



Housesteads is one of the most important forts on Hadrian's Wall. Extensive excavations were carried out between 1874 and 1981 by Newcastle University. Combining the results with those of excavations done between 1959 and 1961 by Durham University, we now have a complete plan of the north-east part of the fort.

These excavations uncovered principally Buildings XIII, XIV and XV, plus stretches of rampart between the north and east gates, along with a multitude of

features and stratigraphic evidence, revealing not only the sequences but also large finds assemblages. In addition to shedding much light on the material culture of the fort's occupants and the structural and chronological relationships between various parts of the fort, limited reinvestigation of Building XIV and excavation of the east end of Building XV enabled significant reinterpretation of the original conclusions reached by the Durham investigators, including some redating of structures.

These excavations uncover the full 300-year period during which the fort formed an integral part of the Roman military frontier, for much if not all of that time the base of the *cohors I Tungrorum miliaria peditata*. This report documents the excavations and gives full finds reports, and the analysis of the evidence has enabled the authors to provide a full history of this part of the fort.

Front cover: Building XIII in 1976, from the west, with Chalet 8 in the foreground

Back cover: Hearth H20:5:63 in north rampart Workshop 2

HOUSESTEADS ROMAN FORT

Volume 2

Alan Rushworth



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HOUSESTEADS ROMAN FORT – THE GRANDEST STATION

Volume 2

The Material Assemblages

HOUSESTEADS ROMAN FORT – THE GRANDEST STATION

Excavation and survey at
Housesteads, 1954–95, by
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Introduction to Volume 2

The material assemblages yielded by the 1974–81 excavations are reported on in this volume (Chapters 12–21). The scale of some of these categories of material evidence was very substantial (over 800 coins from Housesteads as a whole, 13,522 coarse pottery sherds from the north-east quarter for example). The small finds numbering system for the 1974–81 excavations ran to over 9000 items (excluding pottery) and, although many of these (nails, hobnails etc) have not merited description in this volume, Chapter 14 includes over 400 objects worthy of discussion and cataloguing. Much of this material was found in the layers of the ramparts progressively reinstated in the mid- to late 3rd century and widened in the 4th century. The original provenance of this material is an important question. Put simply, was this material incorporated in the rampart deposits during the rampart construction works, as part of processes of rubbish disposal, accidental breakage and/or casual loss, for instance, or was it brought into the fort with the material used to form the rampart? (For detailed discussion of this problem see Volume 1, Chapter 4.) Together all these assemblages shed considerable light on the material culture of the fort and the structural and chronological relationships between various parts of the site. Some of the principal conclusions are noted below.

The stonework, brick and tile assemblage from the north-east quarter catalogued and analysed in Chapter 12 provides much evidence for the appearance of the fort and the patterns of later reuse of this material. For example, a detailed discussion of the different types of string course blocks found during the excavations is incorporated. The quernstones and large mortars are also treated in this section. The coin assemblage from the entire site has been included in Chapter 13 and represents what is for the present a definitive catalogue. Comparison of the coinage from the fort and *vicus* has important implications for our understanding of the date of abandonment of the civil settlement and strongly indicates that the *vicus* was abandoned in the 270s. Counterfeiting activity during the early 3rd century is represented at Housesteads by the two coin moulds, as well as finds of significant numbers of forged coins which indicate that about 30 per cent of the coinage in circulation at the site during the Severan period may have been counterfeit.

The recording of individual small finds location during the 1974–81 excavations was sufficiently precise to enable the analysis of their spatial distribution in Chapter 14. Differences identified between assemblages in the *contubernia* and officer's quarters of the barrack blocks – notably the presence of artefacts that might be indicative of female use – suggest that centurions were accompanied by and resided with dependent households within the fort. Ordinary soldiers,

however, do not seem to have had female dependants living with them, on the evidence of the small finds. This pattern did not change between the Principate and the later empire. In other words, no evidence was recovered to support the notion that the later Roman garrison of the fort comprised a militia of hereditary farmer-soldiers, living in 'married quarters' with their families, as was initially argued.

Samian ware from the 1974–81 excavations is set out in Chapter 15 together with a small assemblage from the *vicus* recovered during the 1930s, which has not previously been published. The assemblage offers strong indications that the fort was abandoned, or not fully garrisoned, during the early Antonine period, which provides an intriguing contrast to the picture of unbroken occupation presented by the stratigraphic evidence from Barrack XIII.

Chapter 16 presents a full coarse pottery type series for the north-east quarter of the fort, with cross-referencing to occurrence in the stratigraphy. The assemblage represents one of the largest yet to be reported on from a Hadrian's Wall fort and includes a significant proportion of the very latest forms, suggesting that occupation continued right up to the end of the Roman period. Particular consideration is given to the problems of dating mid-2nd- to early 3rd-century bowls and dishes in BB2.

The collection of glass vessels found in 1974–81 (see Chapter 17) was in extremely fragmentary condition, but it was clear that, as well as more utilitarian containers, several fine items of tableware – including some that may be of surprisingly early date – were in use on the site. The commonest finds were blue-green bottles, which were in widespread use in the 1st and 2nd centuries. At the other end of the spectrum, the assemblage included a figure-cut fragment which represents a group of vessels rarely found in Britain, showing once again that tableware of the highest quality was in use at Housesteads.

The 20 graffiti published in Chapter 18 include one example, 'Neuto', which is otherwise attested at the shrine of Nehalennia in the East Scheldt estuary and in the territory of the Tungri, the homeland of the cohort which is known to have garrisoned the fort in the 3rd and 4th centuries, if not earlier. Taken in conjunction with other epigraphic evidence, such nomenclature might indicate hereditary service and the retention of traditional family names among the personnel of the *cohors I Tungrorum* or, perhaps more likely, the practice of drafting recruits from Gallia Belgica and Germania Inferior to replenish the unit.

The analysis of associated metalworking debris from the rampart areas in Chapter 20 is of great significance for our understanding of the activities that took place next to the curtain wall following the

removal of the rampart bank in the 3rd century. In its range and quantity, the metalworking debris from the north-east defences at Housesteads is unparalleled from Roman military sites in Britain. In conjunction with the structural evidence outlined in Chapter 4, it suggests that manufacture, rather than simply repair, of equipment, predominantly of copper alloy, such as belt buckles or suspension loops, was taking place there. The Housesteads evidence thus raises important questions regarding the extent and location of metalworking activities in Roman forts, and above all the way in which archaeologists have hitherto conceptualised such activities. It is conceivable that similarly abundant evidence for metalworking has not been

located previously elsewhere because excavators have been seeking a distinct building type to which the title *fabrica* could be applied. In reality, it is evident that the metalworking activities associated with equipment manufacture could be performed in many different types of structure, notably the simple open-fronted sheds set into ramparts exemplified in the north-east quarter.

The flint assemblage presented in Chapter 21 adds further evidence of prehistoric activity in the vicinity of Housesteads, which must be set alongside the possible traces of cord rig furrows under Building XIII and the terrace earthworks north of the fort identified in Chapters 2 and 10 respectively.

Introduction du volume 2

Les assemblages de matériel découverts durant les fouilles de 1974 à 1981 sont décrits dans le présent volume (chapitre 12 à 21). Dans certaines catégories, le nombre d'éléments découverts s'est avéré fort substantiel (les plus de 800 pièces de monnaie venant de l'ensemble du fort de Housesteads et les 13 522 tessons de poterie grossière venant du quartier nord-est par exemple). Le système de numérotation des petits objets découverts établi pour les fouilles de 1974 à 1981 a permis de dénombrer 9000 objets (à l'exception de la poterie) et, bien qu'un grand nombre d'entre eux (clous, caboches etc.) ne méritent pas d'être décrit dans le présent volume, le chapitre 14 couvre 400 objets dignes d'un examen et d'un catalogage. Une grande partie du matériel a été découverte dans les couches des remparts progressivement rétablis du milieu à la fin du III^e siècle et élargis au IV^e siècle. La provenance d'origine de ce matériel pose une question importante. En quelques mots, ce matériel a-t-il été intégré aux dépôts du rempart durant sa construction, dans le cadre de l'élimination des déchets, suite à des bris accidentels ou à une perte, par exemple, ou a-t-il été apporté au fort avec les matériaux utilisés pour le construire? Ensemble, tous ces assemblages fournissent des informations considérables sur la culture matérielle du fort et sur les relations structurelles et chronologiques entre les différentes parties du site. Certaines des principales conclusions sont notées ci-dessous.

La maçonnerie, les briques et les tuiles du quartier nord-est cataloguées et analysées dans le chapitre 12 fournissent de nombreuses informations sur l'apparence du fort et sur les modes de réutilisation ultérieure de ce matériel. Un examen détaillé des différents types de blocs de bandeau trouvés durant les fouilles est effectué. Dans cette section, les meules et les grands égrugeoirs sont également étudiés dans les détails. L'assemblage de pièces provenant de l'ensemble du site est traité dans le chapitre 13 et représente pour le moment un catalogue définitif. La comparaison des pièces venant du fort et du *vicus* fournit des indications importantes concernant la date de l'abandon de l'agglomération civile et nous permet de conclure que cette dernière a été abandonnée dans les années 270. Des activités de contrefaçon sont attestées à Housesteads par la présence de deux moules à pièces et d'un nombre important de fausses pièces qui permettent de conclure que jusqu'à trente pour cent des pièces circulant sur le site durant la période de l'empereur Sévère auraient pu être fausses.

Les indications de l'emplacement où ont été découverts les petits objets durant les fouilles de 1974 à 1981 sont suffisamment précises pour permettre d'analyser leur distribution spatiale dans le chapitre 14. Les différences observées entre les assemblages des *contubernia* et des quartiers des officiers des bâtiments des

casernes – notamment la présence d'artefacts susceptibles d'avoir été utilisés par des femmes – indiquent que les centurions étaient accompagnés de personnes dépendantes qui vivaient avec eux au sein du fort. Cependant, d'après ce qu'indiquent les petits objets découverts, cela n'aurait pas été, semble-t-il, le cas des soldats ordinaires. Ce modèle n'a pas changé entre le principat et la fin de l'empire. En d'autres mots rien ne montre qu'au fort, à la fin de l'empire, la garnison romaine se soit composée d'une milice de cultivateurs-soldats héréditaires accompagnés de leurs familles contrairement à ce qui a été affirmé au départ.

La céramique arétine provenant des fouilles de 1974-1981 est décrite dans le chapitre 15 avec un petit assemblage venant du *vicus*, découvert durant les années 1930, qui n'a pas été publié auparavant. L'assemblage indique fortement que le fort a été abandonné, au moins partiellement, au début de la période d'Antonin, ce qui forme un contraste surprenant avec l'occupation ininterrompue qui peut être déduite des vestiges stratigraphiques de la caserne XIII.

Le chapitre 16 présente une série complète types de poteries grossières venant du quartier nord-est du fort avec renvoi à l'occurrence dans la stratigraphie. L'assemblage figure parmi les plus nombreux découverts jusqu'à présent dans un fort du mur d'Hadrien et comporte une proportion importante des formes les plus récentes, indiquant que l'occupation s'est poursuivie jusqu'à la fin de la période romaine. Une attention particulière est accordée aux problèmes suscités par la datation de bols et de plats en *Black-Burnished 2* venant du milieu du II^e siècle au début du III^e siècle.

La collection de récipients en verre découverte de 1974 à 1981 (voir le chapitre 17) était surtout composée de fragments, mais il est clair qu'outre des récipients à caractère utilitaire, plusieurs articles de belle qualité – y compris certains qui, chose surprenante, remontent à une période assez ancienne – étaient utilisés sur le site. Les plus fréquemment trouvés, des bouteilles bleu-vert, étaient répandus au I^{er} et au II^e siècle. À l'autre bout de l'échelle, figurait dans l'assemblage un fragment gravé d'un personnage, typique de récipients rarement découverts en Grande-Bretagne, indiquant une fois de plus que la vaisselle utilisée à Housesteads était de la plus haute qualité.

Parmi les 20 graffitis publiés au chapitre 18 figure notamment un exemple, «Neuto», qui est également attesté à l'autel de Nehalennia, dans l'estuaire de l'Escaut oriental, et dans le territoire des Tungres, le pays d'origine de la cohorte qui était en garnison au fort aux III^e et IV^e siècles, sinon avant cela. Prise en conjonction avec d'autres indications épigraphiques, cette nomenclature atteste peut-être l'existence d'un service héréditaire et la pratique de conserver les noms de famille traditionnels dans la *cohors I Tungrorum* ou

peut-être celle de recruter en Gallia Belgica et en Germania Inferior pour regarnir les rangs de l'unité.

L'analyse des débris métalliques associés provenant des zones des remparts exécutée dans le chapitre 20 joue un grand rôle dans la reconstitution des activités qui se sont déroulées près de la courtine après l'élimination du talus servant de rempart au III^e siècle. La diversité et le nombre des débris liés au travail du métal provenant des défenses nord-est de Housesteads est sans parallèle sur les sites militaires romains de Grande-Bretagne, et, en conjonction avec les vestiges structurels décrits au chapitre 4, indique qu'il s'agissait ici de fabrication plutôt que de la simple réparation d'un matériel fabriqué principalement au moyen d'un alliage de cuivre, comme les boucles de ceinture et les anneaux de suspension. Ces vestiges soulèvent des questions importantes concernant l'étendue et l'implantation des activités de travail du métal dans les forts romains et les hypothèses jusqu'à présent établies

par les archéologues au sujet de ces activités. On peut imaginer que les fouilleurs n'ont pas réussi auparavant à identifier les abondants vestiges du travail du métal parce qu'ils cherchaient des bâtiments distincts auxquels ils auraient pu appliquer le terme de *fabrica*. En réalité, de nombreux types de structures pouvaient manifestement jouer de manière satisfaisante le rôle d'atelier implicite dans ce terme, notamment les appentis à façade ouverte encastrés dans les remparts notamment dans le quartier nord-est.

L'assemblage de silex présenté au chapitre 21 offre d'autres preuves d'une activité préhistorique dans le voisinage de Housesteads, qui doit être associée aux traces possibles de sillons *cord rig* découvertes sous le bâtiment XIII et aux ouvrages de terre situés au nord du fort identifiés dans les chapitres 2 et 10 respectivement.

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Einleitung in Band 2

Die Assemblagen, die im Zuge der Ausgrabungen von 1974–81 zusammengetragen wurden, sind in diesem Band aufgeführt (Kapitel 12–21). Einige Kategorien dieser Materialnachweise waren recht umfangreich (beispielsweise insgesamt über 800 Münzen aus Housesteads und 13.522 grobe Keramikscherben aus dem nordöstlichen Viertel). Das Nummerierungssystem für die kleinen Funde im Rahmen der Ausgrabungen von 1974–81 listete über 9.000 Gegenstände auf (ohne Keramik), und wenngleich viele davon (Nägel, Schuhnägel usw.) keine Berücksichtigung in diesem Band finden können, beinhaltet Kapitel 14 über 400 Objekte, für die eine nähere Erörterung und Katalogisierung lohnt. Ein großer Teil dieses Materials wurde in Schichten des Erdwalls, der nach und nach Mitte bis Ende des 3. Jahrhunderts wieder eingesetzt und im 4. Jahrhundert erweitert wurde, gefunden. Die ursprüngliche Herkunft des Materials wirft eine wichtige Frage auf, die, einfach ausgedrückt, folgendermaßen lautet: Gelangte es während der Bauphase im Zuge der Abfallentsorgung oder aufgrund von versehentlichem Verlust und/oder Zerbrechen in den Erdwall oder wurde es zusammen mit dem Baumaterial für den Wall in die Festung gebracht? Zusammen genommen brachten all diese Assemblagen maßgebliche Erkenntnisse über die Materialkultur der Festung und die strukturelle und chronologische Beziehung zwischen den verschiedenen Bereichen der Stätte. Nachfolgend sind einige der wichtigsten Schlussfolgerungen aufgeführt.

Das in Kapitel 12 katalogisierte und analysierte Mauerwerk, Backstein- und Ziegel-Assemblagen aus dem nordöstlichen Viertel, bietet einen umfangreichen Nachweis über das Aussehen des Römerkastells und die Muster der späteren Wiederverwendung dieses Materials. Beispielsweise ist eine detaillierte Besprechung der unterschiedlichen Arten von Gurtgesimssteinen enthalten, die während der Ausgrabungen gefunden wurden. Mühlsteine und große Mörser werden in diesem Kapitel ebenfalls behandelt. Die Münzassemblage aus der gesamten Stätte ist in Kapitel 13 enthalten und stellt einen zum aktuellen Zeitpunkt endgültigen Katalog dar. Ein Vergleich des Münzgelds aus dem Kastell und dem *vicus* liefert wichtige Folgerungen für unser Verständnis vom Zeitpunkt der Aufgabe der zivilen Besiedlung und weist stark darauf hin, dass der *vicus* in den 70er Jahren des 2. Jahrhunderts aufgegeben wurde. Münzfälscherei im frühen 3. Jahrhundert in Housesteads wird durch zwei Münzformen sowie durch Funde einer erheblichen Menge von gefälschten Münzen nachgewiesen, welche die Vermutung nahelegen, dass es sich bei rund 30 % der sich in der severischen Periode im Umlauf befindlichen Münzen um Falschgeld gehandelt haben könnte.

Die Aufzeichnungen von einzelnen kleinen Fundstellen der Ausgrabungen von 1974–81 waren so genau, dass eine Analyse ihrer räumlichen Verteilung in Kapitel 14 möglich ist. Die Unterschiede zwischen den Assemblagen in den *contubernia* und den Offiziersquartieren in den Barackenblöcken, insbesondere Artefakte, die auf weibliche Benutzer hinweisen, legen nahe, dass die Zenturionen sich in Begleitung befanden und ihren eigenen Haushalt innerhalb des Lagers führten. Gemeine Soldaten hatten offenbar keine weiblichen Angehörigen, die bei ihnen wohnten, wie die kleinen Funde zeigen. Dieses Muster bleibt während Prinzipat und dem späteren Imperium unverändert. In anderen Worten: Es gibt keinen Nachweis für die anfänglich vertretene Auffassung, dass die spätere römische Garnison des Lagers aus einer Miliz sesshafter Bauernsoldaten mit ihren Familien bestand.

Funde von Terra Sigillata während der Ausgrabungen von 1974–81 sind in Kapitel 15 zusammen mit einer kleinen Assemblage aus dem *vicus* dargelegt, die in den 1930er Jahren gefunden und bisher noch nicht publiziert wurde. Diese Assemblage liefert einen starken Hinweis dahingehend, dass das Kastell in der frühen antoninischen Ära aufgegeben wurde oder nicht voll besetzt war. Dies steht in einem interessanten Widerspruch zu dem Bild der ununterbrochenen Besatzung, das stratigraphische Nachweise aus Baracke XIII zeichnen.

Kapitel 16 zeigt eine vollständige Reihe von grober Keramik des nordöstlichen Bereichs des Römerlagers mit Querverweisen zum Auftreten in der Stratigraphie. Diese Assemblage ist eine der größten vom Hadrianswall, über die noch zu berichten ist, und beinhaltet einen bedeutenden Teil der absolut jüngsten Formen, die darauf hinweisen, dass die Besatzung bis zum Ende der römischen Ära andauerte. Die Probleme bei der Datierung von Schüsseln und Geschirr in BB2 aus Mitte des 2. und Anfang des 3. Jahrhunderts finden besondere Berücksichtigung.

Die Sammlung von Glasbehältern, die von 1974–81 gefunden wurden (s. Kapitel 17) war stark fragmentiert, aber es war klar, dass neben eher alltäglichen Behältern auch feineres Tafelgeschirr – von dem einiges aus überraschend früher Zeit stammen könnte – im Lager zum Einsatz kam. Die häufigsten Funde waren blaugrüne Flaschen, die im 1. und 2. Jahrhundert stark verbreitet waren. Am anderen Ende des Spektrums beinhaltete die Assemblage ein Fragment aus einer Form, die für eine Gruppe von Behältern steht, die in Großbritannien selten gefunden wird und belegt, dass Tafelgeschirr höchster Qualität in Housesteads zum Einsatz kam.

Die 20 Inschriften (Graffiti), die in Kapitel 18 aufgeführt sind, beinhalten das Beispiel, „Neuto“, das

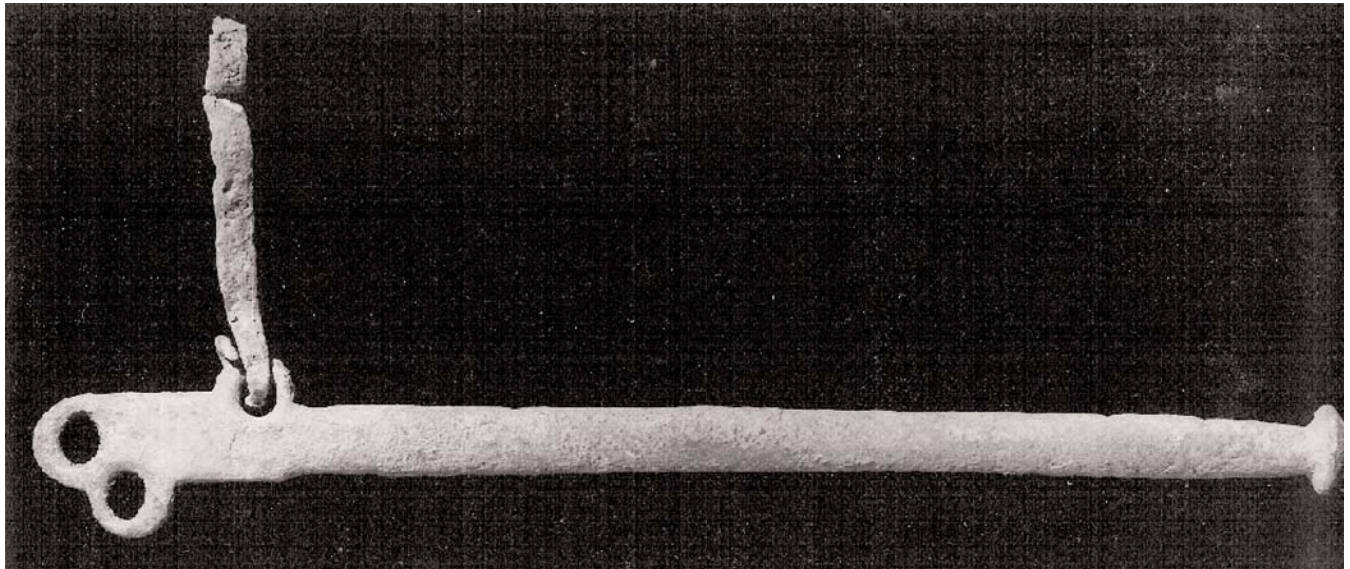
ansonsten am Schrein der Nehalennia im Tempel an der Oosterschelde und im Territorium der Tungri gefunden wird, dem Heimatland der Kohorte, die bekanntlich im 3. oder 4. Jahrhundert im Lager stationiert war, wenn nicht früher. Zusammen mit weiteren epigraphischen Nachweisen kann eine solche Bezeichnung auf ansässige Soldaten und die Beibehaltung von traditionellen Familiennamen beim Personal der *cohors I Tungrorum* hinweisen. Es ist auch vorstellbar, dass Rekruten aus Gallia Belgica und Germania Inferior eingezogen wurden, um die Einheit aufzustocken.

Die Analyse von Schrott aus damit in Beziehung stehender Metallarbeit im Bereich des Erdwalls in Kapitel 20 ist von großer Bedeutung für unser Verständnis über die Aktivitäten, die in der Nähe des Grenzwalls nach Entfernung des Walls im 3. Jahrhundert stattfanden. Der Umfang und die Menge von Metallschrott an den nordöstlichen Befestigungsanlagen von Housesteads ist einzigartig für römische Militärstandorte in Großbritannien weist zusammen mit strukturellen Nachweisen, die in Kapitel 4 beschrieben sind, darauf hin, dass nicht nur einfache Reparaturarbeiten stattfanden sondern Metallarbeiten aus Kupferlegierungen durchgeführt wurden wie Gürtelschnallen oder

Einhängeschlaufen. Die Nachweise aus Housesteads werfen somit wichtige Fragen bezüglich Ausmaß und Standorten von Metallverarbeitung in römischen Militärstützpunkten auf und vor allem, welche Vorstellung Archäologen bisher davon hatten. Möglicherweise haben die an den Ausgrabungen beteiligten Wissenschaftler die reichhaltigen Nachweise für Metallarbeiten nicht gefunden, weil sie nach einer bestimmten Gebäudeart suchten, die als *fabrica* bezeichnet werden könnte. Tatsächlich ist es offensichtlich, dass verschiedene Arten von Strukturen die Funktion einer Werkstatt zufriedenstellend erfüllt haben könnten, insbesondere die Verschlüsse mit offener Frontseite, die in den Wall eingelassen waren. Beispiele dafür finden sich im nordöstlichen Viertel.

Die Flinsein-Assemblage, die in Kapitel 21 gezeigt wird, ist ein weiterer Nachweis für prähistorische Aktivitäten Nahe Housesteads, die zu den möglichen Spuren von einer Cord Rig Kultivierung unter Gebäude XIII passen und den terrassenartigen Erdarbeiten nördlich des Kastells, die in Kapitel 2 bzw. 10 aufgezeigt sind.

Translated by Tamara Benscheidt in association with First Edition Translations Ltd, Cambridge, UK



Frontispiece: The steelyard from Building XIII (see Chapter 14, No. 59)

12 The stonework, brick and tile

D A Welsby

The stonework, querns and large stone objects

Introduction

The catalogue below contains 119 pieces, 79 of which were examined by the writer during 1988. Of the others, a number were not located while some had become mixed up with the stones in the stone pile by the west gate and could not be identified. This is particularly the case with the string course blocks. Twenty-five of the pieces have been consolidated *in situ*, which has often made their detailed study difficult if not impossible. Most of the pieces come from Building XIII and the rampart areas to the north and east, although several are from Building XIV and from the area immediately beyond the north wall of the fort excavated in 1984. Entries in the catalogue prefixed with an asterisk (*) have been illustrated either at a scale of 1:4 or 1:8. Numbers prefixed by HO refer to objects that are not from the recent excavations, but are recorded in the archive report on the stone objects from the fort. Unless otherwise stated all the pieces are of sandstone.

Catalogue

Inscriptions (Fig 12.1)

1. * Fragment of an inscribed block with part of the top edge surviving and roughly dressed with a point. The one letter, of which a substantial portion remains, may be an A with the narrower and deeper incised stroke carried well above the point of junction with the other. A rather irregular groove by one broken edge of the stone may be part of another letter. If the first letter is correctly identified the form is unusual (cf *RIB* 1701 from Chesterholm). Where one stroke extends above

the other it is generally the right-hand stroke which is so treated (cf *RIB* 1576 and 1610 from Housesteads). Also the letter will have been very tall and narrow. The scale of the letter suggests that it came from an inscription of considerable size.

Size – H:205mm, W:235mm, Th:80mm.

H20:5:13 – Inventory No. 52.

2. Not located 1988. Facing stone with an inscription carved on one face (Fig 12.8 A). This has been published by R S O Tomlin in *Britannia* VIII 1977, 431, no. 20 and n 36 and 37.

‘CAMIA N[.], *c(enturia) Camian[i]*. The M has been partly erased. The centurion is otherwise unknown, but his *nomen* is attested in Italy.’

The use of this stone in a *contubernium* wall of the barrack phase (H13:8:7) raises the possibility that it is in its original position (see Fig 12.8 A). However, it is unlikely that the stone would have been built into the wall at such a low level by the century of Camianus. Dr M Bishop has suggested that if the wall was not rebuilt at a later date then the stone may have originally been set into Hadrian’s Wall or Turret 36b and was released for reuse when the Wall and turret were demolished to make way for the fort. If this is the case then it suggests that the turret or Wall at Housesteads had been constructed to a considerable height before the decision to build the fort was taken. However, it should be noted that this wall footing was incorporated in the later Chalet 8.

Size – L:160mm, W:250mm, Th:140mm.

Building XIII, Chalet 8, reused in the early west wall H13:8:7 – Inventory No. 27.

3. Not located 1988. Facing stone with an inscription carved on one face and reddened by fire. This has been published by R S O Tomlin in *Britannia* VIII 1977, 432, no. 21 and n 38 and 39. ‘It reads CVNARIS. The C is preceded by a triangle of three short vertical “pecks” which cannot be interpreted as a centurial sign. The name Cunaris seems to be unrecorded, but is an acceptable Celtic formulation.’

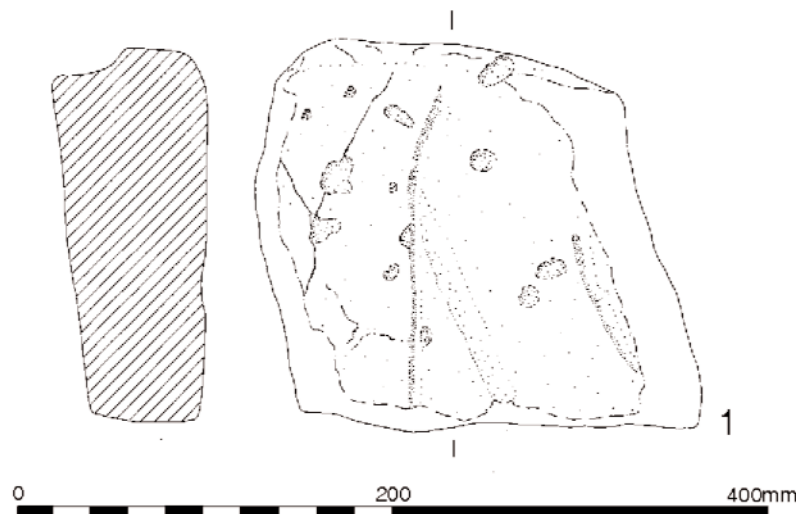


Fig 12.1 Inscription no. 1 (scale 1:4).

Size – L:120mm, W:240mm, Th:170mm.

Found within or in the immediate vicinity of Building XIII – Inventory No. 34.

See also nos 111 and 114.

Reliefs (Fig 12.2)

4. * Not located 1988. The illustration, only approximately to scale, is a copy of the sketch in the finds book drawn at the time of the stone's discovery. Relief of a naked male figure holding a buckler in his left hand and with his right hand resting perhaps on an altar. For a buckler of identical type see *CSIR* I 6, no. 360 from Great Chesters. The figure apparently lacks the spear of the Yardhope warrior god (Charlton and Mitcheson 1983, pl XIV A), but is presumably of that general type (cf also *CSIR* I 6, no. 373). Whether the Housesteads example was a horned individual is unclear as the stone is broken off at the critical point.

Size – H:185mm, W:190mm, Th:90mm.

H20:4:10 – Inventory No. 53.

5. Not located 1988. Sculptured stone. The sketch in the finds book does not make it at all clear what this piece is.

Size – H:200mm, W:190–150mm, Th:unknown.

H20:9:11 – Inventory No. 71.

6. * Rectangular stone block, perhaps originally with a rounded top, now broken off. On the front face the centre has been dressed back to leave a figure in relief. Two legs and a torso are clear, dressed in a short cloak down to the knees. Above the narrow neck the head has been removed by the cutting of an inverted conical depression that survives to a maximum depth of 36mm. In the area of the chest the surface has been cut back a little leaving two raised areas, possibly representing hands, the one on the left perhaps attached to an arm. The short cloak hitched up between the knees is very reminiscent of a relief of the Genii Cucullati from Vindolanda (*CSIR* I 6, no. 153) but there is no evidence to suggest that the Housesteads piece formed part of a relief depicting three figures.

Size – H:215mm, W:135mm, Th:100mm.

Location: H20:4:15 – no Inventory Number.

7. Oval shaft with some fine vertical grooving, perhaps part of a statue. The findspot of this piece may date to the earliest phase of the fort.

Size – 'D':130 × 100mm, L:165mm.

H21:3:26 – no Inventory Number.

Architectural fragments (Fig 12.3)

8. * Very roughly dressed block, except on the one face visible with the semi-circular opening. This face appears to be worn, especially close to the opening, suggesting that at some time this face had been set uppermost. Possibly half of a manhole rather than a window head. If it is to be identified as a window head the opening would have been much narrower than the norm. A not dissimilar piece, unfortunately damaged but with the opening perhaps of the same general size, can be seen in the south guardroom of the East gate at Birdoswald. The Housesteads piece had been reused during a later modification to Chalet 2 (see Fig 12.8 C).

Size – H:320mm, W:770mm, Th:175mm, D of opening approximately 290mm.

Building XIII, Chalet 2 – reused on the west side of the south doorway, H13:2:16, consolidated *in situ* – Inventory No. 6.

9. Not located 1988. Fragment with one curved edge bordered by two grooves or beads. Perhaps part of the curved edge around the semi-circular opening in a monolithic window head.

Size – L:180mm, W:120mm, Th:110mm, D of opening: unknown.

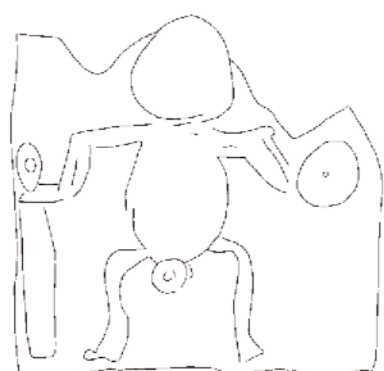
Building XIII, Chalet 6 – from the ploughsoil and rubble, H13:6:14, beneath the flagging 13 – Inventory No. 31.

10. Not located 1988. Fragment with one curved edge bordered by two grooves or beads. Probably part of the curved edge around the semi-circular opening in a monolithic window head.

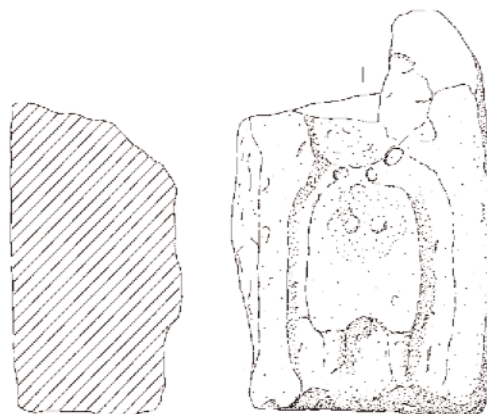
Size – L:180mm, W:150mm, Th:100mm, D of opening: unknown.

Building XIII, Chalet 8 – layer H13:8:40 – Inventory No. 40.

11. * Fragment from the corner of a window head with a triple groove border on the front face along the two



4



6

0 200 400mm

Fig 12.2 Relief nos 4 and 6 (scale 1:4; 4 is illustrated from a finds book sketch).

- dressed edges. The front face is dressed flat and smooth, as is one of the edges (the upper bedding face?). The other edge (bedjoint?) is rougher with clear toolmarks. The rear face is quite flat with a few tool depressions visible.
Size – H:290mm, W:280mm, Th:135mm.
Immediately beyond the north wall – Inventory No. XIII.
12. * A little less than one half of a monolithic window head. Both front and rear roughly dressed, as are all the edges.
Size – H:380mm, W:340mm, Th:115mm, approximate D of opening:640mm.
H20:6:3, found in a stone pile with nos 14, 24 and 42 (Fig 12.9 F). Inventory No. 65.
13. Column shaft broken off at one, and probably at both, ends. Largely obscured by consolidation. The part of the shaft protruding above the floor, in which it has been set, is extensively damaged.
Size – L:690mm, D:240–280mm.
Building XIII, Chalet 4, reused in floor H13:4:9, consolidated *in situ* – Inventory No. 24.
14. Column shaft broken off towards the narrower end. The shaft is markedly square in section with numerous flats. In the centre of the one end preserved is a hole 65 × 60mm in size and 87mm deep. The alignment of the hole deviates considerably from the long axis of the shaft. Two deep grooves on the shaft may be plough marks.
Size – L:790mm, 'D' at top:240 × 220mm. Virtually square (300mm) at the other end.
H20:6:3, found in a stone pile with nos 12, 24 and 42 – Inventory No. 60.
15. Column shaft broken at both ends. Marked taper from 270 to 205mm.
Size – L:150mm, D:270–205mm.
Reused in the late fort wall reconstruction, H20:4:10 – Inventory No. 64.
16. Column shaft, now in two pieces and broken off at both ends. The shaft is bulbous ranging from 255mm to 280mm. A rebate 100mm wide has been cut along the length of the shaft on the side towards Chalet 1, presumably when it was reused as a threshold.
Size – L:850mm, D:280mm.
Building XIII – reused as a threshold in the doorway between Chalets 0 and 1, H13:1:77, consolidated *in situ* – no Inventory Number.
17. Column shaft broken off at both ends and down its length. Diameter uncertain.
Size – L:260mm, D: unknown.
From immediately beyond the north wall, H20:10:10 – Inventory No. V.
18. Column shaft fragment broken off at both ends and down its length. Small tooling depressions over the whole surface.
Size – L:270mm, D:290mm.
From immediately beyond the north wall, H20:10:10 – Inventory No. X.
19. Column shaft? Rectangular stone roughly rock-faced on all sides. One side curves into the adjacent end. The curve is quite well rounded but is not smooth and has no clear tool marks. This may be a fragment from a column shaft that has been broken up for reuse as a building stone. If dressed for a more specific task it is very rough.
Size – L:270mm, W:170mm, Th:155mm, ?D:290mm.
- From immediately beyond the north wall – Inventory No. XVII.
20. * Column shaft, base and plinth. Much of the plinth and the base mouldings are obscured by consolidation. The two *torus* mouldings are well rounded with a sharply defined junction with the shaft. The shaft also is generally well rounded and smooth but with two marked flats. It is broken off at the top.
Size – H:560mm, D:195–230mm. H of shaft:360mm.
Building XIII, Chalet 7, from the north end of the east wall, consolidated *in situ* – Inventory No. 41.
21. * Column shaft, base and plinth much obscured by consolidation. Square or rectangular plinth on two and probably on three sides, the upper parts of which are chamfered towards the base mouldings. Lower moulding rectangular in horizontal section. The upper moulding is a standard *torus* with a marked flat in the centre of the one visible side. Shaft roughly broken off at the top.
Size – H:385mm, D:200mm, H of shaft:85mm.
Building XIII, Chalet 5, reused in the extension of the west wall at its north end (H13:5:1), consolidated *in situ* – Inventory No. 50.
22. * Column base and plinth, much obscured by consolidation. The outline of the shaft can be made out on the top of the *torus*. If the shaft had been an integral part of the base it has been dressed off later. A deep score across the top is presumably a plough mark.
Size – H:295mm, D of *torus*:310mm, D of shaft:240mm.
Building XIII, Chalet 5, reused in the extension of the west wall at its north end (H13:5:1), consolidated *in situ* – Inventory No. 51.
23. * Column base and plinth. Small fragment with the full profile of one *torus* moulding and the beginning of another. The broken face of the fragment is rounded indicating that the piece has been reused in its present state.
Size – H:160mm, W:140mm, Th:80mm. Approximate D of lower *torus*:380mm.
Unprovenanced – no Inventory Number.
24. * Column shaft, base and plinth. The *torus* moulding is oval to make full use of the top of the rectangular plinth. The back of the plinth is very rough and there is no *torus* directly above it, perhaps as a result of the original face having been removed at a later date. On one of the short sides, which is quite roughly dressed, the *torus* has also been removed. The shaft, like the *torus*, is markedly oval in section, by the base 260 × 240mm increasing to 275 × 250mm at the top. The top is flat with a square hole 80mm in size and 40mm deep in the centre.
Size – H:465mm, D:260–275mm, H of shaft:180mm
H20:6:3, found in a stone pile with nos 12, 14 and 42 (Fig 12.9 F). Inventory No. 59.
25. * Column shaft, base and plinth. Very tall plinth (410mm) of square section (270mm) roughly dressed on all sides. The single thick *torus* is also roughly dressed with a flat above the centre of each face of the plinth. Immediately adjacent to the shaft on top of the *torus* is a deep (6mm) V-sectioned groove extending right across the *torus* parallel to one face of the plinth. The shaft is broken off at the top.
Size – H:700mm, H of shaft:160mm, D:220mm.
H20:8:50 – Inventory No. 78.
26. * Column shaft, base and plinth. The rectangular plinth is roughly dressed on three faces and very rough on the fourth (the back). A shallow groove runs across the front and sides of the plinth and is roughly pecked out

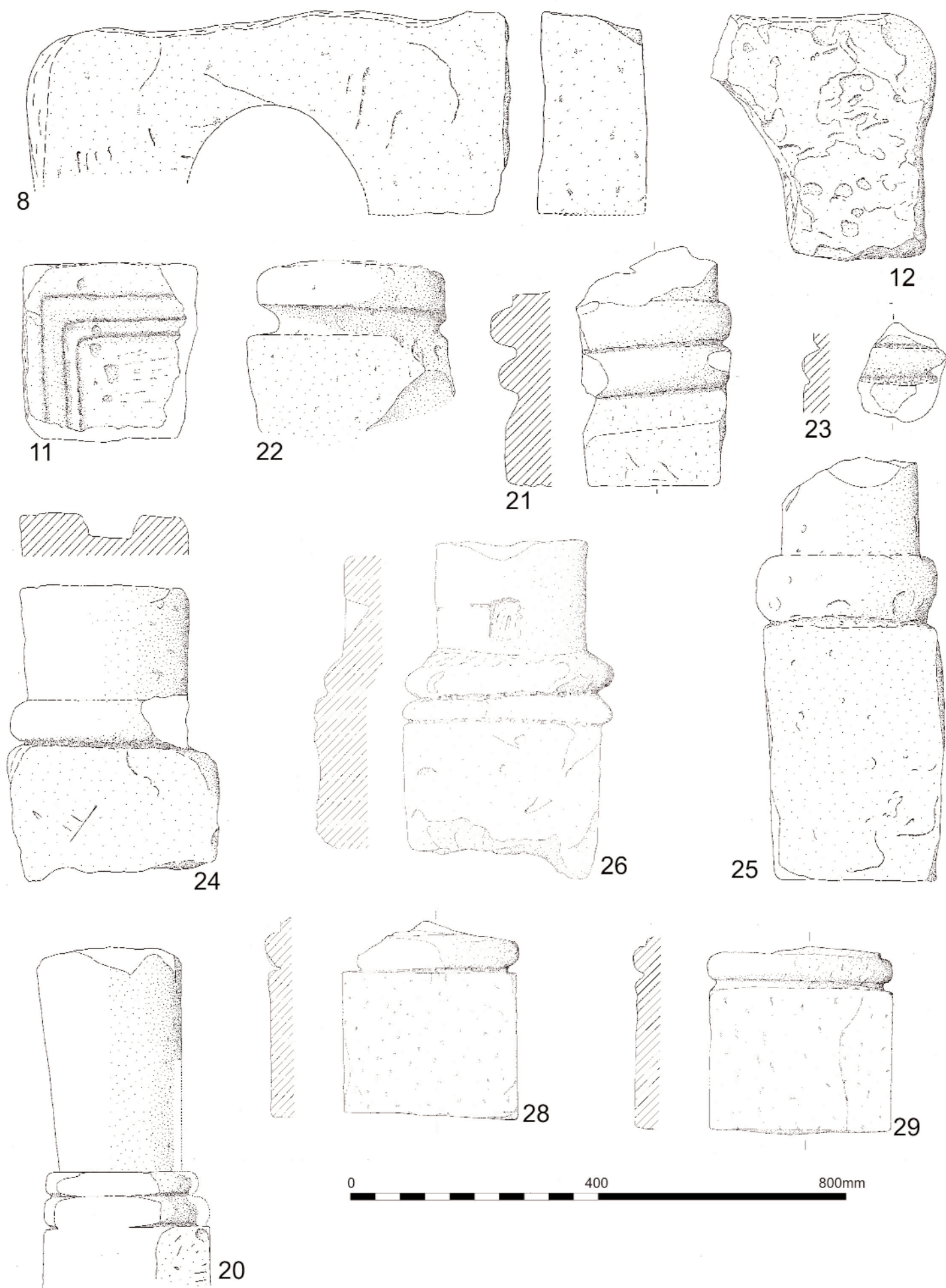


Fig 12.3 Architectural fragments nos 8, 11, 12, 20-29 (scale 1:8).

- across the back. The lower moulding is rectangular in plan. The upper moulding has been rounded to some extent but has marked flats and is very oval to allow it to cover the top of the plinth. The mouldings are very rough on the back. The shaft is oval and splays out from 245 × 215 to 260 × 245mm. Above the centre of the back face of the plinth a slot of rectangular section has been roughly cut in the shaft.
Size – H:530mm, H of shaft:190mm; Slot – W:55mm, H:70mm, max depth:45mm.
H20:9:13 (see Fig 12.9 E) – Inventory No. 81.
27. Plinth for a ?column. Rectangular block very similar in every respect to nos 28 and 29. Very little of the upper surface of the stone is visible owing to consolidation but it is possible to detect a slight rise in the surface of the stone, perhaps the beginning of a *torus* moulding.
Size – L:300mm, W:280mm, H:220mm.
Building XIV, Chalet 4, reused in the east wall – Inventory No. A.
28. * Column base and plinth. Plinth rectangular, well squared with smooth dressed surfaces. The single *torus* is surmounted by a small part of the shaft or the *scotia* between an upper and lower *torus* which has been broken off.
Size – H:330mm, H of shaft:20mm, D of shaft:240mm.
Building XIV, Chalet 4, reused in the east wall – Inventory No. B.
29. * Column base and plinth. Plinth rectangular, well squared with smooth surfaces on one face but with the other visible face rougher except towards the arris with the adjacent face. A single *torus* moulding and part of the shaft or the *scotia* between an upper and lower *torus* that has been broken off, remains.
Size – H:300mm, H of shaft:10mm, D of shaft:265mm.
Building XIV, Chalet 4, reused in the east wall – Inventory No. C.
30. Column base and shaft split down its long axis so that only approximately one half remains. The shaft is broken off at the top and most of the base moulding, which may have consisted of two *tori*, is wanting. Shaft splays from 220 to 230mm in diameter.
Size – H:300mm, D:220–230mm, H of shaft:170mm.
From immediately beyond the north wall, H20:10:10 – Inventory No. IX.
31. Post-pad. Truncated pyramidal stone, roughly faced on all sides (Fig 12.8 B). The top is almost square 340 × 330mm and has a sub-rectangular socket, 150 × 110mm by 55mm deep cut in the centre. In the middle of one side and 200mm up from the base is a V-sectioned notch with a horizontal triangular bottom 80mm wide by 45mm deep, which could have supported an upright timber. On top of the stone shallow grooves are probably plough marks.
Size – H:570mm, L:510mm, W:500mm.
Building XIII, immediately north of Chalet 5, consolidated *in situ* – no Inventory Number.
32. Post-pad. Truncated, slightly pyramidal stone, roughly faced on all sides (Fig 12.8 B). The top is almost square (340 × 330mm) and smooth but undulating and dished mid-way along each side. In the centre is a shallow sub-square socket 140mm in size and 25mm deep. Shallow grooves on top of the stone are probably plough marks.
Size – H:550mm, L:480mm, W:400mm.
Building XIII, immediately north of Chalet 5, consolidated *in situ* – no Inventory Number.
33. Not located 1988. Stone with one side rounded into the top. The excavators suggested that this may be part of a crenellation. A similar stone from the excavations in 1984 on the north side of the fort wall is probably part of a column shaft. See no. 19.
Size – H:240mm, W:110mm, Th:280mm.
Building XIII, Chalet 11 – from rubble H13:11:1, 3.7m west from wall H13:10:5 – Inventory No. 37.
34. Not located 1988. Coping stone.
Size – unknown.
H20:8:14 – Inventory No. 73.
35. Not located 1988. Coping stone.
Size – unknown.
H20:8:14 – Inventory No. 74.
36. Not located 1988. Coping stone.
Size – unknown.
H20:8:14 – Inventory No. 75.
37. Not located 1988. Coping stone.
Size – unknown.
H20:8:14 – Inventory No. 77.
38. Not located 1988. Coping stone.
Size – unknown.
H20:3:? – Inventory No. 82.

String course blocks

(the width is measured along the moulded edge)

39. Corner piece. Type III, with marked arris between the concave mouldings.
Size – L:510mm, W:310mm, Th:140mm.
Reused as a threshold stone (floor H21:3:29) in the late interval tower on the east wall, consolidated *in situ* – no Inventory Number.
40. Corner piece. Type II (W:320mm) and Type III (W:370mm). On the upper bedding face a trapezoidal panel 180 × 95–98mm has been roughly dressed back to a maximum depth of 3mm towards the bedjoints.
Size – L:370mm, W:320mm, Th:120mm.
Building XIII, found in the loose stone pile south of Chalet 1 – Inventory No. 1.
41. Corner piece. Type II (W:450mm) and Type III (W:450mm).
Size – L:450mm, W:450mm, Th:100mm.
Building XIII, Chalet 10 – from the post-Roman stone surface H13:10:? – Inventory No. 32.
42. Corner piece. Fragment. Type III.
Size – L:640mm, W:300mm, Th:120mm.
H20:6:3, found in a stone pile with nos 12, 14 and 24 – Inventory No. 66.
43. Not located 1988. corner piece. Fragment. Type ?
Size – L:140mm, W:115mm, Th:110mm.
From the topsoil just north of Building XIII, Chalet 5 – Inventory No. 45.
44. Fragment. Type III?
Size – L:290mm, W:235mm, Th:110mm.
Building XIII, Chalet 1, reused in the east wall H13:1:7, consolidated *in situ* – Inventory No. 3.
45. * Fragment largely obscured by consolidation. Type I.
For the drawing see Fig 12.7, Type I.
Size – L:430mm, W:?mm, Th:125mm.
Building XIII, Chalet 2 – set upright in the floor H13:2:13 in the south room, immediately to the south of the bench, consolidated *in situ* – Inventory No. 8.
46. Moulding largely obscured by consolidation. Type III?
Size – L:400mm, W:340mm, Th:unknown.

- Building XIII, Chalet 3 – reused in the northern part of floor H13:3:10, consolidated *in situ* – Inventory No. 10.
47. Fragment. Type III.
Size – L:245mm, W:270mm, Th:120mm.
Building XIII, Chalet 5, found on top of the east wall – Inventory No. 11.
 48. Fragment. Type III?
Size – L:490mm, W:290mm, Th:125mm.
Building XIII, Chalet 5, found in loose stones over the chalet – Inventory No. 13.
 49. Type III.
Size – L:580mm, W:380mm, Th:100mm.
Building XIII, Chalet 10, reused in the east wall H13:10:3, consolidated *in situ* – Inventory No. 20.
 50. Type III. A number of very shallow grooves on the upper bedding face up to 150mm in length may be plough marks.
Size – L:560mm, W:350mm, Th:110mm.
Building XIII, Chalet 9, found in black soil in the northern part of the chalet – Inventory No. 23.
 51. Much obscured by consolidation. Type II or III.
Size – L:545mm, W:340mm, Th: unknown.
Building XIII, Chalet 9, reused in floor H13:9:6, consolidated *in situ* – Inventory No. 26.
 52. Type III.
Size – L:500mm, W:295mm, Th:140mm.
From the stone pile between Buildings XIII and XIV – Inventory No. 47.
 53. Type III.
Size – L:420mm, W:340mm, Th:140mm.
H20:2:0 – Inventory No. 55.
 54. Much obscured by consolidation. Type II or III.
Size – L:580mm, W:300mm, Th: unknown.
Building XIII, Chalet 9/10, reused in the party wall H13:9:5, consolidated *in situ* – Inventory No. 56.
 55. Much obscured by consolidation. Type unknown.
Size – L:480mm, W:310mm, Th: ?mm.
Building XIII, Chalet 3, reused in floor H13:3:10 north of the chalet, consolidated *in situ* – Inventory No. 57.
 56. Type III. The block tapers from the moulded edge from 100 to 60mm. It does not appear to have been originally any thicker.
Size – L:335mm, W:285mm, Th:60–100mm.
From Building XIII or its immediate vicinity – Inventory No. 62.
 57. Type III.
Size – L:340mm, W:345mm, Th:125mm.
From Building XIII or its immediate vicinity – Inventory No. 63.
 58. Fragment. Type III?
Size – L:400mm, W:285mm, Th:120mm.
H20:9:12 or 13, back rampart – Inventory No. 69.
 59. Type III.
Size – L:500mm, W:220mm, Th:150mm.
Reused as a threshold stone (floor H21:3:29) in the later interval tower on the east wall, consolidated *in situ* – no Inventory Number.
 60. Small fragment probably from the tip of a moulded string course block. Type II or III.
Size – L:75mm, W:120mm, Th:105mm.
Unprovenanced – no Inventory Number.
 61. Small fragment probably from the tip of a moulded string course block. Type II or III.
Size – L:110mm, W:80mm, Th:85mm.
H21:3:48 – no Inventory Number.
 62. Not located 1988. Type III.
Size – L:520mm, W:400mm, Th:130mm.
Building XIII, Chalet 1, found on the east wall H13:1:17 – Inventory No. 2.
 63. Not located 1988. Type III.
Size – L:290mm, W:320mm, Th:90mm.
Building XIII, Chalet 1, from level H13:1:6 in the south-west corner – Inventory No. 4.
 64. Not located 1988. Fragment. Type II?
Size – L:300mm, W:240mm, Th:110mm.
Found in the loose stones to the south of Building XIII – Inventory No. 12.
 65. Not located 1988. Type III.
Size – L:320mm, W:480mm, Th:140mm.
Found in loose stonework to the south of Building XIII – Inventory No. 14.
 66. Not located 1988. Type III? The lower bedding face is badly burnt.
Size – L:270mm, W:230mm, Th:140mm.
Found in loose stones to the south of Building XIII – Inventory No. 15.
 67. Not located 1988. Fragment. Type III?
Size – L:300mm, W:300mm, Th: unknown.
Building XIII, Chalet 10 – reused in the east wall H13:10:3, consolidated *in situ* – Inventory No. 21.
 68. Not located 1988. Type III.
Size – L:370mm, W: unknown, Th:120mm.
Found among the topsoil stones to the south of Building XIII, Chalet 10 – Inventory No. 22.
 69. Not located 1988. Type III.
Size – L:490mm, W:260mm, Th:130mm.
Found in the loose rubble wall to the north of Building XIII, Chalet 7 – Inventory No. 25.
 70. Not located 1988. Fragment. Type II or III.
Size – L:75mm, W:240mm, Th: unknown.
Building XIII, Chalet 6 – from the backfill in an earlier excavation trench – Inventory No. 28.
 71. Not located 1988. Type III.
Size – L:550mm, W:300mm, Th:115mm.
Building XIII, Chalet 10 – from the westernmost part of the chalet among the loose stones immediately beneath the surface – Inventory No. 29.
 72. Not located 1988. Type III.
Size – L:380mm, W:380mm, Th:110mm.
Building XIII, Chalet 10 – from the westernmost part of the chalet among the loose stones immediately beneath the surface – Inventory No. 30.
 73. Not located 1988. Fragment. Type II or III.
Size – L:130mm, W:200mm, Th: unknown.
Found in a stone pile on the road between Buildings XIII and XIV – Inventory No. 46.
 74. Not located 1988. Type II.
Size – L:490mm, W:460mm, Th:90mm.
Building XIII, Chalet 9, reused in floor H13:9:6, consolidated *in situ* – Inventory No. 58.
 75. Not located 1988. Type unknown.
Size – L:360mm, W:360mm, Th:110mm.
From Building XIII or its immediate vicinity – Inventory No. 61.
 76. Not located 1988. Type III.
Size – L:500mm, W:350mm, Th:160mm.
H20:7:35, sitting on top of the fill of the late posthole in the interval tower on the north wall – Inventory No. 70.
 77. Probably fragmentary. Much obscured by consolidation. Type unknown.

Size – L:260mm, W:210mm, Th: unknown.

Building XIII, Chalet 9, reused in the flagged floor H13:9:6, consolidated *in situ* – no Inventory Number.

- 77a. Only tip of moulded edge present. Type II or III
Size – L:120mm, W:190mm, Th:100mm.
H13:8:0 – no Inventory Number.
78. Fragment with tip of moulded edge missing. Type III?
Size – L:340mm, W:205mm, Th:145mm.
From immediately beyond the north wall – Inventory No. XII.
79. Type IV. Chamfer rough with clear tool marks. Tip of chamfer missing.
Size – L:450mm, W:440mm, Th:160mm, Angle of chamfer:?
From immediately beyond the north wall, H20:10:10 – Inventory No. IV.
80. Type IV. Chamfer with clear tool marks.
Size – L:380mm, W:450mm, Th:135mm, Angle of chamfer:50°.
From immediately beyond the north wall, H20:10:10 – no Inventory Number.
81. Type IV. Chamfer with clear tool marks.
Size – L:500mm, W:360mm, Th:160mm, Angle of chamfer:42°.
From immediately beyond the north wall, H20:10:10 – no Inventory Number.
82. Type IV. Chamfer with clear tool marks.
Size – L:670mm, W:540mm, Th:165mm. Angle of chamfer:28°.
From immediately beyond the north wall, H20:10:10 – no Inventory Number.

Querns (Figs 12.4–5)

Mayen lava

83. * Part of an upper stone. Upper face decorated with parallel *striae* as on the grinding face. The grinding face has shallow and fine parallel *striae* forming parts of two rudimentary harps.
Size – D:400mm, Th:80mm.
H21:3:16 – no Inventory Number.
84. * Small fragment of an upper stone. The upper face is rough with an oval depression 36 × 20mm × 11mm deep cut into it close to the outer edge of the stone. The grinding face has shallow parallel *striae* forming parts of two rudimentary harps. The edge is dressed with vertical *striae*.
Size – D:450mm, Th:60mm.
HSE:1:11 – no Inventory Number, small find no. (SF) 9216.
85. Not located 1988. Complete upper stone. Probably of Mayen lava.
Size – unknown.
H20:8:29 (see Fig 12.9 D) – Inventory No. 80.
86. * Part of a lower stone. The grinding face has deep parallel *striae* forming parts of two rudimentary harps. The lower face is irregular. Fine vertical *striae* on the edge.
Size – D:460mm, Th:65mm.
Unprovenanced – no Inventory Number.
87. Part of a lower stone. Grinding face undulating but no *striae* visible. Underside rough and irregular, markedly dishd towards the eye. No dressing visible on the edge.
Size – D:430mm, Th:48mm.
H21:3:47 – no Inventory Number, SF 8678.

Sandstone

88. Not located 1988. Saddle quern?
Size – unknown.
H20:8:14 – Inventory No. 76.
89. Not located 1988. Upper stone from a beehive quern, largely complete. Eye an inverted truncated cone tapering from 90mm in diameter at the top to 50mm at the bottom.
Size – D:260mm, Th:110mm, D of eye:50mm.
Building XIII, Chalet 2, from partition H13:2:11 – Inventory No. 43.
90. * Part of an upper stone. Upper face quite smooth with a pronounced collar by the slightly inverted conical eye. The grinding face is as the upper face, smooth with small and shallow punch depressions.
Size – D:420mm, Th:55mm, D of eye:100mm.
Unprovenanced – no Inventory Number.
91. Small fragment of an upper stone with the edge rounded into the upper surface.
Size – D:440mm, Th:33mm.
– HSE:1:1 – no Inventory Number, small find no. 9040.
92. * Fragment of an upper stone. Upper surface very rough. Grinding face worn smooth, no dressing visible. Truncated conical eye of large diameter and roughly cut. Edge with rough vertical *striae*.
Size – D:440mm, Th:50mm, D of eye:180mm.
Building XIII, Chalet 4, from the flagging H13:4:11 in the southern area – Inventory No. 44.
93. * One half of an upper stone. Upper surface roughly dressed with clear toolmarks. Eye is biconical and truncated and surrounded by a very slight collar only 3mm high. The grinding face has fine tool mark depressions across the whole face and there is a slight lip by the skirt. The edge has been roughly dressed.
Size – D:530mm, Th:120mm, D of eye:80mm.
Building XIII, Chalet 11, found in the line of rubble H13:11:1 running north–south 3.7m west of wall H13:10:5 – Inventory No. 35.
94. Fragment of an upper stone with only a part of the grinding face visible. Diameter of the eye 120mm. Very coarse sandstone.
Size – L:165mm, W:120mm, Th:45mm.
Building XIII, Chalet 5, reused in the floor H13:5:9 immediately north of the chalet, consolidated *in situ* – no Inventory Number.
95. Not located 1988. Fragment described as from a lower stone but the sketch in the site book shows a pronounced collar by the eye, suggesting that it is an upper stone. Stone described as quartzite.
Size – D: unknown, Th: unknown, L:200mm, W:220mm.
Found in Building XIII or in the immediate vicinity – Inventory No. 17.
96. Part of a lower stone largely obscured by consolidation. Inverted conical eye tapering from 80 to 50mm in diameter. Underside rough.
Size – D:490mm, Th:100mm.
Reused in the door blocking or raised threshold H21:3:29 in the later interval tower on the east wall, consolidated *in situ* – no Inventory Number.
97. * Fragment of a lower stone. Upper surface a shallow dome over the full diameter, quite smooth with small tool depressions. Underside very irregular. Eye a truncated conical shape with a rectangular extension to one side. Edge only roughly rounded.

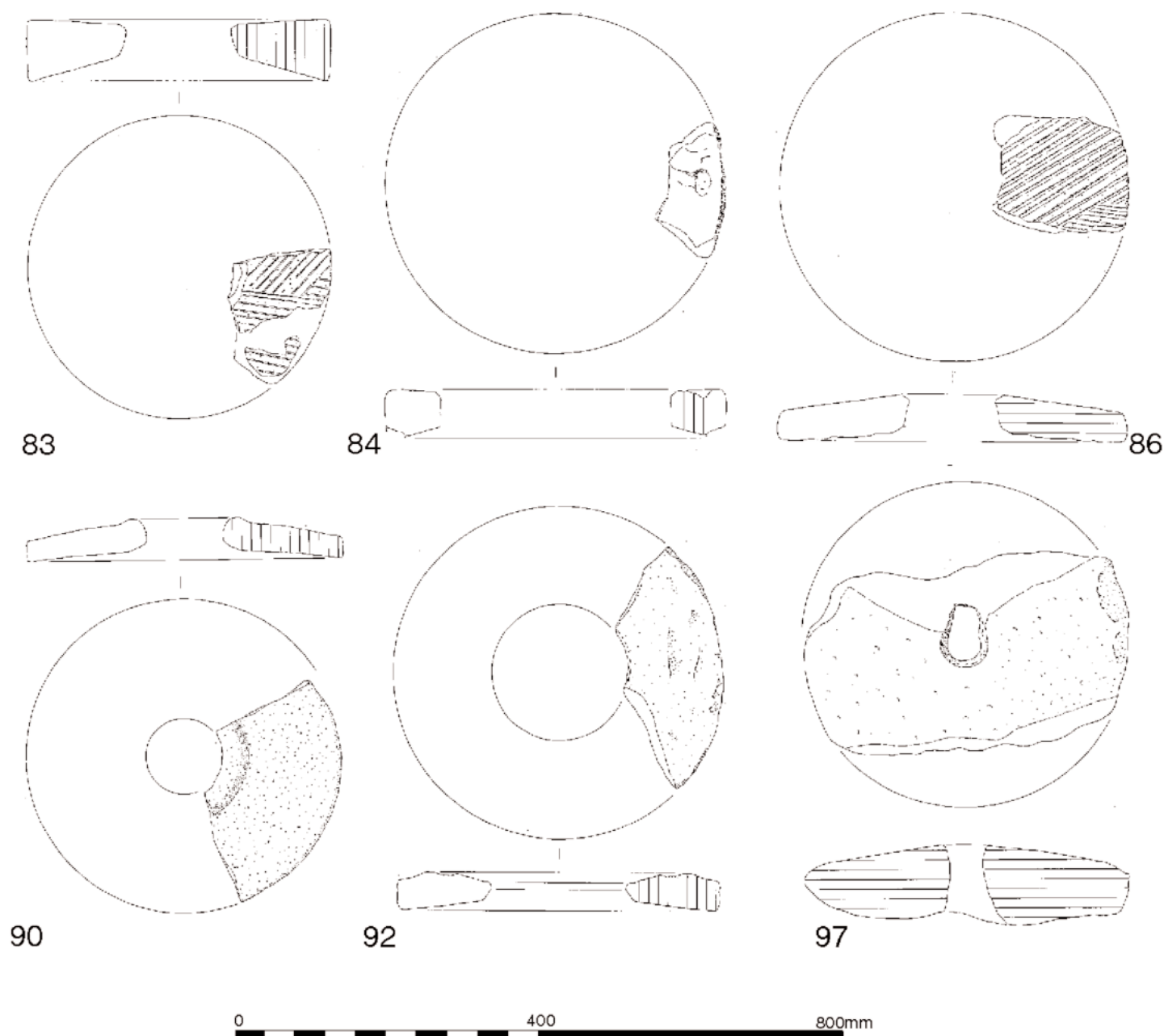


Fig 12.4 Querns (scale 1:8).

Size – D:440mm, Th:95mm, D of eye:40mm.

From the stone pile between Buildings XIII and XIV – Inventory No. 48.

98. * Five fragments from a lower stone, only four of which, forming approximately 70% of the circumference, were located in 1988. Grinding face smooth with no dressing visible. Underside very rough. Eye a truncated cone. Edge very irregular.

Size – D:390mm, Th:80mm, D of eye:40mm.

From the stone pile between Buildings XIII and XIV – Inventory No. 49.

99. Complete but not clear whether an upper or lower stone owing to the consolidation. Oblique *striae* on the edge. Size – D:470mm, Th: unknown, D of eye:55mm.

Building XIII, Chalet 3 – found in position in floor H13:3:10, consolidated *in situ* – Inventory No. 9.

100. Small fragment of a quern. Grinding face has clear but shallow depressions, other face largely broken away.

Size – D: unknown, Th:55mm.

HSE:1:21 – no Inventory Number, SF 9207

101. Not located 1988.

Size – D:390mm, Th: unknown, D of eye: unknown.

Building XIII, Chalet 1, reused in floor H13:1:33 – Inventory No. 5.

102. Not located 1988.

Size – D:460mm, Th:160mm.

Building XIII, Chalet 2, set in layer H13:2:8 – Inventory No. 7.

103. Not located 1988. Fragment of a quernstone with the eye intact. Not clear whether an upper or a lower stone. Size – D: unknown, Th:130mm, L:220mm, W:300mm. D of eye: unknown.

Found in loose stones to the north of Building XIII, Chalet 6 – Inventory No. 18.

104. Not located 1988. Fragment.

Size – D:380mm, Th:110mm.

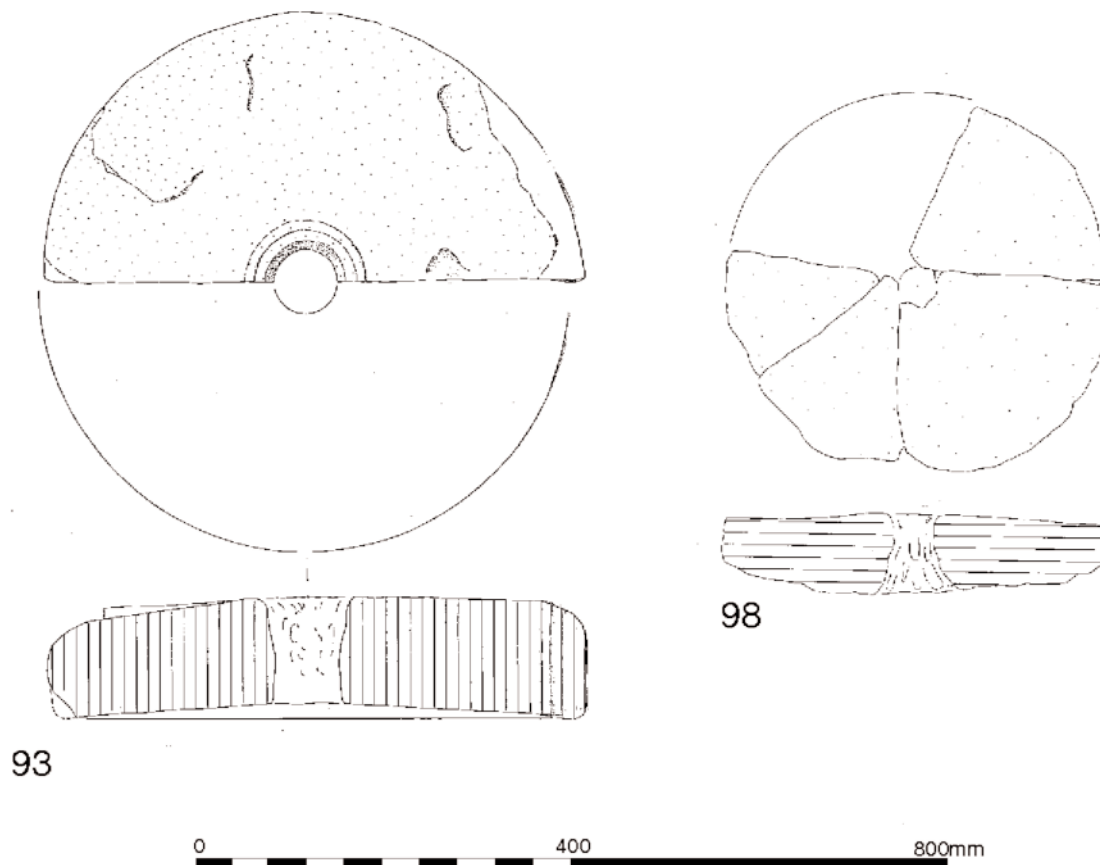


Fig 12.5 Querns 93 and 98 (scale 1:8).

Building XIII, Chalet 11, from the rubble H13:11:1 west of wall H13:10:5 – Inventory No. 38.

105. Not located 1988. Fragment.

Size – D: unknown, Th:30mm.

Building XIII, Chalet 11, findspot as above – Inventory No. 36.

106. Not located 1988. Fragment.

Size – unknown.

H20:9:7 – Inventory No. 72.

107. An irregular slab, part of which is missing, with an inverted conical hole cut through it, 50mm in diameter tapering to 25mm. An unfinished quern?

Size – L:430mm, W:390mm, Th:55mm.

Reused in the revetting wall H21:3:8 on the west side of the water tank by the east rampart, consolidated *in situ* – no Inventory Number.

Miscellaneous (Fig 12.6)

108. * One corner of a moulded pedestal, with identical mouldings on the two adjacent faces. The underside of the block has a roughly pecked groove extending part way across it and the arris with one of the moulded edges is well rounded through wear.

Size – L:270mm, W:230mm, Th:135mm.

Found lying on the surface with loose stones south of Building XIII – Inventory No. 16.

109. * Fragment of the rim and wall of a basin or mortar. Dressed with oblique parallel grooves within and rougher grooves on the exterior.

Size – D:570mm. H:190mm.

Found in Building XIII or in the immediate vicinity – Inventory No. 19.

110. * Mortar, largely complete but for a part of one side missing. The basin is steep sided with a rounded bottom and exhibits fine tool marks, while a ledge around the side near the bottom may be the result of wear although wear marks are not clearly visible. Two diametrically opposed bosses project horizontally out from the rounded rim by 22 and 16mm. On the top of the rim in the centre of one of the bosses a half-moon shaped depression 40mm long may be a deliberate feature. The underside is smooth and flat in the centre and well rounded into the sides. This piece was found laid on its side next to quernstone No. 85 (see Fig 12.9 D). The position of these two pieces suggests the possibility that the quernstone was being reused as a lid for the mortar.

Size – D:480mm, H:420mm, Depth of basin:335mm.

H20:8:29 – Inventory No. 79.

