

Iullinus: large base sherd from a bowl with some internal wear. The decoration includes several motifs characteristic of Iullinus' vessels. The decoration is panelled, the panels divided with blocky beads. The design seems to repeat: a vertical panel containing vase Rogers T5 atop a lozenge, probably Roger U15; followed by two panels with small double-bordered medallions each with a small panel below, one containing paired acorns (Rogers U87), the other paired leaves (Rogers J156). The vase panel is then repeated. The medallions contain small animals, possibly goat O.1836 (not previously listed for this potter) and a sitting hare (O.2116). The beads, vase, hare and leaf are all on a bowl with Iullinus' mould stamp from Leicester (Stanfield and

Simpson 1990, pl. 126, 11). A.D. 170–200, ID 320 (FIG. 16.9).

Laxtucissa: body sherd with fragment of ovolo Rogers B206 with astragalus border below (A10). The astragalus also divides the pot into panels: a saltire containing leaves, Rogers G88 and G159, and a panel containing vine scroll Rogers M4. The ovolo, border, scroll and small leaf were all used by Censorinus, Paternus ii and Laxtucissa, the large leaf (G88) was used by a different range of potters: Avitus, Vegetus, X-5 and Laxtucissa. A.D. 145–170, ID 310 (FIG. 16.7).

Laxtucissa: body sherd with ovolo B206 with fine beaded border. The fragment of panelled design includes leaflet Rogers J162. Leaflet and ovolo were both used by potters of the Quintillianus group, and Laxtucissa who also used the beads. A.D. 145–170, ID 314 (FIG. 16.7).

Laxtucissa et al.: Dr 30 or 37, only ovolo Rogers B105 with astragalus border A10 below. These two motifs were used in combination by Laxtucissa, Censorinus, Lastuca, Mammius and Paternus ii. Mid-late Antonine, ID 311 (FIG. 16.7).

Mercator ii or *Iullinus*: rim sherd with ovolo B156 (used by Mercator and Iullinus) with wavy border below. The panels are divided by bead rows. From the left they include a large medallion containing Victory O.809 with small figure D553 (Stanfield and Simpson 1990, fig. 43, 7) to her right. Iullinus used O.809 whilst O.812 is listed for Mercator (Rogers 1999, fig. 73, 9). The medallion is flanked top and bottom with plain rings. The upper panel to the right holds a single-bordered festoon (Stanfield and Simpson 1990, fig. 146, 10) containing a bear with a plain ring below the bear and rosette C171 below the festoon. The bear is not in Oswald (Oswald 1936/7). It is similar to O.1588 which Mercator (and several other potters, but not Iullinus) used, but the front paws do not cross. The rear end of a bear on Rogers 1999, fig. 73, 12, could be the same figure type. The lower panel contains a repeat impression of the bear. Other sherds have second examples of Victory in a medallion and the panel with the bears and festoon. Repetition of figure types, especially animals, is a feature of many pots attributed to Mercator (Rogers 1999, fig. 73, 9). A.D. 160–200, ID 321 (FIG. 16.8).

Censorinus: body sherd with ovolo Roger B206 with fine beads below; the panels are also separated with bead rows; these end short of the ovolo row and have rosette Rogers C123 at the terminals. The only figure is seated Venus O.334 and there is a plain ring in a second panel. The combination of rosette, ovolo and seated Venus suggests this is the work of either Censorinus or Mercator. The small beads are unusual for both potters; Mercator favoured cabled and wavy borders and Censorinus preferred an astragalus border but used beads below a different ovolo on a stamped bowl from Brough (Samian Research Project 2014, 0010660). The rosette atop vertical beads is on another bowl stamped by Censorinus (Stanfield and Simpson 1990, pl. 102, 11). A.D. 150–180, ID 348 (FIG. 16.7).

Albucius: large sherd with ovolo Rogers B105 with bead row below and beaded vertical dividers. The surviving panel holds a large double-bordered medallion containing Pudicitia (O.926) facing Perseus (O.191). Two beaded rings (Rogers E58) flank the medallion. The ovolo, medallion, beads and rings are all on a bowl attributed to Albucius from Corbridge (Stanfield and Simpson 1990, pl. 121, 13); Pudicitia in a medallion with a second figure is on a stamped fragment from London (Stanfield and Simpson 1990, pl. 121, 14). A.D. 140–170, ID 322 (not illus.).

Albucius?: Dr 30 body sherd with narrow vertical panel enclosing motif Q.77 and dancer O.343. Both motif and figure are known from bowls stamped by Albucius. Burnt. A.D. 140–170, ID 349 (not illus.).

Albucius or *Paternus ii*: body sherd with ovolo Rogers B106 with row of fine beads below; above a medallion or scroll. The ovolo was used by Paternus ii and Albucius? A.D. 140–190, ID 342 (not illus.).

Paternus ii: Dr 37 with Paternus' ovolo Rogers B178 with bead row below. The decoration is part of a scroll inhabited with medallion Rogers E18 containing cherub O.440. A.D. 160–190, ID 309 (not illus.).

Paternus ii: sherd from a panelled bowl in a style which was much repeated using different combinations of figures. Here a single-bordered festoon contains sphinx O.858 and the figure in a long narrow panel is Mercury (either O.537 or O.538). To the right of the figure the vertical divider is topped with a leaf, in this case probably Rogers J.199). A.D. 160–190, ID 325 (not illus.).

Paternus ii: two non-joining sherds from the lower part of a Dr 37, one with part of Paternus' mould-stamp 7a. The design is panelled with caballed dividers, large beads at the panel junctions and a squat astragalus in each corner. Motifs include small single-bordered medallions perhaps containing leaves or masks, none is complete enough to identify; a festoon containing dolphin O.2392. A.D. 160–190, ID 323 and 324 (not illus.).

Paternus ii: sherd with ovolo Rogers B178 with bead row below. The surviving decoration includes a fragment of a winding scroll inhabited by a peacock O.2365. This ovolo was used exclusively by Paternus. A.D. 160–190, ID 308 (could be same pot as ID 309) (not illus.).

Paternus ii: scrap of ovolo Rogers B181 with fine beads below. A.D. 160–190, ID 333 (FIG. 16.10).

Paternus style: rim sherd with ovolo Rogers B138 above a bead row. The ovolo was used by Laxtucissa, Censorinus and Paternus ii. The combination of ovolo and bead row suggests this is most likely to be attributed to Paternus. Mid-late Antonine, ID 305 (not illus.).

Paternus ii style: joining sherds with ovolo Rogers B105 above row of fine beads and a scroll. The ovolo was used by several potters including Albucius, Laxtucissa, Ianarius ii and Paternus ii. Mid-late Antonine, ID 312 (not illus.).

*Paternus ii?: s*crap with leaf Rogers 208 hanging from a short tendril in a panel corner with a plain ring above. The leaf was used by several potters: Quintillianus, Laxtucissa, Censorinus, Ivstvs, Mammius and Paternus ii. Mid-late Antonine, ID 332 (not illus.).

Paternus ii?: a worn sherd with traces of a large ovolo, probably Rogers B178. A.D. 160–190, ID 345 (FIG. 16.7).

Ivstus: body sherd with cabled divider with small ring at terminal. Bead-edged lozenge Rogers U32 in corner of panel filling gap above double-bordered medallion containing panther O.1537. It is probably just the head and shoulders of the panther as on a mould-stamped bowl in Rennes museum (Samian Research Project 2014, 0011800). A.D. 160–200, ID 330 (FIG. 16.7).

Ivstus or *Paternus ii?*: body sherd with cabled divider with small ring at terminal. The only figure type is dolphin O.2393. A.D. 160–200, ID 326 (FIG. 16.7).

Ivstus or *Paternus ii*: scrap of Dr 30 with ovolo Rogers B234 used by Ivstus and Paternus ii. A.D. 160–200, ID 350 (FIG. 16.7).
___ body sherd with part of three figures, tree Rogers N4, the edge of which appears to have been over stamped with a horseman with cloak flying, above is possibly a seated hare facing right. This is a very crowded design and it is not clear which workshop might have produced the vessel. The tree was used by a wide variety of potters over a long period — it was used at Les Martres at the beginning of the second century and still in use at the end of the century at the Cintinus workshop. The hare appears to be O.2115, and the horseman perhaps a smaller version of O.249A. Hadrianic or Antonine, ID 287 (FIG. 16.10).
___ vine leaf fragment. Antonine, ID 334 (FIG. 16.7).
___ very abraded scrap with seated Apollo O.94 which was used by several mid-late Antonine potters (Cinnamus, Carantinus, Iullinus, Paternus ii, Servus ii, Primanus), ID 346 (FIG. 16.7).

EAST GAUL

Lavoye

Tocca: sherd from the base of the decoration with a guide-line impressed with a single row of rosettes, the only other motif is the bent twig used by Tocca. The twig is on a mould signed TOCCAFIICIT (Chenet and Gaudron 1955, fig. 57, G). This sherd is quite worn and entirely blackened. The internal surface bears a graffito which reads CARVS, the R is possibly ligatured with a T. *c.* A.D. 160–200, ID 272 (not illus.).

Rheinzabern

'*Ware mit Eierstab E25.E26*': large rim sherd with ovolo RF E 25, a fragment of a double-bordered festoon with a beaded astragalus (?RF O206), and vertical oval beads as panel divider. A double-bordered medallion is flanked by leaf P87 on long stalks (Ricken and Thomas 2005, taf. 116, 7) in a well-spaced panel. The motifs were all used by a variety of potters, but the potter or group of potters brought together as 'Ware mit Eierstab E25.E26' employed them all. Late second–early third century, ID 265 (FIG. 16.10).

Comitialis style III/IV: large rim sherd with the trophy motif RF O.160 and double medallion RF K20 of Comitialis' style IV, and ovolo E40 and sea-horse T188 of style III. A.D. 175–220, ID 266 (FIG. 16.10).

Comitialis style IV: rim of Dr 37 bowl with two stamps in the mould: Comitialis and REP (cf. stamp catalogue nos 4 and 14). The decoration below tongue-less ovolo RF E66 belongs to the style grouped on Ricken and Thomas 2005, taf. 90, with double-bordered medallions (RF K20) and trophy (RF O160) above leaf RF P46, and with extra birds (RF 249) below the ovolo. The figure type in the medallion (with the REP stamp below it) is crouching leopard (RF T30) which is on another bowl with the REP stamp (Ricken and Thomas 2005, taf. 90,6). A.D. 175–220, ID 264 (FIG. 16.10).

Comitialis style V: body sherd with scuffed external surface; the limited surviving decoration includes a medium-sized double-bordered medallion (RF K19a) with a seated lion T23. To one side is a mould stamp of Latinnus with a small bear (RF T54) below it. A.D. 175–220, ID 267 (FIG. 16.10).

___ a poorly finished sherd with deep grooves truncating the top of the ovolo, no beads below. There is a scrap of a figure which is probably Mercury (RF M79) holding an incomplete (or incompletely impressed) caduceus. Almost no slip remaining on internal surface. Late second–early third century A.D., ID 269 (FIG. 16.10).

CHAPTER 17

GLASS VESSELS AND OBJECTS

By Sally Worrell

INTRODUCTION

This report studies 47 vessel fragments and one object[73] from the unstratified Roman glass assemblage retrieved by divers at Piercebridge. The vessels identified represent a diverse range of drinking, serving and storage vessels dating from the late first to fourth centuries A.D. Common Romano-British vessel forms are represented, including colourless cylindrical cups, with one very rare example of a painted cup, and a range of jug forms and flasks (Tables 17.1–2). In general, these are paralleled on other Roman sites in northern Britain where glass assemblages have been documented, as the parallels noted in the discussion below will demonstrate. Only two fourth-century fragments were found, comprising a drinking cup and a possible flask, indicating that glass use had reduced considerably in the late Roman period. This glass assemblage is very much smaller than that recovered from the excavations at Piercebridge but like it, consists predominantly of blue/green and colourless glass, suggesting a second- to third-century date. However, there is a complete dearth in the river assemblage of cast vessel fragments, strongly coloured fragments, first-century facet-cut colourless vessels or second-century colourless wheel-cut cups or colourless vessels with tooled decoration, types which are well-known from the excavations (Cool and Price 2008). Although the assemblage was very small, the size of the fragments is comparable with those from an excavated context. However, it was noteworthy that there were no large fragments retrieved from the river.

TABLE 17.1. DATE, FORM AND FRAGMENT QUANTITY OF ROMAN GLASS FROM THE RIVER

Date range	Form and quantity of fragments	Total no. of fragments
Late C1–end C2	Jar (1) Jug (14) Prismatic bottle (14)	29
C2–C3	Cup (5) Flask (3) Jug (3) Bowl/cup (1) Bowl/jug (2) Shallow plate (2)	16
C4	Convex cup/flask (2)	2

[73] As this is one of only two objects associated with recreation, the decision was made to discuss it here. The other counter BH-559837 was made from a fragment of a glass vessel.

VESSELS

In the river assemblage the earliest group of tableware consists of blue/green jars and jugs dating to the later first to mid-second centuries. BH-F10E1A is a rim and upper body fragment from a very small blue/green convex jar with a collar rim (Manning *et al.* 1995, 169–71; Price and Cottam 1998, 137–8, fig. 58). The rim was formed by rolling the rim edge in, then out and down to form a vertical tubular collar. The upper body is wide, and there is no trace of decoration. Jars of this type were probably produced as tablewares, perhaps for presenting and serving liquids or fruit (Manning *et al.* 1995, 170). 11 fragments of convex and conical jugs were identified in this assemblage (BH-555923/FIG. 17.1A; BH-54CE7D; BH-5027A5; BH-506158; BH-550749; BH-54EDBA; BH-5498EC; BH-53B8AE; BH-5054F4/FIG. 17.1B; BH-518D11; BH-747F3E/FIG. 17.1C). These are commonly found on Romano-British sites occupied during the late first and early second century (Isings 1957, forms 52a, 55a, 55; Price and Cottam 1998, 150–2, fig. 66; 152–4, fig. 67; 155–7, fig. 68). Both forms have a horizontal or diagonal folded rim with the edge bent, a cylindrical neck and handles which are generally angular and applied to the body and attached to the neck below the rim. Their decoration consists of vertical, diagonal or spiral ribs, or a combination of these.

Convex jugs have a wide globular body and an open pushed-in base ring and concave base and the conical form has a straight or very slightly convex body (e.g. BH-555923), expanding out either to a concave base or to an open pushed-in base ring and concave base. It is often impossible to differentiate the forms on the basis of rim and neck fragments, although the handle, body and base fragments are generally distinguishable. From body fragments alone, it can be very difficult to distinguish convex jugs from convex jars which can also be decorated with vertical or diagonal ribs.

After the early second century, Romano-British glass use follows two trends which can be seen in the majority of the assemblage. Tablewares, produced in colourless, pale green, blue/green and greenish colourless glass during the later second and third centuries, comprise cups, bowls and jugs. By contrast, flasks and bottles were intended as containers.

The most common form in this assemblage is the cylindrical cup with fire-rounded rim, straight or very slightly convex sides and double base ring (NCL-288BA5/FIG. 17.1D; BH-5192B1/FIG. 17.1E; BH-54A89C/FIG. 17.1F; BH-556E0A/FIG. 17.1G; Isings 1957, form 85). In general, there is a very considerable increase in the quantity of cups of this type dating from the third quarter of the second century to the mid-third century (Price and Cottam 1998, 99–101, fig. 37). Most commonly they are undecorated and have a vertical or slightly in-turned rim, a cylindrical upper body, a strong carination leading to a horizontal lower body and base and a tubular pushed-in base ring with an inner circular applied trail or two concentric trails. The excavated glass from Piercebridge is dominated by this form (Cool and Price 2008, 236–8, tables D10.3–4).

Some characteristics of this group merit further specific comment. Of special interest is an unusual example of a painted cylindrical cup (BH-54A89C/FIG. 17.1F), a small body fragment of good quality colourless glass decorated with a layer of pale blue/grey enamel. Some additional lines added on top of the enamel may define folds of clothing. Although it is difficult to identify the feature represented, this fragment adds to the corpus of painted cylindrical cups excavated at Piercebridge which includes a colourless cup with a painted gladiatorial scene (Cool and Price 1995, 238, no. 3, fig. 10.2).

The last major survey of painted cups listed 39 examples with a distribution which concentrates on northern Britain and Denmark (Le Maho and Sennequier 1996, fig. 8). In general, painted cups are decorated with a row of small dots below the rim and representations of animals, gladiators and other motifs on the body. The most outstanding example from Britain was found at Vindolanda in 1991, showing a substantial section of a gladiatorial contest with a row of alternating red and blue dots below the rim, while a smaller rim fragment from a similar vessel from Birdoswald, Cumbria, has a horizontal row of dots in white, pale green, deep pink, pale yellow and pale blue (Price and Cottam 1997, 348, no. 5, fig. 248). In January 2014, two joining rim fragments of a painted colourless cylindrical cup were found in Silloth, Cumbria, and

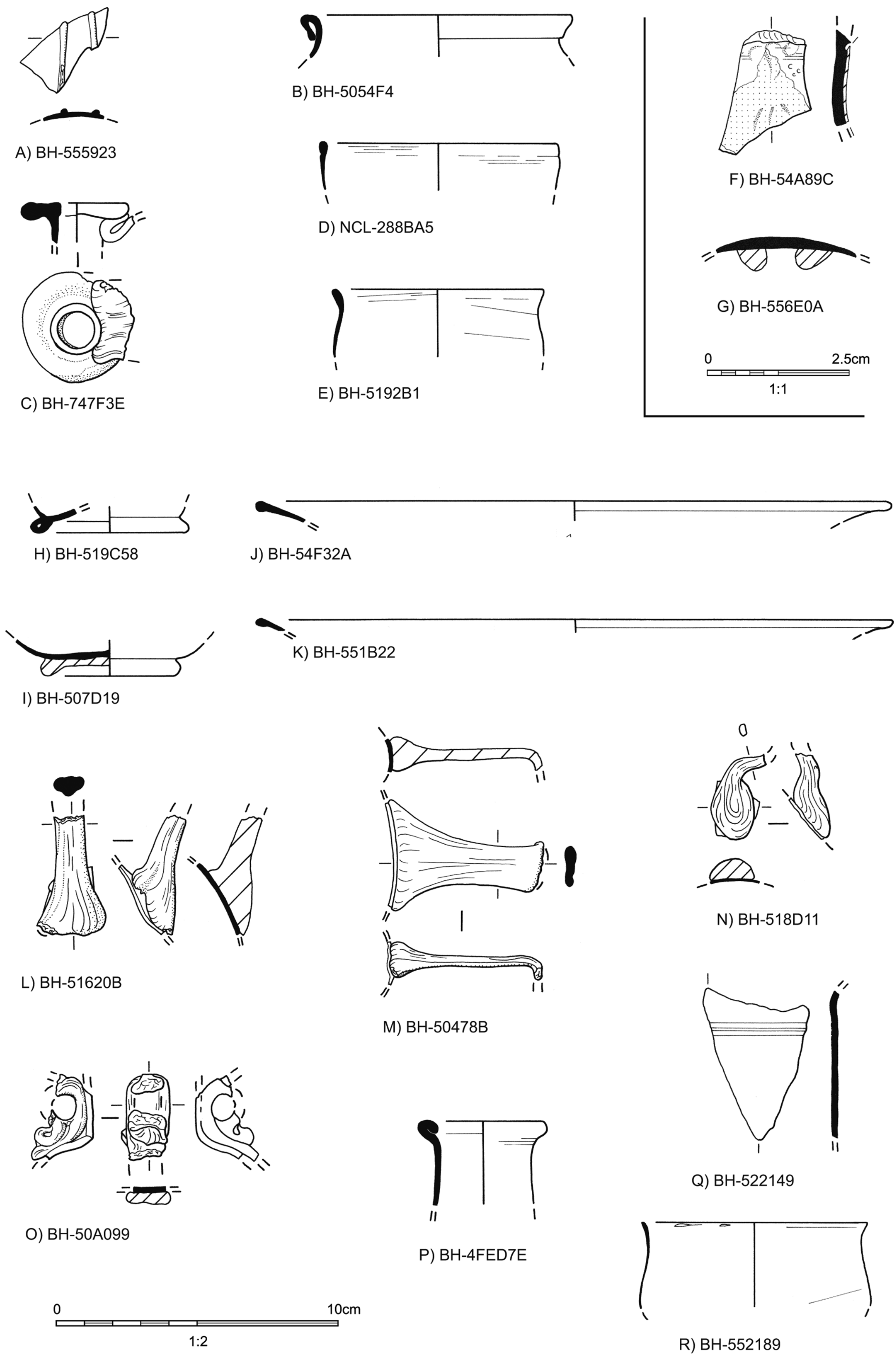


FIG. 17.1. A selection of glass vessel fragments from the river

recorded by the PAS (LANCUM-91E341; Pearce and Worrell 2016, 366–7, no. 3). This cup has a border with alternating blue and red dots and shows part of a black-outlined figure, a likely gladiator, with helmeted head and what appears to be a sword. The helmet was painted in yellow and red, the face mask is light blue, the sword hilt is yellow and its blade light blue.

BH-556E0A (FIG. 17.1G) is a pale blue/green base of a cylindrical cup dating from the later second to mid-third century. Although these cups appear to date to the same period as the colourless examples, they are very much less common (Price and Cottam 1998, 99–101, fig. 37). The basic form of these vessels is not known precisely, but it is likely that they had inner trailed rings or small tubular base rings. Other blue/green cups of this type noted from other northern sites include excavated fragments from Piercebridge (Cool and Price 2008, D10-6), Vindolanda (Price 1985, 209, nos 23-6, fig. 77), Carlisle (Price 1990a, 163, MF2/73 no. 41), Birdoswald (Price and Cottam 1997, 349, nos 33–4) and Binchester (Price and Worrell 2010, 280, 7).

The range of blue/green vessels of this period is eclectic, as the following vessels show. The blue/green base fragment BH-519C58 (FIG. 17.1H) has a tubular pushed-in base ring and comes from a bowl or cup, and can probably be dated to the late second to third centuries. The complete base and lower body fragment from a blue/green bowl or jug, BH-507D19 (FIG. 17.1I), is difficult to parallel. The vessel has a wide convex lower body with a shallow slope and a flat base with an applied true tubular base ring. BH-54F32A (FIG. 17.1J) and BH-551B22 (FIG. 17.1K) are unusual fragments which are likely to come from the same blue/green shallow plate with fire-rounded rim. Parallels for this vessel form occur only occasionally on Roman sites, for example a blue/green shallow plate from Colchester, found in a context closely dated to the mid-second century (Cool and Price 1995, 103, no. 714, fig. 6.7).

There are three fragments of late second- to third-century jugs with funnel mouths in pale green, colourless and blue/green glass, a noteworthy group of jugs of this period (BH-51620B; BH-50478B; BH-518D11). At this time jugs had a fire-rounded or rolled-in rim edge, a short funnel mouth, a cylindrical neck expanding out to an ovoid or globular body and an applied or tubular base ring or concave base.

BH-51620B (FIG. 17.1L) comprises the lower part of a rod handle, applied to the rim edge and attached to the lower body, from an undecorated blue/green discoid jug, which probably dates to the second to early third century. BH-50478B (FIG. 17.1M) comprises an angular handle and trace of convex body fragment in pale green quite bubbly glass, from a fairly common globular or discoid jug with a pulled-out spout of Isings 1957, form 88, especially 88c. Jugs with pulled-out spouts in colourless, pale green or blue/green glass are more common than the pinched-in examples and are frequently found on sites in Britain and elsewhere in the north-west provinces. For example, a colourless discoid jug came from a deposit dated *c.* A.D. 160–230 in the drain at the legionary bath-house at Caerleon (Allen 1986, 109, no. 57, fig. 42) and a colourless globular example was found in a cremation dated *c.* A.D. 200 at Ospringe, Kent (Whiting 1926, 129, no. 154, pl. 17). Fragments of pale green and blue/green jugs, from second- to third-century and later contexts, were recorded from Colchester (Cool and Price 1995, 140–1, nos 1005/6, figs 8.8–9). BH-518D11 (FIG. 17.1N) is a body and handle fragment in fine colourless glass from a tall convex jug with a funnel mouth. One side of the chain handle is present, the lower part of which is oval, and there is a trace of the convex body. The chain handle was applied to the upper body and attached below the rim, often with a folded loop or thumb-rest. The body could be decorated with a horizontal trail or a narrow spiral trail below the rim and/or on the neck. A number of jugs with chain handles have been recorded from northern sites; two colourless chain handle fragments were found during earlier explorations at Piercebridge (Cool and Price 2008, no. 64, Holme House; Bowes Museum 1957/13), two colourless jugs were recorded from Binchester (Price and Worrell 2010, 284, 312, nos 248–50, fig. 84) and two blue/green jugs at Birdoswald (Price and Cottam 1997, 351–2, nos 48, 58, fig. 248).