111. * Small altar with the lower part of the shaft and the base missing. The front face has partly spalled off. On the capital are three roughly circular projections. The inscription on the shaft is roughly cut in three lines and is probably complete. The other faces are all very roughly dressed. Suggested reading of the inscription:

D I B
A S I
T F N

The first letter of the second line is partly missing but the upper part of what must be an A is clearly visible. In the third line the bottom part of the second letter is missing; it could be an F or an E. The form *Dibus* is attested on a number of inscriptions in Britain (see RIB 796, 1456, 1457, 1729, 1730 and 2109) where it is

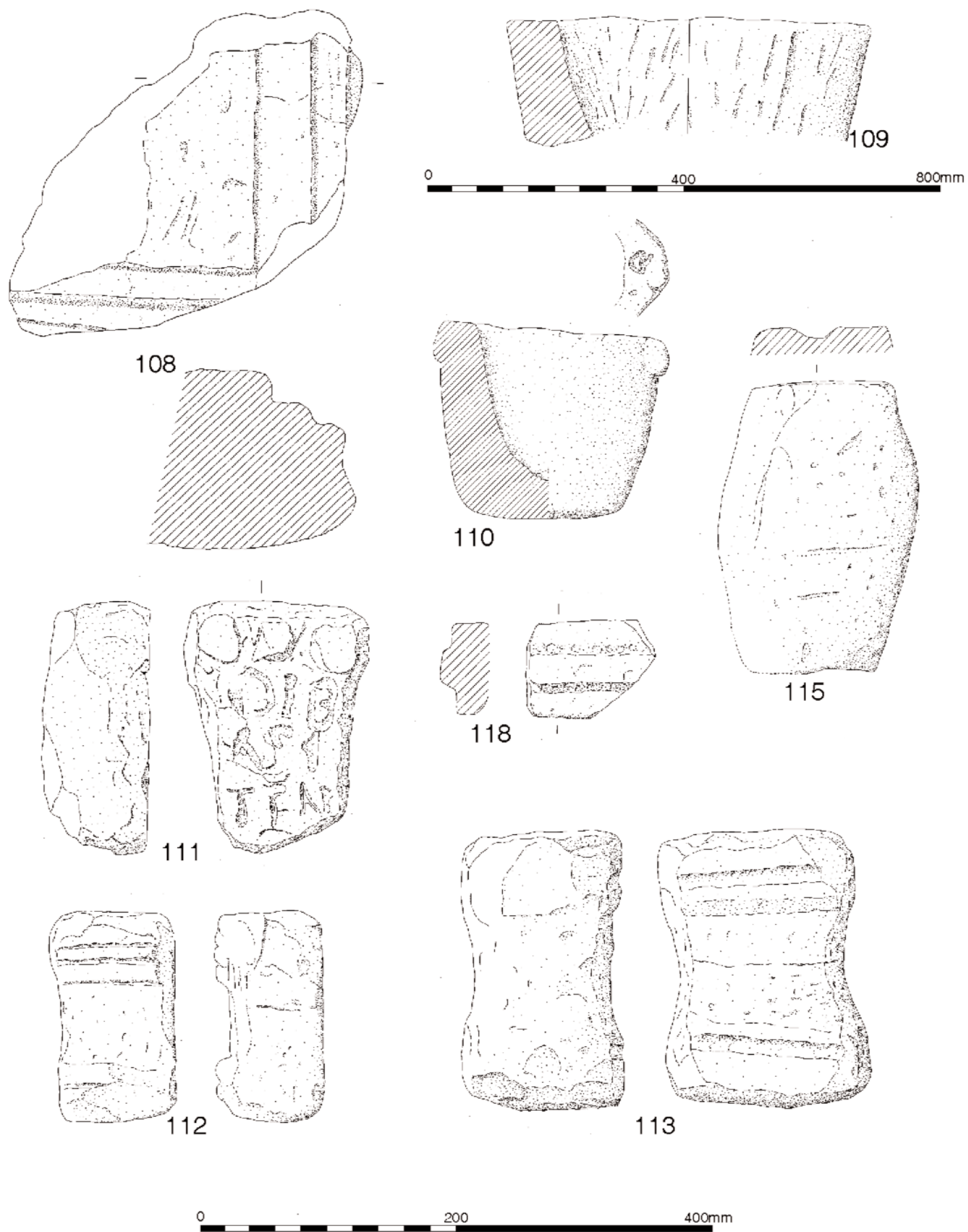


Fig 12.6 Miscellaneous stonework (scale 1:4; nos 109 and 115, 1:8; no. 110, 1:12).

usually, but not invariably, written out in full. *RIB* 2109 has the abbreviation *DIB* as on the Housesteads example. Four of these inscriptions are to be found on small altars ranging in size from 125 to 215mm high and 125 to 150mm wide, each dedicated to the *Veteres* (*RIB* 1456 and 1457 from Chesters; 1729 and 1730 from Great Chesters). The identity of the god referred to on the Housesteads altar is unclear.

Size – H:195mm, W:145mm, Th:80mm.

H13:1:0 – no Inventory Number.

112. * Small uninscribed altar with a circular focus in the centre of the top.
Size – H:165mm, W:100mm, Th:85mm; Focus D:50mm, Depth:20mm
Building XIII, Chalet 1, layer H13:1:17 – Inventory No. 33, SF 2217.
113. * Small uninscribed altar. The front face of the base and capital are smooth, being on a bedding plane of the rock. The rest of the front face has been dressed back leaving fine tool depressions and is not smooth. The sides, back and underside are roughly dressed. In the centre of the top an oval focus, 75 × 65mm by a maximum depth of 9mm, has been roughly cut.
Size – H:215mm, W:160mm, Th:125mm.
H20:4:10, on top of Wall 4 – Inventory No. 42, SF 6528.
114. Not located 1988. The capital and the upper part of the shaft of a small altar with a single line of the dedication preserved. The three letters D E O give no clue to which god the altar may have been dedicated.
Size – H:110mm, W:130mm, Th:80mm.
Found among loose stones in areas H20:1–2 in the topsoil – Inventory No. 54.
115. * Circular-sectioned shaft, oval in profile with truncated ends. Roughly dressed over whole surface. In the one end visible is a shallow depression 70mm in diameter by 18mm deep. One well-defined and one less clear groove, both with point dressing within, run across the face of the shaft on one side almost horizontally. This is presumably a finial. The depression may actually have been on the lower face, perhaps designed to aid in bonding the finial to whatever it stood upon. For a better executed example see *CSIR* I 6, no. 439.
Size – L:460mm, max D:305mm.
Reused in the most southerly rampart revetment wall H20:4:4 north of Building XIII, Chalet 2 (see Fig 12.9 G), consolidated *in situ* – Inventory No. 68.
116. Not located 1988. Pear-shaped ?finial.
Size – H:340mm.
From immediately north of the north wall, H20:10:39 – no Inventory Number.
117. Slab with a rectangular-sectioned groove (22mm deep by 18mm wide) running along the two visible edges. Probably the side of a water tank.
Size – L:710mm, W:140mm, Th:135mm.
Reused in the revetting wall H21:3:8 on the west side of the water tank by the east rampart, consolidated *in situ* – no Inventory Number.
118. * Tip of a moulded slab with a single flattened bead. Possibly part of a string course block but the moulding is unlike those found on the other string courses from the site.
Size – L:50mm, W:100mm, Th:70mm.
H20:4:1 – no Inventory Number.

Discussion

Column shafts, bases and plinths

In total, 18 fragments of columns were found in the excavations in the north-east part of the fort. This figure includes three reused in the east wall of Chalet 4 of Building XIV excavated in 1959 and 1960, and three fragments from excavations beyond the north wall in 1984. Seven of these are fragments of shafts, one is a plinth, one a fragment of a base and shaft, four are bases with plinths and five have at least part of the base, plinth and shaft. Over 120 pieces of columns have been recovered from the fort and its environs, a number of which remain *in situ* notably in the *principia* (see *Additional note* by P R Hill below) and reused in the *praetorium*; the bulk of the others are stored in the Dutch barn beside the Museum.

The collection from the excavations includes at least one example from most of the types of bases and plinths found elsewhere in the fort, except for the absence of the large pieces associated with column shafts of over 400mm in diameter. Many of the shafts are markedly bulbous; the minimum diameters range from 195 to 290mm. Of the few shafts that preserve at least one of their ends, two have a square hole in the centre, Nos 14 and 24.

The three plinth and base blocks from Building XIV (Nos 27–9) come from a group of nine examples from the fort that show a degree of standardisation. The plinth is generally approximately 280mm square, between 220 and 270mm in height and probably originally had two *tori*, the lower *c* 55mm thick, the upper a little smaller. As is usual with the bases at Housesteads, the lower *torus* makes the maximum use of the block, often to the extent of having marked flats in the centre of each side of the plinth, as the diameter of the *torus* is greater than the dimensions of the top of the plinth.

Number 20 is one of a group of 11 pieces where the plinth is usually between 250 and 290mm square but is only 80–135mm high. These pieces all have two *tori*, the lower 40 to 55mm thick, the upper usually a little under 40mm thick. They are associated with shafts from *c* 160mm to 200mm in diameter by the upper *torus*. With No. 20, where the shaft survived to a height of 360mm, the diameter at that point was 230mm. Two of these have been reused as hypocaust *pilae* in the *praetorium*, where they remain *in situ*.

Numbers 22 and 24 both have a single *torus*, 80 and 70mm in thickness respectively. There are a total of ten examples of this type from the fort, generally with a *torus* between 65 and 80mm thick and with a rectangular plinth 250 to 330mm in size by 70 to 220mm high. Apart from HO 421, which is considerably larger than the norm, they were associated with column shafts between 210 and 255mm diameter at the base. The only complete column from the site has a base and plinth of this type (HO 130). The column is markedly bulbous, 210mm in diameter by the base to a maximum

of 270mm and 225mm by the capital over its total length of 395mm. The total height of the column with base, plinth and capital is 750mm. One piece has been reused as a hypocaust *pila* in the *praetorium*.

Number 25 is one of a small group where the plinth is rather tall and is provided with a prominent *torus* between 85 and 130mm thick. The plinths vary widely in size from 295 × 230mm to 540 × 400mm and from 305 to 490mm in height. Shafts range in diameter from 220 to 305mm. The large square sockets in the top of the *torus* of two of this type suggest that they may have supported timber posts.

A small group of three pieces are characterised by having two mouldings but the lower is of rectangular section, conforming to the edges of the plinth. The upper is a true *torus*, rounded in the horizontal as well as in the vertical plane. No capitals were recovered from the recent excavations.

No example of any of these types of column bases have been found *in situ* in its original position within the fort, therefore it is by no means clear from which building or category of buildings they came. The complete column HO 130 and the others of that type presumably stood on dwarf walls, perhaps around the veranda in the *praetorium* or in the hospital.

As with the string course blocks and perhaps the window heads, the availability of column shafts, bases and plinths in some numbers, for reuse by the builders of the chalets, implies that the buildings of which they had formed a part were being extensively remodelled. Were these buildings the barracks themselves? Evidence in Building XIII for a veranda along the north side of the barrack block was found in the form of square stones (H13:4:33; 6:44) set level with the contemporary ground surface (see Volume I, Chapters 3 and 4). These may have acted as post-pads but there is no indication of any socket in the tops of them. They could equally well have supported stone columns. If the barrack verandas were supported by columns of stone a very considerable number of similar column bases, shafts, and perhaps plinths, would have been required. As noted above, the largest 'set' of column fragments does not exceed 11 pieces, rather suggesting that there had not originally been a set containing in the order of 100 columns on the site. Of the ten column and base fragments from stratified contexts, six were probably reused in the earliest chalet phase.

String course blocks

A total of 45 string course blocks was found in the 1974–81 and 1984 excavations, 40 from within the fort and five from the debris immediately beyond the north wall. A further five stones, described as coping stones in the site register, may also be of this type. Only 29 of the stones were available for study in 1988. They form a small part of the collection of 168 examples that have been recovered from in and around the fort and now

either remain *in situ* where they have been reused in the Roman and medieval periods, or are stored in the Dutch barn by the Museum. The mouldings are of four types (Fig 12.7).

Type I: Four examples of this type have been recognised, a total minimum length of 1.41m. The blocks vary in thickness from 100mm to 125mm. Of the four pieces two are right-angled corners. There is a groove on the lower bedface with the *cyma recta* ending in a 90° change of direction, effectively leaving a rectangular-sectioned rebate along the moulded edge. The vertical edge above this has a single groove along it. One piece has very clear weathering on the upper face by the moulded edge.

Type II: There are 26 examples of this type from the fort, two of which came from the excavations in the north-east quadrant of the fort. These are very closely related to the blocks of Type III but they lack the groove by the moulding on the lower bedface. They range in thickness from 100 to 140mm with 125mm being the most common. A total length of 10.38m has been recovered. The basic form is standardised but there is considerable variation in detail, with the width of the moulding ranging from 75 to 170mm. Only one corner block of this type has been recognised. However, four corner blocks have mouldings of Type II along one edge and of Type III on an adjacent edge.

Type III: The 126 examples of Type III make up the most common form of string course moulding. These range in thickness from 100–160mm but the majority fall between 120 and 130mm. The basic design is found on every stone. A groove on the lower bedface lies alongside a *cyma recta* moulding which runs to the edge where there is a triple bead, the lower bead projecting boldly downwards. Along by the moulded edge there is often clear evidence for weathering. Presumably the blocks projected the distance from the rear edge of the groove on the lower bedface to the moulded edge. This varies from 10.5 to 18.30mm but in 81% of those available for measurement it lies between 130 and 160mm. A minimum length of 53.27m of this string course has been recovered from the fort, with over 16% of the pieces being right-angled corner blocks.

Type IV: Blocks with a chamfer varying from 50° to 28° (the examples from the 1974–81 and 1984 excavations). Only 12 examples have been recognised, of which no less than four come from the debris north of the north wall (1984 excavations). A single example is chamfered on two adjacent edges, while another is chamfered on three. With all these blocks it is not easy to be certain whether they are string course blocks or coping stones. The latter example in particular could be a coping stone, perhaps even a merlon cap, but it does exhibit weathering along one edge on the unchamfered face suggesting that it had been used with the chamfered face downwards, ie as a string course block.

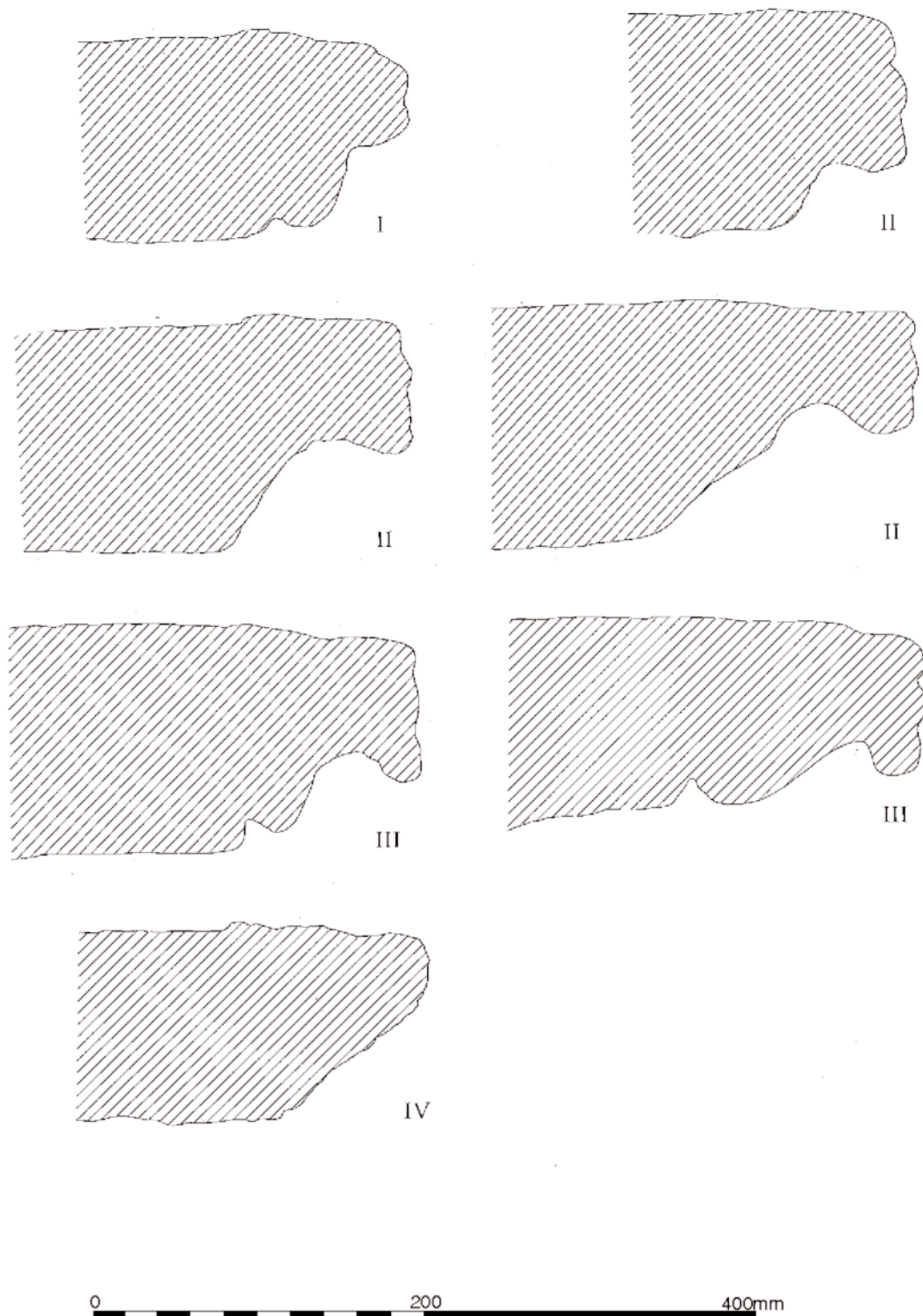


Fig 12.7 String course blocks: Types I-IV (scale 1:4).

The rarity of string course blocks of Type I does not allow us to hazard a guess as to where they may originally have been used. The difficulty of deciding whether Type IV blocks should be interpreted as string course blocks or as coping stones has already been mentioned. They will have performed both functions equally well. One might suggest that their recovery from the debris associated with the collapse of Wall III, itself a repair of the north wall of the fort at some date

after AD 250 (Crow 1988, 72), indicates that they were associated directly with the defensive curtain. One could envisage these chamfered blocks either as forming a string course at the level of the parapet walk or as merlon and crenel capstones. In either situation a very considerable number of stones would have been required. However, they are not a common find at Housesteads, or at least they have not been frequently noticed, recorded or preserved. This may to some

extent be the result of the area immediately outside the fort wall having been cleared during the 19th century. As many as 169 stones of this type were recovered from the line of Hadrian's Wall on Peel Crag during excavations in 1909 (F G Simpson 1976, 115–16) and smaller numbers have been recovered from widely spaced localities, both east of the North Tyne and west of the Irthing. These can only have come from the Wall curtain itself.

That blocks of Types II and III are string course mouldings cannot reasonably be doubted. It is difficult to envisage their having been used within the barracks of the fort; they presumably come from one or more buildings of considerable size and elaboration. The total length of the surviving string course, 64.8m, which includes 18 corner blocks, makes it unlikely that they all could have come from one building. The most obvious candidates within the fort are the interval, angle and gate towers. The Hadrianic fort had 14 towers around the circuit which, if provided with a single string course at parapet level or at the level of one of their upper floors, would have required 56 corner blocks and a total length of *c* 250m. A similar string course may also have run across the gate curtains but presumably such a string course did not extend around the towers and curtain at the same level as no 'internal' corner blocks have been found.

We may presume that the simpler mouldings of type II were designed for use on the less prominent parts of the structures of which they formed a part. It is clear, however, that they were not simply confined to the rear face, as the single example of a Type II corner block indicates. Well before the end of the Roman period a considerable number of these string course blocks were available for reuse. Several were found reused as flagstones and in the walls of the chalet phase of Building XIII. Others are still to be seen in the roadway outside the east and south gates. A single example is built into the core of the south wall of the *Vicus* Building IV, while another is visible in the core of Hadrian's Wall, a little way down the hill from the north-east angle of the fort. Two are reused as threshold stones in the doorway into the late interval tower on the eastern defences by Building XIV (Nos 39 and 59). The fragment found in the excavations of 1984 immediately north of the north wall came from debris associated with the collapse of the fort wall in that area but unfortunately it is not clear in which phase of wall this piece had been reused.

String course blocks of Type IV have been found on a number of military sites, and one remains *in situ* at the level of the parapet walk at the east angle of the legionary fortress at York (Miller 1925, 191). String course mouldings of Types I, II and III have not been recovered from other military sites. As the fort at Housesteads is thought to have been constructed by the same legionary workforce as built the other forts on the Wall in the Hadrianic period, the absence of string course mouldings of Types I to III at other forts in the vicinity may suggest that this design of string course

was not Hadrianic. They were perhaps produced by the garrison in residence at the fort at a later date where the individual style could be seen as relating to a specific, but as yet unidentified, unit. If this interpretation is correct it implies that there was a considerable amount of building activity within the fort in the post-Hadrianic period but before the last century of the Roman occupation.

Whatever building or buildings these string course blocks had formed a part, it is clear that it or they were in an advanced state of decay or were partly demolished on a large scale, presumably at a date before the reconstruction of Building XIII in the later 3rd or early 4th century. Sixteen pieces came from stratified contexts in the north-east quadrant of the fort. Of these, nine were securely dated to the earliest chalet phase and two others were perhaps of the same date. No example was certainly found in deposits or reused in structures associated with later phases of the chalets. Evidence for alterations to the defences can be seen in various parts of the circuit, notably at the south-east and south-west angles, where the front walls of the towers may have been totally rebuilt, and on the north defences where the interval tower to the west of the north gate was demolished, presumably at a date before the construction of the new interval towers to the east of the north and south gates and along the east wall.

Window heads

The monolithic window heads form one of the most characteristic groups of architectural fragments from Housesteads. These are usually decorated with a moulding around the edges of the front face and frequently further embellished with a range of incised motifs (Bosanquet 1904, 267; *CSIR* I 6, nos 244, 413–33). Only one piece that is certainly from a decorated window head was recovered from the 1974–81 and 1984 excavations, No. 11, but Nos 9 and 10, which were not available for examination in 1988, are probably further examples. All three are small fragments and no decoration beyond the mouldings by the edge of the front face are preserved.

A total of 41 fragments are now preserved at Housesteads and a few others from the fort are in Chesters Museum. The pieces at Housesteads are from a minimum of 28 window heads. None of these is complete and it is thus not easy, owing to their rough nature, to be certain of the width of the curved opening. Many, however, lie within the range 570 to 600mm, although a few examples may be as small as 530 and 540mm and one is perhaps only 420mm in diameter.

It is extremely unlikely that these window heads were used in the barracks and the large number of examples, which, although all varying in detail are clearly closely related in style and are probably the product of a single workshop, suggests that they cannot have come from any other single building. As with the string course mouldings, it may be suggested that the

window heads come from the gates and perhaps also from the interval and angle towers. The findspot of many of the decorated window heads is not precisely known as a large number were recovered by the excavators in the 19th century. Some were found by the south gate in the 1830s by Hodgson and during the clearing of the north gate and the area immediately outside it in the 1850s. Another is shown propped against the west gate in the Richardson watercolour of 1855, where it remained until 1988. An example now in Chesters Museum was found during the excavations in 1898, built into the small projecting annex at the west end of Building II (Bosanquet 1904, 268). Another piece had been used face up as a flagstone in the courtyard of the *praetorium* where it remains *in situ*. A further fragment is still to be seen reused as a facing stone in Hadrian's Wall, a little way from the north-east angle of the fort towards the Knag Burn.

The concentration of these fragments around the gates is of interest but whether it bears any relation to their original use is incapable of proof. Many or all of these fragments may have been reused in the gate blocking walls or in later reconstructions of the gates themselves. The piece found in 1984 on the north side of the north wall a little to the east of the north gate (No. 11) was only a small fragment; it had presumably been reused in one of the rebuildings of the fort wall or had been brought from elsewhere and dumped over the wall, rather than having fallen directly from the north gate. Monolithic window heads were found at the east gate at Birdoswald from where it is assumed they came, and at the west gate of South Shields. Where the decorated window head found in 1983 at Sycamore Gap east of Milecastle 39 (CSIR I 6, no. 456) had originally been used is unclear. Milecastle 39 has produced its own style of monolithic window head with a herring-bone pattern of tooling (J G Crow, pers comm).

Five undecorated monolithic window heads are also available for study, two of which came from the 1974–81 and 1984 excavations (Nos 8, 12). The two complete examples have openings 610mm wide while another is approximately 570mm in width. The window heads from Birdoswald have openings 650mm wide, and the two examples from South Shields have openings 600mm in width. The undecorated examples from Housesteads may originally have been used in the buildings of the central range or perhaps in less prominent positions than the decorated window heads on the gates and towers.

The arrangement of the superstructure of the gates and towers at Housesteads is by no means clear. The reconstruction by Richmond and Child allowed for a large gatehouse at first-floor level lit by ten windows, six in the front wall, two in the side walls and two in the rear wall (Richmond and Child 1942, fig 4). The evidence available does not allow a more detailed consideration of the provision of windows in the gates and towers but the large number of decorated window heads that have survived suggests that, if indeed they

did come from the defences, Richmond and Child were correct in the order of magnitude of window openings that they envisaged.

The dating of these window heads is problematic. Richmond and Child assumed that they had been used at the gates but that the fashion for monolithic window heads was a late one and that they belonged to a later reconstruction of the defences (1942, 143). At Birdoswald monolithic window heads were found at the east gate (Wilmott 1997, 63, fig 38), but small voussoirs from an arch approximately 760mm in diameter, suitable for a door or window head, were recovered from the south gate. Similar small voussoirs were also found in the latest material from the collapse of the west gate (Wilmott 1997, 63–5, fig 39 no. 7). The stratigraphical evidence from Housesteads for the few monolithic window heads for which a context is known indicates that a number of the monolithic window heads were available for reuse before the end of the Roman period. The undecorated example, No. 12, was found in a context on the north rampart that was probably contemporary with the earliest phase of the chalets in Building XIII. If the decorated window heads are post-Hadrianic, the building or buildings of which they formed a part must have been built or extensively altered sometime between the mid-2nd century and the mid- to late 4th century.

The decorated window head from Sycamore Gap is closely related to the Housesteads examples but it is rather cruder in execution and it has only a single shallow grooved border around the front face rather than the prominent double or triple border grooves of almost all of the examples from Housesteads. It looks as though the mason was copying the Housesteads type rather than the Sycamore Gap piece being produced by the same workshop as the others. Its reuse in a reconstruction of the curtain of Hadrian's Wall dated to the second half of the 2nd century (Crow 1984) goes some way to supporting a 2nd-century date for the Housesteads pieces.

Two monolithic window heads from South Shields are of exceptional interest as both have had voussoirs painted on them so that they appear as true arches (Bidwell and Speak 1994, 148–9, nos 7–8, fig 5.4). One of these (No. 7) was found in front of the west gate, presumably where it had fallen from the gate itself. The excavator considered it to date from the construction of the gate in the mid-Antonine period and dated its deposition to very late in the Roman period, perhaps in the early 5th century (P T Bidwell, pers comm). If indeed this piece remained *in situ* in the gate until the end of the Roman period the painted decoration is unlikely to be original. It rather suggests, with the evidence for the availability of monolithic window heads for reuse in the late Roman period at Housesteads, that, contrary to the opinion of Richmond and Child, it was the monolithic window heads that were early and the change in fashion to arched window heads at the sites where the former type occurs was a later rather than an



A Centurial stone No. 2 reused in west wall of XIII Contubernium 8



B Post-pads Nos 31–2 reused in the secondary porch of XIII Chalet 5 (mid–late 4th century)



C Windowhead(?) No. 8 reused as door jamb in the late, irregular south wall of XIII Chalet 2

Fig 12.8 A–C: Examples of the reuse of stonework in the north-east quarter.



D Mortar No. 110 and quern 85 lying where abandoned at the end of the life of Workshop 4 (north rampart)



E Column shaft/base/plinth No. 26 in north rampart revetment H20:9:13 (Phase H20/4b)



F Columns, Nos 14 and 24 in the pile of spolia and blocks (H20:6:3) – debris from demolition of the interval tower?



G Shaft No. 115 reused in very late rampart revetment north of XIII Chalet 2

Fig 12.9 D–G: Examples of the reuse of stonework in the north-east quarter.

earlier phenomenon. There is no evidence to indicate that the monolithic window heads from Milecastle 39 are of any other date than Hadrianic.

Querns

Fragments of 24 querns were found during the 1974–81 excavations at Housesteads. This is only a small proportion of the total that were recovered from the site, but hitherto no examples have been published in detail. Bosanquet refers to the finding, during the excavations in 1898, of ‘numerous querns, fragmentary for the most part, and presenting only the usual types’ (Bosanquet 1904, 285). A fragment from a beehive quern that still retains part of its iron spindle is consolidated *in situ* into the verandah on the south side of the courtyard in the *praetorium*. Other querns are to be found in the Museum attic and in the Dutch barn. The present discussion will confine itself to the examples found in the north-east quadrant of the fort.

The most primitive form of quern represented in the collection is a possible fragment of a saddle quern (No. 88), which was not available for study by the writer. If the piece was correctly identified, its occurrence on the site constitutes another piece of evidence for pre-Roman occupation (cf Chapters 2, 10 and 21) considering that the type was being replaced by the beehive quern as early as the 2nd century BC (Welfare 1985, 154). It presumably was not being used for grinding grain during the Roman period, when there was no shortage of the more advanced rotary querns in a variety of designs. Of the other type with a pre-Roman ancestry, the beehive quern, only one example was recovered (No. 89), reused in a 4th-century context. The diameter of this piece is smaller than the norm (at Vindolanda 340, 360 and over 300mm – Welfare 1985, MF1–3; at Wallsend between 300 and 400mm – R Willis, pers comm). There is no evidence for the method of attaching the handle in the Housesteads piece.

Five examples are in the highly distinctive lava probably from Mayen in the Eifel Hills of Germany (cf Peacock 1980, 49), which were presumably introduced to northern Britain by the Roman army (Welfare 1985, 156). The Housesteads examples, although largely fragmentary, exhibit a number of the characteristic features of this type of quern including the clear *striae* on the grinding face arranged to form rudimentary ‘harps’, the pattern sometimes repeated on the upper face of the upper stone, presumably for its decorative effect, and the presence of vertical *striae* on the edge of the stones. One of the three upper stones (No. 84) has a shallow oval depression 36 × 20mm in size and a maximum of 11mm in depth cut in its upper face close to the edge. Its function is unclear. The only complete example found (No. 85) was not available for study by the writer. Its findspot, immediately adjacent to the mortar No. 110, which had been pushed onto its side, suggests the possibility that the quern was being reused as a lid. The two lower stones are markedly dished and irregular

on the underside, presumably to allow them to be bedded on some such material as clay in order to stabilise them during use (Welfare 1985, 157). The diameter of the stones is not easy to measure accurately owing to the small fragments preserved, but they lie between approximately 400 and 460mm and are thus a little larger than the similar stones from the fort at Vindolanda.

The largest group of querns, totalling 18 in number, are basically similar to the Mayen stones in shape but are made of sandstone and are presumably of local origin. The stone varies from fine close-grained to very coarse with large quartz granules. Five are upper stones, three lower stones and the rest, most of which were not available for study, could not be identified as upper or lower stones. Apart from the single very large piece, No. 93, diameters range from 380 to 470mm with another example around 490mm. The most common size is 440mm.

Of the upper stones one is a small fragment from the edge (No. 91). This piece is thin, at 33mm, and is notable in that the upper face is rounded into the edge (for a very similar piece see Welfare 1985, MF28). The other four all preserve part of the eye *c* 180mm, 120mm, 100mm and 80mm in diameter. Features of interest include the vertical *striae* on the edge of No. 92 and the pronounced collar around the eye of No. 90. This piece is of higher quality than the norm, with a smooth dressed upper surface. None of the examples have any grooves on the grinding face but the fine depressions made by a point on the face of No. 90 (and No. 100) will have enhanced the abrasive qualities of the stone. This example is reminiscent in shape, and to some extent in the dressing of the grinding face, to a quern from Vindolanda (Welfare 1985, fig 62, no. 21) but it lacks the furrows radiating from the eye into the breast. The Vindolanda piece may have been in use in the first half of the 4th century. Number 93 is extremely bulky, of rectangular section and 120mm thick. Its diameter, at 530mm, is also greater than the norm. A similar piece, though of considerably smaller diameter, came from Vindolanda, where the use of the stone is dated to the late 3rd or the early 4th century (Welfare 1985, 162, fig 61 no. 17; cf also fig 62 no. 27).

The lower stones have few features of interest. Only No. 97 deserves comment. The circular eye has a rectangular extension 40–50mm long and 35mm wide to one side that pierces the stone. The function of this feature is not altogether clear. It is reminiscent of the rynd chase to be found on upper stones but there the rynd chase extends to both sides of the eye. The diameters of the eyes on the lower stones vary between 40 and 50mm.

Numbers 83, 87, 94, 99, 102 and 107 were all reused in contexts associated with the first phase of the chalets, while Nos 84, 96, 100 and 101 were in contexts dated to the later chalet phase. Number 85 was possibly reused as a lid for the mortar No. 110 in one of the north rampart workshops during the second half of the 3rd century (see Fig 12.9 D). There is no evidence that any of the quern fragments were being used during the life of the chalets except as building materials.

Additional note on architectural stonework in the fort

P R Hill

The methodology used in the technical survey of these architectural fragments and the definitions used in the descriptions below are set out in Chapter 8.

Merlon cap

510 × 450 × 125mm. This is lying in the interior of the corn dryer adjoining the bastle house, used as a stepping-stone by visitors. It is chamfered on three sides; the east side as now lying was a joint. The top bed is badly worn, perhaps partly in antiquity but probably mostly by visitors. There are variations in the chamfers due to wear caused by visitors' feet.

The chamfers are worked in small pecks, range 2mm, and the corners were probably originally square. There is some damage to the west chamfer, immediately adjacent to the north quoin. The bottom bed is very uneven but smoothed; it may be entirely natural or may have been walked on in a previous reuse.

Between the chamfers the top bed measures 420mm E–W and 330mm N–S.

Summary and discussion

This was certainly half of a merlon cap. If the flat area of the top bed was meant to be the same width as the wall below, it came from a parapet 330mm wide; the bottom bed gives no indication of this. If it was exactly half a merlon cap, it suggests a merlon 840mm long. The wear makes judgement difficult, but it was probably quite well worked.

This stone is suffering serious and constant damage from visitors, and should be moved to a place of safety as soon as possible.

Water spout

445 × 840 × 250mm. This is lying at the base of the east *spina* pier of the east gate, and described as it lies. The south end of the stone is broken off. Beginning at this break is a channel, set centrally, which reduces abruptly in width. The east side of the stone, including the east part of the north end, is broken, taking away the top bed along the east side of the channel. What remains of the north end seems to have been a shallow rock face. The channel is worked with a punch, neatly enough, with a range of up to 6mm. Part of the top bed at the west side, from the point of reduction running north for 230mm, is worked unevenly with a punch and is noticeably less weathered than the rest of the top bed.

This stone could have been part of a gutter, but is more likely to be a gargoyle or spitter discharging water from a roof; the form is exactly that found on medieval churches for discharge of water from gutters. The wider part collects water from the gutter at either side and the narrower channel conducts the water through

the parapet. The obvious original location is the top of one of the gate towers. The less weathered section may be an indication of the width of the parapet, although 230mm is rather narrow and does not correspond with the merlon cap in the bastle house (see above), which suggests a parapet wall 330mm wide.

The spout may indicate either a flat roof or a pitched roof with gutters behind a parapet. The apparent narrowness of the parapet may be related to a pitched roof, but this is by no means certain.

This spout is not unlike the remains of two spouts or gutters in a field wall (Grid ref NY 823706) close to the site of Turret 33a; these remains are too fragmentary and inaccessible to make a realistic comparison.

Window head

550 × 120 × 675mm. This is part of an arcuate window head, lying on the north pier of the entrance to the *aedes* in the *principia*. It is broken from the upper edge down to the arch, leaving just over half. The face is worked flat with a punch in small pecks, 3mm hollow to 3mm round, range mostly 2mm. The soffit is worked less cleanly, but still in small pecks and perhaps with the occasional use of a 25mm blade in places. The back is an entirely natural bed; the stone is face-bedded.

Around the arch there are two quirks delineating what were possibly half round mouldings; these return across the lower edge to the left-hand side, at which point they are joined by a further quirk. The three quirks and mouldings then run up the left-hand side and cross the top to the break, which is 300mm from the upper left-hand corner. The quirks and mouldings appear to have been worked with a fine punch.

On the face, set inside the mouldings in the upper left-hand corner is a pecked circle 100mm in diameter, and close to the break is what looks like a small pecked crescent.

At the front of the stone the radius of curvature gives a span of 625mm and at the back 565mm. The stone is worked with a fine punch, giving a somewhat unsatisfactory surface from which to measure, especially over such a small arc. It seems a reasonable assumption that it was designed for an opening of two Roman feet (594mm).

This was a good, carefully worked stone, which would have been of very good appearance when new. The minor variations in the working of the soffit are a little surprising, but this could perhaps have been rendered over. The stone will have been used as a thin facing against the corework of the wall.

The columns

In the *aedes* there are eleven parts of columns; two of them are certainly from the same column. Nine or ten are laid out in five rows, numbered from the west and up from the south.

Part of a column with two torus mouldings lies in the south-west corner of the *aedes*, designated 6/1.

As a whole, the columns show poor workmanship and not a great deal of skill. Column 2/1 is probably the best work, somewhat below average Roman military engineering. Column 5/2 is the most interesting; although sub-rectangular rather than circular some care was taken, and it has a blank side which suggests that it stood against a wall. It was not, however, an engaged column. Column 6/1 is so crudely worked as to represent a descent into barbarism, interesting in itself as it suggests that old forms and styles of building were remembered long after the skills had been lost.

All the columns were worked rather than turned.

Ceramic tile, brick and stone tile

In total, 399 pieces were examined. To this total must be added an indeterminate number of small fragments that preserved no information of interest and were not recorded. All the tiles, where at least the thickness could be measured, were examined. The total assemblage can be divided into a number of categories:

<i>tegulae</i>	100+
<i>imbrices</i>	90
box tiles	38+
flat tiles and bricks	?
stone tile	26

The ceramic tile occurs in a range of fabrics, from a soft orange to a hard brick red. Moderate amounts of red ironstone, quartz and white calcareous inclusions are present. A detailed listing of the fragments has been lodged with the archive.

The *imbrices*

Even quite small fragments of *imbrices* are easy to recognise on account of their curvature, their smooth surface on the outside of the curve and their sanded surface within. *Imbrices* range in thickness from 12–22mm although the margins of the tile were often thickened, the result of the edges being pressed back into the tile causing the clay to bulge at that point.

thickness – more than 5%	13–19mm
most common thickness	15mm
maximum length preserved	132mm
maximum width preserved	110mm

With the other categories of tile it is not always possible to differentiate between fragments of *tegulae*, box tiles and flat tiles. Box tiles frequently have scored designs to aid their bonding to the walls that they were used to line, and to aid the adherence of the plaster with which they were coated, but much more rarely similar designs are found on flat tiles. A number of the *tegulae* or flat tiles have grooves probably made by the finger. These include single grooves, parallel grooves, arcs, a ‘V’ and zigzags. Two paw prints, probably made

by dogs, were also noted. One tile 27mm in thickness had a 7mm diameter hole drilled through it from both sides, a feature not usually seen on *tegulae*. In thickness the range of variability of flat tiles, box tiles and *tegulae* overlap. Of the certain *tegulae* and box tiles the range of thickness is as follows:

	<i>tegulae</i>	box tiles
range	15–33mm	14–24mm
more than 5%	20–26mm	17–22mm
most common thickness	25mm	17mm

Flat tiles and brick

Flat tile fragments with thicknesses that fall within the range of those found in the *tegulae* and box tiles can rarely be differentiated from the more elaborate types. As already noted, the presence of decoration is not confined to box tiles. One tile fragment with comb decoration (Fig 12.10 No. 4) does not appear to have been a box tile and another with lattice decoration, at 33mm thick, is unlikely to have been a fragment of a box tile. Only 18 fragments of tile were over 35mm thick.

35mm+	1	52mm	1
40mm	1	53mm+	1
41mm	1	59–70mm	1
47mm	1	60mm	2
48mm	2 conjoining frags	64mm	1
50mm	2	80mm	1

Only one piece had its full length or width of 190mm preserved. Other examples had minimum dimensions of 238 × 168mm and 206 × 108mm. A tile 47mm thick had a hole 14mm in diameter drilled through it. The hole, being drilled from both sides, has a very pronounced hour-glass shape in section.

Box tiles

Of the 38 pieces of box tile examined 20 had some decoration, of which a scored lattice was by far the most common with 12 examples. The lattice varied from close to open (8–37mm between the grooves) and the grooves from deep to shallow. Other forms of decoration can be seen on Fig 12.10, Nos 1, 3 and 7). Only three box tiles preserved traces of cut-outs through their narrow sides. These may all have been rectangular; the largest surviving example has minimum dimensions of 70 × 35mm. The greatest surviving length of a box tile was 140mm. One had a minimum width of 112mm while another piece may have preserved its full width of 102mm.

The *tegulae*

The *tegulae* are the most interesting category of tile from the site as they exhibit a considerable range of types of flange and of the cut-outs to be found at one end of the flanges. Eight flange types, a–h, have been

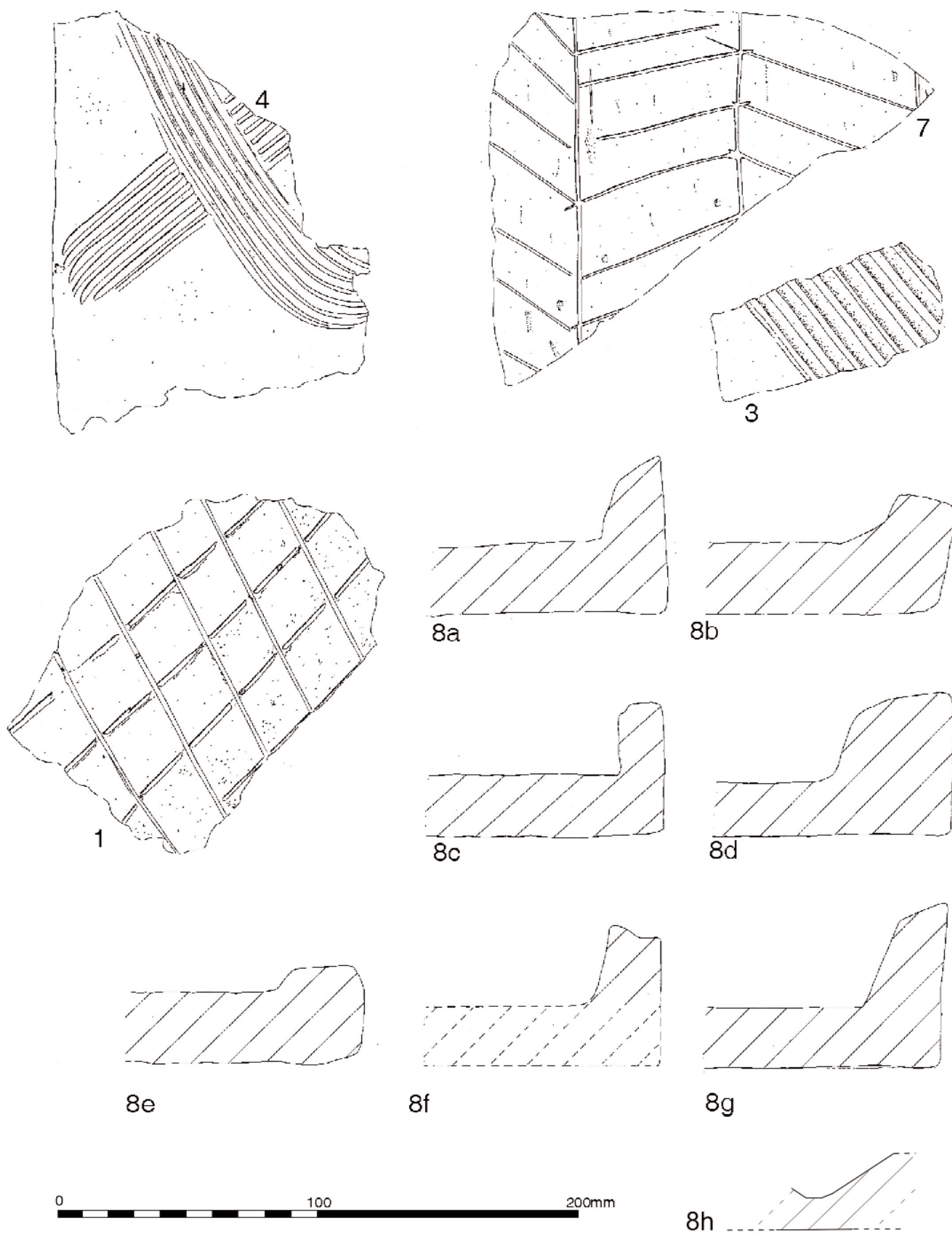


Fig 12.10 Ceramic brick and tile (scale 1:2).

illustrated (Fig 12.10, 8a–h) of which Types e, f, g and h are each represented by one example only and Types b and c by two only. Flange Type h has also been recorded from Vindolanda, where it is rare (Bidwell 1985, 164 and fig 64.3).

There is a considerable degree of overlap between some of the flange types. One piece has a flange with a Type c profile at one end and a Type a at the other. Type g is a more carefully executed version of Type a, and a number of the thicker Type a flanges are close to Type d in shape. Type a is by far the most common with 41 examples and there are 10 examples of Type d, together with a small number of intermediary types. *Tegulae* with flanges of Type a were a rare find in the excavations within the north-east angle of the fort at Vindolanda (Bidwell 1985, 164, and fig 64.2). One may assume that the Vindolanda examples, if their rarity in the north-east angle is typical of the whole site, were diverted from Housesteads.

The height of the flanges generally ranges from 42–70mm with Type e being the exception at 38mm. There is no clear relationship between flange type and flange height, nor between the thickness of the tile and the amount by which the flange protrudes above it. Over 5% of the flanges, where the full height was preserved, fall within the range 45–46mm, 52–55mm and 60mm, with the 52–55mm group the largest. Flanges of Type d and the very thick flanges Type a/d all occur in the range 52–55mm or very close to it. For a discussion of flange types from other British sites see Brodrick 1987, 12–14. Many of the Housesteads types can be paralleled on his figures 5 and 6.

Six cut-out types are illustrated (Fig 12.11, 9a–f), of which only single examples of Types d, e and f were noted. Type a is the most common with 11 certain examples and three probable ones. Type c has four examples and Type b, three. There is no particular correlation between flange and cut-out types. Type a

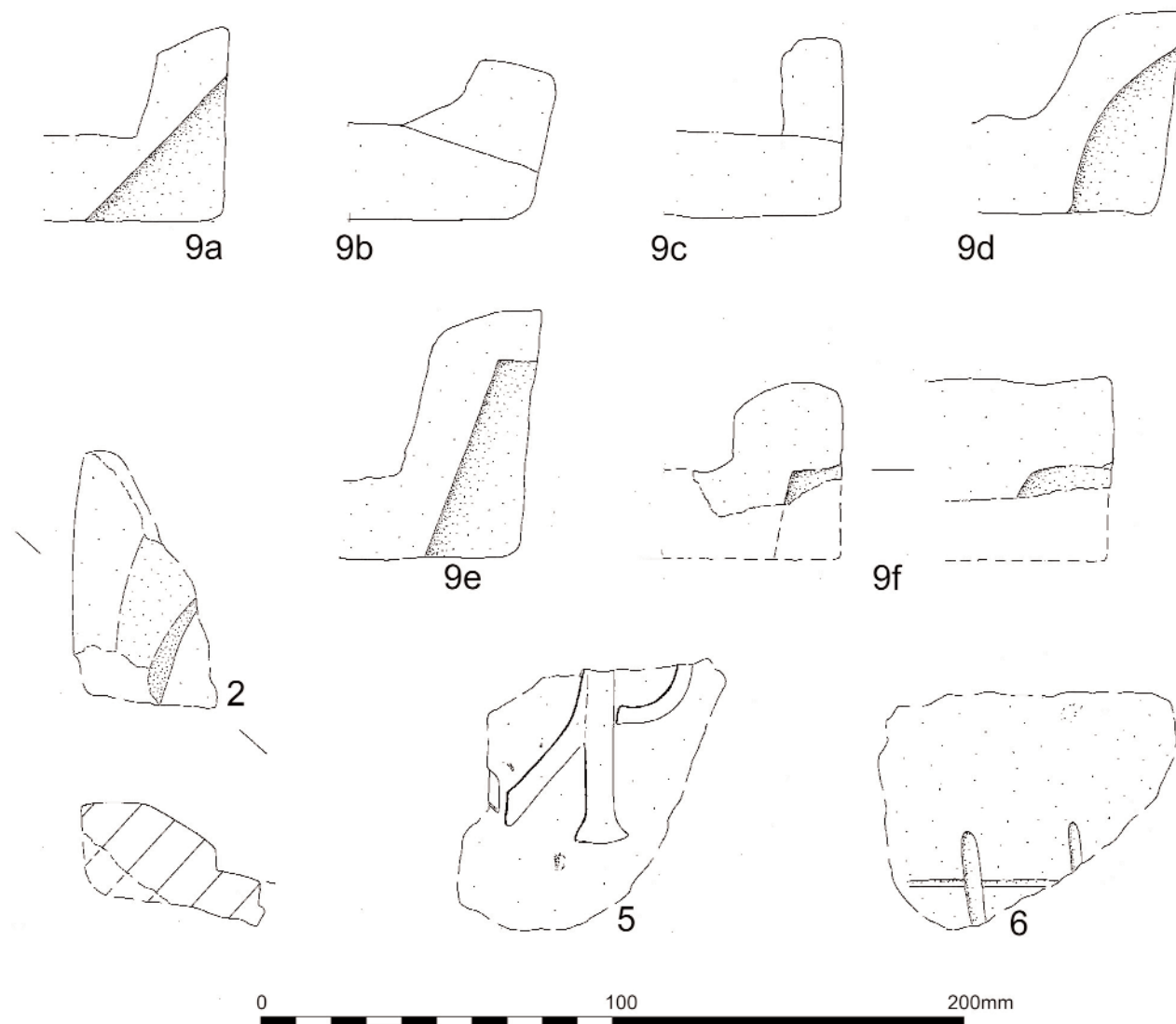


Fig 12.11 Ceramic brick and tile (scale 1:2).

flanges occur with cut-outs of Types a, b and c, Type d flanges with Types a, d and f. The cut-outs were designed to accept the flanges of the next *tegula* down the slope of the roof and will thus have been provided at one end of the flanges. At the other end the flanges were reduced in width by an angled chamfer, as shown on Fig 12.11, 2. Only two examples of the chamfer were noted. One fragment had no special feature at the end of its flange. A unique piece had a slight rebate in the back of the flange and another rebate *c* 7mm deep and at least 120mm wide right across the underside of the tile, 140mm from the one preserved end. For a discussion of cut-out types see Brodribb 1987, 16–17.

Stamped tiles

Only one tile 17mm thick bore a stamped impression (Fig 12.11, 5). Much of the impression is lost owing to the breakage of the tile. The letters are not set within a frame. This piece was published in *Britannia* soon after its discovery (Wright *et al* 1976, 390, no. 58) when it was identified as coming from a *tegula*. It is part of the same die as has been found on hypocaust tiles and a *tegula* from Carlisle and on five bricks in the foundations of a 4th-century building at Brough-by-Bainbridge. It was described thus 'the die consists of an M *c* 65mm high, with boldly serified verticals, the loop of the P ligatured to the right-hand vertical and the central V set unusually low and interrupted at the foot'. For further discussion of the type see Hassall and Tomlin 1980, 408, n 33.

Stone tile

The stone tile, in green sandstone or, more rarely, in red banded or yellow sandstone calls for no particular comment. The fragments were generally small, maximum dimensions 286 × 270mm and between 13 and 36mm thick with the most commonly found thickness of 28mm. Three have holes drilled through them, 8, 9 and 13mm in diameter. A single example is of slate 11mm thick. The red sandstone slab 48mm thick may have been used as a flag rather than as a roof tile as the others no doubt were. One tile, illustrated as Fig 12.11, 6, has three shallow incised grooves on one face.

Fired daub

Three conjoining fragments of fired daub were recovered from H13:5:2. The daub was 43mm thick and preserved the impression of a circular timber *c* 63mm in diameter around which it had been formed. The hole pierced it at 90° to its smooth faces.

Discussion

D Welsby and A Rushworth

The ceramic tile from the north-east quarter of the fort might imply that Buildings XIII, XIV and XV were roofed with *imbrices* and *tegulae* at some point during their use. However, a significant proportion of the tile was either unprovenanced or unstratified, deriving from topsoil or recently disturbed contexts (117 recorded pieces). Of the material in stratified



Fig 12.12 The reuse of stone roof tiles in the latest phases of the north rampart revetment (H20:9:25–6).

contexts, the bulk derived from the deposits associated with the reinstated rampart of the mid-late 3rd and early 4th centuries (49 pieces; contexts H20:4:19, 46, 5:40, 6:50, 8:8, 8:22, 9:9; Phases H20/3b, 3d, 4a) or from the makeup for the flagged floor of the large late Roman storehouse on Site H15 (62 pieces; H15:1:4, 68; Phase H15/4). In both these groups of contexts, the tile is likely to have been residual and potentially redeposited from elsewhere, imported with the rampart or makeup material. In the remaining stratified contexts, predominantly associated with the two barracks (XIII and XIV) and intervening street (HSE), the ceramic tile, totalling 34 pieces, was generally present in quantities that were too small to permit any firm conclusions to be reached regarding its structural implications, although the possibility that some originally derived from the roofs of the buildings cannot be excluded. (Note, however, the assemblage of nine fragments incorporated in a primary makeup

layer in the centurion's quarters of Building XIV – H14:1:10; Phase H14/1). Stone tile is not common but the 21 fragments reused in a mid- to late 4th-century revetment wall (H20:9:25/26 and 9:13 – see Chapter 6 and Fig 12.12) at the west end of the excavated north rampart may indicate that one of the towers or the passageway of the adjacent north gate was roofed with stone prior to the construction of this wall. All the categories of material could have been put to secondary use, although *imbrices* and box tiles are not ideal for reuse. The only structure excavated during 1974–81 where one would expect to find box tiles is the bath-house at the eastern end of Building XV. This had been thoroughly cleared before the structure was re-examined in 1981, and presumably any such material had been removed long ago. The box tiles from the other areas were presumably being reused, for what purpose one can only surmise.

13 The coins

R J Brickstock and P J Casey

Introduction

The coin assemblage from the fort and *vicus* at Housesteads consists of 790 specimens, excluding hoards. These comprise surviving examples, items now missing but reliably recorded in excavation reports, and items referred to *en passant* in local historical or topographical works. Of this total, 540 (Nos 1–540) are from within the ramparts of the fort and 250 (Nos 550–799) from extramural contexts. In addition, a number of coins derive from contexts intimately associated with the fort, notably 18 (Nos 800–817) from the site of the shrines on Chapel Hill to the south and beyond the Vallum; seven from the milecastle (MC 37) immediately to the west of the fort; and at least two from the Knag Burn Gate to the east of the fort. Two pairs of clay moulds, for the casting of 3rd-century *denarii*, provide evidence of coin forgery on the site.

In compiling what is for the present a definitive catalogue of the coinage of Housesteads, acknowledgement must be made of the work of previous scholars. The present writers are particularly indebted to the work of Mark Curteis (1988), whose unpublished MA at Durham University provided the starting point for the present reassessment of the Housesteads coins. Curteis systematically sought material that had been widely distributed among a number of museums, and it is entirely due to his efforts that the coins excavated by Bosanquet in 1898 were brought to light.

Inevitably, re-examination of the material has resulted in the reattribution of a number of coins so that, with the addition of further material and the elimination of duplications, renumbering has been necessary for the new catalogue.

Published collections

The Bosanquet collection comprises 163 coins derived from the excavations undertaken in 1898 within the fort and in the *mithraeum* beside Chapel Hill. By no means all of these coins appear in the original report (Bosanquet 1904), and the majority can no longer be related to specific contexts, though a number can be located to buildings or areas, notably to the *principia*.

The E Birley collection consists of some 258 coins, a forger's mould, and two small hoards (Hoards 4 and 5) from the excavations in the *vicus*, on the Vallum, at the Knag Burn Gate (Birley and Keeney 1935; Birley 1937) and in Milecastle 37 (Birley and Charlton 1934). Again, a proportion do not appear in the published reports (Birley and Charlton 1932; Birley *et al* 1933; Birley and Charlton 1934; Birley and Keeney 1935; Birley 1937).

The Wilkes collection of 103 items was recovered from Buildings XIV and XV, excavated in 1959 to 1961 (Wilkes 1960; 1961; Leach and Wilkes 1962).

The R Birley excavations on Chapel Hill in 1960 produced a total of 13 coins and a second forger's mould (R E Birley 1961, 317–19).

The excavation of the commander's house and hospital by Dorothy Charlesworth in 1967–73 produced 41 coins from well-recorded contexts. Several of these coins were omitted from the published accounts (Charlesworth 1975; 1976).

J Crow's excavations on the north curtain wall in 1984 produced seven coins (Crow 1988).

Of the remaining coins a few are from literary references, including unpublished manuscripts, but the majority, including a further three hoards (Hoards 1–3), are from the excavations that are the subject of the present report. It should be noted that a further 16 coins, labelled 'Housesteads–Winshields', are eliminated from the present study because of uncertainty over their provenance: some may be curtain-wall finds, while others may be the remnant of the Winshields milecastle (MC 40) finds (Craster 1911, 437).

A proportion of the coins from various collections are no longer available for re-examination. The present status of individual items from Housesteads is indicated in the catalogue thus:

P	Present in original envelope
M	Present in modern bag
NT	Present in National Trust Collection
B	Present in Bosanquet Collection
C	Present, Crow excavation coins
PA	Published but absent
BA	Bosanquet, published but absent
A	Absent from original envelope
Absent	Absent, but recorded in extant mss
*	Absent, recorded only in Curteis thesis

With the exception of items displayed at Housesteads Museum and of a single coin in the British Museum's collections (No. 802), all extant Housesteads coins (including hoards) are now deposited in either the Corbridge Museum or in the University of Newcastle's Museum of Antiquities, where they are accessioned according to the order of Curteis's catalogue. This number appears under the heading 'Store No.' in the present work.

Discussion

In the following study the coins in Figs 13.1–3 are presented as consolidated histograms, using a now standard formula:

$\frac{\text{Coins per period} \times 1000 \text{ (a notional multiplier)}}{\text{Length of period}} \quad \text{site total}$

Smaller assemblages, from individual buildings, are presented as percentages (Figs 13.4–13).

Period divisions are as follows:

1	AD 43–54	15	244–9
2	54–68	16	249–53
3	68–81	17	253–60
4	81–96	18	260–73
5	96–117	19	273–86
6	117–38	20	286–96
7	138–61	21	296–317
8	161–80	22	317–30
9	180–92	23	330–48
10	193–217	24	348–64
11	218–22	25	364–78
12	222–35	26	378–88
13	235–8	27	388–402
14	238–44		

Overview

Before discussing individual contexts, consideration of the overall pattern of coins from the fort is necessary in order to place the Housesteads assemblage within the framework of imperial coin supply to Britain in general and the military zone in particular. Coin supply to the north included, in the Hadrianic period and the later 2nd century, *aes* issues dating back to the Claudian period. Significant numbers of Flavian coins, especially *asses*, still circulated but bulk supplies of *sestertii* appear to consist of issues of Trajan, Hadrian and Antoninus Pius (AD 98–161).

From the later 2nd century increasing emphasis is placed on silver issues, especially after the debasement of the *denarius* by Marcus Aurelius (AD 161–80). As is usual in the assemblages from the military area, coins from Period 10 (AD 193–217) onwards are exclusively *denarii* or *antoniniani* (ie double *denarii*).

Levels of activity, if any, in Periods 13–17 (AD 235–60) cannot be judged by the absence of coins of these periods. The hiatus for these years is normal in all histograms of British sites, being a function of the rapid debasement of the silver currency which prompted the equally rapid disappearance from circulation (through withdrawal or hoarding) of earlier, intrinsically more valuable, issues (as well as the counterfeiting of the same).

The Period 18 (AD 260–73) peak corresponds to the collapse of the silver currency, reaching a nadir of 2.5 per cent silver during the reigns of Claudius Gothicus (AD 268–70) and the Tetrici (AD 270–73). A large proportion of the coins of Period 18 are copies of issues of the Tetrici, probably produced to compensate for the dearth of Aurelian's reformed coinage in Britain in Period 19 (AD 273–86), and are discussed as a component of the coinage of this latter period.

Following the currency collapse of Period 18, a pattern well established in Hadrian's Wall and associated forts is visible. As is usual in the north, the coinage of Carausius (Period 20) is under-represented, possibly indicating garrison changes associated with the manning of coastal defences in the south, or the movement of forces to campaign in Gaul (Casey 1994b).

Since the coinage from the *vicus* will have derived, for the most part, from the fort, it will be convenient to address the overview of the site by reference to a histogram representing a combination of fort and *vicus* coins (Fig 13.1). Here the dominant characteristic is the high value of coinage of Periods 3–12 in comparison to that of Periods 20–27, a phenomenon that has been commented upon on a number of previous occasions (for example Casey 1994a). This pattern is common to military sites and has been explained in terms of a diminution in coin supply in the 4th century with the introduction of the *annona militaris* and the payment of troops in goods and services rather than cash.

The time has come for a more sophisticated analysis of this pattern, since to accept the hypothesis without further discussion precludes any consideration of the effect of garrison reduction on the availability of coin to be lost. Unfortunately, no such analysis can be attempted before quantitative studies of pottery are available for period by period comparison with coin supply. Even so the problem of residuality of coins will need to be faced: coins could remain in circulation for very long periods, early imperial issues being actively in use up to and beyond the middle of the 3rd century, while as non-monetary or obsolete coins they were discarded and incorporated into very late contexts. In addition, continual activity on long-occupied sites constantly impacts on previous stratigraphy and reincorporates coins, lost much earlier, into later contexts. Further, the documentary material from Vindolanda shows how difficult it is to equate the presence or absence of parts of auxiliary garrisons from their fort, for longer or shorter periods, with structural evidence (Bowman and Thomas 1994).

Relating the coinage of the site to the garrison is fraught with difficulty: the Hadrianic fort was constructed to hold a milliary infantry cohort; later, perhaps in the Antonine period, there seems to have been a legionary unit (of unknown strength) in residence (*RIB* 1582–3, though the inscriptions cannot be closely dated); and from the 3rd century onwards another milliary cohort (the Tungrians) was supplemented by one, or perhaps two, German units of unknown strength and unknown length of residence. All of these units were paid on variable, and different, scales and their monetary losses will have been proportional to their access to coinage. Since each unit will have brought with it a proportion of the site coinage and since this coinage will have consisted of items ultimately derived from other sites, the mixing of the coin pool at Housesteads raises many theoretical difficulties.

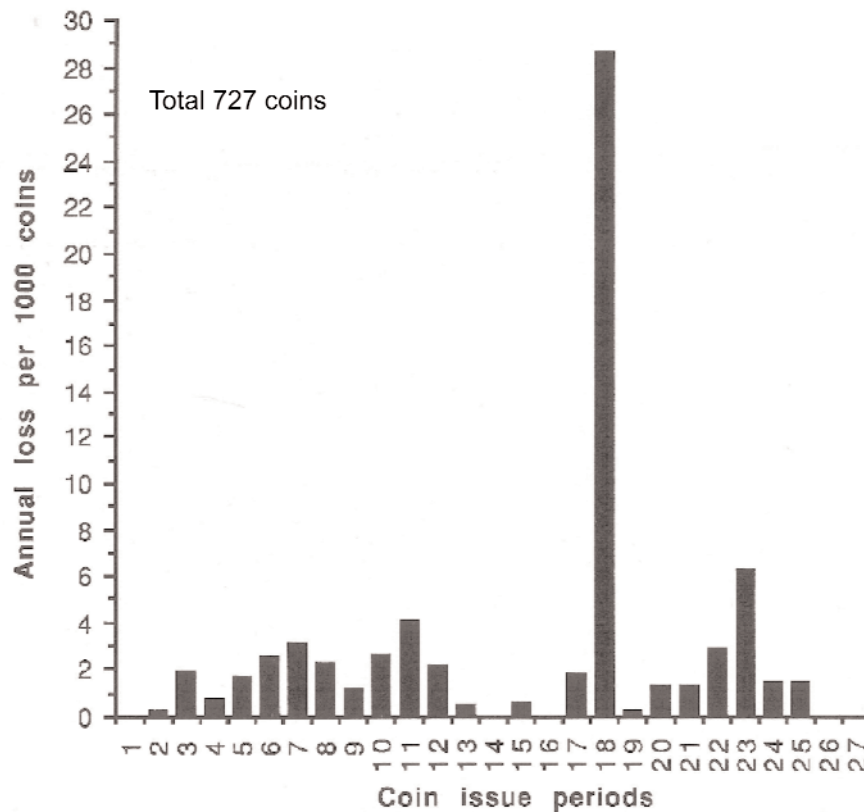


Fig 13.1 Coin graph: Housesteads fort and vicus (excluding Chapel Hill).

Within the confines outlined above we can consider Housesteads relative to other sites adjacent to the Wall. It is very similar to sites such as Vindolanda, Birdoswald and Halton Chesters (Figs 13.14–15; 16; 17). By contrast Corbridge, in its civil phases, produces a pattern similar to urban sites in the south of the province (Fig 13.18). Such comparison makes it clear that coin deposits are a function of supply as much as the character of individual garrisons.

The vicus

A comparison between the coins from the Housesteads vicus (Fig 13.3) and the fort (Fig 13.2) suggests that the life of the vicus did not extend into the 4th century. Analysis of the vicus coins of Periods 21–24 (AD 296–364) suggests that the 13 coins involved (Nos 778–90) derive from contexts in buildings adjacent to the fort wall and may have been lost or discarded from within the fort. A single coin (No. 789) has a context in a more southerly vicus building (Building VIII), but that only from the topsoil.

The 4th-century element apart, the last coins found in the vicus are those of Period 18 (AD 260–73). This period comprises two elements, regular coins and copies. The bulk of the copies, and especially those of smaller module, are associated with the coin reform of Aurelian and appear to have been produced to supplement a shortage of coin in Period 19 (AD 273–86), their production extending just into the reign of Probus (276–82). A comparison between the ratio of

copies to regular coins of Period 18 in the vicus and the fort indicates that the vicus ended before copies achieved the maximum of their circulation.

Period 18	Regular	Copies
Vicus	80%	20%
Fort	38%	62%

The same pattern is found at Vindolanda where detailed studies and excavation show that the vicus was dismantled in the 270s (Bidwell 1985) while occupation of the fort continued. A similar date of abandonment can be advanced for Housesteads.

Vindolanda

Period 18	Regular	Copies
Vicus	71%	29%
Fort	45%	55%

The majority of the coins from vicus buildings are *denarii* or *antoniniani*, with varying proportions of early *aes* coinage. Since the latter was in circulation at the same time as early and middle 3rd-century silver the relationship of base metal to higher denomination coins may give some indication of the status of individual buildings (see Table 13.1).

The tabulation of the finds from the best excavated vicus buildings appears to indicate higher values of silver used or stored in Buildings I, III and VIII. The function of these structures is uncertain but Building I may well have been a tavern (Crow 1989); Building III

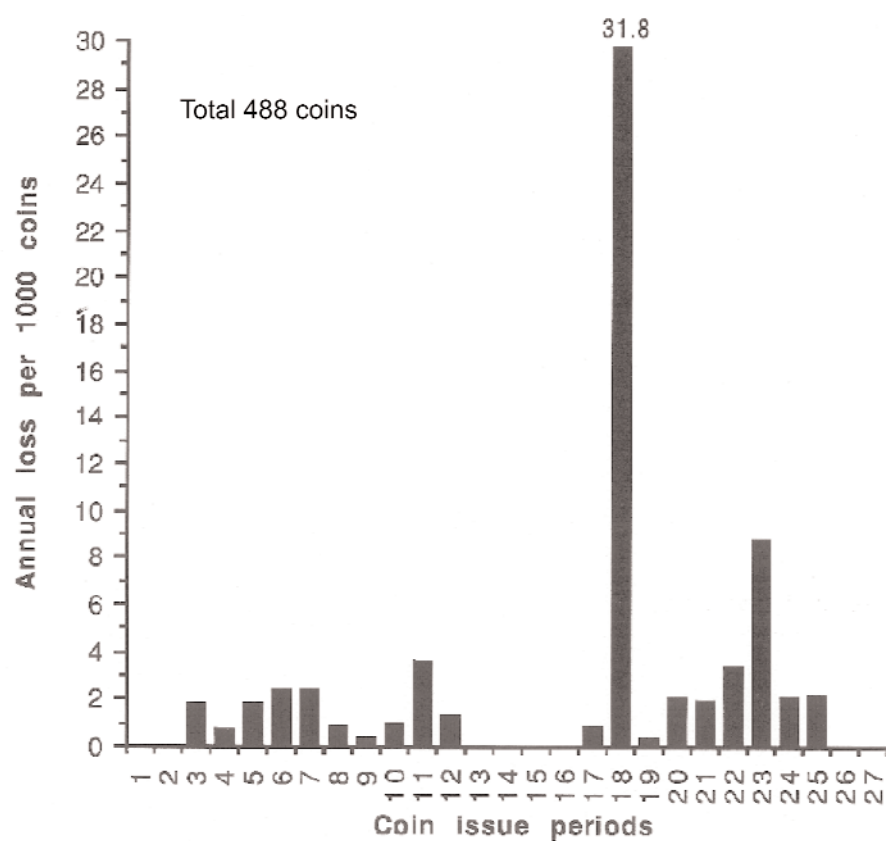


Fig 13.2 Coin graph: Housesteads fort.

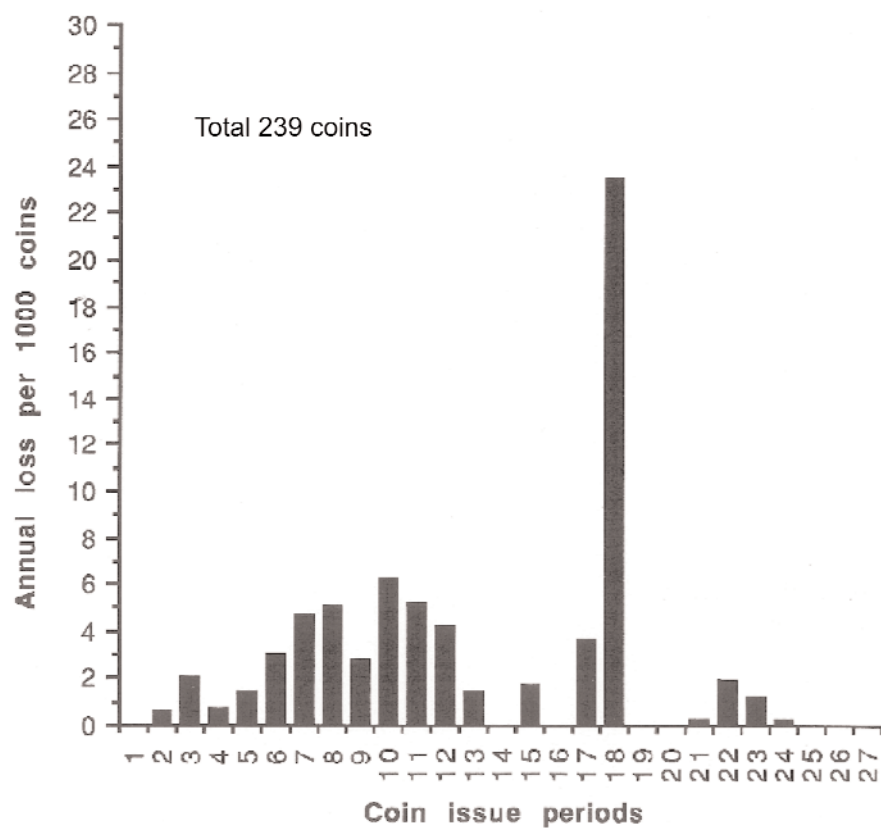


Fig 13.3 Coin graph: Housesteads vicus.

Table 13.1 Denominations of deposits in Housesteads *vicus* buildings

<i>building</i>	<i>as ae</i>	<i>dup ae</i>	<i>sest ae</i>	<i>den ar</i>	<i>ant ar</i>	<i>ar-ae %</i>
I	1	–	2	20	37	95–5
II	1	1	11	12	7	59–41
III	–	1	1	4	9	87–13
IV	7	4	11	28	1	57–43
VIII	2	–	4	9	9	75–25

has been described as a shop (Crow 2004a) and Building VIII is of unknown function. Buildings II and IV seem to show a bias towards the use of coins of lower denomination, perhaps reflecting the value of transactions conducted in the buildings. Buildings I, II and VIII were erected some time after the blocking of the east portal of the south gate and were thus probably built at the same date. Thus the variable denominational structure of the coinage in these buildings points towards a functional rather than a temporal explanation. On the basis of the coinage in Building I a date of construction in the early 3rd century may be postulated, though one suspects that, as with, for example, Barracks XIII and XIV and Building XV in the fort, coinage from the lower levels of several of these buildings may be greatly under-represented.

The fort

Buildings XIII, XIV and XV (Figs 13.4–6) comprise the two barracks and ancillary building of the north-east corner of the fort. There is some difficulty in establishing the stratigraphical sequence of the coins from this area and in deciding which are associated with the early phase of the barracks and which with the later development of chalet accommodation. The four stratified coins from the barrack phase of Building XIII are of Flavian to Trajanic date (Nos 5, 12, 16, 24) with a slightly worn coin of Hadrian dated to 125–8 (No. 49) incorporated in the second of the five floors in the barrack phase centurion's quarters.

Study of the few stratified coins from the chalet construction phases of Building XIII shows that, with the exception of four residual coins of the early empire (all very worn), all are issues of the Gallic Empire or copies thereof, though none of these appear to derive from primary chalet construction contexts. A coin of Constantius II (No. 454) of AD 348–50, found on a flagged surface (former barrack veranda H13:9:13), used as internal flooring in Chalet Phase 1, probably reflects the long duration of occupation on that surface rather than its date of construction. It is therefore worth drawing attention to the fact that the demise of the *vicus* and the construction of chalets seems to coincide, in numismatic terms at least.

The stratification of coins from Building XIV is uncertainly recorded but the site histogram (Fig 13.5) suggests it has a similar history to Building XIII. The presence of Valentinianic coins in Building XIV might

suggest that it remained in use longer than XIII, but the sample of 4th-century coinage from the site is too small to allow certainty. Considerable quantities of Gallic Empire copies mirror the site record for Building XIII, rather than suggesting the presence of a dispersed hoard.

Building XV appears, on the basis of the coin assemblage, to have its foundation in the 3rd century in the post-Severan period. The site histogram (Fig 13.6) and the presence of a coin of AD 259–73 (No. 254) in a context associated with the preceding structural phase (H15/3) perhaps suggests that the storehouse is of the same date as the two chalet barracks. The loss of the coins from the 1961 excavation (Kent 1962, 96), which were not fully identified at the time, precludes further discussion. (*Editor's note:* Coin No. 254, found in one of the drains belonging to the earlier stable – Building XV/3 – certainly provides a *terminus post quem* for the large storehouse of H15 Phase 4. However, the structural evidence, comprising five very distinct phases, with all but the final one involving virtually total demolition of its predecessor, implies that the building *plot* – Site XV – enjoyed much more prolonged occupation. No coins were found in association with the first two structural phases on this site during the 1981 excavation, nor were they in 1961 either, to judge from the published report (Leach and Wilkes 1962).)

Coins from the road surfaces between Buildings XIII and XIV (HSE; Fig 13.7) suggest that levels dating from the AD 270s to the mid-4th century were examined there (but see Chapter 6: Table 6.1 – H21/HSE road level concordance table, for occurrence in stratigraphy). Earlier levels, stretching back to the initial construction of the fort, which were investigated on the adjacent stretch of the eastern *via sagularis* yielded no coins. A similar date range is suggested by the scattered coins incorporated into the surface of the *via principalis* at the west end of Building XIII (H13:11) in the chalet phase.

A total of 30 coins survive from the various excavations of the commanding officer's house (Site XII, Charlesworth 1975). The outstanding feature of this assemblage (Fig 13.10) is the very high proportion of 4th-century coins (60 per cent of the total), representing the most intensive concentration of coin of this period so far recovered from the site. Of these a significant number are of the Valentinianic period (Period 25), again representing something of a deviation from the overall site pattern of use of coinage of this period.

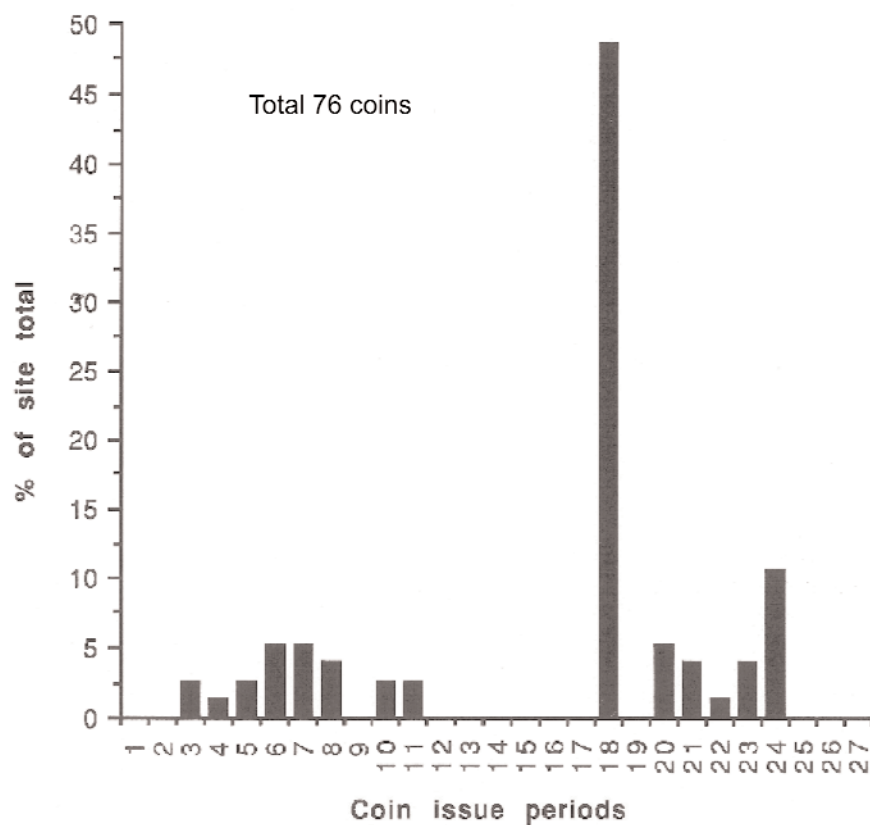


Fig 13.4 Coin graph: Housesteads Building XIII.

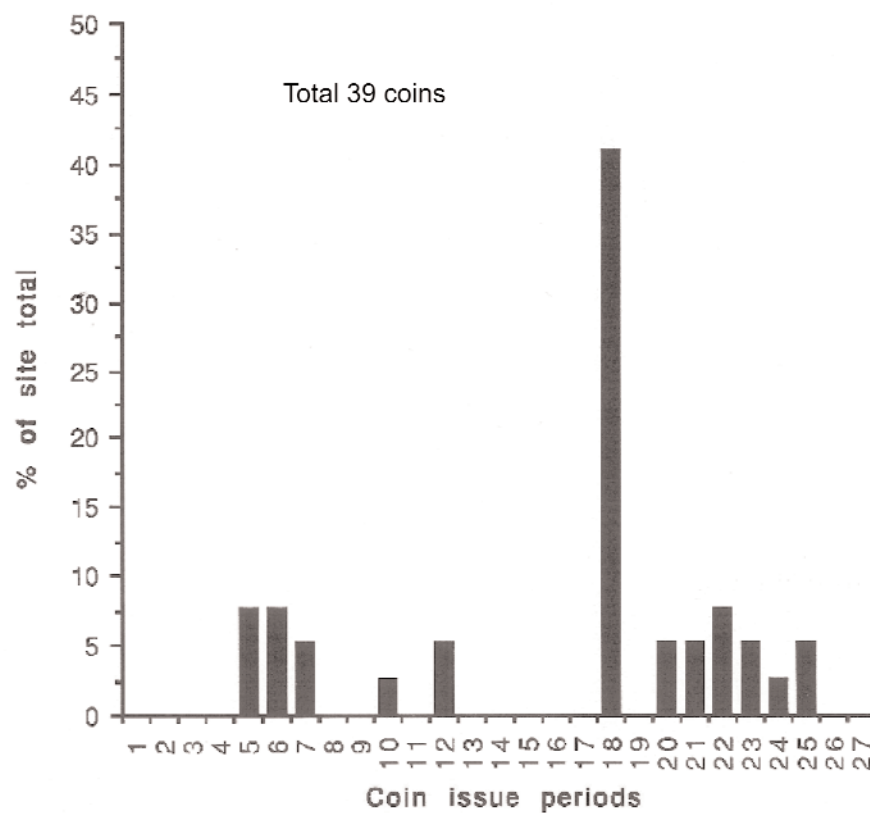


Fig 13.5 Coin graph: Housesteads Building XIV.

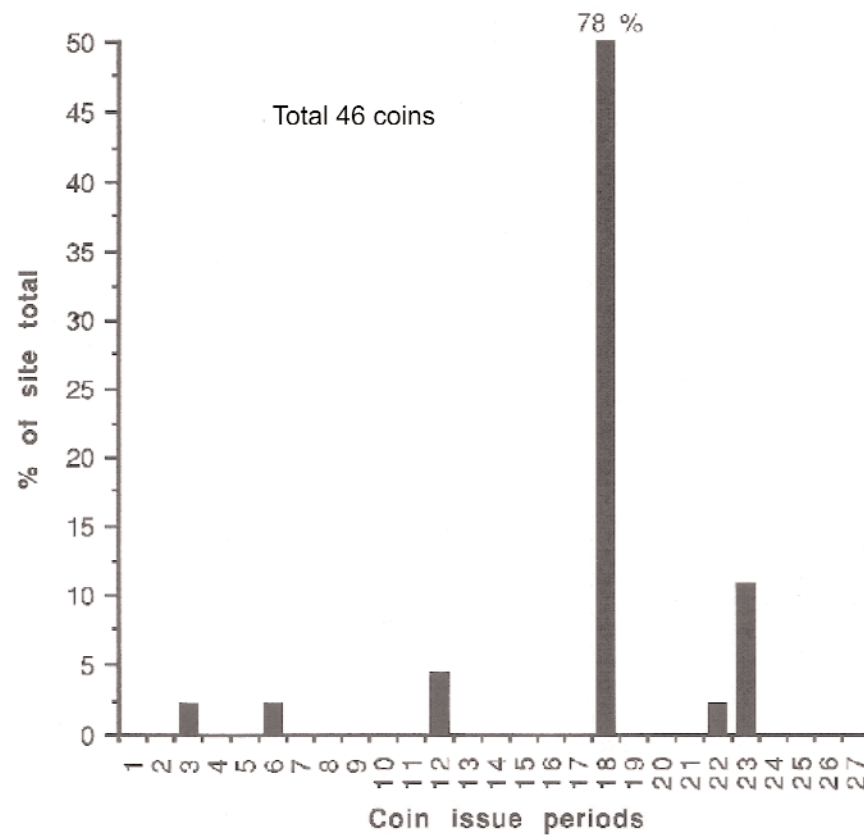


Fig 13.6 Coin graph: Housesteads Building XV

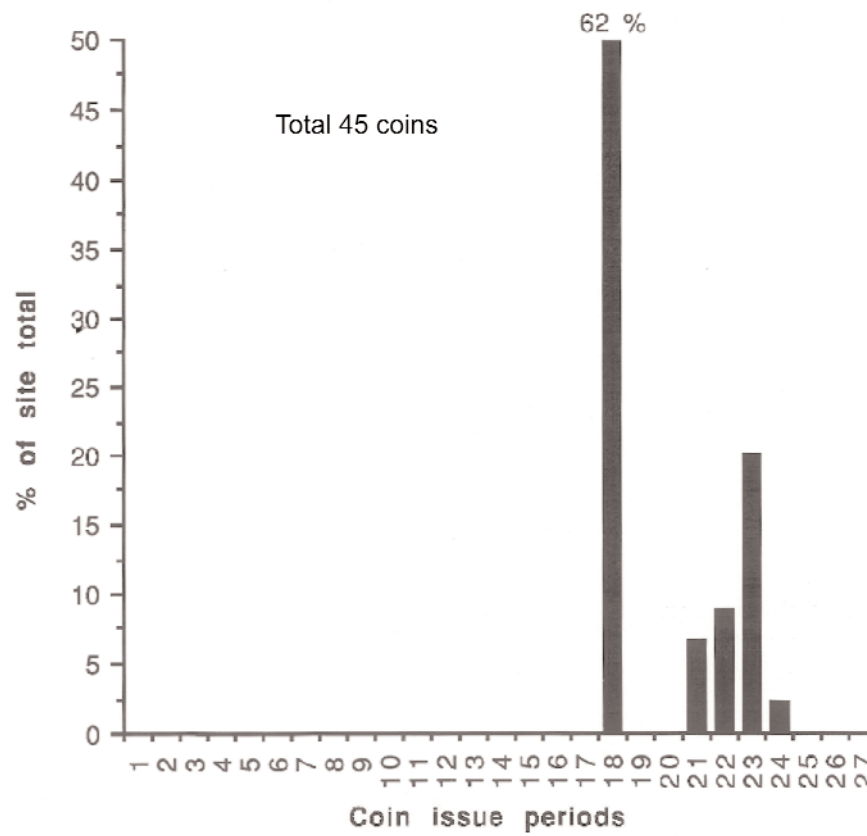


Fig 13.7 Coin graph: Housesteads site HSE.

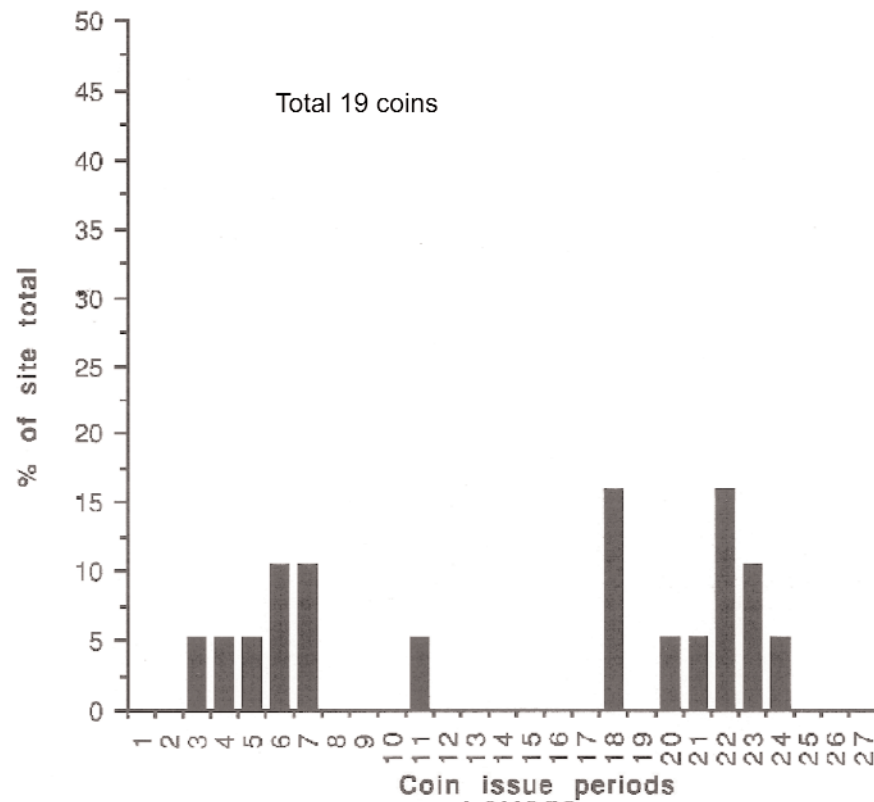


Fig 13.8 Coin graph: Housesteads Building IX (the hospital).

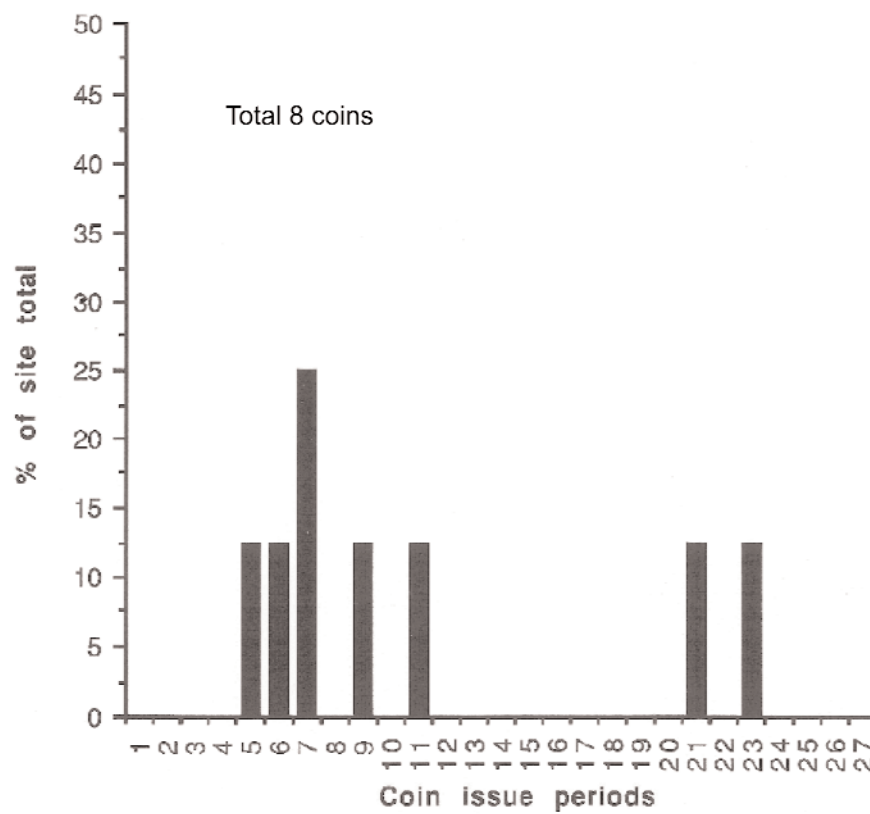


Fig 13.9 Coin graph: Housesteads Building X (the principia).

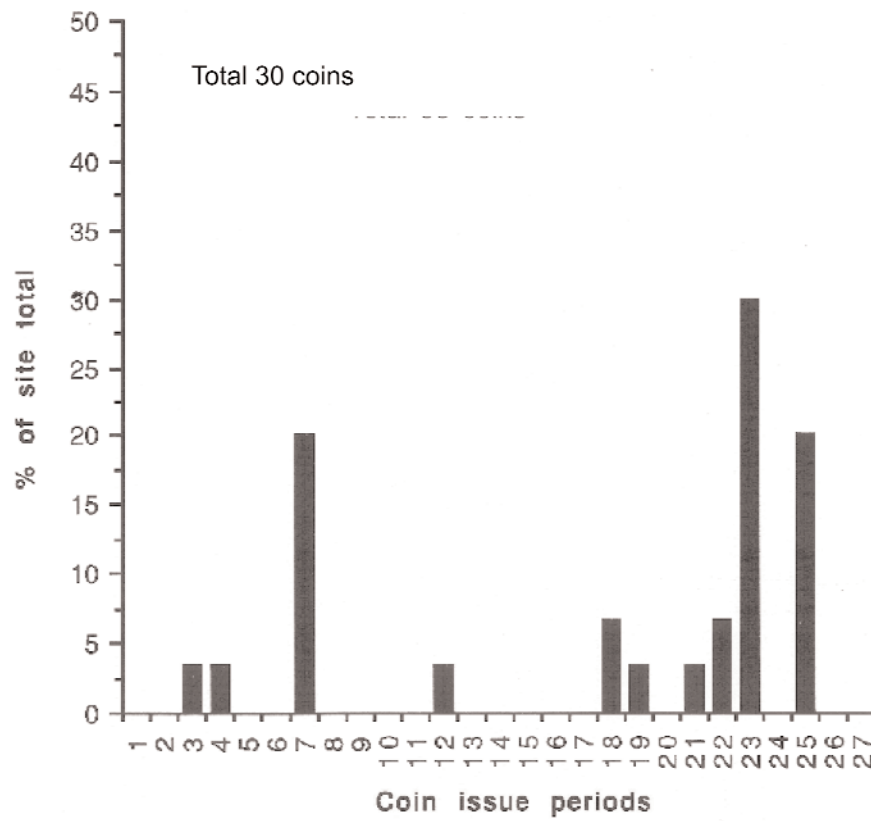


Fig 13.10 Coin graph: Housesteads Building XII (the praetorium).

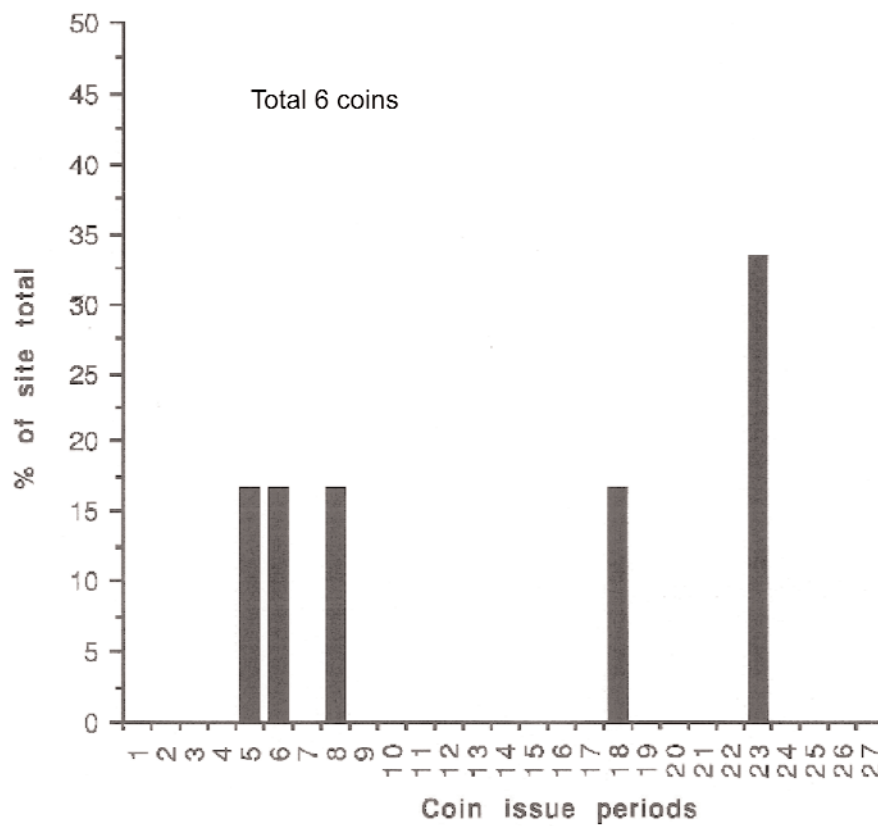


Fig 13.11 Coin graph: Housesteads south rampart sector H23.

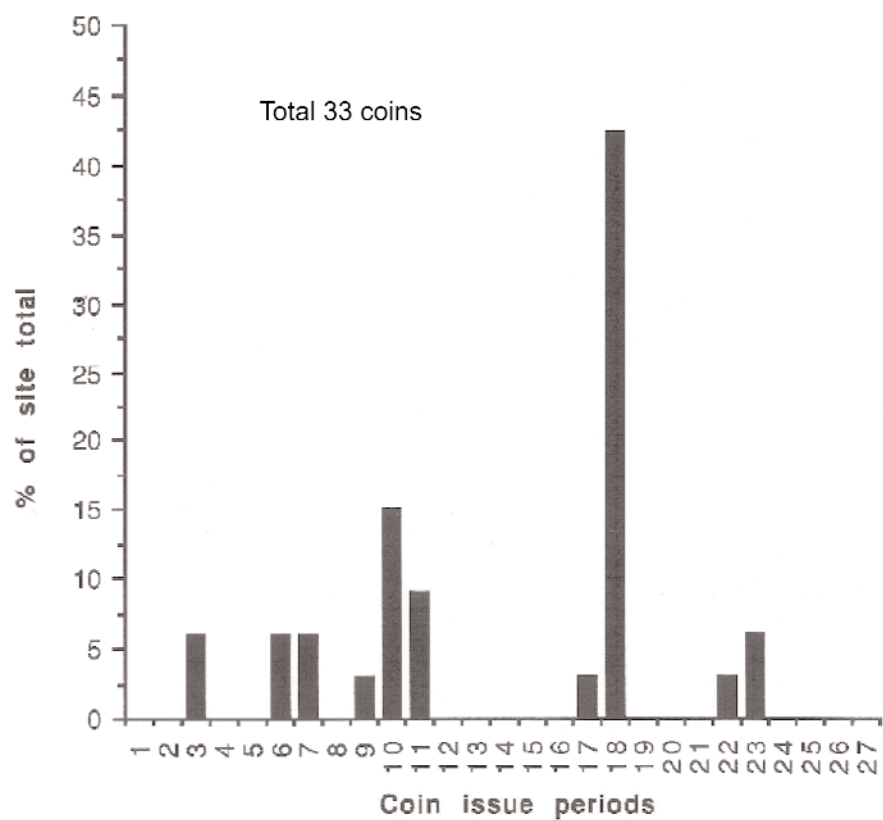


Fig 13.12 Coin graph: Housesteads north rampart sector H20.

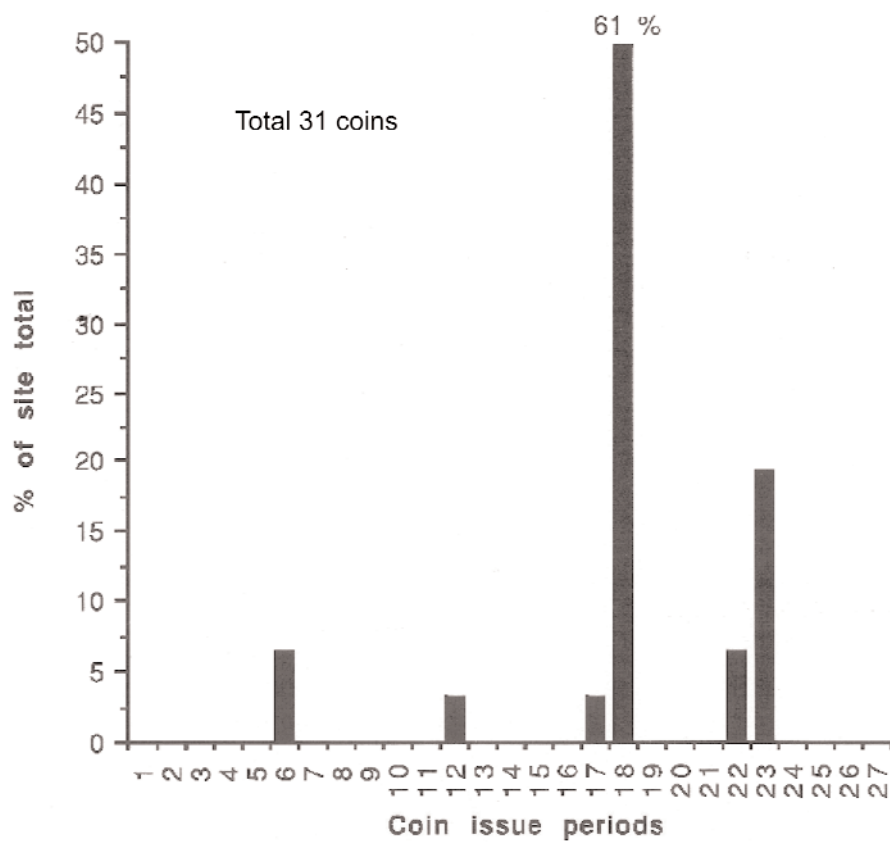


Fig 13.13 Coin graph: Housesteads east rampart sector H21

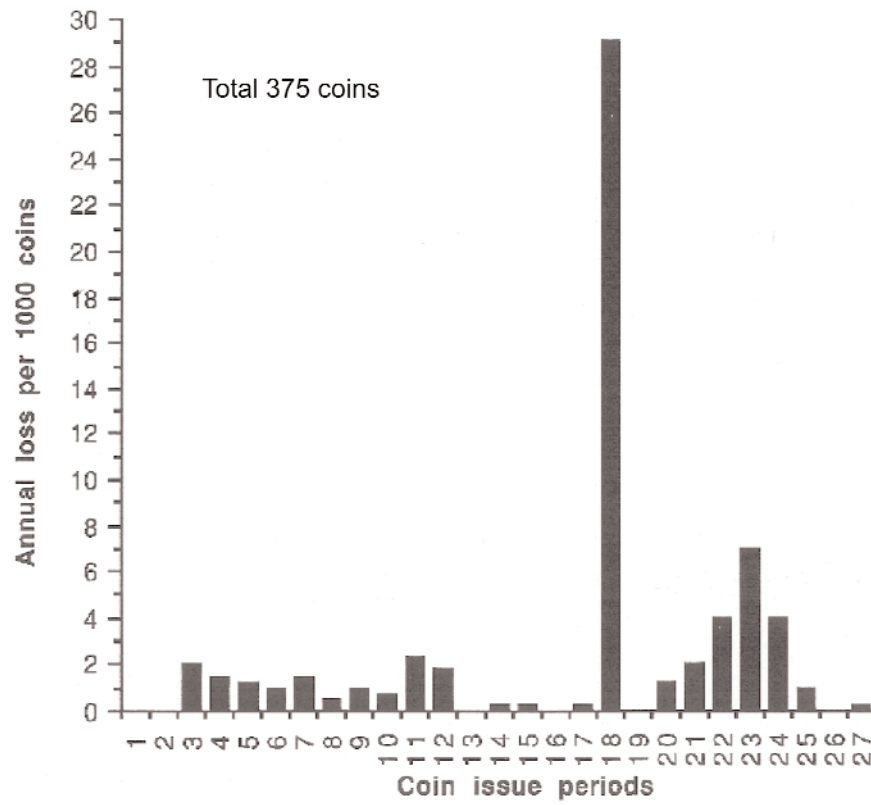


Fig 13.14 Coin graph: Vindolanda fort.

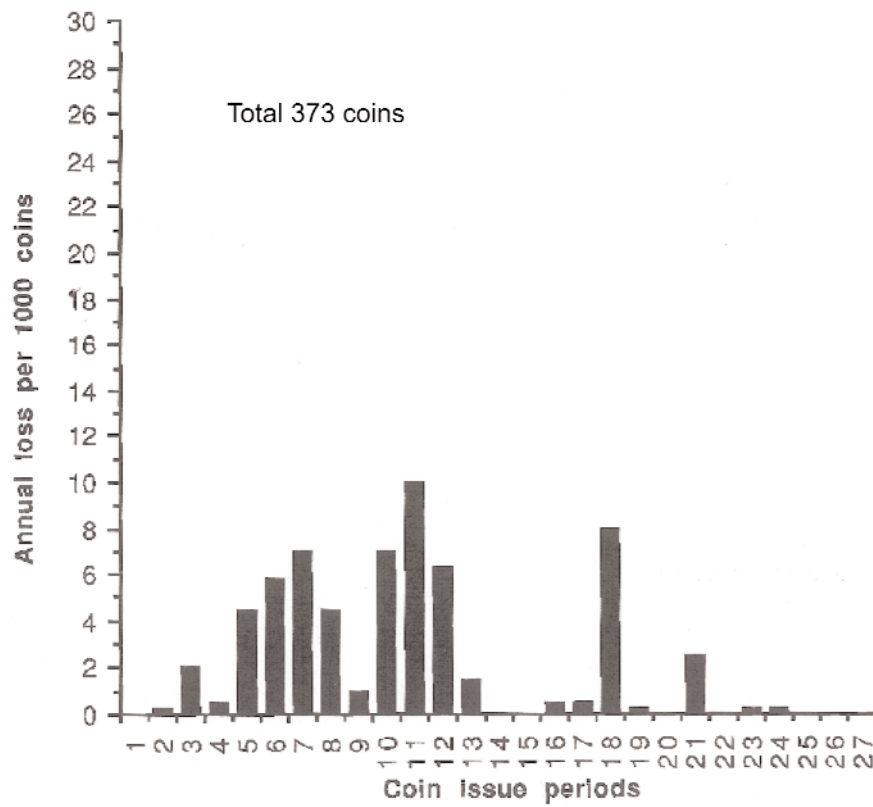


Fig 13.15 Coin graph: Vindolanda vicus.

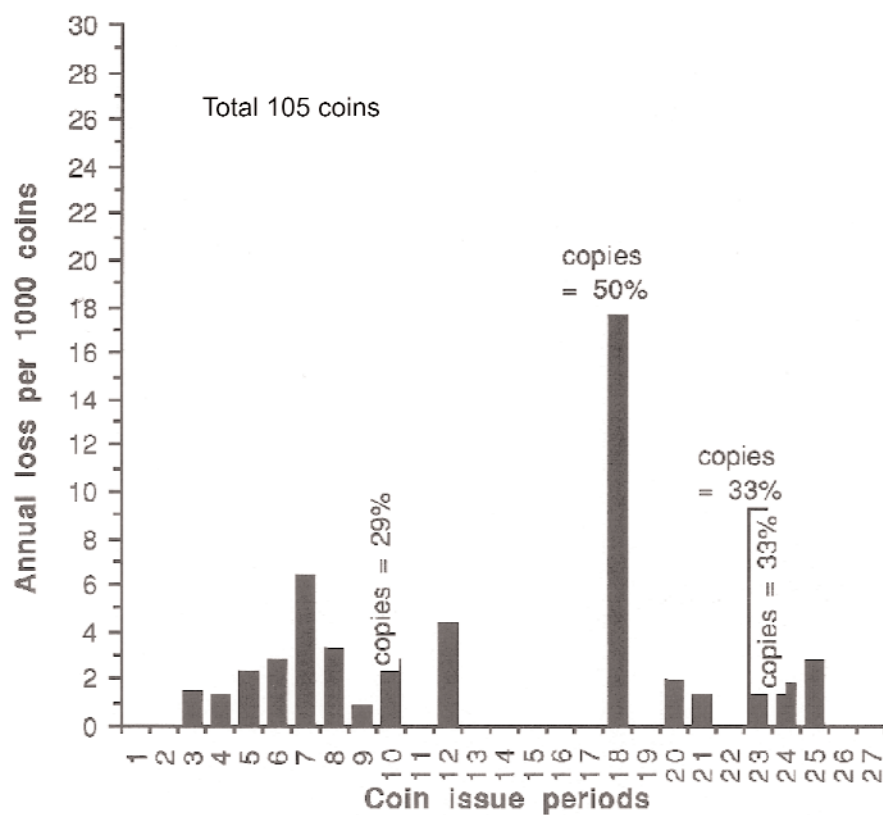


Fig 13.16 Coin graph: Halton Chesters.

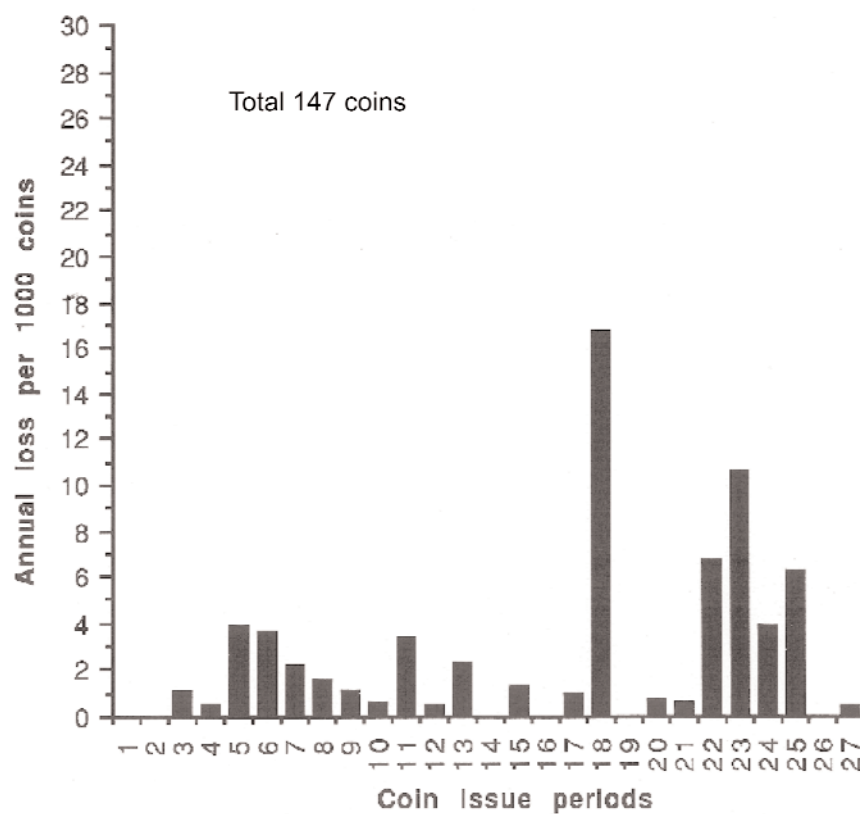


Fig 13.17 Coin graph: Birdoswald 1987-91.

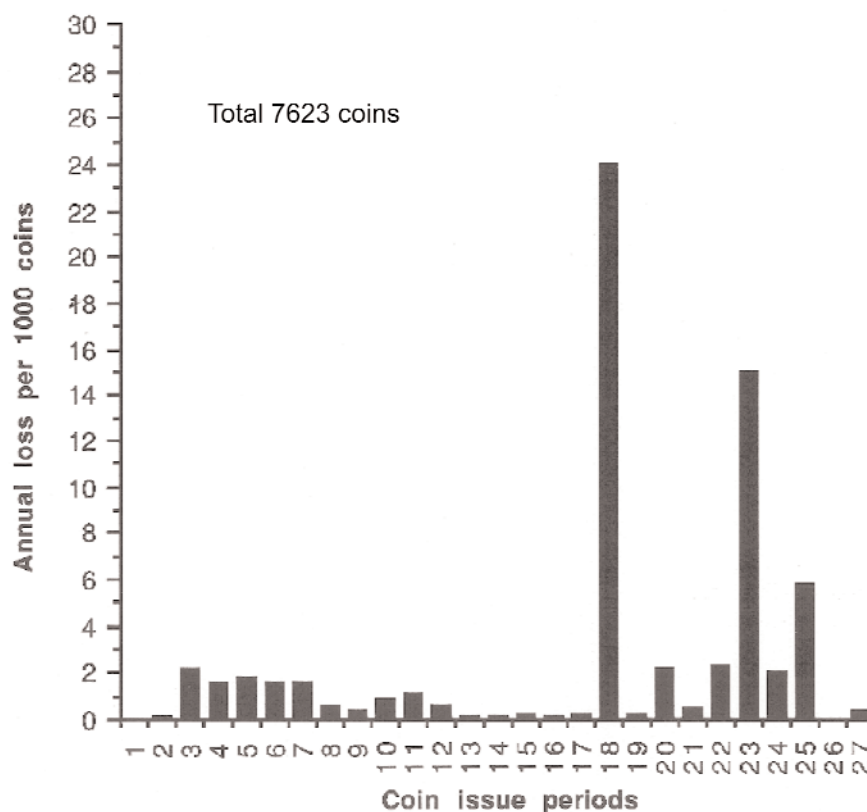


Fig 13.18 Coin graph: Corbridge.

Superficially, the coin patterns from the hospital (Site IX, Fig 13.8) and the headquarters building (Site X, Fig 13.9) are generally similar to those from the commanding officer's house, but the very small numbers of finds preclude detailed comment on these assemblages. Much the same can be said of the latrine block (Site XXIII, Fig 13.11), from which only six coins have been recovered.

Coins from the north and east ramparts (Sites H20, H21; Figs 13.12–13) reflect the overall site histogram relatively closely, and also those of the adjacent Buildings XIII and XIV (Figs 13.4–5). In addition, two of the three hoards recovered from within the fort (Hoards 1 and 3) derive from the north rampart (Site H20).

Hoards

Three hoards were recovered from the excavations inside the fort and two from the *vicus*.

Hoard 1, the earliest from the fort, was found during the 1974–81 excavations, in topsoil in the interval tower on the eastern sector of the north wall (H20:6:0). The find was described as comprising a purse (SF No. 4565) of badly corroded coins (SF No. 4566). These items are now missing and only one coin, of Julia Mamaea, was identified before the loss. Assuming this to have been a *denarius*, though there is no certainty, the hoard may have dated to the reign of Severus Alexander (AD 222–35) or even Gordian III (AD 238–44).

Hoard 2 consists of four Radiate Copies found corroded together (SF No. 9396) in 1981 in H14:4:7, the chalet barrack phase of Building XIV. The identifiable prototypes of the copies are issues of Tetricus I and II (AD 270–73). Deposition may have taken place early in the period AD 273–86 (Period 19) since the copies are of large module and relatively unworn.

1. 'Tetricus I' Obv. ..PEDTDDE ... (sic)
Rev. ...CIOC ... (sic)
14mm, 0.8g SW/SW Store no. F.226 (under which number all four coins are now stored)
2. 'Tetricus II' Obv. [C PIV ESV TETRICUS CAES]
Rev. [SPES ...]
12mm, 0.8g SW/SW Store no. F.247
3. 'Tetricus II' Obv. –
Rev. –
[fragment] W/W Store no. F.251
4. Radiate Copy Obv. –
Rev. –
13mm, 0.5g C/C Store no. F.280

Hoard 3, again from the 1974–81 excavations, and now missing, is recorded from just west of the interval tower at the eastern end of the North Rampart (H20:7:2; SF No. 5637). The surviving description speaks of 'a purse (very black soil) and bronze slivers = minimissimi.' The term 'minimissimi' is an unfortunate one, dating to a period when archaeologists evinced the notion that very small coins were of very late date. There are four classes of coins covered by the name: the smallest Radiate Copies, ie less than 10mm in diameter; copies of the Constantinian issues of AD 330–41;

copies of the *Fel Temp Reparatio* issues of AD 354–8 and, finally, regular issues of the House of Theodosius dating to AD 388–402. In detail the various copies may be dated as follows:

Radiate copies	AD 273–86
Constantinian	copies AD 341–6
<i>Fel Temp Reparatio</i> copies	AD 354–64

Lacking further information, Hoard 3 can be assigned only to the late 3rd or mid- to late 4th century. However, it can be noted that, of the above categories, the most common is the first (AD 273–86), and such a date would be largely consistent with the limited evidence for chalet construction in Buildings XIII and XIV nearby.

A further leather purse (SF No. 7394) is recorded from the same context (H20:7:2), though, with no record of coins found in association with it, it is possible that this represents a duplication in the finds record.

Hoard 4 consisted of five coins found corroded together in the passage between *Vicus* Buildings III and IV in 1931 (Birley and Charlton 1932). The coins were published as *denarii* and *antoniniani* of Vespasian to Elagabalus which were, presumably, lost or deposited at the end of the first quarter of the 3rd century. A *denarius* of Macrinus (No. 676) from the same context may originally have been part of the hoard and is probably a plated counterfeit. Given the proximity of the finding of Hoard 4 to a counterfeiter's mould (*supra*), and the presence of a metalworking furnace in *Vicus* Building IV, the possibility that Hoard 4 itself consisted of counterfeits cannot be excluded. The coins are now missing: the detail below is taken from the empty coin envelopes.

1. Vespasian Obv. IMP CAES VESP AVG PM
Rev. AVGVR TRI POT
RIC 30, Rome, AD 70–72 Store no. V.9
2. Septimius Severus Obv. SEVERVS PIVS AVG
Rev. PM TRP XVI COS III PP
RIC 220, Rome, AD 208 Store no. V.108
3. Caracalla Obv. ANTONINVS PIVS AVG GERM
Rev. PM TRP XVIII COS III PP
RIC 264a, Rome, AD 215 Store no. V.126
4. Elagabalus Obv. IMP CAES M AVR ANTONINVS
AVG
Rev. PM TRP COS PP Roma seated l.
RIC 1, Rome, AD 218 Store no. V.135
5. Elagabalus Obv. IMP CAES ANTONINVS AVG
Rev. SALVS ANTONINI AVG
RIC 137, Rome, AD 218–22 Store no. V.138

Hoard 5 was found in 1933 at the east end of *Vicus* Building XII, immediately south of the east end of Building IX (Birley and Charlton 1934). The hoard rested on the western of two large flags within a niche behind a slab depicting the *Genii Cucullati*, in what is generally assumed to be a domestic shrine. The hoard consisted of five *denarii* of the reigns of Elagabalus (AD 218–22) and Severus Alexander (AD 222–35), and

(since four of the coins could be seen to be unworn) was taken to indicate an approximate date for the erection of the shrine. The coins are now lost: the catalogue below is an up-dated version of the original publication.

1. Elagabalus Obv. –
Rev. –
RIC –, AD 220 Store no. V.141, *AA*, 1934, 191, no. 1
2. Julia Soaemias Obv. IVLIA SOAEMIAS AVG
Rev. VENVS CAELESTIS
RIC Elag 241, AD 218–22 Store no. V.144, *AA*, 1934, 191, no. 4
3. Julia Maesa Obv. IVLIA MAESA AVG
Rev. SAECVLI FELICITAS
RIC Elag 271, AD 218–22 Store no. V.145, *AA*, 1934, 191, no. 3
4. Severus Obv. –
Alexander Rev. –
RIC –, AD 229 Store no. V.152, *AA*, 1934, 191, no. 5
5. Julia Mamaea Obv. IVLIA MAMAEA AVG
Rev. VESTA
RIC S. Alex. 360, AD 222–35 Store no. V.159, *AA*, 1934, 191, no. 2

Knag Burn gate

Clayton recorded the finding of 'coins of Claudius Gothicus and Constantius' (presumably one of each) during his excavations in 1856 (*Archaeol Aeliana*, 1 ser, 1, 186–8; quoted in Birley and Keeney 1935, 246, and Birley 1937, 176). These finds were taken to indicate use of the gateway and its guardchambers into the 4th century, but it is unclear, however, whether the latter emperor is Constantius I Chlorus (AD 293–306) or Constantius II (AD 324–61).

Housesteads milecastle (MC 37)

Seven coins were found during excavations in 1933 (Hunter Blair 1934, 119), ranging in date from a residual, and very worn, coin of M Antony, to an unworn *denarius* of Aelius Caesar, issued in AD 137. The others were a very worn *as* of Domitian (AD 79–81); two unworn *dupondii* of Trajan (AD 103–11 and 112–17); and two fairly worn *sestertii* of Trajan (AD 103–17; 112–17).

Chapel Hill

The coins from Chapel Hill, south of the Vallum, comprise three groups: firstly, an unstratified collection from the 1960 excavations of the *vicus* buildings near the well (Group A, Nos 800–804), to which may be added two coins recovered by Bosanquet in a trench excavated to the north of the *mithraeum*, near the well (813–14); secondly, a group of eight coins from the well (Group B, Nos 805–12); and, finally, there are three coins associated with the *mithraeum* itself (Nos 815–17).

The group from the well extends to the early 4th century and may be regarded as individual votive deposits beginning not earlier than the late 2nd century,

but probably in the 3rd century. The latter date is consonant with the picture given by the unstratified collection of site finds, and also with the epigraphic evidence for the date of the construction of the apsidal well shrine and temple to Mars Thincsus (*RIB* 1593–4). On the other hand, the collection from the *mithraeum* may indicate activity from the 2nd century onwards, though the only extant 2nd-century coin from the *mithraeum* (a *sestertius* of Trajan AD 103–11, No. 815) is very worn and thus could derive from a 3rd-century context. It should be noted in passing that several of the coins in Group A have been re-attributed: the original publication (R E Birley 1961, 317–19) listed two coins of Clodius Albinus and a possible Severan *sestertius*. The first of these (No. 802), positively identified as Albinus, is now in the British Museum, but the second (No. 801) has been reidentified as an *as* of Marcus Aurelius or Commodus, and the third has been reattributed to Marcus Aurelius (No. 803). (It is also possible the numbers of the latter two coins should be transposed: numbering on the coin envelopes suggests that they may have been inadvertently confused.)

Counterfeits

A high proportion of the silver coinage of the early 3rd century proves on close examination to be counterfeit, although this fact may not have been evident in antiquity.

Based on the numbers of regular and false coins set out in Table 13.2, it appears that about 30 per cent of the Severan coinage circulating at Housesteads may have been counterfeit, although the figures may be distorted by selective discarding of irregular coins. On the other hand the figure may have been higher; so skilful were ancient forgers that some of their products can only be detected by the use of modern scientific analytical processes. Only a proportion of the Housesteads coins have been examined in this manner since many items included in the catalogue are no longer available for study. In this latter category are the coins of Hoard 4, and also the silver coins from the well deposit at the foot of Chapel Hill which, to judge from other votive deposits, would have included a high proportion of valueless items.

Table 13.2 Regular and counterfeit silver coinage of the early 3rd century at Housesteads

	Severus	Domna	Caracalla	Geta	Macrinus
<i>vicus</i>					
regular	8	8	8	3	–
false	5	1	3	1	1
fort					
regular	3	3	–	–	–
false	3	–	2	–	–

Coin moulds

Evidence for counterfeiting exists in the form of two pairs of moulds, one found in 1960 in the Chapel Hill well along with the Group B coins (R E Birley 1961), and the other recovered in 1932 from the passage between *Vicus* Buildings III and IV (Birley *et al* 1933), in close proximity to Hoard 4, discovered in the previous year. The Chapel Hill moulds produced copies of *denarii* of Caracalla and Plautilla, the original coins being issued in the period AD 201–10. The moulds from the *vicus* made counterfeits of *denarii* of Julia Domna (AD 196–211) and Septimius Severus (AD 198). None of the work of the Housesteads forger or forgers, however, has been identified in the surviving site assemblage.

1. Caracalla/Plautilla, AD 201+
Obv. ANTONINVS – PI[VS AVG] RIC Caracalla as 54
Rev. CONCORDIA AVGG RIC Caracalla as 359
Mould max diameter 26.5mm; mould max thickness 6mm; flan diameter 17.5mm; weight 4.7g. Die axis of both sides at 12 o'clock to pipe groove.
Reverse is better preserved than obverse; wear of both prototypes, perhaps SW.
Store no. V.275 (mis-attributed by Curteis to Antoninus Pius); at present held at Durham University, prior to display at Housesteads Museum. Published (correctly attributed) as *Archaeol Aeliana*, 4 ser, **39** (1961), 319, no. 13a. XRF analysis (courtesy of Philip Clogg, Department of Archaeology, University of Durham) indicates the presence of copper, lead and zinc on the surface of the mould. The counterfeiter's alloy probably contained copper and some lead; the presence of zinc does not necessarily indicate the deliberate addition of that element, as zinc is attracted to clay and, if present in even trace quantities, will thus give a significant XRF reading.
2. Julia Domna/Septimius Severus, AD 198+
Obv. IVLIA AVGVSTA type of AD 196–211
Rev. VICT AVGG COS II PP RIC Severus 499, AD 198+
Mould diameter, 1"; mould thickness, ¼".
Store no. V.276; at present on display at Housesteads Museum. Published as *Archaeol Aeliana*, 4 ser, **10** (1933), 94, no. 1 (and not re-examined by the present authors).

Catalogue

Mints (followed, where appropriate, by an officina letter, eg P, I, denoting 1st officina):

AQ	Aquileia	LN	London
AR	Arles	ME	Milan
CO	Colchester	RM	Rome
HE	Heraclea	SS	Siscia
LA	Laodicea	TC	Ticinum
LG	Lyons	TR	Trier

Denominations:

ANT	antoninianus	DP	dupondius
AS	as	FOLL	'follis'
AUREL	'aurelianus'	SEST	sestertius
DEN	denarius (pl = plated counterfeit)		

A **copy or counterfeit** of a particular ruler or issuer is denoted by single quotation marks, for example 'CLAUDIUS II', and by the use of a lower case 'c' in the catalogue reference, eg c of 261 = a copy of RIC 261. The use of the word 'of' indicates that a precise catalogue reference has been obtained; for official issues and copies 'as' is used to denote an incompletely catalogued coin.

Where recorded, flan **diameter** is given in millimetres (mm); and **weight** in grams (g). **Die axis** is indicated by clock reference.

Condition of the obverse and reverse is denoted by the following abbreviations:

UW	Unworn	VW	Very worn
SW	Slightly worn	EW	Extremely worn
W	Worn	C	Corroded

Catalogue references are to *RIC* unless otherwise stated:

- RIC *The Roman imperial coinage, volumes 1–10*, eds H Mattingly, E A Sydenham, C H V Sutherland, R A G Carson, J P C Kent, A M Burnett, London, 1926–1994.
- CK *Late Roman bronze coinage, part II*, by R A G Carson and J P C Kent, London, 1960.
- CRAW *Roman republican coinage*, M Crawford, London, 1974.
- E *Die Münzprägung der gallischen Kaiser in Köln, Trier und Mailand*, G Elmer, Darmstadt, 1941.
- HK *Late Roman bronze coinage, part 1*, by P V Hill and J P C Kent, London, 1960.

Housesteads fort: coin list by issuer and period

1	REPUBLICAN	denom: DEN	Obv –
	date: BC–	mint: –	Rev –
	diam: 19.0mm	wt: 1.0g	wear: VW/C
2	M. ANTONIUS	denom: DEN	Obv –
	date: BC 32–31	mint: –	Rev –
	diam: –	wt: –	wear: –
3	M. ANTONIUS	denom: DEN	Obv ANT [AVG] III VIR [RPC]
	date: BC 32–31	mint: –	Rev LEG XXIII
	diam: –	wt: –	wear: –
4	AUGUSTUS	denom: DEN	Obv AVG[VSTVS] DIV[I F]
	date: BC 15–13	mint: –	Rev IMP X
	diam: 17.0mm	wt: 2.9g	wear: VW/VW
5	VESPASIAN	denom: DEN	Obv –
	date: 69–79	mint: –	Rev –
	diam: 15.5mm	wt: 1.3g	wear: C/C
6	VESPASIAN	denom: DEN	Obv ...VESP...
	date: 69–79	mint: –	Rev –
	diam: 17.0mm	wt: 1.6g	wear: VW/VW
7	VESPASIAN	denom: AS	Obv –
	date: 69–79	mint: –	Rev –
	diam: 25.5mm	wt: 7.6g	wear: VW/EW
8	VESPASIAN	denom: DP	Obv –
	date: 69–79	mint: –	Rev –
	diam: 28.5mm	wt: 9.4g	wear: VW/C
9	VESPASIAN	denom: DP	Obv IMP CAE[S VESPASIAN AVG CO]S IIIII]
	date: 71	mint: –	Rev [PAX AVG] SC
	diam: 27.0mm	wt: 8.8g	wear: VW/W
10	VESPASIAN	denom: DP	Obv [IMP CAES]AR [VESPASIAN AVG COS III]
	date: 71	mint: –	Rev [PAX AVG SC]
	diam: 27.5mm	wt: 11.1g	wear: VW/VW
11	TITUS, CAESAR	denom: AS	Obv [T CAES IMP] AVG F TRP COS [VI CENSOR]
	date: 77–78	mint: –	Rev –
	diam: 28.5mm	wt: 6.5g	wear: W/W
12	TITUS	denom: DEN	Obv [IMP TITVS CAE]S VESP[ASIAN AVG P]
	date: 79	mint: –	Rev [TRP VIII IMP XIII] COS VII
	diam: 17.0mm	wt: 2.0g	wear: VW/VW
13	TITUS	denom: DEN	Obv –
	date: 79–81	mint: –	Rev –
	diam: 17.0mm	wt: 2.3g	wear: ?W/C
14	TITUS	denom: DP	Obv –
	date: 79–81	mint: –	Rev –
	diam: 27.5mm	wt: 8.8g	wear: VW/EW

15	DOMITIAN	denom: SEST		Obv –
	date: 81–92	mint: –	cat: –	Rev –
	diam: 34.0mm	wt: 15.1g	die axis: 12?	wear: ?SW/C
16	DOMITIAN	denom: AS		Obv –
	date: 81–96	mint: –	cat: –	Rev –
	diam: 19.0mm	wt: 3.5g	die axis: –	wear: C/C
17	DOMITIAN	denom: AS		Obv [IMP CAESAR DOMIT AVG GER COS XII CENS PER PP]
	date: 86	mint: –	cat: 340	Rev [VI]RT[TVTI AVGVSTI SC]
	diam: 28.0mm	wt: 7.2g	die axis: 6?	wear: W/VW
18	DOMITIAN	denom: AS		Obv [IMP CAES DOMIT A]VG GERM COS XV CENS PER PP
	date: 90–91	mint: –	cat: 395	Rev [MONETA AV]GVSTI SC
	diam: 28.5mm	wt: 7.9g	die axis: 6	wear: W/VW
19	FLAVIAN	denom: SEST		Obv –
	date: 69–96	mint: –	cat: –	Rev –
	diam: 31.5mm	wt: 17.2g	die axis: –	wear: C/C
20	FLAVIAN	denom: DP		Obv –
	date: 69–96	mint: –	cat: –	Rev –
	diam: 25.5mm	wt: 7.9g	die axis: –	wear: C/C
21	FLAVIAN	denom: SEST		Obv –
	date: 69–96	mint: –	cat: –	Rev –
	diam: 33.0mm	wt: 17.5g	die axis: –	wear: EW/EW
22	NERVA	denom: DEN		Obv IMP NERVA CAES AVG PM TRP COS III PP
	date: 97	mint: RM	cat: 14	Rev CONCORDIA EXERCITVVM clasped hands
	diam: –	wt: –	die axis: –	wear: –
23	TRAJAN	denom: SEST		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: –	wt: –	die axis: –	wear: –
24	TRAJAN	denom: SEST		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: 29.0mm	wt: 10.6g	die axis: –	wear: C/C
25	TRAJAN	denom: SEST		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: 32.0mm	wt: 19.6g	die axis: 12	wear: VW/EW
26	TRAJAN	denom: SEST		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: 33.5mm	wt: 22.0g	die axis: 12?	wear: C/C
27	TRAJAN	denom: SEST		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: 31.5mm	wt: 12.0g	die axis: 6	wear: C/C
28	TRAJAN	denom: DP		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: 27.0mm	wt: 9.6g	die axis: –	wear: VW/EW
29	TRAJAN	denom: AS		Obv –
	date: 98–117	mint: RM	cat: –	Rev – [SC]
	diam: –	wt: –	die axis: –	wear: –
30	perhaps TRAJAN	denom: DEN		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: –	wt: –	die axis: –	wear: –
31	TRAJAN	denom: SEST		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: 31.0mm	wt: 19.1g	die axis: –	wear: C/C
32	TRAJAN	denom: DEN		Obv –
	date: 98–117	mint: RM	cat: –	Rev –
	diam: 17.5mm	wt: 1.4g	die axis: 6	wear: SW/W
33	TRAJAN	denom: SEST		Obv [IMP NERVA CA]ES TR[AIAN AVG GERM PM]
	date: 98–99	mint: RM	cat: –	Rev –
	diam: 31.5mm	wt: 21.5g	die axis: 12?	wear: VW/C
34	TRAJAN	denom: SEST		Obv [IMP CAES NERVAE TRAIANO] AVG GER D[AC PM TRP COS V PP]
	date: 103–11	mint: RM	cat: as 519	Rev [SPQR OPTIMO PRINCIPI SC]
	diam: 33.5mm	wt: 18.4g	die axis: 6	wear: ?W/VW
35	TRAJAN	denom: SEST		Obv [IMP CAES NERVA]E TRAIANO AVG GER DAC PM TRP COS V [PP]
	date: 103–11	mint: RM	cat: 492	Rev SPQR OPTIMO PRINCIPI SC

	diam: 32.0mm	wt: 21.8g	die axis: 6	wear: SW/SW
36	TRAJAN	denom: SEST		Obv [IMP CAESTRAIAN]O AVG GER DAC...
	date: 103–12	mint: RM	cat: –	Rev – [SC]
	diam: –	wt: –	die axis: –	wear: –
37	TRAJAN	denom: SEST		Obv IMP [CAES NERVAE] TRAIANO AVG GE[R DAC...]
	date: 103–17	mint: –	cat: as 606	Rev –
	diam: 33.5mm	wt: 20.9g	die axis: 6	wear: VW/EW
38	TRAJAN	denom: SEST		Obv [IMP CAES NERVAE TRAI]ANO AVG GER DA[C PM TRP COS V.PP]
	date: 103–17	mint: RM	cat: as 492	Rev S[PQR OPTIMO PRINCIPI SC]
	diam: 32.0mm	wt: 25.6g	die axis: 7	wear: VW/EW
39	TRAJAN	denom: DEN		Obv [IMP CAES NER TRAI]IAN OPTIM AVG GERM DAC
	date: 114–17	mint: RM	cat: 332	Rev PM TRP COS VI PP SPQR
	diam: 18.5mm	wt: 2.3g	die axis: 7	wear: SW/W
40	TRAJAN	denom: SEST		Obv [IMP CAES NER TRAIANO OPTIMO AVG] GER DAC [PARTHICO PM TRP COS VI PP
	date: 114–17	mint: RM	cat: 667	Rev [REX PARTHIS DATVS SC]
	diam: 34.5mm	wt: 18.8g	die axis: 6?	wear: SW/C
41	HADRIAN	denom: SEST		Obv –
	date: 117–19	mint: RM	cat: –	Rev –
	diam: –	wt: –	die axis: –	wear: –
42	HADRIAN?	denom: SEST		Obv –
	date: 117–19?	mint: RM	cat: –	Rev – [SC]
	diam: –	wt: –	die axis: –	wear: EW/EW
43	HADRIAN	denom: AS		Obv –
	date: 117–38	mint: RM	cat: –	Rev –
	diam: 23.5mm	wt: 4.0g	die axis: 12?	wear: C/C
44	HADRIAN	denom: SEST		Obv IMP CAESAR TRAIANV–S HADR....
	date: 117–38	mint: RM	cat: –	Rev Female fig. 1, hldg – + corn. SC
	diam: 32.0mm	wt: 14.6g	die axis: 6	wear: W/W
45	HADRIAN	denom: SEST		Obv [IMP CAESAR TRAIANVS HADRIANVS AVG]
	date: 118	mint: RM	cat: 551b	Rev [PONT MAX TRPOT COS II] FORT RED SC
	diam: 33.5mm	wt: 20.3g	die axis: 6	wear: SW/W
46	HADRIAN	denom: SEST		Obv [IMP CAESAR] TRAIANVS HADRI[ANVS AVG]
	date: 118	mint: RM	cat: 551a	Rev [PONT MAX TRPOT COS II] FORT RED SC
	diam: –	wt: –	die axis: –	wear: –
47	HADRIAN	denom: AS		Obv IMP CAES[AR] TRAIA[N HADRIANVS AVG]
	date: 119	mint: RM	cat: 577	Rev [PONT MAX TRPOT COS III SC BRIT]ANNI[A]
	diam: 26.0mm	wt: 7.5g	die axis: 6	wear: SW/SW
48	HADRIAN	denom: DEN		Obv [IMP CAESAR TRAIAN HADRIANVS AVG]
	date: 119–22	mint: RM	cat: 98	Rev [PM TRP COS III]
	diam: 18.5mm	wt: 1.7g	die axis: 6	wear: ?SW/W
49	HADRIAN	denom: DP		Obv [HADRI]ANVS AV[GVSTVS]
	date: 125–28	mint: RM	cat: 654	Rev [COS III SC]
	diam: 23.0mm	wt: 3.8g	die axis: 6	wear: SW/SW
50	HADRIAN	denom: AS		Obv HADRIANVS AVGVSTVS
	date: 132–34	mint: RM	cat: 716	Rev COS III PP SC
	diam: –	wt: –	die axis: –	wear: W/VW
51	HADRIAN	denom: SEST		Obv [HADRIANVS AVGVSTVS PP]
	date: 134–38	mint: RM	cat: 970	Rev [HILARITAS P R] COS I[II] SC
	diam: 31.5mm	wt: 18.2g	die axis: 6	wear: W/W
52	HADRIAN	denom: SEST		Obv –
	date: 134–38	mint: RM	cat: as 790	Rev Spes adv. 1
	diam: 31.0mm	wt: 16.4g		die axis: 1 wear: EW/EW
53	HADRIAN	denom: AS		Obv HADR[IANVS AVG C]OS III PP
	date: 134–38	mint: RM	cat: 846	Rev [BRI]TAN[NIA SC]
	diam: 25.5mm	wt: 11.1g	die axis: 6	wear: VW/VW
54	HADRIAN	denom: DEN		Obv HADRIAN[VS AVG COS III PP]
	date: 134–38	mint: RM	cat: 274	Rev [SPES P R]
	diam: –	wt: –	die axis: –	wear: W/W
55	HADRIAN	denom: DEN		Obv [HADRI]ANVS AVG COS III PP
	date: 134–38	mint: RM	cat: 267	Rev [SALV]S AVG
	diam: 17.5mm	wt: 2.5g	die axis: 6	wear: SW/W
56	HADRIAN	denom: DEN		Obv HADRIANVS AVG COS III PP

	date: 134–38 diam: 17.5mm	mint: RM wt: 2.5g	cat: 268 die axis: 6	Rev SALVS AVG wear: SW/SW
57	HADRIAN date: 134–38 diam: 31.0mm	denom: SEST mint: RM wt: 17.0g	cat: 759 die axis: 6	Obv [HADRIANVS AVG COS III PP] Rev [FORTVNA AVG SC] wear: W/VW
58	HADRIAN date: 134–38 diam: –	denom: DEN mint: RM wt: –	cat: 241a die axis: –	Obv HADRIANVS AVG COS III PP Rev FIDES PVBLICA wear: –
59	HADRIAN date: 134–38 diam: 24.5mm	denom: AS mint: RM wt: 8.6g	cat: 831d die axis: 6	Obv [HADRIANVS] AVG [COS III PP] Rev SC wear: W/W
60	HADRIAN date: 134–38 diam: 30.0mm	denom: SEST mint: RM wt: 13.1g	cat: as 741 die axis: 6	Obv [HA]DRIANVS [AVG COS III PP] Rev [ADVENTVS AVG SC] wear: W/W
61	HADRIAN date: 134–38 diam: 26.5mm	denom: DP mint: RM wt: 11.8g	cat: 830 die axis: 6	Obv [HADRIANVS AVG COS III PP] Rev SC wear: VW/VW
62	HADRIAN/ ANTONINUS PIUS? date: 117–61? diam: 26.0mm	denom: AS mint: RM wt: 6.2g	cat: – die axis: –	Obv – Rev – wear: EW/EW
63	AELIUS date: 136–38 diam: 17.0mm	denom: DEN mint: RM wt: 2.6g	cat: Hadrian 436 die axis: 6	Obv L AELIVS CAESAR Rev TRIB POT COS II/CONCORD wear: UW/SW
64	SABINA date: 117–38 diam: 17.0mm	denom: DEN mint: RM wt: 1.4g	cat: Hadrian 399 die axis: 5	Obv [[SABINA AV]GVSTA HADRIANI AVG [PP] Rev CONCORDIA AVG wear: SW/W
65	SABINA date: 117–38 diam: 17.5mm	denom: DEN mint: RM wt: 2.1g	cat: Hadrian 398 die axis: 7	Obv [SABINA AVG]VS[TA HADRIANI AVG PP] Rev [CON]COR[DIA AVG] wear: W/W
66	ANTONINUS PIUS date: 138–61 diam: 24.0mm	denom: DP mint: RM wt: 3.1g	cat: – die axis: –	Obv – Rev – wear: C/C
67	ANTONINUS PIUS date: 138–61 diam: –	denom: SEST mint: RM wt: –	cat: as 626 die axis: –	Obv – Rev Spes wear: VW/VW
68	ANTONINUS PIUS date: 138–61 diam: 26.0mm	denom: AS mint: RM wt: 4.2g	cat: – die axis: –	Obv – Rev – wear: C/C
69	prob ANTONINUS PIUS date: 138–61 diam: –	denom: AS mint: RM wt: –	cat: – die axis: –	Obv – Rev – wear: –
70	ANTONINUS PIUS date: 138–61 diam: 26.0mm	denom: DP mint: RM wt: 9.4g	cat: – die axis: 5	Obv – Rev Libertas stg. 1 wear: W/W
71	ANTONINUS PIUS date: 138–61 diam: 31.0mm	denom: SEST mint: RM wt: 19.3g	cat: – die axis: –	Obv – Rev – wear: C/C
72	poss ANTONINUS PIUS date: 138–61? diam: 26.0mm	denom: DP/AS mint: RM wt: 4.0g	cat: – die axis: –	Obv – Rev – wear: C/C
73	ANTONINUS PIUS? date: 138–61? diam: 29.0mm	denom: SEST mint: RM wt: 10.0g	cat: – die axis: 6	Obv – Rev – wear: EW/EW
74	ANTONINUS PIUS date: 139–44 diam: 31.0mm	denom: SEST mint: RM wt: 14.1g	cat: 546/646 die axis: 5	Obv [ANTO]NINVS AVG [PIVS PP] Rev TRP[OT COS II(I)] SC wear: VW/VW
75	ANTONINUS PIUS date: 139–61 diam: 23.5mm	denom: DP mint: RM wt: 6.2g	cat: as 803 die axis: 6	Obv ANTONINVS AVG [PIVS PP TRP COS....] Rev LIBER[ALI]TAS A[VG...] SC wear: W/SW
76	ANTONINUS PIUS date: 139–61 diam: 33.5mm	denom: SEST mint: RM wt: 20.0g	cat: – die axis: 6?	Obv [AN]TONINVS [AVG PIVS PP...] Rev – wear: EW/C
77	ANTONINUS PIUS date: 140–44 diam: –	denom: SEST mint: RM wt: –	cat: 622 die axis: –	Obv ANTONINVS AVG PIVS PP TRP COS III Rev [ROMAE AETERNAE SC] wear: W/VW

78	ANTONINUS PIUS date: 140–44 diam: 30.5mm	denom: SEST mint: RM wt: 25.9g	cat: 637 die axis: 5	Obv ANTONINVS AVG PIVS PP TRP COS III Rev SALVS [AVG] SC wear: SW/SW
79	ANTONINUS PIUS date: 148–49 diam: 17.0mm	denom: DEN mint: RM wt: 2.8g	cat: 175 die axis: 12	Obv ANTONINVS AVG PIVS PP TRP XII Rev COS IIII wear: UW/UW
80	ANTONINUS PIUS date: 154–55 diam: 24.0mm	denom: AS mint: RM wt: 6.6g	cat: 934 die axis: 6	Obv [ANTONINVS AVG PIVS PP TRP XVIII] Rev [BRITANNIA COS IIII SC] wear: VW/VW
81	ANTONINUS PIUS date: 158–59 diam: 31.5mm	denom: SEST mint: RM wt: 21.1g	cat: 1004 die axis: 5	Obv ANTONINVS AVG [PIVS PP] TRP XXII Rev TEMPLV[M DI]V AVG REST [COS IIII] SC wear: W/W
82	FAUSTINA I date: 138–61 diam: –	denom: AE mint: RM wt: –	cat: – die axis: –	Obv – Rev – wear: –
83	FAUSTINA I, POSTH date: 140–61 diam: 24.5mm	denom: AS mint: RM wt: 10.1g	cat: Ant Pius as 1155 die axis: 11	Obv [DIVA FAVSTI]NA Rev [AETERNITAS] SC wear: W/W
84	FAUSTINA I, POSTH date: 141–61 diam: –	denom: SEST mint: RM wt: –	cat: Ant Pius – die axis: –	Obv – Rev – wear: –
85	FAUSTINA I, POSTH date: 141–61 diam: 25.5mm	denom: DP mint: RM wt: 5.9g	cat: Ant Pius – die axis: 6	Obv [DI]VA [FAVSTINA] Rev – wear: ?W/C
86	FAUSTINA I, POSTH date: 141–61 diam: 17.5mm	denom: DEN mint: RM wt: 2.4g	cat: Ant Pius 361 die axis: 12	Obv DIVA F[AV]STINA Rev AVGVSTA wear: SW/SW
87	FAUSTINA I, POSTH date: 141–61 diam: 17.0mm	denom: DEN mint: RM wt: 2.8g	cat: Ant Pius 373 die axis: 12	Obv DIVA FAVSTINA Rev AVGVSTA wear: UW/SW
88	FAUSTINA II (ANT. PIUS) date: 145–61 diam: –	denom: DEN mint: RM wt: –	cat: Ant Pius 502 die axis: –	Obv FAVSTINA AVG PII AVG FIL Rev CONCORDIA wear: –
89	FAUSTINA II (ANT. PIUS) date: 145–61 diam: 31.5mm	denom: SEST mint: RM wt: 16.8g	cat: Ant Pius 378c die axis: 11	Obv [FAVSTINAE] AVG PII [AVG FIL] Rev [LAETITIAE PVBLICAE SC] wear: VW/VW
90	M AURELIUS, CAESAR date: 140–44 diam: 28.0mm	denom: AS mint: RM wt: 9.6g	cat: Ant Pius 1238 die axis: 12	Obv [A]VRELIVS CAE[SAR AVG PII F COS] Rev [IVVEN]TAS SC wear: W/W
91	M AURELIUS, CAESAR date: 153–54 diam: 29.5mm	denom: SEST mint: RM wt: 16.7g	cat: Ant Pius 1314 die axis: 10	Obv [AVRELIVS CAE]SAR [AVG PII FIL] Rev [TRPOT VIII] COS II SC wear: VW/VW
92	M AURELIUS date: 161–80 diam: 25.5mm	denom: DP mint: RM wt: 7.8g	cat: – die axis: 6?	Obv – Rev – wear: EW/EW
93	M AURELIUS date: 161–80 diam: 26.5mm	denom: SEST mint: RM wt: 11.4g	cat: – die axis: 6	Obv – Rev – wear: VW/VW
94	FAUSTINA II (M AURELIUS) date: 161–75 diam: 29.5mm	denom: SEST mint: RM wt: 13.7g	cat: M Aurelius 1667 die axis: 6	Obv [FAVSTINA AVGVSTA] Rev [SALVTI AVGVSTAE SC] wear: EW/EW
95	FAUSTINA II (M AURELIUS) date: 161–75 diam: 24.0mm	denom: AS mint: RM wt: 5.4g	cat: M Aurelius – die axis: 12	Obv – Rev – wear: C/C
96	FAUSTINA II (M AURELIUS) date: 161–75 diam: 18.0mm	denom: DEN mint: RM wt: 1.8g	cat: M Aurelius 729 die axis: 6	Obv [FAVSTIN]A AVGVSTA Rev VENVS wear: W/W
97	FAUSTINA II (M AURELIUS) date: 161–75 diam: 33.5mm	denom: SEST mint: RM wt: 19.0g	cat: M Aurelius 1638 die axis: 12	Obv FAVS[TINA AVGVSTA] Rev [FECVNDITAS SC] wear: VW/VW