Fragments from a total of four flasks were identified in this assemblage. A bath-flask (BH-50A099/FIG. 17.1O) has been identified from the dark blue/green neck, handle and shoulder fragment. Bath-flasks are small globular flasks with two looped handles and are quite common finds in bath-house drains and occasionally on occupation sites and in burials. The complete form has a folded rim with the edge bent out, up and in, a short cylindrical neck, a wide globular body, a small flattened or slightly concave base and two small looped 'dolphin' handles. They first appeared during the third quarter of the first century and continued in use until the mid-third century (Price and Cottam 1998, 188–90, fig. 87). This example is likely to date from the second or third century as the handle is applied to the shoulder, trailed up the neck and bent out and down. At least twelve examples come from late second-century and later contexts at Colchester (Cool and Price 1995, 158–9, nos 1190–1209, fig. 9.9).

BH-4FED7E (FIG. 17.1P) is the blue/green rim and neck fragment of an unguent bottle where too little is preserved for the form of the vessel to be identified. The rim is folded and the edge is bent out, up, in and flattened and the cylindrical neck is reasonably thin-walled. It is likely to date from the late second and third centuries. It is also difficult to suggest the exact form of the blue/green base and convex lower body fragment with a pontil mark at the centre (BH-55663B) which may come from a flask or bowl, and is likely to date from the late second to third centuries.

Of particular interest in this assemblage is the body fragment of a greenish/colourless glass vessel, decorated with a band of horizontal abrasion (BH-522149/FIG. 17.1Q). This may have been from a cylindrical flask which would have been in use in the first half of the fourth century (Price and Cottam 1998, 184–5, fig. 84). However, as no diagnostic elements are preserved on this straight-sided body fragment, it is very difficult to distinguish the form; a third- to fourth-century date is most likely.

There is a known contraction of glass use in the fourth century A.D. (Cool and Price 2008, 239–40). The undecorated glass of this date which can be certainly identified from the excavations at Piercebridge is restricted to the Housing Scheme and fort sites (Cool and Price 1995, 239–40, fig. 10.3). In the river assemblage, there are two possible vessels of fourth-century date. One comprises a fragment of a greenish/colourless convex cup, with an out-turned rim, edge cracked off and left unworked, and a convex body fragment in thin glass with occasional small bubbles, without sign of decoration (BH-552189). The other is the possible flask discussed above (BH-522149).

The cup represented by BH-552189 (FIG. 17.1R) typically shows various forms of decoration occurring in combination, including pulled-out points and lugs, trails, indents and abraded bands. Although undecorated convex cups of the same period as the decorated examples are being noted with increasing frequency, they are very difficult to identify unless a large part of the profile is preserved. Undecorated examples have been documented at Beadlam (Price and Cottam 1996, 89, no. 12, fig. 56), Dalton Parlours (Price 1990b, 103, no. 8, fig. 78) and Vindolanda (Price 1985, 207, no. 7, fig. 77).

14 fragments of blue/green bottles have been recorded in this assemblage. These bottles were used primarily as containers for storage and transportation. The rims, necks, handles and shoulders of all bottle shapes were produced by the same methods. The rim is folded out, up, in and flattened, and the neck is cylindrical and often shows tooling marks at the junction with the shoulder (e.g. BH-54E31A). The angular handle was applied to the shoulder and drawn up and across at an angle to meet the neck below the rim in a folded attachment (e.g. BH-51D501/FIG. 17.2A). The lower section of the handle was usually reeded with the ribs drawn down on to the shoulder in order to strengthen the attachment.

Prismatic bottles, of which square, rectangular and hexagonal forms were the most common, were nearly always blown into a multi-piece body-mould which had a separate base piece. The raised patterns on the base aided the strength and stability of the vessel as well as possibly acting as some form of trademark (Cool and Price 1995, 179–200).

In this assemblage, the most common form of bottle was prismatic, comprising two square (BH-54E31A; BH-51D501) and one hexagonal bottle fragments (BH-514ECA/FIG. 17.2B). Square bottles became very common in the Flavian period and continued in use throughout the second century and possibly into the third. Although only two fragments (a minimum of one vessel) have been identified in this assemblage, the number of square bottles is likely to be considerably larger as most prismatic bottle fragments probably come from square bottles. Similarly, hexagonal bottles, represented by one base fragment here (BH-514ECA), have been

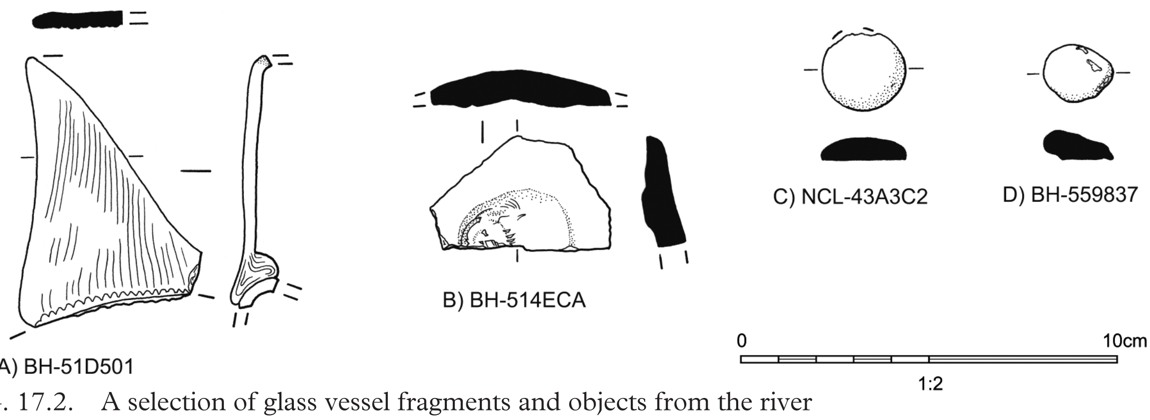


FIG. 17.2. A selection of glass vessel fragments and objects from the river

found at sites in Britain in the Neronian/early Flavian period but they were most common in the last quarter of the first century A.D. A few examples have been found in contexts as late as the mid-second century, for example in pit deposits at Felmongers, Harlow (Price 1987, 197, 206, no. 36) and Alcester (Price and Cottam 1994, 225, no. 28, fig. 105).

The raised design on this base fragment (BH-514ECA) consists of a concentric circle and a further motif, although too little survives to identify it fully. Other hexagonal bottles with similar base designs are known from an early second-century burial at Stansted (Price and Cottam 1998, 199–200) and from the mid-second-century pit at Alcester mentioned above (Price and Cottam 1994, 225, no. 28, fig. 105). In common with the very noticeable rarity of cylindrical bottles from excavations at Piercebridge (Cool and Price 2008, D10-4), no fragments of cylindrical bottles were discovered in this assemblage.

TABLE 17.2. VESSEL COLOURS FROM THE RIVER

Colour	No. of fragments	% vessel glass
Colourless	5	10.1%
Blue/green	39	83%
Pale green	1	2.6%
Late Roman greenish/ colourless	2	4.3%
Total	**47**	**100%**

GLASS OBJECTS

COUNTERS

Small monochrome plano-convex counters are found on sites of all periods of Roman occupation, but are most closely associated with first- and second-century sites and are particularly common on military sites. They may have been used both for accounting purposes and in board-games. NCL-43A3C2 (FIG. 17.2C) is an opaque white counter and would have been produced by dropping a small blob of hot glass onto a flat surface, although fragments of vessel or window glass were sometimes grosed around the edges for secondary use as counters, as seen on BH-559837 (FIG. 17.2D).

CHAPTER 18

THE ANIMAL BONE ASSEMBLAGE

By Martyn Allen

INTRODUCTION

An assemblage of 167 animal bones was recovered from the river Tees and submitted for analysis. The remains were very well preserved, owing to their watery environment, and fragmentation was relatively minimal. Cattle bones were very common, though pig, sheep and horse bones were also present. Wild animals were represented by bones of red deer and badger, while a small number of oyster shells were also identified. Bones of small mammals and birds were absent, which almost certainly reflects recovery bias. Owing to the good preservation, cut and chop marks were frequently observed, particularly on cattle bones. This evidence strongly suggests carcass-processing practices of a type often found at towns and military sites in Roman Britain. No evidence of carnivore gnawing was observed on any of the bones, suggesting that most if not all of the animal remains had become deposited fairly soon after being butchered. Where possible, the river assemblage has been compared to zooarchaeological data from animal bones previously analysed from the nearby fort and *vicus* (Rackham and Gidney 2008).

METHODS

The animal bones were examined in full and were identified to species and element where possible using the author's comparative reference collection. Evidence of epiphyseal fusion was recorded and estimated ages at death followed the timings of Simmons and Grossman (Getty 1975). Element zones were recorded following Serjeantson's (1996) criteria. Dental wear data were recorded according to Grant's (1982) criteria and estimated age groups were assigned following Jones and Sadler (2012) for cattle, Jones (2006) for sheep, and Hambleton (1999) for pigs. Butchery marks were recorded using Maltby's (2010) coding system. Bones were measured using von den Driesch's (1976) criteria, though as the sample size was fairly small, no biometric analyses have been undertaken here and the raw data have been retained in the archive. No signs of burning, gnawing or pathologies were observed.

CONDITION

The animal bones were very well preserved with low levels of fragmentation throughout the assemblage. Most of the bones exhibited a fairly dark 'chocolate' colour commonly seen in material recovered from watery environments which is often well preserved and suffers relatively little from bacterial action and trampling (FIG. 18.1). The low level of fragmentation was particularly notable in the large rib fragments; ribs tend to break down into very small pieces and split in half.

SPECIES PRESENT

Cattle, sheep/goat and pig remains dominate the assemblage. Cattle were the commonest species present, representing over half of the specimens identified to species (Table 18.1). When large-mammal-sized specimens, almost exclusively rib, vertebra and long-bone shaft fragments, are included with the cattle remains, the count reaches 114 (Table 18.2). It is possible that some of the large mammal specimens belonged to horse or red deer, though the majority are almost certainly cattle. The high proportion of cattle and large mammal remains is partly influenced by recovery and selection bias.

Sheep/goat remains were represented by 22 specimens. One skull fragment was identified as sheep based on the morphology of the horncore. No conclusive evidence of goats was found. It was notable, and perhaps surprising, that no evidence of goats was identified by Rackham and Gidney (2006) from the nearby fort and *vicus* deposits, while several sheep were identified from horncore specimens. Pigs were represented in the river assemblage by 16 specimens. One horse was represented by two articulating bones from the same individual.

Wild animals were rare. Red deer was represented by two bones, possibly from the same animal (see below). No antler specimens were found. One badger bone from a mature animal was identified; two oyster shells were also recovered.

While this is a small and biased assemblage, the relative frequencies of different species are similar to those found in deposits at the fort and *vicus*, where cattle overwhelmingly dominated in most areas, while sheep/goat and pig remains were fairly equally represented (ibid.). Horse bones tended to be rare and there was little evidence of articulated skeletons. Rackham and Gidney suggested that horses were likely to have been eaten though their skeletal remains tended to become mixed with other remains from butchery waste. Red deer and badger bones were also noted by Rackham and Gidney, albeit comparatively rarely. However, many of the red deer remains from the fort and *vicus* deposits were from antler, and they argued that the badger bones came from animals that had died naturally in setts and had become mixed with other remains rather than being directly exploited by the local inhabitants.

FIG. 18.1. A selection of animal bones recovered from the river (*Photo: Lindsay Banfield*)

BODY-PART PATTERNS

A wide range of cattle elements was identified, including numerous rib fragments (though see above with regards to species identification). Mandible and scapula fragments were the most common elements in terms of fragment counts and minimum numbers of elements (Table 18.2). When body size was taken into account, both mandibles and scapulae were found to represent the remains of at least five individual cattle. Tibiae and metatarsals were also relatively well represented in terms of minimum numbers of elements and individuals, though these bones tend to be fairly robust and survive well in most assemblages.

Sheep/goat remains were dominated by mandible (five examples) and tibia (six examples) specimens. This pattern is often found in zooarchaeological assemblages and tends to reflect differential survival and recovery bias, owing to the robusticity of these elements. As mentioned above, at least one sheep was represented by a skull fragment with part of the horncore attached. Other sheep/goat elements included radius, pelvis, sacrum, femur and fibula, as well as two loose teeth. Pig remains consisted of four tibiae specimens, four skull (including three maxilla) fragments and two mandible specimens. Other pig elements included scapula, ulna, femur and metatarsal specimens, plus a lower canine. Horse bones were represented by a radius and an ulna. Red deer was represented by a humerus and a scapula, possibly from the same animal, and the badger bone was a complete radius.

AGEING DATA

A total of six cattle mandibles provided dental wear data (Table 18.3). Estimated ages, based on Jones and Sadler's (2012) analysis of modern samples, ranged between a minimum of 26 months and a maximum of 16 years old. All the mandibles that included first molars were in fairly late stages of wear. Five out of six specimens were from animals potentially between six and eight years old when they were culled, though this is a minimum estimate. Epiphyseal fusion data broadly support the evidence from dental wear in that all bar one post-cranial specimen had reached full maturity. A single scapula was clearly from a juvenile animal, probably less than a year old.

Only three sheep/goat mandibles provided dental wear data, all deriving from animals slaughtered between 10 and 36 months. In each specimen, the third molar was erupting or only very slightly worn. In terms of epiphyseal fusion, eight out of ten sheep/goat post-cranial specimens had reached maturity. A fused distal radius came from one animal that was older than 42 months, while two distal tibiae were unfused, representing animals aged below or at 15–20 months when slaughtered.

Only one pig mandible provided ageing data. This specimen included an unworn deciduous premolar and a first molar still in its crypt, the bone deriving from a perinatal or neonatal piglet. Epiphyseal fusion data indicate that pigs were generally culled at young ages. Several tibiae were unfused at the proximal end and one at the distal end, all coming from animals aged younger than 42 months and one at least that was less than 24 months when culled.

Both horse specimens — radius and ulna bones — were fully fused, indicating that this animal was older than four years when it died.

BUTCHERY PATTERNS

A total of 40 cattle specimens (including large-mammal-sized bones) were found with butchery marks, accounting for over 35 per cent of the *Bos* assemblage (Table 18.4; FIG. 18.2). Of these, 34 had chop marks made by a cleaver or similar heavy-bladed implement, while 11 had been cut by a knife. Several specimens exhibited butchery typical of 'Roman-style' butchery practices, often made by meat cleavers and usually found at urban or military sites but rarely at rural sites (see Maltby 2007 for detailed descriptions). Distinctive 'scoop' marks on the shafts of long bones are indicative of a cleaver being run along the bone to fillet the meat prior to cooking;

a femur and three tibiae had been butchered in this way. Several limb bones had been axially split, including humerus, femur and tibia specimens. Axial splitting is caused by the bones, often already stripped of meat, being held or clamped in an upright position and struck at the proximal end, dividing the bone through the shaft in an anterio-posterior direction. The method is thought to be a quick and efficient way of accessing the marrow inside the bone, employed when larger numbers of carcasses are being processed. One cattle mandible had been chopped through the ascending ramus, a fairly crude but effective method of removing the jaw from the skull. Finally, several scapulae exhibited marks associated with hanging and trimming of the shoulder joint. At least four had blade marks along the lateral spine; three had been chopped through or around the edges of the articulating end (the glenoid); two had been chopped through the neck; two had knife marks on both sides of the blade; and one had been punctured through the blade, possibly indicating that it had been hung, perhaps for smoking or brining (see Allen 2017, 121–3).

Butchery marks were also found on the bones of other animals. The sheep skull had been chopped centrally through the occipital, cleaving the skull in half to access the brain, and the horncore base on the same specimen had been chopped through from the posterior side. The horn appears to have been deliberately removed for working. A sheep/goat radius had superficial axial chop marks at the proximal end, and a sacrum had several superficial blade marks indicative of chopping around the pelvis. A pig ulna had cut marks on the shaft. Both red deer bones exhibited butchery marks: the humerus had been chopped obliquely through the shaft during dismemberment of the upper forelimb, and the scapula had a horizontal chop through the neck, similar to that found on two of the cattle scapulae.

FIG. 18.2. Butchery marks on cattle bones from the river (*Photo: Lindsay Banfield*)

RADIOCARBON ANALYSES

Five animal bone samples were sent to the Scottish Universities Environmental Research Centre (SUERC) for radiocarbon dating. The samples selected were of a range of taxa, including cattle, pig, sheep/goat and badger (Table 18.5; FIG. 18.3). The results of the radiocarbon analyses show that all five of the animal bone samples were of Roman date. The sheep/goat specimen (sample

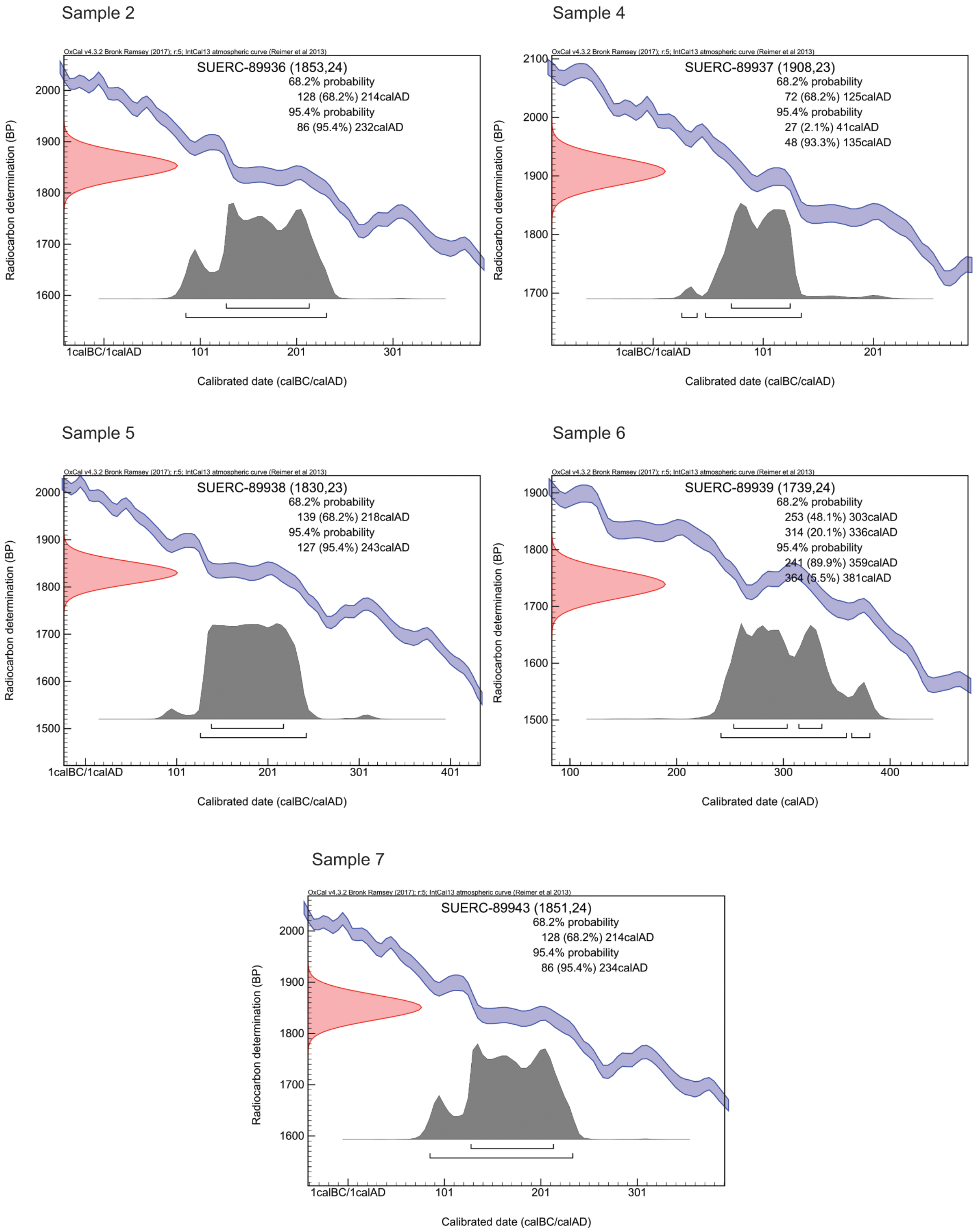


FIG. 18.3. Radiocarbon plots for the five animal bone samples from the river produced by Scottish Universities Environmental Research Centre. Sample 2: badger; Sample 4: sheep; Sample 5: pig; Sample 6: cattle; Sample 7: cattle

4) was the earliest with a calibrated date range of A.D. 48–135 (at 93.3% confidence). This was followed by a remarkably similar result from the badger bone (sample 2) and one of the cattle bones (sample 7), which gave readings of cal. A.D. 86–232 and cal. A.D. 86–234 respectively (both at 95.4% confidence). The later ends of these ranges were also fairly consistent with the result from the pig bone (sample 5), which dated to cal. A.D. 127–243 (95.4% confidence). The latest date range was given by the second cattle bone (sample 6), which dated to cal. A.D. 241–359 (89.9% confidence).

DISCUSSION

The animal bones recovered from the river Tees comprise a useful assemblage that contributes to our understanding of deposition in the river. Most if not all the bones are likely to be Roman, as is made clear by the radiocarbon dating results, which suggest that the remains were placed in the river over a period of time from the later first or early second century A.D. to the late third or early/middle fourth century A.D. The radiocarbon dating suggests that there are no residual or intrusive bones, though this cannot be ruled out for other elements of the assemblage. There are other signs that the material is of Roman date and coincides with the material culture recovered from the same area. The butchery marks found on many of the bones, particularly cattle, are common to material recovered at Roman towns and military sites, and, anecdotally, the size of many bones accords well with Roman material (as opposed to post-medieval or modern livestock). The exceptional level of preservation owes much to the bones becoming probably fairly rapidly deposited in the water; they do not appear to have been exposed on land for long as there is little evidence of weathering on the surfaces of the bones. Fragmentation was also minimal, suggesting that they had not been moved around much or trampled as may be expected if they had been placed initially on a midden, for example.

The composition of the material is heavily biased, mostly by the fact that the remains were deposited in the river and some of the remains may have been washed away, particularly bones of smaller animals. Also, the divers may not have picked up smaller bones. These factors undoubtedly favour the recovery of cattle bones which dominate the assemblage. Nonetheless, cattle bones are often far more common in Romano-British military assemblages (e.g. King 1999) and there is little reason to think that this assemblage is unusual in this regard. The relatively high proportion of pig bones is also common to military assemblages in Britain, where they are sometimes found to outnumber sheep/goat bones (ibid.). Despite the bias towards larger and more robust bones, horse remains are very rare in this assemblage. Horse bones are also comparatively rare in other deposits at Piercebridge (Rackham and Gidney 2006). In some cases, horses appear to have been dumped in ditches, their remains eventually becoming disarticulated and mixed with other carcass waste. It is likely that most horses at military sites were buried in areas where they did not become part of food-waste deposits.

Cattle were generally culled in adulthood, and though the evidence is not strong enough to suggest that a particular age group was targeted, the lack of younger prime-beef animals is a pattern often found in assemblages recovered from military and urban sites (Maltby 2010). Sheep/goats, in contrast, were consistently culled at fairly young ages, mostly by their third year, suggesting a preference for lamb or young mutton. Pigs, too, were mostly culled before the fourth year and probably much younger than this. Some remains from very young (neonatal) cattle, sheep/goats and pigs suggest that at least some livestock were being raised nearby.

Perhaps the most distinctive aspect of the assemblage is the butchery evidence, particularly that found on cattle bones. Butchery marks associated with rapid dissection and meat filleting are a method of carcass-processing often found at towns and military sites. This was almost certainly undertaken by specialist butchers using heavy cleavers. The comparatively wide range of cattle elements suggests that the remains found in the river deposits relate to a mixture of primary butchery and consumption waste, rather than selected table waste. This waste material may have been gathered together and disposed of fairly quickly after processing.