98 FAUSTINA II (M AURELIUS)	denom: SEST mint: RM date: 161–75 diam: – wt: –	cat: M Aurelius 1688 die axis: –	Obv FAVSTINA AVGVSTA Rev VENVS VICTRIX SC wear: –
99 FAUSTINA II, POSTH	denom: DEN mint: RM date: 175–80 diam: – wt: –	cat: M Aurelius 745 die axis: –	Obv DIVA FAVSTINA PIA Rev CONSECRATIO wear: –
100 COMMODUS	denom: DEN mint: RM date: 186–87 diam: – wt: –	cat: 161 die axis: –	Obv M COMM ANT P FEL AVG BRIT Rev VOT SOL DEC PM TRP XII IMP VIII COS V PP wear: –
101 COMMODUS	denom: DEN mint: RM date: 187–88 diam: 18.5mm wt: 1.8g	cat: 164 die axis: 6	Obv M COMM ANT P FEL AVG B[RIT] Rev PM TRP XIII IMP VIII COS V PP wear: SW/SW
102 SEPTIMIUS SEVERUS	denom: SEST mint: – date: 193–211 diam: 28.5mm wt: 16.8g	cat: as 692 die axis: 6	Obv – Rev Felicitas stg. l., hldg. caduc.+ corn, foot on prow SC wear: VW/VW
103 SEPTIMIUS SEVERUS	denom: DEN mint: – date: 197–98 diam: 16.5mm wt: 1.9g	cat: 118 die axis: 6	Obv [L SEPT] SEV PERT AVG IMP X Rev PACI AETERNAE wear: ?W/W
104 SEPTIMIUS SEVERUS	denom: DEN mint: – date: 207 diam: 19.0mm wt: 2.3g	cat: 211 die axis: 1	Obv SEVERVS PIVS AVG Rev PM TRP XV COS III PP wear: SW/SW
105 SEPTIMIUS SEVERUS	denom: DEN mint: – date: 210 diam: – wt: –	cat: 233 die axis: –	Obv SEVERVS PIVS AVG Rev PM TRP XVIII COS III PP wear: –
106 ‘SEPTIMIUS SEVERUS’	denom: DENpl mint: – date: 194–98+ diam: 16.0mm wt: 1.1g	cat: c as 29a die axis: 12	Obv [L SEPT] SEV PER[T AVG IMP...] Rev Victory wear: W/W
107 ‘SEPTIMIUS SEVERUS’	denom: DENpl mint: – date: 195–96+ diam: 17.0mm wt: 1.6g	cat: c of 67 die axis: 12	Obv [L SEPT SEV PERT AVG I]MP VII Rev [PM TRP] III [COS II PP] wear: ?W/W
108 ‘SEPTIMIUS SEVERUS’	denom: DENpl mint: – date: 197–98+ diam: 16.0mm wt: 2.0g	cat: c of 99/112a die axis: 12	Obv [L SEPT SEV PERT AVG IMP...] Rev LIBER[O PATRI] wear: SW/W
109 JULIA DOMNA	denom: DEN mint: – date: 196–211 diam: 18.5mm wt: 2.4g	cat: Sept Sev 577 die axis: 6	Obv IVLIA AVGVSTA Rev [S]AECVLI [FELICITAS] wear: W/VW
110 JULIA DOMNA	denom: DEN mint: – date: 196–211 diam: 17.5mm wt: 2.6g	cat: Sept Sev 580 die axis: 6	Obv IVLIA AVGVSTA Rev [VENVS] FELIX wear: W/W
111 ‘CARACALLA’	denom: DENpl mint: – date: 196+ diam: 16.5mm wt: 2.4g	cat: c of 2 die axis: 11	Obv [M AVR ANTONINVS] CAES Rev SECVR[ITAS PERPETVA] wear: W/W
112 ‘CARACALLA’	denom: DENpl mint: – date: 205+ diam: 19.5mm wt: 1.5g	cat: c of 81 die axis: 6	Obv ANTONINVS PIVS AVG Rev PONTIF TRP VIII COS II wear: W/W
113 ELAGABALUS	denom: DEN mint: – date: 218–22 diam: 18.0mm wt: –	cat: 141 die axis: –	Obv [IMP ANT]ONINVS AVG Rev [S]ALVS AV[GVSTI] wear: SW/SW
114 ELAGABALUS	denom: DEN mint: – date: 218–22 diam: 18.5mm wt: 1.8g	cat: 146 die axis: 7	Obv IMP ANTONINVS PIVS AVG Rev SVMMVS SACERDOS AVG wear: SW/SW
115 ELAGABALUS	denom: DEN mint: – date: 218–22 diam: – wt: –	cat: 146/7 die axis: –	Obv IMP ANTONINVS PIVS AVG Rev SVMMVS SACERDOS AVG wear: –
116 ELAGABALUS	denom: DEN mint: – date: 221–22 diam: 18.0mm wt: 1.0g	cat: 46b/53b die axis: 6	Obv IMP ANTONINVS PIVS AVG Rev [PM TRP...] COS III [PP] wear: W/W
117 ‘ELAGABALUS’ (AE core)	denom: DENpl mint: – date: 218–22+ diam: 16.5mm wt: 0.6g	cat: c of – die axis: –	Obv [...AN]TONI[NVS...] Rev – wear: ?SW/C
118 JULIA SOAEMIAS	denom: DEN mint: – date: 218–22 diam: 18.5mm wt: 1.1g	cat: Elagabalus – die axis: –	Obv IVLIA SOAEMIAS [AVG] Rev – wear: SW/C
119 JULIA MAESA	denom: DEN mint: – date: 218–22	cat: Elagabalus 268	Obv IVLIA MAESA AVG Rev PVDICITIA

diam: 18.5mm	wt: 2.6g	die axis: 12	wear: SW/SW
120 SEVERUS ALEXANDER	denom: DEN		Obv IMP C M AVR SEV ALEXAND AVG
date: 222	mint: –	cat: 7	Rev PM TRP COS PP
diam: 18.5mm	wt: 2.6g	die axis: 12	wear: W/S
121 SEVERUS ALEXANDER	denom: DEN		Obv [IMP C M AVR SEV] ALEXAND AVG
date: 222–28	mint: –	cat: 156	Rev [LI]BERTAS AVG
diam: 18.0mm	wt: 1.4g	die axis: 6	wear: ?W/W
122 SEVERUS ALEXANDER	denom: DEN		Obv [I]MP C M AVR SEV ALEXAND AVG
date: 222–28	mint: –	cat: 168	Rev PAX AVG
diam: –	wt: –	die axis: –	wear: –
123 SEVERUS ALEXANDER			
fragments	denom: DEN		Obv IMP [C M] AVR SEV ALE[XAND AVG
date: 222–28	mint: –	cat: as 40	Rev [PM] TRP I.. COS PP
diam: 17.0mm	wt: 1.0g	die axis: 6	wear: SW/SW
124 SEVERUS ALEXANDER			
fragments	denom: DEN		Obv IMP C M AVR [SEV ALEXAND AVG]
date: 222–28	mint: –	cat: 165	Rev PAX AE[TERNA AVG]
diam: 17.0mm	wt: 1.3g	die axis: –	wear: W/W?
125 JULIA MAMAEA	denom: DEN		Obv IVLIA MAMAEA AVG
date: 222–35	mint: –	cat: Sev.Alex. 348	Rev SAECVLI FELICITAS
diam: –	wt: –	die axis: –	wear: –
126 JULIA MAMAEA	denom: DEN		Obv IVLIA MA[MAEA AVG]
date: 222–35	mint: –	cat: Sev.Alex. 358	Rev VENVS VIC[TRIX]
diam: 18.0mm	wt: 1.5g	die axis: 6	wear: W/W
127 JULIA MAMAEA	denom: DEN		Obv [IVLIA MAMAEA AVG]
date: 222–35	mint: –	cat: Sev.Alex. –	Rev –
diam: –	wt: –	die axis: –	wear: –
128 VALERIAN I	denom: ANT		Obv IMP C [VAL]ERIANVS P AVG
date: 258	mint: RM	cat: 10	Rev [OR]IENS A[VGG]
diam: 21.0mm	wt: 2.2g	die axis: 6	wear: W/VW
129 VALERIAN/GALLIENUS?	denom: ANT		Obv –
date: 253–60?	mint: –	cat: –	Rev –
diam: 21.0mm	wt: 1.5g	die axis: –	wear: C/C
130 SALONINUS	denom: ANT		Obv SALON VALERIANVS CAES
date: 256–59	mint: LG	cat: 9	Rev PIETAS AVG
diam: –	wt: –	die axis: –	wear: –
131 GALLIENUS	denom: ANT		Obv [GALL]IENVS AVG
date: 260–68	mint: –	cat: 514	Rev SECV[RIT AVG]
diam: 17.5mm	wt: 1.4g	die axis: 6	wear: W/W
132 GALLIENUS	denom: ANT		Obv [...GALLIENVS AVG]
date: 260–68	mint: –	cat: 178/9	Rev [DIANAE] CO[NS] AVG
diam: 17.5mm	wt: 1.3g	die axis: 6?	wear: C/W
133 GALLIENUS	denom: ANT		Obv GALLIEN[VS AVG]
date: 260–68	mint: –	cat: 157	Rev [ABVND]ANTIA AV[G]
diam: 18.5mm	wt: 1.8g	die axis: 12	wear: SW/W
134 GALLIENUS	denom: ANT		Obv [GALLIENVS AVG]
date: 260–68	mint: –	cat: 280	Rev [SECV]RIT PE[RPET] in field r., N
diam: 22.0mm	wt: 1.7g	die axis: 12	wear: SW/SW
135 GALLIENUS fragments	denom: ANT		Obv –
date: 260–68	mint: –	cat: –	Rev –
diam: 14.0mm	wt: 0.3g	die axis: –	wear: C/C
136 GALLIENUS fragment	denom: ANT		Obv [IMP GALLIENVS AVG]
date: 260–68	mint: –	cat: 178	Rev [DIANAE CONS AVG]
diam: 17.5mm	wt: 0.6g	die axis: –	wear: W/W
137 GALLIENUS	denom: ANT		Obv [...GALLIENVS AVG]
date: 260–68	mint: RM	cat: 176–8	Rev DI[ANAE CONS AV]G in ex., E
diam: 18.0mm	wt: 1.2g	die axis: 12	wear: SW/W
138 GALLIENUS	denom: ANT		Obv [GALLIE]NVS AVG
date: 260–68	mint: – XI	cat: 181	Rev [DIANAE CON]S AVG
diam: 18.0mm	wt: 1.0g	die axis: 12	wear: SW/SW
139 GALLIENUS	denom: ANT		Obv [IMP GALLI]EN[VS AVG]
date: 260–68	mint: –	cat: 198	Rev GENI[VS AV]G
diam: 18.5mm	wt: 1.8g	die axis: 2	wear: SW/SW
140 GALLIENUS?	denom: ANT		Obv –
date: 260–68	mint: –	cat: –	Rev –
diam: 18.5mm	wt: 2.2g	die axis: 12?	wear: C/C

141 GALLIENUS?	denom: ANT		Obv –
date: 260–73?	mint: –	cat: –	Rev –
diam: 15.5mm	wt: 0.6g	die axis: –	wear: SW/C
142 SALONINA	denom: ANT		Obv SALON[INA] AVG
date: 260–68	mint: –	cat: 12	Rev [I]VNO [REG]INA
diam: 19.0mm	wt: 1.4g	die axis: 6	wear: W/W
143 probably CLAUDIUS II	denom: ANT		Obv [IMP.. CLAVDIVS AVG]
date: 268–70	mint: –	cat: as 104	Rev VICTORIA AVG
diam: –	wt: –	die axis: –	wear: –
144 CLAUDIUS II	denom: ANT		Obv [IMPC CLAVDIVS AVG]
date: 268–70	mint: –	cat: 66	Rev [MARS V]LTOR
diam: 17.5mm	wt: 1.6g	die axis: 6	wear: W/W
145 CLAUDIUS II fragment	denom: ANT		Obv [IMP..C]LA[VDI]VS [AVG]
date: 268–70	mint: –	cat: as 90	Rev –
diam: 13.5mm	wt: 0.2g	die axis: 6	wear: SW/SW
146 CLAUDIUS II	denom: ANT		Obv [IMP CLAVDIVS AVG]
date: 268–70	mint: –	cat: 195	Rev [VIRTVS AVG]
diam: 17.5mm	wt: 1.3g	die axis: 12	wear: W/W
147 CLAUDIUS II	denom: ANT		Obv –
date: 268–70	mint: –	cat: –	Rev –
diam: 17.5mm	wt: 1.3g	die axis: –	wear: SW/C
148 CLAUDIUS II	denom: ANT		Obv –
date: 268–70	mint: –	cat: –	Rev –
diam: 20.0mm	wt: 1.4g	die axis: –	wear: C/C
149 CLAUDIUS II	denom: ANT		Obv IMP CLAVDIVS AVG
date: 268–70	mint: –	cat: 105	Rev [V]IC[TORIA A]VG
diam: 20.5mm	wt: 2.1g	die axis: 6	wear: SW/W
150 CLAUDIUS II	denom: ANT		Obv –
date: 268–70	mint: –	cat: –	Rev –
diam: 15.0mm	wt: 1.3g	die axis: –	wear: W/C
151 CLAUDIUS II	denom: ANT		Obv [IMPC CLAVDIVS] AVG
date: 268–70	mint: –	cat: 14	Rev [AEQUITAS] AVG
diam: 16.5mm	wt: 0.9g	die axis: 6	wear: W/W
152 CLAUDIUS II	denom: ANT		Obv –
date: 268–70	mint: –	cat: –	Rev –
diam: 16.0mm	wt: 1.3g	die axis: –	wear: W/C
153 CLAUDIUS II fragment	denom: ANT		Obv [IMPC CLAVDIVS AVG]
date: 268–70	mint: –	cat: as 104	Rev [VICTORIA AVG]
diam: 13.5mm	wt: 1.2g	die axis: –	wear: ?W/C
154 ‘CLAUDIUS II’	denom: ANT		Obv –
date: 268+	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
155 ‘CLAUDIUS II’	denom: ANT		Obv [...CLAVD]IVS...
date: 268+	mint: –	cat: –	Rev –
diam: 15.5mm	wt: 2.7g	die axis: –	wear: SW/SW
156 CLAUDIUS II, POSTH.	denom: ANT		Obv [DIVO CL]AV[DIO]
date: 270	mint: –	cat: 261	Rev [CONSE]C[RATIO] Altar
diam: 16.5mm	wt: 1.2g	die axis: 6	wear: W/W
157 CLAUDIUS II, POSTH.	denom: ANT		Obv DIVO CLAVDIO
date: 270	mint: –	cat: 259	Rev CONSECRATIO Altar
diam: –	wt: –	die axis: –	wear: –
158 CLAUDIUS II, POSTH.	denom: ANT		Obv [DIVO CLAVDIO]
date: 270	mint: –	cat: 261	Rev [CONSECRATIO] Altar
diam: 15.0mm	wt: 1.1g	die axis: 6	wear: W/W
159 CLAUDIUS II, POSTH.	denom: ANT		Obv [DIVO CL]AVDI[O]
date: 270	mint: –	cat: 266	Rev CON[SECRATIO] Eagle
diam: 15.5mm	wt: 1.5g	die axis: 12	wear: W/W
160 CLAUDIUS II, POSTH.	denom: ANT		Obv DIVO CLAVDIO
date: 270	mint: –	cat: 261	Rev [CONSECRA]TIO Altar
diam: 17.5mm	wt: 1.0g	die axis: 6	wear: SW/SW
161 CLAUDIUS II, POSTH.	denom: ANT		Obv [D]IVO [CLAVDIO]
date: 270	mint: –	cat: 261	Rev CONSE[CRATIO] Altar
diam: 16.5mm	wt: 0.5g	die axis: 1	wear: UW/UW
162 CLAUDIUS II, POSTH.	denom: ANT		Obv [DIVO CLAVDIO]
date: 270	mint: –	cat: 261	Rev [CONSECRATIO] Altar
diam: 14.5mm	wt: 0.6g	die axis: –	wear: C/C

163 'CLAUDIUS II, POSTH'	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: c of 261	Rev [CONSECRATIO] Altar
diam: 14.0mm	wt: 1.3g	die axis: –	wear: C/W
164 'CLAUDIUS II, POSTH'	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: c of 261	Rev [CONSECRATIO] Altar
diam: 9.5mm	wt: 0.5g	die axis: 1	wear: W/W
165 'CLAUDIUS II, POSTH'	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: c of 261	Rev [CONSECRATIO] Altar
diam: 13.5mm	wt: 0.3g	die axis: –	wear: SW/W
166 'CLAUDIUS II, POSTH'	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: c of 261	Rev [CONSECRATIO] Altar
diam: 8.5mm	wt: 0.3g	die axis: 3	wear: ?W/W
167 'CLAUDIUS II, POSTH'	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: c of 261	Rev [CONS]EC[RATIO] Altar
diam: 13.0mm	wt: 0.4g	die axis: –	wear: W/W
168 'CLAUDIUS II, POSTH'	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: c of 261	Rev [CONSECRATIO] Altar
diam: 15.0mm	wt: 1.0g	die axis: 6	wear: C/C
169 'CLAUDIUS II, POSTH'	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: c of 261	Rev [CONSECRATIO] Altar
diam: 13.5mm	wt: 0.7g	die axis: 12?	wear: W/SW
170 'CLAUDIUS II, POSTH'	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: c of 261	Rev [CONSECRATIO] Altar
diam: –	wt: –	die axis: –	wear: ?W/W
171 POSTUMUS	denom: ANT		Obv [IMPC P]OSTUMUS [PF AVG]
date: 259–68	mint: –	cat: –	Rev –
diam: 15.0mm	wt: 0.7g	die axis: 6	wear: SW/SW
172 POSTUMUS	denom: ANT		Obv [IMPC POSTV]MVS [PF AVG]
date: 260	mint: –	cat: E 189	Rev [FID]ES M[ILITVM]
diam: 16.0mm	wt: 0.6g	die axis: 12	wear: W/W
173 'POSTUMUS'	denom: ANT		Obv [IMPC POSTVMVS PF AVG]
date: 268+	mint: –	cat: c of E 563	Rev [IOVI ST]ATORI
diam: 17.5mm	wt: 2.5g	die axis: 6	wear: W/W
174 VICTORINUS	denom: ANT		Obv [IMPC VIC]TORINVS [PF AVG]
date: 268–70	mint: –	cat: as E 697	Rev [S]ALVS AVG
diam: 19.5mm	wt: 3.0g	die axis: 12	wear: W/W
175 VICTORINUS fragment	denom: ANT		Obv –
date: 268–70	mint: –	cat: –	Rev –
diam: 14.0mm	wt: 0.8g	die axis: –	wear: SW/W
176 VICTORINUS	denom: ANT		Obv IMP[C VICTORINVS PF AVG]
date: 268–70	mint: –	cat: as E 697	Rev [SALVS AVG]
diam: 18.0mm	wt: 1.4g	die axis: 6?	wear: W/W
177 VICTORINUS	denom: ANT		Obv [IMPC PIAV VIC]TORIN[VS PF AVG]
date: 268–70	mint: –	cat: as E 651	Rev [PAX AVG]
diam: 20.5mm	wt: 2.3g	die axis: 12	wear: W/W
178 VICTORINUS	denom: ANT		Obv [IMP..VICTORINVS PFAVG]
date: 268–70	mint: –	cat: 112–14	Rev [INVICTVS]
diam: 19.5mm	wt: 1.0g	die axis: –	wear: C/?W
179 VICTORINUS	denom: ANT		Obv [IMPC] VICT[ORINVS AVG]
date: 268–70	mint: –	cat: E as 699	Rev [VIRT]V[S AVG]
diam: 17.0mm	wt: 1.5g	die axis: 12	wear: W/W
180 VICTORINUS	denom: ANT		Obv [IMPC VIC]TORI[NV]S [PF AVG]
date: 268–70	mint: –	cat: 58, E –	Rev [PIE]TAS AVG
diam: 17.0mm	wt: 1.3g	die axis: 11	wear: SW/SW
181 'VICTORINUS'	denom: ANT		Obv IMP VICTORINVS [PF AVG]
date: 270+	mint: –	cat: c as E 699	Rev [VIRTVS AVG]
diam: 14.5mm	wt: 1.1g	die axis: 5	wear: W/W
182 VICTORINUS/ TETRICUS I	denom: ANT		Obv –
date: 268–73	mint: –	cat: c as –	Rev ?Spes
diam: 17.5mm	wt: 1.0g	die axis: 12	wear: W/W
183 TETRICUS I	denom: ANT		Obv [IMP] TETRICVS PF AVG
date: 270–73	mint: –	cat: –	Rev –
diam: 20.0mm	wt: 1.4g	die axis: –	wear: W/C
184 TETRICUS I	denom: ANT		Obv IMP[C] TETRICVS PF AVG
date: 270–73	mint: –	cat: E 790	Rev HIL[ARITAS] AVGG

diam: 17.5mm	wt: 1.5g	die axis: 7	wear: SW/W
185 TETRICUS I fragments	denom: ANT		Obv –
date: 270–73	mint: –	cat: –	Rev –
diam: 13.5mm	wt: 0.6g	die axis: –	wear: C/C
186 TETRICUS I	denom: ANT		Obv [IMPC T]ETRICVS [PF AVG]
date: 270–73	mint: –	cat: E 795	Rev [NOBIL]ITAS [AVGG]
diam: 17.0mm	wt: 0.6g	die axis: 12	wear: W/W
187 TETRICUS I	denom: ANT		Obv [IMPC] TETRIC[VS PF AVG]
date: 270–73	mint: –	cat: –	Rev –
diam: 18.5mm	wt: 0.9g	die axis: –	wear: W/C
188 TETRICUS I	denom: ANT		Obv [IMPC TERICVS PF] AVG
date: 270–73	mint: –	cat: 109	Rev [PIETAS AVG]
diam: 18.0mm	wt: 2.1g	die axis: 12	wear: UW/SW
189 TETRICUS I	denom: ANT		Obv IMP TETR[ICVS PF AVG]
date: 270–73	mint: –	cat: E 789	Rev HILAR[ITAS AVGG]
diam: 18.5mm	wt: 2.6g	die axis: 2	wear: SW/SW
190 TETRICUS I	denom: ANT		Obv –
date: 270–73	mint: –	cat: –	Rev –
diam: 16.5mm	wt: 1.2g	die axis: –	wear: C/C
191 TETRICUS I	denom: ANT		Obv –
date: 270–73	mint: –	cat: as E 761/4	Rev [SPES PVBLICA]
diam: 14.0mm	wt: 0.4g	die axis: 6	wear: SW/SW
192 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 12.5mm	wt: 0.8g	die axis: –	wear: C/C
193 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c of –	Rev –
diam: 14.0mm	wt: 2.4g	die axis: 10	wear: W/W
194 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 17.0mm	wt: 1.6g	die axis: 6?	wear: C/C
195 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 770	Rev [HIL]ARI[TAS AVGG]
diam: 16.0mm	wt: 2.1g	die axis: 6	wear: W/W
196 ‘TETRICUS I’	denom: ANT		Obv [IMP TET]RICV[S PF AVG]
date: 273+	mint: –	cat: c of 86	Rev [LAETITIA] AVG
diam: 17.0mm	wt: 1.5g	die axis: 6	wear: W/W
197 ‘TETRICUS I’	denom: ANT		Obv IM ATELE...
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
198 ‘TETRICUS I’? fragments	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 782/4	Rev [FIDES MILITVM]
diam: 10.0mm	wt: 0.2g	die axis: 2	wear: W/W?
199 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 771/5	Rev ?[PAX AVG]
diam: 9.5mm	wt: 0.6g	die axis: 4	wear: SW/SW
200 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 15.0mm	wt: 0.4g	die axis: –	wear: UW/UW
201 ‘TETRICUS I’	denom: ANT		Obv [...TETR]ICV[S...]
date: 273+	mint: –	cat: c as –	Rev –
diam: 15.0mm	wt: 0.6g	die axis: –	wear: W/C
202 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 764	Rev ?Spes
diam: 13.0mm	wt: 1.3g	die axis: 1	wear: UW/SW
203 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 784	Rev ?[FIDES MILITVM]
diam: 17.0mm	wt: 1.7g	die axis: 5	wear: W/W
204 ‘TETRICUS I’	denom: ANT		Obv [...] TETR[ICVS]
date: 273+	mint: –	cat: c as 132	Rev ?[SPES...]
diam: 11.0mm	wt: 0.7g	die axis: 12?	wear: W/W
205 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 765	Rev [VICTORIA AVG]
diam: 15.5mm	wt: 0.7g	die axis: 8	wear: W/W
206 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –

diam: 12.0mm	wt: 0.5g	die axis: –	wear: C/C
207 ‘TETRICUS I’	denom: ANT		Obv [IMPC TETRIC]VS [PF AVG]
date: 273+	mint: –	cat: c as E 771/5	Rev [PAX AVG]
diam: 15.5mm	wt: 1.0g	die axis: 12	wear: SW/W
208 ‘TETRICUS I’ fragment	denom: ANT		Obv VS....CVS... (sic)
date: 273+	mint: –	cat: c as –	Rev –
diam: 17.0mm	wt: 1.0g	die axis: –	wear: ?W/C
209 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 15.0mm	wt: 1.4g	die axis: –	wear: C/C
210 ‘TETRICUS I’	denom: ANT		Obv [IMPC TETRICVS PF AVG]
date: 273+	mint: –	cat: c of E 794	Rev [MARS VICTOR]
diam: 13.5mm	wt: 0.8g	die axis:	12wear: W/W
211 ‘TETRICUS I’	denom: ANT		Obv [IMPC TETRICVS PF AVG]
date: 273+	mint: –	cat: c of E 780	Rev VI[RT][VS AVGG]
diam: 15.0mm	wt: 0.8g	die axis: 11?	wear: W/VW
212 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 787	Rev [LAETITIA AVGG]
diam: 15.5mm	wt: 1.2g	die axis: 10	wear: W/W
213 ‘TETRICUS I’	denom: ANT		Obv IMP [..TET]RIC[VS] PF AVG
date: 273+	mint: –	cat: c of E 779/88	Rev [SALVS] AVGG
diam: 19.0mm	wt: 1.8g	die axis: 6	wear: W/W
214 ‘TETRICUS I’?	denom: ANT		Obv [IMPC TETRICV]S P[F AVG]
date: 273+	mint: –	cat: c as 110	Rev P[IETAS AVG]
diam: 9.5mm	wt: 0.4g	die axis: 8	wear: SW/SW
215 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 794	Rev [MARS VICTOR] Mars adv l. hldg spear
diam: 12.0mm	wt: 0.4g	die axis: 2	wear: SW/SW
216 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 13.5mm	wt: 0.9g	die axis: –	wear: ?W/C
217 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 16.5mm	wt: 1.0g	die axis: –	wear: W/W
218 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 15.0mm	wt: 1.2g	die axis: –	wear: C/C
219 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 764/7	Rev [SPES PVBLICA]
diam: 15.0mm	wt: 0.8g	die axis: 2	wear: SW/SW
220 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as E 766	Rev –
diam: 13.0mm	wt: 0.8g	die axis: 6	wear: W/W
221 ‘TETRICUS I’	denom: ANT		Obv [IMPC TETRICVS PF AVG]
date: 273+	mint: –	cat: c as E 764/7	Rev [SPES PVBLICA]
diam: 17.0mm	wt: 1.8g	die axis: 3	wear: W/W
222 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 14.0mm	wt: 1.3g	die axis: –	wear: C/C
223 ‘TETRICUS I’	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 18.0mm	wt: 1.6g	die axis: 7?	wear: W/W
224 TETRICUS II, CAESAR	denom: ANT		Obv –
date: 270–73	mint: –	cat: as E 781	Rev [PRINC IVVENT]
diam: 13.0mm	wt: 0.5g	die axis: 6?	wear: W/W
225 TETRICUS II, CAESAR	denom: ANT		Obv ...[TETR]IC[VS...]
date: 270–73	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
226 TETRICUS II, CAESAR	denom: ANT		Obv [C P]IV ESV TETRIC[VS CAES]
date: 270–73	mint: –	cat: E 791/6	Rev [SPES AVGG]
diam: 18.0mm	wt: 1.9g	die axis: 6	wear: W/W
227 TETRICUS II, CAESAR			
fragments	denom: ANT		Obv [C] PIV E[SV TETRICVS CAES]
date: 270–73	mint: –	cat: E 769/91	Rev [SPES...]
diam: 17.0mm	wt: 0.8g	die axis: –	wear: W/W
228 TETRICUS II, CAESAR	denom: ANT		Obv –

	date: 270–73	mint: –	cat: E 769/91	Rev [SPES...]
	diam: 15.0mm	wt: 0.7g	die axis: 7	wear: SW/SW
229	‘TETRICUS II’ fragments	denom: ANT		Obv –
	date: 273+	mint: –	cat: c of E 769/91	Rev [SPES...]
	diam: 11.0mm	wt: 0.6g	die axis: –	wear: W/W
230	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as –	Rev –
	diam: 14.0mm	wt: 1.0g	die axis: –	wear: W/W
231	‘TETRICUS II’	denom: ANT		Obv [C PIV ESV] TETRICUS CAES
	date: 273+	mint: –	cat: c of 232	Rev [HILARITAS] AVGG
	diam: 13.0mm	wt: 0.8g	die axis: 5	wear: UW/SW
232	‘TETRICUS II’ fragments	denom: ANT		Obv [C PIV ESV TETRICVS CAES]
	date: 273+	mint: –	cat: c of E 769/91	Rev [SPES...]
	diam: 13.0mm	wt: 0.3g	die axis: –	wear: W/W
233	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as –	Rev –
	diam: 16.0mm	wt: 2.2g	die axis: –	wear: W/W
234	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as –	Rev –
	diam: 15.0mm	wt: 1.4g	die axis: 11	wear: W/W
235	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as E 769/91	Rev [SPES...]
	diam: 15.0mm	wt: 1.1g	die axis: 10	wear: W/W
236	‘TETRICUS II’	denom: ANT		Obv –
	date: 273	mint: –	cat: c as –	Rev ?[VICTORIA...]
	diam: 15.0mm	wt: 0.6g	die axis: 6	wear: W/W
237	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as –	Rev –
	diam: 12.0mm	wt: 0.7g	die axis: 12?	wear: W/W
238	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c of E 769/91	Rev [SPES...]
	diam: 17.0mm	wt: 1.2g	die axis: –	wear: W/W
239	‘TETRICUS II’ fragments	denom: ANT		Obv –
	date: 273+	mint: –	cat: c of E 769/91	Rev [SPES...]
	diam: 15.0mm	wt: 0.3g	die axis: –	wear: UW/SW
240	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as –	Rev –
	diam: 13.5mm	wt: 0.7g	die axis: 3	wear: SW/W
241	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as E 769/91	Rev [SPES...]
	diam: 14.0mm	wt: 0.8g	die axis: 8	wear: W/W
242	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as –	Rev –
	diam: 9.0mm	wt: 0.6g	die axis: 10?	wear: W/W
243	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as –	Rev –
	diam: 15.0mm	wt: 0.3g	die axis: –	wear: W/W
244	‘TETRICUS II’	denom: ANT		Obv –
	date: 273+	mint: –	cat: c as –	Rev –
	diam: 13.0mm	wt: 0.8g	die axis: –	wear: W/C
245	‘TETRICUS II’ fragments	denom: ANT		Obv –
	date: 273+	mint: –	cat: c of E 769/91	Rev [SPES...]
	diam: 14.0mm	wt: 0.8g	die axis: –	wear: W/W
246	RADIATE	denom: ANT		Obv –
	date: 259–73	mint: –	cat: –	Rev –
	diam: 15.0mm	wt: 2.1g	die axis: –	wear: C/C
247	RADIATE	denom: ANT		Obv –
	date: 259–73	mint: –	cat: –	Rev –
	diam: 17.0mm	wt: 1.0g	die axis: –	wear: C/W
248	RADIATE	denom: ANT		Obv –
	date: 259–73	mint: –	cat: –	Rev –
	diam: 17.0mm	wt: 0.9g	die axis: –	wear: C/C
249	RADIATE	denom: ANT		Obv –
	date: 259–73	mint: –	cat: –	Rev –
	diam: 15.0mm	wt: 1.3g	die axis: –	wear: C/C
250	RADIATE	denom: ANT		Obv –

date: 259-73	mint: -	cat: -	Rev -
diam: 16.5mm	wt: 1.7g	die axis: -	wear: C/C
251 RADIATE	denom: ANT		Obv -
date: 259-73	mint: -	cat: -	Rev -
diam: 18.0mm	wt: -	die axis: -	wear: C/C
252 RADIATE	denom: ANT		Obv -
date: 259-73	mint: -	cat: -	Rev -
diam: -	wt: -	die axis: -	wear: -
253 RADIATE fragments	denom: ANT		Obv -
date: 259-73	mint: -	cat: -	Rev -
diam: 15.0mm	wt: 0.3g	die axis: -	wear: C/C
254 RADIATE	denom: ANT		Obv -
date: 259-73	mint: -	cat: -	Rev -
diam: -	wt: -	die axis: -	wear: -
255 RADIATE	denom: ANT		Obv -
date: 259-73	mint: -	cat: -	Rev -
diam: 15.5mm	wt: 1.0g	die axis: -	wear: C/C
256 RADIATE	denom: ANT		Obv -
date: 259-73+	mint: -	cat: -	Rev -
diam: 14.5mm	wt: 0.9g	die axis: -	wear: C/C
257 RADIATE fragments	denom: ANT		Obv -
date: 259-73+	mint: -	cat: -	Rev -
diam: 10.0mm	wt: 0.2g	die axis: -	wear: C/C
258 RADIATE fragments	denom: ANT		Obv -
date: 259-73+	mint: -	cat: -	Rev -
diam: 14.0mm	wt: 0.9g	die axis: -	wear: C/C
259 RADIATE	denom: ANT		Obv -
date: 259-96	mint: -	cat: -	Rev [S]ALVS...
diam: -wt: -	die axis: -	wear: -	
260 RADIATE	denom: ANT		Obv -
date: 259-96	mint: -	cat: -	Rev -
diam: -	wt: -	die axis: -	wear: -
261 RADIATE	denom: ANT		Obv -
date: 259-96	mint: -	cat: -	Rev -
diam: -	wt: -	die axis: -	wear: -
262 RADIATE	denom: ANT		Obv -
date: 259-96	mint: -	cat: -	Rev -
diam: -	wt: -	die axis: -	wear: -
263 RADIATE	denom: ANT		Obv -
date: 259-96	mint: -	cat: -	Rev -
diam: -	wt: -	die axis: -	wear: -
264 RADIATE?	denom: ANT		Obv -
date: 259-73+	mint: -	cat: -	Rev -
diam: 15.5mm	wt: 0.8g	die axis: -	wear: C/C
265 RADIATE?	denom: ANT		Obv -
date: 259-73+	mint: -	cat: -	Rev -
diam: 16.5mm	wt: 1.6g	die axis: -	wear: C/C
266 RADIATE?	denom: ANT		Obv -
date: 259-73+	mint: -	cat: -	Rev -
diam: 16.0mm	wt: 0.9g	die axis: -	wear: C/C
267 RADIATE COPY	denom: ANT		Obv -
date: 273+	mint: -	cat: c as -	Rev -
diam: 13.0mm	wt: 0.9g	die axis: -	wear: SW/SW
268 RADIATE COPY	denom: ANT		Obv -
date: 273+	mint: -	cat: c as -	Rev -
diam: -	wt: -	die axis: -	wear: -
269 RADIATE COPY	denom: ANT		Obv -
date: 273+	mint: -	cat: c as E 780	Rev ?Virtus
diam: 13.0mm	wt: 1.0g	die axis: 4	wear: ?SW/W
270 RADIATE COPY	denom: ANT		Obv -
date: 273+	mint: -	cat: c of -	Rev -
diam: 14.5mm	wt: 1.2g	die axis: -	wear: W/C
271 RADIATE COPY	denom: ANT		Obv -
date: 273+	mint: -	cat: c of -	Rev -
diam: 15.5mm	wt: 0.9g	die axis: -	wear: C/C
272 RADIATE COPY	denom: ANT		Obv -

date: 273+	mint: –	cat: c as –	Rev ...VLII...
diam: 10.0mm	wt: 0.1g	die axis: 9	wear: SW/SW
273 RADIATE COPY	denom: ANT		Obv ...M...
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
274 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev ...E..C..
diam: –	wt: –	die axis: –	wear: –
275 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
276 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
277 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
278 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
279 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
280 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
281 RADIATE COPY?	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 10.0mm	wt: 0.3g	die axis: –	wear: C/C
282 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
283 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 11.0mm	wt: 0.4g	die axis: –	wear: C/C
284 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
285 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
286 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 16.0mm	wt: 1.2g	die axis: 6	wear: ?SW/C
287 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: – wt: –	die axis: –	wear: –	
288 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
289 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
290 RADIATE COPY			
fragment	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 9.5mm	wt: 0.2g	die axis: –	wear: W/W
291 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
292 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
293 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 15.5mm	wt: 1.4g	die axis: –	wear: C/C

294 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
295 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
296 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
297 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
298 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
299 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 13.5mm	wt: 1.3g	die axis: –	wear: C/C
300 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 8.5mm	wt: 0.3g	die axis: –	wear: C/C
301 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 10.0mm	wt: 0.4g	die axis: –	wear: C/C
302 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 13.5mm	wt: 0.8g	die axis: –	wear: C/C
303 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
304 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: as E 772	Rev ?[SALVS AVG]
diam: 13.0mm	wt: 1.0g	die axis: 5	wear: C/C
305 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
306 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
307 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 6.5mm	wt: 0.2g	die axis: –	wear: W/C
308 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
309 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
310 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 16.5mm	wt: 2.0g	die axis: –	wear: C/W
311 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 8.0mm	wt: 0.1g	die axis: –	wear: C/C
312 RADIATE COPY?	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 8.0mm	wt: 0.1g	die axis: –	wear: C/C
313 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
314 RADIATE COPY?	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 11.0mm	wt: 0.3g	die axis: –	wear: C/C
315 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –

316 RADIATE COPY frags	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 12.0mm	wt: 0.3g	die axis: –	wear: W/W
317 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
318 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 18.0mm	wt: 1.0g	die axis: –	wear: C/C
319 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
320 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
321 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 8.0mm	wt: 0.1g	die axis: –	wear: C/C
322 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
323 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 13.0mm	wt: 0.3g	die axis: –	wear: C/W
324 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
325 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
326 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
327 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
328 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 12.0mm	wt: 1.1g	die axis: –	wear: SW/W
329 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 12.0mm	wt: 0.6g	die axis: 7	wear: W/W
330 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 11.0mm	wt: 0.2g	die axis: –	wear: W/W
331 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: 10.5mm	wt: 0.5g	die axis: –	wear: C/C
332 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: c as –	Rev –
diam: –	wt: –	die axis: –	wear: –
333 PROBUS	denom: AUREL		Obv PROBVS P F AVG
date: 276–82	mint: –	cat: –	Rev –
diam: 20.0mm	wt: 1.2g	die axis: –	wear: W/C
334 PROBUS	denom: AUREL		Obv –
date: 276–82	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
335 CARAUSIUS	denom: AUREL		Obv [IMP.CARAVSI]VS AVG
date: 287–93	mint: –	cat: as 1041	Rev VIR[TVS AVG]
diam: 20.0mm	wt: 2.4g	die axis: 12	wear: SW/SW
336 CARAUSIUS	denom: AUREL		Obv [...CAR]AV[SIVS...]
date: 287–93	mint: –	cat: –	Rev –
diam: 22.0mm	wt: 2.1g	die axis: 6?	wear: SW/SW
337 CARAUSIUS	denom: AUREL		Obv [IMP.]CARAVSIVS PF AVG
date: 287–93	mint: CO	cat: as 255	Rev LAETIT AVG S/P/C
diam: 21.0mm	wt: 3.2g	die axis: 2	wear: SW/SW

338 CARAUSIUS	denom: AUREL		Obv –
date: 287–93	mint: CO	cat: as 411	Rev [SP]ES....
diam: 18.0mm	wt: 1.4g	die axis: 12	wear: SW/SW
339 CARAUSIUS	denom: AUREL		Obv [I]MPC[.ARAVSIVS..AVG]
date: 287–93	mint: –	cat: as 858	Rev MO[NETA AVG]
diam: 21.0mm	wt: 3.5g	die axis: 6	wear: SW/SW
340 CARAUSIUS	denom: AUREL		Obv IMPC[CARAVSIVS..AVG]
date: 290–93	mint: –	cat: as 355	Rev PAX AV[GGG] transverse sceptre
diam: 20.0mm	wt: 1.3g	die axis: 7	wear: SW/SW
341 ALLECTUS	denom: QUIN		Obv [IMPC] ALLECTVS PF AVG
date: 293–96	mint: –	cat: as 55	Rev VIRTVS AVG Galley
diam: 18.0mm	wt: 1.8g	die axis: 6	wear: SW/SW
342 ALLECTUS	denom: AUREL		Obv [IMPC ALLECTVS PF AVG]
date: 293–96	mint: LN	cat: 42	Rev SALVS AVG S/P/ML
diam: –	wt: –	die axis: –	wear: –
343 perhaps ALLECTUS	denom: QUIN		Obv [IMPC ALLECTVS PF AVG]
date: 293–96	mint: LN	cat: as 55	Rev [VIRTVS AVG] –/ML
diam: –	wt: –	die axis: –	wear: –
344 ALLECTUS	denom: AUREL		Obv IMPC ALLECTVS PF AVG
date: 293–96	mint: LN P	cat: 33	Rev PAX AVG S/P/ML
diam: 21.0mm	wt: 2.9g	die axis: 1	wear: SW/SW
345 DIOCLETIAN	denom: AE		Obv –
date: 284–305	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
346 DIOCLETIAN	denom: AE		Obv –
date: 284–305	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
347 DIOCLETIAN fragment	denom: FOLL		Obv –
date: 294–305	mint: –	cat: –	Rev [GENIO POPVLI R]OMA[NI]
diam: 25.0mm	wt: 1.3g	die axis: –	wear: C/?W
348 DIOCLETIAN	denom: FOLL		Obv IMP DIOCLETIANVS PF AVG
date: 295–97	mint: TR C	cat: as 6TR 170a	Rev GENIO POPV–LI ROMANI
diam: 28.0mm	wt: 8.6g	die axis: 7	wear: SW/SW
349 MAXIMIANUS	denom: FOLL		Obv IMPC MAXIMIANVS PF AVG
date: 300–05	mint: –	cat: 6LN 6b	Rev GENIO POPV–LI ROMANI
diam: 26.5mm	wt: 7.8g	die axis: 12	wear: SW/W
350 CONSTANTIVS I	denom: FOLL		Obv FL VAL CONSTANTIVS NOB C
date: 293–305	mint: TR	cat: as 6TR 195/328	Rev GENIO POPV–LI ROMANI A –/..TR
diam: –	wt: –	die axis: –	wear: –
351 CONSTANTIVS I	denom: FOLL		Obv [FL VAL] CONSTANTIVS NOB C
date: 300	mint: LN	cat: 6LN 14a	Rev GENIO POPV–LI ROMANI
diam: 27.5mm	wt: 8.7g	die axis: 5	wear: SW/SW
352 GALERIUS, CAESAR	denom: FOLL		Obv MAXIMIANVS NOBIL C
date: 302–03	mint: TR I	cat: 6TR 558b	Rev MONETA S AVGG ET CAESS NN S/F/PTR
diam: 27.5mm	wt: 9.1g	die axis: 12	wear: SW/SW
353 GALERIUS, CAESAR	denom: FOLL		Obv MAXIMIANVS NOB [C...]
date: c 300	mint: LN?	cat: as 6LN 15/31	Rev GENIO POPV–LI ROMANI
diam: – wt: –	die axis: –	wear: –	
354 LICINIUS I	denom: FOLL		Obv [IMP] LICINIVS PF AVG
date: 313–14	mint: LN P	cat: 7LN 19	Rev [SOLI INVIC]–TO COMITI
diam: 20.5mm	wt: 1.6g	die axis: 6	wear: SW/W
355 LICINIUS I	denom: FOLL		Obv IMP LICINIVS PF AVG
date: 313–15	mint: TR P	cat: 7TR 58	Rev GENIO–POP ROM
diam: –	wt: –	die axis: –	wear: SW/W
356 CONSTANTINE I, CAESAR	denom: FOLL		Obv FL V[AL CO]NSTAN[TIN]VS NOB C
date: 307	mint: LN P	cat: 6LN 88b	Rev GENIO–POP ROM
diam: 25.5mm	wt: 3.2g	die axis: 6	wear: SW/SW
357 CONSTANTINE I frag	denom: FOLL		Obv [IMP] CONSTAN[TINVS P..AVG]
date: 310	mint: LN P	cat: as 6LN 121a	Rev SOLI IN[VICTO COMITI] T*/–
diam: 14.0mm	wt: 0.4g	die axis: 6	wear: SW/SW
358 CONSTANTINE I	denom: FOLL		Obv [IMP] CONSTANTINVS PF AVG
date: 310	mint: LN P	cat: 6LN 121a	Rev SOLI INVIC–TO COMITI
diam: 23.0mm	wt: 2.4g	die axis: 6	wear: SW/SW
359 CONSTANTINE I? frag	denom: FOLL		Obv –
date: 310–18?	mint: –	cat: –	Rev ?[S]OLI [INVICTO COMITI]

	diam: 14.0mm	wt: 0.4g	die axis: –	wear: C/C
360	CONSTANTINE I	denom: FOLL		Obv IMP CONSTANTINVS AVG
	date: 313–14	mint: LN P	cat: 7LN 10	Rev SOLI INVIC–TO COMITI S/F/PLN
	diam: 20.5mm	wt: 3.1g	die axis: 6	wear: SW/SW
361	CONSTANTINE I	denom: FOLL		Obv IMP CONSTANTINVS PF AVG
	date: 314–15	mint: LG P	cat: 7LG 15	Rev SOLI INVIC–TO COMITI
	diam: 23.5mm	wt: 2.4g	die axis: 1	wear: W/SW
362	CONSTANTINE I	denom: FOLL		Obv CONSTANTINVS PF AVG
	date: 316	mint: TR P	cat: 7TR 113	Rev [MARTI CON]–SERVATORI T/F/ATR
	diam: 21.0mm	wt: 2.8g	die axis: 7	wear: VW/W
363	CONSTANTINE I	denom: FOLL		Obv [CONS]TANTINVS PF AVG
	date: 316–17	mint: LN P	cat: 7LN 90	Rev SOLI INVIC–TO COMITI
	diam: –	wt: –	die axis: –	wear: W/W
364	CONSTANTINE I	denom: FOLL		Obv [...CONSTANTINVS...AVG]
	date: 318	mint: LN P	cat: 7LN 137–41	Rev SOLI INVIC–TO COMITI U/PLN
	diam: –	wt: –	die axis: –	wear: –
365	CONSTANTINE I	denom: –		Obv [IMP CONSTANTIN]VS AVG
	date: 319	mint: TR	cat: 7TR 215	Rev [VICTORIAE LAETAE PRINC PERP] VOT/PR
	diam: 18.5mm	wt: 2.7g	die axis: 6	wear: SW/W
366	CONSTANTINE I	denom: –		Obv IMP CONSTANTINVS MAX AVG
	date: 319	mint: TR	cat: 7TR 213	Rev [VI]CTORIAE LAETAE PRINC PERP VOT/PR
	diam: 17.0mm	wt: 1.3g	die axis: 11	wear: SW/W
367	CONSTANTINE I	denom: –		Obv IMP CONSTAN–TINVS MAX AVG
	date: 319	mint: LN P	cat: 7LN 154	Rev VICTORIAE LAETAE PRINC PERP VOT/PR
	diam: 18.0mm	wt: 2.7g	die axis: 6	wear: SW/SW
368	CONSTANTINE I	denom: –		Obv IMP [CONST]AN–TINVS M[AX AVG]
	date: 319	mint: TR S	cat: 7TR 213	Rev [VICTORIAE LAETAE PRI]NC PERP VOT/PR
	diam: 17.5mm	wt: 1.5g	die axis: 6	wear: SW/W
369	CONSTANTINE I	denom: –		Obv CONSTAN–TINVS AVG
	date: 320–21	mint: TC S	cat: 7TC 140	Rev D N CONSTANTINI MAX AVG
	diam: 18.5mm	wt: 2.0g	die axis: 12	wear: UW/SW
370	CONSTANTINE I	denom: –		Obv [CONSTANTI]NV[S P AVG]
	date: 321–23	mint: LG	cat: as 7LG as 128	Rev [BEA]TA [TRANQVILL]ITAS VO/TIS/XX
	diam: 18.0mm	wt: 1.6g	die axis: 6	wear: W/W
371	CONSTANTINE I	denom: –		Obv CONSTANT–[INVS AVG]
	date: 323	mint: LG P	cat: 7LG 200	Rev BEATA TRAN[QUILLITAS] VOT/IS/XX
	diam: 18.5mm	wt: 1.2g	die axis: 6	wear: SW/SW
372	CONSTANTINE I	denom: –		Obv [CONSTAN]TINVS AVG
	date: 323–24	mint: TR P	cat: 7TR 435	Rev [SAMARTIA D]EVICTA
	diam: 20.5mm	wt: 2.1g	die axis: 6	wear: SW/SW
373	CONSTANTINE I fragments	denom: –		Obv [CONSTANTINVS AVG]
	date: 323–24	mint: TR P	cat: 7TR 429	Rev SA[RMATIA DEVICTA]
	diam: 16.0mm	wt: 0.5g	die axis: –	wear: W/W
374	CONSTANTINE I	denom: –		Obv [CONSTAN]TINVS AG
	date: 323–24	mint: LN P	cat: 7LN 290	Rev [SARMATIA] DEVICTA
	diam: 18.0mm	wt: 1.2g	die axis: 6	wear: W/SW
375	CONSTANTINE I	denom: –		Obv VRBS–ROMA
	date: 330–31	mint: LG P	cat: 7LG 247, HK190	Rev Wolf and twins
	diam: –	wt: –	die axis: –	wear: –
376	CONSTANTINE I	denom: –		Obv VRB[S–RO]MA
	date: 330–31	mint: TR P	cat: 7TR 529, HK58	Rev Wolf and twins
	diam: 16.0mm	wt: 1.9g	die axis: 12	wear: SW/SW
377	CONSTANTINE I	denom: –		Obv [V]RBS [ROMA]
	date: 330–31	mint: TR P	cat: 7TR 529, HK58	Rev Wolf and twins
	diam: 16.5mm	wt: 1.3g	die axis: 6	wear: SW/SW
378	CONSTANTINE I	denom: –		Obv VRBS–ROMA
	date: 330–31	mint: LG P	cat: 7LG 242, HK184	Rev Wolf and twins
	diam: 14.5mm	wt: 1.2g	die axis: 6	wear: W/SW
379	CONSTANTINE I	denom: –		Obv [VRBS RO]MA
	date: 330–31	mint: TR P	cat: 7TR 529	Rev Wolf and twins
	diam: 17.0mm	wt: 0.8g	die axis: 12	wear: SW/SW
380	CONSTANTINE I	denom: –		Obv VRBS ROMA
	date: 330–35	mint: –	cat: as 7TR522, HK51	Rev Wolf and twins
	diam: 14.5mm	wt: 1.1g	die axis: 6	wear: SW/SW
381	CONSTANTINE I	denom: –		Obv [VRBS] ROMA
	date: 332	mint: LG P	cat: 7LG 257, HK200	Rev Wolf and twins

diam: 17.0mm	wt: 1.1g	die axis: 12	wear: SW/SW
382 CONSTANTINE I	denom: –		Obv [VRB]S-ROMA
date: 332–33	mint: TR S	cat: 7TR 542, HK65	Rev Wolf and twins
diam: 15.0mm	wt: 1.7g	die axis: –	wear: SW/SW
383 CONSTANTINE I	denom: –		Obv CONSTAN-[TINOPOLIS]
date: 330–31	mint: TR –	cat: as 7TR 523, HK52	Rev Victory on prow
diam: 16.0mm	wt: 0.5g	die axis: 6	wear: W/W
384 CONSTANTINE I	denom: –		Obv CONST[ANTINOP]OLIS
date: 330–31	mint: TR P	cat: 7TR 523, HK52	Rev Victory on prow
diam: 15.0mm	wt: 1.0g	die axis: –	wear: C/C
385 CONSTANTINE I	denom: –		Obv [CONSTAN]-TINOP[OLIS]
date: 330–35	mint: –	cat: as 7TR523, HK52	Rev Victory on prow
diam: 15.5mm	wt: 1.6g	die axis: 12	wear: C/C
386 CONSTANTINE I	denom: –		Obv [CO]NSTAN-TINOPOLIS
date: 330–35	mint: –	cat: as 7TR523, HK52	Rev Victory on prow
diam: 16.0mm	wt: 2.0g	die axis: 12	wear: W/W
387 CONSTANTINE I			
fragment	denom: –		Obv [CONSTANTINOPOLIS]
date: 330–35	mint: –	cat: as 7TR523, HK52	Rev Victory on prow
diam: 13.5mm	wt: 1.0g	die axis: 11	wear: W/W
388 CONSTANTINE I	denom: –		Obv CONSTAN-TINOPOLIS
date: 332	mint: LG P	cat: 7LG 256, HK201	Rev Victory on prow
diam: 16.0mm	wt: 1.6g	die axis: 6	wear: SW/SW
389 CONSTANTINE I	denom: –		Obv CONSTAN-TINOPOLIS
date: 332–33	mint: TR S	cat: 7TR 543, HK66	Rev Victory on prow
diam: –	wt: –	die axis: –	wear: –
390 CONSTANTINE I	denom: –		Obv CONSTAN-TINOPOLIS
date: 332–33	mint: TR S	cat: 7TR 543, HK66	Rev Victory on prow
diam: 17.0mm	wt: 1.5g	die axis: 6	wear: SW/SW
391 CONSTANTINE I	denom: –		Obv CONSTAN-TINOPOLIS
date: 332–33	mint: TR S	cat: 7TR 543, HK66	Rev Victory on prow
diam: –	wt: –	die axis: –	wear: –
392 CONSTANTINE I	denom: –		Obv CONSTAN-TINOPOLIS
date: 333–34	mint: LG P	cat: 7LG 266, HK206	Rev Victory on prow
diam: 16.5mm	wt: 1.8g	die axis: 6	wear: SW/SW
393 CONSTANTINE I	denom: –		Obv CONSTAN-TINOPOLIS
date: 333–34	mint: TR	cat: 7TR 554, HK77	Rev Victory on prow
diam: 16.5mm	wt: 1.0g	die axis: 12	wear: W/SW
394 CONSTANTINE I	denom: –		Obv CONSTAN[TINVS MAX AVG]
date: 330	mint: AR P	cat: 7AR 341, HK351a	Rev GLOR]-IA EXERC-ITVS 2 stds
diam: 17.5mm	wt: 1.3g	die axis: 12	wear: SW/SW
395 CONSTANTINE I	denom: –		Obv [CONSTAN-TI]NVS AVG
date: 330	mint: AR	cat: 7AR 341, HK351a	Rev GLOR]-IA EXERC-ITVS 2 stds
diam: 17.5mm	wt: 1.8g	die axis: 6	wear: SW/SW
396 CONSTANTINE I	denom: –		Obv CONSTANT[INVS MAX AVG]
date: 330–31	mint: TR	cat: 7TR 518/25, HK48/53	Rev GLOR]-[IA EXERC]-ITVS 2 stds
		die axis: 6	wear: W/W
397 CONSTANTINE I	wt: 1.3g		Obv [CONSTANTI]NVS MAX AVG
date: 330–35	denom: –	cat: as 7TR 518, HK48	Rev [GLORIA EXERCITVS] 2 stds
diam: 15.5mm	mint: –	die axis: 6	wear: UW/UW
398 CONSTANTINE I frag	wt: 1.8g		Obv [..C]ONST[ANTI-NVS MAX AVG]
date: 330–35	denom: –	cat: as 7TR 537, HK60	Rev GLO[RIA EXERCITVS] 2 stds
diam: 14.5mm	mint: TR P	die axis: 6	wear: SW/SW
399 CONSTANTINE I	denom: –		Obv [CONSTANTINVS] MAX AVG
date: 330–35	mint: TR	cat: as 7TR 537, HK60	Rev GLOR[IA EXERCITVS] 2 stds
diam: 14.5mm	wt: 0.6g	die axis: 1	wear: SW/SW
400 CONSTANTINE I	denom: –		Obv [CONS]TANTI-NVS [MAX AVG]
date: 332–33	mint: TR P	cat: as 7TR 537, HK60	Rev GLOR]-[IA EXERC]-ITVS 2 stds
diam: 15.0mm	wt: 1.1g	die axis: 6	wear: UW/SW
401 CONSTANTINE I	denom: –		Obv CONSTAN-TINOPOLIS
date: 330–35	mint: –	cat: –	Rev [Victory on prow]
diam: 16.5mm	wt: 3.2g	die axis: –	wear: SW/–
402 ‘CONSTANTINE I’	denom: –		Obv [CONSTANTINOPOLIS]
date: 341–46	mint: –	cat: c as 7TR 523, HK52	Rev Victory on prow
diam: 10.0mm	wt: 0.6g	die axis: 12	wear: W/W

403 'CONSTANTINE I'	denom: – mint: – date: 341–46 diam: 13.0mm	wt: 0.6g	cat: c as 7TR 523, HK52	Obv [CONSTANTINOPOLIS] Rev Victory on prow wear: C/W
404 CRISPUS	denom: – mint: LG date: 319–20 diam: 19.0mm	wt: 2.3g	cat: 7LG 74	Obv DN CRISPO–NOB CAES Rev VICTORIAE LAETAE PRINC PERP VOT/PR wear: SW/SW
405 CRISPUS	denom: – mint: LN P date: 320 diam: 18.5mm	wt: 1.4g	cat: 7LN 175/6	Obv [FL IVL C]RIPV–[VS NOB CAES] Rev [VICTORIAE LAETAE PRINC PERP VOT/PR] wear: ?SW/SW
406 CRISPUS	denom: – mint: LN P date: 323–24 diam: –	wt: –	cat: 7LN 291	Obv IVL CRIS–PVS NOB C Rev CAESARVM NOSTRORVM VOT/X wear: –
407 CRISPUS	denom: – mint: LN P date: 324–25 diam: 20.5mm	wt: 3.0g	cat: 7LN 295	Obv FL IVL CRISPV NOB CAES Rev PROVIDEN–TIAE CAESS wear: UW/UW
408 CRISPUS	denom: – mint: HE A date: 325–26 diam: –	wt: –	cat: 7HE 75	Obv CRISPUS NOB CAES Rev PROVIDEN–TIAE CAESS wear: –
409 CONSTANTINE II, CAESAR	denom: – mint: – date: 321–24 diam: 19.0mm	wt: 2.8g	cat: as 7LN 286	Obv [CONSTAN]TINVS IVN N C Rev BEATA TRAN–QUILLITAS VOT/IS/XX wear: SW/SW
410 CONSTANTINE II, CAESAR	denom: – mint: TR P date: 323–24 diam: 16.0mm	wt: 1.3g	cat: 7TR 433	Obv [CONSTANTINVS IVN NOB C] Rev [CAESARVM NOS]TROR[VM] VOT/X wear: C/W
411 CONSTANTINE II, CAESAR	denom: – mint: LN P date: 323–34 diam: –	wt: –	cat: 7LN 287	Obv CONSTANTI–NVS IVN N C Rev BEAT TRAN–NQLITAS VOT/IS/XX wear: SW/SW
412 CONSTANTINE II, CAESAR	denom: – mint: LN P date: 324–25 diam: 19.0mm	wt: 1.9g	cat: 7LN 296	Obv [CONSTA]NTINV[S IVN NOBC] Rev [PROVIDEN–TIAE] CA[ESS] wear: SW/UW
413 CONSTANTINE II, CAESAR	denom: – mint: TR P date: 327–28 diam: 18.0mm	wt: 2.5g	cat: 7TR 505, HK39	Obv CONSTANTINVS IVN NOB C Rev PROVIDEN–TIAE CAESS wear: SW/SW
414 CONSTANTINE II, CAESAR	denom: – mint: TR S date: 330–35 diam: –	wt: –	cat: as 7TR 520, HK49	Obv CONSTANTINVS IVN NOB C Rev GLOR–IA EXERC–ITVS 2 stds wear: –
415 CONSTANTINE II, CAESAR(?)	denom: – mint: – date: 330–35 diam: –	wt: –	cat: as 7TR 520, HK49	Obv – Rev [GLORIA EXERCITVS] 2 stds wear: –
416 CONSTANTINE II, CAESAR	denom: – mint: – date: 330–35 diam: 16.0mm	wt: 1.1g	cat: as 7TR 520, HK49	Obv – Rev [GLORIA EXERCITVS] 2 stds wear: C/C
417 CONSTANTINE II, CAESAR	denom: – mint: TR date: 330–35 diam: 17.5mm	wt: 1.9g	cat: as 7TR 539, HK63	Obv [CONSTANT]INVS IVN NOB C Rev GLOR[–IA EXERC–]ITVS 2 stds wear: SW/SW
418 CONSTANTINE II, CAESAR	denom: – mint: AR P date: 332–33 diam: 18.0mm	wt: 2.1g	cat: 7AR 359, HK363	Obv CONSTANTINVS IVN NOB C Rev GLOR–IA EXERC–ITVS 2 stds wear: SW/SW
419 CONSTANTINE II, CAESAR	denom: – mint: AQ S date: 334–35 diam: 17.0mm	wt: 1.3g	cat: 7AQ 119	Obv CONSTANTINVS IVN NOB C Rev GLOR–IA EXERC–ITVS 2 stds wear: SW/SW
420 CONSTANTINE II, CAESAR	denom: – mint: RM P date: 335–36 diam: 12.0mm	wt: 0.4g	cat: 7RM 364/5	Obv CONS[TANTINVS IVN N...C] Rev [GLORIA EXERCIT]VS 2 stds wear: SW/SW

421 CONSTANTINE II, CAESAR date: 335–37 diam: 15.5mm	denom: – mint: – wt: 1.0g	cat: as 7LG 271 die axis: 12	Obv [CONSTANTINVS IVN] NOB C Rev [G]LOR–[IA EXERCITVS] 1 std wear: UW/UW
422 CONSTANTINE II, CAESAR date: 335–37 diam: 14.5mm	denom: – mint: AR P wt: 1.3g	cat: 7AR 412, HK411 die axis: 12	Obv [C]ON[STANTINVS IVN N C] Rev [GLORIA EXERC]–ITVS 1 std wear: SW/SW
423 CONSTANTIUS II, CAESAR date: 330–35 diam: 16.0mm	denom: – mint: – wt: 0.9g	cat: as 7TR 528, HK57 die axis: 7	Obv FL [IVL CONS]TANTIV[S NOB C] Rev [GLO]R–IA EXE[RCITVS] 2 stds wear: SW/SW
424 CONSTANTIUS II, CAESAR date: 330–35 diam: 16.5mm	denom: – mint: – wt: 1.5g	cat: as 7TR 521, HK50 die axis: 12	Obv FL IVL [CONSTANTIVS NOB] C Rev [GLORIA EXERCITVS] 2 stds wear: SW/SW
425 CONSTANTIUS II, CAESAR date: 330–35 diam: 16.0mm	denom: – mint: TR P wt: 0.7g	cat: as 7TR 528, HK57 die axis: 6	Obv [FL IVL CONSTANTI]VS NO[B C] Rev [GLORIA EXERC]–ITVS 2 stds wear: W/W
426 CONSTANTIUS II, CAESAR date: 330–31 diam: –	denom: – mint: TR P wt: –	cat: 7TR 528, HK57 die axis: –	Obv FL IVL CONSTANTIVS NOB C Rev GLOR–IA EXERC–ITVS 2 stds wear: SW/SW
427 CONSTANS, CAESAR date: 336 diam: 14.5mm	denom: – mint: – wt: 1.3g	cat: as 7LG 278, HK227 die axis: 1	Obv FL IVL CONSTANS N[OB C] Rev GLOR–IA EXERC–ITVS 1 std wear: W/W
428 HELENA date: 337–40 diam: 13.5mm	denom: – mint: TR wt: 1.1g	cat: as 8TR 63, HK112 die axis: 12	Obv [FL IVL HELENAE AVG] Rev [PAX PVBLICA] wear: W/SW
429 HELENA date: 337–40 diam: 11.5mm	denom: – mint: TR P wt: 0.7g	cat: as 8TR 63, HK112 die axis: 6	Obv [FL IVL HELENAE AVG] Rev [PAX PVBLICA] wear: SW/SW
430 THEODORA date: 337–40 diam: 14.5mm	denom: – mint: TR P wt: 1.3g	cat: 8TR 65, HK113 die axis: 12	Obv [FL MAX THEO–]DORAE AVG Rev PIE[TAS – ROMANA] wear: SW/SW
431 THEODORA date: 337–40 diam: 15.0mm	denom: – mint: TR P wt: 0.8g	cat: 8TR 79, HK120 die axis: 1	Obv FL MAX THEO–DORAE A[VG] Rev PIETAS ROMANA wear: SW/SW
432 CONSTANTINE II date: 337–40 diam: –	denom: – mint: – wt: –	cat: as 8TR 39, HK100 die axis: 6	Obv [FL C]L CONST[ANTINVS AVG] Rev [GLORIA EXERCITVS] 1 std wear: UW/UW
433 CONSTANTINE II date: 337–40 diam: 14.5mm	denom: – mint: AR P wt: 1.3g	cat: 8AR 1/11, HK416/9 die axis: 6	Obv [IMP CONSTA–NTIN]VS AVG Rev [G]LOR–[I]A EXERC–ITVS 1 std wear: W/W
434 CONSTANS date: 337–40 diam: 12.0mm	denom: – mint: – wt: 0.6g	cat: as 8RM 10, HK587 die axis: 6	Obv [DN FL CONSTANS AVG] Rev [SECVRITAS REIP] wear: SW/SW
435 CONSTANS date: 337–40 diam: –	denom: – mint: RM T wt: –	cat: 8RM 26, HK– die axis: –	Obv DN FL CONSTANS AVG Rev GLOR–IA EXERC–ITVS 1 std wear: SW/SW
436 CONSTANS date: 340–41 diam: 13.5mm	denom: – mint: LG P? wt: 0.6g	cat: 8LG 30, HK253a die axis: 6	Obv [CONSTANS] PF AVG Rev [GLORIA EXERC]ITVS 1 std wear: SW/SW
437 CONSTANS date: 346–48 diam: 14.5mm	denom: – mint: TR P wt: 1.1g	cat: 8TR 206, HK159 die axis: 6	Obv CONSTAN–S PF AVG Rev VICTORIAE DD AVGG QNN wear: SW/SW
438 CONSTANS date: 346–48 diam: 15.5mm	denom: – mint: TR P wt: 2.0g	cat: 8TR 199, HK154 die axis: 1	Obv CONS[TAN]–S PF AVG Rev VIC[TOR]IAE DD AVGG QNN wear: UW/UW
439 CONSTANS date: 346–48 diam: 14.5mm	denom: – mint: TR P wt: 0.8g	cat: 8TR 206, HK159 die axis: 5	Obv [CO]NSTAN–S PF AVG Rev VIC[TORIAE DD AVGG QNN] wear: SW/SW
440 CONSTANS date: 346–48 diam: 15.5mm	denom: – mint: TR P wt: 0.9g	cat: as 8TR 182, HK138 die axis: 1	Obv CONSTAN–S PF AVG Rev VICTORIAE D[D AVGG QNN] wear: UW/UW

441 CONSTANS	denom: –		Obv CONSTAN–S PF AVG
date: 346–48	mint: TR P	cat: 8TR 206, HK159	Rev VICTORIAE DD AVGG QNN
diam: 14.0mm	wt: 0.8g	die axis: 11	wear: SW/SW
442 CONSTANS	denom: –		Obv CONSTAN–S PF AVG
date: 346–48	mint: TR P	cat: 8TR 195, HK148	Rev VICTORIAE DD AVGG QNN
diam: 14.5mm	wt: 1.4g	die axis: 6	wear: SW/SW
443 CONSTANS	denom: –		Obv CONSTAN–S [PF AVG]
date: 346–48	mint: TR S?	cat: 8TR 199, HK155	Rev VICTORIAE DD AVG[G QNN]
diam: 15.5mm	wt: 1.2g	die axis: 6	wear: SW/SW
444 CONSTANS	denom: –		Obv CONSTAN–S PF AVG
date: 346–48	mint: LG P	cat: 8LG 57, HK267	Rev VICTOR[IAE DD] AVG[G QNN]
diam: 15.0mm	wt: 1.0g	die axis: 12	wear: W/W
445 CONSTANS	denom: –		Obv CONSTAN–S PF AVG
date: 346–48	mint: TR P	cat: 8TR 185, HK140	Rev [VICTORIA]E DD AVGG QNN
diam: 14.5mm	wt: 1.2g	die axis: 6	wear: SW/SW
446 CONSTANS	denom: –		Obv –
date: 348–50	mint: –	cat: as 8TR 215/9	Rev [FEL TEMP REPARATIO] ?Galley
diam: –	wt: –	die axis: –	wear: –
447 CONSTANS fragments	denom: –		Obv –
date: 348–50	mint: –	cat: as 8TR 215/9	Rev [FEL TEMP REPARATIO] Galley
diam: 21.0mm	wt: 1.8g	die axis: –	wear: C/C
448 ‘CONSTANS’	denom: –		Obv –
date: 348–50+	mint: TR P	cat: c as 8TR 215/9	Rev [FEL TEMP REPARATIO] Galley
diam: 18.0mm	wt: 1.3g	die axis: 12	wear: C/SW
449 CONSTANTIIUS II	denom: –		Obv [CONSTANTI]–VS PF AVG
date: 337–40	mint: LG S	cat: 8LG 22, HK250	Rev [GLORIA EXERC]–ITVS 1 std
diam: 14.0mm	wt: 1.1g	die axis: 12	wear: SW/SW
450 CONSTANTIIUS II	denom: –		Obv CONSTANTI–[VS PF AVG]
date: 337–40	mint: TR P	cat: 8TR 108, HK132	Rev GLORI–[A E]XER–[CITVS] 1 std
diam: 15.0mm	wt: 0.8g	die axis: 6	wear: SW/SW
451 CONSTANTIIUS II	denom: –		Obv [FL IVL C]ONS[TANTI]VS [AVG]
date: 340–41	mint: TR S	cat: 8TR101a, HK–	Rev [GLOR]IA [EXERC]–ITVS 1 std
diam: 13.5mm	wt: 0.7g	die axis: 12	wear: SW/UW
452 CONSTANTIIUS II	denom: –		Obv [C]ONSTAN–[TIVS PF AVG]
date: 346–48	mint: TR P	cat: 8TR 193, HK145	Rev VICTO[RIAE DD AVGG QNN]
diam: 16.0mm	wt: 0.6g	die axis: 6	wear: SW/SW
453 CONSTANTIIUS II	denom: –		Obv CONST[ANTI–VS P]F AVG
date: 346–48	mint: –	cat: as 8TR 181, HK137	Rev VICTORIAE DD AVG[G QNN]
diam: 15.5mm	wt: 0.6g	die axis: 5	wear: SW/SW
454 CONSTANTIIUS II	denom: –		Obv DN CONSTAN–[TIVS PF AVG]
date: 348–50	mint: –	cat: as 8TR 239, CK44	Rev [FEL TEMP] REPARATIO Galley (1) phoenix
diam: 21.5mm	wt: 2.2g	die axis: 6	wear: SW/W
455 ‘CONSTANTIIUS II’	denom: –		Obv [DN CONSTANTIVS PF AVG]
date: 353+	mint: –	cat: c as 8TR 359, CK76	Rev [FEL TEMP REPARATIO] FH3
diam: –	wt: –	die axis: –	wear: C/C
456 ‘CONSTANTIIUS II’	denom: –		Obv [DN CONSTANTIVS PF AVG]
date: 353+	mint: –	cat: c as 8TR 359, CK76	Rev [FEL TEMP REPARATIO] FH3
diam: 14.5mm	wt: 0.5g	die axis: 12	wear: C/C
457 ‘CONSTANTIIUS II’	denom: –		Obv [DN CONSTANTIVS PF AVG]
date: 353+	mint: –	cat: c as 8TR 359, CK76	Rev [FEL TEMP REPARATIO] FH3
diam: 12.0mm	wt: 0.9g	die axis: 12	wear: SW/SW
458 ‘CONSTANTIIUS II’	denom: –		Obv [DN CONSTANTIVS PF AVG]
date: 353+	mint: –	cat: c as 8TR 359, CK76	Rev [FEL TEMP REPARATIO] FH3
diam: 14.5mm	wt: 0.8g	die axis: –	wear: C/SW
459 CONSTANS/ CONSTANTIUS II	denom: –		Obv –
date: 346–48	mint: –	cat: as 8TR 181, HK137	Rev VICTORIAE DD AVG[G QNN]
diam: 14.0mm	wt: 0.7g	die axis: 12	wear: SW/SW
460 CONSTANS/ CONSTANTIUS II	denom: –		Obv –
date: 346–48	mint: TR P	cat: 8TR 193–6, HK145–50	Rev [VICTORIAE DD AVGG] QNN
diam: –	wt: –	die axis: –	wear: –
461 CONSTANS/ CONSTANTIUS II	denom: –		Obv –
date: 346–48	mint: TR	cat: 8TR 181–3, HK137–8	Rev VICTORIAE DD AV[GG QNN]
diam: 14.5mm	wt: 0.9g	die axis: 6	wear: SW/SW