The question arises as to how far this assemblage can be considered to be part of a ritual deposit. This is difficult considering that its composition, in terms of taxa representation, body-part patterns and butchery style, is little different to the assemblages identified in the fort and *vicus* deposits found elsewhere at Piercebridge, much of which no doubt relates to fairly common waste-disposal practices occurring around the settlement (Rackham and Gidney 2006). Flowing water is of course necessary, or at least desirable, for a range of animal-processing activities such as butchery, bone working and tanning, and may provide another context for carcass deposition in rivers. However, given that the river assemblage was associated with finds of a religious nature, such as copper-alloy and pipeclay figurines and miniature objects, it is possible that some if not all of these animal remains formed part of a votive deposit. The remains could represent carcass parts that had already been processed elsewhere and were selected for feasting or were from animals that were specifically targeted for slaughter (sacrifice?) and killed separately. The former seems more likely considering the similarity between the river and fort/*vicus* assemblages. In either case, if these animal remains were part of a ritual deposit, the types of animals/meat chosen for consumption and the manner in which the carcasses were processed did not stand out as different from 'normal' culling, processing and consumption practices.

Although the incorporation of animal remains into Romano-British ritual deposits is widely acknowledged (Fulford 2001; King 2005; Allen 2018), it is difficult to find comparable faunal assemblages from river deposits that are conclusively dated to the Roman period, let alone from northern Britain specifically. Although ritual deposition in rivers has received increased attention over the past ten or so years (e.g. Rogers 2007; 2013; Kamash 2008), animal remains are rarely considered in detail beyond their mere presence owing to difficulties in dating and the potential for contamination and disturbance from river currents. Animal bones were found in association with Iron Age weapons, tools and pottery near a timber causeway in the river Witham at Fiskerton, Lincs. (Field and Parker Pearson 2003), and may represent remains from ritual feasting. Large dumps of cattle carcasses were recovered from the same river where it flowed past Lindum (Lincoln), though much of these remains are thought to relate to large-scale livestock processing and disposal relating to supply of the *colonia* (Dobney *et al.* 1996). Ritual deposition in watery contexts is, of course, not restricted to natural features; structured deposits in wells (shafts) are often highlighted as the result of ritual activities, with Fulford (2001, 215–16) highlighting the lack of distinction in this practice between rural and urban settlements, and suggesting that this type of activity continued from prehistory. Wells tend to provide better evidence than rivers as zooarchaeological remains are generally better dated and are less prone to disturbance and contamination. At Rothwell Haigh, W Yorks., a faunal assemblage of almost 5,000 specimens comprising a high proportion of dog and sheep bones, and, notably, the carcasses of at least ten goats, was recovered from an early fill of a stone-lined well dating to the third and early fourth centuries A.D. (Cool and Richardson 2013). The assemblage also included bones of cattle, pigs, horses, cats, deer, chickens, corvids, buzzards and rodents, recovered alongside complete pottery vessels, a wooden spade, wooden drinking vessels, quernstones, leather shoes, flue tile and an adult human skull which was placed just below the main group of animal carcasses. Similarly, at Heslington East, York, the excavation of a late Roman well produced over 1,000 bones of cattle, horse, pig, sheep/goat, red deer and goose (Roskams *et al.* 2013). In both cases, the presence of articulating skeletal body parts indicated that some of the material in the wells was buried fairly quickly, and perhaps with some care, which led the excavators to suggest that ritualised practices were at play. It is worth pointing out that butchery marks observed on the bones in the wells at both sites were similar to those seen on material found in other contexts. This is certainly the case at Piercebridge, but here it is much less likely that deposited carcasses were going to remain in articulation after being buried on the riverbed for the reasons outlined above.

The remarkable discovery of over 100 pits and wells containing an array of finds at the fort and *vicus* at Newstead in Scotland provides potential evidence for structured deposition in a military context in northern Britain (Clarke 1997; 1999; Clarke and Jones 1996). The majority of these features would have penetrated below the water table. Although not reported in detail, animal remains featured prominently in these deposits and included cattle and horse skulls, dog skeletons and deer antlers, as well as bones of sheep/goats, pigs and wild birds. As with the well deposits excavated at Rothwell Haigh and Heslington East, such remains are not necessarily markedly different to animal bone assemblages recovered from a wide range of features found on any number of Romano-British sites; what marks them out is the context of the remains: the types of finds with which they are associated and the regularity in the patterns of deposition (e.g. animal skulls or articulating body parts).

CONCLUSIONS

The animal bone assemblage from the river Tees is fairly unremarkable in terms of the range of species and body parts present. There is little to suggest that it differed much from zooarchaeological assemblages found elsewhere at Piercebridge (cf. Rackham and Gidney 2006). The preservation of the material is exceptional, and the collection is suggestive of waste material gathered up and deposited in the river soon after processing and consumption. Why this material was selected for disposal in the river and not in ditches and/or pits, as was often the case for carcass waste elsewhere at Piercebridge, is difficult to answer. There is no clear sign that these animals were selected for sacrifice and/or feasting, though this possibility should not be precluded given the evidence for finds of a religious nature in the river. The possibility that dressed carcasses were selected for ritual consumption and deposition must be considered.

TABLES

TABLE 18.1. NUMBER OF FRAGMENTS AND FREQUENCY OF IDENTIFIED TAXON

Element	**No.**	**%NISP**
Cattle	62	58.5
Sheep/goat	22	20.8
Sheep	1	0.9
Pig	16	15.1
Horse	2	1.9
Red deer	2	1.9
Badger	1	0.9
Large mammal	52	–
Medium mammal	7	–
Oyster	2	–
Total	**167**	

TABLE 18.2. CATTLE BODY-PART PATTERNS BY NUMBER OF IDENTIFIED SPECIMENS, MINIMUM NUMBER OF ELEMENTS AND MINIMUM NUMBER OF INDIVIDUALS (vertebra, rib and long-bone shaft specimens identified as 'large mammal' included here for NISP count; *vertebra includes cattle atlas, axis and hyoid)

Element	NISP	MNE	MNI
skull/horncore	5	–	–
mandible	8	7	5
tooth	10	–	–
scapula	8	6	5
humerus	3	2	1
radius	3	3	1
ulna	0	–	–
metacarpal	4	3	2
long-bone shafts	7	–	–
vertebra*	6	–	–
rib	42	–	–
pelvis	2	1	1
femur	4	3	2
tibia	5	5	3
astragalus	1	1	1
metatarsal	5	4	4
phalanx	1	1	1
Total (maximum)	**114**	**(7)**	**(5)**

TABLE 18.3. DENTAL WEAR DATA

Specimen	Taxon	ldp4	LM1	LM2	LM3	MWS	Age stage	Est. age
38	cattle		k	g		34–39	E/F	26 mths–43 mths
37	cattle				f	37–42	F/G	34 mths–6.5 yrs
36	cattle		k	j	g	42	G	40 mths–6.5 yrs
20	cattle		k	k	j	44	H	5–10 yrs
42	cattle				j	44–46	H/J	5–16 yrs
39	cattle		l	k	k	46	J	8–16 yrs
62	sheep/goat	h	g	c	C	21	D	10–24 mths
45	sheep/goat		g	e	a	28	E	20–36 mths
65	sheep/goat		g	f	c	31	E	20–36 mths
119	pig	a	C			1	A	Neonatal

TABLE 18.4. BUTCHERY MARKS ON CATTLE AND LARGE MAMMAL SPECIMENS

Butchery data	No.	% of total
no. butchered specimen	40	35.1
no. with chop/saw marks	34	29.8
no. with cut marks	11	9.6
split upper limb	7	–
bladed upper limb	4	–
chopped ramus	1	–
trimmed scapula	4	–
holed scapula	1	–

TABLE 18.5. SUMMARY OF RADIOCARBON RESULTS

Sample no.	Lab. ref.	Taxon	$\delta^{13}C$ value	RC age BP	Cal. date (95.4% conf.)	Cal. date (68.2% conf.)
2	SUERC-89936 (GU52911)	Badger	–20.3‰	1853 ± 24	cal. A.D. 86–232 (95.4%)	cal. A.D. 128–214 (68.2%)
4	SUERC-89937 (GU52912)	Sheep/Goat	–22.5‰	1908 ± 23	cal. A.D. 48–135 (93.3%) cal. A.D. 27–41 (2.1%)	cal. A.D. 72–125 (68.2%)
5	SUERC-89938 (GU52913)	Pig	–21.6‰	1830 ± 23	cal. A.D. 127–243 (95.4%)	cal. A.D. 139–218 (68.2%)
6	SUERC-89939 (GU52914)	Cattle	–22.3‰	1739 ± 24	cal. A.D. 241–359 (89.9%) cal. A.D. 364–381 (5.5%)	cal. A.D. 253–303 (48.1%) cal. A.D. 314–336 (20.1%)
7	SUERC-89943 (GU52915)	Cattle	–22.0‰	1851 ± 24	cal. A.D. 86–234 (95.4%)	cal. A.D. 128–214 (68.2%)

CHAPTER 19

OBJECTS ASSOCIATED WITH RELIGIOUS BELIEFS AND PRACTICES

By Philippa Walton

INTRODUCTION

23 objects which are explicitly associated with religious beliefs and practices were recovered from the river. They include figurines, plaques, miniature objects, a bell and amuletic pendants, as well as several unidentified objects which may have votive resonances. They are summarised in Table 19.1 alongside the very few objects of a religious nature recovered during the excavations; further stone altars and figurines are known from antiquarian explorations (Scott and Mason 2008, 14–16). It should be noted that this chapter creates something of an artificial distinction between divine and mundane objects, a distinction which did not exist in the ancient world. The objects discussed here should therefore be considered alongside other finds, such as finger-rings, which depict or reference deities but are not necessarily exclusively religious in nature (Ch. 4).

TABLE 19.1. A SUMMARY OF THE RELIGIOUS OBJECTS FROM THE RIVER AND THE EXCAVATIONS AT PIERCEBRIDGE (Cool 2008, 266–7)

Object type	Piercebridge river	Piercebridge excavations
Pipe-clay figurine	3	0
Copper-alloy figurine	6	0
Plaque	2	0
Miniature object	7	0
Bell	1	0
Pendant	1	1
Snake object?	3	0
Altar	0	2
Stone statue	0	2
Statue base	0	1
Total	**23**	**6**

FIGURINES

PIPE-CLAY FIGURINES

Three fragmentary pipe-clay figurines (BM-3E45C9; NCL-14F6E7; NCL-8C8C21) were recovered from the river, all dating to the mid-first or second century A.D. The function of pipe-clay figurines is much debated and although frequently identified as children's toys, their appearance and findspots actually suggest use in religious rituals (e.g. van Boekel 1987; Rouvier-Jeanlin 1972). In Britain, they appear to have been placed in burials or offered at temples and shrines (Fittock 2016, 4–5; 2015, 119). None were recovered from the excavations at Piercebridge and so their presence in the riverine assemblage is another indication that the depositional activity focused on the river had a religious element.[74]

Although the smallest fragment (NCL-14F6E7) appears to be part of a relatively common Dea Nutrix figurine (Fittock 2015, 116; fig. 4a), it is notable that the other two are of more unusual types. The first, depicting the head and naked torso of the god Mercury (NCL-8C8C21/FIG. 19.1A) is unique in a Romano-British context, with the only two parallels being from Rheinzabern (Beenhouwer 2005, 642, serie 518, cat. no. 4199) and the Musée de Rouen's collections (Rouvier-Jeanlin 1972, 211, no. 493). The other, depicting a horse (BM-3E45C9) is not as rare, although only 16 other examples are known from Roman Britain.[75] An association with either Mars, the god of war (van Boekel 1987, 698), or Epona, goddess of the stable and fertility (Jenkins 1967; Aldhouse-Green 1976, 171–5), is likely. Both could be considered appropriate deities given the large quantities of military and cavalry equipment present in the assemblage.

As is the case for many objects in the assemblage, the figurines appear to have been deliberately broken. This phenomenon has been observed for pipe-clay figurines elsewhere in Roman Britain and is argued to have occurred as part of rituals associated with their deposition (Fittock 2015, 125–9; 2016, 5). It also appears that the neck of the Mercury figurine was repeatedly jabbed with a sharp tool prior to firing. As the fabric suggests a Central Gaulish workshop, this treatment cannot be linked directly to any potential ritual activity at Piercebridge.

METAL FIGURINES

Four copper-alloy figurines, as well as two probable fragments of figurines, were recovered from the river. They include a ram (NCL-DACBB3/FIG. 19.2A) and a tortoise (BM-F24FCB/FIG. 19.2B), two Cupids in flying poses (NCL-2C40A4/FIG. 19.1B; FAPJW-D8ABE4/FIG. 19.1C), a possible vine leaf (BM-2CBF25) and a possible eagle (BM-B0E251). Like the pipe-clay figurines discussed above, they all possess clear religious resonances and it is likely that they played a primary role in domestic religious practice. The ram and the tortoise were associated with the god Mercury (Aldhouse-Green 1976, 224, 65; Pitts 1979, 57, pl. 12, 39), Cupids and vine leaves with Venus[76] or Bacchus, and the eagle with Jupiter (Durham and Fulford 2013).

The larger figurines are all of types which are well-paralleled throughout the province (cf. Durham 2012). The Cupid figurines in particular cluster at military sites in northern Britain, suggesting that they were popular with soldiers and perhaps that they were produced in the region. Curiously, a close parallel for the Cupid figurines at Kirkby Thore, Cumbria, was also recovered from a riverine context (Shotter 1978, 19–22; Smyth 1846).

However, while the types represented are common, the number of figurines found at Piercebridge is unusual. Figurines tend to be relatively rare finds in northern Britain with the majority of sites producing only single examples (Durham 2012, 4.3). When this is supplemented by chance discoveries from the site, the number known from Piercebridge becomes exceptional. These discoveries, the exact findspots of which remain unknown, include 'a small bronze statue'

[74] Aldhouse-Green (1978, 66, nos 4–5) refers to fragments of two pipe-clay figurines held in the Bowes Museum collections which were apparently found at Piercebridge. One depicts a Dea Nutrix and the other Venus. No accession numbers are given for these objects, they can no longer be located and are not discussed by Cool and Mason 2008a. It is possible that they represent chance finds from the parish but Fittock (pers. comm.) has noted their similarity with two finds from Greta Bridge, Co. Durham, published by Casey and Hoffmann (1998, 145, nos 1–3), suggesting that their association with Piercebridge may in fact be an error.

[75] These 16 examples account for only 1.69 per cent of all pipe-clay figurines recorded for the province (Fittock 2018, 538).

[76] Half of the gems with images of Venus come from military sites, where she is almost invariably depicted holding weapons in her guise as Venus Victrix, rather than as the goddess of love (Marshman 2015, 153).

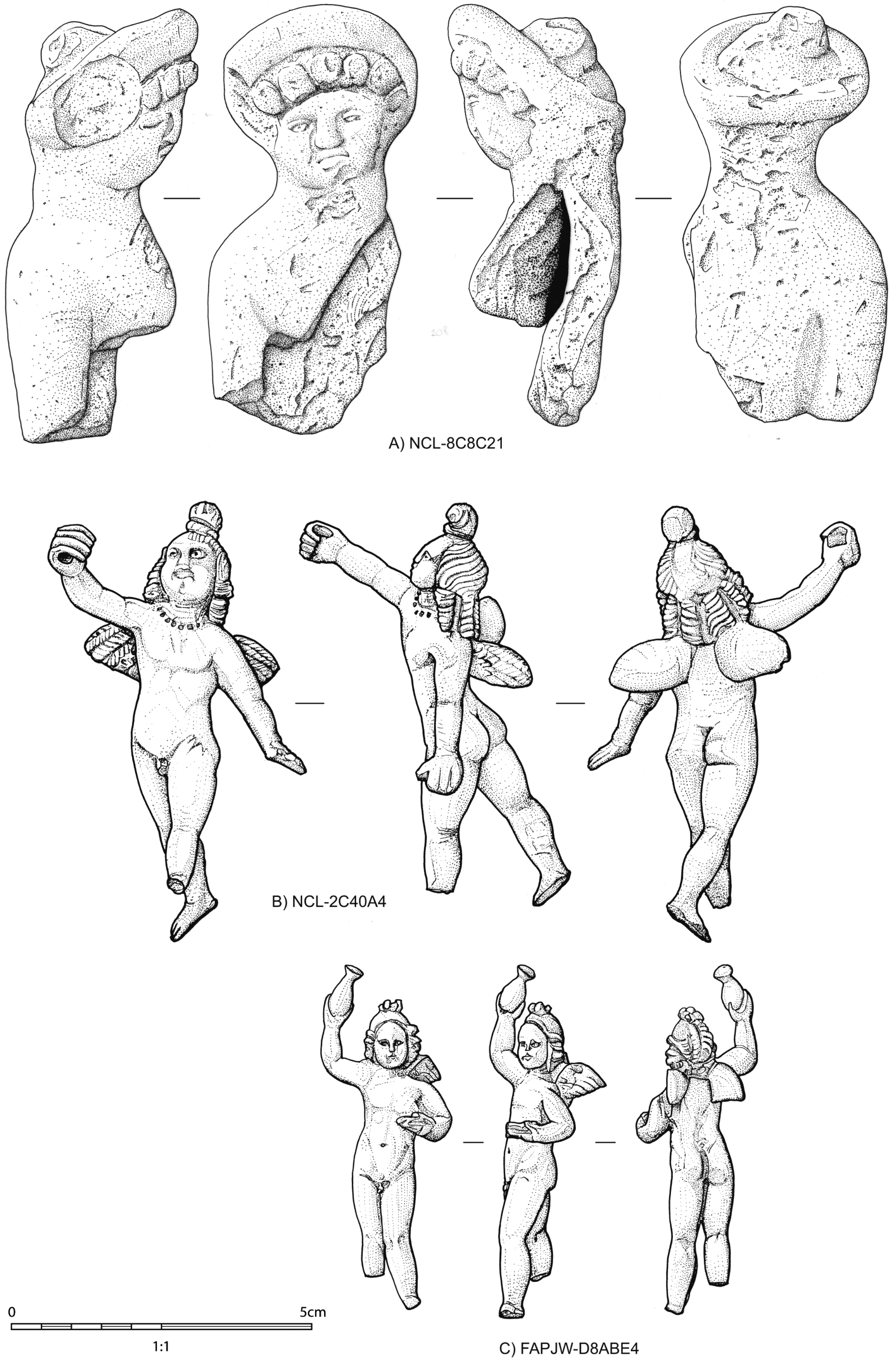


FIG. 19.1. Pipe-clay and copper-alloy figurines from the river

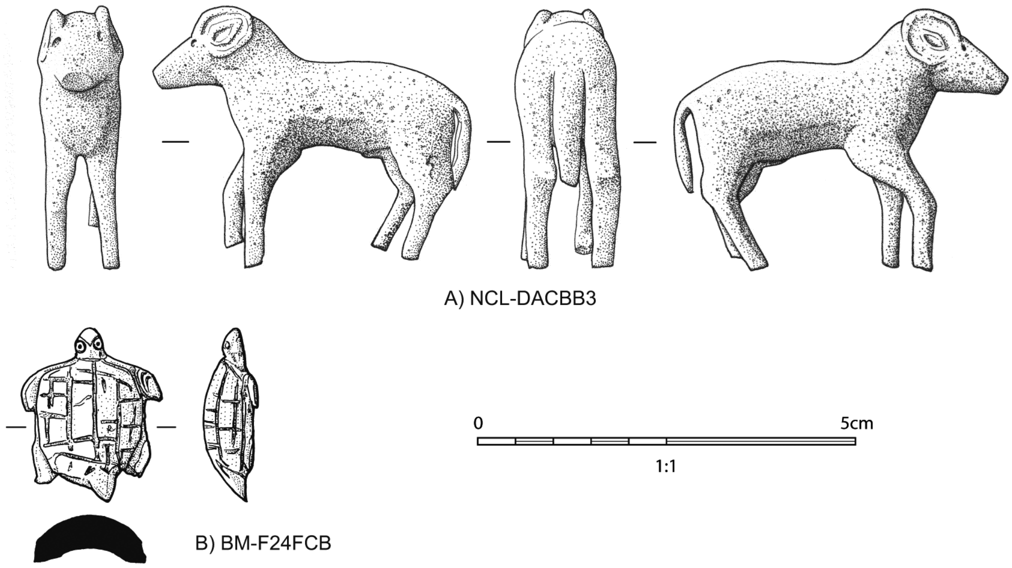


FIG. 19.2. Copper-alloy figurines associated with Mercury from the river

of Mercury (Scott and Mason 2008, 14, citing earlier references), a plough-group thought to be a depiction of the *pomerium* ritual (Aldhouse-Green 1978, 66; Manning 1971, 125–36; Scott and Mason 2008, 14; Toynbee 1962, 149, no. 54), a figurine of Jupiter or Hercules (Toynbee 1964, 74) and an unidentified head (Bowes Museum). In addition, a bound captive (Ferris 2001, 19–20) belongs to a group of enigmatic objects possibly once attached to decorative mounts and strongly associated with military sites along the Rhine and Danube (Jackson 2005, 147).

PLAQUES

Two very different plaques, one of lead alloy (BM-2CEE27) and the other of sheet copper alloy (BM-9978DC) were recovered from the river. The lead-alloy example (BM-2CEE27/FIG. 19.3C) depicts a male deity, possibly Mercury, cradling an object (a *caduceus*?) in his left arm and naked but for some drapery over his left shoulder. The figure has been deliberately damaged with its legs twisted prior to deposition, but may originally have stood within a frame representing a temple pediment. Alternatively, it may have formed the centre-piece of a portable *aedicula* or shrine, examples of which are known from Segedunum (Allason-Jones 2016, 171), Dorchester (Henig 1993b, fig. 72), Wroxeter (Lloyd-Morgan 2000b, 141–2, fig. 4.31; 137), Vindolanda (Vindolanda Museum Ref. 2033) and London (Howell *et al.* 2015, 147). Such lead-alloy plaques are rare in Roman Britain, with their distribution apparently focused on the Danubian *limes* and particularly the province of Pannonia. Multiple finds are known from Carnuntum (Humer and Kremer 2011, 369–79), Gorsium (Bánki 1972, 29 and 30) and Savaria (Tóth and Sosztarits 2016, 194–7), with nearly all examples depicting goddesses such as Venus, Fortuna and Abundantia. A single example depicting a naked Mercury is known from Carnuntum (Humer and Kremer 2011, 372, no. 677), but is cruder in design and execution than the example from Piercebridge.

The second plaque (BM-9978DC/FIG. 19.3A) was neatly folded when recovered from the river but was subsequently opened and flattened by the divers. It is decorated with a finely executed repoussé image of a young male bust facing right wearing a lion-skin head-dress. The identity of the individual depicted remains unknown although there are several possibilities. In the ancient world, the lion-skin was an attribute of Hercules and Alexander the Great, while both Commodus and Caracalla are shown in sculpture and on coinage wearing it in order to evoke an association

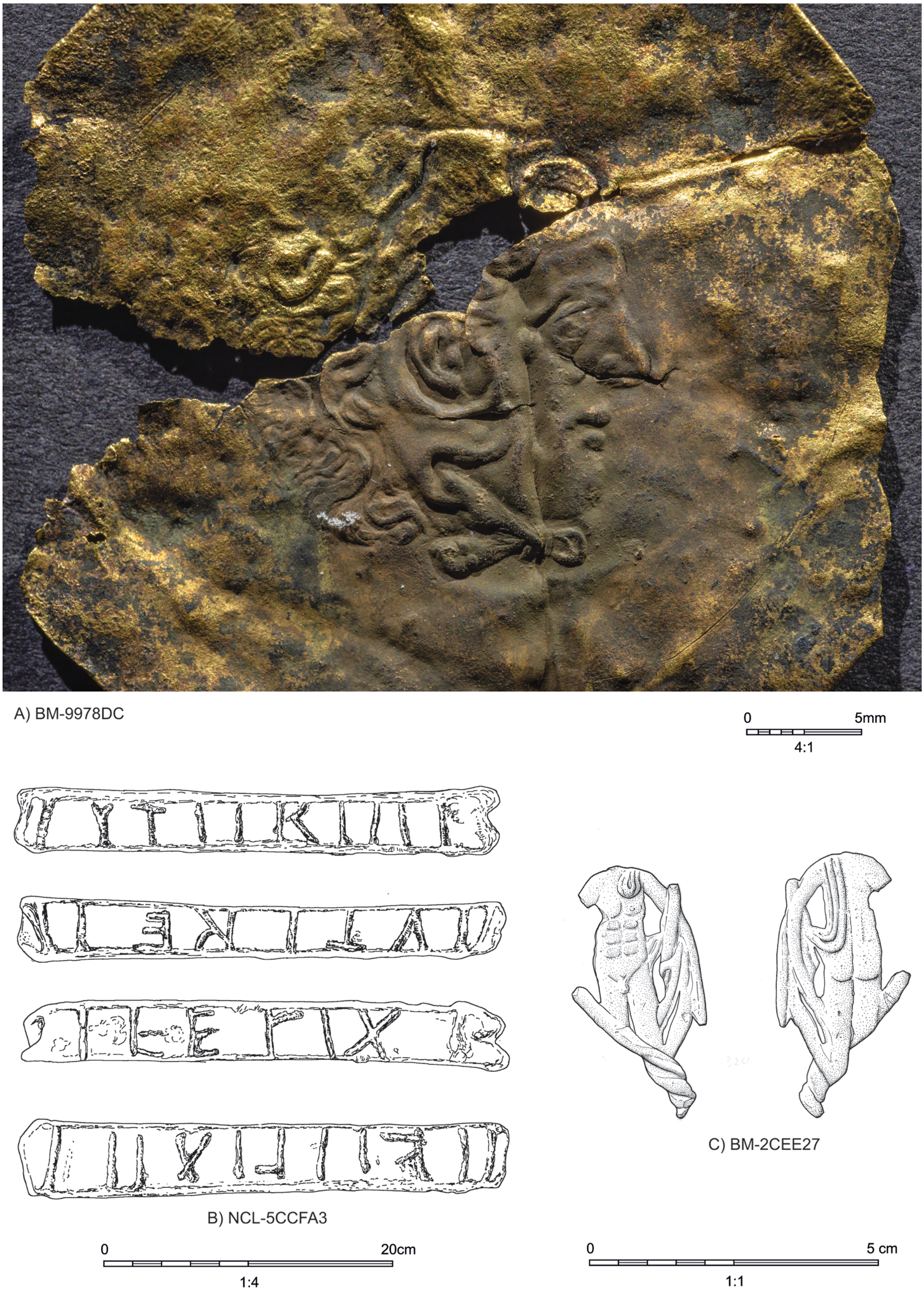


FIG. 19.3. Objects with ritual associations from the river

with the demi-god or the Hellenistic ruler.[77] No direct parallels are known for this sheet, although it is tempting to suggest that it fulfilled some form of votive or dedicatory function, particularly as it had been so purposefully folded. There are no obvious means of attachment (though all four corners are folded inwards); this differs from the copper-alloy sheet decorated in repoussé with Cupids surrounding a male bust (BM-3DC993) which appears to have acted as a box fitting and is discussed in Chapter 15.