462 CONSTANS/ CONSTANTIUS II	denom: – mint: TR wt: 1.4g	cat: as 8TR 193 die axis: 12	Obv – Rev [VICTORIAE DD AVGG QNN] wear: SW/SW
463 CONSTANS/ CONSTANTIUS II	denom: – mint: – wt: –	cat: as 8TR 215/9 die axis: –	Obv – Rev [FEL TEMP REPARATIO] ?Galley wear: –
464 CONSTANS/ CONSTANTIUS frag	denom: – mint: – wt: –	cat: as 8TR 220ff die axis: –	Obv – Rev [FEL TEMP REPARATIO] wear: C/C
465 HOUSE OF CONSTANTINE	denom: – mint: LN P wt: –	cat: 7LN 183–90 die axis: –	Obv – Rev VIRTUS EXERCIT wear: –
466 HOUSE OF CONSTANTINE	denom: – mint: – wt: 3.2g	cat: – die axis: –	Obv laureate head, r Rev – wear: ?SW/–
467 HOUSE OF CONSTANTINE	denom: – mint: – wt: –	cat: – die axis: –	Obv – Rev [GLORIA EXERCITVS] 2 stds wear: C/W
468 HOUSE OF CONSTANTINE?	denom: – mint: – wt: 0.5g	cat: – die axis: –	Obv – Rev ?[GLORIA EXERCITVS] wear: C/C
469 HOUSE OF CONSTANTINE frag	denom: – mint: AR wt: 0.3g	cat: as 7AR394, HK398 die axis: –	Obv – Rev [GLORIA EXERCITVS] 1 std (showing chi-rho) wear: C/W
470 HOUSE OF CONSTANTINE	denom: – mint: – wt: 0.4g	cat: – die axis: 6	Obv Head laur, r Rev [GLORIA] EXER[CITVS] 1 std wear: UW/SW
471 HOUSE OF CONSTANTINE	denom: – mint: – wt: 1.0g	cat: – die axis: –	Obv – Rev [GLORIA EXERCITVS] 1 std wear: C/SW
472 HOUSE OF CONSTANTINE frag	denom: – mint: – wt: 0.4g	cat: – die axis: 12	Obv – Rev [GLORIA EXERCITVS] 1 std wear: W/SW
473 MAGNENTIUS	denom: – mint: AR S wt: 3.2g	cat: 8AR 151, CK423 die axis: 12	Obv DN MAGNEN–[T]IVS PF AVG Rev GLORIA ROMANORVM (4) wear: UW/SW
474 MAGNENTIUS	denom: – mint: TR P wt: 3.6g	cat: 8TR 323, CK66 die axis: 1	Obv DN [MAGNEN–TIVS PF AVG] Rev [SALVS DD NN] A[VG ET] CAES wear: SW/SW
475 MAGNENTIUS	denom: – mint: – wt: –	cat: as 8TR 312 die axis: –	Obv DN MAGNEN–TIVS PF AVG Rev VICTORIAE DD NN AVG ET CAE(S) wear: –
476 ‘MAGNENTIUS’	denom: – mint: – wt: 2.9g	cat: c as 8AM 1 die axis: 12	Obv [DN MAGNEN]TIVS AVG Rev [G]LORIA [ROMANORVM] wear: SW/SW
477 DECENTIUS	denom: – mint: – wt: –	cat: as 8AM 34 die axis: –	Obv [DN DECENTIVS NOB] CAES Rev [SALVS DD NN AVG ET CAES] wear: SW/SW
478 VALENTINIAN I	denom: – mint: LG/AR II wt: 1.4g	cat: as CK281 die axis: 6	Obv [DN VALENTINI–ANVS P]F AVG Rev [GLORIA RO]–MANORVM wear: W/W
479 VALENTINIAN I	denom: – mint: AQ P wt: 2.0g	cat: CK 1017 die axis: 12	Obv DN VALENTINI–ANVS PF AVG Rev GLORIA RO–MANORVM wear: SW/UW
480 VALENTINIAN I	denom: –		Obv DN VALENTINI–ANVS PF AVG

	date: 367–75 diam: 17.5mm	mint: SS B wt: 2.2g denom: –	cat: as CK1364 die axis: 6	Rev GLOR[IA RO–]MANORVM wear: W/W Obv DN VALE[NTINIANVS] PF AVG Rev [SECVRITAS REIPVBLICAE] wear: ?SW/SW
481 VALENTINIAN I	date: 364–75 diam: 16.0mm	mint: – wt: 1.4g denom: –	cat: – die axis: 12	Obv [DN VALE]NTINI–ANVS PF AVG Rev S[ECVRIT]AS–REI[PVBLIC]AE wear: SW/SW
482 VALENTINIAN I	date: 367–75 diam: 17.0mm	mint: AR II wt: 1.6g denom: –	cat: CK514 die axis: 7	Obv DN V[ALENS P]F AVG Rev ?[GLORIA R]OM[ANORVM] wear: W/W
483 VALENS	date: 364–78 diam: –	mint: – wt: – denom: –	cat: – die axis: –	Obv DN VALEN–[S PF AVG] Rev [SECVRITAS] REIPVBLICAE wear: UW/UW
484 VALENS	date: 364–78 diam: 16.0mm	mint: LG/AR II wt: 1.1g denom: –	cat: as CK276 die axis: 6	Obv [DN VALEN]S PF AVG Rev SECVRIT[AS REIPVBLICAE] wear: SW/SW
485 VALENS	date: 367–75 diam: 16.5mm	mint: AQ wt: 1.2g denom: –	cat: CK1047 die axis: 12	Obv [DN VALEN–S] P[F AVG] Rev [SECVRITAS] REIPVBLICAE wear: SW/SW
486 VALENS	date: 367–75 diam: 15.0mm	mint: LG I wt: 1.0g denom: –	cat: CK 340 die axis: 6	Obv [DN GRATIANVS AVGG AVG] Rev GLORIA NOVI SAECVLI wear: –
487 GRATIAN	date: 367–75 diam: –	mint: AR III wt: – denom: –	cat: as CK 503 die axis: –	Obv – Rev [GLORIA ROMANORVM] wear: W/W
488 HOUSE OF VALENTINIAN	date: 364–75 diam: 16.0mm	denom: – mint: AR III wt: 1.3g	cat: as CK512 die axis: 12	Obv – Rev [GLORIA ROMANORVM] wear: C/W
489 HOUSE OF VALENTINIAN	date: 364–75 diam: 13.5mm	denom: – mint: LG/AR II? wt: 1.0g	cat: as CK281 die axis: 12	Obv – Rev [GLORIA ROMANORVM] wear: C/W
490 HOUSE OF VALENTINIAN frag	date: 364–78 diam: 12.5mm	denom: – mint: LG wt: 0.5g	cat: as CK281 die axis: 12	Obv – Rev [GLORIA ROMANORVM] wear: C/W
491 HOUSE OF VALENTINIAN	date: 367–75 diam: 13.5mm	denom: – mint: LG/AR – wt: 1.1g	cat: as CK281 die axis: 6	Obv – Rev [GLORIA ROMANORVM] wear: C/W
492 HOUSE OF VALENTINIAN	date: 364–67 diam: 17.5mm	denom: – mint: AR II wt: 1.8g	cat: as CK 487 die axis: 12	Obv – Rev SECVRITAS REIPVBLICAE wear: SW/SW
493 ILLEGIBLE	date: C1 diam: –	denom: AS mint: RM wt: –	cat: – die axis: –	Obv – Rev – wear: –
494 ILLEGIBLE COIN?	date: C1? diam: 33.5mm	denom: SEST? mint: RM wt: 5.6g	cat: – die axis: –	Obv – Rev – wear: EW/EW
495 ILLEGIBLE fragment	date: C1/2 diam: 22.0mm	denom: SEST mint: RM wt: 8.7g	cat: – die axis: –	Obv – Rev – wear: C/C
496 ILLEGIBLE	date: C1/2 diam: 24.0mm	denom: DP mint: RM wt: 6.9g	cat: – die axis: –	Obv – Rev – wear: C/C
497 ILLEGIBLE	date: C1/2 diam: 25.0mm	denom: DP mint: RM wt: 5.4g	cat: – die axis: –	Obv – Rev – wear: C/C
498 ILLEGIBLE	date: C1/2 diam: 31.0mm	denom: SEST mint: RM wt: 14.5g	cat: – die axis: –	Obv – Rev – wear: C/C
499 ILLEGIBLE	date: C1/2 diam: 25.5mm	denom: AS mint: RM wt: 4.4g	cat: – die axis: –	Obv – Rev – wear: EW/EW
500 ILLEGIBLE	date: C1/2	denom: DP mint: RM	cat: –	Obv – Rev –

diam: 23.5mm	wt: 9.0g	die axis: 6	wear: C/C
501 ILLEGIBLE	denom: DP		Obv –
date: C1/2	mint: RM	cat: –	Rev –
diam: 29.5mm	wt: 12.4g	die axis: –	wear: C/C
502 ILLEGIBLE	denom: AS/DP		Obv –
date: C1/2	mint: RM	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
503 ILLEGIBLE	denom: AS/DP		Obv –
date: C1/2	mint: RM	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
504 ILLEGIBLE	denom: SEST		Obv –
date: C1/2	mint: RM	cat: –	Rev –
diam: 33.0mm	wt: 18.7g	die axis: –	wear: C/C
505 ILLEGIBLE ROMAN?	denom: DP/AS		Obv –
date: C1/2?	mint: RM	cat: –	Rev –
diam: 24.5mm	wt: 3.7g	die axis: –	wear: C/C
506 ILLEGIBLE disintegrated	denom: DEN		Obv –
date: C1–3	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: C/C
507 ILLEGIBLE	denom: DEN		Obv –
date: C2?	mint: RM	cat: –	Rev –
diam: 26.0mm	wt: 6.2g	die axis: –	wear: EW/EW
508 ILLEGIBLE fragment	denom: SEST?		Obv –
date: C2?	mint: RM	cat: –	Rev –
diam: 16.5mm	wt: 0.7g	die axis: –	wear: C/C
509 ILLEGIBLE	denom: –		Obv –
date: 259–348	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
510 ILLEGIBLE	denom: –		Obv –
date: 259–348	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
511 ILLEGIBLE	denom: –		Obv –
date: 259–348	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
512 ILLEGIBLE	denom: –		Obv –
date: 259–348	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
513 ILLEGIBLE	denom: –		Obv –
date: 259–348	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
514 ILLEGIBLE	denom: –		Obv –
date: 259–348	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
515 ILLEGIBLE	denom: –		Obv –
date: 259–348	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
516 ILLEGIBLE	denom: –		Obv –
date: 259–378	mint: –	cat: –	Rev –
diam: 16.5mm	wt: 0.8g	die axis: –	wear: C/C
517 ILLEGIBLE	denom: –		Obv –
date: 259–378	mint: –	cat: –	Rev –
diam: 19.5mm	wt: 2.4g	die axis: –	wear: C/C
518 ILLEGIBLE	denom: –		Obv –
date: 259–378	mint: –	cat: –	Rev –
diam: 16.0mm	wt: 1.8g	die axis: –	wear: C/C
519 ILLEGIBLE fragment	denom: –		Obv –
date: 259–378	mint: –	cat: –	Rev –
diam: 8.5mm	wt: 0.1g	die axis: –	wear: C/C
520 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
521 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
522 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –

diam: –	wt: –	die axis: –	wear: –
523 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
524 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
525 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
526 ILLEGIBLE fragments	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: 9.5mm	wt: 0.2g	die axis: –	wear: C/C
527 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
528 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
529 ILLEGIBLE fragment	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: 11.0mm	wt: 0.5g	die axis: –	wear: C/C
530 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
531 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
532 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
533 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
534 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
535 ILLEGIBLE fragment	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: 9.5mm	wt: 0.4g	die axis: –	wear: C/C
536 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
537 ILLEGIBLE	denom: –		Obv –
date: C3/4	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
538 ILLEGIBLE	denom: –		Obv –
date: –	mint: –	cat: –	Rev –
diam: 9.0mm	wt: –	die axis: –	wear: C/C
539 CHARLES I/II	denom: 2d		Obv [CAR DG SCOT ANG FRA ET HIB R] CR [crowned], ?II to r
date: 1642–63	mint: –	cat: as Stewart 239	Rev [NEMO ME IMPVNE LACESSIT] Thistle
diam: 19.5mm	wt: 1.6g	die axis: –	wear: EW/EW
540 MODERN ARABIC (intrusive)	denom: –		Obv –
date: 1960	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
541 NOT A COIN			
542 NOT A COIN			
543 NOT A COIN			
544 NOT A COIN			
545 NOT A COIN			
546 NOT A COIN			
547 NOT A COIN			
548 NOT A COIN			
549 NOT A COIN (fragments)			

Housesteads vicus: coin list by issuer and period

550 M ANTONIUS	denom: DEN		Obv M ANT AVG III VIR RPC
date: BC32–31	mint: –	cat: CR 544	Rev LEG.... Galley
diam: –	wt: –	die axis: –	wear: –
551 NERO	denom: SEST		Obv –
date: 54–68	mint: –	cat: –	Rev –
diam: 32.0mm	wt: 14.7g	die axis: –	wear: EW/EW
552 NERO (twice pierced)	denom: AS		Obv IMP NERO CAE[SAR AVG P] MAX TR[P PP]
date: 66–68	mint: –	cat: –	Rev –
diam: 29.0mm	wt: 7.1g	die axis: 5	wear: ?W/W
553 VITELLIUS	denom: DEN		Obv [A VITELLIVS GE]RM IMP AVG TRP
date: 69	mint: RM –	cat: 90 (ed.1, 2)	Rev [CONCOR]DIA P R
diam: 18.0mm	wt: 1.2g	die axis: 7	wear: ?W/W
554 VESPASIAN	denom: DEN		Obv IMP CAESAR VESPASIANVS AVG
date: 69–71	mint: RM	cat: 10	Rev [COS ITER TRPOT]
diam: 18.5mm	wt: 2.0g	die axis: 7	wear: VW/VW
555 VESPASIAN	denom: DEN		Obv –
date: 69–79	mint: –	cat: as 94	Rev –
diam: 18.0mm	wt: 1.9g	die axis: 12	wear: VW/VW
556 VESPASIAN	denom: DEN		Obv –
date: 69–79	mint: –	cat: –	Rev –
diam: 17.5mm	wt: 2.3g	die axis: 6	wear: VW/VW
557 VESPASIAN	denom: DEN		Obv IMP CAESAR VESPASIANVS
date: 75	mint: RM	cat: 90	Rev [PON MAX] TRP COS VI
diam: 19.0mm	wt: 2.1g	die axis: 7	wear: VW/W
558 DOMITIAN	denom: DEN		Obv IMP CAES DOMIT AVG GERM PM TRP XV
date: 95–96	mint: RM	cat: 192	Rev IMP XXII COS XVII CENS P P P
diam: –	wt: –	die axis: –	wear: –
559 FLAVIAN	denom: DP		Obv –
date: 69–96	mint: –	cat: –	Rev –
diam: 28.0mm	wt: 8.8g	die axis: –	wear: C/C
560 FLAVIAN	denom: AS		Obv –
date: 69–96	mint: –	cat: –	Rev –
diam: 26.0mm	wt: 7.1g	die axis: 12	wear: C/C
561 FLAVIAN	denom: AS		Obv –
date: 69–96	mint: –	cat: –	Rev –
diam: 27.0mm	wt: 7.5g	die axis: –	wear: C/C
562 TRAJAN	denom: DEN		Obv IMP CAES NERVA TRAIAN AVG GERM
date: 100	mint: RM	cat: 38	Rev PM TRP COS III P P
diam: –	wt: –	die axis: –	wear: UW/UW
563 TRAJAN	denom: DEN		Obv [IMP TRAI]ANO AVG GER [DAC PM TRP]
date: 103–11	mint: RM	cat: 142	Rev COS V PP SPQR OPTIMO PRINC
diam: 18.0mm	wt: 2.2g	die axis: 6	wear: W/W
564 TRAJAN	denom: DEN		Obv IMP NERVA TRAIANVS AVG GER DACICVS
date: 103–12	mint: RM	cat: 81	Rev PM TRP COS V PP
diam: 17.0mm	wt: 2.6g	die axis: 6	wear: W/W
565 TRAJAN	denom: SEST		Obv [IMP CAES NERVAE] TRAIANO AVG GER
			DAC PM TRP
date: 103–17	mint: RM	cat: as 461	Rev –
diam: 34.0mm	wt: 18.4g	die axis: 6	wear: VW/EW
566 TRAJAN	denom: SEST		Obv IMP CAES NER TRAIANO OPTIMO AVG
			GER DAC PARTHICO PM TRP COS VI PP
date: 114–17	mint: RM	cat: 663	Rev PROVIDENTIA AVGVSTI SPQR SC
diam: –	wt: –	die axis: –	wear: UW/UW
567 TRAJAN	denom: SEST		Obv –
date: 97–117	mint: RM	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: C/C
568 TRAJAN	denom: AS		Obv –
date: 97–117	mint: RM	cat: –	Rev –
diam: 26.5mm	wt: 8.1g	die axis: 6?	wear: C/C
569 HADRIAN	denom: AS		Obv –
date: 117–38	mint: RM	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: W/W
570 HADRIAN fragment	denom: SEST		Obv –

	date: 117–38 diam: 28.0mm	mint: RM wt: 12.6g denom: SEST	cat: – die axis: 6	Rev – wear: W/VW Obv –
571 HADRIAN	date: 117–38 diam: 32.0mm	mint: RM wt: 16.5g denom: SEST	cat: – die axis: –	Rev – wear: C/C Obv –
572 HADRIAN	date: 117–38 diam: 31.5mm	mint: RM wt: 22.4g denom: SEST	cat: – die axis: –	Rev – wear: ?W/C Obv –
573 HADRIAN	date: 117–38 diam: 30.0mm	mint: RM wt: 23.0g denom: SEST	cat: – die axis: 6	Rev – wear: EW/EW Obv –
574 HADRIAN	date: 117–38 diam: 33.0mm	mint: RM wt: 14.5g denom: DEN	cat: – die axis: 6	Rev – wear: EW/EW Obv –
575 HADRIAN	date: 117–38 diam: –	mint: RM wt: – denom: AS	cat: – die axis: –	Rev – wear: – Obv –
576 HADRIAN	date: 117–38 diam: 25.5mm	mint: RM wt: 5.8g denom: DP	cat: – die axis: –	Rev – wear: C/C Obv IMP CAESAR TRAIANVS HADRIANVS AVG PM TRP COS III
577 HADRIAN	date: 119–21 diam: 27.0mm	mint: RM wt: 8.5g denom: DP	cat: as 599 die axis: 6	Rev – wear: VW/EW Obv IMP CAESAR TRAIANVS HADRIANVS AVG PM TRP COS III
578 HADRIAN	date: 119–21 diam: 27.0mm	mint: RM wt: 11.9g denom: AS	cat: 597c die axis: 6	Rev [AETERNIT]AS AVGVSTI SC wear: W/VW Obv [HADRIANVS AVGVSTVS]
579 HADRIAN	date: 125–28 diam: 27.0mm	mint: RM wt: 7.6g denom: SEST	cat: as 673 die axis: –	Rev [COS III SC] wear: C/C Obv [HADRIANVS] AVGVSTVS
580 HADRIAN	date: 125–32 diam: 32.0mm	mint: RM wt: 18.8g denom: SEST	cat: – die axis: 12	Rev – wear: ?W/C Obv HADRIANVS AVG COS III P P
581 HADRIAN	date: 134–38 diam: 31.0mm	mint: RM wt: 20.5g denom: DEN	cat: as 760 die axis: 6	Rev [FORTVNA AVG] wear: SW/SW? Obv HADRIANVS AVG COS III PP
582 HADRIAN	date: 134–38 diam: –	mint: RM wt: – denom: DEN	cat: 266 die axis: –	Rev ROMVLO CONDITORI wear: SW/SW Obv HADRIANVS AVG COS III PP
583 HADRIAN	date: 134–38 diam: 18.0mm	mint: RM wt: 2.7g denom: SEST	cat: 268d die axis: 6	Rev SALVS AVG wear: SW/SW Obv IMP T AEL CAES HADRI ANTONINVS AVG PIVS
584 ANTONINUS PIUS	date: 138 diam: 31.0mm	mint: RM wt: 22.5g denom: SEST	cat: 519c die axis: 12	Rev PONT MAX TRPOT COS SC Pax wear: ?SW/W Obv –
585 ANTONINUS PIUS	date: 138–61 diam: 32.0mm	mint: RM wt: 26.0g denom: DEN	cat: – die axis: 12	Rev – wear: C/C Obv –
586 ANTONINUS PIUS	date: 138–61 diam: 18.0mm	mint: RM wt: 2.0g denom: SEST	cat: – die axis: –	Rev – wear: C/C Obv –
587 ANTONINUS PIUS	date: 138–61 diam: 29.0mm	mint: RM wt: 10.1g denom: SEST	cat: – die axis: 12	Rev – wear: C/C Obv –
588 ANTONINUS PIUS	date: 138–61 diam: 31.0mm	mint: RM wt: 16.5g denom: DP	cat: – die axis: 7	Rev – wear: VW/VW Obv –
589 ANTONINUS PIUS	date: 138–61 diam: 24.0mm	mint: RM wt: 5.3g denom: DEN	cat: – die axis: –	Rev – wear: C/C Obv [ANTONINVS AVG PIVS...]
590 ANTONINUS PIUS(?)	date: 138–61? diam: 17.5mm	mint: RM wt: 1.9g denom: AS	cat: as 177 die axis: 6	Rev Aequitas stg. I., holding scales wear: ?SW/SW Obv –
591 ANTONINUS PIUS?				

date: 138–61? diam: 27.0mm	mint: RM wt: 8.1g	cat: – die axis: –	Rev – wear: EW/EW
592 ANTONINUS PIUS date: 139 diam: 18.0mm	denom: DEN mint: RM wt: 2.6g	cat: 17b die axis: 12	Obv [IMP T AEL CAES HADRI ANTONINVS] Rev [AVG PIVS PM TRP COS] II Aequitas wear: W/W
593 ANTONINUS PIUS date: 140–44 diam: 31.0mm	denom: SEST mint: RM wt: 20.7g	cat: 600 die axis: 11	Obv ANTONINVS AVG PIVS PP TRP COS III Rev [CONCORDIA EXERCITVVM] SC wear: VW/VW
594 ANTONINUS PIUS date: 140–44 diam: 34.5mm	denom: SEST mint: RM wt: 25.1g	cat: 636 die axis: 11	Obv ANTONINVS AVG [PIVS PP TR]P COS IIII Rev SALVS AVG SC wear: SW/W
595 ANTONINUS PIUS date: 145–61 diam: 26.5mm	denom: DP mint: RM wt: 12.4g	cat: as 808 die axis: 12	Obv [ANTONINVS] AVG PIVS.... Rev SC wear: W/W
596 ANTONINUS PIUS date: 145–61 diam: 31.5mm	denom: SEST mint: RM wt: 15.8g	cat: 756 die axis: 12	Obv AN[TONINVS AVG PI]VS PP TRP COS IIII Rev [AN]NONA [AVG SC] wear: SW/SW
597 ANTONINUS PIUS date: 145–61 diam: 30.0mm	denom: SEST mint: RM wt: 13.4g	cat: – die axis: 6	Obv [ANTONINVS AVG PIV]S P P TRP COS IIII Rev – wear: VW/C
598 ANTONINUS PIUS date: 150–52 diam: 31.5mm	denom: SEST mint: RM wt: 17.4g	 cat: 871/91 die axis: 6	Obv [IMP CAES T AEL HADR ANTONINVS AVG PIVS P P Rev [TRPOT XIII(or XV) COS IIII] ANNONA AVG [SC] wear: W/W
599 ANTONINUS PIUS date: 151–52 diam: 18.0mm	denom: DEN mint: RM wt: 2.9g	 cat: 216a die axis: 6	Obv IMP CAES T AEL HADR ANTONINVS AVG PIVS PP Rev TR POT XV COS IIII in exergue PAX wear: SW/SW
600 ANTONINUS PIUS date: 153–54 diam: –	denom: SEST mint: RM wt: –	cat: 917 die axis: –	Obv ANTONINVS AVG PIVS PP TRP XVII Rev LIBERTAS COS IIII SC wear: SW/SW
601 ANTONINUS PIUS date: 154–55 diam: 28.0mm	denom: AS mint: RM wt: 11.9g	cat: 934 die axis: 6	Obv ANTONINVS AVG PIVS PP TRP XVIII Rev BRITANN[IA COS IIII SC] wear: ?SW/C
602 ANTONINUS PIUS date: 154–55 diam: 28.0mm	denom: AS mint: RM wt: 9.7g	cat: 934 die axis: 12	Obv ANTONINVS AVG PIVS PP TRP XVIII Rev BRITANNIA COS IIII SC wear: ?W/C
603 ANTONINUS PIUS, POSTH date: 161–80 diam: 17.5mm	denom: DEN mint: RM wt: 2.8g	cat: 441 die axis: 6	Obv DIVVS ANTONI[NVS] Rev DIVO PIO wear: W/W
604 FAUSTINA I, POSTH date: 141–61 diam: 32.5mm	denom: SEST mint: RM wt: 23.7g	cat: A Pius 1108 die axis: 12	Obv [DIVA AVG]VSTA FAVSTINA Rev [AET]ERN[ITAS] SC wear: SW/SW
605 FAUSTINA I, POSTH date: 141–61 diam: 31.0mm	denom: SEST mint: RM wt: 21.6g	cat: as A Pius 1102 die axis: 11	Obv DIVA FAVSTINA Rev [AETERNITAS SC] wear: VW/EW
606 FAUSTINA I, POSTH date: 141–61 diam: 16.5mm	denom: DEN mint: RM wt: 2.9g	cat: A Pius 363 die axis: 5	Obv DIVA FAVSTINA Rev AVGVSTA wear: W/W
607 FAUSTINA I, POSTH date: 141–61 diam: –	denom: SEST mint: RM wt: –	cat: A Pius 1146a die axis: –	Obv DIVA AVGVSTA FAVSTINA Rev PIETAS AVG SC wear: –
608 FAUSTINA II (ANT PIUS) date: 145–46 diam: 27.5mm	denom: DP mint: RM wt: 11.9g	cat: A Pius 1395 die axis: 6	Obv FAVSTINA AVG PII AVG FIL Rev FELICITAS SC wear: W/W
609 FAUSTINA II (ANT PIUS) date: 145–61 diam: 17.5mm	denom: DEN mint: RM wt: 2.4g	cat: A Pius 502a die axis: 6	Obv FAVSTINA AVG PII AVG FIL Rev CONCORDIA wear: SW/W
610 MARCUS AURELIUS, CAESAR date: 158–59 diam: 24.0mm	denom: DP mint: RM wt: 11.7g	cat: A Pius 1351 die axis: 5	Obv AVRELIUS CAESAR AVG PII F Rev TRPOT XIII CO[S II SC] wear: W/W

611 MARCUS AURELIUS	denom: DEN		Obv IMP M AVREL ANTONINVS AVG
date: 161	mint: RM	cat: 3	Rev CONCORD AVG TRP XV COS III
diam: 16.5mm	wt: 2.1g	die axis: 6	wear: ?W/W
612 MARCUS AURELIUS	denom: AS		Obv –
date: 161–80	mint: RM	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
613 MARCUS AURELIUS	denom: SEST		Obv –
date: 161–80	mint: RM	cat: –	Rev –
diam: 30.0mm	wt: 19.3g	die axis: 12	wear: C/C
614 MARCUS AURELIUS	denom: SEST		Obv –
date: 161–80	mint: RM	cat: –	Rev –
diam: 31.5mm	wt: 18.0g	die axis: 5	wear: EW/EW
615 MARCUS AURELIUS	denom: DEN		Obv –
date: 161–80	mint: RM	cat: –	Rev –
diam: 16.5mm	wt: 2.0g	die axis: 7	wear: ?W/W
616 MARCUS AURELIUS	denom: AS		Obv –
date: 161–80	mint: RM	cat: –	Rev –
diam: 27.0mm	wt: 7.3g	die axis: 11?	wear: ?VW/VW
617 MARCUS AURELIUS	denom: SEST		Obv IMP CAES M AVREL ANTONINVS AVG
date: 161–80	mint: RM	cat: as 797	Rev [CONCORD AVGVSTOR TRP XV COS III] SC
diam: 31.5mm	wt: 16.9g	die axis: 11	wear: W/C
618 MARCUS AURELIUS	denom: DEN		Obv [ANTONINVS AVG ARMENIAC]VS
date: 163–64	mint: RM	cat: 92	Rev PM TRP XVIII IMP II COS III
diam: 17.0mm	wt: 2.0g	die axis: 6	wear: W/W
619 MARCUS AURELIUS	denom: SEST		Obv M ANTONINVS AVG.....
date: 163–80	mint: RM	cat: –	Rev –
diam: 30.5mm	wt: 19.3g	die axis: 1	wear: VW/VW
620 MARCUS AURELIUS	denom: SEST		Obv M ANTONINVS ARM PARTH MAX
date: 168	mint: RM	cat: 959	Rev TRPOT XXII IMP V COS III SC
diam: 31.5mm	wt: 14.7g	die axis: 12	wear: W/W
621 MARCUS AURELIUS	denom: SEST		Obv –
date: 170–73	mint: RM	cat: –	Rev –
diam: 31.0mm	wt: 19.3g	die axis: 12	wear: ?SW/C
622 MARCUS AURELIUS	denom: SEST		Obv M ANTONINVS AVG [GERM TRP XXIX]
date: 174–75	mint: RM	cat: 1147	Rev [LIBERALITAS AVG VI] IMP VII [COS III] SC
diam: 31.0mm	wt: 22.2g	die axis: 12	wear: W/VW
623 MARCUS AURELIUS	denom: SEST		Obv M ANTONINVS AVG GERM SARMATICVS
date: 175–76	mint: RM	cat: 1169	Rev TRP XXX IMP VIII COS III SC
diam: –	wt: –	die axis: –	wear: SW/SW
624 LUCIUS VERUS	denom: DEN		Obv IMP L AVREL VERVS AVG
date: 161	mint: RM	cat: 463	Rev PROV DEOR TRP COS II
diam: –	wt: –	die axis: –	wear: SW/SW
625 LUCIUS VERUS	denom: DEN		Obv L VERVS AVG ARM PARTH MAX
date: 167–68	mint: RM	cat: M Aurelius 578	Rev TRP VIII IMP IIII COS III
diam: –	wt: –	die axis: –	wear: –
626 FAUSTINA II (M AURELIUS)	denom: SEST		Obv –
date: 161–80	mint: RM	cat: –	Rev –
diam: 31.0mm	wt: 16.6g	die axis: 7	wear: C/C
627 FAUSTINA II, POSTH	denom: SEST		Obv DIVA [FAVSTINA]
date: 176–80	mint: RM	cat: –	Rev –
diam: 29.0mm	wt: 17.2g	die axis: –	wear: ?W/C
628 FAUSTINA II, POSTH	denom: SEST		Obv DIVA FAV[STINA PIA]
date: 176–80	mint: RM	cat: M Aurelius 1699	Rev [AET]ER[NITAS SC]
diam: 31.0mm	wt: 21.1g	die axis: 6	wear: VW/VW
629 FAUSTINA II, POSTH	denom: SEST		Obv DIVA FAVSTINA PIA
date: 176–80	mint: RM	cat: M Aurelius 1692	Rev AETERNITAS SC
diam: 31.0mm	wt: 12.4g	die axis: 12	wear: W/W
630 FAUSTINA II, POSTH	denom: DEN		Obv DIVA FAVSTINA PIA
date: 176–80	mint: RM	cat: M Aurelius 741	Rev CONSECRATIO
diam: –	wt: –	die axis: –	wear: –
631 COMMODUS	denom: SEST		Obv L AVREL COMMODVS AVG [TRP IIII]
date: 179	mint: RM	cat: M Aurelius 1599	Rev [IMP II COS II PP] SC
diam: 31.0mm	wt: 21.3g	die axis: 5	wear: W/W
632 COMMODUS	denom: SEST		Obv [L AVR]EL COM[MODVS AVG TRP V]
date: 179–80	mint: RM	cat: as 293	Rev –

diam: 29.0mm	wt: 21.7g	die axis: 7	wear: VW/VW
633 COMMODUS	denom: SEST		Obv M COMMODVS ANTONINVS AVG
date: 181	mint: RM	cat: 312	Rev PROV DEOR TRP VI IMP IIII COS III PP SC
diam: –	wt: –	die axis: –	wear: UW/UW
634 COMMODUS	denom: SEST		Obv [M COMMODVS ANTONINVS AVG]
date: 181	mint: RM	cat: 309	Rev LIB AVG IIII SC
diam: 28.5mm	wt: 12.8g	die axis: 6	wear: EW/EW
635 COMMODUS	denom: SEST		Obv [M COMMODVS] ANT [P FELIX AVG BRIT]
date: 186–88	mint: RM	cat: 504/515	Rev [SAL AVG PM TRP XII (or XIII) IMP VIII COS V PP SC]
diam: 29.5mm	wt: 17.8g	die axis: 1	wear: ?W/W
636 COMMODUS	denom: DEN		Obv M COMM ANT P FEL AVG BRIT
date: 188–89	mint: RM	cat: 173	Rev IOV IVVEN PM TRP XIII COS V PP
diam: –	wt: –	die axis: –	wear: –
637 COMMODUS	denom: DEN		Obv M COMM ANT [P FEL AVG] BRIT PP
date: 189–92	mint: RM	cat: as 91	Rev PM TRP...
diam: 17.5mm	wt: 1.7g	die axis: 6	wear: SW/C
638 COMMODUS (pierced)	denom: SEST		Obv M COMM ANT P FELIX AVG BRIT PP
date: 190	mint: RM	cat: 565/6	Rev SAECVLI (or TEMP) FELIC PM TRP XV IMP VIII COS VI SC
diam: 27.0mm	wt: 5.3g	die axis: 12	wear: ?W/C
639 COMMODUS	denom: DEN		Obv M COMM ANT P FEL AVG BRIT PP
date: 190–91	mint: RM	cat: 222a	Rev MIN AVG PM TRP [XVI COS VI]
diam: 17.5mm	wt: 2.0g	die axis: 6	wear: SW/SW
640 COMMODUS	denom: DEN		Obv [L AEL AVREL COMM AVG P FEL]
date: 191–92	mint: RM	cat: 251	Rev HERCVL ROMAN AVGV
diam: –	wt: –	die axis: –	wear: –
641 SEPTIMIUS SEVERUS	denom: DEN		Obv [L SEPT] SEV PER[T AVG IMP IIII]
date: 194–95	mint: RM	cat: 40	Rev [APOLLINI] AVGVSTO
diam: 18.0mm	wt: 2.2g	die axis: 12	wear: W/W
642 SEPTIMIUS SEVERUS	denom: DEN		Obv L SEPT SEV PERT AVG IMP VIII
date: 196–97	mint: LA	cat: 491a	Rev PROVIDENTIA AVG
diam: –	wt: –	die axis: –	wear: SW/SW
643 SEPTIMIUS SEVERUS	denom: DEN		Obv [L SEPT SEV PERT] AVG IMP VIII
date: 196–97	mint: RM	cat: 85	Rev [PM TRP IIII] COS II PP
diam: 17.5mm	wt: 1.9g	die axis: 7	wear: W/W
644 SEPTIMIUS SEVERUS	denom: DEN		Obv [L SEPT SEV PERT] AVG IMP VIII
date: 197	mint: RM	cat: 101	Rev [PM TRP V] COS II P P
diam: 17.0mm	wt: 1.8g	die axis: 6	wear: W/W
645 SEPTIMIUS SEVERUS	denom: DEN		Obv L SEPT SEV AVG IMP XI PART MAX
date: 198–202	mint: LA	cat: 504	Rev COS III PP
diam: 20.5mm	wt: 2.0g	die axis: 6	wear: W/W
646 SEPTIMIUS SEVERUS	denom: DEN		Obv SEVERUS PIUS AVG
date: 201	mint: RM	cat: 176	Rev PART MAX
diam: –	wt: –	die axis: –	wear: SW/SW
647 SEPTIMIUS SEVERUS	denom: DEN		Obv SEVERVS PIVS AVG
date: 201	mint: RM	cat: 176	Rev PART MAX PM TRP VIII
diam: 17.5mm	wt: 1.3g	die axis: 12	wear: W/W
648 ‘SEPTIMIUS SEVERUS’	denom: DENpl		Obv ...SEVERVS...
date: 193+	mint: –	cat: –	Rev –
diam: 18.0mm	wt: 2.0g	die axis: –	wear: ?W/C
649 ‘SEPTIMIUS SEVERUS’	denom: DENpl		Obv –
date: 193+	mint: –	cat: c as 220	Rev –
diam: 15.5mm	wt: 0.7g	die axis: 6	wear: W/W
650 ‘SEPTIMIUS SEVERUS’	denom: DENpl		Obv SEVERVS [PIVS AVG]
date: 193+	mint: –	cat: c as –	Rev –
diam: 18.5mm	wt: 2.6g	die axis: 6	wear: W/W
651 ‘SEPTIMIUS SEVERUS’	denom: DENpl		Obv [L SEPT] SEV PERT [AVG IMP...]
date: 196+	mint: –	cat: c as 79	Rev HERCVL[I DEFENS]
diam: 17.0mm	wt: 2.4g	die axis: 7	wear: SW/W
652 ‘SEPTIMIUS SEVERUS’	denom: DENpl		Obv [L SEPT SEV PERT] AVG IMP VIII
date: 196+	mint: ‘RM’	cat: c of 79	Rev [HER]CVLI DEFENS
diam: 17.0mm	wt: 2.8g	die axis: 7	wear: SW/W
653 JULIA DOMNA	denom: DEN		Obv –
date: 193–211	mint: –	cat: –	Rev –
diam: 17.5mm	wt: 1.1g	die axis: 12?	wear: C/C

654 JULIA DOMNA date: 196–211 diam: 15.5mm	denom: DEN mint: RM wt: 1.6g	cat: Severus 587 die axis: 6	Obv IVLIA [AVGVSTA] Rev [VESTAE] SANCTAE wear: W/W
655 JULIA DOMNA date: 196–211 diam: –	denom: DEN mint: RM wt: –	cat: Severus 559 die axis: –	Obv IVLIA AVGVSTA Rev IVNO wear: –
656 JULIA DOMNA date: 196–211 diam: –	denom: DEN mint: RM wt: –	cat: Severus 551 die axis: –	Obv IVLIA AVGVSTA Rev FELICITAS wear: SW/SW
657 JULIA DOMNA date: 196–211 diam: 18.0mm	denom: DEN mint: RM wt: 2.2g	cat: Severus 561 die axis: 6	Obv IVLIA AVGVSTA Rev LAETITIA wear: W/W
658 JULIA DOMNA date: 196–211 diam: –	denom: DEN mint: RM wt: –	cat: Severus 564 die axis: –	Obv IVLIA AVGVSTA Rev MATER DEVM wear: –
659 JULIA DOMNA date: 196–211 diam: –	denom: DEN mint: RM wt: –	cat: Severus 577 die axis: –	Obv IVLIA AVGVSTA Rev SAECULI FELICITAS wear: –
660 JULIA DOMNA date: 211–17 diam: –	denom: DEN mint: RM wt: –	cat: Severus 373A die axis: –	Obv IVLIA PIA FELIX AVG Rev DIANA LVCIFERA wear: –
661 'JULIA DOMNA' date: 196+ diam: 20.0mm	denom: DENpl mint: 'RM' wt: 2.7g	cat: c as 572 die axis: 12	Obv IVLIA [AVGVSTA] Rev PIETAS AVGG wear: SW/W
662 CARACALLA date: 196 diam: –	denom: DEN mint: RM wt: –	cat: 2 die axis: –	Obv M AVR ANTONINVS CAES Rev SECVRITAS PERPETVA wear: –
663 CARACALLA date: 196 diam: 17.5mm	denom: DEN mint: RM wt: 1.9g	cat: 5 die axis: 6	Obv M AVR ANTONINVS CAES Rev [SP]EI PERPET[VAE] wear: W/W
664 CARACALLA fragments date: 198–217 diam: 19.0mm	denom: DEN mint: RM wt: 1.0g	cat: 324 die axis: 6	Obv ANTONIN[VS PIVS AVG GERM] Rev SALVS [ANTONINI AVG] wear: W/W
665 CARACALLA date: 201–06 diam: –	denom: DEN mint: RM wt: –	cat: 144b die axis: –	Obv ANTONINVS PIVS AVG Rev VICT PART MAX wear: –
666 CARACALLA date: 207 diam: –	denom: DEN mint: RM wt: –	cat: 92 die axis: –	Obv ANTONINVS PIVS AVG Rev PONTIF TRP X COS II wear: SW/SW
667 CARACALLA date: 209–12 diam: 20.0mm	denom: DEN mint: RM wt: 2.5g	cat: 205 die axis: 6	Obv ANTONINVS PIVS AVG Rev VOTA SALVT DEC COS III wear: W/W
668 CARACALLA date: 215 diam: 19.0mm	denom: DEN mint: RM wt: 1.4g	cat: 311b die axis: 12	Obv [ANTONINVS PIVS] AVG GERM Rev [V]ENV[S VI]CT[R]IX wear: W/SW
669 'CARACALLA' date: 198+ diam: 17.0mm	denom: DENp mint: – wt: 1.7g	cat: c as – die axis: 6	Obv [...A]NT....AVG... Rev – wear: W/C
670 'CARACALLA' date: 202+ diam: 19.0mm	denom: DENpl mint: – wt: 2.5g	cat: c as – die axis: 6?	Obv [ANTONINVS] PIVS [AVG] Rev – wear: ?SW/C
671 'CARACALLA' date: 212+ diam: 18.0mm	denom: DENpl mint: – wt: 1.3g	cat: c as 192 die axis: 7	Obv [ANTONINVS PIVS] AVG BRIT Rev [PM TRP X]V COS III PP wear: W/W
672 GETA CAESAR date: 198–200 diam: 18.5mm	denom: DEN mint: RM wt: 1.5g	cat: 3 die axis: 7	Obv P SEPT GETA CAES PONT Rev [SEVERI PII AVG FIL] wear: W/W
673 GETA CAESAR date: 198–200 diam: 19.0mm	denom: DEN mint: RM wt: 2.1g	cat: 2 die axis: 12	Obv L SEPTIMIVS GETA CAES Rev FELICITAS TEMPOR wear: SW/SW
674 GETA CAESAR date: 203–08 diam: 19.0mm	denom: DEN mint: RM wt: 2.8g	cat: 34 die axis: 12	Obv P SEPTIMIVS GETA CAES Rev PONTIF COS wear: SW/SW
675 'GETA CAESAR' date: 200+ diam: 17.0mm	denom: DENpl mint: 'RM' wt: 0.9g	cat: c of 20a die axis: 6	Obv P SEPT GETA CAES PONT Rev SECVRIT IMPERII wear: W/W

676 'MACRINUS'	denom: DENpl		Obv [IMP CM OPEL SEV MACRINVS AVG]
date: 217+	mint: 'RM'	cat: -	Rev -
diam: 18.0mm	wt: 2.1g	die axis: -	wear: C/C
677 ELAGABALUS	denom: DEN		Obv -
date: 218-22	mint: -	cat: -	Rev -
diam: 19.0mm	wt: 1.7g	die axis: 6	wear: W/W
678 ELAGABALUS	denom: DEN		Obv IMP CAES M AVR ANTONINVS AVG
date: 218-22	mint: RM	cat: 139	Rev SALVS ANTONINI AVG
diam: -	wt: -	die axis: -	wear: -
679 ELAGABALUS	denom: DEN		Obv IMP ANTONINVS PIVS AVG
date: 218-22	mint: RM	cat: 88	Rev INVICTVS SACERDOS AVG
diam: -	wt: -	die axis: -	wear: SW/SW
680 ELAGABALUS	denom: DEN		Obv IMP ANTONINVS PIVS AVG
date: 221	mint: RM	cat: 46	Rev PM TRP III COS III PP Emperor stg l., sacrificing
diam: 19.0mm	wt: 1.8g	die axis: 6	wear: W/W
681 JULIA SOAEMIAS	denom: DEN		Obv IVLIA SOAEMIAS AVG
date: 218-22	mint: -	cat: Elagabalus 241	Rev VENVS CAELESTIS
diam: 18.5mm	wt: 2.1g	die axis: 6	wear: SW/SW
682 SEVERUS ALEXANDER	denom: DEN		Obv IMP C M AVR SEV ALEXAND AVG
date: 222-28	mint: RM	cat: 127	Rev AEQUITAS AVG
diam: -	wt: -	die axis: -	wear: -
683 SEVERUS ALEXANDER	denom: ANT		Obv IMP SEV ALEXANDER AVG
date: 222-35	mint: -	cat: -	RevAVG
diam: 18.5mm	wt: 1.7g	die axis: 12	wear: W/W
684 SEVERUS ALEXANDER	denom: DEN?		Obv -
date: 222-35	mint: -	cat: -	Rev -
diam: -	wt: -	die axis: -	wear: SW/SW
685 SEVERUS ALEXANDER	denom: DEN		Obv IMP C M AVR SEV ALEXAND
date: 224	mint: RM	cat: 35	Rev PM TRP III COS PP
diam: -	wt: -	die axis: -	wear: SW/SW
686 SEVERUS ALEXANDER	denom: DEN		Obv IMP C M AVR SEV ALEXAND AVGG
date: 227	mint: RM	cat: 64	Rev PM TRP VI COS II PP
diam: -	wt: -	die axis: -	wear: SW/SW
687 SEVERUS ALEXANDER	denom: DEN		Obv IMP SEV ALEXAND AVG
date: 228-31	mint: RM	cat: 187	Rev ANNONA AVG
diam: 18.0mm	wt: 1.9g	die axis: 6	wear: W/SW
688 SEVERUS ALEXANDER	denom: DEN		Obv IMP SEV ALEXAND AVG
date: 228-31	mint: RM	cat: 196	Rev FORTUNAE REDVCI
diam: 18.0mm	wt: 2.9g	die axis: 1	wear: W/W
689 SEVERUS ALEXANDER	denom: DEN		Obv IMP SEV ALEXAND AVG
date: 230	mint: RM	cat: 101	Rev PM TRP VIII COS III PP
diam: -	wt: -	die axis: -	wear: SW/SW
690 SEVERUS ALEXANDER	denom: DEN		Obv IMP ALEXANDER PIVS AVG
date: 231-35	mint: RM	cat: 250	Rev PROVIDENTIA AVG
diam: -	wt: -	die axis: -	wear: SW/SW
691 SEVERUS ALEXANDER	denom: DEN		Obv IMP SEV ALEXAND AVG
date: 233-35	mint: RM	cat: 169	Rev PERPETVITATI AVG
diam: 20.0mm	wt: 2.6g	die axis: 6	wear: SW/SW
692 'SEVERUS ALEXANDER'	denom: DENpl		Obv
date: 224+	mint: -	cat: c of ?	Rev VESTA
diam: 19.0mm	wt: -	die axis: -	wear: NSU/-
693 JULIA MAMAEA	denom: DEN		Obv IVLIA MAMAEA AVG
date: 222-35	mint: -	cat: Sev Alex. 360	Rev VESTA
diam: 15.5mm	wt: 0.8g	die axis: 7	wear: SW/SW
694 JULIA MAMAEA	denom: DEN		Obv IVLIA MAMAEA AVG
date: 222-35	mint: -	cat: Sev Alex. 335	Rev FELICITAS PVBLICA
diam: 18.5mm	wt: 1.8g	die axis: 1	wear: W/W
695 JULIA MAMAEA	denom: DEN		Obv IVLIA MAMAEA
date: 222-35	mint: -	cat: Sev. Alex. 343	Rev IVNO CONSERVATRIX
diam: 18.5mm	wt: 2.4g	die axis: 1	wear: SW/W
696 MAXIMINUS I	denom: DEN		Obv IMP MAXIMINVS PIVS AVG
date: 236	mint: RM	cat: 3	Rev PM TRP II COS PP
diam: -	wt: -	die axis: -	wear: -
697 PHILIP I	denom: ANT		Obv [IMP M IV]L PHILIPPVS [AVG]
date: 245	mint: RM	cat: 2b	Rev [PM] TRP II C[OS PP]
diam: 22.0mm	wt: 2.4g	die axis: 12	wear: W/W

698 OTACILIA SEVERA	denom: ANT		Obv M OTACIL SEVERA AVG
date: 244–49	mint: –	cat: Philip I 138	Rev AEQUITAS AVGG
diam: 20.5mm	wt: 2.1g	die axis: 12	wear: W/W
699 VALERIAN I	denom: ANT		Obv IMP VALERIAN[VS P F AVG]
date: 253–59	mint: ME	cat: 246	Rev PIETAS A[VGG]
diam: 18.5mm	wt: 1.5g	die axis: 12?	wear: SW/SW
700 VALERIAN I	denom: ANT		Obv [IMP VALERIANVS AVG]
date: 253–59	mint: –	cat: 107	Rev [OR]IEN[S AVGG]
diam: 16.5mm	wt: 1.0g	die axis: 12	wear: W/W
701 VALERIAN I	denom: ANT		Obv –
date: 253–60	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
702 VALERIAN I	denom: ANT		Obv VALER[IANVS] P F AVG
date: 258–59	mint: LG	cat: 12	Rev ORI[ENS AVG]G
diam: 22.0mm	wt: 1.9g	die axis: 12	wear: W/W
703 VALERIAN I	denom: ANT		Obv VALERIANVS P F AVG
date: 258–59	mint: LG	cat: 12	Rev ORIENS AVGG
diam: –	wt: –	die axis: –	wear: –
704 VALERIAN II	denom: ANT		Obv VALERIANVS CAES
date: 253–55	mint: LG	cat: 3	Rev IOVI CRESCENTI
diam: –	wt: –	die axis: –	wear: SW/SW
705 GALLIENUS	denom: ANT		Obv –
date: 253–68	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
706 GALLIENUS	denom: ANT		Obv [..GA]LLIENVS P F AVG
date: 258–68	mint: –	cat: –	Rev –
diam: 20.5mm	wt: 1.6g	die axis: –	wear: ?W/C
707 GALLIENUS	denom: ANT		Obv GALLIENVS AVG
date: 258–68	mint: RM	cat: 160	Rev AETERN[ITAS AVG]
diam: 18.5mm	wt: 1.8g	die axis: 12	wear: W/C
708 GALLIENUS	denom: ANT		Obv GALLIENVS AVG
date: 258–68	mint: RM	cat: 161	Rev ANNONA AVG
diam: –	wt: –	die axis: –	wear: –
709 GALLIENUS	denom: ANT		Obv GALLIENVS AVG
date: 258–68	mint: RM	cat: 157	Rev ABVNDANTIA AVG
diam: –	wt: –	die axis: –	wear: –
710 GALLIENUS	denom: ANT		Obv IMP GALLIENVS AVG
date: 258–68	mint: RM	cat: 287	Rev VBERITAS AVG
diam: –	wt: –	die axis: –	wear: –
711 GALLIENUS	denom: ANT		Obv IMP GALLIENVS AVG
date: 258–68	mint: RM	cat: 287	Rev VBERTAS AVG
diam: –	wt: –	die axis: –	wear: –
712 GALLIENUS	denom: ANT		Obv –
date: 258–68	mint: –	cat: –	Rev –
diam: 19.0mm	wt: 1.3g	die axis: –	wear: C/C
713 GALLIENUS	denom: ANT		Obv IMP GALLIENVS AVG
date: 258–68	mint: RM XI	cat: 213	Rev IOVI PROPVGNAT
diam: –	wt: –	die axis: –	wear: SW/SW
714 GALLIENUS	denom: ANT		Obv GALLIENVS AVG
date: 258–68	mint: RM	cat: 280	Rev SECVRIT PERPET
diam: –	wt: –	die axis: –	wear: SW/SW
715 GALLIENUS	denom: ANT		Obv GALLIENVS AVG
date: 258–68	mint: RM	cat: 157	Rev ABVNDANTIA AVG
diam: –	wt: –	die axis: –	wear: SW/SW
716 SALONINA	denom: ANT		Obv SALONINA AVG
date: 258–68	mint: RM VI	cat: 31	Rev VENVS VICTRIX
diam: 20.5mm	wt: 1.9g	die axis: 6	wear: W/W
717 CLAUDIUS II	denom: ANT		Obv IMP C CLAVDIVS AVG
date: 268–70	mint: RM	cat: –	RevAVG
diam: 18.5mm	wt: 0.7g	die axis: 6	wear: SW/SW
718 CLAUDIUS II	denom: ANT		Obv IMP CLAVDIVS AVG
date: 268–70	mint: RM	cat: 49	Rev GENIVS EXERCI
diam: –	wt: –	die axis: –	wear: –
719 CLAUDIUS II	denom: ANT		Obv IMP CLAVDIVS AVG
date: 268–70	mint: RM	cat: 56	Rev LAETITIA AVG
diam: –	wt: –	die axis: –	wear: –

720 CLAUDIUS II	denom: ANT		Obv IMP CLAVDIVS AVG
date: 268–70	mint: ME P	cat: 144	Rev DIANA LVCIF
diam: 21.0mm	wt: 3.5g	die axis: 6	wear: SW/SW
721 CLAUDIUS II	denom: ANT		Obv [IMP CLAVDIVS AVG]
date: 268–70	mint: RM	cat: 88	Rev PROVID AVG
diam: –	wt: –	die axis: –	wear: –
722 CLAUDIUS II	denom: ANT		Obv [IMP C] CLAVD[IVS AVG]
date: 268–70	mint: –	cat: as 109	Rev [VIRTV]S AVG (struck off-centre)
diam: 20.5mm	wt: 2.2g	die axis: 6	wear: W/W
723 CLAUDIUS II	denom: ANT		Obv IMP C CLAVDIVS P F AVG
date: 268–70	mint: ME –	cat: 167	Rev SALVS AVG
diam: –	wt: –	die axis: –	wear: –
724 CLAUDIUS II	denom: ANT		ObvCLAVD[IVS...]
date: 268–70	mint: –	cat: –	Rev –
diam: 19.0mm	wt: 0.9g	die axis: –	wear: SW/SW
725 CLAUDIUS II	denom: ANT		Obv –
date: 268–70	mint: –	cat: –	Rev –
diam: 17.5mm	wt: 0.6g	die axis: –	wear: SW/C
726 CLAUDIUS II	denom: ANT		Obv IMP CLAVDIVS AVG
date: 268–70	mint: RM	cat: 87	Rev PROVID AVG
diam: –	wt: –	die axis: –	wear: –
727 CLAUDIUS II	denom: ANT		Obv IMP [C] CLAVDIVS AVG
date: 268–70	mint: RM	cat: 91/2	Rev PROVIDENTIA AVG
diam: –	wt: –	die axis: –	wear: –
728 ‘CLAUDIUS II’	denom: ANT		Obv –
date: 268+	mint: –	cat: –	Rev –
diam: 17.5mm	wt: 2.6g	die axis: –	wear: ?W/W
729 CLAUDIUS II, POSTH	denom: ANT		Obv DIVO CLAVDIO
date: 270	mint: –	cat: 261	Rev CONSECRATIO Altar
diam: –	wt: –	die axis: –	wear: –
730 ‘CLAUDIUS II, POSTH’	denom: ANT		Obv [DIVO CLAVDIO]
date: 270+	mint: –	cat: 261	Rev [CONSECRATIO] Altar
diam: 14.5mm	wt: 0.8g	die axis: –	wear: C/W
731 POSTUMUS	denom: ANT		Obv IMP C POSTUMUS P F AVG
date: 260	mint: –	cat: E 129	Rev PM TRP COS II PP
diam: 19.5mm	wt: 1.9g	die axis: 6	wear: SW/W
732 POSTUMUS	denom: ANT		Obv IMP C POSTVMVS P F AVG
date: 260	mint: –	cat: E 123	Rev SALVS PROVINCIARVM
diam: –	wt: –	die axis: –	wear: UW/UW
733 POSTUMUS	denom: ANT		Obv IMP C POSTVMVS P F AVG
date: 260–68	mint: LG	cat: 78	Rev PAX AVG
diam: –	wt: –	die axis: –	wear: –
734 POSTUMUS	denom: ANT		Obv [IMP C POS]TVMVS P F AVG
date: 260–68	mint: LG	cat: 83	Rev [SA]ECVLI FELI[CITAS]
diam: 20.0mm	wt: 1.5g	die axis: 6	wear: SW/SW
735 POSTUMUS	denom: ANT		Obv IMP C POSTVMVS P F AVG
date: 262	mint: –	cat: E 336	Rev MONETA AVG
diam: –	wt: –	die axis: –	wear: –
736 VICTORINUS	denom: ANT		Obv IMP C VICT[ORINVS...AVG]
date: 268–70	mint: –	cat: –	Rev –
diam: 19.0mm	wt: 1.4g	die axis: 6?	wear: SW/C
737 probably VICTORINUS	denom: ANT		Obv –
date: 268–70	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
738 VICTORINUS	denom: ANT		Obv –
date: 268–70	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
739 VICTORINUS	denom: ANT		Obv IMP VICTORINVS P F AVG
date: 268–70	mint: –	cat: 115	Rev ORIENS AVG
diam: –	wt: –	die axis: –	wear: –
740 VICTORINUS	denom: ANT		Obv IMP C VICTORINVS P F AVG
date: 268–70	mint: –	cat: E 744	Rev VICTORIA AVG
diam: –	wt: –	die axis: –	wear: –
741 VICTORINUS	denom: ANT		Obv IMP C VICTORINVS P F AVG
date: 268–70	mint: –	cat: E 732/3	Rev SALVS AVG
diam: –	wt: –	die axis: –	wear: –

742 VICTORINUS date: 268–70 diam: –	denom: ANT mint: – wt: –	cat: E 684 die axis: –	Obv IMP C VICTORINVS P F AVG Rev FIDES MILITVM wear: –
743 VICTORINUS date: 268–70 diam: –	denom: ANT mint: – wt: –	cat: E 682 die axis: –	Obv IMP C VICTORINVS P F AVG Rev PAX AVG wear: SW/SW
744 VICTORINUS date: 268–70 diam: –	denom: ANT mint: – wt: –	cat: E 741 die axis: –	Obv IMP C VICTORINVS P F AVG Rev PIETAS AVG wear: SW/SW
745 'VICTORINUS' date: 270+ diam: 17.5mm	denom: ANT mint: – wt: 1.2g	cat: c as – die axis: 6	Obv IIVIC..... Rev ...OTV...VICT wear: W/W
746 VICTORINUS/ TETRICUS I date: 268–73 diam: 16.0mm	denom: ANT mint: – wt: 0.7g	cat: – die axis: 8?	Obv – Rev – wear: W/C
747 TETRICUS I date: 270–73 diam: –	denom: ANT mint: – wt: –	cat: 82 die axis: –	Obv IMP C T[ETRICVS P F AVG] Rev INVICTVS wear: –
748 TETRICUS I date: 270–73 diam: 18.5mm	denom: ANT mint: – wt: 1.9g	cat: E as 746 die axis: 6	Obv IMP C TETRICVS P F AVG Rev SPES [PVBICA] wear: SW/SW
749 TETRICUS I date: 270–73 diam: –	denom: ANT mint: – wt: –	cat: 109 die axis: –	Obv IMP C [TETRICVS P AVG] Rev PIETAS AVG wear: –
750 TETRICUS I date: 270–73 diam: –	denom: ANT mint: – wt: –	cat: – die axis: –	Obv – Rev – wear: –
751 TETRICUS I date: 270–73 diam: 14.5mm	denom: ANT mint: – wt: 1.3g	cat: as 141 die axis: 12	Obv – Rev [VICTORIA AVG] wear: W/W
752 TETRICUS I date: 270–73 diam: 16.5mm	denom: ANT mint: – wt: 1.7g	cat: as E 769 die axis: 6	Obv – Rev [SPES....] wear: W/W
753 TETRICUS I date: 270–73 diam: –	denom: ANT mint: – wt: –	cat: E 787 die axis: –	Obv IMP T[ETRICVS P F AVG] Rev [LAETITIA AVGG] wear: –
754 TETRICUS I date: 270–73 diam: 18.5mm	denom: ANT mint: – wt: 0.8g	cat: as E 772 die axis: 6?	Obv – Rev SALVS AVG wear: C/SW
755 TETRICUS I date: 270–73 diam: 15.5mm	denom: ANT mint: – wt: 1.3g	cat: E771/5 die axis: 1	Obv – Rev Pax? wear: SW/SW
756 'TETRICUS I' date: 273+ diam: 16.0mm	denom: ANT mint: – wt: 2.0g	cat: c of E 776 die axis: 6	Obv [IMP C TETRICVS P F] AVG Rev [SALVS AVG] wear: W/W
757 'TETRICUS I' date: 273+ diam: 16.0mm	denom: ANT mint: – wt: 2.1g	cat: c of E 788 die axis: –	Obv [IMP TETRICVS P F AVG] Rev [SALVS AVGG] wear: W/W
758 'TETRICUS I' date: 273+ diam: 13.5mm	denom: ANT mint: – wt: 0.6g	cat: c as 110 die axis: 4	Obv Head of Tetricus I Rev [PIETAS AVG..] Pontifical implements wear: SW/W
759 'TETRICUS I' date: 273+ diam: 15.0mm	denom: ANT mint: – wt: 1.7g	cat: c as 100, E771/5 die axis: 6	Obv ...RICVS PVIC Rev ?Pax stg. 1. wear: SW/SW
760 'TETRICUS I' date: 273+ diam: –	denom: ANT mint: – wt: –	cat: c as 100, E771/5 die axis: –	Obv – Rev [PAX AVG] wear: EW/C
761 'TETRICUS I' date: 273+ diam: 15.5mm	denom: ANT mint: – wt: 2.1g	cat: c of 100, E 771/5 die axis: 5	Obv – Rev Pax, hldg vertical sceptre wear: W/W
762 'TETRICUS I' date: 273+ diam: 16.0mm	denom: ANT mint: – wt: 1.4g	cat: c as 110 die axis: 11	Obv Head of Tetricus I Rev Pontifical implements wear: ?W/W
763 TETRICUS II date: 270–73	denom: ANT mint: –	cat: 238	Obv C PIV ESV TETRICVS CAES Rev LAETITIA AVG

diam: –	wt: –	die axis: –	wear: –
764 TETRICUS II	denom: ANT		Obv [C PIV ESV TETRICVS CAES]
date: 270–73	mint: –	cat: E 769	Rev SPES PVBLICA
diam: –	wt: –	die axis: –	wear: –
765 TETRICUS II	denom: ANT		Obv C PIV ES TETRICVS CAES
date: 270–73	mint: –	cat: 264	Rev SALVS AVG
diam: –	wt: –	die axis: –	wear: –
766 TETRICUS II	denom: ANT		Obv –
date: 270–73	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
767 TETRICUS II	denom: ANT		Obv [C PIV] ESV TETR[ICVS CAES]
date: 270–73	mint: –	cat: E 769	Rev SPES [PVBLICA]
diam: 17.0mm	wt: 0.9g	die axis: 6	wear: SW/SW
768 TETRICUS II	denom: ANT		Obv C PIV ESV TETRICVS CAES
date: 270–73	mint: –	cat: E 778	Rev PIETAS AVGVSTOR
diam: –	wt: –	die axis: –	wear: –
769 ‘TETRICUS II’	denom: ANT		Obv [C PIV ES]V TETRICVS [CAES]
date: 273+	mint: –	cat: c as E 778	Rev [PIETAS AVG...] Pontifical implements
diam: 15.0mm	wt: 1.3g	die axis: 3	wear: W/W
770 RADIATE	denom: ANT		Obv –
date: 260–73+	mint: –	cat: –	Rev –
diam: 16.0mm	wt: 1.6g	die axis: 12?	wear: C/C
771 RADIATE	denom: ANT		Obv –
date: 260–73+	mint: –	cat: –	Rev –
diam: 18.5mm	wt: 2.1g	die axis: 12	wear: ?W/W
772 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: –	Rev –
diam: 9.5mm	wt: 0.4g	die axis: –	wear: W/W
773 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: –	Rev –
diam: 10.0mm	wt: 0.5g	die axis: –	wear: C/C
774 RADIATE COPY	denom: ANT		Obv
date: 273+	mint: –	cat: –	Rev –
diam: 12.5mm	wt: 0.7g	die axis: –	wear: C/C
775 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: –	Rev –
diam: 14.0mm	wt: 0.6g	die axis: –	wear: C/C
776 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: –	Rev –
diam: 12.0mm	wt: 0.5g	die axis: –	wear: C/C
777 RADIATE COPY	denom: ANT		Obv –
date: 273+	mint: –	cat: –	Rev –
diam: –	wt: –	die axis: –	wear: –
778 CONSTANTINE I	denom: –		Obv IMP CONSTANTINVS....
date: 313–18	mint: –	cat: as 7LN5	Rev [SOLI INVIC–TO COMITI]
diam: 17.0mm	wt: 0.5g	die axis: –	wear: W/W
779 HOUSE OF CONSTANTINE	denom: –		Obv –
date: 318–19	mint: –	cat: as 7TR209	Rev [VICTORIAE LAETAE PRINC PERP VOT/PR]
diam: 18.5mm	wt: 1.7g	die axis: 6	wear: ?SW/C
780 CONSTANTINE I	denom: –		Obv IMP CONST[ANT]INVS MAX AVG
date: 318–19	mint: –	cat: as 7TR209	Rev VICTORIAE LAETAE PRINC PERP VOT/PR
diam: 18.0mm	wt: 1.6g	die axis: 6	wear: SW/SW
781 CONSTANTINE I	denom: –		Obv IMP CONSTANTINVS AVG
date: 319–20	mint: LN P	cat: 7LN158	Rev VICTORIAE LAETAE PRINC PERP VOT/PR
diam: –	wt: –	die axis: –	wear: SW/SW
782 CONSTANTINE I	denom: –		Obv IMP CONSTANT–[INVS....]
date: 319–20	mint: –	cat: as 7LN154	Rev VIC[TORIA LAETAE] PRINC PERP
diam: 15.5mm	wt: 1.1g	die axis: 6	wear: W/W
783 CONSTANTINE I	denom: –		Obv CONSTAN–TINVS AVG
date: 322–23	mint: LG S	cat: 7LG256	Rev BEATA TRANQUILLITAS VOT/IS/XX
diam: 21.0mm	wt: 1.8g	die axis: 11	wear: W/SW
784 CONSTANTINE I	denom: –		Obv CONST[AN–TIN]VS AVG
date: 323–24	mint: –	cat: as 7LG209	Rev [SARM]AT[IA DE]VI[CTA]
diam: 18.5mm	wt: 1.3g	die axis: 6	wear: UW/UW
785 CONSTANTINE I	denom: –		Obv [CONSTANTINOPOLIS]

date: 330–31 diam: 16.0mm	mint: LG P wt: 1.1g	cat: 7LG241, HK185 die axis: 1	Rev Victory on prow wear: SW/SW
786 CONSTANTINE I date: 330–35 diam: –	denom: – mint: – wt: –	cat: – die axis: –	Obv – Rev [GLORIA EXERCITVS] 2 stds wear: –
787 HOUSE OF CONSTANTINE date: 330–35 diam: 15.5mm	denom: – mint: – wt: 1.3g	cat: – die axis: 6	Obv – Rev [GLORIA EXERCITVS] 2 stds wear: ?SW/SW
788 CONSTANTINE I date: 333 diam: 17.0mm	denom: – mint: AR wt: 1.3g	cat: 7AR373, HK376 die axis: 6	Obv [VRBS-ROMA] Rev Wolf and twins wear: ?W/W
789 ‘CONSTANTINE II, CAESAR’ date: 341–46 diam: 16.0mm	denom: – mint: ‘LG’ ‘P’ wt: 1.6g	cat: c of 7LG238 die axis: 6	Obv CONIIIIIIIIINVZ IVNONC (sic) Rev [GLOR]IA IIXIR-IIVS (sic) PLG wear: W/W
790 CONSTANTINUS II/ CONSTANS date: 348–50? diam: –	denom: – mint: – wt: –	cat: – die axis: –	Obv – Rev ?[FEL TEMP REPARATIO] wear: C/C
791 ILLEGIBLE date: C1–3 diam: –	denom: DEN mint: – wt: –	cat: – die axis: –	Obv – Rev – wear: C/C
792 ILLEGIBLE FRAGS date: C1–3 diam: 17.0mm	denom: DEN mint: – wt: 0.8g	cat: – die axis: –	Obv – Rev – wear: C/C
793 ILLEGIBLE date: C1/2 diam: 24.5mm	denom: AS mint: – wt: 3.5g	cat: – die axis: –	Obv – Rev – wear: C/C
794 ILLEGIBLE date: C1/2 diam: 26.0mm	denom: AS mint: – wt: 5.7g	cat: – die axis: –	Obv – Rev – wear: C/C
795 ILLEGIBLE date: C2/3 diam: –	denom: DEN mint: – wt: –	cat: – die axis: –	Obv – Rev – wear: C/C
796 ILLEGIBLE date: C3/4 diam: 14.5mm	denom: – mint: – wt: 0.8g	cat: – die axis: –	Obv – Rev – wear: C/C
797 ILLEGIBLE FRAG date: C3/4th diam: 10.0mm	denom: – mint: – wt: 0.2g	cat: – die axis: –	Obv – Rev – wear: C/C
798 ILLEGIBLE, NOT A COIN? date: – diam: –	denom: – mint: – wt: 0.8g	cat: – die axis: –	Obv – Rev – wear: –
799 CHARLES I (3rd issue) date: 1642–50 diam: 18.0mm	denom: 2d mint: – wt: 1.2g	cat: – die axis: –	Obv [CAR D G SCOT ANG FRA ET HIB R] Crowned CR, II to r Rev [NEMO ME IMPVNE LACESSIT] Thistle wear: W/W

Housesteads *vicus*: Chapel Hill and *mithraeum*

800 M ANTONIUS date: BC32–31 diam: 18.5mm	denom: DEN mint: – wt: 2.8g	cat: CR 544/8 etc die axis: –	Obv [M ANT] III VIR RPC Galley Rev [LEG ...] wear: EW/EW
801 MARCUS AURELIUS/ COMMODUS date: 161–92 diam: 26.0mm	denom: AS mint: – wt: 7.8g	cat: – die axis: –	Obv Head of Aurelius or Commodus, r Rev – wear: C/C
802 CLODIUS ALBINUS date: 193–95 diam: –	denom: AS mint: LG wt: –	cat: 64 die axis: –	Obv IMP CAE[S D CLO] SEP ALB AVG Rev FORTVN[AE REDVCI COS] II wear: –
803 MARCUS AURELIUS date: 193–211 diam: 30.0mm	denom: SEST mint: – wt: 12.7g	cat: – die axis: –	Obv [IMP CAES M AVR]EL – [ANTONINVS AVG...] Rev – wear: C/C

804 ILLEGIBLE	denom: AS		Obv –
date: C1–3	mint: –	cat: –	Rev –
diam: 25.0mm	wt: 5.0g	die axis: –	wear: C/C
805 FAUSTINA II (M AURELIUS)	denom: AS		Obv [FAVSTI]NA A[VG]VSTA]
date: 161–75	mint: RM	cat: M Aurel as 1639	Rev ?[FECVNDITA]S SC Female fig stg r, both hands raised
diam: 29.5mm	wt: 10.0g	die axis: –	wear: VW/VW
806 COMMODUS	denom: DEN		Obv M COMM ANT P FEL AVG BR[IT] Head laur, r
date: 186/87	mint: RM	cat: 146	Rev [A]VCT PIET PM TRP XII IMP VIII COS V PP Pietas stg. l
diam: –	wt: –	die axis: –	wear: –
807 SEPTIMIUS SEVERUS	denom: SEST		Obv Head laur, r.
date: 193–211	mint: –	cat: 667/672	Rev [...] SC Victory hastening r, hldg wreath and palm
diam: 29.5mm	wt: 25.4g	die axis: 12	wear: VW/VW
808 GETA CAESAR	denom: DEN		Obv P SEPT GETA CAES PONT
date: 200–02	mint: RM	cat: 18	Rev PRINC IVVENTVTIS
diam: –	wt: –	die axis: –	wear: –
809 TRAJAN DECIUS	denom: ANT		Obv IMP TRAIANVS DECIVS AVG
date: 249	mint: RM	cat: 1b	Rev ADVENTVS AVG Decius mounted, l
diam: –	wt: –	die axis: –	wear: –
810 CLAUDIUS II	denom: ANT		Obv I[MP] CL[AVD]IVS [P F] AVG
date: 268–70	mint: ME	cat: 171	Rev VICTO[RIA AVG]
diam: 18.0mm	wt: 1.8g	die axis: 12	wear: SW/SW
811 CLAUDIUS II	denom: ANT		Obv IMP C CLAVDIVS AVG
date: 268–70	mint: RM H	cat: 66	Rev MARS VLTOR Mars walking r
diam: 19.5mm	wt: 1.5g	die axis: 12	wear: W/W
812 CONSTANTINE I	denom: –		Obv [CONSTANTINVS P AVG]
date: 316–17	mint: –	cat: as 7LN92	Rev [SOLI INVIC]–TO COMITI
diam: 16.5mm	wt: 1.4g	die axis: 6	wear: ?W/W
813 VESPASIAN	denom: DEN		Obv IMP CAESAR VESPASIANVS AVG
date: 76	mint: RM –	cat: 87 var COS VII	Rev COS VII Bull butting r
diam: –	wt: –	die axis: –	wear: –
814 JULIA MAMAEA	denom: DEN		Obv IVLIA MAMAEA AVG
date: 222–35	mint: –	cat: Sev Alex 360	Rev VESTA
diam: –	wt: –	die axis: –	wear: –
815 TRAJAN	denom: SEST		Obv [IMP CAES NERVAE TRAIANO AVG GER DAC PM TRP COS V PP]
date: 103–11	mint: RM –	cat: as 478	Rev [SPQR OPTIMO PRINCIPI SC]
diam: 31.0mm	wt: 12.4g	die axis: 6	wear: VW/VW
816 FAUSTINA II, POSTH	denom: DEN		Obv DIVA FAVSTINA PIA
date: 176–80	mint: –	cat: M. Aurelius 744	Rev CONSECRATIO Peacock
diam: –	wt: –	die axis: –	wear: –
817 TETRICUS I'	denom: ANT		Obv MTE...
date: 273+	mint: –	cat: c as E 789	Rev [HILARITAS AVGG]
diam: 16.5mm	wt: 2.0g	die axis: 5	wear: SW/SW

Housesteads fort

No.	find date	site	context	feature	SF no.	store no.	status	reference
1	1978–79	H20	08	063	8383	F.1	P	–
2	1960	H14	–	–	1	F.3	PA	AA4, 39, 1961, 298, no. 1
3	1864	–	Found at Borcovicus	–	–	F.2	PA	AA2, 6, 1865, J Clayton
4	1898	–	–	–	H	F.4	B	–
5	1974–77	H13	02	023	3217	F.8	P	–
6	1978–79	H20	06	074	8502	F.5	P	–
7	1978–79	H20	05	010	5909	F.6	P	–
8	1967–68	H12	03 SE corner, u/s	–	–	F.7	NT	(Not in AA5, 3, 1975)
9	1898	–	–	–	U	F.10	B	–
10	1898	–	–	–	G	F.9	B	–
11	1971	H9	S range, u/s	–	1	F.11	NT	AA5, 4, 1976, 30, no. 1
12	1974–77	H13	10	031	3049	F.12	P	–
13	1981	H15	01	004	9265	F.13	P	–

<i>No.</i>	<i>find date</i>	<i>site</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
14	1898	—	—	—	N	F.14	B	—
15	1970	H9	E range	—	—	F.15	NT	(Not in AA5, 4, 1976)
16	1974–77	H13	01	100	3429	F.16	P	—
17	1967–68	H12	09 latrine drain	—	1	F.17	NT	AA5, 3, 1975, 42, no. 1
18	1898	—	—	—	Q	F.18	B	—
19	1898	—	—	—	K	F.20	B	—
20	1898	—	—	—	I	F.21	B	—
21	1898	—	—	—	20	F.19	B	—
22	1898	H10	12	—	—	F.21a	BA	AA2, 25, 1904, 297
23	1911	H23	latrine pit, on flagged floor	—	—	F.36	PA	Simpson, F, 1976, 138
24	1974–77	H13	09	011	1603	F.31	P	—
25	1971	H9	S wall	—	2	F.34	NT	AA5, 4, 1976, 30, no. 2
26	1898	—	—	—	F	F.35	B	—
27	1898	—	—	—	T	F.39	B	—
28	1898	—	—	—	L	F.37	B	—
29	1959	H14	period 1 below period 2 wall	—	2	F.38	PA	AA4, 38, 1960, 70, no. 2
30	1960	H14	—	—	2	F.32	PA	AA4, 39, 1961, 298, no. 2
31	1898	—	—	—	91	F.33	B	—
32	1898	—	SE III	—	49	F.110	B	—
33	1898	—	—	—	X	F.40	B	—
34	1898	—	—	—	119	F.24	B	—
35	1898	—	—	—	A	F.23	B	—
36	1959	H14	period 1, below stone hearth	—	1	F.25	PA	AA4, 38, 1960, 70, no. 1
37	1974–77	H13	10	000	454	F.27	P	—
38	1898	—	—	—	R	F.26	B	—
39	1898	—	—	—	AI	F.30	B	AA2, 25, 1904, 297
40	1898	—	N central, near boulder	—	69	F.29	B	—
41	1911	H23	latrine pit, on flagged floor	—	—	F.43	PA	Simpson, F, 1976, 138
42	1959	H14	period 1 below period 2 wall	—	3	F.41	PA	AA4, 38, 1960, 70, no. 3
43	1898	—	—	—	61	F.44	B	—
44	1898	—	—	—	M	F.59a	B	—
45	1898	—	—	—	AE	F.45	B	—
46	1959	H14	period 1 below period 2 wall	—	4	F.46	PA	AA4, 38, 1960, 70, no. 4
47	1980–81	H21	02	006	8536	F.47	P	—
48	1980–81	H21	04	036	8654	F.48	P	—
49	1974–77	H13	01	242	9555	F.49	P	—
50	—	H10	u/s	—	—	F.50	*	—
51	—	H—	u/s	—	—	F.59	NT	—
52	1974–77	H13	04	003	486	F.58	P	—
53	1898	—	—	—	Z	F.124	B	—
54	1898	H 1	—	—	—	F.53	BA	AA2, 25, 1904, 297
55	1978–79	H20	08	034	7737	F.55	P	—
56	1969–73	H 9	03 under cobble floor	—	3	F.52	NT	AA5, 4, 1976, 30, no. 3
57	1969–73	H 9	07 below offset course	—	4	F.57	NT	AA5, 4, 1976, 30, no. 4
58	1898	H 6	u/s, in surface soil	—	—	F.53a	BA	AA2, 25, 1904, 297
59	1898	—	—	—	AF	F.51	B	—
60	1898	—	NW III, on paved floor	—	117	F.56	B	—
61	1974–77	H13	11	014	3127	F.54	P	—
62	1962	H14/15	barracks (5.4.1962, J Foster)	—	6?	F.491a	P	—
63	1984	H20	10 berm deposit, period 2	034	20	F.60	C	AA5, 16, 1988, 75
64	1974–77	H13	02	008	2945	F.61	P	—
65	1981	H14	06	004	9501	F.62	P	—
66	1968	H12	08	—	3	F.63	NT	AA5, 3, 1975, 42, no. 3
67	—	H10	u/s	—	—	F.64	*	—
68	1978–79	H20	04	010	5361	F.65	P	—
69	1961	H15	—	—	1	F.69	PA	AA4, 40, 1962, 96, no. 1
70	1968	H12	09 latrine drain	—	5	F.70	NT	AA5, 3, 1975, 42, no. 5
71	1898	H10	12	—	70	F.68	B	AA2, 25, 1904, 298 (probably)
72	1968	H12	09 latrine drain	—	4	F.67	NT	AA5, 3, 1975, 42, no. 4
73	1974–77	H13	07	000	586	F.492	P	—
74	1969–73	H 9	05 below bench level	—	5	F.71	NT	AA5, 4, 1976, 30, no. 5
75	1971	H 9	S range topsoil, W end	—	6	F.78	NT	AA5, 4, 1976, 30, no. 6
76	1974–77	H13	08	000	225	F.72	P	—
77	1898	—	—	—	—	F.73	*	—

<i>No.</i>	<i>find date</i>	<i>site</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
78	—	H—	u/s	—	—	F.74	NT	—
79	1967–68	H12	courtyard on flags	—	2	F.75	NT	AA5, 3, 1975, 42, no. 2
80	1964	—	—	—	—	F.76	NT	—
81	1898	—	—	—	B	F.77	B	—
82	1898	—	—	—	—	F.78a	BA	AA2, 25, 1904, 298
83	1978–79	H20	08	008	8318	F.80	P	—
84	1960	H14	—	—	4	F.82	PA	AA4, 39, 1961, 298, no. 4
85	1968	H12	09 latrine drain	—	7	F.81	NT	AA5, 3, 1975, 42, no. 7
86	1967–68	H12	09 latrine drain	—	6	F.84	NT	AA5, 3, 1975, 42, no. 6
87	1974–77	H13	01	080	3201	F.79	P	—
88	1960	H14	—	—	5	F.86	PA	AA4, 39, 1961, 298, no. 5
89	1898	—	—	—	AB	F.85	B	—
90	1898	—	—	—	AC	F.87	B	—
91	1974–77	H13	04	003	487	F.88	P	—
92	1974–77	H13	10	000	1044	F.89	P	—
93	1974–77	H13	01	059	2723	F.91	P	—
94	1898	—	—	—	P	F.94	B	—
95	1898	—	outside SE tower	—	64	F.92	B	—
96	1974–77	H13	11	014	3457	F.93	P	—
97	1898	—	—	—	D	F.95	B	—
98	1898	H 3	—	—	—	F.95a	BA	AA2, 25, 1904, 298
99	1911	H23	latrine pit 10" above floor	—	—	F.96	PA	Simpson, F, 1976, 138
100	1898	H10	02 at higher floor level	—	—	F.98a	BA	AA2, 25, 1904, 298
101	1978–79	H20	05	030	6238	F.99	P	—
102	1898	—	—	—	V	F.106a	B	—
103	1898	—	—	—	AD	F.102	B	—
104	1984	H20	10 late rampart slump period 3	009	3	F.105	C	AA5, 16, 1988, 75
105	1960	H14	—	—	6	F.106	PA	AA4, 39, 1961, 298, no. 6
106	1974–77	H13	07	016	2224	F.100	P	—
107	1978–79	H20	04	016	6263	F.101	P	—
108	1978–79	H20	05	028	6044	F.103	P	—
109	1898	—	—	—	53	F.108	B	—
110	1984	H20	10 berm deposit, period 3	015	6	F.107	C	AA5, 16, 1988, 75
111	1978–79	H20	07	000	5209	F.109	P	—
112	1974–77	H13	06	005	1041	F.111	P	—
113	1974–77	H13	03	880	9556	F.113	P	—
114	1984	H20	10 late rampart slump period 3	009	4	F.115a	C	AA5, 16, 1988,
115	1898	H10	10 under latest floor	—	—	F.115b	BA	AA2, 25, 1904, 298
116	1978–79	H20	09	001	7485	F.115	P	—
117	1974–77	H13	01	022	1872	F.112	P	—
118	1978–79	H20	06	018	6118	F.116	P	—
119	1969–73	H 9	12 in drain	—	7	F.118	NT	AA5, 4, 1976, 30, no. 7
120	1968	H12	08 latrine fill	—	8	F.119	NT	AA5, 3, 1975, 42, no. 8
121	1980–81	H21	04	053	9523	F.122	P	—
122	1959	H14	period 2 below period 3 bench	—	7	F.120	PA	AA4, 38, 1960, 70, no. 7
123	1981	H14	03	001	9281	F.121	P	—
124	1974–77	H13	06	005	1091	F.123	P	—
125	1898	H15	—	—	—	F.125b	BA	AA2, 25, 1904, 298
126	1898	H15	—	—	19	F.125	B	—
127	1898	H16	—	—	—	F.125a	BA	AA2, 25, 1904, 298
128	1980–81	H21	03	047	8671	F.126	P	—
129	1978–79	H20	01	002	5885	F.497	P	—
130	1961	H15	—	—	2	F.127	PA	AA4, 40, 1962, 96, no. 2
131	1898	—	NE above drain N of cistern	—	44	F.129	B	AA2, 25, 1904, 298
132	1898	—	—	—	60	F.132	B	AA2, 25, 1904, 298
133	1981	HSE	01	024	9098	F.130	P	—
134	1898	—	Filling in	—	43	F.131	B	AA2, 25, 1904, 298
135	1981	HSE	01	031	9299	F.128	P	—
136	1981	HSE	01	024	8901	F.133	P	—
137	1898	—	—	—	73	F.134	B	AA2, 25, 1904, 298
138	1969–73	H 9	E range, u/s	—	8	F.135	NT	AA5, 4, 1976, 30, no. 8
139	1978–79	H20	03	000	5046	F.136	P	—
140	1898	—	—	—	W	F.136a	B	—
141	1898	—	—	—	26	F.451	B	—

<i>No.</i>	<i>find date</i>	<i>site</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
142	1980–81	H21	03	001	8538	F.137	P	–
143	1960	H14	beneath period 3 floor	–	8	F.143	PA	AA4, 39, 1961, 298, no. 8
144	1980–81	H21	03	047	8655	F.142	P	–
145	1898	–	–	–	81	F.139	B	AA2, 25, 1904, 298
146	1974–77	H13	11	014	3461	F.145	P	–
147	1978–79	H20	04	010	6113	F.141	P	–
148	1980–81	H21	04	004	8558	F.149	P	–
149	1898	–	filling in	–	29	F.138	B	AA2, 25, 1904, 298
150	1974–77	H13	01	000	35	F.140	P	–
151	1980–81	H21	04	004	8557	F.146	P	–
152	1981	HSE	01	029	9246	F.147	P	–
153	1974–77	H13	11	000	2698	F.148	P	–
154	1959	H14	period 3 in clay below flag	–	15	F.151	PA	AA4, 38, 1960, 71, no. 15
155	1980–81	H21	04	009	8632	F.150	P	–
156	1898	–	–	–	0	F.153	B	–
157	1960	H14	–	–	7	F.152	PA	AA4, 39, 1961, 298, no. 7
158	1981	HSE	01	029	9256	F.158	P	–
159	1974–77	H13	11	000	2699	F.154	P	–
160	1974–77	H13	07	001	1235	F.155	P	–
161	1974–77	H13	07	001	1424	F.156	P	–
162	1980–81	H21	04	053	9525	F.157	P	–
163	1980–81	H21	04	053	9526	F.163	P	–
164	1974–77	H13	09	003	416	F.160	P	–
165	1974–77	H13	11	000	2927	F.161	P	–
166	1981	H15	01	001	8947	F.165a	P	–
167	1974–77	H13	09	003	1601	F.159	P	–
168	1974–77	H13	11	014	3202	F.165	P	–
169	1974–77	H13	11	014	3455	F.162	P	–
170	1981	HSE	01	027	9212	F.165b	Absent	–
171	1981	HSE	01	012	9239	F.166	P	–
172	1978–79	H20	08	001	6961	F.167	P	–
173	1978–79	H20	08	017	7163	F.168	P	–
174	1980–81	H21	04	053	9524	F.169	P	–
175	1974–77	H13	11	001	2696	F.171	P	–
176	1978–79	H20	09	003	7309	F.172	P	–
177	1978–79	H20	02	000	4217	F.170	P	–
178	1978–79	H20	03	020	6045	F.532	P	–
179	1981	HSE	01	033	9522	F.173	P	–
180	1898	–	filling in	–	34	F.174	B	AA2, 25, 1904, 298
181	1974–77	H13	11	014	3459	F.175	P	–
182	1974–77	H13	00	000	702	F.315	P	–
183	1981	HSE	01	024	8902	F.197	P	–
184	1974–77	H13	11	014	3451	F.199	P	–
185	1898	–	NW III S wall	–	62b	F.188	B	–
186	1974–77	H13	11	014	3452	F.203	P	–
187	1969–73	H 9	SE corner, u/s	–	9	F.198	NT	AA5, 4, 1976, 30, no. 9
188	1963	H23	latrines	–	23	F.190	NT	–
189	1974–77	H13	11	014	3142	F.200	P	–
190	1974–77	H13	11	014	3511	F.193	P	–
191	1974–77	H13	01	039	3123	F.194	P	–
192	1984	H20	10 late rampart slump period 3	009	5	F.229a	C	AA5, 16, 1988, 75
193	1898	–	–	–	78	F.187	B	–
194	1898	–	–	–	95	F.210	B	–
195	1980–81	H21	04	054	9527	F.229	P	–
196	1898	–	–	–	71	F.195	B	–
197	1864	–	found at Borcovicus	–	–	F.291	PA	AA2, 6, 1865, J Clayton
198	1898	–	–	–	108	F.196	B	–
199	1967	H12	–	–	–	F.209	NT	(Not in AA5, 3, 1975)
200	1984	H20	10 berm deposit, period 3	028	8	F.229b	C	AA5, 16, 1988, 75
201	1898	–	–	–	111	F.244	B	–
202	1969	H 9	topsoil	–	10	F.208	NT	AA5, 4, 1976, 30, no. 10
203	1898	–	–	–	68	F.219	B	–
204	1898	–	filling in	–	32	F.235	B	–
205	1981	HSE	01	024	8900	F.222	P	–

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206	1974–81	H –	casual find	–	9253	F.221	P	–
207	1898	–	–	–	25	F.201	B	–
208	1898	–	–	–	55	F.192	B	–
209	1981	HSE	01	029	9249	F.220	P	–
210	1898	–	–	–	79	F.211	B	–
211	1981	HSE	01	029	9251	F.228	P	–
212	1974–77	H13	11	014	3148	F.212	P	–
213	1980–81	H21	03	–	8542	F.225	P	–
214	1898	–	–	–	115	F.191	B	–
215	1898	–	–	–	88	F.204	B	–
216	1981	HSE	01	016	9516	F.227	P	–
217	1931	H23/24	longhouse N of S gate, E end	–	153	F.218	P	–
218	1980–81	H21	03	018	8673	F.224	P	–
219	1974–77	H13	11	014	3456	F.214	P	–
220	1981	HSE	01	016	9518	F.223	P	–
221	1898	–	–	–	59a	F.216	B	–
222	1931	H23/24	longhouse N of S gate	–	135	F.217	*	–
223	1980–81	H21	03	–	8537	F.202	P	–
224	1981	HSE	01	033	9530	F.231	P	–
225	1959	H14	central third	–	8	F.232	PA	AA4, 38, 1960, 70, no. 8
226	1898	–	–	–	30	F.233	B	–
227	1974–77	H13	07	001	1476	F.234	P	–
228	1974–77	H13	09	000	277	F.230	P	–
229	1974–77	H13	01	006	1757	F.242	P	–
230	1981	HSE	01	030	9259	F.255	P	–
231	1981	HSE	01	024	8905	F.240	P	–
232	1981	HSE	01	031	9298	F.254	P	–
233	1981	HSE	01	033	9521	F.253	P	–
234	1981	HSE	01	016	9519	F.245	P	–
235	1978–79	H20	02	000	4219	F.243	P	–
236	1980–81	H21	03	047	8598	F.250	P	–
237	1898	–	–	–	80	F.237	B	–
238	1980–81	H21	03	041	8670	F.249	P	–
239	1974–77	H13	11	014	3453	F.236	P	–
240	1980–81	H21	03	018	8597	F.252	P	–
241	1974–77	H13	01	046	2686	F.238	P	–
242	1974–77	H13	11	014	3454	F.239	P	–
243	1974–77	H13	07	001	1478	F.241	P	–
244	1981	H15	01	006	9060	F.248	P	–
245	1981	HSE	01	027	9200	F.246	P	–
246	1981	HSE	01	012	9240	F.181	P	–
247	1981	HSE	01	026	9199	F.180	P	–
248	1978–79	H20	04	010	4046	F.179	P	–
249	1980–81	H21	03	018	8672	F.184	P	–
250	1898	–	–	–	84	F.185	B	–
251	1981	HSE	01	024	8904	F.182	P	–
252	1961	H15	–	–	4	F.264	PA	AA4, 40, 1962, 96, no. 4
253	1974–77	H13	07	001	1468	F.176	P	–
254	1961	H15	Phase 3 drain (S)	–	3	F.189	PA	AA4, 40, 1962, 96, no. 3
255	1898	–	–	–	102	F.530	B	–
256	1974–77	H13	06	001	20	F.177	P	–
257	1981	HSE	01	–	9097	F.183	P	–
258	1974–77	H13	08	002	243	F.178	P	–
259	1959	H14	central third	–	14	F.493	PA	AA4, 38, 1960, 71, no. 14
260	1960	H14	–	–	11	F.494	PA	AA4, 39, 1961, 298, no. 11
261	1959	H14	central third	–	9	F.478	PA	AA4, 38, 1960, 70, no. 9
262	1959	H14	central third	–	19	F.495	PA	AA4, 38, 1960, 71, no. 19
263	1959	H14	central third	–	20	F.496	PA	AA4, 38, 1960, 71, no. 20
264	1898	–	–	–	100	F.529	B	–
265	1898	–	–	–	98	F.518	B	–
266	1974–77	H13	11	014	3366	F.516	P	–
267	1898	–	–	–	75	F.213	B	–
268	1959	H14	period 3 in clay below flag	–	12	F.258	PA	AA4, 38, 1960, 71, no. 12
269	1967–68	H12	05 hypocaust fill	–	10	F.206	NT	AA5, 3, 1975, 42, no. 10

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270	1898	—	—	—	86	F.207	B	—
271	1898	—	NW III S wall	—	62a	F.186	B	—
272	1898	—	—	—	85	F.205	B	—
273	1959	H14	period 3 in clay below flag	—	17	F.259	PA	AA4, 38, 1960, 71, no. 17
274	1959	H14	period 3 in clay below flag	—	11	F.260	PA	AA4, 38, 1960, 71, no. 11
275	1959	H14	period 3 in clay below flag	—	13	F.261	PA	AA4, 38, 1960, 71, no. 13
276	1959	H14	central third	—	16	F.262	PA	AA4, 38, 1960, 71, no. 16
277	1959	H14	period 3 in clay below flag	—	18	F.263	PA	AA4, 38, 1960, 71, no. 18
278	1961	H15	—	—	13	F.273	PA	AA4, 40, 1962, 96, no. 13
279	1961	H15	—	—	17	F.277	PA	AA4, 40, 1962, 96, no. 17
280	1959	H14	period 3 in clay below flag	—	10	F.257	PA	AA4, 38, 1960, 71, no. 10
281	1898	—	—	—	110	F.279	B	—
282	1961	H15	—	—	5	F.265	PA	AA4, 40, 1962, 96, no. 5
283	1978–79	H20	09	001	7214	F.281	P	—
284	1961	H15	—	—	7	F.267	PA	AA4, 40, 1962, 96, no. 7
285	1961	H15	—	—	19	F.282	PA	AA4, 40, 1962, 96, no. 19
286	1898	—	—	—	48	F.215	B	—
287	1961	H15	—	—	18	F.278	PA	AA4, 40, 1962, 96, no. 18
288	1961	H15	—	—	11	F.271	PA	AA4, 40, 1962, 96, no. 11
289	1961	H15	—	—	10	F.270	PA	AA4, 40, 1962, 96, no. 10
290	1974–77	H13	11	014	3460	F.283	P	—
291	1961	H15	—	—	20	F.284	PA	AA4, 40, 1962, 96, no. 20
292	1961	H15	—	—	6	F.266	PA	AA4, 40, 1962, 96, no. 6
293	1978–79	H20	08	036	7775	F.285	P	—
294	1961	H15	—	—	15	F.275	PA	AA4, 40, 1962, 96, no. 15
295	1961	H15	—	—	14	F.274	PA	AA4, 40, 1962, 96, no. 14
296	1961	H15	—	—	16	F.276	PA	AA4, 40, 1962, 96, no. 16
297	1961	H15	—	—	8	F.268	PA	AA4, 40, 1962, 96, no. 8
298	1961	H15	—	—	12	F.272	PA	AA4, 40, 1962, 96, no. 12
299	1931	H23/24	longhouse N of S gate	—	150	F.286	P	—
300	1980–81	H21	03	001	8583	F.301	P	—
301	1974–77	H13	00	001	1170	F.318	P	—
302	1974–77	H13	01	000	24	F.289	P	—
303	1961	H15	—	—	21	F.288	PA	AA4, 40, 1962, 96, no. 21
304	1898	—	—	—	103	F.447	B	—
305	1961	H15	—	—	22	F.290	PA	AA4, 40, 1962, 96, no. 22
306	1961	H15	—	—	23	F.292	PA	AA4, 40, 1962, 96, no. 23
307	1980–81	H21	03	018	8674	F.303	P	—
308	1961	H15	—	—	25	F.296	PA	AA4, 40, 1962, 96, no. 25
309	1961	H15	—	—	26	F.304	PA	AA4, 40, 1962, 96, no. 26
310	1898	—	—	—	93	F.298	B	—
311	1980–81	H21	01	009	8605	F.305	P	—
312	1898	—	—	—	AAa	F.300	B	—
313	1961	H15	—	—	27	F.306	PA	AA4, 40, 1962, 96, no. 27
314	1898	—	—	—	AAb	F.302	B	—
315	1961	H15	—	—	28	F.307	PA	AA4, 40, 1962, 96, no. 28
316	1981	HSE	01	024	8903	F.295	P	—
317	1961	H15	—	—	29	F.308	PA	AA4, 40, 1962, 96, no. 29
318	1974–77	H13	04	006	55	F.287	P	—
319	1961	H15	—	—	30	F.309	PA	AA4, 40, 1962, 96, no. 30
320	1961	H15	—	—	9	F.269	PA	AA4, 40, 1962, 96, no. 9
321	1981	H15	01	001	9262	F.299	P	—
322	1961	H15	—	—	24	F.294	PA	AA4, 40, 1962, 96, no. 24
323	1981	HSE	01	024	8899	F.297	P	—
324	1961	H15	—	—	32	F.311	PA	AA4, 40, 1962, 96, no. 32
325	1961	H15	—	—	33	F.312	PA	AA4, 40, 1962, 96, no. 33
326	1961	H15	—	—	34	F.313	PA	AA4, 40, 1962, 96, no. 34
327	1961	H15	—	—	35	F.314	PA	AA4, 40, 1962, 96, no. 35
328	1974–77	H13	00	001	1045	F.256	P	—
329	1898	—	—	—	82	F.316	B	—
330	1978–79	H20	08	001	8525	F.317	P	—
331	1981	HSE	01	026	9198	F.293	P	—
332	1961	H15	—	—	31	F.310	PA	AA4, 40, 1962, 96, no. 31
333	1967–68	H1	05 hypocaust fill	—	9	F.320	NT	AA5, 3, 1975, 42, no. 9

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334	1967–68	H 1	02 at higher floor level	–	–	F.320a	BA	AA2, 25, 1904, 298
335	1898	–	–	–	51	F.322	B	AA2, 25, 1904, 298
336	1974–77	H13	11	014	3479	F.323	P	–
337	1974–77	H13	06	001	86	F.324	P	–
338	1974–77	H13	09	000	184	F.325	P	–
339	1898	–	–	–	74	F.326	B	AA2, 25, 1904, 298
340	1898	H 1	01	–	24	F.327	B	AA2, 25, 1904, 298
341	1974–77	H13	00	000	582	F.328	P	–
342	1960	H14	–	–	9	F.329	PA	AA4, 39, 1961, 298, no. 9
343	1960	H14	–	–	10	F.330	PA	AA4, 39, 1961, 298, no. 10
344	1972	H 9	W wall (disturbed)	–	–	F.331	NT	(Not in AA5, 4, 1976)
345	1898	H13	–	–	–	F.333a	BA	AA2, 25, 1904, 298
346	1898	H16	–	–	–	F.333b	BA	AA2, 25, 1904, 298
347	1974–77	H13	07	001	1236	F.332	P	–
348	1898	H10	11	–	21	F.333	B	–
349	1969–73	H 9	W range in S wall of lobby	–	11	F.337	NT	AA5, 4, 1976, 30, no. 11
350	1960	H14	–	–	13	F.338	PA	AA4, 39, 1961, 298, no. 13
351	1981	HSE	01	016	9520	F.339	P	–
352	1974–77	H13	09	000	1612	F.342	P	–
353	1960	H14	–	–	2	F.340	PA	AA4, 39, 1961, 298, no. 12
354	1981	HSE	01	029	9258	F.343	P	–
355	1898	H14/15	between blocks 14 and 15	–	–	F.344	BA	AA2, 25, 1904, 298
356	1898	–	–	–	123	F.397	B	–
357	1898	–	–	–	AJ	F.345	B	AA2, 25, 1904, 298
358	1981	HSE	01	016	9517	F.346	P	–
359	1898	–	–	–	104	F.347	B	AA2, 25, 1904, 298
360	1968	H12	05 hypocaust fill	–	11	F.348	NT	AA5, 3, 1975, 42, no. 11
361	1931–33	H –	u/s	–	–	F.350	M	–
362	1898	–	–	–	J	F.349	B	AA2, 25, 1904, 298
363	1898	–	–	–	–	F.351	BA	AA2, 25, 1904, 298 (probably)
364	1960	H14	–	–	14	F.353	PA	AA4, 39, 1961, 299, no. 14
365	1898	–	–	–	S	F.356	B	AA2, 25, 1904, 298
366	1973	H 9	W range topsoil	–	12	F.355	NT	AA5, 4, 1976, 30, no. 12
367	1967–68	H12	–	–	12	F.354	NT	AA5, 3, 1975, 42, no. 12
368	1980–81	H21	03	001	8539	F.357	P	–
369	1981	HSE	01	029	9244	F.358	P	–
370	1980–81	H21	03	019	8566	F.359	P	–
371	1972	H 9	W wall (disturbed)	–	–	F.360	NT	(Not in AA5, 4, 1976)
372	1981	HSE	01	033	9531	F.364	P	–
373	1974–77	H13	11	001	2689	F.363	P	–
374	1981	HSE	01	012	9096	F.362	P	–
375	1961	H15	–	–	39	F.367	PA	AA4, 40, 1962, no. 39
376	1898	–	filling in	–	45	F.370	B	AA2, 25, 1904, 298
377	1980–81	H21	03	001	8585	F.369	P	–
378	1974–81	H –	u/s, on spoil tip	–	9557	F.368	P	–
379	1978–79	H20	04	011	5389	F.365	P	–
380	1974–77	H13	06	005	1043	F.449	P	–
381	1967–68	H12	05 hypocaust fill	–	15	F.366	NT	AA5, 3, 1975, 42, no. 15
382	1898	–	–	–	45b	F.371	B	AA2, 25, 1904, 298
383	1974–77	H13	11	014	3216	F.372	P	–
384	1981	HSE	01	029	9248	F.373	P	–
385	–	H –	u/s	–	–	F.374	NT	–
386	1898	–	–	–	56b	F.376	B	AA2, 25, 1904, 298
387	1898	–	–	–	77	F.375	B	AA2, 25, 1904, 298
388	1972	H 9	13 S end under latest floor	–	14	F.377	NT	AA5, 4, 1976, 30, no. 14
389	1961	H15	–	–	40	F.379	PA	AA4, 40, 1962, 96, no. 40
390	1980–81	H21	03	019	8573	F.380	P	–
391	1960	H14	–	–	17	F.378	PA	AA4, 39, 1961, 299, no. 17
392	1898	–	–	–	22	F.381	B	AA2, 25, 1904, 298
393	1963	H23	latrines	–	29	F.382	NT	–
394	1981	HSE	01 with bronze ring	029	9247	F.384	P	–
395	1898	–	SW III	–	118	F.383	B	–
396	1978–79	H20	09	001	7310	F.385	P	–
397	1981	HSE	01	029	9241	F.386	P	–

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398	1898	—	—	—	120	F.387	B	—
399	1981	HSE	01	031	9297	F.388	P	—
400	1898	—	—	—	27	F.389	B	—
401	1898	—	— (corroded to SF 23b)	—	23a	F.390a	B	AA2, 25, 1904, 298
402	1898	H10	by southern base	—	67	F.474	B	—
403	1981	H15	01	002	9266	F.391	P	—
404	1984	H20	10	u/s	2	F.392	C	AA5, 16, 1988, 75
405	1898	—	—	—	96	F.393	B	—
406	1961	H15	—	—	36	F.394	PA	AA4, 40, 1962, 96, no. 36
407	1967–68	H12	N of S hypocaust	—	24	F.395	NT	AA5, 3, 1975, 42, no. 13
408	1960	H14	—	—	16	F.396	PA	AA4, 39, 1961, 299, no. 16
409	1898	—	—	—	AG	F.398	B	—
410	1898	—	—	—	72	F.399	B	—
411	1987	H 8	granaries, surface	—	—	F.361	*	—
412	1981	HSE	01	032	9558	F.399a	P	—
413	1972	H 9	outside W wall	—	13	F.400	NT	AA5, 4, 1976, 30, no. 13
414	1961	H15	—	—	37	F.401	PA	AA4, 40, 1962, 96, no. 37
415	1961	H15	—	—	38	F.402	PA	AA4, 40, 1962, 96, no. 38
416	1980–81	H21	04	002	8633	F.403	P	—
417	1898	—	SE II	—	37	F.404	B	—
418	1967–68	H12	05 hypocaust fill	—	14	F.405	NT	AA5, 3, 1975, 42, no. 14
419	1980–81	H21	03	018	8669	F.406	P	—
420	1898	—	drain under central road	—	40	F.407	B	—
421	1974–77	H13	00	001	1164	F.408	P	—
422	1981	HSE	01	029	9243	F.409	P	—
423	1898	—	filling in	—	50	F.436	B	—
424	1898	—	—	—	59b	F.410	B	—
425	1898	—	—	—	83	F.411	B	—
426	—	H —	u/s	—	—	F.413	*	—
427	1981	HSE	01	029	9245	F.414	P	—
428	1931	H 8	South granary	—	196	F.416	P	—
429	1898	—	—	—	114	F.415	B	—
430	1898	H 9	drain south of H 9	—	76	F.460	B	AA2, 25, 1904, 298 ('Decentius')
431	1898	—	—	—	52	F.417	B	AA2, 25, 1904, 298
432	1981	HSE	01	—	9213	F.419	P	—
433	1898	—	—	—	57	F.420	B	—
434	1898	—	—	—	106	F.421	B	—
435	—	H—	u/s	—	—	F.422	*	—
436	1967–68	H12	rubble over W wall	—	16	F.423	NT	AA5, 3, 1975, 42, no. 16
437	1898	—	filling in	—	33	F.432	B	—
438	1967–68	H12	05 hypocaust fill	—	20	F.427	NT	AA5, 3, 1975, 42, no. 20
439	1967–68	H12	11 (top room)	—	21	F.426	NT	AA5, 3, 1975, 42, no. 21
440	1898	—	—	—	39	F.431	B	—
441	1967–68	H12	W range	—	22	F.429	NT	AA5, 3, 1975, 42, no. 22
442	1967–68	H12	in consolidation	—	19	F.428	NT	AA5, 3, 1975, 42, no. 19
443	1898	—	—	—	36	F.425	B	—
444	1898	—	—	—	56a	F.424	B	—
445	1898	—	—	—	122	F.430	B	—
446	1974–77	H13	08	000	283c	F.435a	Absent	—
447	1974–77	H13	08	000	283a	F.434	P	—
448	1974–77	H13	08	000	283b	F.435	P	—
449	1963	H23	latrines	—	28	F.418	NT	—
450	1898	—	—	—	42	F.437	B	—
451	1968	H12	05 hypocaust fill	—	17	F.412	NT	AA5, 3, 1975, 42, no. 17
452	1980–81	H21	03	001	8586	F.439	P	—
453	1898	—	filling in	—	47	F.438	B	—
454	1974–77	H13	09	013	2679	F.440	P	—
455	—	H —	u/s	—	—	F.441	*	—
456	1974–77	H13	05	000	3618	F.444	P	—
457	1898	—	—	—	113	F.442	B	—
458	1898	—	—	—	87	F.443	B	—
459	1981	HSE	01	012	9238	F.450	P	—
460	1960	H14	—	—	18	F.445	PA	AA4, 39, 1961, 299, no. 18
461	1968	H12	05 hypocaust fill	—	18	F.446	NT	AA5, 3, 1975, 42, no. 18

<i>No.</i>	<i>find date</i>	<i>site</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
462	1931–33	—	—	—	—	F.446a	M	—
463	1974–77	H13	08?	—	286	F.435b	Absent	—
464	1974–77	H13	03	000	47	F.433	P	—
465	1960	H14	—	—	15	F.448	PA	AA4, 39, 1961, 299, no. 15
466	1898	—	— (corroded to SF 23a)	—	23b	F.390b	B	AA2, 25, 1904, 298
467	1981	HSE	01	029	9248	F.454	*	—
468	1898	—	SE: great tank	—	63	F.512	B	—
469	1980–81	H21	03	001	8600	F.164	P	—
470	1898	—	—	—	AAc	F.452	B	—
471	1898	—	—	—	97	F.455a	B	—
472	1898	—	—	—	101	F.455	B	—
473	1974–77	H13	00	001	1047	F.456	P	—
474	1969–73	H 9	02 in W wall	—	15	F.457	NT	AA5, 4, 1976, 30, no. 15
475	1960	H14	—	—	19	F.458	PA	AA4, 39, 1961, 299, no. 19
476	1981	HSE	01	012	9257	F.459	P	—
477	1898	—	—	—	—	F.461	*	—
478	1898	—	—	—	54	F.463	B	AA2, 25, 1904, 298
479	1967–68	H12	05 hypocaust fill	—	23	F.464	NT	AA5, 3, 1975, 42, no. 23
480	1898	—	—	—	31	F.466	B	AA2, 25, 1904, 298
481	1967	H12	—	—	—	F.462	NT	(Not in AA5, 3, 1975)
482	1898	—	—	—	41	F.465	B	AA2, 25, 1904, 298
483	1959	H14	central third	—	21	F.467	PA	AA4, 38, 1960, 71, no. 21
484	1967–68	H12	18 SW corner	—	26	F.468	NT	AA5, 3, 1975, 42, no. 26
485	1967	H12	—	—	—	F.473	NT	(Not in AA5, 3, 1975)
486	1967–68	H12	courtyard rubble E	—	25	F.469	NT	AA5, 3, 1975, 42, no. 25
487	1960	H14	—	—	20	F.470	PA	AA4, 39, 1961, 299, no. 20
488	1898	—	—	—	46	F.472	B	—
489	1898	—	—	—	112	F.475	B	—
490	1967–68	H12	05 hypocaust fill	—	24	F.476	NT	AA5, 3, 1975, 42, no. 24
491	1898	—	—	—	121	F.477	B	—
492	1974	—	—	—	93	F.471	NT	—
493	1960	H14	—	—	2	F.479	PA	AA4, 39, 1961, 298, no. 2
494	1974–77	H13	10	000	1411	F.479a	P	—
495	1898	—	—	—	94	F.486	B	—
496	1898	—	—	—	C	F.487	B	—
497	1974–77	H13	05	052	2953	F.488	P	—
498	1898	—	—	—	E	F.489	B	—
499	1978–79	H20	07	000	5787	F.489a	P	—
500	1898	—	—	—	Y	F.480	B	—
501	1898	—	—	—	90	F.483	B	—
502	1959	H14	period 1 below period 2 wall	—	6	F.482	PA	AA4, 38, 1960, 70, no. 6
503	1959	H14	period 1 below period 2 wall	—	5	F.481	PA	AA4, 38, 1960, 70, no. 5
504	1898	—	—	—	89	F.485	B	—
505	1971	H 9	outside W wall, u/s	—	—	F.484	NT	(Not in AA5, 4, 1976)
506	1981	HSE	01	027	9201	F.490	P	—
507	1974–77	H13	06 flag floor, Chalet Phase 1	012	1723	F.491b	Absent	—
508	1974–77	H13	08	000	154	F.491	P	—
509	1960	H14	—	—	21	F.499	PA	AA4, 39, 1961, 299, no. 21
510	1960	H14	—	—	26	F.508	PA	AA4, 39, 1961, 299, no. 26
511	1960	H14	—	—	22	F.501	PA	AA4, 39, 1961, 299, no. 22
512	1960	H14	—	—	23	F.504	PA	AA4, 39, 1961, 299, no. 23
513	1960	H14	—	—	24	F.506	PA	AA4, 39, 1961, 299, no. 24
514	1960	H14	—	—	25	F.507	PA	AA4, 39, 1961, 299, no. 25
515	1960	H14	—	—	27	F.509	PA	AA4, 39, 1961, 299, no. 27
516	1898	—	—	—	105	F.513	B	—
517	1898	—	—	—	92	F.527	B	—
518	1898	—	—	—	99	F.522	B	—
519	1898	—	—	—	109	F.520	B	—
520	1961	H15	—	—	42	F.500	PA	AA4, 40, 1962, 96, no. 42
521	1961	H15	—	—	43	F.502	PA	AA4, 40, 1962, 96, no. 43
522	1961	H15	trodden into Phase 4 floor	—	41	F.498	PA	AA4, 40, 1962, 96, no. 41
523	1961	H15	trodden into Phase 4 floor	—	45	F.505	PA	AA4, 40, 1962, 96, no. 45
524	1961	H15	—	—	44	F.503	PA	AA4, 40, 1962, 96, no. 44
525	1961	H15	—	—	48	F.519	PA	AA4, 40, 1962, 96, no. 48

<i>No.</i>	<i>find date</i>	<i>site</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
526	1981	H14	03	001	9296	F.531a	P	–
527	1960	H14	–	–	28	F.510	PA	AA4, 39, 1961, 299, no. 28
528	1961	H15	trodden into Phase 4 floor	–	49	F.523	PA	AA4, 40, 1962, 96, no. 49
529	1898	–	SE II: on pavement	–	66	F.514	B	–
530	1961	H15	trodden into Phase 4 floor	–	52	F.526	PA	AA4, 40, 1962, 96, no. 52
531	1960	H14	–	–	29	F.515	PA	AA4, 39, 1961, 299, no. 29
532	1961	H15	trodden into Phase 4 floor	–	53	F.528	PA	AA4, 40, 1962, 96, no. 53
533	1961	H15	–	–	51	F.525	PA	AA4, 40, 1962, 96, no. 51
534	1961	H15	trodden into Phase 4 floor	–	46	F.511	PA	AA4, 40, 1962, 96, no. 46
535	1980–81	H21	03	018	8607	F.531	P	–
536	1961	H15	–	–	47	F.517	PA	AA4, 40, 1962, 96, no. 47
537	1961	H15	trodden into Phase 4 floor	–	50	F.524	PA	AA4, 40, 1962, 96, no. 50
538	1974–77	H13	03	000	476	F.531b	Absent	–
539	1898	–	–	–	AH	F.533	B	–
540	1979	H20	08, planted by student	063	8292	F.534	P	–
541	1978–79	H20	04	009	8292	F.535	P	–
542	1978–79	H20	07	002	6237	F.536	P	–
543	1974–77	H13	11	014	3450	F.537	P	–
544	1974–77	H13	07	015	1873	F.538	P	–
545	1978–79	H20	01	000	4091	F.539	P	–
546	1981	HSE	01	029	9250	F.540	P	–
547	1978–79	H20	04	010	5360	F.541	P	–
548	1981	HSE	01	–	9099	F.542	P	–
549	1898	–	–	–	107	F.543	B	–

Housesteads *vicus*

<i>No.</i>	<i>find date</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
550	1931	<i>Vicus</i> II	u/s, north east	1	V.1	A	AA4, 9, 1932
551	1931	<i>Vicus</i> II	u/s, north east	3	V.3	P	–
552	1931	<i>Vicus</i> II	u/s, north east	2	V.4	P	–
553	1932	Vallum trench F	layer 2	5	V.5	P	–
554	1932	Sewer trench 6	on top	32	V.6	P	–
555	1932	<i>Vicus</i> VIII	south of cross wall	17	V.8	P	–
556	1934	<i>Vicus</i> XIV	inside south wall	1	V.7	P	–
557	1932	Sewer trench 6	–	51	V.10	P	–
558	1932	<i>Vicus</i> VIII	outside north wall	18	V.11	Absent	–
559	1931	<i>Vicus</i> IV	stone, 1	5	V.14	P	AA4, 9, 1932, 235, group 1
560	1931	<i>Vicus</i> IV	u/s, east	7	V.12	P (from M)	–
561	1931	Vallum trench E	–	6	V.13	P	AA4, 9, 1932
562	1932	Vallum trench F	–	41	V.16	Absent	–
563	1931	<i>Vicus</i> IV	stone, 1, east	8	V.17	P	AA4, 9, 1932
564	1931	<i>Vicus</i> IV	u/s, east	9	V.19	P	–
565	1931	<i>Vicus</i> IV	stone, 1, (sealed), centre	10	V.20	P	AA4, 9, 1932
566	1933	Vallum causeway, east of	below terrace	1	V.21	PA	AA4, 10, 1933, 190, no. 1
567	1933	<i>Vicus</i> XXI, west side	below floor, over Vallum ditch	2	V.23	PA	AA4, 11, 1934, 190, no. 2
568	1931	<i>Vicus</i> IV	stone, 1, west	17	V.22	P	AA4, 9, 1932
569	1933	Vallum causeway	on road above causeway	5	V.25	PA	AA4, 11, 1934, 190, no. 5
570	1932	u/s, 1932 tip	–	–	V.24	P	–
571	1931	<i>Vicus</i> II	in ‘drain’, west end	54	V.266	P	–
572	1931	<i>Vicus</i> II	u/s, north east	14	V.26	P	AA4, 9, 1932
573	1931	<i>Vicus</i> IV	stone, 2, centre, u/s	13	V.27	P	AA4, 9, 1932
574	1932	<i>Vicus</i> VIII	inside south wall	48	V.28	P	AA4, 10, 96
575	1933	<i>Vicus</i> VIII	prior to erection of building	–	V.28a	PA	AA4, 10, 96
576	1934	<i>Vicus</i> XV	middle trench	3	V. 270	P	–
577	1931	<i>Vicus</i> II	b, north east	15	V.31	P	AA4, 9, 1932
578	1931	Vallum trench E	–	16	V.29	P (from A)	AA4, 9, 1932
579	1932	<i>Vicus</i> VIII, south of	west of alley south of VIII	41	V.32	P	–
580	1931	<i>Vicus</i> II	u/s, east	12	V.33	P	AA4, 9, 1932
581	1932	<i>Vicus</i> VIII, near south wall	black layer below clay	57	V.36	P	–
582	1931	Vallum trench E	–	11	V.34	A	AA4, 9, 1932
583	1932	Lynne’s drain	–	63	V.35	P	–

<i>No.</i>	<i>find date</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
584	1931	<i>Vicus</i> II	u/s, south	19	V.37	P	—
585	1932	u/s, 1932 tip	—	—	V.38	P	—
586	1932	<i>Vicus</i> VIII, building north of,	inside south wall	65	V.39	P	—
587	1931	<i>Vicus</i> II	b, south east	24	V.40	P	AA4, 9, 1932
588	1931	<i>Vicus</i> II	c, centre	25	V.41	P	AA4, 9, 1932
589	1931	<i>Vicus</i> IV	stone, 1 (sealed), centre	27	V.42	P	AA4, 9, 1932
590	1931	<i>Vicus</i> IV	wood, c (sealed by furnace)	70	V.96	P	AA4, 9, 1932
591	1931	<i>Vicus</i> IV	u/s, alongside west wall	57	V. 268	P	AA4, 9, 1932
592	1931	<i>Vicus</i> IV	wood, c (sealed)	65	V.98	P	AA4, 9, 1932
593	1931	<i>Vicus</i> IV	wood (sealed), east	23	V.43	P	AA4, 9, 1932
594	1931	<i>Vicus</i> IV	u/s, south-west	21	V.44	P	AA4, 9, 1932
595	1931	<i>Vicus</i> IV	stone, 1, south-west	26	V.47	P	AA4, 9, 1932
596	1931	<i>Vicus</i> IV	u/s, east	22	V.46	P	—
597	1932	u/s	—	—	V.45	P	—
598	1932	Vallum trench F	layer 2	6	V.48	P	—
599	1931	<i>Vicus</i> IV	u/s, south-west	18	V.49	P	AA4, 9, 1932
600	1931	<i>Vicus</i> II	b	20	V.50	PA	AA4, 9, 1932
601	1931	<i>Vicus</i> IV	wood, in revetting wall	28	V.51	P	AA4, 9, 1932
602	1932	<i>Vicus</i> VIII	burnt layer, centre	56	V.52	P	—
603	1931	<i>Vicus</i> IV	stone, 1 (sealed), centre	32	V.53	P	AA4, 9, 1932 & 235, group 2
604	1931	<i>Vicus</i> IV	u/s, south-west	30	V.54	P	AA4, 9, 1932
605	1932	<i>Vicus</i> VI	trial trench	—	V.56	P	—
606	1931	<i>Vicus</i> II	a, north east	29	V.55	P	AA4, 9, 1932 & 235, group 3
607	1931	<i>Vicus</i> IV	stone, 1, south-west	31	V.57	PA	AA4, 9, 1932
608	1932	<i>Vicus</i> III, tip west of	—	70	V.58	P	—
609	1931	<i>Vicus</i> IV	wood, on revetting wall	40	V.59	P	AA4, 9, 1932
610	1931	<i>Vicus</i> IV	stone, 1, south-west	37	V.60	P	AA4, 9, 1932
611	1931	<i>Vicus</i> IV	stone, 1, south-west	33	V.61	P	AA4, 9, 1932
612	1931	<i>Vicus</i> IV	stone, 1, south-west	38	V. 267	PA	AA4, 9, 1932
613	1933	u/s, 1931 tip	—	—	V.62	P	—
614	1933	u/s, 1931 tip	—	—	V.63	P	—
615	1932	<i>Vicus</i> III	centre	4	V.64	P	—
616	1931	<i>Vicus</i> IV	stone, 1, south-west	39	V.65	P	AA4, 9, 1932
617	1931	<i>Vicus</i> IV	stone, 1, south-west	34	V.66	P	AA4, 9, 1932
618	1934	<i>Vicus</i> XIX	west wall, outside	—	V.72	P	—
619	1932	<i>Vicus</i> VIII	SE corner	47	V.67	P	AA4, 10, 1933, 96
620	1931	<i>Vicus</i> IV	wood, c (sealed)	35	V.68	P	AA4, 9, 1932
621	1932	SE angle, main drain of fort	—	45	V.71	P	AA4, 10, 1933, 96
622	1931	<i>Vicus</i> IV	stone, 1,	36	V.69	M	AA4, 9, 1932
623	1933	Vallum trench G	—	1	V.70	A	—
624	1931	<i>Vicus</i> II	c, south-east	45	V.73	A	AA4, 9, 1932
625	1931	<i>Vicus</i> IV	stone, u/s	46	V.74	A	—
626	1931	<i>Vicus</i> II	a, west	41	V.76	P	AA4, 9, 1932
627	1931	<i>Vicus</i> II	b, north-east	43	V.79	P	AA4, 9, 1932
628	1931	<i>Vicus</i> I	2, north	42	V.78	P	AA4, 9, 1932
629	1931	<i>Vicus</i> IV	stone, 2, u/s	44	V.77	P	AA4, 9, 1932
630	1932	<i>Vicus</i> IV, tip east of	—	55	V.80	A	—
631	1932	<i>Vicus</i> III	inside, near centre of W. wall	12	V.82	P	—
632	1932	<i>Vicus</i> VIII	outside north wall	44	V.83	P	—
633	1853	South gate, in front of,	with AU signet ring + earring	—	V.84a	PA	Bruce, J C, 1867
634	1931	<i>Vicus</i> I	2, north, top floor	52	V.84	P	AA4, 9, 1932
635	1931	u/s	—	—	V.81	M	—
636	1931	<i>Vicus</i> IV	stone, 1, south-west	47	V.86	A	AA4, 9, 1932
637	1931	<i>Vicus</i> IV	stone, 1 (sealed), centre	50	V.87	P	AA4, 9, 1932
638	1931	<i>Vicus</i> II	b, east end	53	V.88	P	AA4, 9, 1932
639	1931	<i>Vicus</i> IV	stone, 1 (sealed), centre	48	V.89	P	AA4, 9, 1932
640	1931	<i>Vicus</i> IV	wood, c (sealed)	49	V.90	A	AA4, 9, 1932
641	1933	Vallum trench G	—	2	V.99	P	—
642	1931	<i>Vicus</i> II	u/s, in base of east wall	64	V. 100	A	AA4, 9, 1932
643	1931	<i>Vicus</i> I	2, NW corner, top floor	60	V. 102	P	AA4, 9, 1932

<i>No.</i>	<i>find date</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
644	1932	u/s, 1931–2 tip	–	71	V. 104	P	–
645	1931	<i>Vicus</i> IV	stone, 1a, west (sealed)	59	V. 105	P	AA4, 9, 1932
646	1931	<i>Vicus</i> I	basement, c, SE corner	63	V. 106	A	AA4, 9, 1932
647	1931	<i>Vicus</i> II	b, NE angle	66	V. 107	P	AA4, 9, 1932
948	1931	<i>Vicus</i> IV	stone, 1, SW, below flagging	68	V.95	P	AA4, 9, 1932
649	1931	<i>Vicus</i> IV	wood, c (sealed by furnace)	69	V. 110	P	AA4, 9, 1932
650	1931	<i>Vicus</i> IV	stone, 1, south-west	67	V. 109	P	AA4, 9, 1932
651	1931	<i>Vicus</i> II	b, SW, burnt layer near top	61	V. 103	P	AA4, 9, 1932
652	1931	<i>Vicus</i> IV	stone, 1, south-west	62	V. 101	P	AA4, 9, 1932
653	1932	<i>Vicus</i> VIII	centre, under flagging	49	V. 111	P	AA4, 10, 1933, 96
654	1931	<i>Vicus</i> I	NE corner	77	V. 117	P	–
655	1931	<i>Vicus</i> IV	stone, north-west, top	73	V. 113	A	AA4, 9, 1932, 235, group 1?
656	1931	<i>Vicus</i> I	basement, c, hearth, NE angle	72	V. 112	A	AA4, 9, 1932
657	1931	<i>Vicus</i> I, east of	outside east wall	74	V. 114	P	–
658	1931	<i>Vicus</i> IV	stone, 1, SW corner	75	V. 115	A	AA4, 9, 1932
659	1931	<i>Vicus</i> II	south east, top	76	V. 116	A	–
660	1931	<i>Vicus</i> I	basement, on step	71	V. 118	A	–
661	1934	East gate, S of, 6' from jamb	on gravel, 4' from fort wall	15	V. 118a	P	–
662	1931	<i>Vicus</i> IV	stone, 1, south-west	80	V. 119	A	AA4, 9, 1932
663	1931	<i>Vicus</i> IV	stone, 1 (sealed), centre	79	V. 120	P	AA4, 9, 1932 & 235, group 2
664	1932	<i>Vicus</i> VIII	east half, above flagging	60	V. 121	P	–
665	1931	<i>Vicus</i> IV	outside west wall	81	V. 122	A	AA4, 9, 1932, 235, group 1?
666	1931	<i>Vicus</i> IV	stone, 1, south-west	82	V. 123	A	AA4, 9, 1932
667	1932	<i>Vicus</i> VIII	SE corner, top	58	V. 124	P	–
668	1932	<i>Vicus</i> III	south annexe	36	V. 127	P	–
669	1931	<i>Vicus</i> II	u/s, below flagging, west end	51	V.91	P	AA4, 9, 1932
670	1932	u/s, 1931–2 tip	–	69	V.132	P	–
671	1931	<i>Vicus</i> I, west of	road trench, level of flags	83	V.125	P	–
672	1932	<i>Vicus</i> III	NE corner of annexe	28	V.129	P	–
673	1931	<i>Vicus</i> II	a, south east, on floor	84	V.128	P	AA4, 9, 1932
674	1931	<i>Vicus</i> I, east of	outside NE angle	85	V.131	P	–
675	1932	<i>Vicus</i> III	annexe, u/s	59	V.133	P	–
676	1931	<i>Vicus</i> III–IV	–	86	V.134	P	–
677	1931	<i>Vicus</i> II	a, south east, on flag floor	91	V.137	P	AA4, 9, 1932 & 235, group 3
678	1931	<i>Vicus</i> I	basement, on step landing	89	V.139	A	–
679	1931	<i>Vicus</i> II	b, east end, top floor	90	V.140	A	AA4, 9, 1932
680	1932	<i>Vicus</i> VIII	NE corner	54	V.142	P	–
681	1931	<i>Vicus</i> I	2, north side, top floor	92	V.143	P	AA4, 9, 1932
682	1931	<i>Vicus</i> I	basement, a	96	V.146	A	AA4, 9, 1932
683	1932	<i>Vicus</i> VIII, trench north of,	top	66	V.147	P	–
684	1932	<i>Vicus</i> I	basement, a	98	V.151a	PA	AA4, 9, 1932
685	1931	<i>Vicus</i> I	basement, b	95	V.148	A	AA4, 9, 1932
686	1931	<i>Vicus</i> I	2, north-west	100	V.149	PA	AA4, 9, 1932
687	1933	Vallum trench G	–	3	V.150	P	–
688	1931	<i>Vicus</i> I	basement, a	94	V.151	P	AA4, 9, 1932
689	1931	<i>Vicus</i> I	basement, b	97	V.153	A	AA4, 9, 1932
690	1931	<i>Vicus</i> I	basement, b	93	V.154	A	AA4, 9, 1932
691	1931	<i>Vicus</i> I	basement, b (sealed by oven)	99	V.155	P	AA4, 9, 1932
692	1932	SE angle of fort,	drain	2	V.277	PA	AA4, 10, 1933, 94, no. 2
693	1931	<i>Vicus</i> II	on ruined south wall, c	103	V.158	P	–
694	1931	<i>Vicus</i> IV	stone, south end	101	V.156	P	–
695	1931	<i>Vicus</i> I	basement, b (sealed by oven)	102	V.157	P	AA4, 9, 1932
696	1931	<i>Vicus</i> I	basement, b (sealed)	104	V.160	A	AA4, 9, 1932
697	1931	Sewer of fort	–	46	V.162	M	AA4, 10, 1933, 96
698	1931	u/s, 1931 tip	–	–	V.163	P	–
699	1932	<i>Vicus</i> III	NW corner	16	V.166	P	–
700	1933	u/s, 1931 tip	–	–	V.165	P–	–
701	1931	<i>Vicus</i> II	b, east	109	V.167	PA	AA4, 9, 1932
702	1931	<i>Vicus</i> I	outside east wall	108	V.170	P	–

<i>No.</i>	<i>find date</i>	<i>context</i>	<i>feature</i>	<i>SF no.</i>	<i>store no.</i>	<i>status</i>	<i>reference</i>
703	1931	<i>Vicus</i> I	SE corner	107	V.169	A	—
704	1931	<i>Vicus</i> I	basement, b	110	V.171	PA	AA4, 9, 1932
705	1931	<i>Vicus</i> II	u/s, north-east	117	V.172	Absent	—
706	1933	Vallum trench G	—	4	V.174	P	—
707	1931	u/s	—	—	V.177	M	—
708	1931	<i>Vicus</i> I	u/s, south-east	115	V.178	Absent	—
709	1931	<i>Vicus</i> I	1, north	116	V.175	PA	AA4, 9, 1932
710	1931	<i>Vicus</i> I	basement, a	112	V.181	PA	AA4, 9, 1932
711	1932	<i>Vicus</i> VIII	south-east, inside	32	V.182	PA	AA4, 10, 1933, 96
712	1932	<i>Vicus</i> VIII, SW of,	below flagging	67	V.173	P	—
713	1931	<i>Vicus</i> I	basement, b	113	V.179	PA	AA4, 9, 1932
714	1931	<i>Vicus</i> I	basement, b	114	V.180	PA	AA4, 9, 1932
715	1931	<i>Vicus</i> I	basement, b	111	V.176	PA	—
716	1932	<i>Vicus</i> VIII	NE corner	31	V.183	P	—
717	1932	<i>Vicus</i> III, west of	—	24	V.186	P	—
718	1931	<i>Vicus</i> I	basement, b	138	V.190	PA	AA4, 9, 1932
719	1931	<i>Vicus</i> I, north of	—	139	V.191	Absent	—
720	1932	<i>Vicus</i> VIII	below clay filling	52	V.187	P	AA4, 10, 1933, 96
721	1931	<i>Vicus</i> I	2, north-west	140	V.194	PA	AA4, 9, 1932
722	1932	<i>Vicus</i> III	near centre of west wall, top	13	V.196	P	—
723	1931	<i>Vicus</i> II	u/s, south-east	142	V.188	Absent	—
724	1931	<i>Vicus</i> III–IV	outside west wall of <i>Vicus</i> IV	161	V.185	P	—
725	1931	u/s	—	—	V.184	M	—
726	1932	Vallum causeway	over causeway, below the road	3	V.193	PA	AA4, 11, 1934, 190, no. 3
727	1931	<i>Vicus</i> I	basement, b	141	V.195	PA	AA4, 9, 1932
728	1933	u/s, 1932 tip	—	—	V.198	P	—
729	1931	<i>Vicus</i> II	u/s, south-east	143	V.197	Absent	—
730	1931	<i>Vicus</i> I, north of	over flagging south of S gate	152	V.199	P	—
731	1931	u/s, 1931 tip	—	—	V.203	P	—
732	1932	<i>Vicus</i> VIII	NW corner on flagging	—	V.202	A	—
733	1932	<i>Vicus</i> VIII	SE corner	32	V.200	Absent	—
734	1932	<i>Vicus</i> III	in passage half way up W side	34	V.201	P	—
735	1931	<i>Vicus</i> IV	stone, u/s	118	V.204	Absent	—
736	1932	<i>Vicus</i> III	half way up west side	35	V.207	P	—
737	1932	Vallum causeway	on road over causeway	4	V.205	PA	AA4, 11, 1934, 190, no. 4
738	1931	<i>Vicus</i> I	basement, a	125	V.206	PA	AA4, 9, 1932
739	1931	<i>Vicus</i> I	basement, b	120	V.208	PA	AA4, 9, 1932
740	1931	<i>Vicus</i> I	basement, b (sealed)	124	V.213	PA	AA4, 9, 1932
741	1931	<i>Vicus</i> I	2, north	123	V.211	PA	AA4, 9, 1932
742	1931	<i>Vicus</i> I	basement, b	119	V.210	PA	AA4, 9, 1932
743	1931	<i>Vicus</i> I	basement, b	121	V.209	PA	AA4, 9, 1932
744	1931	<i>Vicus</i> I	basement, b (sealed)	122	V.212	PA	AA4, 9, 1932
745	1932	<i>Vicus</i> III	north end, top	11	V.214	P	—
746	1931	<i>Vicus</i> II	outside south wall	151	V.244	P	—
747	1931	<i>Vicus</i> I	basement, b (sealed)	126	V.218	PA	AA4, 9, 1932
748	1933	u/s, 1931 tip	—	—	V.219	P	—
749	1931	<i>Vicus</i> I	u/s, south-east	128	V.217	Absent	—
750	1931	<i>Vicus</i> I	basement, a	130	V.216	PA	AA4, 9, 1932
751	1932	<i>Vicus</i> VIII, south of	north wall of bldg south of VIII	43	V.215	P	—
752	1931	u/s	—	—	V.236	M	—
753	1931	<i>Vicus</i> I	b, north-east	127	V.221	PA	AA4, 9, 1932
754	1932	<i>Vicus</i> VIII	below floor	30	V.222	P	AA4, 10, 1933, 96
755	1931	u/s	—	—	V.223	M	—
756	1933	u/s, 1931 tip	—	—	V.226	P	—
757	1931	<i>Vicus</i> I	basement, b (sealed)	129	V.227	PA	AA4, 9, 1932
758	1931	<i>Vicus</i> I, north of	—	131	V.237	P	—
759	1931	u/s, 1931 tip	—	158	V.225	P	—
760	1931	<i>Vicus</i> II	south wall, inside	151	V.220	Absent	—
761	1931	<i>Vicus</i> I	basement, b (sealed)	149	V.243	P	AA4, 9, 1932
762	1931	<i>Vicus</i> I	outside north wall on flagging	159	V.240	P	—
763	1931	<i>Vicus</i> I	basement, b	132	V.231	PA	AA4, 9, 1932
764	1931	<i>Vicus</i> I	basement, a	136	V.229	PA	AA4, 9, 1932
765	1931	<i>Vicus</i> I	basement, c	134	V.232	PA	AA4, 9, 1932
766	1931	<i>Vicus</i> I	basement, b	137	V.230	PA	AA4, 9, 1932

No.	find date	context	feature	SF no.	store no.	status	reference
767	1932	<i>Vicus</i> III	annexe south of <i>Vicus</i> III	25	V.233	P	—
768	1931	<i>Vicus</i> I	basement, b	133	V.234	PA	AA4, 9, 1932
769	1932	<i>Vicus</i> III, trench west of,	—	10	V.235	P	—
770	1933	u/s, 1931 tip	—	—	V.272	P	—
771	1932	<i>Vicus</i> III	south of cross-wall	9	V.246	P	—
772	1931	<i>Vicus</i> II	east end	157	V.224	P	—
773	1934	<i>Vicus</i> XII	outside south wall	4	V.245	P	—
774	1932	SE angle of fort, close to,	topsoil	18	V.238	P	—
775	1931	<i>Vicus</i> I	basement, b	155	V.241	P	AA4, 9, 1932
776	1931	<i>Vicus</i> I	basement, b	156	V.242	P	AA4, 9, 1932
777	1931	<i>Vicus</i> I	2, north west	—	V.239	Absent	—
778	1931	<i>Vicus</i> I, west of	road trench, top	145	V.248	P	—
779	1932	East gate, north of,	trench 1, 2'6" down	38	V.251	P	—
780	1932	East gate, ?north of,	trench 1, 2'6" down	37	V.250	P	—
781	1931	<i>Vicus</i> I	basement, c, north west	144	V.253	PA	AA4, 9, 1932
782	1932	<i>Vicus</i> III	south of cross-wall	8	V.252	P	—
783	1932	East ditch	southern end, topsoil	40	V.254	P	—
784	1932	<i>Vicus</i> II, trench south of,	—	68	V.247	P	—
785	1931	<i>Vicus</i> I	basement, NE, over hearth	148	V.257	P	AA4, 9, 1932
786	1932	Sewer of fort	outside SE angle of fort	47a	V.256	PA	AA4, 10, 1933, 96
787	1931	<i>Vicus</i> I	NW corner, by wall, top floor	146	V.259	P	AA4, 9, 1932
788	1931	<i>Vicus</i> I	outside NE angle	147	V.255	P	—
789	1932	<i>Vicus</i> VIII	west end, topsoil	—	V.258	P	—
790	1931	u/s	—	—	V.260	Absent	—
791	1931	<i>Vicus</i> IV	stone, 1 (sealed), centre	106	V.263	P	—
792	1932	<i>Vicus</i> VIII	east end, black layer	61	V.269	P	—
793	1931	<i>Vicus</i> IV	stone, 1 (sealed), centre	55	V.262	P	AA4, 9, 1932
794	1931	<i>Vicus</i> I	basement, b	56	V.264	P	AA4, 9, 1932
795	1931	<i>Vicus</i> IV	—	105	V.271	Absent	—
796	1932	<i>Vicus</i> VIII	outside N. wall, lower level	53	V.273	P	—
797	1931	<i>Vicus</i> I	basement, a	162	V.261	P	—
798	1931	<i>Vicus</i> I	south side, c	160	V.278	P	—
799	1931	<i>Vicus</i> II	over robbed north wall	164	V.274	P	—

Housesteads *vicus*: Chapel Hill and *mithraeum*

No.	find date	context	feature	SF no.	store no.	status	reference
800	1960	Chapel Hill	Group A, u/s	1	V.2	P	AA4, 39, 1961, 317, no. 1
801	1960	Chapel Hill	Group A, u/s	3	V.93	P	AA4, 39, 1961, 317, no. 3
802	1960	Chapel Hill	Group A, u/s	2	V.92	P (in BM)	AA4, 39, 1961, 317, no. 2
803	1960	Chapel Hill	Group A, u/s	4	V.94	P	AA4, 39, 1961, 317, no. 4
804	1960	Chapel Hill	Group A, u/s	5	V.265	P	AA4, 39, 1961, 317, no. 5
805	1960	Chapel Hill	Group B, in well	6	V.75	P	AA4, 39, 1961, 317, no. 6
806	1960	Chapel Hill	Group B, in well	7	V.85	PA	AA4, 39, 1961, 318, no. 7
807	1960	Chapel Hill	Group B, in well	8	V.97	P	AA4, 39, 1961, 318, no. 8
808	1960	Chapel Hill	Group B, in well	9	V.130	PA	AA3, 39, 1961, 318, no. 9
809	1960	Chapel Hill	Group B, in well	10	V.164	PA	AA4, 39, 1961, 318, no. 10
810	1960	Chapel Hill	Group B, in well	12	V.189	P	AA4, 39, 1961, 318, no. 12
811	1960	Chapel Hill	Group B, in well	11	V.192	P	AA4, 39, 1961, 318, no. 11
812	1960	Chapel Hill	Group B, in well	13	V.249	P	AA4, 39, 1961, 318, no. 13
813	1898	trench N of <i>mithraeum</i>	near well	—	V.10a	BA	AA2, 25, 1904, 297
814	1898	trench N of <i>mithraeum</i>	near well	—	V.158a	BA	AA2, 25, 1904, 298
815	1898	<i>mithraeum</i>	—	116	V.18	B	(Not in AA2, 25, 1904)
816	1898	<i>mithraeum</i>	—	—	V.80a	BA	AA2, 25, 1904, 298
817	1898	<i>mithraeum</i>	—	28	V.228	B	(Not in AA2, 25, 1904)

14 The small finds

L Allason-Jones

with contributions by M Henig, W B Griffiths and Q Mould

Discussion

The small finds from the 1974–81 excavations at Housesteads include objects of silver, copper alloy, lead, iron, tile, pottery, stone and flint, bone, glass, jet and shale.