MINIATURE OBJECTS

Seven miniature objects were recovered from the river Tees. They include a lead-alloy miniature platter (BM-D2AF52/FIG. 19.4B), two hafted axes (NCL-143544; BH-38D31B), a possible pierced axe-head (BH-38AFF9), a lead-alloy adze or hammer (BM-90A3C3) and two spearheads (BM-A0FDF8/FIG. 19.4A; BM-999956). An eighth object (BH-EC3B02/FIG. 19.4C) may represent a miniature lead-alloy vessel, similar to an example found at Springhead (Schuster 2011a, 244–5, pl. 12), although its resemblance to a medieval pilgrim's *ampulla* has also been noted.

Like the pipe-clay figurines discussed above, the exact function of miniature objects is debated (Kiernan 2009, 213; Robinson 1995). However, their religious resonances seem clear. Spears are known from several temple sites in Roman Britain, including Wood Eaton, Oxon., Lydney Park and Uley, Glos., and Great Walsingham, Norfolk (Kiernan 2009, 100–2). They may act as 'symbolic representations of full-sized objects, which distil many of the qualities and associations of their life-size counterparts' (Farley 2011, 101), the attributes of a particular deity, such as Mars, or alternatively have acted as accessories for figurines of deities. For example, a copper-alloy spear from the spring sanctuary at Ihn, Germany, has been identified as a fragment of a statuette (Kiernan 2009, 99–101; Maisant and Miron 1994, 60, cat. no. 49, pl. 66.8). Meanwhile the axe could be interpreted as a generic representation of divine power and symbolic of the act of sacrifice (Kiernan 2009, 212–13).

BELLS

A domed copper-alloy bell (BM-C82C45/FIG. 19.4E) was recovered from the river. It is of a type which was particularly long-lived with examples in pre-Flavian, as well as third- and fourth-century contexts (Eckardt and Williams 2018, 185). Although larger bells may well have been used on animals or functioned as door, market or warning bells, it is clear that many of the smaller examples possessed amuletic or apotropaic functions (Eckardt and Williams 2018, 201). The unusual treatment of this example, which includes a deep notch at the apex, the removal of the suspension lug and a keyhole-shaped cut-out near its base, reinforces such a hypothesis, hence its inclusion here.

UNCERTAIN OBJECTS WHICH MAY HAVE RELIGIOUS SIGNIFICANCE

A silver pendant (NCL-5CCFA3/FIG. 19.3B) dating to the Roman period was recovered from the river.[78] Each of its faces was decorated with raised moulded lettering which together read 'VTERE FELIX VTERE FELIX' 'Use this (and be) happy!'. Its function remains unknown although it is likely to have been suspended from the central, circular piercing which runs its length. The phrase 'VTERE FELIX' appears frequently on Roman objects including belt mounts and spoons and this cast possible pendant resembles bronze strap-ends with the same legend in

[77] It was previously suggested that the image may represent Commodus in the guise of Hercules (Pearce and Worrell 2016, 367–8, no. 4). However, detailed photography has now revealed that the male does not possess a beard, or at least not as luxurious a beard as Commodus had.

[78] Roger Tomlin commented on the identification of this object and its inscription.

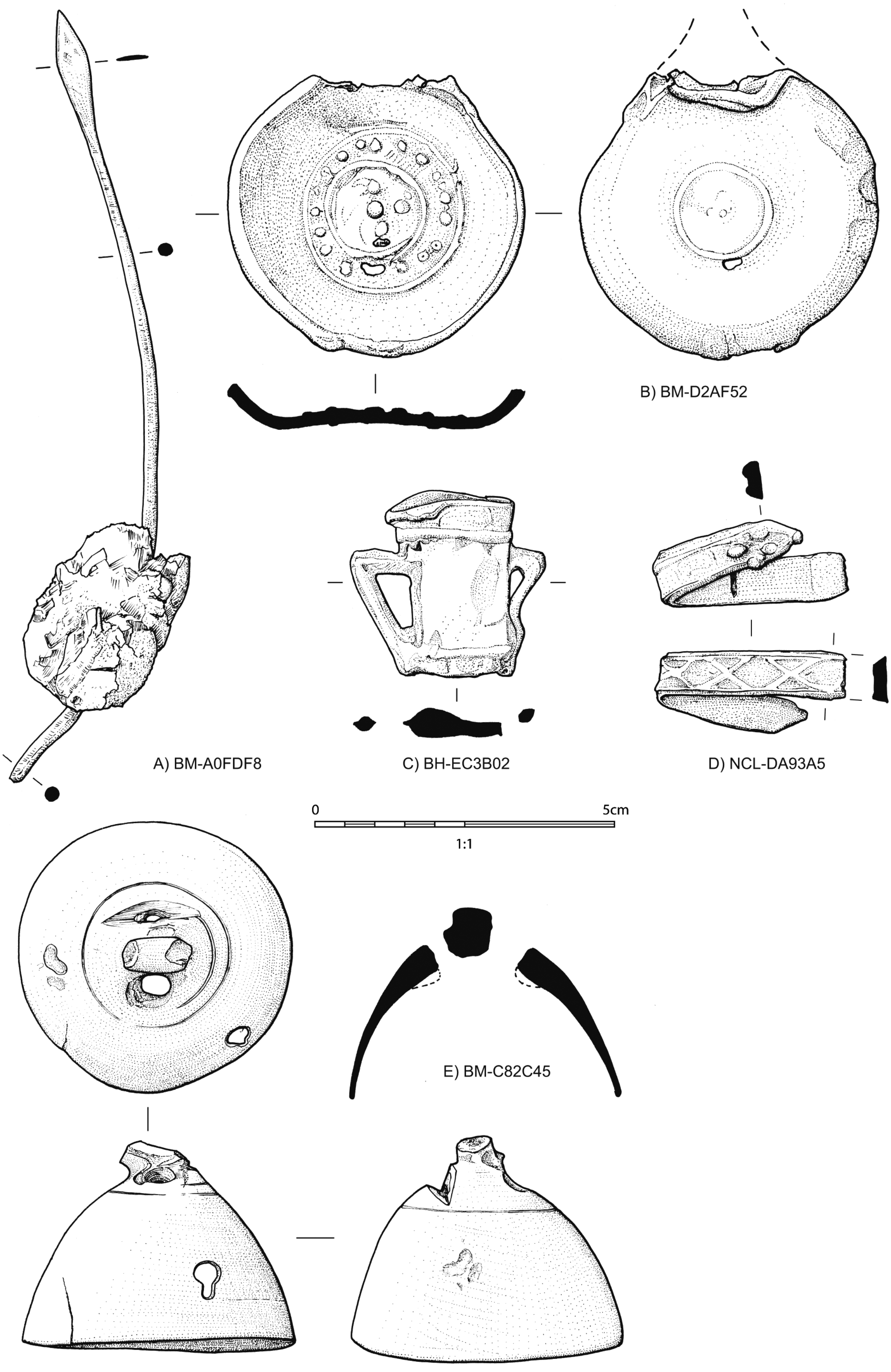


FIG. 19.4. Objects with ritual associations from the river

incised letters filled with enamel, found at South Shields and Chester (*RIB* II.3, 2429.13, 14 and 15).

Three lead-alloy or base-silver strips were recovered from the river (NCL-DA93A5/FIG. 19.4D; BM-BBBA45; NCL-3630F2). They remain undated and while not identical in form, they share elements of decoration, particularly on their terminals. It is possible that two of the strips (NCL-DA93A5 and NCL-3630F2) may be stylised representations of snakes and therefore perhaps votive miniature objects associated with the cult of Mercury, Minerva or Asclepius, deities with whom snakes were particularly associated (Cool 2000, 34; Aldhouse-Green 1976, 13; Toynbee 1964). The other strip (NCL-DA8117) may be a stylised animal paw, perhaps that of a lion, although this is far from certain.

CONCLUSION

The presence of this small assemblage of objects appears to reflect private or personal religious practice in the vicinity of the river Tees, something which is almost entirely absent in the material from the excavations at the site (Cool 2008, 266–7). Instead, chance discoveries of inscribed stonework from Piercebridge provide an insight into public religious ceremony. These finds are dominated by dedications to Jupiter Dolichenus, a deity not represented by the material from the river, although two finger-rings depict Jupiter, either enthroned (BM-B37817) or in the guise of an eagle (NCL-39EAF0). There is a slight emphasis on objects associated with the god Mercury, although the presence of objects associated with other gods such as Mars, Venus and Bacchus illustrates that there was not a single focus for veneration.

The choice of gods represented in the riverine assemblage may be significant. Mercury was the patron of travellers and merchants but also the guide to the Underworld (Henig 1995, 57–8). The location of Piercebridge at a crossing point on a major communication artery frequented by a wide range of travellers would therefore be a highly appropriate place to make offerings to Mercury. Interestingly, signet rings depicting Mercury appear to be associated with men (Marshman 2015, 101), while Mercury figurines (like all copper-alloy figurines) are concentrated on civilian sites in the south of the province (Durham 2012, 4.4.1). Mars as the god of war would have been popular with the military community based at, and passing through, Piercebridge. Marshman (2015, 151) notes that the god's image was especially favoured on signet rings worn by members of the military community. The silver finger-ring (BM-42989D) inscribed with a dedication to Mars is one of the few rings in the assemblage sized for a man (internal diameter 19.81 mm) rather than a woman or child (see Ch. 4). Furthermore, the dedication by a surveyor tentatively associated with the construction of the bridge refers to Mars Condates, hinting at a specific association between the god and the Tees (see Ch. 23). Venus may have been worshipped at Piercebridge in her specific role as Venus Victrix, particularly as she was popular in this guise on intaglios from military sites (Marshman 2015, 153).

Some of the objects with religious connotations discussed in this chapter may have been designed to be offered, but as we argue in Chapter 22, many other objects found in the Tees vary sufficiently from 'normal' depositional patterns to suggest ritual deposition.

CHAPTER 20

MISCELLANEOUS AND UNIDENTIFIED OBJECTS

By Philippa Walton

Rather than the discursive analysis of the previous sections, this chapter simply summarises the 39 objects in the assemblage which could not be identified with any certainty. Some, but not all, are likely Roman in date and may well be recognised in future. They are summarised here by material; full descriptions (including dimensions) and photos of each object can be found in the individual Portable Antiquities Scheme database records (https://finds.org.uk/).

SILVER OR BASE-SILVER OBJECTS

1. BM-905A66: a fragment of a base-silver or pewter object decorated with a raised grapevine motif, a triangle with dots within and two dots flanking the apex of the triangle. It is presumably some form of decorative fitting or inlay (FIG. 20.1A).

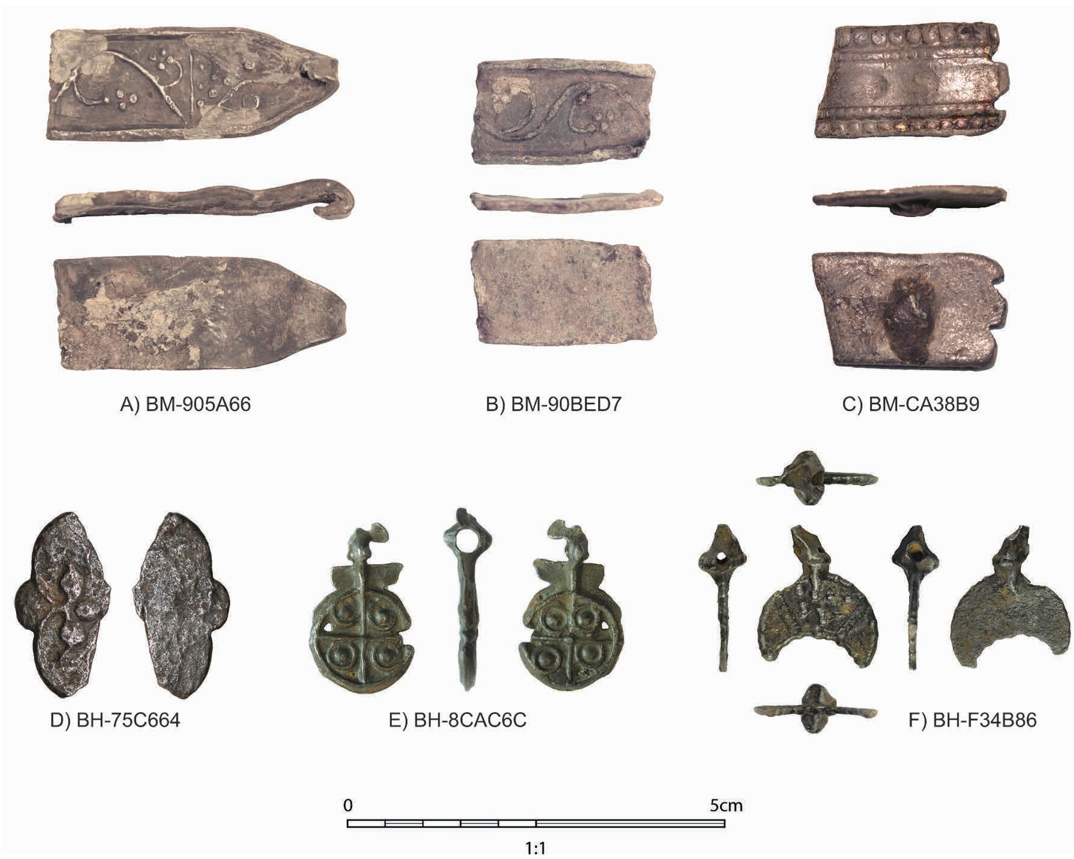


FIG. 20.1. Miscellaneous silver and base-silver objects

2. BM-90BED7: a fragment of a base-silver object of similar dimensions to BM-905A66 and with an identical grapevine motif, this object is clearly of the same type (FIG. 20.1B).
3. BM-CA38B9: a fragment of a silver fitting with marginal dot and rib decoration and an integral rivet on its underside (FIG. 20.1C).
4. BH-75C664: a fragment of a silver object with cast foliate motif on one terminal. Given its shape, it is possibly part of a Roman harness pendant, although no parallels could be found (FIG. 20.1D).
5. BH-8CAC6C: a very small crudely cast base-silver or pewter flat, circular pendant with raised decoration on its upper and lower surface. No parallels could be found and its date remains uncertain although an early medieval one is possible (FIG. 20.1E).
6. BH-F34B86: a crescentic base-silver pendant with raised decoration on its upper surface. It bears some resemblance to BH-8CAC6C, particularly in the execution of its lozengiform attachment loop, and this may suggest that it shares a similar function and date range. While it bears some resemblance to a Roman lunular harness pendant, its size would appear to preclude such an identification (FIG. 20.1F).

COPPER-ALLOY OBJECTS

7. BM-25AE29: an incomplete copper-alloy object, presumably some sort of mount. Its date is uncertain. Trilobate in plan and slightly convex in section, it is broken at one end. The small perforated lug on its underside may indicate that it is a box fitting or mount (FIG. 20.2A).
8. BH-9EB9B6: an incomplete copper-alloy strip of uncertain function with two circular perforations and incised decoration at one end (FIG. 20.2B).
9. BM-26C37D: an incomplete waisted copper-alloy object filled with lead, with a flat, circular end-plate. It may possibly be the foot from a small item of furniture (FIG. 20.2C).
10. BM-BE5616: a copper-alloy object with perforation, presumably some sort of mount. Two similar objects were recovered from excavations at Colchester (Crummy 1983, 163, no. 4610 and 164, fig. 201 and 164, no. 4616, fig. 201), although the latter example possessed a rivet hole in both the head and the body (FIG. 20.2D).
11. BM-B03B92: a fragment of a copper-alloy object with a rivet hole and a single looped terminal. It bears some resemblance to an amphora-shaped strap end (FIG. 20.2E).
12. BM-1E33C1: a copper-alloy mount, pierced with three rivets and on its underside three flat, square end-plates. It is probably Roman in date, although no parallels could be found (FIG. 20.2F).
13. BM-C07ECD: a copper-alloy object of uncertain date. Although the object bears a superficial resemblance to the escutcheons from hanging bowls dating to the sixth or seventh century A.D. (cf. Bruce-Mitford and Raven 2005) the lug extends outwards rather than inwards. All examples of hanging bowl escutcheons appear to extend inwards. It is possible the corrosion products on the lug obscure the remains of two semi-circular hinge lugs, perhaps indicating that this is some sort of vessel lid (FIG. 20.2G).
14. BH-1153D0: a copper-alloy object, possibly the handle for a knife, razor or medical instrument. A similar copper-alloy loop with offset extension was found in a Roman context during the excavations at Elginhaugh where it was identified as a knife handle or part of a medical instrument (Allason-Jones 2007, 427, fig. 10.37 and 428, no. 148) (FIG. 20.2H).
15. BM-00D43F: a copper-alloy object resembling a very small vessel handle or escutcheon of uncertain date (FIG. 20.2I).
16. BM-D17CEF: a fragment of a copper-alloy object in the form of a duck or goose, dating to the first to third century A.D. There are several examples of these objects recorded on the PAS database; many have been recorded as possible cart rein-guides (BH-EC55C8; HAMP-48C465; IOW-B8B014; LEIC-FAFDD1; LIN-565C52; NLM-596735; SF-757CE6; SUSS-37ADE6; SWYOR-62F4B1; WMID4346); however others are recorded as vessel handles (e.g. HAMP-2939, LIN-565C52; LIN-567032). Similar examples were found in

FIG. 20.2. Miscellaneous copper-alloy objects from the river

Colchester (Crummy 1983, 71–2 refs: 2035, 3036, 2037). See also an example of a rein-guide from Cirencester with a similar swan (Webster 1958, 74 no. 37, fig. 3). Compare also an object described as having birds' heads found with a collection of horse harness within the stairwell of a Roman villa at Wange, Belgium (Lodewijckx *et al.* 1993, 82 no. 4.24 and 84, fig. 10) (FIG. 20.3A).

17. BM-F5DDBB: a fragment of a copper-alloy object of uncertain date and function (FIG. 20.3B).
18. BM-11B3ED: a fragment of an unidentified copper-alloy object, with elaborate ribbed and enamelled decoration. Although the enamel is degraded and in places missing, it is clear that originally red and blue enamel appeared side by side in the same cell, alternating in panels of six cells. The underside of the object is hollow and is filled in places with lead solder, suggesting that it was originally attached to something else (FIG. 20.3C).
19. BM-00E270: a fragment of a copper-alloy object, similar in plan to the unidentified silver object BH-75C664. It is possible that it is part of a fragmentary harness pendant (FIG. 20.3D).
20. BM-A9D178: a fragment of a decorated copper-alloy sheet, probably dating to the Roman period which has been deliberately cut. The mount comprises a sheet of copper alloy which is approximately rectangular in plan. The sheet has been stamped and incised with bands of decoration. The sheet possesses a stamped raised border. This encloses a rectangular depression and then an inner stamped raised rib, which has been separated into individual squares with pairs of incised grooves. The inner edge of the sheet appears to have been deliberately cut, apparently following a semi-circular pattern of incised dots, which is just visible. Find 3.656 from South Shields (Allason-Jones and Miket 1984, 197–200) has similar dimensions and decoration. The catalogue entry notes the range of identifications given for similar objects including a cover for a small box, a casket mount or a decorative harness plate while also noting that it bore a strong resemblance to the girth covers from the hoard in the Rijkmuseum Van Oudheden Leiden (Allason-Jones and Miket 1984, 200; Webster 1969, 152, pl. XVIII). The object's decoration is similar to a three-piece chamfron dating to the early third century A.D. from Straubing (Born and Junkelmann 1997, 120) but also to the sheet bronze casing of a cosmetic stone palette from Andernach (Riha 1986, 44–5) and the lids of cosmetic boxes from Pannonia (Tóth 2006) (FIG. 20.3E).
21. NCL-2E1547: an incomplete openwork mount of uncertain date with two attachment lugs on its underside. This object may be Roman in date and harness- or belt-related although no parallels could be found (FIG. 20.3F).
22. BM-A08174: a fragment of a copper-alloy object which superficially resembles the stem of a spoon. However, it seems very long and the flattened, pierced terminal does not have the appropriate form for a spoon bowl. It is possible that it is a miniature spear, similar to BM-A0FDF8 in the assemblage, although this example does not have a pierced blade (FIG. 20.3G).
23. BM-F74602: an incomplete copper-alloy object dated on stylistic grounds to the later second or third centuries A.D. The mount probably originally comprised a flat oval plate, of which just over half remains. It is decorated with three openwork spiral motifs. A flat, rectangular strip extends from one end of the plate. Part of this strip is bent back on itself and the underside is stained suggesting it had originally been glued to something else. It is possible that the object is an element of horse harness, although no parallels could be found for something of this size (FIG. 20.3H).
24. BM-29E5B6: a copper-alloy tube of uncertain function, probably relatively modern in date (FIG. 20.4A).
25. BM-AF2684: a crushed copper-alloy object, possibly a bell dating to the Roman period. Compare with an example found in association with an amber head and two pierced coins in a burial context in Colchester. There it was interpreted as amuletic in nature (Crummy 1983, 51, no. 1811 and fig. 54). Alternatively, it may represent part of a post-medieval button (FIG. 20.4B).

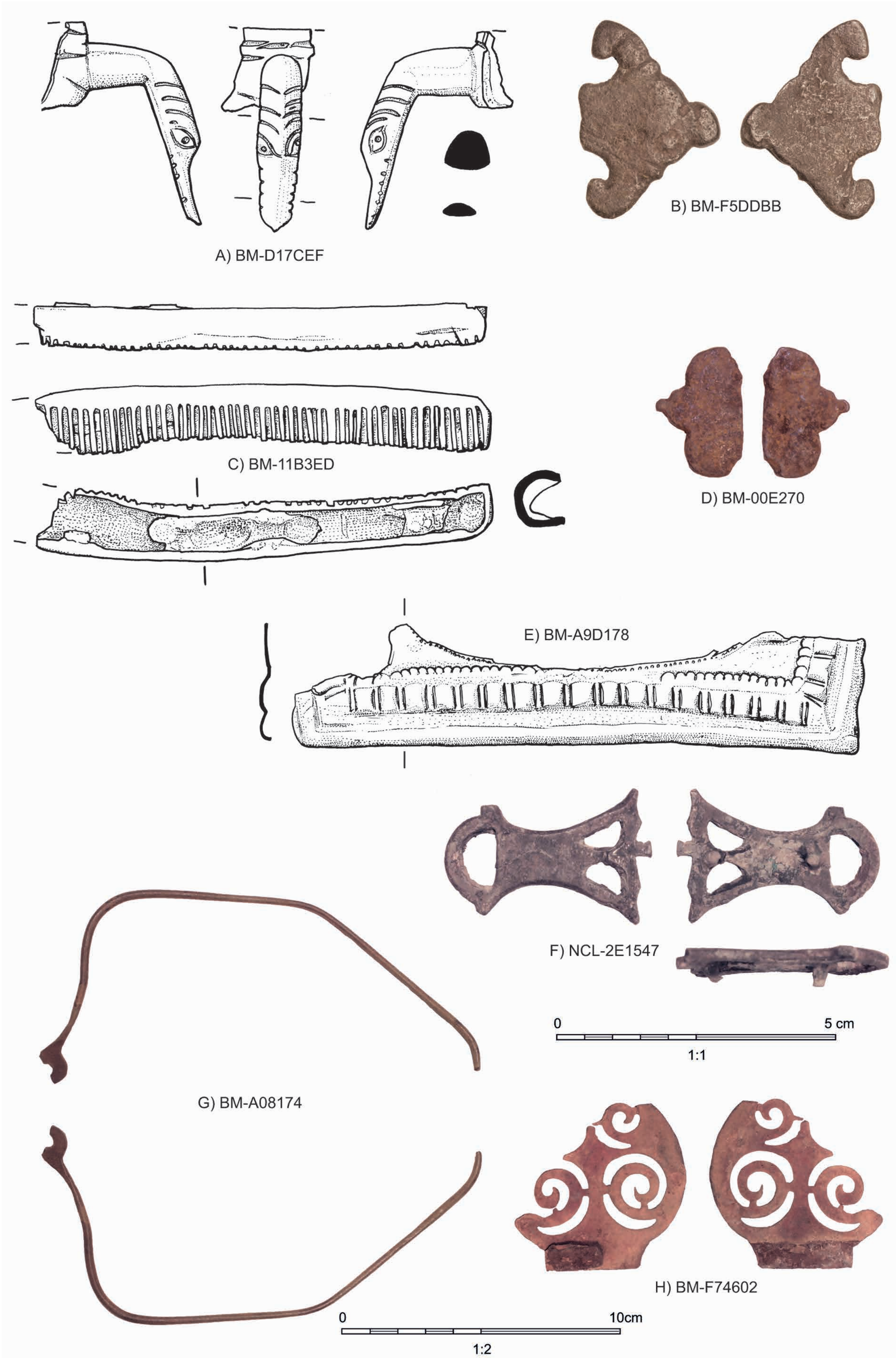


FIG. 20.3. Miscellaneous copper-alloy objects from the river

FIG. 20.4. Miscellaneous copper-alloy objects from the river

26. NCL-3597E1: a copper-alloy tube filled with iron corrosion products, possibly a ferrule of uncertain date (FIG. 20.4C).
27. BM-A7FC76: a copper-alloy object of uncertain date or function. The worn lug suggests the object was hinged or intended for suspension (FIG. 20.4D).
28. BM-AEDA35: a flat, circular object with hinged pin, resembling a brooch (FIG. 20.4E).
29. BM-359EE2: a copper-alloy object with a rectangular-section attachment loop and a two-pronged extension, possibly a ferrule (FIG. 20.4F).
30. NCL-B6E1D1: a fragment of a copper-alloy object of unknown date and function which resembles a tuning peg (FIG. 20.4G).
31. BM-1E5D1D: a copper-alloy openwork object which resembles the bit cheek-pieces illustrated by Bishop and Coulston 2006, 191, fig. 124. However, it is far too small and its attachment loops too flimsy to have effectively fulfilled this function (FIG. 20.4H).

IRON OBJECTS

32. BM-98377E: a fragment of iron sheet with a copper-alloy fitting set within it. It may be part of a vessel although no parallels could be found (FIG. 20.5A).
33. BM-E3C837: an incomplete iron object with an integral suspension loop of uncertain date and function (FIG. 20.5B).

ANIMAL SKELETAL MATERIAL

34. BM-91120C: a ring of worked antler, possibly an offcut. Similar antler rings were recovered during the excavations at Binchester where it was suggested that they may have been used as sliders for clothing and purses (Bevan 2010, 381, figs 106 and 383) (FIG. 20.5C).
35. BH-7F3115: an undecorated worked bone strip of uncertain function, possibly an offcut (FIG. 20.5E).
36. BM-05321C: a perforated bone peg of uncertain date and function (FIG. 20.5F).

LEAD OBJECTS

37. BM-EB782A: a lead object in the form of a flower with a central perforation (FIG. 20.5D).
38. BH-0ED5AE: more than 200 fragments of lead waste weighing 3.5 kg in total were also recovered from the river. These fragments were not catalogued individually, although a group record has been created on the Portable Antiquities Scheme database and group photographs of the material were taken (FIGS 20.6 and 20.7).

LEATHER OBJECTS

39. BH-67BB47: a large rectangular fragment of leather, possibly a panel from a Roman military tent similar to examples found at Vindolanda (van Driel Murray 1993, 1–75).

FIG. 20.5. Miscellaneous iron, lead and worked bone objects from the river

FIG. 20.6. Fragments of lead from the river (*Photo: Diane Pearl Mcnutt*)

FIG. 20.7. Fragments of lead from the river (*Photo: Diane Pearl Mcnutt*)

CHAPTER 21

POST-ROMAN OBJECTS FROM THE RIVER

By Philippa Walton with Berni Sudds and Owen Humphreys

INTRODUCTION

65 post-Roman objects and four fragments of post-medieval glass were recovered from the river of which 46 were small items of personal adornment. The post-Roman assemblage contrasts markedly with the earlier material, both in terms of assemblage size and the range of object types represented. Table 21.1 summarises these objects.

TABLE 21.1. A SUMMARY OF THE POST-ROMAN OBJECTS FROM THE RIVER BY FUNCTIONAL CATEGORY AND DATE

Functional category	Date	No. of examples
Personal adornment	Early medieval	7
Tools	Early medieval	1
Pottery	Early medieval	1
Coinage	Medieval	1
Equine equipment	Medieval	1
Household	Medieval	1
Personal adornment	Medieval	19
Personal adornment	Post-medieval	21
Household	Post-medieval	15
Structural	Post-medieval	2
Total		**69**

EARLY MEDIEVAL ARTEFACTS

The nine objects dating to the early medieval period comprise three brooch fragments, one sleeve clasp, two pins, a finger-ring, a knife and a single sherd of pottery; they range in date from the late fifth century A.D. through to the eleventh century. Along with the material from the excavations, they suggest some continuity of occupation into the second half of the fifth century A.D. and limited activity at Piercebridge throughout the early medieval period (Cool and Mason 2008b, 310–11).

The earliest object recovered is an incomplete Small-Long brooch (BM-B8C33E/FIG. 21.1A) dating to the later fifth or early sixth century A.D. (MacGregor and Bolick 1993, 124–7). Two fragments, possibly from the same florid Cruciform brooch (BM-4862D6/FIG. 21.1G; BM-484402/FIG. 21.1C) and an incomplete sleeve clasp (BM-4C0345/FIG. 21.1B) also date to the sixth century A.D.[79] The florid Cruciform is not a common brooch type but recorded examples, including a close parallel from Driffield (Martin 2015, pl. 29.1), appear to indicate a distribution pattern focusing on north-eastern England. Sleeve clasps, meanwhile, are found in East Anglia, the East Midlands and north and east Yorkshire (Hines 1993) and so this example is just within its usual distribution pattern.

A single sherd from the shoulder of a jar of Myres' *Buckelurnen* group was also recovered. Although attributed predominantly to the second half of the fifth century A.D. (Myres 1969, 46), it is clear that such precise dating cannot be substantiated (Hamerow 1993; Arnold 1997), with a broader late fifth- or sixth-century date now preferred (Vince 2008, 4; Sudds 2007, 258; Hamerow 1993, 45). Contemporary pottery can be found in the immediate vicinity of Piercebridge (Cooper with Vince 2008), broader Tees valley (Myres 1976, 72–3; Sherlock 1992) and in greater frequency to the south into Yorkshire (Evans 1996; Vince 2008).

As there is increasing evidence for the spread of 'Anglian' material culture along the Tees and its tributaries, it may be that these objects represent accidental losses, associated with settlement activity in the area of the fort (Cool and Mason 2008b, 310–11). Alternatively, Small-Long brooches, florid Cruciform brooches and sleeve clasps have all been found together in furnished burials, for example at Sewerby, E Yorks. (Martin 2015, 109; G49) and it is therefore possible that they represent the contents of a single grave or graves washed into the river as the result of riverine erosion. Indeed, they may be associated with the undated burials 'found by the river bank in 1771 and 1933' (Scott and Mason 2008, 14). However, we cannot exclude the possibility that the Tees continued to be a focus for depositional activity into the early medieval period. Ritual offerings, including pottery vessels, have been identified in pre-Christian funerary and settlement contexts in Britain (Crawford 2004; Hamerow 2006), and rivers, and particularly crossing points such as bridges, also formed a focus for such activity in Scandinavia (Lund 2010). The majority of these deposits take the form of weaponry, tools or jewellery but other types of offering may also have been made.

While it is argued that the focus of settlement in the area shifted to nearby Gainford from the seventh century A.D. onwards (Cool and Mason 2008b, 311), four finds dating from the eighth to the eleventh century were also recovered. They comprise two pins (NCL-3DE827; BM-F66EA5), a finger-ring (BM-7E5702) and a knife (BH-D0A2A2). One of the pins (NCL-3DE827/FIG. 21.1D) is of a common type dating to the eighth or ninth century A.D. whereas the other (BM-F66EA5/FIG. 21.1E) is paralleled by an example from the Piercebridge excavations where it is dated to the tenth or eleventh century A.D. (Allason-Jones 2008, no. 179, fig. 140).

The fragment of a silver cable-twist finger-ring is also dated to the tenth or eleventh century A.D. (BM-7E5702/FIG. 21.1F). The form is a miniature version of Viking-period gold and silver neck- and arm-rings and is a rare find in Britain (Graham-Campbell 1980, nos 217 and 221). It is the third Viking/Anglo-Scandinavian object to be found at Piercebridge (Cool 2008, 245) and provides some evidence for Viking activity in the area.

Finally, an incomplete iron pattern-welded knife (BH-D0A2A2) was also recovered. Although its date is not certain, its angled back is commonly seen in knives dating from the eighth to tenth centuries A.D. (Ottaway 1995, Pt. 2, 1), the same period in which pattern-welding begins to be used in knife-making (Ottaway 1995, Pt. 1, 3, Pt. 2, 4). Whilst this knife is marginally longer than is typical for this type, it is well under the 250 mm barrier typically used to distinguish between everyday knives and larger single-edged weapons (*scramasax*/*seax*).[80]

[79] The divers' diaries for 13.4.02 note that they found BM-4862D6 'above the bridge site' whereas BM-4C0345, recorded in the diaries as being found on 11.8.01, was found either immediately downstream of the timbers on the riverbed or slightly to the north of them.

[80] This knife was in a display case in the George Hotel at Piercebridge along with other material found in the river Tees and elsewhere. The divers are not certain that it was recovered from the bed of the river Tees at Piercebridge and there is a possibility that it was recovered from a riverine site elsewhere.

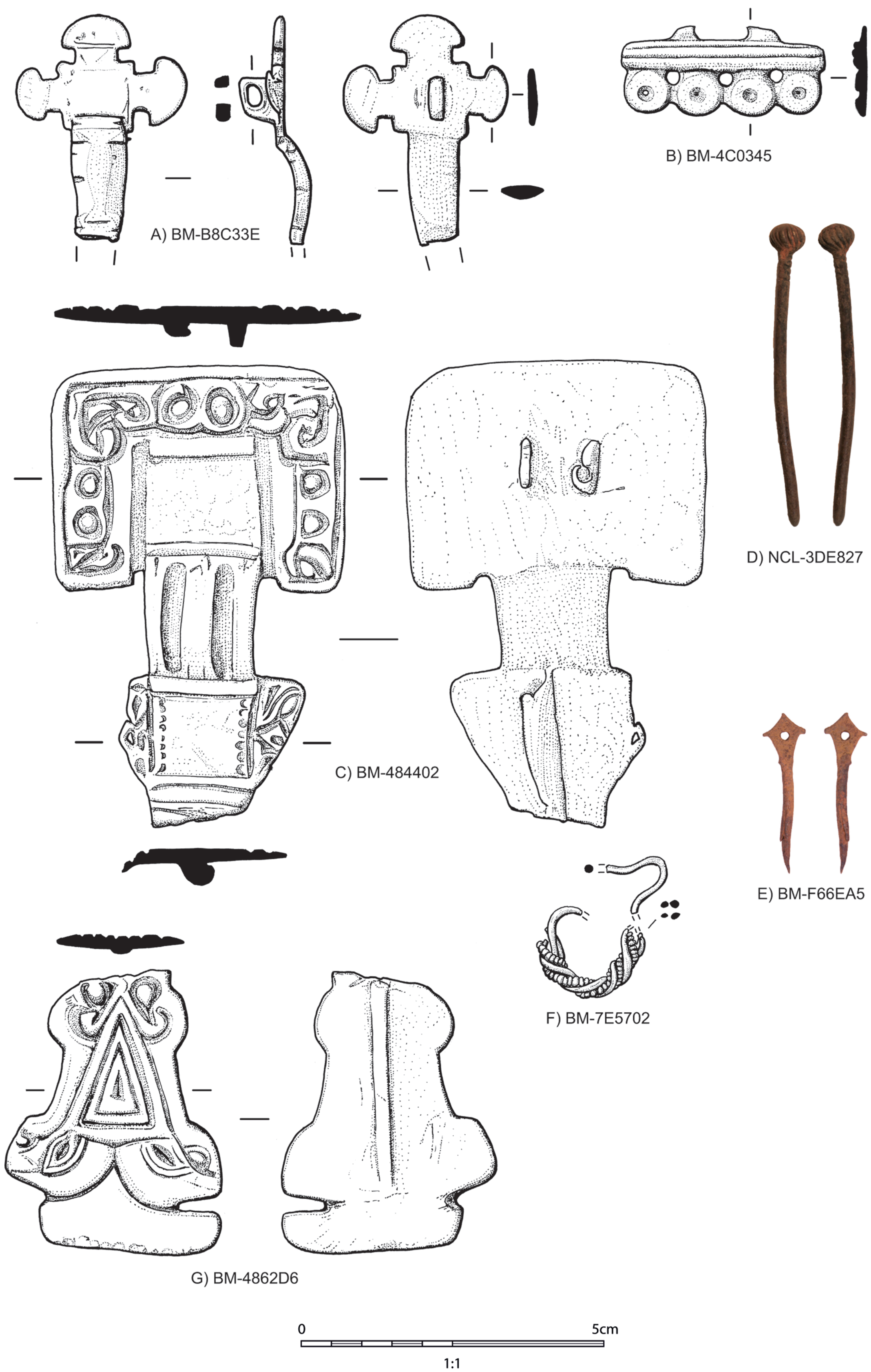


FIG. 21.1. Early medieval objects from the river

MEDIEVAL ARTEFACTS

22 objects dating to the medieval period were recovered from the river. With the exception of a single halfpenny of Edward III (1327–1377) (BM-F9E428), a rowel spur fitting (BM-D34CF4) and a bolt from a barrel padlock (BM-E22852/FIG. 21.2E), all the objects are small items of personal adornment dating to the thirteenth or fourteenth century. They include three annular brooches (NCL-2EE044; BM-9F38B9; BH-F48A02), a possible annular brooch pin (BM-B2A96B), ten dress pins (BH-0F121C; BH-0F03E6; BH-12E40C; NCL-D90372),[81] three buckle frames (BH-11B110; BM-4C2F48; NCL-113F06) and two buckle plates (BH-0F8D91; BM-35EC34/FIG. 21.2A). Similar brooches, pins and buckles are common finds in medieval assemblages, for example from London (Egan and Pritchard 1991).

The presence of these objects in the river clearly points to medieval activity close by. Although the archaeological evidence for medieval settlement activity in Piercebridge is limited, documentary evidence refers to the presence of a bridge in 1243,[82] while the remains of a thirteenth-century chapel, which is likely to have acted as a focus for travellers crossing the river, are known from the northern bank of the Tees adjacent to the bridge (Scott 1982, 81).[83] However, the absence of medieval pottery is puzzling.

POST-MEDIEVAL AND MODERN ARTEFACTS

There are 38 post-medieval and modern artefacts with a date range spanning the period from the sixteenth to the twentieth century.[84] The assemblage comprises coins, items of personal adornment and household artefacts, as well some structural fixtures and fittings and four fragments of vessel glass.

Nearly two-thirds (21) of the objects are items of personal adornment. With the exception of two sixteenth-century finds, a silver hat hook (BH-0F6D23/FIG. 21.2D) and an openwork dress-hook (BH-0F5D2E), the majority appear to be low-value pieces associated with eighteenth-, nineteenth- or twentieth-century dress. There is a slight emphasis on shoe-related items, with eight buckle frames (BH-0FEA0D; BH-0F329A; BH-EC004D; BH-EBFD8C; BH-EBFA9A; BH-EBF659; BM-D38731; BM-D368F7/FIG. 21.2C), four iron shoe reinforcements (BH-39E732; BH-39D01E; BH-38DA7E; BH-38C04A) and a single clog clasp (BH-0FFA37) recovered. Other objects include four buttons (BH-0F7816; BH-0F329A; BH-0EE7D2; BH-0ECD3B), a decorative stud (BM-497B21) and a sword-belt fitting (BM-EC25EC).

The household assemblage is dominated by items associated with the collection and storage of water and includes four iron bucket escutcheons (BH-ED6F4A; BH-ED7478/FIG. 21.2F, BH-ED7E0D; BH-ED8336)[85] and an iron bath handle (BH-5F0F05). A single pin (BH-0F201C) may be of 'vine-eye' type and if so, was used to attach the wires or strings to train plants to walls. However, there are also a further seven items which could easily have been lost while picnicking beside the Tees. They include two box fittings (BH-EDB712; BM-3EB244), an iron fork (BM-3EF278), a fragmentary pair of nut-crackers (BM-E0D902) and a glass marble from a Cod-neck bottle (BM-3F3C86), as well as four fragments of eighteenth- and nineteenth-century vessel glass (BH-5071E8 for two fragments; BH-551588; BH-2E1599).

The majority of iron structural fixtures and fittings from the river remain undated, but at least some are likely to be post-medieval or modern in date. They include chain links (e.g. BH-0DED9E), washers (e.g. BH-F1B9FD) and nails (see also Ch. 14) which are probably associated with buildings or jetties constructed on the river bank. More identifiable are two fragments of

[81] This record contains data for six individual pins.

[82] An assizes roll of 1243 mentions the existence of a bridge at Piercebridge, while Leland described it, in 1540, as formerly having five arches, 'but late made new of three arches' (Leland 1542 cited in Scott and Mason 2008, 16).

[83] Although first recorded in 1546, a watching-brief at the site concluded that the structure probably dates to the medieval period (Durham County Council Archaeology Section 2020, Ref: D34794).

[84] 108 objects from the assemblage remain undated and are likely to include some post-medieval and modern objects.

[85] Despite a probable post-medieval date, it is worth noting that a similar but fragmentary escutcheon was recovered during the excavations of the Romano-British temple complex at Harlow (Gobel 1985, fig. 48, 22).

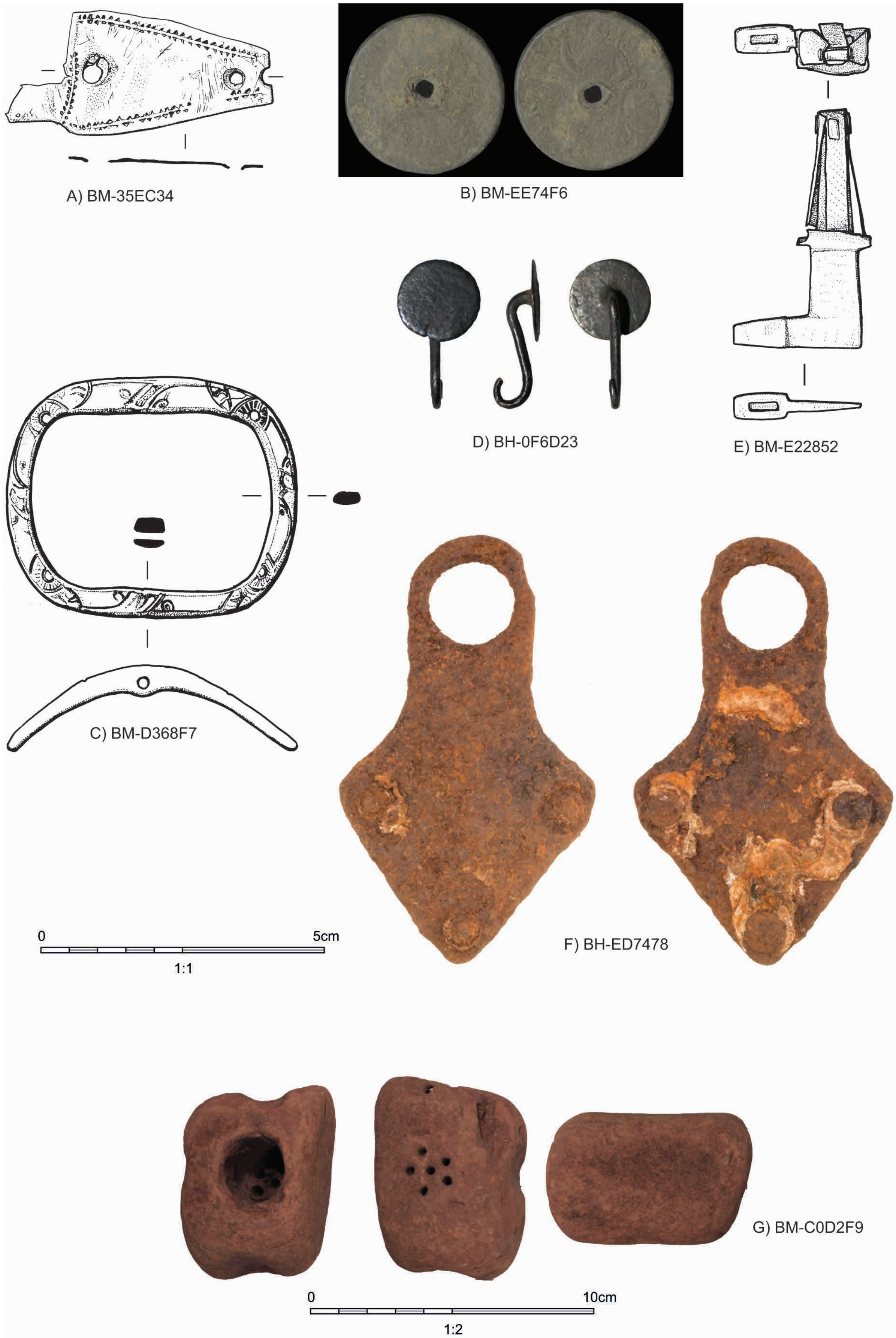


FIG. 21.2. Medieval and post-medieval artefacts from the river

perforated tile (BM-C0D2F9; BM-C0D2F9/FIG. 21.2G) of a type used to floor malting kilns. Although very abraded, they appear to be handmade rather than mould-produced, suggesting a seventeenth- or eighteenth-century date (Crew 2004, 4–12). As many villages had a malt house in the eighteenth century to supply local publicans, estates and home brewers, these fragments suggest that there was one located in the vicinity of the river.

Despite the large quantities of lead recovered, only one lead bullet was found (BM-3F2921). Although it can only be assigned a broadly post-medieval date, its weight suggests it was intended for use with a pistol or carbine (Courtney 1988; Foard 2008). There is nothing to suggest that it is associated with the Civil War skirmish fought near the bridge at Piercebridge on 1 December 1642 (Daniels and Philo 2018, 14–16).