The number and quality of the silver artefacts is unusual from a Hadrian's Wall fort, and includes a rare ear-ring and a votive leaf plaque. The objects are, however, widely scattered across the excavated areas and it is difficult to reach any conclusions as to the reasons for their presence.

The number and spread of copper alloy artefacts is also unusual for a Hadrian's Wall fort with a few items, such as the two Langton Down brooches (15 and 16), already being antiques when they arrived on the site. The bulk of the material is of 2nd- to 3rd-century date with numbers dropping as the 4th century progresses. There is a small quantity of enamelled luxury goods, such as mount No. 48 and the perfume flask (50), but the majority of the copper alloy objects come from the expected range of domestic and military equipment, the latter including items of harness, such as a rare bridle hackamore (81). It is noticeable that more military equipment was found during the excavations of the north and east ramparts than in the barracks and that much of it was old when deposited, suggesting redeposition of rubbish dumps, probably located outside the fort, or material from the abandoned *vicus*. There was a particular concentration of scabbard runners and chapes (114–17) within the late interval tower on the east rampart (see Fig 14.11). Most of these were of 3rd-century date although the context – the fill (H21:3:32) of a pit (3:34) next to a large stone hearth (3:38/40), all sealed by the makeup (3:31) for the secondary floor of that tower – is dated to the late 3rd to early 4th century (H21 Phase 3). This may suggest dumping from an armourer's workshop, although evidence of metalworking – in particular the large adjacent hearth – may imply that material from a specific source was being recycled.

In general the armour fittings show a bias towards open-work mounts with Celtic motifs, such as can be paralleled on the German *limes*, which might be expected to have appealed to the men of the First Cohort of Tungrians. None of the artefacts offer any clues as to the other garrisons that might have served at Housesteads either before or after the Tungrian presence. There are also, among the copper alloy objects, items such as the enamelled button and loop fasteners, which might suggest local sources of supply.

The iron objects include few weapons but no fewer than is normally found on Wall sites, and an interesting selection of tools, such as spades, hammers and chisels, which may serve to emphasise the self-sufficient nature

of the fort. Both in iron and copper alloy there are several examples of locks, keys and padlocks. While the contexts do not reveal a specific time when the soldiers started to lock their doors there is a suggestion that the early 2nd-century barracks did not have locked doors, and that security only became an issue after the first phase of the fort. The unstratified context (H20:5:0) of the iron shackles (333) may suggest that they came from an even later period of the fort's history, possibly when the Armstrong family made the fort the centre of raiding activities.

There are few identifiable objects in lead other than weights, nor are there many bone objects. While a lack of lead artefacts in the Roman north is to be expected, the lack of bone items is unusual. The tile, pot, and stone objects cover the normal range of counters, whorls, lids and hones with few surprises other than some objects of amber and lithomarge, which may have religious connotations.

It is in the amount and quality of the jet and shale artefacts that Housesteads is unusual. Other than the fort at South Shields, where there is evidence of a jet/shale workshop, the Hadrian's Wall sites have not produced much in jet or shale, the usual range being largely confined to beads, armlets and pins. At Housesteads there are few pins but there is an unexpected number of finger-rings of high quality. As the evidence suggests that jet had a special significance for women (Pliny, *Nat Hist*, XXXVI, 141–2; Allason-Jones 1996) this raises the question of the presence of women at Housesteads.

In 1980 the suggestion was made that there was 'a preponderance of brooches and other trinkets at Housesteads XIII', and this was taken as confirmation of the theory that the 'chalets' were married quarters (Daniels 1980). However, a close study of the distribution and phasing of the artefacts traditionally associated with women does not include a bias toward female artefacts in H13 in the chalet periods.

The dangers of attributing objects to purely male or female use have been discussed elsewhere (Allason-Jones 1995). In this study only ear-rings, bracelets, hairpins and jet artefacts have been considered to be specifically for female use. Glass beads, in some circumstances, may be seen as 'female', as beaded necklaces and armlets seem to have been worn solely by women; however, the few glass beads found in the chalets are all extremely small and may easily have been trampled into the buildings on the soles of muddy boots. The brooches of H13 and H14 are invariably disc brooches or crossbow brooches and there is overwhelming evidence that both these types were used throughout Britain for fastening both military and civilian cloaks and cannot, therefore, be considered as evidence for the presence of women.

In Barracks XIII and XIV no unequivocally female objects were found stratified in the chalet phase contexts, as opposed to post-Roman dereliction or modern disturbance. Thus one jet bead (614) was found among the mixed layer of rubble collapse and topsoil covering Chalet 5 (H13:5:3), while a gilded silver hairpin (7) was recovered from the backfill of one of Bosanquet's trenches (4:6). The latter object, in any case, would have been an expensive item that might have been picked up or stolen by a soldier and hidden away as loot. One stratified object was found in H13 associated with one of the latest modifications to the chalet range: a shale armlet (623 – H13:11:20). However, this is an ambiguous artefact as far as gender attribution is concerned. Moreover, it was found in the backfill of a stone-lined, oblong pit or sump (10:32; 11:6) and may well have been a residual artefact imported with the clay fill material.

The only area in H13 where there was an identifiable preponderance of female artefacts was within the area of the centurion's quarters, and here there was enough to indicate the presence of women at all periods of the fort's history. Centurions had always been allowed to marry and several inscriptions in Britain record the presence of centurions' wives on forts: Aurelia...illa at Piercebridge (*RIB* 1026), Vibia Pacata at Westerwood (*JRS* 54, 1964, 178), and Salviena Metilliana whose husband died at Lambaesis in Algeria, but whose career may have included a tour of duty at Housesteads (*CIL* VIII 2907). There has been some debate as to whether the centurions' wives lived in the centurion's quarters at the end of each barrack block or in the *vici* outside the forts. One of the arguments raised against the families living inside the forts is the suggestion that the centurion's accommodation was too small to house a family. On Hadrian's Wall, however, the average size of the centurion's quarters is 78–98 sq metres, which falls comfortably within the range of the strip houses at Verulamium, London, Silchester, etc. There is no reason to suppose that the accommodation was too small to hold a centurion, his wife, an average military family of two children, and any servants he might employ or own. The analysis of the small finds from Housesteads would appear to support the view that centurions' families lived in the centurion's quarters, even if it cannot be used in support of the married quarters theory.

The rest of the female artefacts, including most of the hairpins, were found in rampart dumps of various periods. Although there is no clear evidence regarding the origin of dump material, the range of artefacts may suggest that it was coming from domestic rubbish heaps, possibly from the *vici*.

Catalogue

The catalogue principally includes small finds from the 1974–81 excavations. In addition seven pieces of ironwork from the adjacent 1984 excavations outside the fort, immediately to the north of the north rampart

(Area H20:10), are published here, as these were mistakenly omitted from the excavation report (Crow 1988). The objects are arranged by material and numbered sequentially for ease of cross-reference with the illustrations and the finds sections in Chapters 2–7. This catalogue number is followed by the original excavation small finds number, the site context number, and a figure number when relevant. It should be noted that in the case of the H20:10 ironwork the excavation small finds number is completely independent of the 1974–81 numbering sequence. Similarly the finds assemblages recovered during the consolidation of Building XIII and the clearance of the western part of the road between XIII and XIV (code HS) undertaken over the winter of 1977–78 were also both numbered separately, those associated with the consolidation of Building XIII incorporating an 'A' at the end of each finds number. Finally, a few objects can now only be identified by the six figure number applied during conservation at the Ancient Monuments Laboratory.

The report on the leatherwork is by Q Mould, the intaglios are analysed by M Henig and the stone missiles by W B Griffiths. All other entries are by L Allason-Jones. The pottery identifications were by J N Dore. The majority of the finds were drawn by M Daniels, the remainder by A Liddell.

Abbreviations used: L = Length, H = Height, D = Diameter, W = Width, T = Thickness, Wt = Weight

Silver (Fig 14.1)

- 9171 HSE:1:13
Two fragments of fine wire brooch spring.
L:7mm, T of wire:1mm
- 2716 H13:8:37 (Fig 14.1)
Finger-ring made from three oval-sectioned beaded wires twisted around each other. The beading has been achieved before twisting and has the effect of emphasising the gap between the wires and making the final effect more elaborate. Both ends of each wire are soldered to the sides of an oval bezel with four pellets originally covering the soldered joints.
Twisted beaded wire was commonly used to give texture to simple jewellery (see Allason-Jones 1989), particularly in the early 3rd century AD. The use of pellets to hide soldered joints is to be seen on two gold intaglio rings from the Backworth Hoard (Charlesworth 1961, 30, no. 79) although both those examples have a single plain band. The Backworth Hoard has been dated to the mid- to late 2nd century. The ring under discussion, however, shows signs of considerable wear and is likely to have been of some age when deposited.
Internal D:18mm, T:3mm, bezel:13.5 × 6mm
- 6040 H20:6:14
Fragments of a strip finger-ring.
W:4mm, T:1mm
- 3104 H13:1:85 (Fig 14.1)
Small plain disc with an oval-sectioned shank that projects from the centre of the back in a curved hook.
Stud ear-rings are rare in Roman Britain although common in Roman Egypt (see Allason-Jones 1989, Type 16).

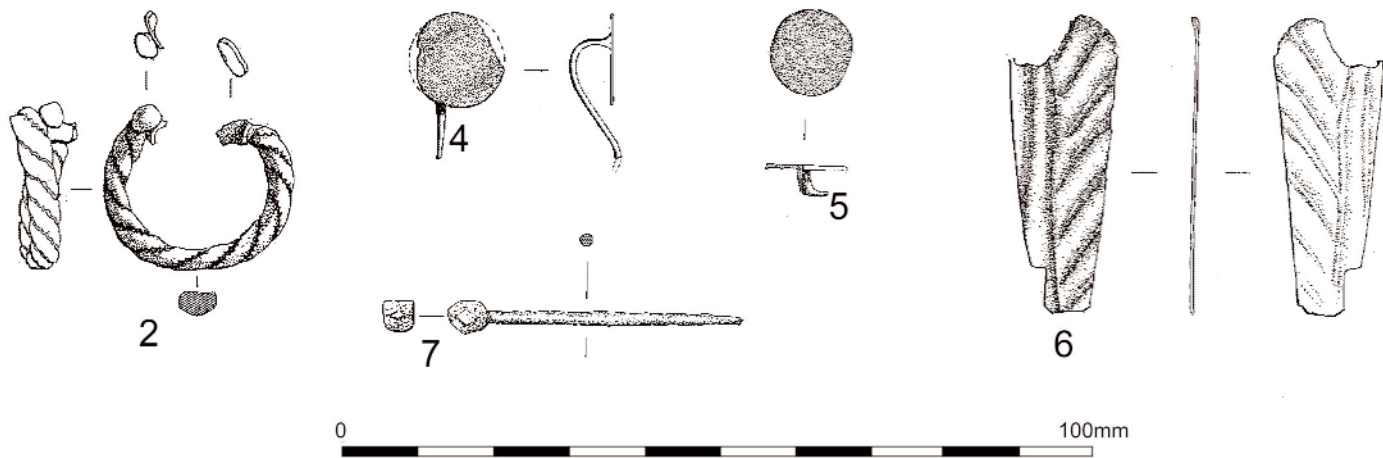


Fig 14.1 Silver objects (scale 1:1).

This example appears to bridge the gap between the hooked ear-rings – see in particular Allason-Jones 1989, Type 9 – and the stud proper.

D of head:11.5mm, total L:18mm

5. 9252 H15:1:4 (Fig 14.1)
Very small stud with a disc head and a short rectangular-sectioned curled shank.
D:10mm, W of shank:2mm
6. 7641 H20:9:9 (Fig 14.1)
Fragment of a repoussé-decorated plate with oblique ribs emerging from a ?central vertical rib giving the appearance of a leaf.
A copper alloy leaf from Cavenham (Green 1976, pl XXIVf, 213) is similar to the Housesteads leaf but the closest parallels can be found in the Water Newton Hoard. The discovery at Water Newton included the largest group of votive leaf plaques from Britain. The majority were plain but several included ChiRho symbols in their decoration indicating their Christian nature, contradicting the pagan status of the previously discovered leaves – see Toynbee 1964, 328–31; Walters 1921, nos 224–41.
L:38mm, W:14mm, T:0.5mm
7. 54 H13:4:6 (Fig 14.1)
Fine pin with a faceted head. Some of the facets show traces of gilding but it is unclear whether the entire head was gilded or just some of the facets. The pin is rather roughly fashioned and follows a common 2nd- to 4th-century form.
L:39mm

Copper alloy (Figs 14.2–13)

8. 40 H13:5:0
Fragment of a wire brooch. All that survives is the curved circular-sectioned bow and part of the splayed catchplate. This appears to be part of a Nauheim derivative brooch with a date range between the pre-Roman and pre-Flavian periods. Cf Colchester: Crummy 1983, 8, no. 9. See also Bishop and Dore 1988, 159, fig 76, nos 2, 3, 4.
L:26mm, T:2.5mm
9. 3215 H13:1:109 (Fig 14.2)
Solid knee brooch with a high angular knee. The head is short and tubular and has lost both its spring and pin, although traces of the iron hinge pin survive. The back of the shank is straight and flat. The rectangular foot splays

to a marginal groove. The projecting catchplate is incomplete. A shallow rib separates the head from the shank. The brooch is made from leaded bronze which has been heavily tinned.

The knee brooch was a common form on the German frontier in the 2nd century AD. In the area of Hadrian's Wall, however, it would appear that the form with a tubular head is less common than the fan head form.
H:30mm, W of head:17.5mm, max W of knee:7.5mm

10. 8066 H20:8:23
Fragment of the hollow faceted bow from a knee brooch. Cf Sewingshields: Haigh and Savage 1984, 75, no. 1.
L:9mm, W:11mm
11. 8658 H21:4:7 (Fig 14.2)
Fragment of a simple knee brooch with a bar head hollowed at the back to take the spring, which has three loops on either side of the missing pin. The bow is hollow at the back and slightly chamfered. The foot and catchplate are missing, as is the pin. The hinge pin is of iron.
L:20mm, W across head:16mm, max W across bow:10mm
12. 8913 H21:1:33
Fragmentary knee brooch. The tubular head has a short rectangular projection and contains the spring held in place by an iron hinge pin. The hollow-curved bow has straight sides. The fragment of catchplate that survives is too fragmentary to identify the form.
L:31mm (approx), W of head:11mm, W across bow:8mm
13. 6534 H20:6:37 (Fig 14.2)
Incomplete bow brooch with a narrow tapering tubular head. The bow is thin and triangular in section with a notched median rib. The foot, catchplate and part of the pin is missing.
The method of manufacture seems to have been to make the bow in a mould and then solder it into position onto the tubular head, made from a curled sheet with a notch cut out for the pin. The pin itself is a simple length of wire wrapped twice around the iron hinge pin.
Surviving L:29mm, W across head:24mm
14. 8660 H21:4:36
Catchplate and foot of a bow brooch. The foot is small and projects forward of the lower bow to form a point.
Surviving L:21mm

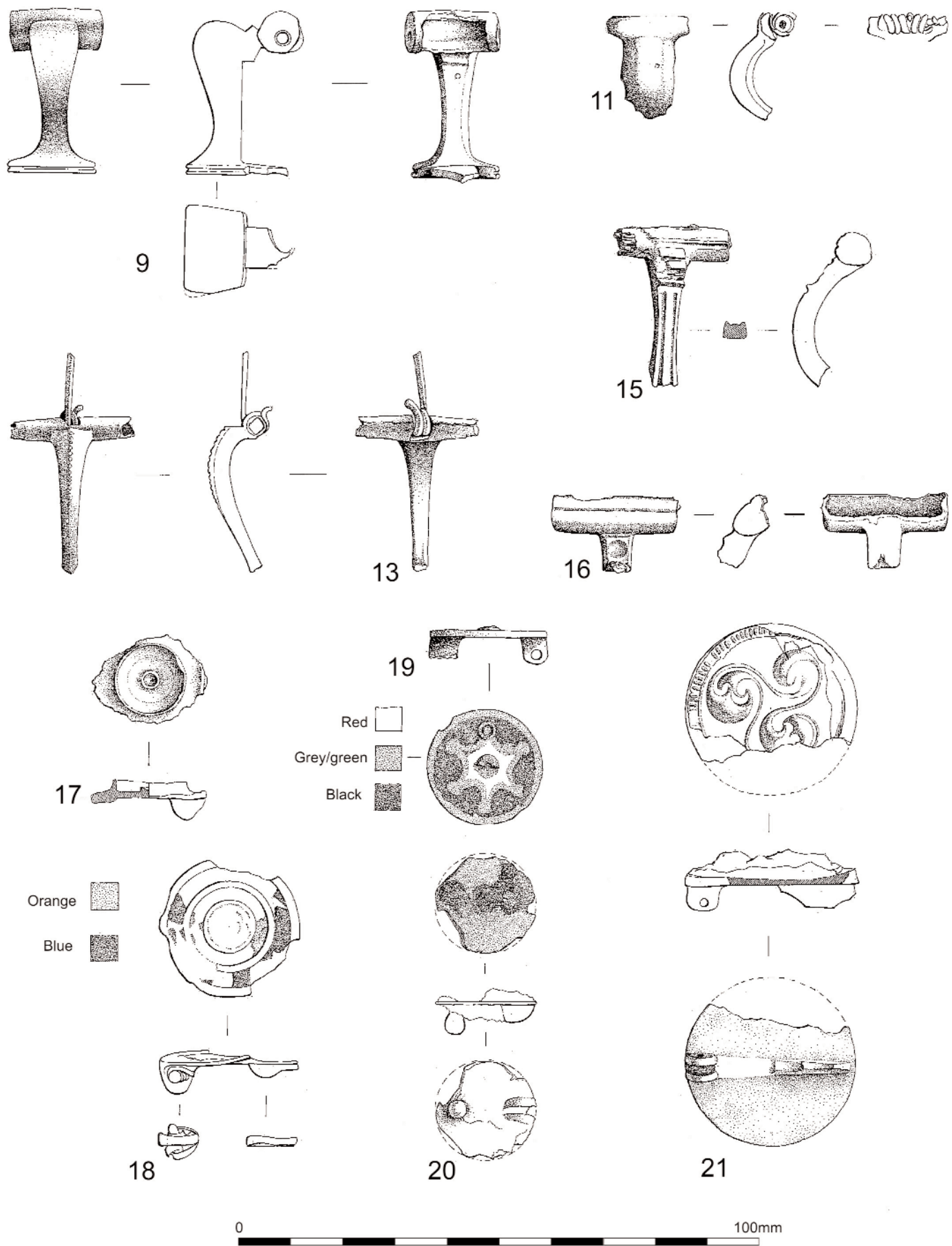


Fig 14.2 Copper alloy brooches (scale 1:1).

15. 790 H13:5:3 (Fig 14.2)
Incomplete brooch with the characteristic flattened reeded bow and cylindrical spring case of the Langton Down series. The spring case is decorated with two horizontal grooves across the top. The pin and catchplate are missing. Hawkes and Hull 1947, Type XII; Riha 1979, Type 4.4. The presence of this early brooch form (50 BC–AD 100) on a Wall fort is unusual.
Surviving L:31mm
16. 3524 H13:11:14 (Fig 14.2)
Fragment of a Langton Down brooch with a hollow cylindrical head and a horizontal rib across the rectangular-sectioned bow.
W:25mm, D of spring case:7mm
17. 8682 H21:3:41 (Fig 14.2)
Incomplete circular disc brooch with a concentric rib to hold a now missing glass inset. The inset would have been keyed into position with the aid of a small raised ring that encircles a central hole. In the channel formed by the rib and the raised edge of the brooch there is a series of stamped S-shaped motifs. The face is gilded. Scars of the hinge and catchplate are all that survive on the back.
This type of brooch appears in both oval and circular forms in the military north in 3rd- and 4th-century contexts. See Allason-Jones and Miket 1984, no. 3.138 for parallels and Mackreth 1986, 65–7, 73 for discussion.
D:21mm, total H:9mm
18. 9280 H14:3:4 (Fig 14.2)
Disc brooch with the face divided into concentric rings by shallow ribs. The outer ring contains blue enamel, the inner ring orange enamel. The central circle is poorly shaped and would not have held enamel efficiently but possibly acted as seating for a glass cone as in No. 17 above. The hinge survives but not the sprung pin or the turnover of the catchplate.
Disc brooches with simple concentric rings of enamel are not as common in the military north as the more elaborate forms with reserved metal emerging from the enamel. Unfortunately this example is poorly preserved so it is not clear if the enamel is unbroken or arranged in wedges. Cf Corbridge: Corstopitum Museum Acc Nos 75.480; 75.287; 75.473; 75.297.
D:26mm, Total H:6.5mm
19. 9328 H21:1:35 (Fig 14.2)
Disc brooch with a central applied knob surrounded by a ring of red enamel, the outer edge of which is shaped to a six-pointed star. A border of reserved metal follows the star pattern with a rounded knob applied individually at each point of the star. The field between the outer raised rim of the brooch and the star motif is filled with black enamel although traces of red enamel among the black and vice versa were noticed during conservation. All the knobs and the reserved metal are plated with tin.
The looped hinge and catchplate project from the back although the pin, hinge-pin and catchplate turnover are all missing.
Wedlake catalogues a parallel from Camerton and refers to others from Verulamium and Wroxeter, but in none of these examples do the applied knobs survive (1958, fig 53, no. 50). An example from Corbridge (Corstopitum Museum Acc No. 75.476) also lacks the applied knobs although it is unclear whether these ever existed.
D:22mm, total H:6mm
20. 6962 H20:8:8 (Fig 14.2)
Very small disc brooch with no obvious decoration on the face. The hinge lugs survive but the catchplate and pin are missing.
D:20mm
21. 699 H13:5:3 (Fig 14.2)
Incomplete disc brooch with a silver repoussé plate soldered to the face with lead-tin alloy. The plate may have been gilded but no traces survive. The decoration consists of a swirled triskele motif contained within a narrow beaded border. The hinge survives but not the pin or the hinge pin. The catchplate turnover is also missing.
This type of brooch, which combines a Roman form with a Celtic decorative motif, has been found on most of the forts on Hadrian's Wall as well as those on the Stanegate. Some, such as a small example from Vindolanda (Bidwell 1985, 117, no. 2) and those with a southern distribution (eg Silchester: Boon 1957, fig 19, no. 2; Verulamium: Waugh and Goodburn 1972, 118, fig 13, no. 24) come from later contexts, but the northern group point to a late 1st- to mid 2nd-century date of manufacture. For local parallels see Allason-Jones and Miket 1984, nos 3.148–9.
D:33mm, total H:10mm, L of catchplate:15mm
22. 8377 H20:8:63 (Fig 14.3)
Disc brooch with a central nipped umbate boss which is plated with white metal (Sn/Pb alloy) and has been soldered into position. The solder extends beyond the edge of the boss and appears to have secured a fine strip of repoussé beading in a brighter metal than the solder, possibly silver. Traces of solder around the edge of the brooch suggest that here the beaded strip was repeated. The face around the boss is divided into two concentric rings; that nearest the boss is filled with red enamel with a row of reserved metal dots. On analysis the small circular blobs on top of the reserved metal were found to be of similar composition to the solder around the edge and may suggest that the dots were covered in silver foil; traces of silver were noted in this area through XRF although none was recognisable as metal. The outer ring has a scalloped edge and is filled with blue enamel. All the reserved metal shows traces of white metal plating. A simple strip catchplate projects from the back but now lacks its turnover. Two projecting lugs form the hinge. Several examples of this form of brooch have been found on Hadrian's Wall, but none in a securely dated context: Coventina's Well: Allason-Jones and McKay 1985, no. 43; Corbridge: Bishop and Dore 1988, no. 21; Wallsend, 1975–84 excavations, K14.1353.
D:30mm, D of boss:12mm, total H:16mm
23. 6164 H20:6:3 (Fig 14.3)
Short heavy foot from a brooch which has had a wide strip bow decorated with vertical grooves and transverse ribs. The face of the foot is chamfered and hides a tubular catchplate with a side opening. The foot ends in a short flange. The whole has been silvered or tinned.
Surviving L:35mm, W:13mm, L of catchplate:22mm
24. 3624 H13:1:170
Incomplete penannular brooch with a circular-sectioned loop and a small, plain, knobbed terminal.
Internal D:21mm, T:2.5mm
25. 39 H13:5:0 (Fig 14.3)
Two fragments of a large penannular brooch with simple zoomorphic terminals. The shank is circular in section. The pin is missing.
Fowler 1960, Type E.
D:39mm

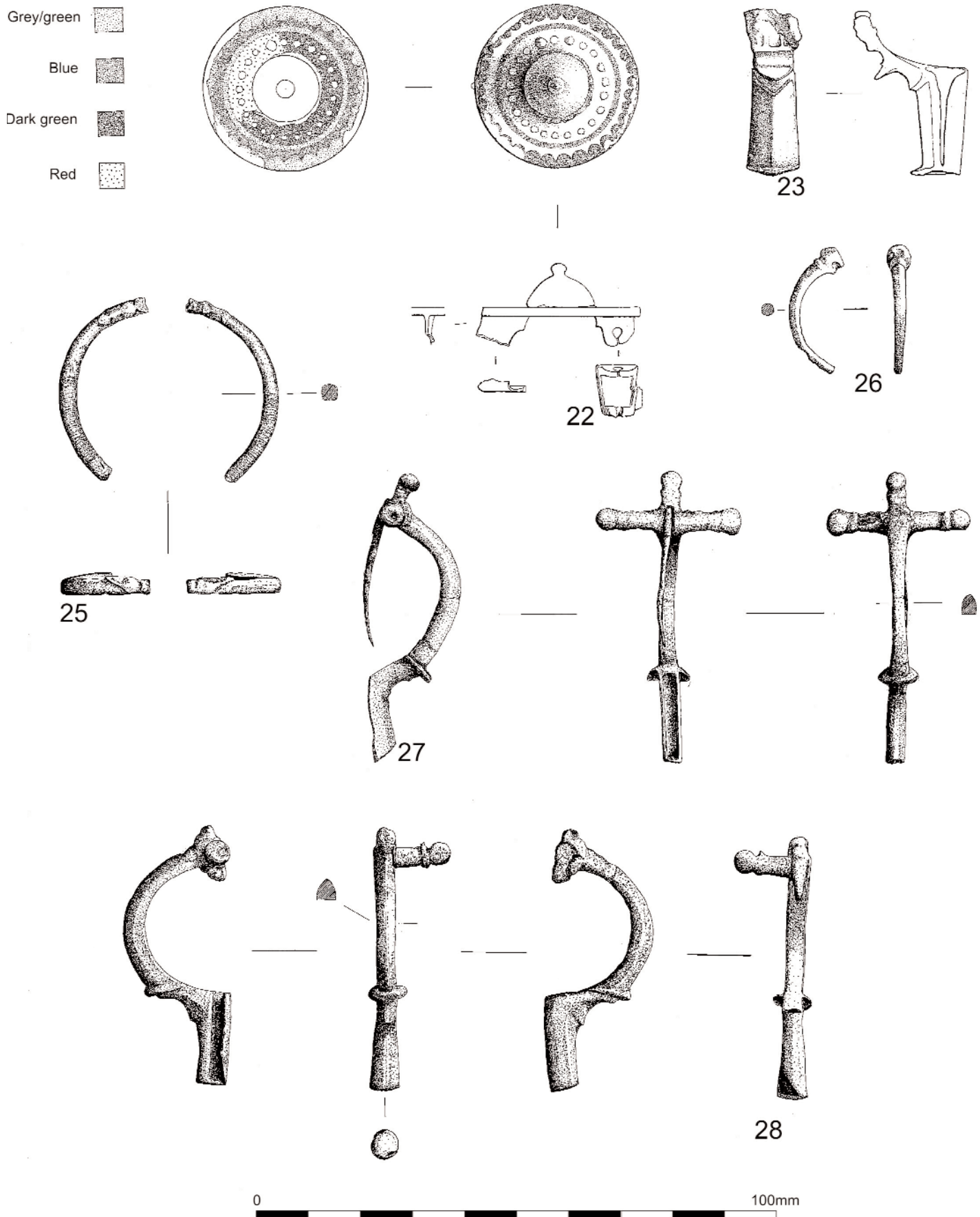


Fig 14.3 Copper alloy brooches (scale 1:1).

26. 5771 H20:7:2 (Fig 14.3)
Fragment of a penannular brooch with a circular-sectioned shank which expands to a globular terminal with a disc neck. The whole has been tinned.
Fowler 1960, Type A3.
L:29mm
27. 5927 H20:7:15 (Fig 14.3)
Small crossbow brooch with semi-oval-sectioned shank. An incomplete flange projects from above the tubular foot which expands slightly to the end. The arms are semi-circular in section with globular terminals and disc necks. The pin is incomplete and hinged. The terminal is flat at the back and has only a vestigial disc at the neck. A similar brooch from Richborough has been dated to earlier than the last quarter of the 3rd century AD (Bushe-Fox 1949, 119, no. 55, pl XXX), but continental parallels suggest an even earlier date (Riha 1979, Taf 50, no. 1440). Local parallels include those from South Shields (Allason-Jones and Milet 1984, nos 3.43, 3.47, 3.51, 3.54) and Coventina's Well (Allason-Jones and McKay 1985, 24–5, no. 49).
L:55mm, W across arms:27mm, L of catchplate:16mm
28. 1245 H13:8:1 (Fig 14.3)
Crossbow brooch lacking the pin, the terminal and one arm. The surviving arm has a globular end and a disc neck. The bow is semi-octagonal in section while the expanding catchplate is plain and also has a semi-octagonal section. The whole has been silvered or tinned. *See* No. 27 above for comments on the type.
L:49mm
29. 62 H13:3:0 (Fig 14.4)
Developed crossbow brooch lacking the pin and one arm. The rectangular-sectioned bow is narrower than proportions might demand and has two fine vertical grooves. The knobbed terminals have baluster-moulded necks. The long rectangular catchplate with side opening is decorated with three groups of three transverse incised lines. The whole has been silvered and tinned. This brooch does not fall naturally into Keller's typology (1971); in particular the thin, circular-sectioned arms recall the earlier bow brooches as exemplified by Nos 27 and 28 above. The baluster-moulded necks, however, are a sophistication on the more common globular or onion-headed terminals discussed by Clarke (1979).
L:74mm
30. 3483 H13:2:0
Fragment of the triangular-sectioned bow of a developed crossbow brooch.
L:25mm, W:5mm, T:7mm
31. 9065 HSE:1:17
Triangular-sectioned bow from a crossbow brooch. An oval flange projects from just above the missing foot.
Surviving L:36mm, W of bow:3.5mm, T of bow:3.5mm
32. 3340 H13:11:16
Rectangular foot and catchplate from a crossbow brooch. The bow appears to have been rectangular in section.
Surviving L:36mm, W of foot:5.5mm
33. 8613 H21:1:12
Brooch pin of rectangular section with two coils of the spring surviving.
L:43mm, T:1.5 × 1mm
34. 4967 H20:2:2
Length of chain made up of a series of wire rings bent and fitted into one another so that each ring contains part of two others. The resultant cross-section is a concave-sided square. The links are tightly fitted and have a limited play.
This complex form of chain is usually found in association with brooch pairs. For a general discussion see Stevenson and Emery 1963, 20ff; for local parallels see Brewis 1924, pl 4, and Hanson *et al* 1979, 62.
L:56mm, total T:5mm
35. 200 H13:7:0
Fragment of a triangular-sectioned ring. Possibly part of a buckle or a penannular brooch.
D:40mm, W:3.5mm, T:3mm
36. 4415 H20:6:0 (Fig 14.4)
Strip finger-ring expanding at the shoulders to enclose a raised rectangular panel. A double incised V on either side of the panel emphasises the shoulders. The inner surface shows file marks.
Internal D:20mm, panel:11 × 10mm
37. 5929 H20:6:19 (Fig 14.4)
Oval annular ring of D-section expanding slightly to a flat oval panel, moulded to the outer face, which has a central boss. Possibly a finger-ring or the loop from a mount (see Allason-Jones 1986, 68–9).
D:21mm, panel:12 × 11mm
38. 2872 H13:1:54 (Fig 14.4)
Oval-sectioned penannular ear-ring with a groove across the inner edge indicating a missing pendant. One tapered terminal has a length of wire wrapped tightly around it seven times.
Type 1 (Allason-Jones 1989) ear-rings with pendants are common throughout the Roman period on both military and civilian sites. The additional twisted wire decoration, however, is less common.
D:19mm
39. 9505a H21:1:8
Arc of copper alloy with notches along the inner face and both ends splayed. Ear-ring of Allason-Jones 1989, Type 2F.
Surviving L:23mm
40. No SF no. or context
Fragment of a curved hook of tapering lozenge section. Possibly an ear-ring.
Surviving L:16mm, maximum T:2mm
41. 7312 H20:8:8 (Fig 14.4)
Incomplete and fragmentary strip bracelet with a raised edge. The centre of the shank is decorated with a median row of stamped lozenges which increases to three rows towards the surviving terminal. The terminal is rounded with a beaded border and a stylised repoussé snake's head.
In the quality and elaboration of the decoration this can be compared with the two snake's head bracelets from Castlethorpe (Cool 1979). In discussing those examples, however, Cool comments that early snake's head bracelets, such as those found at Dolaucothi, tend to have the heads modelled in the round while the later bracelets are flat with the details incised. The Castlethorpe examples are unusual in having moulded tops and flat undersides and none of the examples cited by Cool have repoussé decoration.
Surviving L:84mm, max W:16.5mm, T:1.5mm
42. 3551 H13:5:0
Fragment of a strip bracelet decorated with incised transverse lines.
Surviving L:30mm, W:1mm, T:4mm
43. 5928 H20:6:19 (Fig 14.4)
Very small bracelet of oval section with rounded terminals.

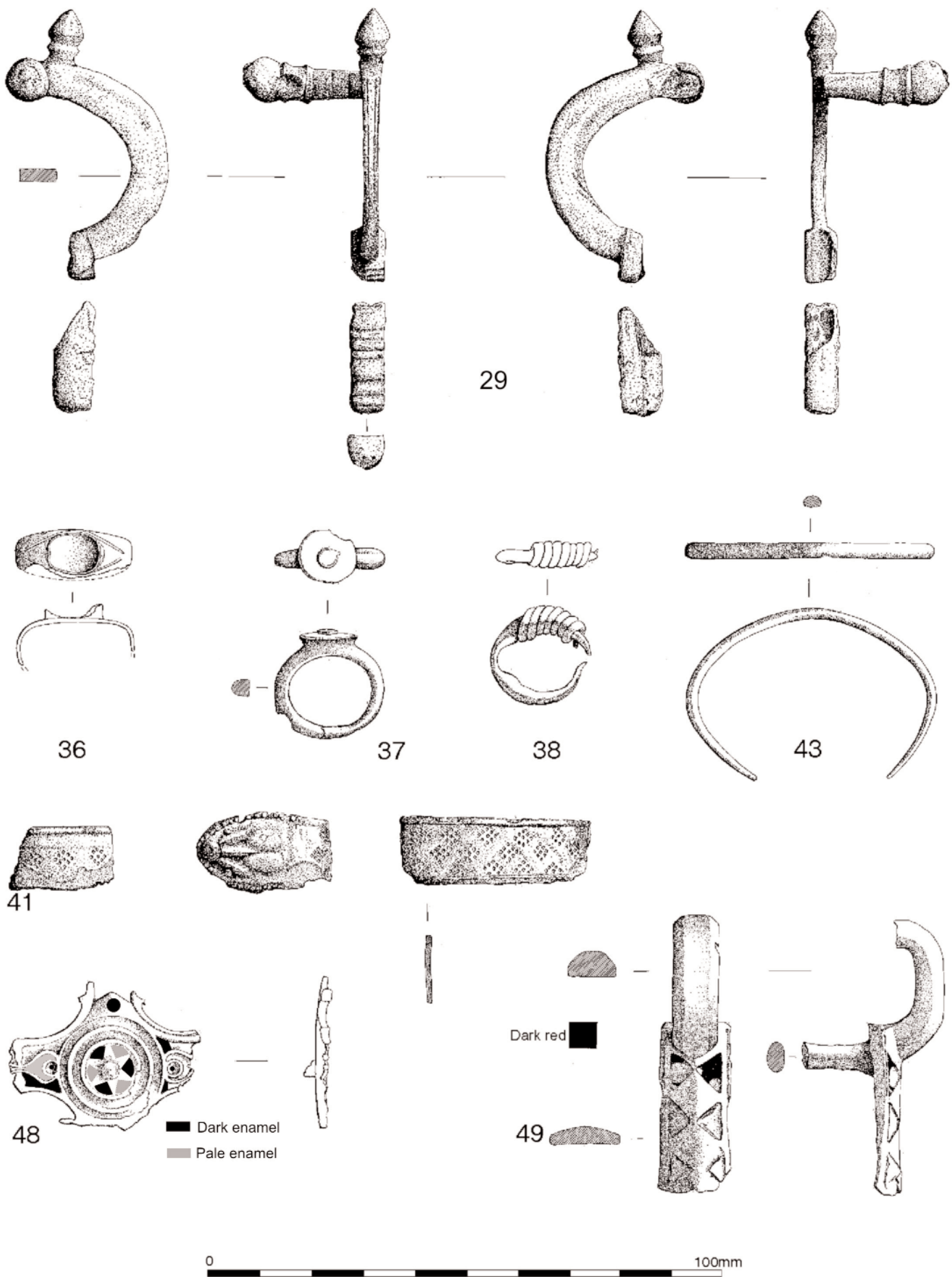


Fig 14.4 Copper alloy crossbow brooch, rings, bracelet and other objects (scale 1:1).

- Undecorated.
Internal D:45mm, W:1.75mm, T:3mm
44. 9473 H21:1:44
Length of semi-oval-sectioned wire, tapering to one end and decorated across the convex face by incised transverse grooves. Distorted bracelet.
L:21mm, W:3mm, T:1.5mm
 45. 8621 H21:3:18
Two fragments of a bracelet formed by twisting three lengths of wire together. Allason-Jones and Miket 1984, Type 12.
L:37mm, 25mm, total T:2mm
 46. 10 H13:2:0
Fragment of a curved circular-sectioned strip. Possibly part of a bracelet.
Surviving L:25mm, T:6mm
 47. 8593 H21:4:7
Curved, circular-sectioned rod, possibly from a bracelet or handle.
L:37mm, T:7mm
 48. 8675 H21:3:78 (Fig 14.4)
Incomplete enamelled plate with a central circular rivet hole. The back is plain and undecorated. The face has a six-point star in reserved metal surrounding the central hole. The triangular fields between the arms of the star and its encompassing circle of two grooves have been filled with alternate colours of enamel, now surviving as dark olive green and pale brown. Projecting from the circle are two opposing bars and four projecting curled motifs arranged in opposing pairs – too little survives to identify the shape or purpose of these motifs. Both of the bars appear to have been decorated by a series of stylised leaves, each separated from its neighbour by a transverse strip – the leaves and strips in reserved metal providing cells in the spaces for enamel of unknown colour. Although the decoration on this piece follows recognised forms for enamelled work of the 2nd to 3rd centuries AD (see Henry 1933), its exact purpose is unclear. The central hole may proclaim it to be a mount while the thickness of the metal may indicate that it originally adorned a wooden box rather than a leather strip.
L:36mm, max W:26mm, T:2.5mm
 49. 3556 H13:5:0 (Fig 14.4)
Incomplete bucket or bowl escutcheon with a rectangular plate. The face of the plate has six triangular fields of red enamel flanked by two notched lines and is slightly convex. The hook has chamfered edges. A single shank projects from the back at the base of the hook.
L:57mm, maximum W:17mm, Total H:28mm
 50. 1776 H13:1:12 (Fig 14.5)
Small vessel with an incomplete narrow flared base. A lathe chuck hole is visible on the underside of the base. A rib separates the base from the body of the vessel which is divided into three zones of decoration by plain bands. The lower zone has elongated down-pointing triangles of turquoise enamel. The central zone has a wide zigzag of reserved metal with triangles of olive green in the spaces. There is a mistake in the arrangement of the triangles in one section. The upper zone has downward-pointing curved triangles, again of turquoise enamel. An incised line runs around the rough edge at the top. The similarity of this piece in form and decoration to the flask found at Catterick (Allason-Jones 2002), as well as others at Mook in the Netherlands (Boesterd 1956, no. 307), München Gladbach (Lindenschmidt 1864–1911, pl 4, no. 7), and the Fitzwilliam Museum, Cambridge (Henry 1933, 65–146), suggests that it is another of the type but lacks the top section. The München Gladbach and Fitzwilliam examples, in particular, share the curved and straight triangle motifs, although none of the examples display the reserved metal zigzag design. In discussing the manufacture of these vessels attention has been drawn to a difference in attitude to the decoration of a vessel by the craftsmen concerned as to whether it should be the enamel or the reserved metal that provides the motifs. In the Housesteads example both techniques have been used. Although all the flasks are superficially similar there are several differences that may suggest they are not necessarily the products of a single craftsman or workshop. The context of the Catterick flask has been dated to the 4th century but, while the others can provide no firm dating, they do hint at an earlier date for manufacture, probably in the 3rd century AD. For a fuller discussion of the comparable flasks see Allason-Jones 2002.
D of upper edge:35mm, D of base:17mm, T at lip:2mm
 51. 7900 H20:5:21 (Fig 14.5)
Fragment of a large vessel with a high straight neck. The rim is thickly beaded and there is a rib running around the lower neck.
D:138mm
 52. 9128 H21:2:29 (Fig 14.5)
Fragment of a bowl escutcheon of triangular shape. Enough survives of the incised feathering decoration to suggest that the escutcheon took the form of a stylised bird with its head bent back to form the loop for the handle. Cf Boesterd 1956, pl VIII, nos 191 and 196.
L:24mm, W:23mm
 53. 9006 HSE:1:2
Annular ring of circular section with an oval-sectioned strip wrapped around the shank. Although this piece has certain similarities to the button-and-loop fastener (No. 103), its size and appearance suggest that it was a vessel escutcheon rather than an item of harness.
D of ring:16mm, W:3.5mm, W of strip:4mm
 54. 9260 H21:2:49 (Fig 14.5)
Bucket or bowl handle of oval section tapering to simple looped ends. Only one of the escutcheons survives: this is triangular with a convex face and a circular loop projecting from the top. The metal of the escutcheon is leaded bronze (Cu, some Pb, trace Sn) while that of the handle is tin bronze (Cu, Sn, trace of Pb). For local parallels see Allason-Jones and Miket 1984, no. 3.765, but also Waugh and Goodburn 1972, fig 41, no. 132 for an example from a context dated to AD 150.
Total W across handle:145mm, maximum T:6mm, L of escutcheon:40mm, maximum W:20mm
 55. 9279 H21:2:61 (Fig 14.5)
Handle of a bucket or bowl of circular section tapering at the ends to conical terminals. A flat hook with a splayed end is looped over one terminal.
Total W:69mm, T:5.5mm
 56. 1425 H13:1:21 (Fig 14.6)
Oval-sectioned strip which expands to a curved end. Fragment of handle?
L:97mm, W:8–11.5mm, T:6mm
 57. 8594 H21:4:10 (Fig 14.6)
Curved hollow rod with a central rib complete with nicked decoration suggesting a stylised dolphin. The 'tail' is broken off while the 'snout' forms a triangular projection.

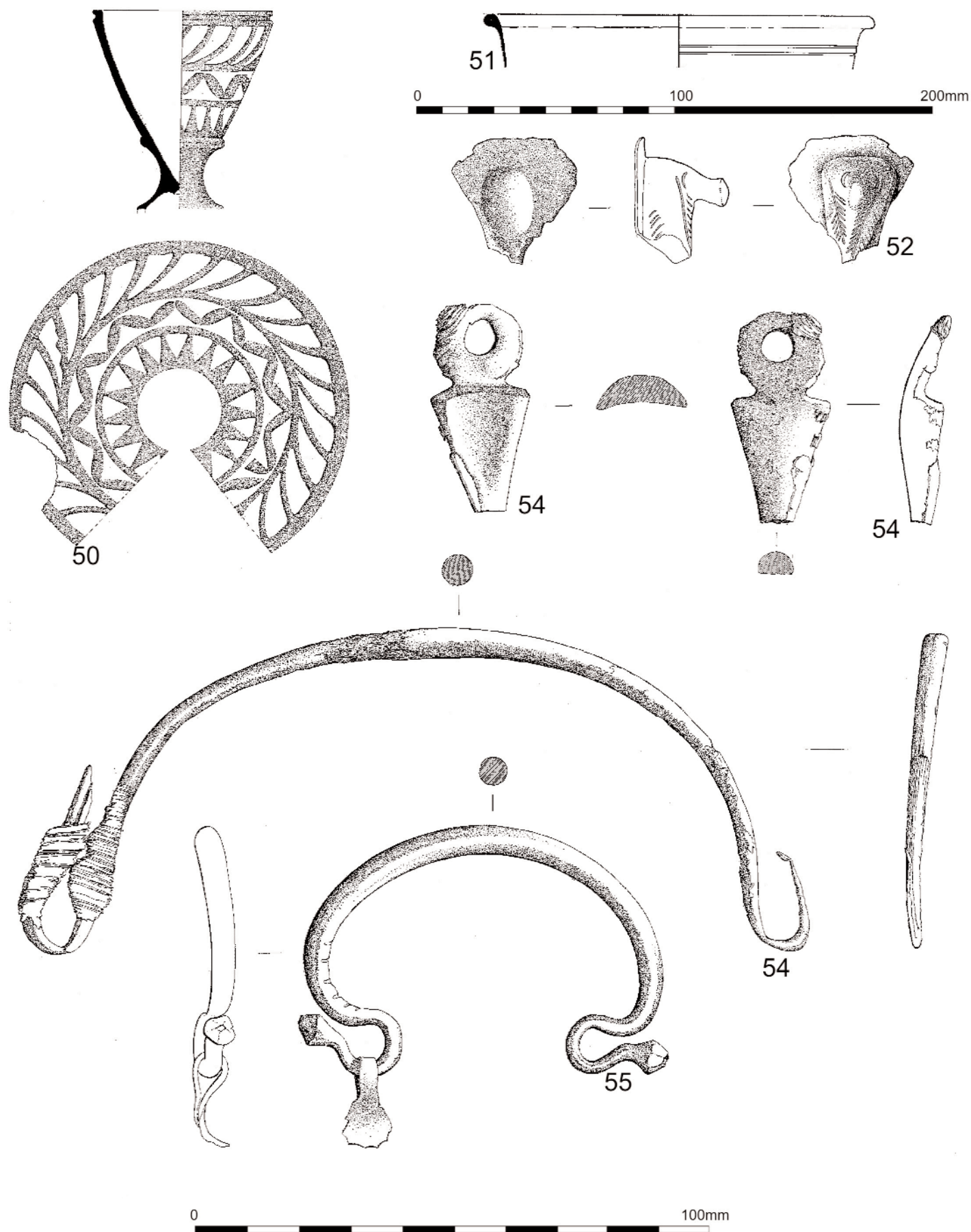


Fig 14.5 Copper alloy objects 50–55 (scale 1:1, except No. 51: 1:2).

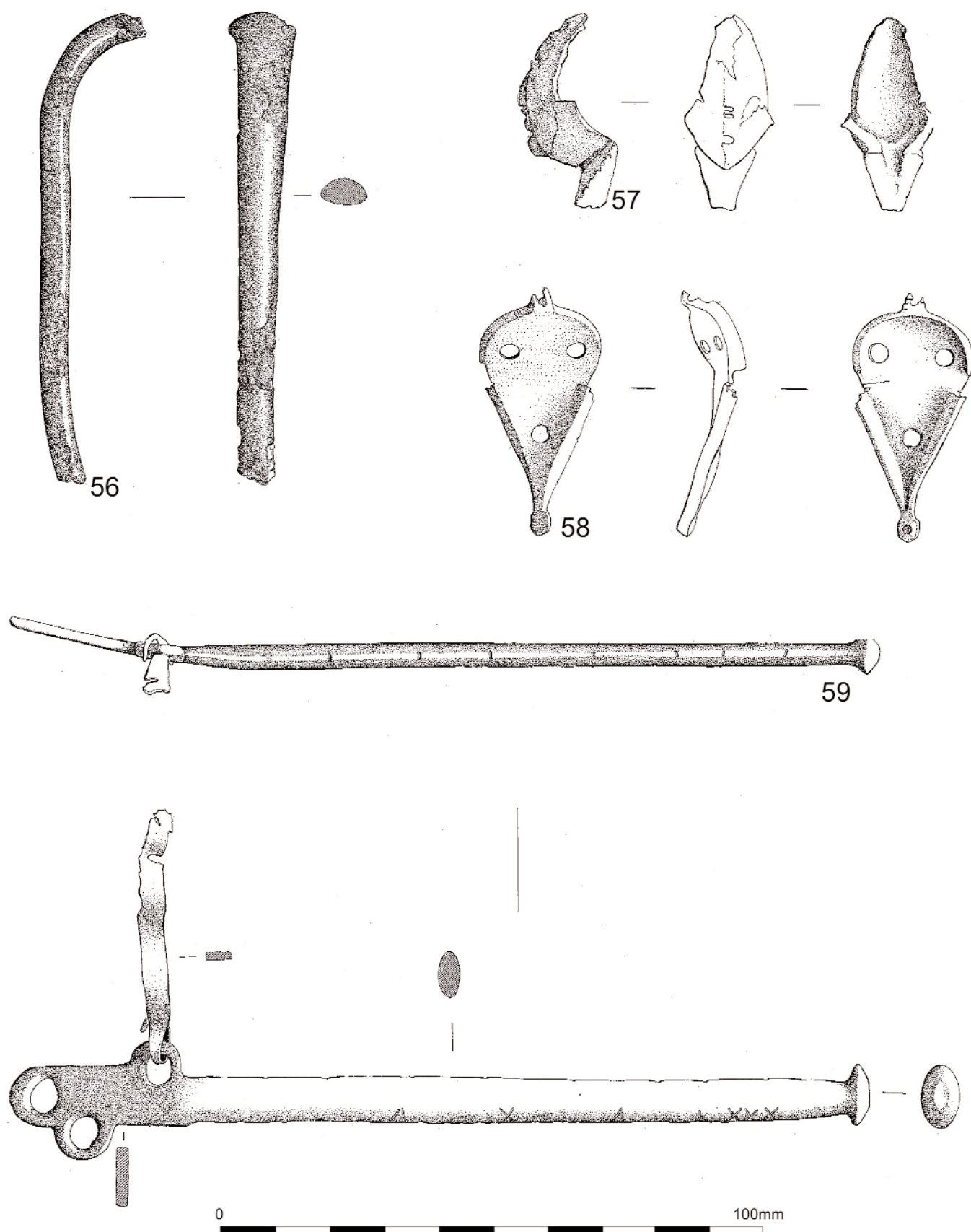


Fig 14.6 Copper alloy objects 56–59 (scale 1:1).

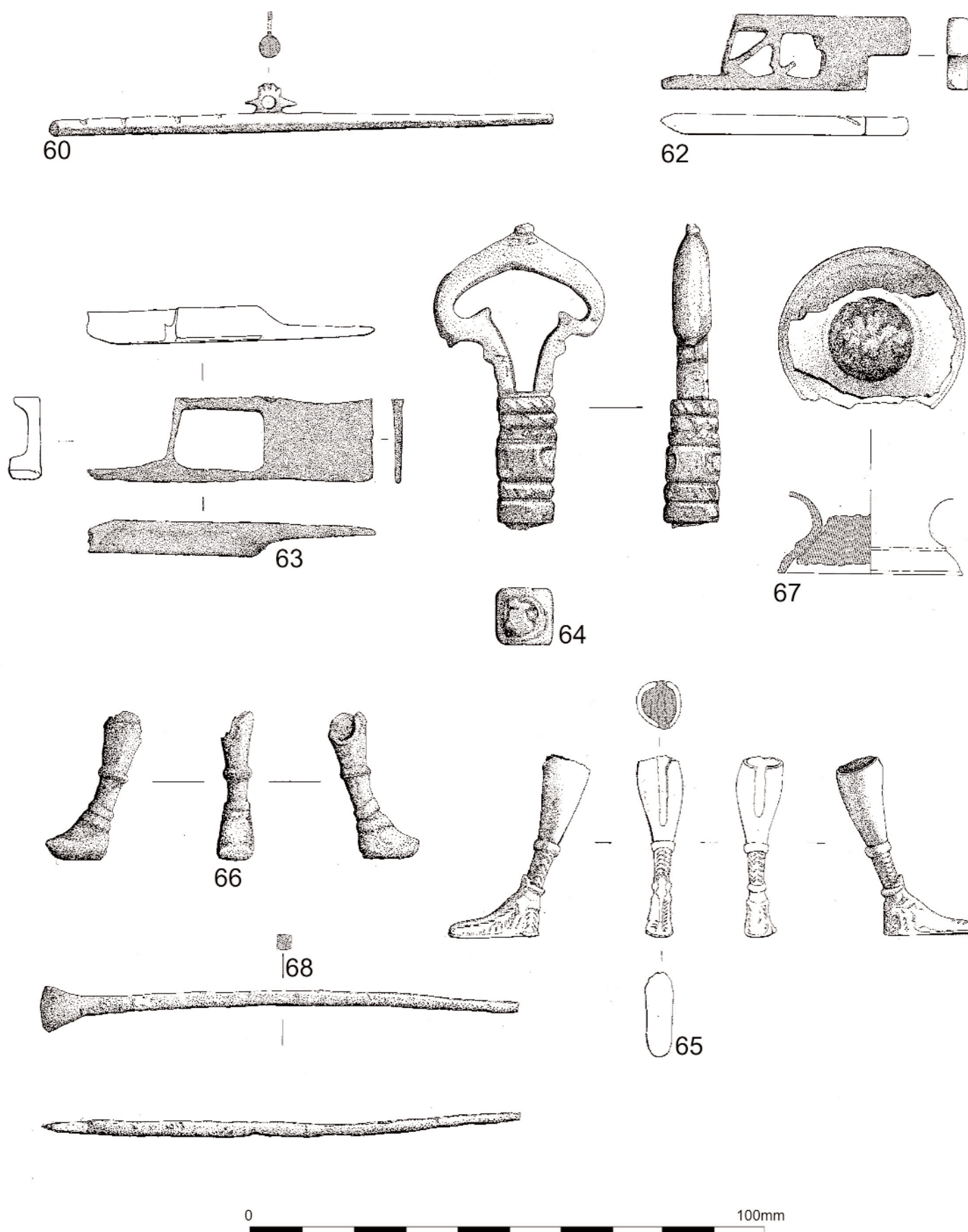


Fig 14.7 Copper alloy objects 60–68 (scale 1:1).

- Although the style resembles the late Roman zoomorphic buckles discussed by Hawkes and Dunning (1961, see in particular fig 13h, 17j) or the dolphin scabbard runners (see Allason-Jones and Milet 1984, no. 3.648) the hollow back is more indicative of a vessel handle.
L:33mm, W:16mm, H:19mm
58. 9514 H21:3:(consolidation) (Fig 14.6)
Elongated pear-shaped base from a sealbox, pierced by three holes (3.5mm).
L:45mm, W:21mm
 59. 1968 H13:5:4 (Fig 14.6 and frontispiece)
Steelyard of oval section tapering to a domed end. The other end is flattened and houses three suspension holes. Only one of these retains a hook made from a flat strip of copper alloy. The shank has the positions of the weights indicated by notches set at apparently irregular intervals astride the edge. The other edge has the characters XX, V, XV, and X, lightly incised on both faces. Steelyards and their weights are common finds on both military and civilian sites in Britain. It was usual practice for the weight positions to be indicated by Roman numerals with transverse grooves used in conjunction with dots (see Crummy 1983, no. 2508 and Allason-Jones 2007, 411–12, no. 59, fig 10.31). The slightly random arrangement of the grooves on this example suggests that it may have been less than accurate. The steelyard was found between flags belonging to the primary floor of Chalet 5. A lead steelyard weight (No. 377) was found only 0.65m away, on the other side of the *contubernium* dividing wall (H13:5:5) in the latest clay floor (H13:5:8) of the *contubernium* phase. At first glance it seems merely coincidental that two elements of a steelyard should be found in close proximity, but the chalet flagging does not cover the entire floor area and the area where the weight was found is of trodden earth. It seems likely that the preceding *contubernium* floors were reutilised for this chalet with flagging laid down only where necessary. It is thus possible that the steelyard and weight formed two parts of the same item and were lost or discarded at the same time during the chalet phase, but the heavy weight sank into the softer clay of the floor on the other side of the demolished *contubernium* phase wall and became separated from the rest of the steelyard.
L:157mm, Terminal:11 × 8mm, L of hook:45mm
 60. 9466 H21:1:81 (Fig 14.7)
Incomplete arm of an equipoise balance. The central pierced lug for suspension has decorative notching and side wings. Four notches survive across the edge of one arm. Cf Colchester: Crummy 1983, no. 2508.
L:97mm, max T:3mm
 61. 1133 H13:5:0
Conical plumb-bob lacking its loop.
L:27mm, D:17mm
 62. 3200 H13:1:80 (Fig 14.7)
Incomplete lock-bolt with a stepped end. Two of the cut-outs survive, both open squares with oblique cross-bars.
L:49mm, W:15mm, T:4.5mm
 63. 2201 H13:5:4 (Fig 14.7)
Incomplete lock-bolt with a squared end stepped in section. The cut-out consists of a single large square.
L:55mm, W:15mm, T:6.5mm
 64. 33 H13:1:0 (Fig 14.7)
Key handle with a wide ogee loop with internal projections. Two incised oblique lines flank the terminal. The shank is square in section and has ridge-and-groove decoration flanking a chip-carved central area. Traces of the iron key survive.
L:60mm
 65. 9317 HSE:1:29 (Fig 14.7)
Small human foot which ends at the calf. The top is hollow with a split down the front and is filled with iron. The foot is realistic, if somewhat out of proportion, and is wearing either a boot with outer strappings or a sock under sandals. The piece has been made in a mould and then the details incised. Although similar pieces have been found on a number of sites (cf Piercebridge: Cool and Mason 2008, ch 11, no. 230, fig D11.24, no. 203), their exact purpose is unclear but they may have been used to support small candelabra or dishes.
H:35mm, L of foot:17mm, W:8.5mm
 66. 64 H13:4:6 (Fig 14.7)
Small human foot similar to above, but with three simple ridges to indicate a boot or leggings. The top is hollow but no filling survives.
H:30mm
 67. 2218 H13:1:39 (Fig 14.7)
Hollow circular statuette base flared at top and bottom with a rib around the skirt. The centre is filled with lead alloy.
D:35mm, H:16mm, T:1.5mm
 68. 5362 H20:4:10 (Fig 14.7)
Stylus with a tapering rectangular-sectioned shank. The head is short and has been hammered to a splayed blade.
L:92mm, W across head:8mm
 69. 1870 H13:1:3 (Fig 14.8)
Hollow tapering tube with two flanges at the mid point. Each flange is decorated with an incised concentric line and oblique notches around the edge. At the narrow end an iron shaft is jammed into the socket but not secured by a rivet. Mineralised wood remains were found with this piece. Medical instrument handle.
L of copper alloy:51mm, W of handle:15mm
 70. 4093 H20:1:0
Pair of tweezers with both arms incomplete. The edges are pitted and corroded but appear to be straight-sided.
L:43mm, W:5.5mm, T of strip:1mm
 71. 444 H13:10:0 (Fig 14.8)
Medical or toilet instrument with a circular-sectioned shank tapering to a point. The head is angled and wedge-shaped.
L:120mm
 72. 1771 H13:1:12 (Fig 14.8)
Incomplete spoon with a large oval bowl. The rectangular-sectioned shank is stepped with three transverse grooves and splays into the back of the bowl.
L of bowl:45mm, W of shank:3.5mm
 73. 1871 H13:5:8 (Fig 14.8)
Incomplete lute-shaped spoon bowl, heavily tinned. The shank is rectangular in section and the joint between shank and bowl is notched.
L of bowl:43mm, W of shank:2.5mm
 74. 7590 H20:8:22 (Fig 14.8)
Long conical terminal with a circular-sectioned shank.
L:25.5mm, T:7.5mm, T of shank:4mm
 75. 5991 H20:6:3
Fine, circular-sectioned pin shank lacking its head.
L:30mm, W:1mm
 76. 6246 H20:4:16 (Fig 14.8)
Circular-sectioned rod with baluster moulding, probably pin head.
L:32mm, T:3.5mm

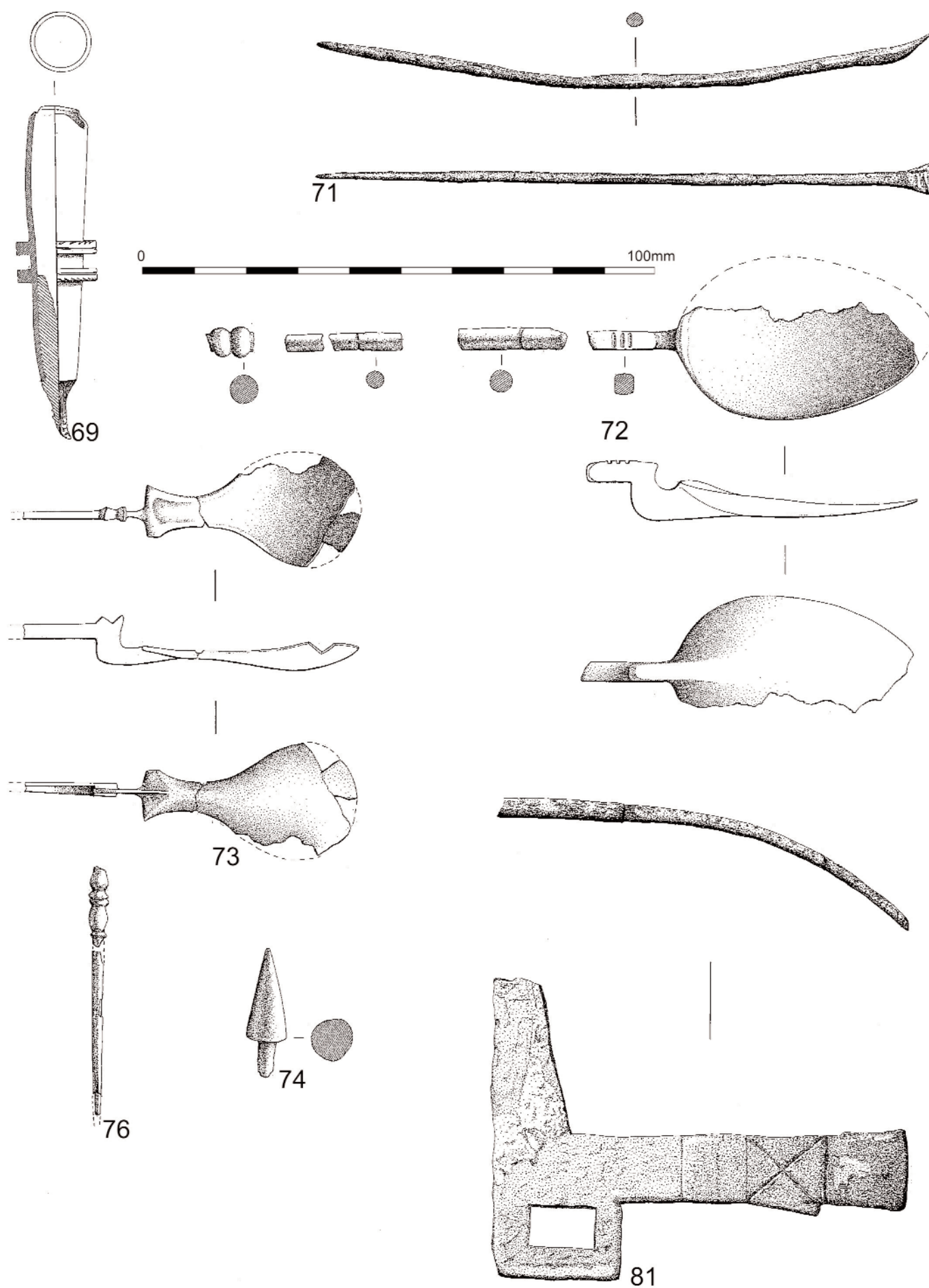


Fig 14.8 Copper alloy objects 69–81 (scale 1:1).

77. 6786 H20:5:32
Pointed end of a circular-sectioned pin or needle.
L:40mm, T:2mm
78. 8662 H21:3:47
Globular head from a pin.
D:7mm
79. 426 H13:10:0
Rod tapering from rectangular section to circular section with a ring head.
L:67mm
80. 363 H13:8:0
Curved rod with a globular head on a bead-and-reel neck. The shank is octagonal in section but reduces to rectangular section as it curves and tapers to the broken end. Both medical instruments and pins are known of similar appearance, see Allason-Jones 1979.
L:52mm, T:5.5mm
81. 34 H13:1:0 (Fig 14.8)
Fragment of a bridle hackamore with one rectangular loop surviving. The nose band has incised transverse grooves and saltire decoration. See Bishop 1988, fig 25.
L:81mm
82. 6791 H20:5:31 (Fig 14.9)
Dumb-bell button with wide discs and rounded terminals. Dumb-bell buttons are commonly found on military sites in the North of England. Gillam, in 1958, referred to them in support of his suggested inter-Wall school of metalworking (M MacGregor 1976, 134). MacGregor has suggested a late 1st- to 3rd-century date. Cf Corbridge: Bishop and Dore 1988, fig 83, no. 127.
L:23.5mm, maximum T:12mm
83. 5888 H20:6:4
Peltate terminal from an openwork belt plate. Cf Osterburken: Oldenstein 1976, Taf 62, no. 791.
L:15mm, W:16mm
84. 4361 H20:4:0 (Fig 14.9)
Incomplete apron pendant hanging from an incomplete hexagonal 'female' mount. The pendant has been filed on both faces and decorated with two incised converging lines at the neck. The penannular loop passes through an oval hole in a flat rectangular plate which projects from the mount. The mount is hollow at the back.
For parallels to the pendant see Oldenstein 1976. For parallels to the mount see Allason-Jones and Miket 1984, no. 3.870.
Total L:43mm, W across pendant:17.5mm, W of mount:16mm
85. 1179 H13:-:0
Incomplete apron pendant similar to above, with two incised converging lines on either side of the neck.
Surviving L:27mm
86. 8645 H21:1:7 (Fig 14.9)
Circular terminal with a depressed centre. An oval-sectioned shank projects from one edge with a curved rib across the angled joint. Corrosion products have confused the issue as to whether the terminal was pierced. Reinforcing bar from a helmet?
L:30mm, D of terminal:16mm
87. 365 H13:8:0
Fragments of fine armour scale.
T:0.25mm
88. 8145 H20:9:2 (Fig 14.9)
Two armour scales joined by a short length of copper alloy wire through the circular holes. Both are rounded at one end and have six holes: four rectangular and two circular. In type they can be compared to the scales from Straubing illustrated by Robinson (1975, pl 441).
L:21mm, W:11mm, T:2.5mm
89. 700 H13:5:3 (Fig 14.9)
Openwork disc with a circular loop projecting from the back. The openwork takes the form of an unsuccessful triskele motif. The edge is chamfered with a scalloped effect.
M MacGregor (1976, 37) discusses a group of objects which she refers to as 'triskele-decorated fobs'. This mount appears to be a hybrid between the Celtic triskele-decorated fob and the Roman *balteus* mount such as the eagle mount discussed above.
D:52mm
90. 7311 H20:7:2 (Fig 14.9)
Openwork mount with tinning on the face. The edges are chamfered and the back is slightly hollowed. The incomplete motif consists of two peltae with an open lozenge in the centre flanked by two trilobate flanges. A single disc-headed shank projects from the back. Cf Saalburg: Oldenstein 1976, Taf 72, no. 954.
L:40mm, W:24mm, T:1mm, total H:8mm
91. 2430 H13:10:18
Fragment of an openwork *trompetenmuster* mount.
L:21mm, maximum W:11mm, T:4mm
92. 8550 H21:1:1 (Fig 14.9)
Fragment of an openwork mount.
L:30.5mm
93. 701 H13:0:0 (Fig 14.9)
Disc mount with a central recessed openwork motif. The broken edge suggests that there was also an openwork design extending on either side. This may be seen as a variant on the late 2nd/early 3rd-century rectangular belt plates known from Osterburken and Stockstadt (Oldenstein 1976, Taf 62, nos 786, 787).
D:35mm
94. 28 H13:1:0
Part of a large disc broken across a central circular hole. The outer circumference appears to have carried an openwork inscription although none of the letters survive intact.
D:70mm, T:1mm
95. 3656 H13:1:170
Fragment of a flat openwork roundel with a plain border. The projections are lozenge-shaped suggesting that this is part of an 'eagle mount', similar to those found at Carlisle and High Rochester (Allason-Jones 1986). A short period of manufacture in the first or second quarter of the 3rd century is indicated for the mounts, which were worn as part of a set on the military *balteus* or cross strap.
L:42mm, W of border:5.5mm
96. 8604 H21:1:9 (Fig 14.9)
Incomplete openwork belt tag. The loop is triangular and is set in a terminal which is square with concave sides. The decoration emerges from the loop as a series of long scrolls enclosing a series of circular holes. The back is flat, the face convex and the piece has been made in a mould, not chip-carved. Cf Zugmantel and Niederbieber: Oldenstein 1976, Taf 41, nos 394-5.
L:25mm, maximum W:12mm, T:3mm
97. 6787 H20:5:36 (Fig 14.9)
Narrow plain belt tag with a rectangular head and loop. The shank narrows before expanding to a pointed terminal. The edges are chamfered but the back and face are flat.

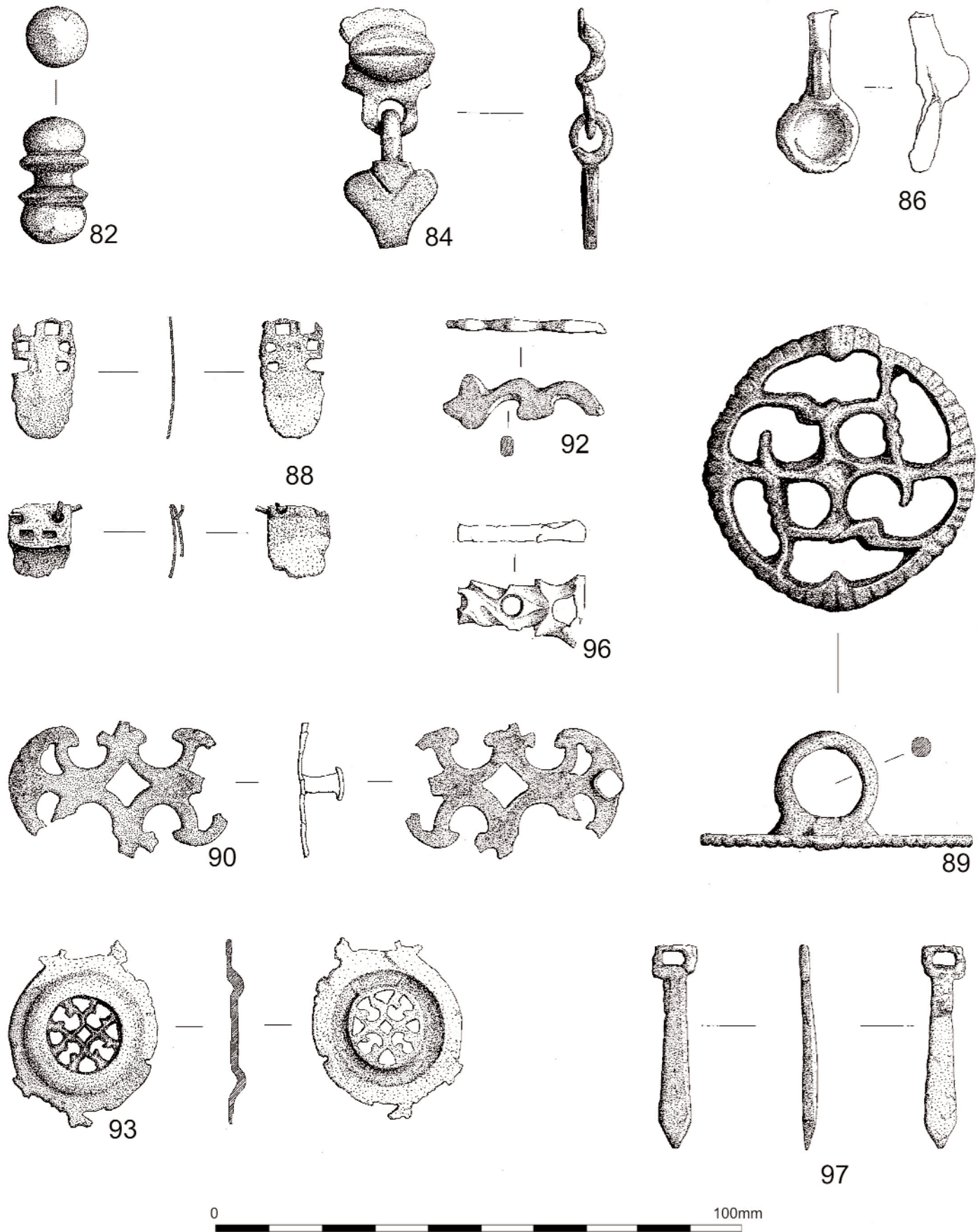


Fig 14.9 Copper alloy objects 82–97 (scale 1:1).