Two worn and pierced halfpennies of William III (1689–1702) (BM-D396BB; BM-EE74F6/FIG 21.2B) are unusual and may represent the defacement of possible counterfeit coinage. Although the piercing of coins in order to convert them into amuletic charms or touch pieces is a practice known throughout history (Houlbrook 2018, 95), the positioning and crude execution of these examples would tend to suggest this was not the intention here. However, the bending and breaking of coins to create 'love tokens' was particularly common in the reign of William III (Manville 2014, 20 and 276; Millmore 2015, 45) and so it may be that the piercings represent a variation or negation of this practice.[86]

CONCLUSION

A number of different processes may have led to the deposition of these post-Roman finds in the Tees. The early medieval objects may be derived from graves eroded by the river, while the items of personal adornment from the later medieval and post-medieval period may represent casual losses. Two pierced coins of William III may represent deliberate offerings, but the fragments of malting floors are more likely rubbish.

Unfortunately, effective interpretation of the material is extremely difficult as the exact locations from which the post-Roman objects were recovered can no longer be reconstructed. It is unclear whether they were found together with the bulk of the Roman objects or in subtly different locations, as is perhaps suggested by the apparent findspots of two early medieval objects (see above, n. 79). During the early medieval period it is possible that the stone bridge was still standing, but that is located downstream from the main concentration of finds (see Ch. 3). There was a crossing at the site of the current bridge from at least the thirteenth century and there may well have been one there earlier, but it is uncertain how far any such finds lost or deposited there may have travelled downstream. There is no indication of medieval timbers in the vicinity of the Dere Street bridge next to which most of the Roman material was found. If the medieval and modern finds also come from this area, they must have been washed downstream, which has implications for how we interpret the Roman finds (i.e. they could also have been washed down from the fort/settlement itself rather than thrown from the Dere Street bridge).

[86] The Portable Antiquities Scheme database has records for 1,594 'pierced' post-medieval coins, although only a small minority possess similar central piercings. Two coins of George III from the parish of Kirby Misperton, N Yorks., provide a good parallel for the examples from Piercebridge (YORYM-F8215A and YORYM-F80AE8).

PART III

ANALYSING RIVERINE ASSEMBLAGES

CHAPTER 22

COMPARING THE RIVERINE ASSEMBLAGE WITH OTHER SITES

By Hella Eckardt, Kris Lockyear and Philippa Walton

INTRODUCTION

This chapter compares the assemblage from the Tees at Piercebridge with other assemblages from the immediate region in order to explore why and how the material was deposited. Do the river finds correspond in date with the peak of deposition established by the excavations undertaken at the site? Is it comparable with excavated settlement assemblages generally and if so, might this indicate that the river finds are also predominantly rubbish? Conversely, if there are major differences, for example in the relative representation of materials or object types, can we argue for the deliberate selection of such objects for deposition?

Here, we will address these questions in two ways: first, we will discuss the finds assemblages recovered from two further Romano-British riverine sites (Corbridge and Catterick Bridge) in the North-East which have been explored by Bob Middlemass and Rolfe Mitchinson. This will enable us to compare the number, typological range and relative proportions of objects retrieved by diving. Secondly, we will compare the Tees assemblage to material excavated at Piercebridge using Correspondence Analysis, while also considering excavated assemblages from two nearby Roman military sites (Binchester and Catterick) and finds reported to the Portable Antiquities Scheme in the region (County Durham, North Yorkshire, Tyne and Wear, unitary authorities of Redcar and Cleveland and Middlesborough).

This analysis will allow us to address questions such as the likely effect of taphonomy on the assemblage. Does it appear that there is a bias towards heavy objects (because they sink more quickly rather than float) or towards fragile objects such as earrings which are more likely to survive having sunk into anaerobic layers on the riverbed? Furthermore, how similar is the riverine assemblage to the Portable Antiquities Scheme data for the region, a dataset mainly composed of metal-detected finds from rural sites? As finds specialists we are both agreed that the riverine assemblage ‘feels’ unusual and some of the qualitative differences have been highlighted in preceding chapters. However, there is clearly a danger that we have selectively focused on these unusual patterns while downplaying other aspects of the material retrieved from the Tees. Therefore, the application of Correspondence Analysis, employed by numismatists and small find specialists for many years, affords an opportunity to explore the entire assemblage from a statistical perspective (e.g. Reece 1995; Cool and Baxter 1999; 2002; Pitts 2004; 2010; 2019).

ROMAN RIVERINE ASSEMBLAGES IN THE NORTH-EAST

In addition to diving at Piercebridge, Bob Middlemass and Rolfe Mitchinson have explored numerous other riverine locations in north-eastern England. However, only the rivers at Corbridge and Catterick have produced significant quantities of Roman material and these are discussed below.

During a series of dives in the late 1980s and 1990s, the divers recovered approximately 200 metal objects from the river Tyne at Corbridge. The majority of finds were Roman in date but there were also 20 medieval and post-medieval artefacts. Unlike at Piercebridge, these objects were not found in association with the Roman bridge (Bidwell 2009). Instead, they were located approximately 80 m downstream near a structure which has been identified as a watermill and radiocarbon-dated to the eighth to tenth centuries A.D. (Durham County Council Archaeology Section 2020, Ref. No. N9052; Denison 1996, 5; Snape 2003). It is possible that some were washed from the north bank as the river has changed course since the Roman period, but this is not certain. The divers did not note any concentrations of finds by date, although they did observe that the medieval finds were found at a depth of between 25 mm and 80 mm, while the Roman finds were found at a depth of between 100 mm and 260 mm. This may suggest the existence of some vertical stratigraphy.

Although the divers did record many of their finds with the Portable Antiquities Scheme, the dataset is unfortunately not entirely representative of what they found. Some objects, including a pair of Roman or later slave shackles, were acquired by Corbridge museum in the late 1980s (Corbridge Museum Accession number: CO34976; Thompson 1988) before the advent of the scheme. There are also some problems with the accuracy of the data recorded on the PAS database. First, there are several duplicate entries amongst the 221 individual object records created between 2004 and 2012, probably as a result of being presented for recording on multiple occasions. Second, careful reading of the divers' logs has revealed that some finds recovered by the divers at Catterick were mistakenly assigned a Corbridge findspot on the database. Where the objects are distinctive, it has been possible to assign the records to their correct findspots. However, the objects without illustrations or detailed descriptions (particularly the coins) cannot be assigned confidently to one site or the other.

Although the objects recovered included items of personal adornment and military equipment, coins dominate the Roman assemblage. 112 examples are recorded on the Portable Antiquities Scheme database, with the divers' logs recording that 32 were recovered during dives made in 1996.[87] Although we cannot know exact numbers due to the inaccuracies outlined above, we do know their approximate dates. The divers have indicated that the majority were third-century radiates or fourth-century *nummi* with some earlier *denarii* and bronzes (Bob Middlemass and Rolfe Mitchinson, pers. comm.). In addition, at least 12 finds dating to the second or third century A.D. were recovered. They include an unusual swastika plate brooch (NCL-22D738), two possible bracelets (NCL-B97906; NCL-B96FF2), two earrings (NCL-766286; NCL-7699D2), an armour scale (NCL-34BE90), strap-ends (NCL-350533; NCL-C9C354) and a scabbard slide (NCL-B8FC11). The most striking objects recovered are an elaborate folding knife handle depicting a gladiator (NCL-393023/FIG. 22.1A) and a small figurine depicting a panther (NCL-B6A984/FIG. 22.1C).

20 medieval artefacts were recovered, including six coins dating from the reigns of Henry II and Edward III, along with 13 buckle fittings and a pin of thirteenth- or fourteenth-century date. A single post-medieval bucket escutcheon of a type used on buckets and coal scuttles was also found.

During the same period, the divers also recovered a small assemblage of approximately 90 objects from the river Swale at Catterick Bridge. Catterick Bridge is east of the Roman settlement and is the site of the modern road bridge. Excavations on the northern side of the river identified a revetment and possible wharf structures (Wilson 2002, 185–205). As has already been outlined above, at least some of the objects recovered from the river Swale were mistakenly logged on the Portable Antiquities Scheme database as coming from the river Tyne at Corbridge. However, the majority have not yet been recorded and information about the composition of the assemblage must be extracted from the divers' logs.

As was the case at Corbridge, Roman coins dominate the assemblage, with 75 of the objects being issues ranging in date from the first century B.C. to the reign of Constantine I. Most appear

[87] Query (www.finds.org.uk) on 28.10.19.

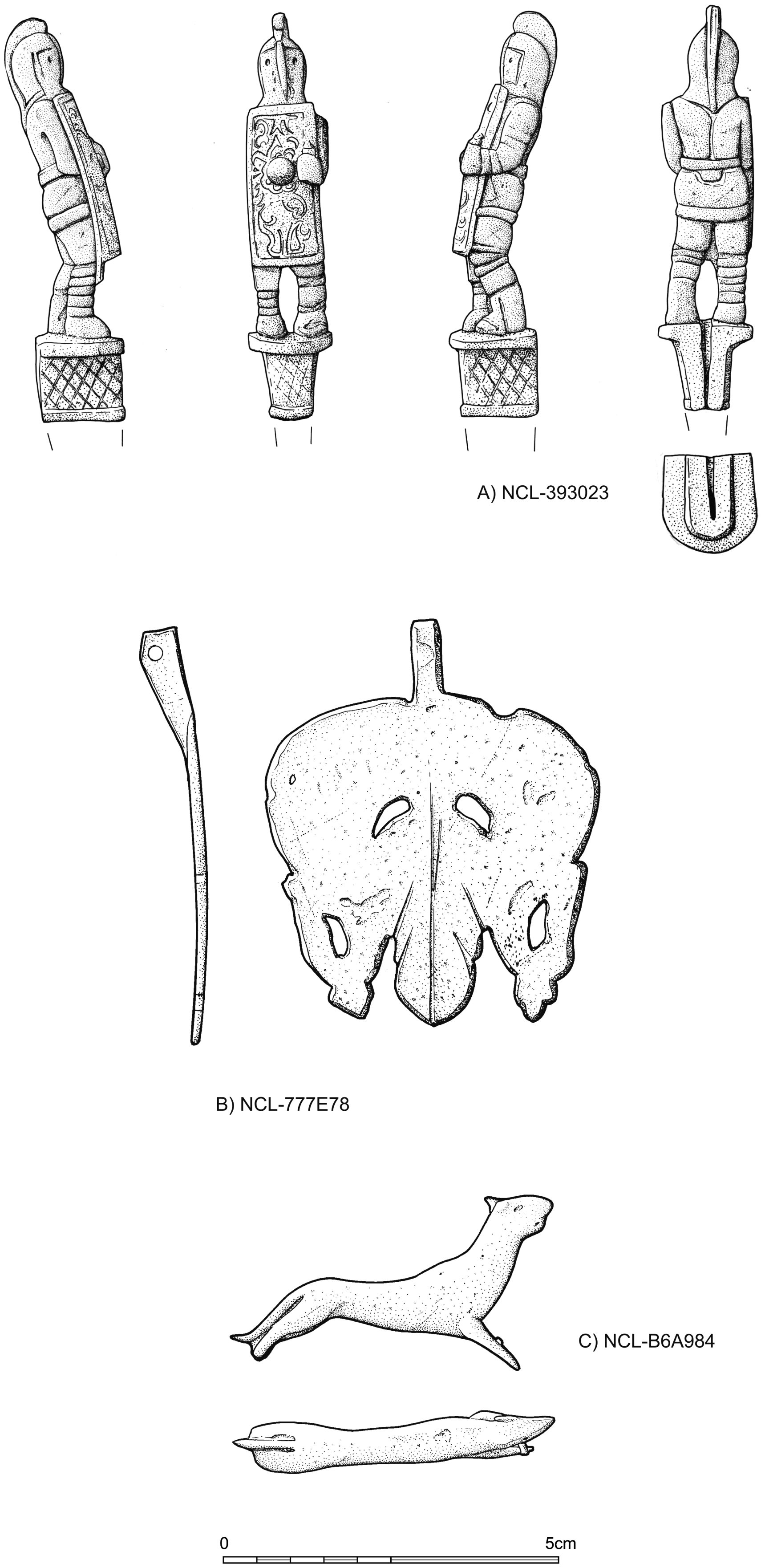


FIG. 22.1. Finds from the river Tyne at Corbridge and the Swale at Catterick Bridge (*Illustration: Mark Hoyle*)

to be third- or fourth-century radiates or *nummi* although two *sestertii* of Hadrian are singled out for identification. Six *denarii* were also logged of which two were identified. They include a Republican *denarius* and a *denarius* of Vespasian. Other finds include fragments of brooches, 'various bits of gold' and an earring as well as two pieces of equine equipment. One is a distinctive first- or early second-century harness pendant of a type used by Roman cavalry (NCL-777E78/ FIG. 22.1B), while the other is a phallic pendant dated to the second or third century A.D. An iron shoe intended to secure a wooden post was also recovered.

The assemblages from the Tyne and Swale indicate that Roman artefacts do find their way into rivers adjacent to Roman settlements in the region. However, while their inconsistent recording precludes detailed analysis, they do not appear that similar to the material from the Tees at Piercebridge. Both assemblages are much smaller in size with a very restricted range of artefact types represented. There are few precious metal coins or artefacts and the absence, for example, of pottery, worked bone or glass is striking. Furthermore, although there are some first- and second-century objects, the presence of numerous radiates and *nummi* suggests an emphasis on the late Roman period.

COMPARISON WITH EXCAVATED FINDS FROM PIERCEBRIDGE

Much of the debate around ritual deposits has focused on pits and wells, often using the presence of human remains, articulated animals (especially dogs) and complete pots to suggest that assemblages represented 'more' than rubbish (e.g. Fulford 2001; Hill 1995). As in prehistory, it is time to consider whether the term structured deposition has, however, become too broad to be useful (Garrow 2012). 'Odd deposits' of articulated animal remains or upturned querns are relatively easy to identify but the interpretation of more subtle patterning of material culture is clearly complex. While some patterns may reflect deliberate ritual activities others could simply reflect the rhythms of 'everyday' practice (Garrow 2012, 94–103; cf. Crease 2015). In the Roman period we are lucky to have much better chronological control and a more detailed understanding of settlement activities than for most of prehistoric archaeology. It is thus possible to examine whether any material culture patterning differs significantly across a site or region, both for selected artefact types and whole assemblages.

For example, while the late Roman well at Rothwell Haigh, W Yorks., contained a human skull, articulated animal remains and complete pots, the entire assemblage is argued to represent ritual offerings because the composition of the assemblage as a whole differs from material culture use and animal consumption patterns in the area (Cool and Richardson 2013, 208–13). This approach builds on attempts by numismatists and small find specialists to identify 'normal' deposition patterns for a particular artefact type, period or region, to which individual site assemblages can then be compared (e.g. Cool and Baxter 1999; 2002; Pitts 2004; 2010; 2019; Reece 1995). This is more straightforward if a single artefact type (such as coins or glass vessels) is considered while attempts to identify patterning across a range of materials and object types produce less convincing results (Evans 2001; Eckardt 2014, 14–20). Nevertheless, such work can identify unusual consumption or activity patterns and evidence for selection.

Here, evidence for selection and deviation from the norm might indicate that we are dealing with deliberate deposition, and not accidental loss or 'standard' rubbish disposal. However, it is also worth noting that the riverine assemblage may differ from excavated or metal-detected finds as a result of taphonomic factors, something that is difficult to identify as no complete Roman riverine assemblages have previously been published.

The first question to be addressed is whether there are differences in the dating of the objects deposited in the river Tees and those found throughout the excavations at Piercebridge. Analysis of the respective coin assemblages in Chapter 10 (especially FIG. 10.2, repeated here as FIG. 22.2) highlighted their very different chronological profiles. As outlined there, the riverine assemblage possesses large numbers of early to mid-Roman issues with a peak in the Severan period, while the excavation assemblage is dominated by late third- and fourth-century pieces.

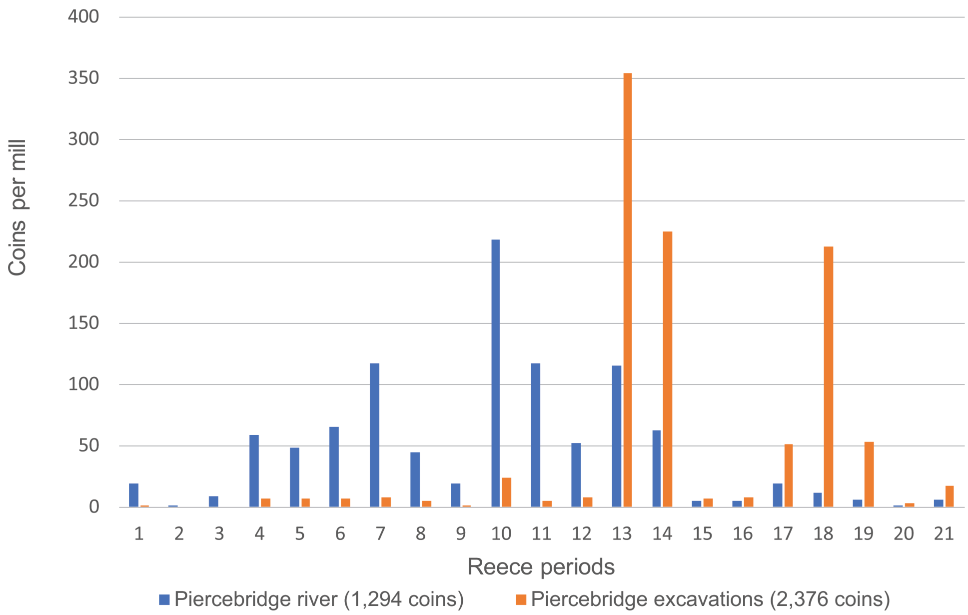


FIG. 22.2. Comparing the date ranges of coins from the river and the excavations

It is more difficult to define narrow date ranges for most small finds. However, 503 objects from the river could be assigned to periods of 200 years or less. Adapting the methodology employed by Cool (2008, 245, table 11.3), these periods have been simplified into eleven broad bands, thus enabling the comparison of dated riverine and excavation material. What is apparent is that the assemblage from the river is overwhelmingly mid-Roman in date, with a particular emphasis on material from the mid-second to third century A.D. This contrasts markedly with the artefactual data from the excavations where the majority of items date from the later third century onwards (Cool 2008, 243 and table 11.3). While some of these differences may be due to the vagaries of dating small finds, this is a striking pattern which clearly suggests that whatever the nature of deposition in the river, it is not a straightforward reflection of settlement activity in the area.

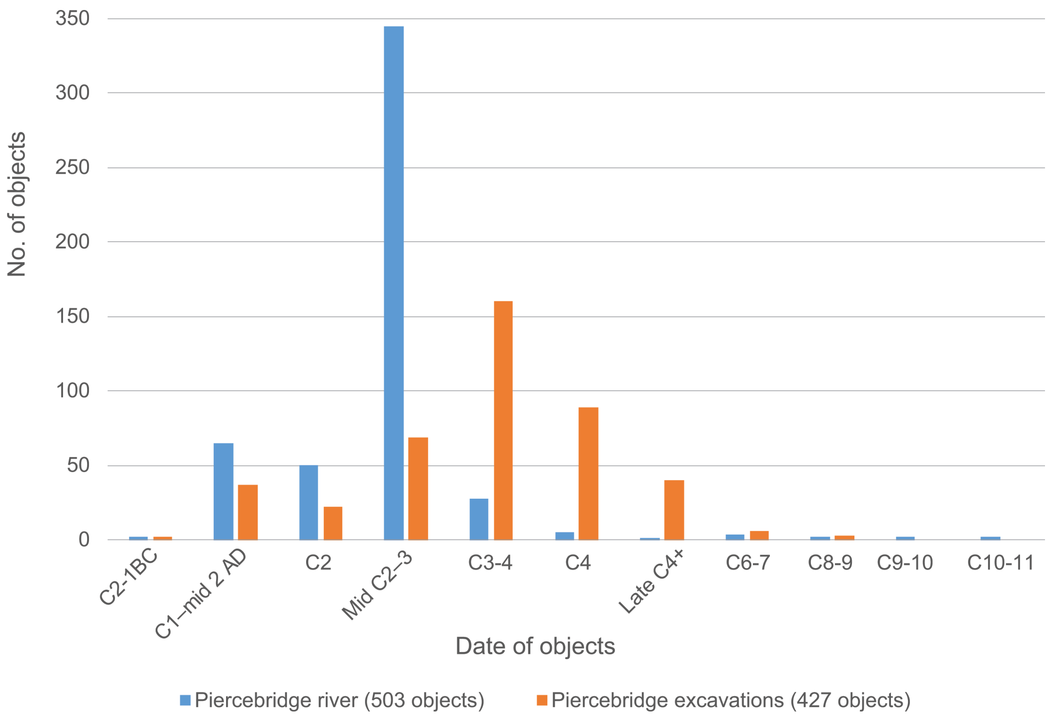


FIG. 22.3. Comparing the date ranges of objects from the river and excavations (excluding coins)

Another factor to consider is the composition of both the coin and the artefact assemblages in terms of materials. Table 22.1 lists the finds, excluding coins, from the river and the excavations at Piercebridge by material. It is immediately evident how different the two assemblages are. There are much higher proportions of precious metal and copper-alloy objects in the riverine assemblage and much lower proportions of worked bone and glass objects. We have already seen in Chapter 10 (especially FIGS 10.3 and 10.4) that the denominational coin profiles for the riverine and excavated assemblages differ significantly, with the former possessing unusually high proportions of silver *denarii*. This may be partly a function of date, but could also indicate the preferential selection and deposition of high-value objects. It could of course also indicate the efforts made (or relative frequency of opportunity) to retrieve high-value objects in settlements, while objects vanished from sight completely in the river.

However, distinguishing between patterns of deliberate selection in the Roman period and retrieval biases and taphonomy is not simple. Certainly, precious metal is much better represented in the riverine assemblage with gold and silver objects accounting for more than 5 per cent of all objects (excluding coins) recovered compared with only 1.01 per cent from the excavations. The high proportion of copper-alloy objects in the riverine assemblage is also striking. However, the anaerobic conditions on the riverbed are likely to have increased the likelihood of their survival, while the divers' occasional use of underwater metal-detectors may have resulted in the recovery of more items of precious metal and copper alloy while depressing ironwork totals. Lead and lead-alloy objects such as the sealings have a better chance of survival in wet contexts (see below). Meanwhile, other objects, such as spindlewhorls, glass beads, worked bone pins and jet/shale items may have floated away even if originally deposited in the river. The almost complete

TABLE 22.1. THE COMPOSITION OF THE IRON AGE AND ROMAN ASSEMBLAGE FROM THE RIVER AND EXCAVATIONS AT PIERCEBRIDGE BY MATERIAL

Material	**Piercebridge river**	**% of the river assemblage**	**Piercebridge excavations**	**% of the excavation assemblage**
Gold	63	3.93%	3	0.15%
Silver	20	1.25%	17	0.86%
Copper alloy	808	50.46%	721	36.58%
Lead alloy	226	14.12%	47	2.38%
Iron	265[88]	16.55%	409[89]	20.75%
Glass	6	0.37%	112	5.68%
Fired clay/ceramic	8	0.49%	50	2.54%
Frit	0	–	5	0.25%
Stone	4	0.25%	61	3.09%
Jet/shale	0	–	114	5.78%
Amber	0	–	1	0.05%
Gemstones	0	–	3	0.15%
Worked bone	40	2.45%	428	21.71%
Copper alloy and iron	22	1.37%	0	–
Copper alloy and lead	135	8.43%	0	–
Leather	4	0.25%	0	–
TOTAL	**1601**		**1971**	

[88] This total excludes nails or fragments of nails. With nails included there are 570 iron objects in the riverine assemblage.

[89] This table includes objects of Iron Age and Roman date but not the coins. The post-Roman objects and the iron nail assemblage are also excluded.

absence of ceramic building material and fired clay objects in the riverine assemblage is however curious given the fact there is so much pottery.

A qualitative assessment of the river assemblage has already highlighted the high-status and often exotic nature of the material; as with the chronological pattern, the riverine assemblage therefore appears distinct from the nearby excavated finds in terms of the materials represented. Both the excavated and river assemblages have a strong military element. Using Crummy's functional categories is helpful but counting only military equipment partially obscures the especially military nature of the river finds as seen, for example, in the brooch and lead sealing assemblages. Finally, we have noted in the relevant chapters where river finds represent an unusual selection of object types – for example, we have noted that the relative proportions of chape to scabbard slide, openwork belt mounts and strap ends are unusual in the riverine assemblage. Such qualitative observations can be obscured by the more formal quantitative comparisons which shape the next section.

COMPARISON WITH EXCAVATED AND METAL-DETECTED FINDS IN THE WIDER REGION

By Kris Lockyear, Philippa Walton and Hella Eckardt

In this section, we compare the functional composition of the riverine assemblage with assemblages from excavations at Piercebridge, Catterick and Binchester, as well as a dataset of Roman finds recorded by the Portable Antiquities Scheme in the North-East. Catterick and Binchester were selected as comparative sites due to their military nature and proximity to Piercebridge. Although neither were excavated or published to modern standards, their finds assemblages are published in such a way that it is possible to extract data relating to functional category. Binchester is a smaller assemblage overall, and it should be noted that the Catterick[90] assemblage comprises finds from multiple sites, some with very different characters.

A further comparison is provided by a north-eastern dataset from the Portable Antiquities Scheme. It combines all Roman material (except coins) from the counties of North Yorkshire, County Durham and Tyne and Wear along with the unitary authorities of Redcar and Cleveland and Middlesborough and represents approximately 20 years of recording by the Portable Antiquities Scheme in the region. The majority of finds recorded were retrieved by metal-detector users whose recovery and selection biases may be similar to those of the Piercebridge divers. The relative paucity of material suggests low levels of metalwork acquisition, use and deposition within the region either deliberately or as rubbish. Table 22.2 summarises the composition of these assemblages.

We have employed a statistical technique known as Correspondence Analysis (CA) to compare the assemblages. CA examines the distribution of finds across the categories and sites to find patterns in the data, weighting the sites and categories by assemblage size to reduce the impact of smaller groups. The underlying assumption is that while there are taphonomic and depositional factors affecting the overall representation of certain objects, these largely relate to material and size and should affect all sites roughly equally. Therefore, any significant variations in the distribution of finds are likely to relate to patterns of activity and behaviour in the past (Cool and Baxter 1999, 73).

The principal aim of CA is one of data reduction, that is it attempts to show the major patterns in a table of data in one or two 'maps', but to do so, it has to discard some of the details (Lockyear forthcoming). Usually, the 'detail' is noise in the data caused by random variation. To do this, CA compares the rows of the table to an average of those rows, and the columns of the table to an average of the columns. The maps are an approximate graphical representation of those differences. One of the attractions of the technique is that it provides information about both the rows and the columns of the table. Greenacre (2017) provides a more detailed and technical

[90] The data used here were extracted from Cool 2002, 25, table 85 and include material from Sites 46, 240, 251, 273, 433, 434, 452, 482, Embleton, Cadbury-Schweppes, RAF Catterick 1966, Citadella and other areas at Catterick.

TABLE 22.2. A SUMMARY OF OBJECTS BY FUNCTIONAL CATEGORY FROM SITES INVESTIGATED IN THE CORRESPONDENCE ANALYSIS

Functional category	North-East (PAS)	Catterick	Binchester	Piercebridge excavations	Piercebridge river
Personal adornment	1535	748	27	805	377
Equine equipment and transport	225	58	10	47	192
Household	256	801	31	117	323
Military	33	112	15	115	165
Recreation	8	81	6	97	2
Religious	78	32	1	6	23
Textiles	29	91	8	39	36
Toilet	58	52	1	46	69
Weighing and measuring	80	9	2	7	30
Writing and communication	33	53	3	16	70
Agriculture	1	23	1	0	102
Tools	6	140	7	66	45
Building fixtures and fittings	26	119	9	33	167
TOTAL	**2368**	**2319**	**121**	**1451**	**1601**

account. For the user, we need only to be sure that the data input is of the correct form, and how to interpret the output. For the usual application of CA, the input data should be a cross-tabulated set of counts such as we have in this example. The analysis was undertaken using the ca library (Nenadić and Greenacre 2007) in the R statistical system (R Core Team 2020) in order to compare the functional composition of the riverine assemblage.

To interpret a CA one examines the maps – so-called because one unit on the *x*-axis should be the same physical size as one unit on the *y*-axis – alongside the 'decompositions of inertia', a set of figures which enables one to assess the contribution of each category or assemblage to the results. If two categories are placed close to each other on the map, then the distribution of those finds across the sites is similar. If two sites are placed close together, then the distribution of finds categories between those two sites is similar. It is important to note, however, that the distance between a finds category and a site on the map is not defined, although their relationship to the axes is. Thus, if a finds category is placed at one extreme of an axis, a site plotted at the same extreme is likely to have an above average proportion of that type of find, and vice versa.

Before offering a detailed interpretation, however, one must check the decompositions. All sites and finds categories will be plotted on the map, whether or not they fit the general pattern, and the decompositions will allow one to see any problematic data points. The column 'quality' (`qlt`) is a measure of how well an assemblage/category 'fits' the map and is expressed as a per mill. The relative contributions (columns `cor`) show how that category/site fits each individual axis. The quality for a map is the sum of the relevant relative contributions from the two axes. The coordinates for each point are given in the `k=1` etc. columns (see Tables 22.3 and 22.4).

The first analysis included all thirteen finds categories and five assemblages. The first two axes from the analysis 'explain' 86 per cent of the variation in the data set (FIG. 22.4). This is a very successful result, partly because we only have five sites. Looking at the 'quality' for the finds categories we can see that most are very well represented with values of over 900‰ accounted for (Table 22.3). Military and toilet related items are less well represented (484‰ and 505‰ respectively). For the sites, the North-East (PAS) group and the Piercebridge river finds are very well represented, with the Piercebridge excavation finds least well represented, but all are within acceptable levels.

FIG. 22.4. Correspondence Analysis of assemblages from the river and excavations at Piercebridge and the excavations at Binchester and Catterick as well as PAS data for the North-East region. First (horizontal) and second (vertical) axes of inertia; sites in green, find categories in red

Looking at the relative contributions (Table 22.3, column `cor`), if we use an arbitrary cut-off value of 500‰ we can see that the first axis is principally contrasting agricultural/fishing equipment, building fixtures, writing and communication items and household items with items of personal adornment. If we look at the figures for the Piercebridge river assemblage (Table 22.2) we can see this in the data: that assemblage has the highest proportion of those four categories, and the second lowest proportion of items of personal adornment, the lowest proportion coming from Binchester. In contrast, the PAS data have the highest proportion of items of personal adornment. The large assemblage of fishing weights (which was grouped with agricultural equipment) from the Tees clearly has an impact here. Another possibility is that the first axis is contrasting assemblages with a high proportion of iron objects with those made in other materials. Indeed, the well-preserved iron assemblage from the river was analysed in detail, while similar material from excavations is often too corroded for identification, especially if it is not x-rayed (Cool 2008, 242). It may also be that the corrosion processes of iron artefacts contributed to the formation of the 'crud' which the divers recognised as rich in artefacts and therefore targeted. Conversely, metal-detector users tend not to retrieve or record iron objects meaning that few are present in the PAS assemblage.

The second axis (FIG. 22.4) draws a contrast between assemblages with equine equipment and weighing items compared to recreational items and tools. The Piercebridge river and the PAS assemblages have the highest proportions of the first two categories, whereas Catterick and the Piercebridge excavations have the highest proportions of the latter two. Gaming pieces of bone, clay and glass are clearly quite common on the three excavated sites but absent from the Tees and PAS assemblages, perhaps because they would have floated away in the river and because naturally metal-detectorists do not normally recover these materials.

In this analysis, the Piercebridge river assemblage is shown to be quite different in composition to both the excavated assemblages and the PAS finds. However, the three excavated assemblages are relatively similar to each other.

CA can be strongly impacted by unusual outlying assemblages, although less severely than is claimed (Greenacre 2013). Usually, removing the offending categories or assemblages results in a rescaling of the maps, but substantive interpretation remains similar. To check this, a CA was run omitting the two outlying categories of agriculture and fishing items, and recreational items. A comparison between the two sets of results using the Procrustes Stress Index (PSI; Sibson 1978) shows almost no difference in the results.

The PAS dataset, which forms just over 30 per cent of the total, will have an influence on the results. As the PAS dataset is less controlled than the other four assemblages, it is worth removing it. A comparison was made between a CA of the remaining four assemblages with all the finds categories, and a CA omitting agricultural and recreational items. As before, there is very little difference as measured by the PSI, so we will examine the version with all the finds categories.

FIG. 22.5. Correspondence Analysis with obvious outliers removed. First (horizontal) and second (vertical) axes of inertia; sites in green, finds categories in red

The map of the first two axes from this analysis (FIG. 22.5) explains 98 per cent of the variation in the data, not altogether surprising given that we only have four assemblages. An examination of the figures for the sites shows that Binchester is very poorly represented in this analysis (Table 22.3, quality is 121‰). It is also the smallest assemblage with less than 2 per cent of the total number of finds. Of the finds categories, however, all are very well represented with only two falling below a quality of 900‰, textiles (683‰) and toilet items (871‰). Taking our arbitrary cut-off point of 500‰ once more, we can see that the first axis is contrasting recreational and personal adornment items with equine equipment, religious items, objects associated with weighing and measuring, writing and communication and agricultural/fishing items. The Piercebridge excavation assemblage is principally associated with the former, and the riverine assemblage with the latter. We have addressed the dominance of fishing weights already but another striking feature of the riverine assemblage is the emphasis on objects associated with communication, namely the 46 lead sealings, which represent the second largest assemblage from Britain. As discussed in Chapter 8, their presence in the river may reflect the huge volume of trade along Dere Street and their deliberate deposition, but could also be the result of the survival of these delicate lead objects in waterlogged contexts, much as has been suggested for medieval lead pilgrim badges (Lee 2014).

The second axis is contrasting military equipment and toilet items against household equipment, textiles and tools. The two Piercebridge assemblages are associated with the former, and Catterick with the latter. As expected, Binchester is the only site represented by the third axis. This is related to the presence of textile items, showing that Binchester has a slightly higher percentage (6.6%) than the other three sites, although it seems unlikely this is especially significant.

CONCLUSION

Ongoing work will examine how widespread deposition in rivers was in the Roman period (Eckardt and Walton forthcoming), but haphazard recovery and poor recording are clearly factors affecting many sites. The finds made by the Piercebridge divers at Catterick Bridge and Corbridge are fewer in number, and generally not as high status as those at Piercebridge, but they indicate that metal artefacts have found their ways into rivers in the wider region.

Comparison with excavated and metal-detected assemblages from north-eastern Britain has proven a more fruitful avenue here. Statistical and qualitative study have demonstrated significant differences in the composition of the excavated and riverine assemblages at Piercebridge. It is also evident that while the composition of the excavation assemblage from Piercebridge is broadly comparable with two excavated sites in the region, the assemblage from the river is not. Furthermore, the riverine assemblage is not similar to the profile for Portable Antiquities finds in the region.

This suggests that the riverine assemblage was accumulated through a different process or processes of deposition to other sites in the region, and/or that it was affected by very different taphonomic processes. Although there may be some refuse amongst the finds recovered from the river, the majority are clearly not part of a wider pattern of rubbish deposition evidenced in the excavated portions of Piercebridge. Of course, it is possible that the riverine assemblage represents rubbish associated with an as yet unexcavated settlement, a particular clearance event (the construction of the third-century fort?) or with transient populations crossing the bridge. However, it seems likely that the deliberate deposition of high-value or exotic metal objects also took place. This deposition is very different in scale and character to deposition on land on the kinds of sites explored by metal-detectorists. A better understanding of the taphonomic process affecting river finds is highly desirable but can only be achieved when other *entire* assemblages from rivers are published.

TABLES

TABLE 22.3. DECOMPOSITIONS OF INERTIA FOR THE FIRST ANALYSIS

	mass	qlt	inr	k=1	cor	ctr	k=2	cor	ctr
Categories									
Personal adornment	448	996	220	−385	993	391	21	3	2
Equine equipment	68	983	74	−47	7	1	−568	976	243
Household	196	753	190	414	583	198	224	170	108
Military	56	484	70	418	460	58	−95	24	6
Recreation	25	656	86	2	0	0	832	656	190
Religious	18	538	20	−338	331	12	−266	206	14
Textiles	26	907	17	296	429	13	312	478	28
Toilet	29	505	8	98	117	2	−179	388	10
Weighing and measuring	16	866	33	−457	345	20	−561	521	57
Writing and communication	22	998	20	431	685	25	−291	313	21
Agriculture	16	963	121	1084	520	113	−1000	442	179
Tools	34	963	54	448	415	40	516	549	99
Building fixtures and fittings	45	982	86	690	831	127	−294	151	43
Sites									
North-East (PAS)	303	937	303	−507	848	460	−164	89	90
Catterick	297	886	220	312	433	170	319	454	334
Binchester	16	561	18	425	500	17	148	61	4
Piercebridge excavations	179	469	158	−253	239	67	248	230	121
Piercebridge river	205	979	301	486	531	286	−447	448	451

TABLE 22.4. DECOMPOSITIONS OF INERTIA FOR THE SECOND ANALYSIS

	mass	qlt	inr	k=1	cor	ctr	k=2	cor	ctr
Categories									
Personal adornment	360	991	220	336	825	286	−151	166	105
Equine equipment	56	995	139	−632	725	159	−385	269	108
Household	234	999	218	−124	73	25	439	926	579
Military	75	901	36	−149	206	12	−274	695	72
Recreation	34	979	85	731	968	129	−78	11	3
Religious	11	969	7	−294	620	7	221	349	7
Textiles	32	683	11	87	97	2	213	585	19
Toilet	31	871	13	−151	251	5	−238	620	22
Weighing and measuring	9	977	22	−644	729	26	−376	248	16
Writing and communication	26	996	26	−467	988	40	−43	8	1
Agriculture	23	986	135	−1076	886	189	−361	100	39
Tools	47	987	17	182	406	11	218	580	29
Building fixtures and fittings	60	999	71	−509	990	110	−51	10	2
Sites									
Catterick	427	999	199	67	43	13	315	956	545
Binchester	22	121	18	−126	88	2	78	33	2
Piercebridge excavations	256	1000	384	491	720	435	−306	280	308
Piercebridge river	295	1000	400	−514	873	549	−196	127	146

CONCLUSIONS

By Hella Eckardt and Philippa Walton

APPROACHES TO DEPOSITS IN WATER

It is clear that disciplinary boundaries and traditions have affected the ways in which finds from watery contexts have been approached. Roman river finds have been conceptualised largely in isolation from debates in prehistoric (and medieval) archaeology and key issues such as topography have often been neglected. As a discipline, we have become stuck in a rather stale debate between those favouring votive or ritual explanations and those preferring more 'rational' explanations such as midden erosion and accidental loss (Snodgrass 2006). The biases of recovery and publication affecting all river finds make this a difficult problem to address. Roman archaeology should be at the forefront of academic investigations of watery deposits, because the detailed chronological and typological data available to Romanists may prevent sweeping statements and allow for more nuanced understandings (Snodgrass 2006, 111–13). However, this is only possible if archaeologists examine and publish whole assemblages, rather than selecting 'highlights' such as figurines or coins for particular attention.

It has long been recognised that washed-out midden assemblages should include pottery sherds, fragmented animal bones and objects associated with construction and daily life while finds of weapons, complete vessels and complete items of personal adornment may be indicative of deliberate deposits or possibly accidents (Torbrügge 1971, 52–61). To recognise the former, it is obviously crucial to recover and publish ceramic and organic remains, something that is all too often lacking for antiquarian, dredged and chance river finds. We should also consider the specific nature of the objects: some offerings may be quite low key (e.g. depositing a single copper-alloy coin) while others represent significant financial and personal sacrifices (e.g. the deposition of a sword: Laursen 1982, 18–19). However, it is hard, and indeed fruitless, to attempt to identify ancient intentions in specific cases, and for individual, even high-value, objects it will always be very difficult — if not impossible — to distinguish between accidental loss and votive offering (cf. Sauer 2011, 510). A focus on the identities of those depositing the finds is one way forward (see below), and it is useful to think about the distinction between separate multiple individual depositions in the same place and material deposited in the water on a single occasion (Derks 1998, 140). Large vessel assemblages such as those at Neupotz fall in the latter category while the wide array of material found at Trier or Piercebridge appears to have accumulated over time.

SPECIFIC LANDSCAPE CONTEXTS, RIVERS AS BOUNDARIES AND THE ROLE OF BRIDGES

It is also important to consider the specific locations of Roman river finds but topography and landscape context are regularly neglected by archaeologists. Nicolay (2007, 185) suggests that when various depositions were made at the same location, be they individual offerings by one person or collective depositions, 'it is not only the specific act, but the place of action that is significant'. In some cases, such as for the late Roman bridge at Cuijk (Netherlands), factors such as the road network are considered (Goudswaard *et al.* 2001, 495–509). However, there is rarely any thought given to features that may have had symbolic or magical relevance, such as whirlpools, colour changes or confluences, which are often ritually significant in prehistory (Derks 1998, 139; Holland 1961, 4).

While a phenomenological study of river finds to assess natural features was beyond the scope of this project, we can consider evidence for the worship of confluences. Five altars to Mars Condates (Mars of the Confluence, from the Celtic 'god of the waters-meet') are known, all from northern Britain and some found in close proximity to confluences (FIG. 23.1). The fort at Bowes, Co. Durham, is located on the river Greta while Cramond, Midlothian, is at the confluence of the Almond with the Firth of Forth (*RIB* 731; McIntyre 1938; *RIB* III, 3500; Hassall and Tomlin 1978, 475–6) . The altar from Chester-le-Street was found 275 m north of the fort in alluvial soil beside the Cong Burn, about 365 m from its confluence with the river Wear (*RIB* 1045; Bruce 1887, 284) and the one from Piercebridge/High Coniscliffe (*RIB* 1024) just downstream from where the Piercebridge Beck joins the Tees from the north (FIG. 3.3; Scott and Mason 2008, 12, fig. 2.2). Given the altars' distribution, Speed and Holst (2018, 634) suggest that this may have been a cult associated with legionary rather than auxiliary troops, perhaps even specifically Legion VI. However, the most recently discovered altar comes from a roadside settlement at Scurragh House (originally published as Moulton), N Yorks. (Tomlin 2016, 389–90; Ross and Ross 2020, 24–5; Speed and Holst 2018, 634).

Ian Richmond posed the question of whether these altars refer to 'one confluence, where lay a temple famous in its district … or whether it applies to the locality in which each of the dedications was found', favouring the first explanation (Richmond in McIntyre 1938, 226).[91] Piercebridge seems a likely location for this shrine, being located on the most significant of these rivers and Richmond (ibid.) further speculates whether the *mensor* mentioned on the Coniscliffe altar may have been involved with a 'boundary-adjustment affecting the interests of the shrine'. Where the style of carving may provide clues to dating (Bowes and Chester-le-Street) the altars are attributed to the later second and beginning of the third century A.D., which coincides with the certain military presence at Piercebridge and the apparent peak of deposition in the river. Perhaps we can therefore postulate the existence of a shrine to Mars Condates on or near the original Dere Street bridge? In this context it is interesting to note that Ottaway (2013, 188, fig. 7.15) argues that the mid-second-century circular stone structure at Holme House could be a shrine (in contrast to the excavator Harding's interpretation of it as a utilitarian structure). Coniscliffe is located almost directly opposite Holme House and connected to it by a ford (Betteney 2019, 12).

Only one object from the Tees, a finger-ring with a punched inscription (BM-42989D), is explicitly linked to Mars; a seal with a helmeted bust may also depict Mars and a pipe-clay figurine of a horse is very tentatively linked to either Epona or Mars (BH-966F24; BM-3E45C9). Mars is an important deity in Roman Britain, and while most of the 47 figurines known from Britain have been found in the south of the province (Durham 2012, section 3.14 and fig. 22), inscriptions are quite common in the north, especially along Hadrian's Wall (Birley 1986, 28–30; Mattingly and Jones 1990, 267, map 8:4). Mars is commonly syncretised, often as a healer (e.g. Mars Lenus and Mars Nodens) and sometimes conflated with Mercury but the iconographic evidence is usually martial (Birley 1986, 43–4, 68–70; Mattingly and Jones 1990, 267).

That river deities were important in the wider region is also indicated by an altar to the 'goddess nymph Neine' at Greta Bridge possibly found on the banks of the river Greta (*RIB* I, no.744; Coombe forthcoming) and the altars to Oceanus and Neptune from Newcastle (*RIB* 1319–1320; Bidwell and Holbrook 1989, 99–103).

Heightened significance may have been attributed to the Tees at Piercebridge, perhaps because it represented such a major river en-route to Rome's northern frontier or because the Tees related to pre-existing socio-cultural ('tribal') or Roman administrative boundaries (see Ch. 3). That such symbolic, legal or political river boundaries may have been marked by the deposition of

[91] Although he would only have been aware of three at the time of writing.

FIG. 23.1. The distribution of dedications to Mars Condates in Britain

artefacts as part of *suovetaurilia* rituals has been argued for the Ljubljanica river (Istenič 2019, 244–54). It seems equally possible at Piercebridge. Of course it is also possible to consider the act of crossing and the bridge itself as the focus of ritual activity. We have seen in Chapter 2 that bridges have been viewed in functional terms by most Roman archaeologists, who have tended to focus on aspects of engineering. But bridges and fords were important elements in the cultural and symbolic landscape of the Roman world, just as they were in the medieval period (e.g. Lund 2005). Van Gennep (1977, 15) in his seminal work on rites of passage has pointed out that the transition from one stage of life or social position to another is often marked by ceremonies. These transition rites can be associated with physical crossings of symbolic thresholds such as doors and rivers. This model has been adopted as an explanation for Celtic coins in the Seine but more rarely for Roman deposits (Derks 1998, 140; Bourgeois 1991, 198). A bridge can be looked at from two different perspectives: from below (i.e. from the banks or the river where strong currents continuously threaten the bridge's stability), or from above, from the point of view of the traveller. From both perspectives the bridge appears to be a miracle. However, it is also sacrilege to Neptune or the god associated with that specific river which must be expiated (Mancini 2010, 156–7).

Where on or near a bridge any possible votive acts occurred, is now largely unknown because the method of retrieval usually means that we know very little of the exact context or location of river finds near bridges. It has been suggested that during the rituals carried out on the Pons Sublicius the straw puppets were thrown from the bridge into the middle of the Tiber as 'objects tossed from the banks were all too likely to land on the mud and lie there shamelessly exposed instead of disappearing decently into the current' but there is obviously no archaeological evidence for this (Holland 1961, 330). Even though the dredging activities between 1824 and 1841 at London Bridge were clearly not recorded according to modern standards, Roach Smith noted significant coin concentrations just to the north of the mid-point in the river (Rhodes 1991a, 180–2, fig. 1), and this may indicate the location of a shrine or favoured spot for deposition. If properly excavated, it may be possible to distinguish between votive offerings, accidental losses and rubbish that eventually settled on the river bed, and offerings or losses made during the construction of a bridge or ford. For example, a bronze vessel, an adze and a *gladius* found underneath the stone pavement of the ford at Casaque across the Saône may be ritual offerings associated with the act of construction, an act which was potentially seen as disturbing the river gods (Bonnamour and Dumont 1994; Braund 1996b, 45; Künzl 2001, 557). Similar reasons may be behind the deliberate placement of a pot amongst the bridge piles and a very old coin in a bar-clamp socket at the later Roman bridge over the Meuse at Cuijk (Goudswaard *et al.* 2001, 480 and 482, figs 31 and 33).

CHRONOLOGY AND THE CONTEXT OF DEPOSITION AT PIERCEBRIDGE

This section summarises all the dating information available, and in particular addresses the question of whether it is possible to relate periods of deposition to bridge construction phases. Radiocarbon evidence suggests that the westernmost of the ancient bridges might predate A.D. 70. This would fit with the earliest phase of Holme House as well as activity at nearby Stanwick, from where a routeway led to the Tees. However, there are virtually no late Iron Age and very few Claudio-Neronian finds from the Tees at Piercebridge. The evidence from Stanwick and Scotch Corner, both only a few miles away, shows that Roman material reached the area, and that the quality of these objects was high, even if quantities were small. Some such objects may have been diplomatic gifts from southern rulers or Rome herself, and from A.D. 50 there was an increase in trade reaching this area (Fell 2020; Haselgrove 2016, 432–7; Harding 2004, 163; Zant and Howard-Davis 2013, 125). The lack of early finds may indicate that the 'early' bridge dates towards the later end of the single radiocarbon date available, that the Piercebridge area was peripheral to the extended Stanwick/Scotch Corner *oppidum* area or that there was no Iron Age tradition of depositing objects in rivers in this region.

The Dere Street bridge was in existence by A.D. 90 based on dating evidence for the road, but some crossing must have existed in the A.D. 70s, given the site's strategic importance and the development of the road network in the area (Hodgson and Bidwell 2009). From the arrangement of the timbers we consider it likely that this bridge had at least two phases. The available radiocarbon dates suggest that a structure may have existed here longer than previously thought, and at a time when the stone bridge was perhaps already constructed (at the turn of the second and third centuries A.D.). It is important not to lay too much emphasis on the written sources or to attempt to match the archaeological evidence with known historical events such as the conquest or Severan campaigning (Haselgrove 2016, 468). Full recording of the bridge timber structures and a thorough programme of radiocarbon and dendrochronological dating are clearly desirable to resolve the date of all the bridges for which timber piles remain.[92]

In the current absence of this information for Piercebridge we can consider the inherently datable finds to explore the sequence and nature of depositional activity, beginning with coins, then turning to typologically-dated small finds and ending with radiocarbon dates obtained by this project for the animal bone assemblage. The dates of the coins within the assemblage range from the first century B.C. to the early fifth century A.D., with the earliest being a Republican *denarius* issued by L. Titurius Sabinus in 89 B.C. (FAPJW-1D45E5) and the latest a clipped *siliqua* of Arcadius dating to the period A.D. 395 to 402 (NCL-F06331). However, the majority of the coins found were issued between the late first and early third century A.D. with particularly large peaks in the Antonine and Severan periods. While present, there are comparatively few coins dating to the later third and fourth centuries A.D. The recovery of two Claudian copies (BM-F4B171; NCL-0A0082) which circulated until the A.D. 130s (Walton 2012, 85) implies activity at this time if not before. However, as most coins could remain in circulation for long periods of time, it would be unwise to conflate dates of issue with dates of use and loss. For example, most of the Trajanic and Antonine bronze coins in the riverine assemblage could have been circulating into the early third century in northern Britain (Casey 1989, 40). The pattern of

[92] An example of collaboration between a community group and heritage specialists to radiocarbon date a medieval bridge was recently completed at Ancrum: https://www.historicenvironment.scot/about-us/news/unique-underwater-discovery-of-medieval-scottish-bridge/; https://www.adhs.co.uk/projects/ancrum-bridge

use wear, although notoriously difficult to interpret, may also be consistent with deposition in the late second or early third century A.D. (Casey 1989, 40).

Reece period analysis clearly demonstrated that the riverine assemblage was very different to the coin assemblage excavated at Piercebridge. This pattern was also reflected in the ceramics (Ch. 16) and the small finds (Ch. 22). Together, they show that the dating of the riverine assemblage focuses on the mid-second to third century A.D., before the apparent increase in depositional activity at the adjacent small town and fort.

Finally, radiocarbon dating of five samples from the river shows that the deposition of the animal bone assemblage was contemporaneous with that of the majority of other object types, that is Roman in date. The samples date from the late first century to the fourth century A.D., again with an emphasis on the mid-second and early third century (Ch. 18). The range of dates suggests the animal remains in the river are not the result of a single dumping episode, but multiple events.

Overall, what can we conclude about the dating of the Piercebridge assemblage, and its relationship to the settlement and bridges? Although there is an emphasis on mid-second- to third-century material, the presence of both earlier and later finds suggests prolonged activity. As the stone bridge is thought to date to the late second to early third century but deposition at the bridge along the original Dere Street alignment appears to continue, it may suggest that it remained open for foot traffic or religious ceremonies or that the construction of the stone bridge occurred at the later end of that date range. There are clearly different processes of deposition on land and in water, and the river finds do not simply mirror activity in the nearby settlement, regardless of the uncertainty surrounding the exact construction date of the third-century fort (Bidwell and Hodgson 2009, 147–8). Instead, there is a peak in depositional activity associated with the river before the peak in that associated with the settlement. This may be because rubbish disposal practices in or near the river differed from those on land, where objects may have stayed in middens for some time before eventually being buried in pits and ditches. It is also possible that there are some areas of earlier activity and rubbish disposal which were not identified by the excavations. Finally, people may have crossed the bridge at Piercebridge and made offerings there in the first and second centuries A.D. but did not necessarily stay at the site for prolonged periods of time.

It remains to acknowledge that the medieval and post-medieval finds pose a puzzle. The earlier material may be derived from one or more graves, but if the later medieval finds came from the same small area in the river next to the Dere Street bridge (which is not certain), they must have washed downstream from an unrecorded medieval bridge or ford. This is either on the line of the Roman bridge and would indicate a continuity (or reinvention) of offerings or, if such a crossing was on the line of the current, sixteenth-century bridge, the finds highlight the possibility that some of the Roman material has also travelled further than previously thought.

It is regrettable that for only very few objects the exact findspot is known (see FIG. 3.11), and that there is no stratigraphic information at all. In general, much work remains to be done on the taphonomic processes affecting river assemblages. While such processes have been studied for animal bone and lithic assemblages through experimental and observational research (e.g. Jalvo 2003; Macklin 1995), such work appears not to have been conducted with Roman finds. Time and again, we have noted the absence or comparative rarity of certain categories such as bone and antler combs, bone hairpins, glass beads and ceramic gaming pieces, possibly because the Tees would have swept such objects away. Conversely, tiny fragments of gold jewellery appear to have settled in the mud.

The pottery, glass and animal bone assemblages do not appear to be very worn or rolled; and fragment size as well as composition is not that different from the material excavated nearby. A clear indication of a riverine assemblage containing rubbish would be ceramic building material, but this is completely absent, with only fragments of post-medieval malting floor tiles retrieved (Ch. 21). Roman ceramic building material is completely absent from the Tees and while not prominent amongst the published excavation finds, it was noted in Tofts Field just north of the river (Hingley and Rogers 2008, 285) and in the baths and a possible temple (Harding 2008, 141–3; Scott and Large 2008a, 102).

IDENTITIES

Modern excavations of Roman bridges and associated deposits are clearly a major research priority, and it is a great shame that more detailed recording was not possible at Piercebridge. Nevertheless, we can consider the Tees artefact assemblage in its own right in order to learn more about the identities of the people who used and deposited the material. Are the deposits essentially military in nature? What can we say about gender and what do exotic or unusual objects reveal about the presence of long-distance migrants or trade? What can the selection of objects tell us about society and religious practices in the north-western provinces?

Such an identity-focused approach is rarely taken for Roman objects from watery contexts; an exception is the report for the Neupotz hoard, which attempts to reconstruct the location, status and economic framework of the villa from which the material was supposedly looted (Künzl 1993). Much work has also been done on establishing the origin and status of the warriors whose equipment is found in Germanic lakes such as Illerup (e.g. Ilkjaer 2002). Finally, Teegen (1999, 287–94) attempts to identify the possible origins of those making offerings and to determine their gender and status.

Chapter 22 demonstrated that the riverine assemblage contains an unusually high proportion of precious metal objects. They include a large number of *denarii* and items of personal adornment made from gold. However, there are no large, complete high-status objects such as copper-alloy vessels, helmets or swords, the kinds of objects that characterise many continental river assemblages. In the following, we will review what the finds from Piercebridge can reveal about the identities of those depositing objects and consider in turn 'British' identities, gender, soldiers, merchants and craftspeople as well as origin and religious practices.

EXPRESSING 'BRITISH' IDENTITIES

There are numerous objects amongst the assemblage, particularly items of horse harness and military equipment, which incorporate elements of 'native' art style within their decoration. However, there are only five objects which appear to be the possessions of those who wanted to express a peculiarly British form of identity, either before the arrival of the Roman army or alongside military elements. The first, a middle Iron Age mirror handle (NCL-F1CEF4) of a type common in the East Riding of Yorkshire may provide some tentative evidence for a local pre-Roman origin for depositional practice, although it would be unwise to place too much interpretative weight on a single object.

Four further objects dating to the first or second century A.D., including a Nauheim derivative brooch (BM-B012B8), a cosmetic mortar (NCL-2BE823) and two nail-cleaners (NCL-F1C187; BM-05491A), are all associated with the creation and maintenance of 'native' rather than Roman forms of bodily representation. What is striking about these objects is that while they can be considered to be 'native' in origin, they cannot be considered to be local. The distribution pattern of Nauheim derivatives focuses on southern Britain, as does that for cosmetic grinders, and hence the examples from Piercebridge are extreme outliers. Similarly, nail-cleaners are rare in northern Britain particularly at sites associated with the army (Eckardt and Crummy 2008, 57 and 71; Crummy 2001). These are all objects which had travelled considerable distances to be deposited at Piercebridge.

GENDER AND AGE

There has been considerable debate in recent years regarding the validity of identifying women and children in the archaeological record using material culture. Various scholars have highlighted the methodological difficulties in 'sexing' artefact types traditionally associated with women such as brooches and spindlewhorls (Allason-Jones 1995, 22–3; Allison 2006; James 2006, 34) or in interpreting the sizing of shoes and finger-rings (van Driel Murray 1995, 19–20; James 2006, 35; Swift 2017, 150–90). Whilst acknowledging these potential pitfalls in interpretation, there are still hints that women, and to a lesser extent children, may have been involved in activities focused on the river. Notably, the earliest object in the assemblage, a mirror handle dating to the middle Iron Age (NCL-F1CEF4) may have been a female object (Joy 2010, 74–5), although it may also have been used in a ritual or magical context (Joy 2010, 50). There are also substantial quantities of Roman objects which are securely associated with women including hairpins and bracelets. Items of gold jewellery such as necklaces and earrings are extremely well-represented and the finger-ring assemblage is dominated by small examples, with the only two gold finger-rings falling within the child size range. In addition, a child-sized bracelet (BM-C98DB9) and a phallic pendant (BM-3AD788) of a type commonly found in children's graves were also recovered.

So who were these women and children? The dating of some of the hairpins may suggest that there was a local/'native' element to activity in the early Roman period. However, the majority of 'sexed' finds date to the second or early third century, coinciding with the arrival of the Roman army and the peak in deposition. It therefore seems likely that the women and children represented by these artefacts were connected with the military community and included wives and relations, as well as tradeswomen and female slaves. The unparalleled quantity of gold jewellery suggests the involvement of wealthy, high-status women hailing from the upper echelons of military society as sumptuary laws prevented anyone other than members of the social elite wearing gold finger-rings until the reign of Septimius Severus (Marshman 2017, 139). Whether commanders' wives, family members or even part of the Severan imperial retinue, these women appear to have had links with the provinces of Germany, Moesia and Thrace as at least two items of jewellery (BM-91F36C; NCL-2D4F25) only have parallels there.

Whilst often overlooked, some of the finds may also indicate the presence of teenage boys, perhaps acting as personal and regimental servants (James 2006, 32–3). For example, one finger-ring (BM-B1A12C) is engraved with a legend reading 'The century of Lucius M' suggesting the wearer had an affiliation with the Roman army. However, the ring is rather small for a man's finger-ring, perhaps indicating that it belonged to a wife, servant or slave.

MILITARY VERSUS CIVILIAN

We acknowledge that the separation of material culture into 'military' and 'civilian' categories is problematic (Allason-Jones 2002, 822; Bishop and Coulston 2006, vii). Even so, it is evident that items of military equipment and dress form one of the largest functional categories recovered from the river and these can be supplemented by other finds with clear military associations such as the horse harness, lead sealings and third-century brooches. Although a few early Roman items of militaria are present, the majority of finds date to the later second and early third century, mirroring the dating of other small finds and coins.

Relatively little weaponry or armour has been recovered. Instead, there is an emphasis on military belt fittings and equine equipment (Chs 6 and 7) with particular elements of the sword belt and horse harness found in greater numbers than one might expect. While wear and tear would cause some accidental loss of smaller elements, these categories of material were potent symbols of military identity and status and their selection highly symbolic (Haynes 2013, 262–6). There are also indications that many of the troops either came from or had links with the German and Danubian *limes* which we discuss further below. Despite these observations, there are few clues as to whether the soldiers were legionaries or auxiliaries. Although *lorica squamata* scales, fragments of composite bows and cavalry shield bindings (Ch. 6) are more comfortably associated with auxiliary troops and particularly the auxiliary cavalry, it is likely that 'off the battlefield, infantry soldiers, both legionary and auxiliary, presented their status in similar ways …' (Haynes 2013, 265).

However, the lead sealings do provide unequivocal evidence for soldiers of different statuses, with thirteen originating with the *legio VI Victrix* at York, three from auxiliary units based at Binchester and two from Vindolanda (Ch. 8). As address labels for both the sender and recipient of goods and official documents, they allude to the network of military communication centred on Piercebridge but not necessarily the presence of these specific troops. For that, we must rely on the epigraphic evidence from the site, which mentions the Second, Sixth and Twenty-Second legions respectively, as well as 'the army of each of the Germanies' (Scott and Mason 2008, 15–16; Birley 1967).

MERCHANTS AND CRAFTSPEOPLE

The Vindolanda tablets highlight the fact that where there were soldiers, there were invariably also merchants/sutlers/traders, skilled manufacturers and local producers, the *lixae* of ancient literature, who were ready, willing and able to supply exotic foodstuffs and spices, local produce and trinkets to individual soldiers, and particularly higher-ranking officers (Kolbeck 2018; Bowman 1994; Evers 2011). While the sheer range of artefacts recovered from the river at Piercebridge, alongside 'exotica' such as Greek and Roman Provincial coinage, attest to the site's integration within long-distance trade and communication networks, it is three small lead sealings which provide most insight into mercantile activity at Piercebridge. They include one which records an apparent business partnership between two individuals (BM-E83E2D) while two further examples may refer to the sale of cloth, or to an actual cloth-dealer (BM-E8657C; NCL-381163). There is good evidence for the existence of a specialised textile industry within Roman Britain, producing items such as cloaks but the possibility of production from further afield is raised by Clodius Super's statement at Vindolanda that 'Valentinus' has approved of clothing 'on his return from Gaul' (Tab. 255: Kolbeck 2018; cf. Wild 2002; Roche-Bernard and Ferdière 1993, 125–42). Lead sealing NCL-381163 is particularly interesting as it is in Greek, implying the import of goods from the Greek-speaking East. Parallels are extremely rare in a Romano-British context, with only four examples known from the south of the province. If this refers to a consignment of cloth, the implication is that it is something special and expensive.

That Piercebridge represented an important market is also indicated by the presence of unusual and high-status glass vessels on the excavated site, particularly a rare variant of a snake-thread glass from the eastern Empire as well as a late second-century polychrome mosaic cast plate (Cool and Price 2008, 238).

The presence of weighing equipment associated with both the manufacture and distribution of goods is also interesting. While the steelyards were used to weigh large quantities of material or foodstuffs, dual balances, of which there are two examples (NCL-E18835; BM-0A38FC), are likely associated with fine metalworking and particularly the production of jewellery (Smither 2016a, 24–5; 2017, 50). Elsewhere in Britain, dual balances appear exclusively in urban contexts so their presence in the assemblage is interesting. It may indicate that there was a jewellery workshop in Piercebridge. Such a suggestion is strengthened by finds of two cross pene hammers (BH-CC2BB4; BH-5EFC4B) which were commonly used as metalworking tools. Other tools such as a drill bit, saw, awl and hot punch provide an insight into some of the other activities taking place nearby (BM-37916A; BM-AF446A; BH-3823D1; BH-EF79C5).

There is certainly evidence for the production of items of military equipment or dress at the site, which is not surprising given that soldiers in the Principate normally purchased their own equipment (Speidel 1992, 131–6). A lead brooch pattern (NCL-287030) probably used in the production of third-century Knee brooches was recovered as well as a series of miscast or unfinished military artefacts including a phallic stud mount (BM-ABA269) and a strap slide (BM-42B67E). Whether these items were produced by the Roman army within the fort or the local 'civilian' population in the settlement is unknown (see Kolbeck 2018; Casey 1982; Bishop 1985 for this debate). Excavations of the third-century *vicus* at Vindolanda revealed many military items (Birley 2013); while this certainly demonstrates that soldiers sometimes inhabited the *vicus*, it also suggests civilian production, maintenance and marketing of equipment (Kolbeck 2018).

ORIGINS

We have already seen that the Piercebridge river finds include exotic material, including a lead sealing inscribed with Greek letters, suggesting trade links with the eastern Empire and highlighting that activity at Piercebridge may have been of high status. In this Piercebridge is not dissimilar from other northern military sites; we can, for example, note Barates the Palmyrene at South Shields (*RIB* 1065) and dedicatory inscriptions in Greek at Corbridge (*RIB* 1129 and *RIB* 1124). At Piercebridge, there are also several worn and regrettably unidentifiable Greek or Roman Provincial bronzes, as well as a coin of Juba II of Numidia dating to between 25 B.C. and A.D. 24 (FASAM-21AFB5). These are unlikely to have reached Piercebridge as part of normal coin supply. It is possible that some exotic objects travelled as personal possessions rather than items of trade, and this is what we argue is the case for some unusual items of dress.

Chapter 4 showed that some of the high-status female jewellery from the river appears to have come from Germany, Moesia and Thrace. The second- and early third-century belt fittings recovered from the river also suggest at least some soldiers had links with the Danubian *limes* (Ch. 6). Examples include five elements from *Lechinça de Mureş* belt plates, which are unparalleled in Roman Britain, instead occurring on the Danubian *limes* and particularly modern-day Romania (Hoss 2014, 156). Similarly, a ring buckle mount (BM-9A3577) dating to the period A.D. 175–250 is of a type that appears to cluster along the Danubian *limes* (Ubl 2002, 177, Anm. 11; Hoss 2014, 209–10). Mounts with trumpet motifs occur along the Danubian *limes*, but are also found more widely at military installations from Hadrian's Wall to Morocco (Hoss 2014, 175). An openwork belt plate (NCL-42E596) and a strap end (BM-F70315) have similar widespread frontier distributions with concentrations on Hadrian's Wall and along the Rhine and Danubian *limes*. While Knee brooches are also produced in Britain, at least one of the river finds (NCL-430847) is an import from the Continent, possibly from the upper Danube (Mackreth 2011, 192: Type 6) or the German *limes* (Bayley and Butcher 2004, 179, type 172).

We cannot know whether such unusual dress items were the possessions of auxiliaries recruited from the Danubian provinces (and their families), soldiers who had previously been posted in this region or even locals who wished to adopt or emulate Danubian fashions. It is nevertheless striking that many of these objects are the first of their type to be found in Roman Britain. While their unusual nature may not have indicated a specific origin to their contemporaries in Roman Britain, they stand out archaeologically because their distribution across the Empire does not display a gradual diminuation suggesting trade but highly localised occurrences at a significant distance from the main distribution areas. There are of course issues of source criticism (preferential deposition in, and publication of, Danubian cemeteries, for example) and ultimately the question of origin can only be resolved where human remains are subject to isotope analysis (cf. Eckardt 2014, 25–62). That incomers were buried in the wider region is not surprising. A tombstone from Cliffe, south of the river Tees opposite Piercebridge, commemorates a centurion from Upper Germany named Gracilis (*RIB* 1026), while there is artefactual evidence for incomers from Pannonia, Dacia and Moesia amongst the people interred along Dere Street in the Catterick area (Speed and Holst 2018, 642–5) and isotope analysis of the late Roman cemetery at Scorton (just north of Catterick) found that the majority of the men were originally from cooler, more continental areas such as Germany (Eckardt *et al.* 2015).

RELIGIOUS IDENTITIES

We have already reviewed the possibility that Piercebridge was the site of a shrine to Mars Condates, but there is no obvious concentration of objects associated with Mars in the river. The assemblage contains some figurines, associated primarily with Mercury or Venus, and there are other objects where a ritual association is perhaps more tenuous; these include plaques, miniature objects and lead-alloy coin copies. We have observed the treatment of objects routinely to assess how they may have been used throughout their life, and this can provide clues to the transformation of an object from something mundane to something ritually charged. Thus in Chapter 10 it was noted that some coins had been halved, bent, cut or defaced and other objects such as brooches, vessels and vessel mounts appear to have been deliberately cut, broken or distorted. While the attribution of original motivations for such treatments is difficult, they can provide useful insights into peoples' interactions with material culture, particularly as in the publication of other sites, such treatments are frequently unrecorded and unremarked upon.

FIG. 23.2. A reconstruction of the Dere Street bridge as it may have appeared in the late second or early third century A.D. (*Illustration: Aaron Watson*)

CONCLUSION

The assemblage from the Tees at Piercebridge is exceptional in its size and typological range. This may be the result of taphonomic processes but to us appears to also reflect particular depositional practices at the site. It is for this reason, and to challenge previous reconstruction images of Roman bridges (see FIG. 2.5), that we have worked with Aaron Watson to produce an image that highlights the ritual and magical aspects of peoples' interactions with the Tees (FIG. 23.2). Consideration of the Piercebridge bridges has highlighted the need for Roman archaeologists to focus less on the engineering aspects of these structures and be more open to an exploration of their symbolic and ritual significance. One question we may ask is how widespread the custom of depositing objects in water was in Roman Britain. Piercebridge, as a 'complete' assemblage from a major river, is currently unique but an ongoing literature survey of all finds from Romano-

British rivers has identified well over 300 examples. These include what appear to be deliberate deposits of statuary, such as the head of Hadrian from the Thames, as well as objects washed out from settlement deposits. This material is too extensive to be considered here, but forms the subject of a forthcoming book (Eckardt and Walton forthcoming).

Much of the debate about Roman finds from watery contexts across the Empire has been about 'high value' finds such as weapons and vessels but we suspect most river assemblages are much more like Piercebridge — that is dominated by coins and small finds. Until we excavate and publish more of these assemblages, discussion cannot move forward substantively from where we are now. More broadly, the entire distinction between ritual and mundane deposits is unhelpful (Fontijn 2012; Brück 1999). We have reviewed some of the debates surrounding votive deposition in the Roman world, and most objects from the Tees lack the inscriptions that would make a dedication to the gods certain. The concept of structured deposition, which has so strongly influenced the interpretation of pit and well deposits, is difficult to apply effectively to river finds. It is often impossible to identify 'odd deposits' such as articulated animal remains or complete pots in riverine contexts and we have found it more helpful to consider overall material culture patterning (Ch. 22). Such patterning may be the result of selection and ritual activity, or of the changing everyday rhythms of activity on a given site (cf. Garrow 2012, 94–103), but the fine-grained nature of much Roman material culture can distinguish between the two. Our Correspondence Analysis demonstrated that the riverine assemblage is very different from those from other sites in the region. Selection happened at Piercebridge, both in terms of individual elements and in terms of functional categories and materials, strongly hinting at some ritual activity.

As we have seen throughout this volume, it is however clearly wrong to frame the interpretation of watery deposits in terms of a stark dichotomy of either ritual or rubbish, as is demonstrated by the post-medieval finds from Lake Västannorstjärn (Dalarna) in rural Sweden. 'The residents of the nearby farm had used the lake for discarding refuse. At the same time, excavations also uncovered a large number of coins, small personal objects such as silver clasps and a lead tablet with a Marian prayer which was wrapped around bone, possibly a relic. These objects — unlikely to be just lost or thrown away — were in all likelihood part of ritual practices at the lake' (Regner 2017, 310). We think the same is true of Piercebridge, where some material may represent rubbish disposed into the river or washed away by its erosive action. However, for the first time, by examining the entire assemblage and by comparing its composition to other northern sites it has also became clear that a significant proportion of the material is likely to have been ritual in nature. It is to be hoped that future excavation at Roman bridges and fords along with the publication of all the finds discovered at such sites will throw further light on the ways in which the people of the Roman Empire interacted with rivers through material culture. Of wider relevance to the study of riverine deposits of all periods are the methodological lessons learnt in this project, namely the importance of publishing entire assemblages and considering the fluvial and wider landscape context even where excavation to modern standards was not possible. The aim must be to relate finds to structures such as bridges and fords and their chronology, to explore the nature of deposition in the river and compare it to nearby settlements through statistical analysis. Finally, discussion needs to move beyond ancient motivations for deposition to focusing on the identities of the people who once used and deposited the artefacts.

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ABBREVIATIONS

AE	*L'Année Epigraphique*
CIL VIII	*Corpus Inscriptionum Latinarum: Inscriptiones Africae Latinae* 1881
RE	Pauly, A., Wissowa, G., Kroll, W., Witte, K., Mittelhaus, K. and Ziegler, K. (eds) 1894–1980: *Paulys Realencyclopädie der classischen Altertumswissenschaft: neue Bearbeitung*, Stuttgart: J. B. Metzler
RIB I	Collingwood, R.G., Wright, R.P. and Tomlin, R.S.O. (eds) 1995 (new edition): *The Roman Inscriptions of Britain. Volume I: Inscriptions on Stone*, Stroud: Alan Sutton. <https://romaninscriptionsofbritain.org>
RIB II.1	Collingwood, R.G. and Wright, R.P. 1990–1995: *The Roman Inscriptions of Britain. Volume II: Instrumentum Domesticum (Personal Belongings and the like).* S.S. Frere and R.S.O Tomlin (eds), Gloucester: Alan Sutton

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