- Strap ends or tags of this form are common finds in the 2nd and 3rd centuries although they are rarely exactly the same. A clay mould for making a similar tag was discovered at South Shields: Allason-Jones and Miket 1984, no. 9.7.
L:38mm, max W:8mm, T:3mm
98. 8688 H21:1:20
Pointed terminal from a strap tag of the same type as No. 97 above.
L:24mm, maximum W:8mm, T:1mm
99. 9504 H21:1:8
Strap-end with rectangular loop and a flat shank expanding to a point.
L:29mm, W of loop:11mm
100. 4098 H20:1:0
Fragment of an oval openwork pendant with a broad hook.
L:13mm
101. 6968 H20:5:47 (Fig 14.10)
Button-and-loop fastener with a thin triangular loop and a disc head. The face of the disc is decorated with an elaborate champlevé enamel design of a five-petalled flower with a circular centre, all contained within a fine, elegant peltate motif. Between the petals are reserved dots of metal.
This fastener falls within Wild (1970) Type 5b, which Wild considered, in agreement with Gillam 1958, to be 'a product of the northern school of enamellers of the 2nd century AD'. Other Type 5b fasteners with floral motifs have been found at Chesters (Budge 1907, no. 1059) and Chester (Wild 1970, 151, no. 63).
Total L:41mm, D of head:26mm, W across loop:17.5mm
102. 3553 H13:1:154 (Fig 14.10)
Circular head from a button-and-loop fastener. The shallow domed face has a complex enamelled motif consisting of an outer ring of inward pointing black triangles separated by turquoise petals. The central circular motif has an intricate motif of reserved metal filled in with turquoise enamel and a central square of black enamel. Wild 1970, Type 5b.
D:33mm
103. 453 H13:10:0 (Fig 14.10)
Ring of hemispherical section with a raised scar on one face – possibly a button-and-loop fastener of Wild (1970) Type 2, lacking the simple lip-moulding through damage. Wild has suggested that this form comes from an Iron Age tradition that survived into the 2nd century. The parallels listed by Wild are all, with only one exception, from the north of England or Scotland.
D:27mm
104. 8319 H20:8:8
Triangular loop from a button-and-loop fastener.
L:21mm, W:16mm
105. 7482 H20:8:7
Top of a small bell with a loop at the top. An internal loop has held the clapper.
Surviving L:10mm
106. 8661 H21:4:36
Ring attachment, projecting from a bar with a short spigot. Cf Allason-Jones and Miket 1984, no. 3.689.
L:18mm, T:1.5mm
107. 6047 H20:5:28 (Fig 14.10)
Incomplete rectangular plate with a wide plain panel along one edge. An openwork motif has broken along the parallel edge. From the back project two shanks, one with a disc head, the other with a hammered head.
- Similar openwork pieces have been described by Bishop as 'saddle plates' and allotted to his Type 6, with parallels given from Aislingen, Baden, Haltern, Salona and Vindonissa (Bishop 1988, fig 38, 133).
L:79mm, W:36mm
108. 212 H13:9:0
Several fragments of fine square sheets with the edges folded back. Each has a square hole punched through from the back with the ragged edges left. A pattern of shallow raised concentric circles surround the hole. Saddle or box plates: cf South Shields: Allason-Jones and Miket 1984, nos 652–5; Bishop 1988, fig 37.
The largest sheet measures 33 × 32mm, T:0.25mm
109. 2984a H13:6:12
Incomplete disc with a raised edge. Both faces show traces of organics. Box lid?
D:36mm, H of rim:6mm
110. 7978 H20:9:26 (Fig 14.10)
Hollow dome with four rings projecting away from the edge. Three of the rings are plain but narrow at the furthest point from the dome while the fourth ring has a peltate motif. The face of the dome is decorated by three tiny bosses arranged in a triangle. There is no obvious attachment at the back other than the rings.
This 2nd-century harness junction can be compared to two mounts discussed by Oldenstein (1976, Taf 87, nos 1126 and 1128), from Saalburg and Pforring, both of which are flat with an openwork design in the centre, with four additional smaller loops between the large rings. The Saalburg example, in particular, has a similar wear pattern to the Housesteads mount on three of its rings while the fourth is also in the form of a pelta.
Total W:40mm, H:10mm, D of central dome:21mm
111. 8614 H21:1:11
Incomplete dagger guard, originally hexagonal in shape with an oval tang hole.
Surviving L:10mm, W:11mm
112. 8837 H21:2:39
Incomplete rectangular dagger guard with an oval tang hole.
Surviving L:15mm, W:10mm, T:1mm, D of hole:5mm
113. 613 H13:4:9
Fragment of a curved sheet. Part of a scabbard chape? Cf South Shields: Allason-Jones and Miket 1984, no. 3.397.
L:24mm
114. 8544 H21:3:32 (Fig 14.11)
Chape of peltate shape with openwork peltae on the face. The back is plain and does not complete the design on the face. A small circular hole is pierced centre front.
See Allason-Jones and Miket 1984, no. 3.404 for British parallels and Oldenstein 1976, 112ff, for examples from the German *Limes*.
H:38mm, W:43mm, total T:9mm
115. 8540 H21:3:31 (Fig 14.11)
Scabbard runner. The central panel has a chamfered face and tapers from the top. The upper terminal has an open pelta with a projecting lug. The other terminal is stepped back and appears to be plain and tapered to a point.
This is a common form of runner found in all the north-western provinces in late 2nd/early 3rd-century contexts. British examples are known from South Shields, Chesters and Colchester (Allason-Jones and Miket 1984, no. 3.646) and German parallels have been found

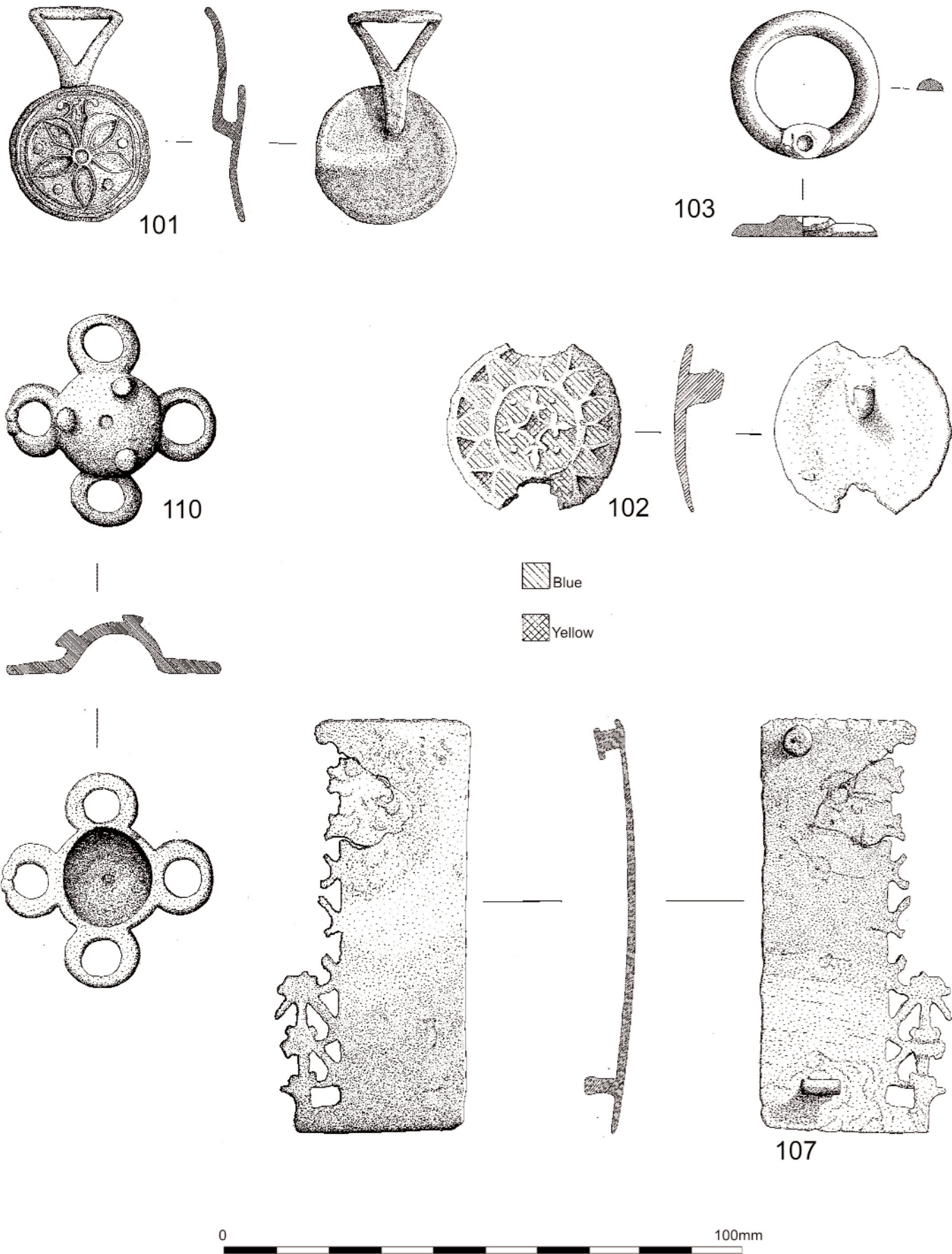


Fig 14.10 Copper alloy objects 101–110 (scale 1:1).

- at Niederbieber and Zugmantel (Oldenstein 1976, Taf 13, nos 55, 56, 57).
L:100mm, W of pelta:16mm
116. 8543 H21:3:32 (Fig 14.11)
Incomplete scabbard runner similar to above but with the open pelta held away from the chamfered face by a straight neck. The upper part of the shank is thickened with a horizontal hole passing from side to side. The upper shank projects from behind this pierced block. The lower shank is stepped.
L:79mm, max W:12mm, max H:13mm
117. 8545 H21:3:32 (Fig 14.11)
Terminal from a scabbard runner of semi-circular section tapering to a disc head which is decorated by wide grooves around the head, giving a floral effect.
L:40.5mm, max W:17mm
118. 8535 H20:8:22
Part of a tapering scabbard runner with chamfered edges.
L:55mm, max W:11mm
119. 7381 H20:9:6
Terminal from a scabbard runner of strip section with a trilobate terminal. One shank survives on the back with traces of leather attached.
L:49mm, W:8mm
120. 7595 H20:9:9
Fragment of a scabbard runner including its lobate terminal.
Surviving L:50mm
121. 4216 H20:2:1 (Fig 14.11)
Oval buckle with a central D-shaped loop. The wide bar is pierced by a circular hole (D:3.5mm) to take the hinge. The end is cut away and broken. Two shanks project from the back and the surfaces are tinned.
D:21.5mm
122. 8656 H21:3:104 (Fig 14.11)
Oval buckle of triangular section. Two thin loops projecting internally on either side of the pin seating are the only decoration.
D:22mm, T:2mm
123. 8628a H21:2:6
Very corroded, small, oval buckle complete with pin. A tapering rod takes the place of the belt plate.
W of buckle:15mm, L of rod:31mm
124. 8663 H21:3:47 (Fig 14.11)
Incomplete rectangular buckle broken at the hinge bar sockets. The shank is rectangular in section.
L:35mm, T:2mm
125. 7380 H20:9:6
Incomplete buckle pin of oval section nipped at both ends. The hinge is missing but the tip has an angled 'snake's head' shape.
L:34mm, W:2.5mm
126. 7374 H20:8:8
Broad strip broken at both ends but expanding at one end to enclose a hinge pin seating?
L:18mm, W:8mm
127. 4093 H20:1:0 (Fig 14.12)
Strip with tapering edges, folded in two. The wider end is pierced by a circular hole 1mm diam. The narrow end is decorated by an oblique groove. Belt hook?
L:21mm, W:5.9mm, T:0.25mm
128. 5788 H20:7:2
Three fragments of U-sectioned binding, one with perforated lugs for attachment.
L:40mm
129. 7307 H20:8:16
Fragment of U-sectioned binding similar to above but narrow for shield or scabbard binding.
L:39mm, W:5.5mm
130. 7821 H20:7:42
Length of U-sectioned binding, again unusually narrow. One end is nipped, the other splayed.
L:77mm, W:4.5mm
131. 8519 H20:7:75
Fragment of U-sectioned binding.
L:30mm, W:7mm
132. 8601 H21:3:1 (Fig 14.12)
Fragment of a U-sectioned binding. One end is serrated on both edges for 8mm.
L:43mm, W:7mm
133. 8914 H21:1:33
Short length of U-sectioned binding.
L:39mm, W:6mm
134. 8692 H21:1:20
Sheet rolled to a tube and then flattened with one section projecting from the end. Terminal of binding?
L:21mm, W:6.5mm
135. 8628b H21:2:6
Fragment of a U-sectioned binding.
L:32mm, W:5mm
136. 9271 H21:2:6
Fragment of U-sectioned binding.
L:26mm, W:5mm
137. 7673 H20:3:11 (Fig 14.12)
Triangular terminal emerging from a splayed flat shank. Pierced by a rough hole.
L:21mm, W:17mm, T:1mm
138. 4659 H20:5:0 (Fig 14.12)
Curved bar or hook of triangular section emerging from a rectangular plate. The back of the plate has raised notched edges and a central stamped dot-and-ring motif.
L:13mm, H:16mm, W:8mm
139. 8651 H21:2:26
Short, curved bar with a hollow back, pierced by a central circular hole.
L:18mm, W:6mm, T:1mm, hole:2mm
140. 43 H13:1:0 (Fig 14.12)
Circular-sectioned rod, hollowed from one end for part of its length. The globular head sits on a disc neck and is hollow.
L:46mm, T of rod:11mm
141. 8624 H21:1:8
Globular terminal from a curved, circular-sectioned rod.
D of terminal:13mm, D of rod:9mm
142. 4087 H20:1:0 (Fig 14.12)
Thin roughly triangular sheet with a strip cut from one edge. The sheet is pierced by rows of drilled circular holes arranged decoratively.
L:32.5mm, W:14mm, T:0.1mm
143. 9369 H21:2:44
Hollow domed boss filled with lead caulking.
D:13mm, H:5.5mm
144. 9327 H21:1:35
Incomplete hollow domed boss with a central dimple and a flanged edge.
D:24mm, H:4mm
145. 4634 H20:6:0 (Fig 14.12)
Boss with a conical centre with a surrounding rib. The rest of the face is stepped back to a raised edge.
D:26mm, H:11mm

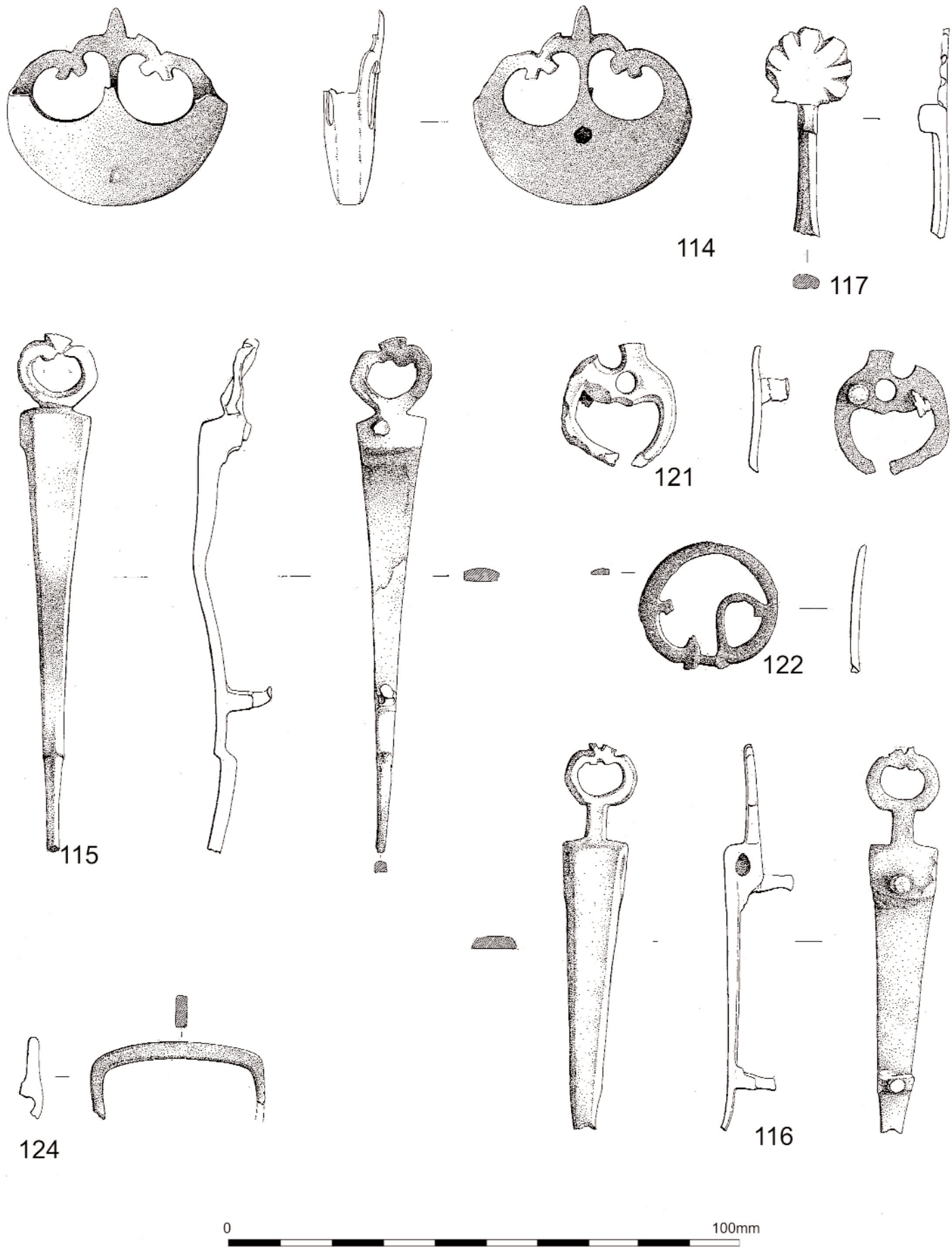


Fig 14.11 Copper alloy objects 114–124 (scale 1:1).

146. 8339 H20:8:63 (Fig 14.12)
Circular plate with a central lathe chuck mark. Three tiny circular holes are spaced equidistantly around the edge.
D:31.5mm, T:1.5mm
147. 8615 H21:3:16 (Fig 14.12)
Small disc stud with a nicked edge. In the centre a circular rib contains orange enamel. The surrounding ring is filled with alternate wedges of turquoise and green enamel. A short shank projects from the back.
The metal when analysed by the Ancient Monuments Laboratory proved to be leaded bronze with traces of tin on the face.
A similar stud from Corbridge contains the same combination of enamel colours (Bishop and Dore 1988, 181, no. 181), but the form is well known on the northern frontier.
D:15mm
148. 8144 H20:5:70 (Fig 14.12)
Small disc stud with a short circular-sectioned tapering shank. The edge is raised on both faces. In the centre there is a small boss surrounded by a field which may have contained enamel, as in the example above, or niello, as has been observed at Corbridge (Bishop and Dore 1988, nos 187–8, fig 86).
D:10mm, H:6mm
149. 2871 H13:1:54 (Fig 14.12)
Disc stud with a notched edge and two disc-headed shanks at the back. Traces of silvering on the face.
D:32mm, total H:6.5mm
150. 3657 H13:1:170 (Fig 14.12)
Mount made from curls of wire with copper alloy sheeting attached as a backing and forming a base for enamel. Traces of the enamel suggest that the colour was white. Incomplete.
Total L:23mm, T:1.5mm
- Bell-shaped studs**
- Bell-shaped studs are common finds on fort sites in the northern zone. They divide into two types: those with iron shanks held in place by lead caulking (Type 1) and those with a copper alloy shank cast in one with the head (Type 2). A number of functions have been postulated for both types and are discussed by Allason-Jones 1985, 95–108.
151. 8 H13:6:0
Type 1, missing most of the iron shank.
H:15mm, D:19mm
152. 18 H13:5:0
Type 1, missing most of the square-sectioned iron shank.
H:14mm, D:31mm
153. 25 H13:1:0
Type 1, missing most of the square-sectioned iron shank.
H:24mm, D:35mm
154. 56 H13:1:0
Type 1, missing most of the iron shank and part of the head.
No measurements valid.
155. 60 H13:5:0
Type 1, missing most of the iron shank.
H:21mm, D:25mm
156. 1166 H13:1:12
Type 1, missing most of the square-sectioned iron shank.
H:40mm, D:39mm
157. 1408 H13:1:6
Type 1, missing most of the square-sectioned iron shank.
H:21mm, D:30mm
158. 1426 H13:1:21 (Fig 14.12)
Type 1.
Total H:31mm, D:35mm
159. 1427 H13:1:21
Type 1 with no waist, a flared skirt and a projecting dimpled cone. The missing shank was of iron.
D:31mm, H:18mm
160. 1428 H13:1:21
Large bell-shaped stud of Type 1, with a wide flared skirt and a dimpled cone. The top and the iron shank have a solid residue of charcoal.
D:41mm
161. 1470 H13:1:6
Type 1, with no waist, a flared skirt and a projecting dimpled cone. The missing iron shank appears to have been caulked into place with lead.
D:35mm, H:20mm
162. 1472 H13:1:6
Type 1, with a short waist, flared skirt and a small dimpled cone, missing its iron shank.
D:31mm, H:15mm
163. 1756 H13:1:6
Incomplete bell-shaped stud of Type 1, with a short waist, wide skirt and hollowed central cone, missing its iron shank.
D:31mm, H:15mm
164. 8567 H21:3:1
Type 1 missing its iron shank, with a short plain waist and skirt and a flat cone.
D:24mm, H:16mm
165. 8744 HSE:1:1
Type 1, lacking most of its iron shank.
H:17mm, D:29mm
166. 9316 HSE:1:29
Type 1, missing all its iron shank. An incised marginal line decorates the face of the head.
H:15mm, D:33mm
167. 1248 H13:9:0
Distorted Type 2, lacking most of the shank.
D:33mm
168. 8574 H21:4:2
Incomplete, bell-shaped stud of Type 2.
D:22mm, surviving H:8mm
169. 8595 H20:–:0
Type 2, with a very short skirt, no waist and a shallow, flat cone.
D:19mm, H:11mm
170. 2984b H13:6:12
Dimpled cone from a large bell-shaped stud.
Surviving H:13mm
- Plain studs**
171. 6809 H20:6:48
Stud with a shallow conical head decorated by radiating grooves. The shank is short and of circular section.
D:29mm, H:10mm

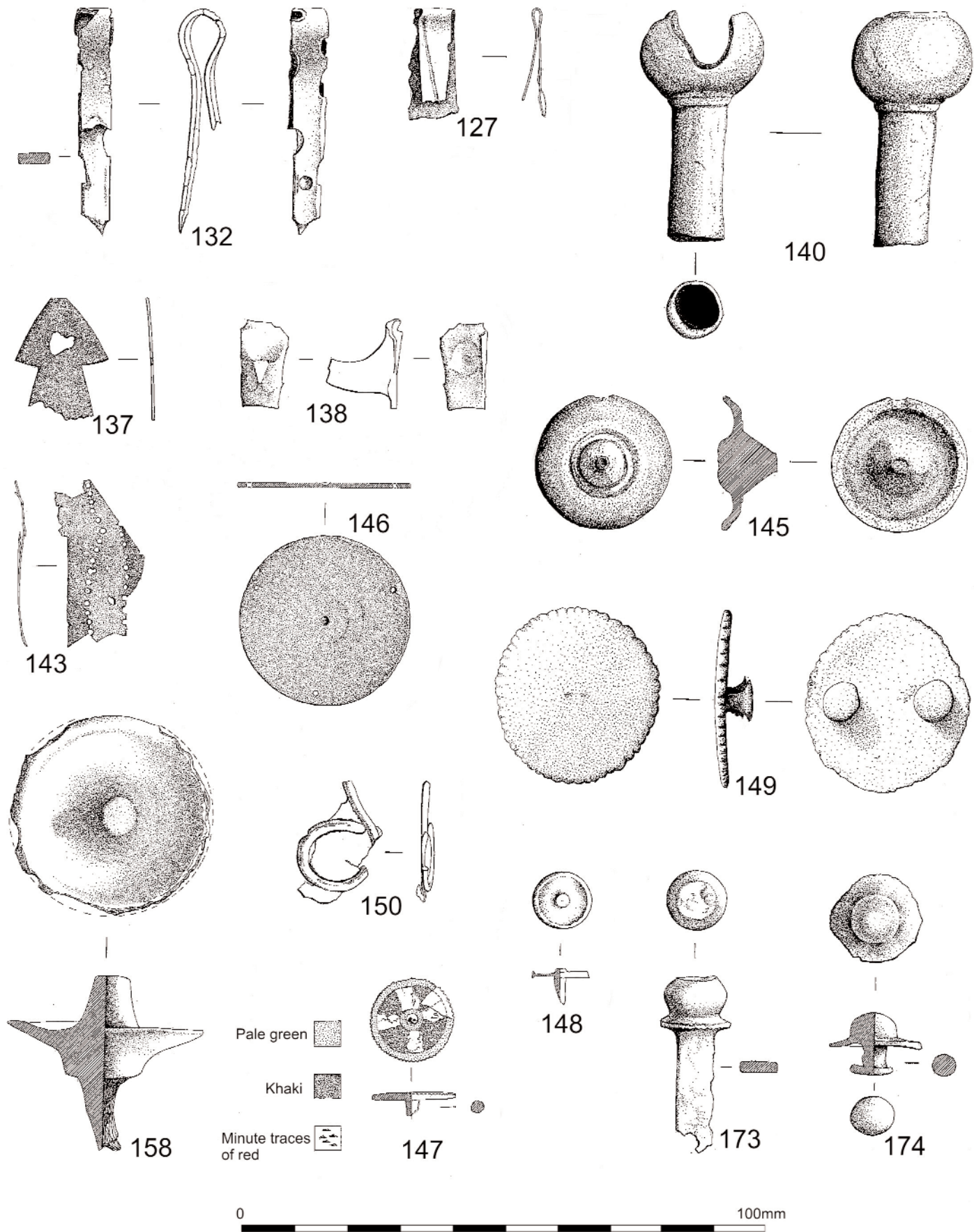


Fig 14.12 Copper alloy objects 127–174 (scale 1:1).

172. 7301 H20:8:12
Peltate end of a stud or belt plate. The face is convex and a broken shank projects from the back.
L:11mm, W:14mm
173. 4097 H20:1:0 (Fig 14.12)
Stud with a globular head on a flanged neck. The wide rectangular-sectioned shank has broken across a circular hole.
D of head:11mm, total H:33mm, Shank:6.5 × 3mm
174. 3458 H13:5:0 (Fig 14.12)
Solid stud with a central boss and a chamfered flange. The short, circular-sectioned shank and disc rove are cast in one with the head.
D of head:17mm, D of rove:8mm, total H:13mm
175. 2720 H13:4:16 (Fig 14.13)
Stud with a hollow domed head and a wide rectangular-sectioned shank broken across a circular hole at the end.
H:29mm, D:17mm, Shank:9 × 2.5mm
176. 2725 H13:2:8 (Fig 14.13)
Stud with a hollow domed head and a wide rectangular-sectioned shank which has a 2.5mm circular hole at the end.
H:24mm, D:24mm, Shank:7 × 2.5mm
177. 733 H13:4:3
Stud with a disc head and a rectangular-sectioned shank.
H:11.5mm, D:6mm
178. 2106 H13:0:2
Disc-headed stud with a short shank held by a disc rove.
D of head and rove:16mm, total H:8mm
179. 4578 H20:4:0
Disc-headed stud with a thick circular-sectioned shank.
D:18mm, T of shank:5mm
180. 8666 H21:3:100
Stud with a large disc head and a short, rectangular-sectioned shank.
D of head:22mm, total H:10mm
181. 5724 H20:3:10
Stud with a hollow domed head and a circular-sectioned shank.
H:16mm, D:25mm
182. 9264 H14:3:1
Stud with a disc head and a thick circular-sectioned shank.
H:15mm, D:18mm, T of shank:5mm
183. 9261 H21:2:48
Hollow conical stud head filled with lead caulking. No trace survives of the shank.
H:13mm, D:29mm
184. 9282 H14:3:5
Hollow domed stud head filled with lead caulking. No trace survives of the shank.
H:7mm, D:20mm
185. 5785 H20:5:1
Incomplete hollow domed stud head filled with lead caulking. The centre has been torn away.
D:29mm
186. – H15:1:123
Incomplete stud with a plain rectangular head and one short shank near the surviving end.
L:21mm, W:12mm, T of head:0.5mm
187. 2580 H13:8:31
Small hollow domed stud with an oval-sectioned shank.
H:9mm, D:12mm
188. 8518 H20:8:75
Hollow, circular stud head whose rectangular-sectioned iron shank (now missing) was held in position by lead-tin caulking.
D:12mm
189. 8568 H21:3:1
Hollow, domed stud with a flanged edge. A square hole (4 × 4mm) has been cut through the centre from the underside to take a separate shank.
D:20mm
190. 8619 H21:4:9
Hollow, domed stud with traces of lead/tin caulking. No evidence of a shank.
D:14mm, H:4mm
191. 1772 H13:1:6
Hollow dome of copper alloy with a rectangular-sectioned iron shank through the centre.
D:32mm
192. 931 H13:1:6
Flanged knob. The larger face is dished with a central cylindrical projection. The narrower face has a groove running around the edge and a deep hollow in the centre to take a shank.
This can be compared to the 'bell-shaped studs' and may have served a similar purpose.
D:30mm, H:14.5mm
193. 1407 H13:5:–
Flanged mount with a wide skirt and a bun-shaped hole cut out of the top.
H:20mm, D:36mm
194. 6248 H20:3:8
Looped rivet formed from a length of wire tapered to both ends and bent through 180 degrees.
L:38mm
195. 6112 H20:4:17 (Fig 14.13)
Short nail of circular section with a nipped neck and a large drum head.
L:31.5mm, D of head:12mm
196. 29 H13:1:0
Disc-headed nail with a square-sectioned shank.
L:20mm
197. 6264 H20:5:1
Small onion-headed rivet or nail.
L:18mm
198. 8877 H21:1:37 (Fig 14.13)
Small nail with a tapering square-sectioned shank. The disc head has a series of incised concentric circles that may have held niello or enamel although no traces survive.
L:16mm, D of head:7mm
199. 6903 H20:5:36
Small tack formed by rolling a sheet and folding one end to form the head.
L:14mm, W of head:5mm
200. 8620 H21:3:18
End of a tack formed from a rolled sheet.
L:18mm, T:3mm
201. 8797 H21:1:8
Tack formed from a rolled sheet.
L:12mm, Head:12 × 8mm
202. 9148 H21:1:37
Shank of tack formed from a rolled sheet.
L:13mm
203. 9149 H21:1:37
Tack formed from a rolled sheet.
L:11mm, D of head:6mm
204. 9233 H21:2:6
End of a tack formed from a rolled sheet.
L:15mm, T:3mm
205. 5836 H20:1:3
Tack formed from a rolled sheet.
L:14mm

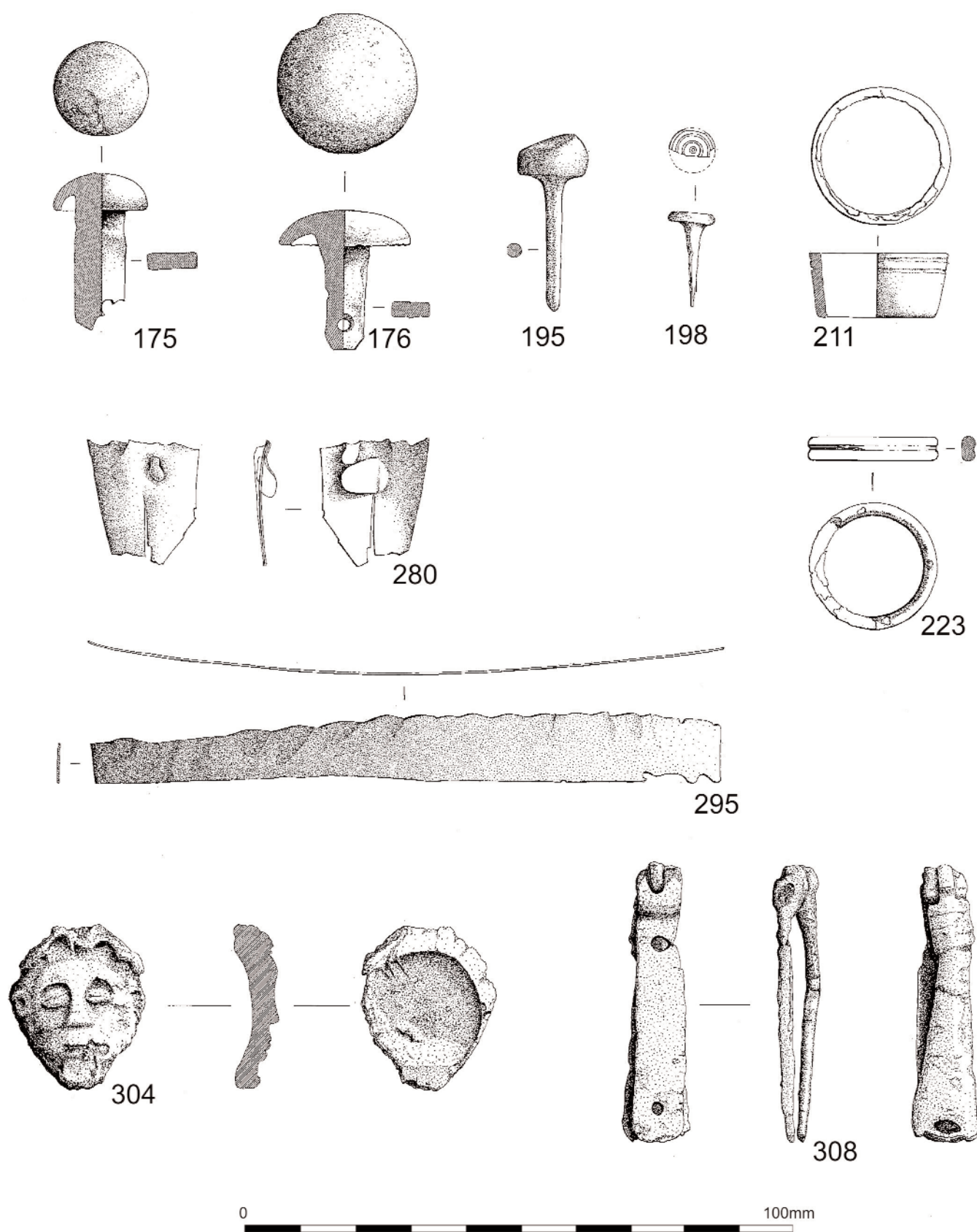


Fig 14.13 Copper alloy objects 175–308 (scale 1:1).

206. 9187 H21:1:35
Small rivet with a solid oval-sectioned shank and a hammered head.
L:10mm, D of head:4mm
207. 9270 H21:2:6
Very small curved rod of circular-section with a globular terminal.
L:6mm, D of head:1.5mm
208. 5406 H20:4:11
Narrow tube of circular section.
L:27mm, W:6mm
209. 4106 H20:1:0
Distorted tube, possibly a ferrule as there are indications that the sides were sloped.
L:26mm, approx D:20mm
210. 6690 H20:4:22
Incomplete domed casing with a rounded edge.
H:18mm, T:1–4mm
211. 8592 H21:4:22 (Fig 14.13)
Collar with sloping sides and two incised rings around the lower edge.
D:25.5mm, H:11.5mm, T:2mm
212. 7831 H20:7:3
Small penannular collar with a convex outer face.
Internal D:8mm, W:1mm, T:4.5mm
213. 13 H13:3:1
Oval ring of circular section.
D:23 × 18mm, W:2.5mm, T:3mm
214. 37 H13:--:0
Annular ring of semi-oval section.
D:39mm, W:5mm, T:5mm
215. 284 H13:8:0
Annular ring of oval section.
D:19.5mm, T:3.25mm, W:3.5mm
216. 591 H13:0:0
Penannular strip ring or collar.
D:23mm, T:2mm, W:5mm
217. 1055 H13:10:0
Annular ring of rectangular section.
D:32mm, T:2mm, W:3mm
218. 1413 H13:5:4
Fragment of a square-sectioned ring.
Internal D:14mm, T:3 × 3mm
219. 2417 H13:10:25
Fragment of a circular-sectioned ring.
Internal D:19mm, T:6mm
220. 2930 H13:11:0
Fragment of a rectangular-sectioned ring.
Internal D:12mm, W:2mm, T:1mm
221. 3412 H13:11:0
Two fragments of circular-sectioned wire, curved to form a ring.
Approx D:22mm, T:2mm
222. 4968 H20:5:0
Fragment of a ring of circular section.
D:17mm, W:2mm
223. 5886 H20:6:18 (Fig 14.13)
Annular ring of oval section with a median groove around the outer face.
D:23mm, W:2.5mm, T:4.5mm
224. 6041 H20:6:20
Fragments of a corroded strip ring.
Internal D:13mm, W:1mm, T:3mm
225. 6673 H20:4:21
Fragment of a wire ring of oval section tapering to one end. Ear-ring?
D:11mm, W:2mm
226. 8687 H21:1:20
Fragment of a ring of triangular section.
D:18mm, W:2.25mm, T:2mm
227. 9440 H15:1:27
Part of a small ring with a spigot projecting from the edge.
D:10mm
228. (813668)
Annular ring of rectangular section.
D:24mm, W:2.5mm, T:3mm
229. 7271 H20:9:5
Fragment of a wide flat ring or washer.
L:27mm, W:7mm, T:1mm
230. 9505b H21:1:8
Part of a disc washer.
Internal D:16mm
231. 9481a H21:2:6
Coiled strip.
External D:20mm
232. 8549 H21:1:1
Length of elliptical-sectioned wire flattened at one end.
L:33mm
233. 8616 H21:1:1
Length of wire of triangular section.
L:57mm, W:2.5mm, T:2mm
234. 6845 H20:4:21
Heavily tinned hook of circular section.
L:15mm, T:3mm
235. 8563 H21:3:19
Small hook of circular-sectioned wire.
L:20mm, T:1.5mm
236. 9220 H21:2:5
Strip curved to form a loop with the ends bent out: clip or hook.
L:19mm, W:4.5mm, T:0.5mm
237. 9269 H21:2:6
Rectangular-sectioned wire curled at one end to form a hook.
L:20mm, W:2.5mm, T:1.5mm
238. 9481b H21:2:6
Curved rod of oval section, possibly a hook.
L:36mm
239. 2730 H13:9:11
Part of an oval-sectioned hook.
L:18mm, T:3.5mm
240. 2712 H13:7:9
Fragment of an oval-sectioned hook.
L:31mm, T:3mm
241. 7513 H20:9:9
Fragment of a circular-sectioned rod with a pointed end.
L:30mm, T:1mm
242. 6960 H20:5:40
Fragment of a circular-sectioned rod, curved at both broken terminals.
L:31mm, T:2.5mm
243. 7522 H20:7:2
Length of roughly cut rectangular-sectioned rod.
L:52mm, W:3mm
244. 8065 H20:8:23
Slightly tapering rectangular-sectioned rod.
L:30mm, W:2.5–3mm, T:1.5mm
245. 8314 H20:8:8
Circular-sectioned rod broken at both ends.
L:34mm, T:3mm

246. 8611a H21:1:1
Curved tapering rod of oval section.
L:30mm, W:5–7mm, T:3–6mm
247. 9490 H15:1:4
Rod.
L:21mm, T:2mm
248. 8635 H21:2:3
Rod of semi-oval section, undercut at one end and broken across a circular hole at the other.
L:53mm, W:5.5mm, T:3mm
249. 8716 H21:1:9
Tapered end of a circular-sectioned rod.
L:18mm, T:4mm
250. 9069 H21:1:35
Rod of irregular section.
L:36mm, T:2.5mm
251. 131 H13:7:0
Distorted rod of rectangular section. Curved in both planes.
L:26mm, W:5mm, T:4mm
252. 4961? H20:3:0
Fragment of an oval-sectioned rod.
L:15mm, W:3mm, T:2mm
253. 822 H13:0:0
Fragment of a block of rectangular shape and section.
L:20mm, W:10mm, T:5mm
254. 8493 H20:4:29
Incomplete triangular block.
L:25mm, W:16mm, T:2mm
255. 476 H13:4:3
Strip of lopsided triangular section.
L:27mm, W:11mm
256. 1788 H13:6:20
Plate with no surviving edges but pierced by one 2.5mm circular hole.
T:0.5mm
257. 6519 H20:1:3
Rectangular plate with one end cut to an asymmetrical triangle.
L:46mm, W:18mm, T:0.5mm
258. 8238 H20:8:53
Fragment of a rectangular plate.
L:20mm, W:17mm, T:0.75mm
259. 9505c H21:1:8
Fragment of a square plate.
25 × 25mm
260. 8311 H20:8:63
Fragment of a rectangular plate.
L:30mm, W:20mm, T:0.75mm
261. 7987 H20:7:49
Fragment of a rectangular plate.
L:26mm, W:15mm, T:0.75mm
262. 8379 H20:8:63
Fragment of a plate with no surviving edges but broken across a 3mm circular hole.
L:31mm, T:0.5mm
263. 8611b H21:1:1
Four fragments of a plate with some straight edges. Two of the fragments have small circular holes.
T:1mm
264. 8639 H21:1:8
Plate with no surviving edges but with a 2mm circular hole drilled through.
L:18mm, W:10mm, T:0.5mm
265. 977 H13:10:0
Rectangular strip with two rounded corners and one edge curved over.
L:24mm, W:20mm, T:0.5mm
266. 1936 H13:10:1
Fragment of a curved strip with raised edges. The strip is flattened where a disc-headed rivet pierces it.
Surviving L:25mm
267. 2711 H13:1:51
Fragment of fine crumpled sheet pierced by a small copper alloy rivet.
Surviving L:70mm
268. 2715 H13:1:55
Curved disc with a hole cut through the centre.
D:20mm
269. 3491 H13:0:0
Two fine rectangular strips which have been held together by two rivets, now missing.
L:50mm W:10mm
270. 4094 H20:1:0
Strip of semi-circular section.
L:46mm, W:3.5mm, T:3mm
271. 4295 H20:2:0
Wide strip broken at both ends. The face is convex while the back has traces of lead/tin alloy.
L:19mm, W:13mm, T:1.5mm
272. 5638 H20:5:10
Incomplete rectangular sheet with a large oval hole near one edge, probably enlarged by corrosion.
L:35mm, W:15mm, T:1mm, hole:5 × 5mm
273. 6354 H20:5:28
Incomplete plate with two curved edges, pierced by a rough rivet in one rounded corner.
L:35mm, W:27mm, T:0.5mm
274. 6848 H20:5:37
Irregular strip.
L:41mm, W:13mm, T:0.5mm
275. 7213 H20:9:1
Broad strip with a broken distorted flared end. A mould seam runs along the underside.
L:30mm, W:8mm, T:2mm
276. 7508 H20:9:9
Fragmentary strip with parallel edges and a shallow median rib.
Surviving L:25mm, W:13mm, T:1mm
277. 7595 H20:9:9
Fragment of a flat strip with cut edges, possibly from a strap end.
Surviving L:50mm
278. 8158 H20:7:33
Triangular sheet carefully cut to shape.
L:21.5mm, W:7mm, T:0.5mm
279. 8548 H21:1:1
Rectangular strip pierced by an iron rivet which projects from the top of a wider, tapering rod.
Strip:30 × 11mm
280. 8625 H21:1:8 (Fig 14.13)
Incomplete plate with cut edges and a central split. A rough disc-headed rivet pierces the plate at one edge.
L:21mm, W:19mm, T:0.33mm, D of rivet head:6 × 8mm
281. 8628c H21:2:6
Triangle cut from a sheet with no means of attachment; possibly waste.
L:34mm, W:24mm, T:0.5mm
282. 8652 H21:1:7
Lentoid strip pierced by two holes, one circular (D:5mm), one rectangular (4 × 3mm), both torn to the edge.
L:50mm, maximum W:19mm, T:0.5mm

283. 8694 H21:1:20
Short slightly curved strip with one pointed end. Buckle pin?
L:15mm, W:3.5mm, T:1mm
284. 8717 H21:1:9
Distorted strip with one rolled edge.
L:25mm, T:0.5mm
285. 8718 H21:1:9
Incomplete corroded strip with one straight edge. A disc-headed rivet pierces the plate near one edge.
L:30mm, T:0.5mm, D of rivet head:5mm
286. 8855 H21:1:33
Rectangular strip broken across a fold at one end and across a central circular hole at the other. Sides taper slightly.
L:25mm, W:15–17mm, T:1mm
287. 8857 H21:1:33
Strip with repoussé ridges along the length.
L:21mm, W:7mm, T:0.5mm
288. 8872 H21:1:37
Incomplete rectangular strip broken across an off-centre circular hole.
L:20mm, W:6mm, T:1.25mm
289. 8918 H21:1:33
Rectangular plate with a shallow convex upper face. One end is pierced by two rough holes.
L:28mm, W:10mm, T:0.5mm
290. 9127 H21:2:29
Distorted triangular sheet of copper alloy, probably an offcut.
L:49mm, W:21mm, T:0.5mm
291. 9203 H21:2:5
Strip with a rounded end pierced by a disc-headed rivet.
L:24mm, W:9mm, T:0.5mm, D of rivet head:6mm
292. 9219 H21:2:5
Incomplete rectangular sheet.
L:20mm, W:18mm, T:0.25mm
293. 9263 H21:2:6
Strip with straight edges and the surviving end cut obliquely. Two repoussé ridges run along the length of the sheet but not parallel to the edges.
L:20mm, W:9mm, T:0.25mm
294. 9304 H21:1:64
Rectangular strip with an elliptical hole punched through.
L:51mm, W:13.5mm, T:1mm, hole:8 × 3mm
295. 9317b H21:2:75 (Fig 14.13)
Hammered strip.
L:114mm, W:12mm, T:0.75mm
296. 9322 H21:1:35
Several fragments of plate, all triangular but of different sizes. Two have holes. Offcuts?
L:21–31mm, T:1mm
297. 1179 H13:–:0
Large block of raw copper alloy ready for melting down.
L:64mm
298. 6672 H20:4:30
Several fragments of curved plate. Offcuts?
T:1mm
299. 4107–4112 H20:1:0
Several irregular offcuts.
T:1mm
300. 9477 H21:1:35
Several fragments of roughly cut or torn copper alloy, possibly for recycling.
301. 9481 H21:2:6
Several fragments of copper alloy for recycling.

302. H21:2:55
Several fragments of roughly cut or torn copper alloy, possibly for recycling. An amount of copper alloy slag (9483) was also recovered from this context, plus two crucible fragments (9482).

303. 1471 H13:6:0
Fragment of copper alloy waste.
Copper alloy sheets or strips were also found in the following contexts:

<i>Context</i>	<i>small find no.</i>
H20:2:2	5397
H20:1:3	5983
H20:5:36	6921
H20:8:8	7487
H20:9:45	8434
H21:1:20	8683
H21:1:20	8684
H21:1:20	8690
H21:1:20	8691
H21:1:20	8693
H21:1:9	8715
H21:1:8	8799
H21:1:8	8800
H21:1:8	8801
H21:2:39	8836
H21:1:37	8870
H21:1:37	8871
H21:1:33	8917
H21:1:33	8919
H21:1:37	8937
H21:1:37	8938
H21:2:39	9048
H21:1:35	9071
H21:1:35	9072
H21:1:37	9144
H21:1:37	9145
H21:1:37	9147
H21:1:35	9186
H21:2:43	9227
H21:2:43	9229
H21:1:8	9505d–g
H21:–:–	9572
H21:2:55	–

Copper alloy objects from consolidation

304. 29A H13:3:– (Fig 14.13)
Pear-shaped mount in the form of a stylised human face. The forehead is divided from the hair by a clear curved ridge. The hair is confined to the top of the head and is shaped into waves rather than curls. The ears are raised circles which are on a level with the slanted lentoid eyes. The pupils are each indicated by an incised oblique line. The mouth is a short horizontal groove with a drilled dot at each end. The back is hollow and shows traces of lead/tin alloy but there is no other sign of a shank.
There are a number of face mounts from the Hadrian's Wall area, for example three from Coventina's Well (Allason-Jones and McKay 1985, nos 35–7) and a single head from South Shields (Allason-Jones and Miket 1984, no. 3.775). All are hollow with traces of lead/tin alloy but no shank and all portray noticeably Celtic features; all differ markedly in appearance. The Housesteads mount is unusual in its depiction of the ears.
L:28mm, W:23mm

305. 57 HS:—:1
Fragmentary ring of oval section.
D:22mm, W:4.5mm, T:3mm
306. 19 HS:—:1
Square-sectioned rod expanding slightly to a rounded end.
L:40mm, W:8mm, T:7mm
307. 23 HS:—:1
Curved rod of oval section expanding at one end. Pin from a penannular brooch?
L:22mm, W:2mm
308. 1A H13 (Spoil heap) (Fig 14.13)
Box or belt hinge consisting of a long rectangular strip pierced by two circular holes (D:2.5mm). One end is moulded to form a tube with the central section removed to provide a gap into which is slotted the narrow rolled end of a second strip, held in place by an iron pin. The second strip is shorter than the first, has a convex face and is stepped at the end.
L of 1st strip:47mm, W:8mm, T:2mm, L of 2nd strip:48mm
309. 21A H13:1 (in drain)
Fragment of a rectangular plate which has snapped across one rolled end and also across a single circular rivet hole which shows traces of an iron rivet.
L:29mm, W:13mm, T:0.75mm
310. 60 HS:—:1
Irregular sheet with one straight edge. There are traces of a lead/tin alloy on the reverse and some spillage on the front which may suggest that this formed part of a statue.
L:51mm, T:2mm

Ironwork (Figs 14.14–19)

311. 2174 H13:10:12 (Fig 14.16)
Finger-ring with a very narrow, triangular-sectioned shank which expands to triangular shoulders. The oval bezel contains an oval intaglio (No. 429, see p 470) with an important device depicting Aeneas and the Cumaean Sibyl. The intaglio has a bevelled edge and is made from two layers of glass with an upper royal blue layer on a dark ground imitative of blue onyx, generally known to jewellers as 'nicolo', a type popular in the Military Zone in the 2nd and 3rd centuries AD. The ring is very close to several from the Fortress Baths at Caerleon (cf Zienkiewicz 1986, 142–3, esp nos 6 and 8). It is more probably Antonine rather than 3rd century in date.
Internal D of ring:21mm, T of shank:2 × 1.5mm, Intaglio:13 × 11mm
312. 9267 H14:3:2 (Fig 14.14)
Circular shield boss with a wide flange, nicked at the edges. No rivet holes survive.
Three turrets: 18b, 26a, and 29b (Allason-Jones 1988) and at least one milecastle on Hadrian's Wall have produced iron shield bosses (Haigh and Savage 1984) but they are less common finds in forts.
Total D:183mm, internal D of bowl:122mm, H:40mm (approx), W of flange:30mm
313. 7774 H20:7:40
Lump of corroded mail (*lorica hamata*) made from fine rings which appear to be butted rather than riveted. The size of the rings is smaller than has been found previously on Hadrian's Wall but falls within the expected range of mail rings: 4–7mm. Cf South Shields: Allason-Jones and Miket 1984, no. 5.75.
Internal D of rings:4mm, T of rings:1mm
314. 1570 H13:8:8 (Fig 14.16)
Oval-sectioned bar which expands to a flat oval terminal pierced by a double-disc-headed rivet.
A group of similar bars found at Sewingshields has been identified as the strengthening and grip bars from shields (Haigh and Savage 1984, 89–90, figs 14, 15). A complete grip bar was found with the remains of a 1st-century shield at Doncaster (Buckland 1978, 247ff, fig 4) and others are known from Newstead (Curle 1911, pl XXXIV, 1 and 2) and Hod Hill (Richmond 1968, fig 58, A4).
L:73mm, W across terminal:30mm, D of rivet:20mm
315. 2488 H13:0:22 (Fig 14.14)
Long leaf-shaped spearhead, broken across the socket. Both faces are slightly convex without a midrib. Mid shoulder. This was found in the same context as ferrule 322, below, and both may therefore have belonged to the same spear.
L:160mm, L of entry:49mm, W of blade:24mm
316. (813675) H13:10:22 (Fig 14.14)
Spearhead with a long thin blade. Both faces are slightly convex without a midrib. Mid shoulder. The socket is split in two places and widely splayed. Mineral-preserved wood from the socket is *Salix* sp (willow) or *Populus* sp (poplar); see Watson 1985.
L:240mm, L of entry:112mm, W of blade:24mm
317. (813676) – (Fig 14.14)
Small but very fine spearhead with wide shoulders tapering sharply to a long point shaped at the tip. Faces are flat without a midrib. Low shoulder. The split wrapped socket has one large rectangular rivet hole opposite two short horizontal grooves.
L:163mm, L of entry:94mm, D of socket:15mm
318. 6830 H20:5:36
Blade of a large spearhead, missing its tip and broken across the socket junction. Low angular shoulder.
Surviving L:142mm, W of blade:49mm
319. (813674)
Very corroded spearhead with a narrow blade. Shoulders missing, no obvious midrib. Split socket.
L:214mm, D of socket:15mm
320. 4966 H20:6:2 (Fig 14.16)
Flat barbed-and-tanged arrowhead with a long straight-sided head and a rectangular-sectioned tapering shank. This is similar to the arrowheads found in a group of eight hundred in a 4th-century context in the *principia* (Bosanquet 1904, 225; Manning 1976, 22–3). Another was found in the excavation of the North Curtain Wall in 1984 (Crow 1988, 93). In his discussion of Roman archery Coulston (1985, 265) describes the type as 'improvised'.
L:56mm, W across barbs:15mm, L of entry:30mm
321. 1747 H13:5:12 (Fig 14.14)
Ferrule with a short pyramidal head and a long shank that ends in a split socket. Traces of the wooden shaft remain *in situ*, probably composed of *Acer* sp (maple) or *Tilia* sp (lime) see Watson 1985. Cf Corbridge hoard: Allason-Jones and Bishop 1988, fig 20, nos 60–3.
L:120mm, W of head:14mm, D of socket:14mm
322. 2521 H13:0:22 (Fig 14.15)
Split conical ferrule. One disc-headed rivet survives in a rivet hole, while another hole on the opposite side of the split suggests a second, now lost. Mineral-preserved wood from the socket is *Salix* sp (willow) or *Populus* sp (poplar), see Watson 1985. Found in the same context as spearhead 315 above.
L:84mm, D across socket:29mm

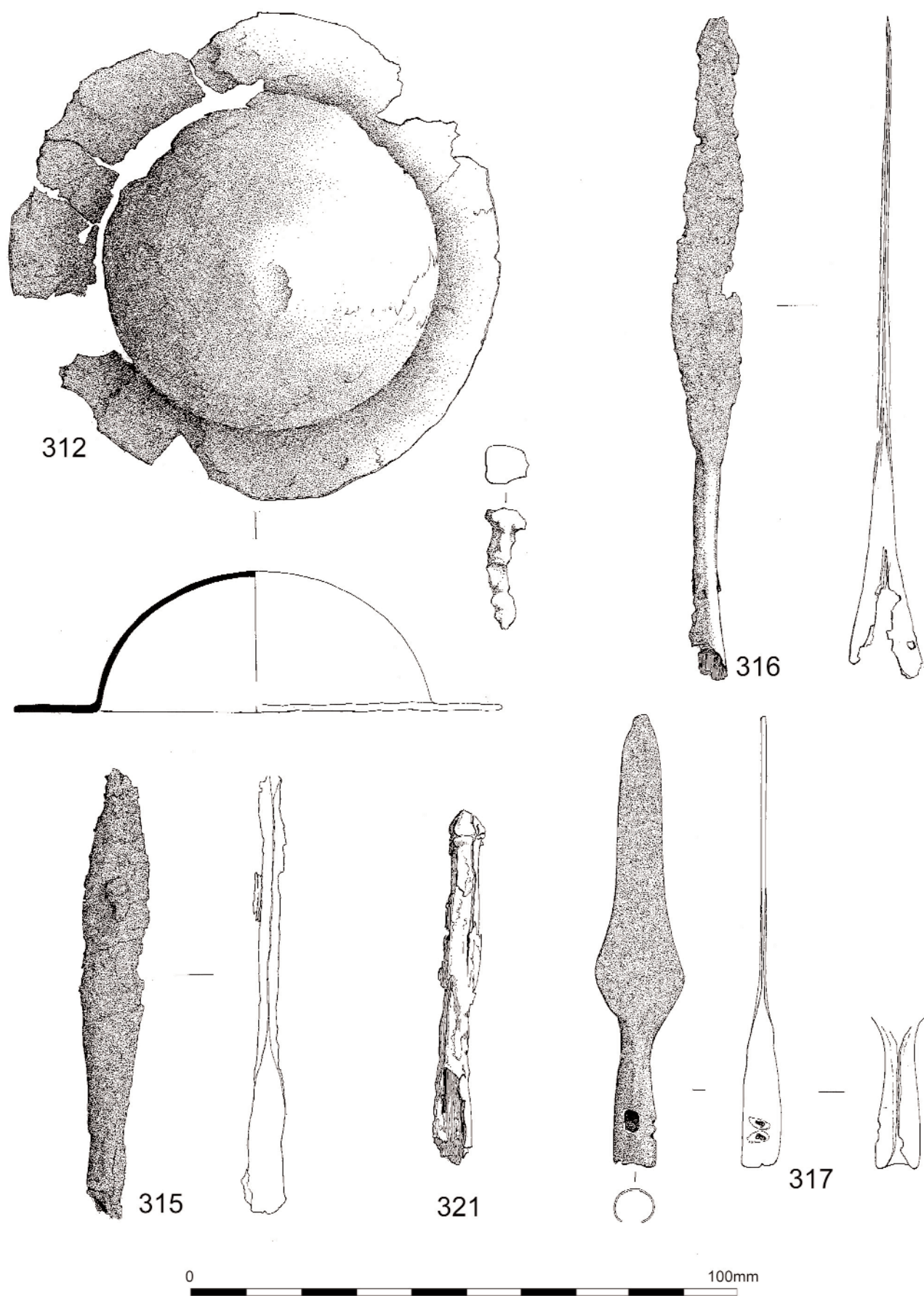


Fig 14.14 Iron objects (scale 1:2).

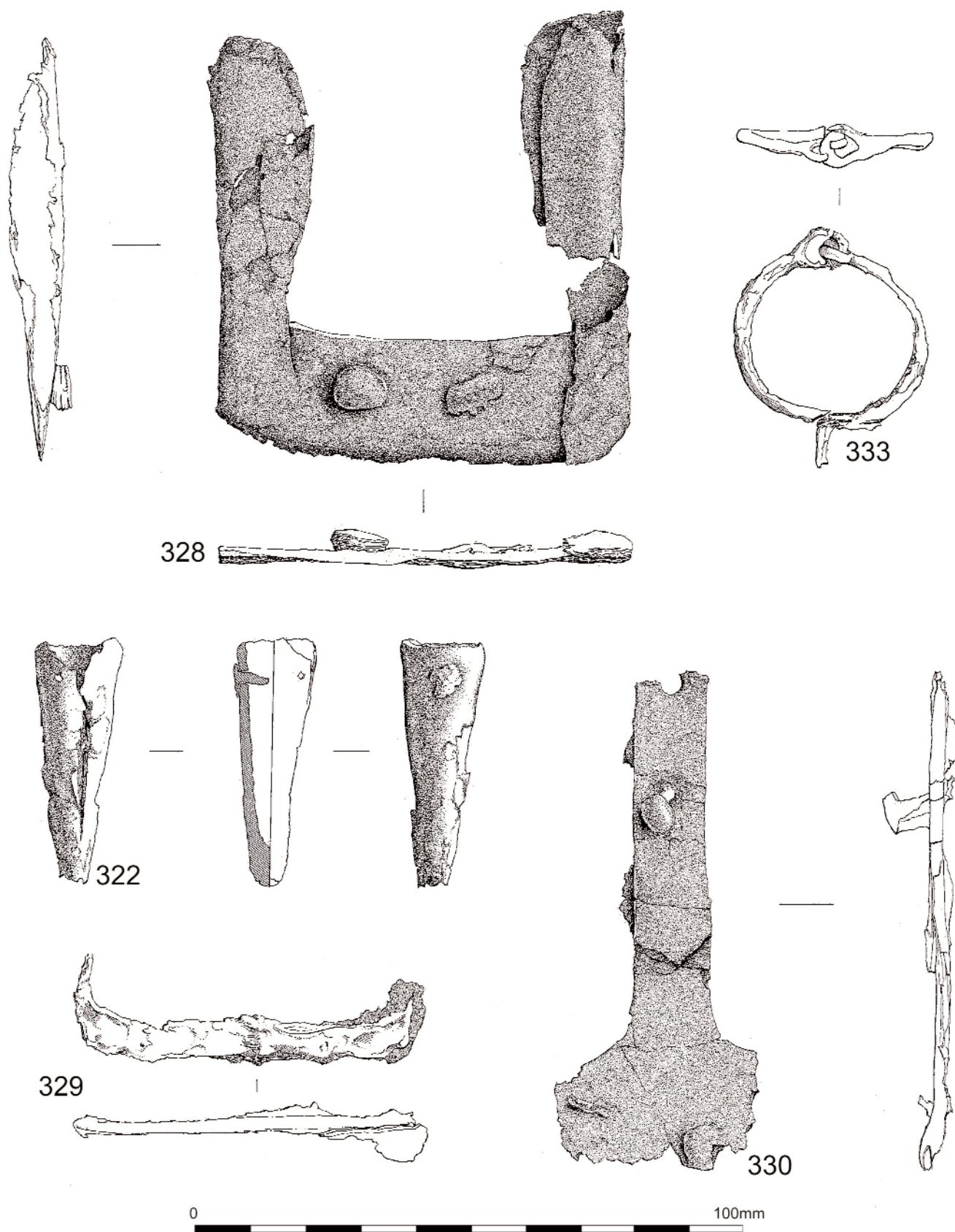


Fig 14.15 Iron objects (scale 1:2).

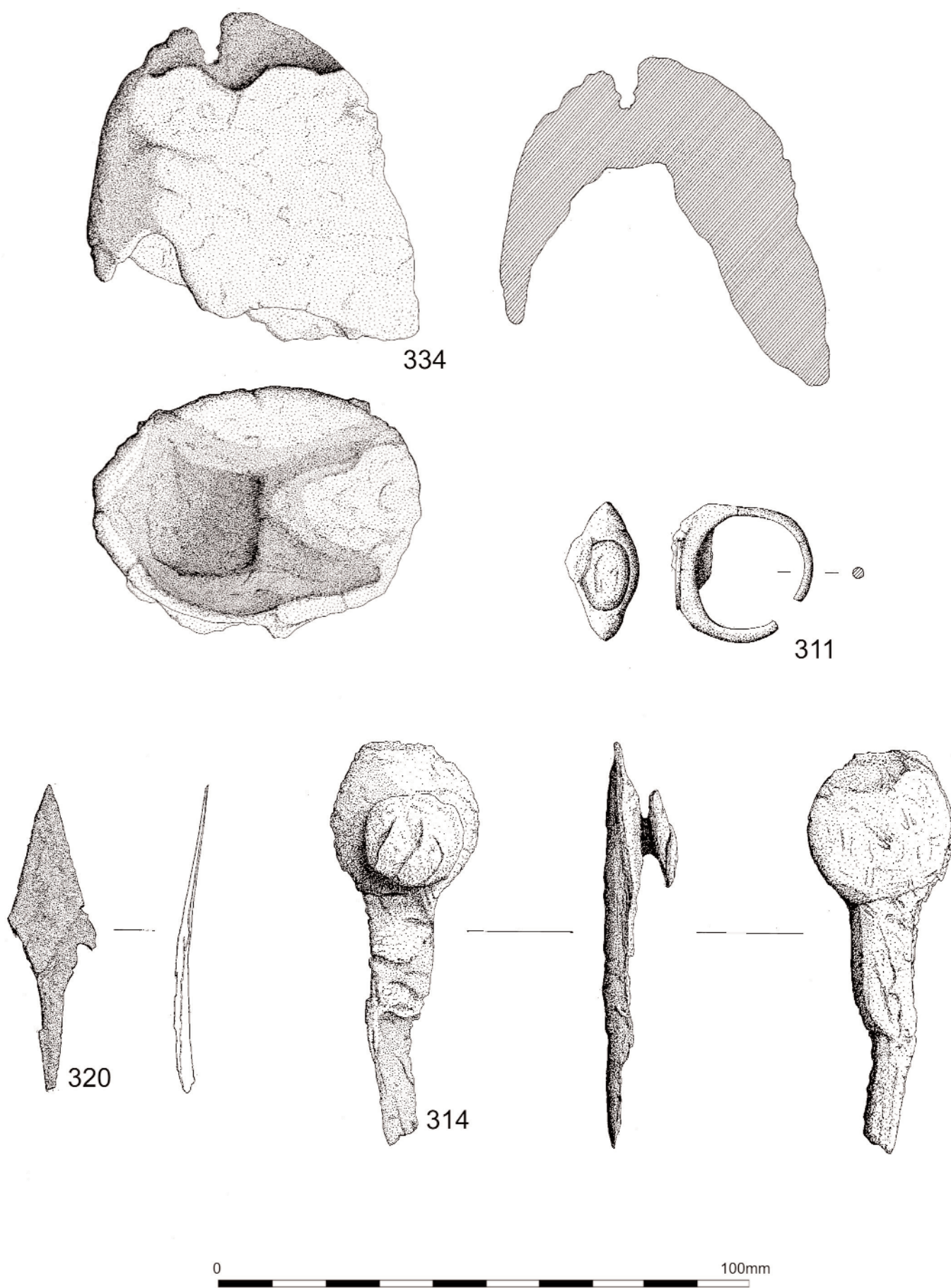


Fig 14.16 Iron objects (scale 1:1).

323. 2676 H13:10:6
Long split conical ferrule with traces of the wooden shaft composed of *Fraxinus* sp (ash) still *in situ* (see Watson 1985). No rivet holes survive.
L:152mm, D across socket:37mm
324. 6963 H20:8:12
Fragments of dagger or knife blade.
No measurements available.
325. 106 H20:10:33 (North Curtain – 1984)
Fragment of a knife blade with a straight cutting edge and an angled back.
L:70mm, W:20mm
326. 46 HS:–:1
Fragment of a large rectangular buckle with slightly bowed sides. The size of this piece suggests a harness buckle rather than a belt or armour buckle.
L:52mm
327. 8596 H21:1:7
Flat oval plate with a wide strip projecting from the edge opposite a short narrow shank.
L:42mm, max T:2mm
328. 644–648 H13:1:12 (Fig 14.15)
Spade sheath with a straight mouth and straight lugged arms. Manning 1985, Type 2B.
Romano-British spades were of wood with a cutting edge provided by a sheath of iron that fitted around the blade. The various forms have been discussed by Corder (1943) and Manning (1969 and 1985).
W:146mm, H:155mm, max T of blade:4mm
329. 592–4 H13:4:3 (Fig 14.15)
Strip of iron with curved ends, possibly the edge of a spade sheath or a joiner's dog (*see above* and Manning 1985, R52).
L:120mm, W:14mm, T:5mm
330. 669–671 H13:1:12 (Fig 14.15)
Flat strip broken at one end across a circular rivet hole. The other end flattens and expands to a roughly oval head which is pierced by two rivet holes, one of which still contains a rivet shank. A fourth rivet hole with its disc-headed rivet sits in the centre of the bar.
Although this was found with the spade sheath, No. 328 above, there is no reason to suppose an agricultural use for this item. One suggestion is that it forms part of a box fitting, cf Manning 1985, R8.
L:180mm, W across bar:25mm, D of rivet head:13mm, T of bar:3.5mm
331. 1239 H13:8:13
Two wide strips, one of which bends through a right angle. Fragments of a straight-grained wood are attached suggesting box hinges or edging. Cf Corbridge Hoard: Allason-Jones and Bishop 1988, figs 81–2.
L:130mm, 93mm, W:39–52mm, T:7.5mm
332. 2687 H13:11:11 (Fig 14.17)
Pair of dividers with rectangular-sectioned tapering arms hinged at the oval heads by a dome-headed rod. See Manning 1985, A39 for parallels.
L:185mm, W across head:19mm, T of arms:3mm, D of rod head:9mm
333. 4456 H20:5:0 (Fig 14.15)
Shackle collar consisting of two semi-circular arms that interlock by means of oval terminal loops. Only a short projection survives from the opening loops but this is sufficient to identify the collar as an element in shackles of Manning's Type 4 (1985, fig 23, no. 4). The small size suggests handcuffs rather than ankle restraints.
Internal D:56mm, W across shank:6mm
334. 4159 H20:3:0 (Fig 14.16)
Bell of rectangular section with a loop projecting from the top.
H:55mm
335. 7033 H20:8:1
Four oval annular chain links of oval section.
L of each link:49mm, total W:26mm, T:5mm, total L:194mm
336. 75 H13:7:0 (Fig 14.17)
Barb-spring padlock. The case is cylindrical with one end blocked except for a narrow rectangular slot. A strip projects from the wall of the cylinder at this end and curves back as if to run parallel with the case. The bolt is circular in section at the haft but rectangular in section at the tip with two springs or barbs and a circular convex stop. Barb-spring padlocks are discussed in full by Manning (1985, 95–6). Unfortunately it is difficult to assign this example to one of Manning's types because the hasp is missing. However, a fragment of iron attached to the bolt head may be from the hasp terminal, suggesting Type 2. The cylindrical form of the case is less common than the rectangular. Cf Verulamium: Manning 1972, 182, no. 72.
Approx total L:150mm, D of case:34mm, L of bolt barbs:73mm
337. (813678) H13 (Fig 14.18)
L-shaped lift key with a rectangular-sectioned handle which is broken at the end. The shank narrows at its mid-point to a circular-sectioned neck. The bit consists of two teeth.
Two L-shaped lift keys are already known from Housesteads although both examples have three teeth rather than two (Manning 1976, nos 144–5).
L:122mm, W across bit:22mm, T of handle:7.5 × 8mm
338. 6107 H20:6:4 (Fig 14.18)
Iron latch-lifter of a form more commonly seen in bone or wood. It has been made by the simple method of cutting four pieces from the edge of a rectangular strip to leave three teeth and a handle. For examples in bone, antler and wood see Allason-Jones and Milet 1984, no. 2.22.
L:121mm, W:13mm, T:3.5mm
339. 4699 H20:3:0
Rectangular-sectioned rod lacking both ends but narrowing sharply at a mid-point. Handle and shank of a lift key? *See* No. 337 above.
L:110mm, Max W:10mm, max T:7mm
340. 6111 H20:6:3 (Fig 14.18)
Iron stylus. The circular-sectioned shank is interrupted by two bead-and-reel motifs. The point is missing. The blade is narrow but spatulate with two transverse grooves across one face and three vertical grooves along the edge of the other face. The elaborate decoration on this piece is more usually found on copper alloy styli. Manning 1985, Type 4.
L:112mm, W across blade:7.5mm, max T of shank:5mm
341. 181 H20:10:15 (North Curtain – 1984)
Rod of oval section which expands to a spatulate end. The broken end suggests that the shank was twisted. Stylus or medical instrument handle?
L:95mm, max W:15mm
342. 2290 H13:10:24 (Fig 14.17)
Chisel with narrow, straight-sided blade which expands to a bell-shaped socket still containing a substantial portion of the circular-sectioned wooden shank. Analysis by the Ancient Monuments Laboratory has shown the wood to be *Castanea* sp (chestnut); see Watson 1985.

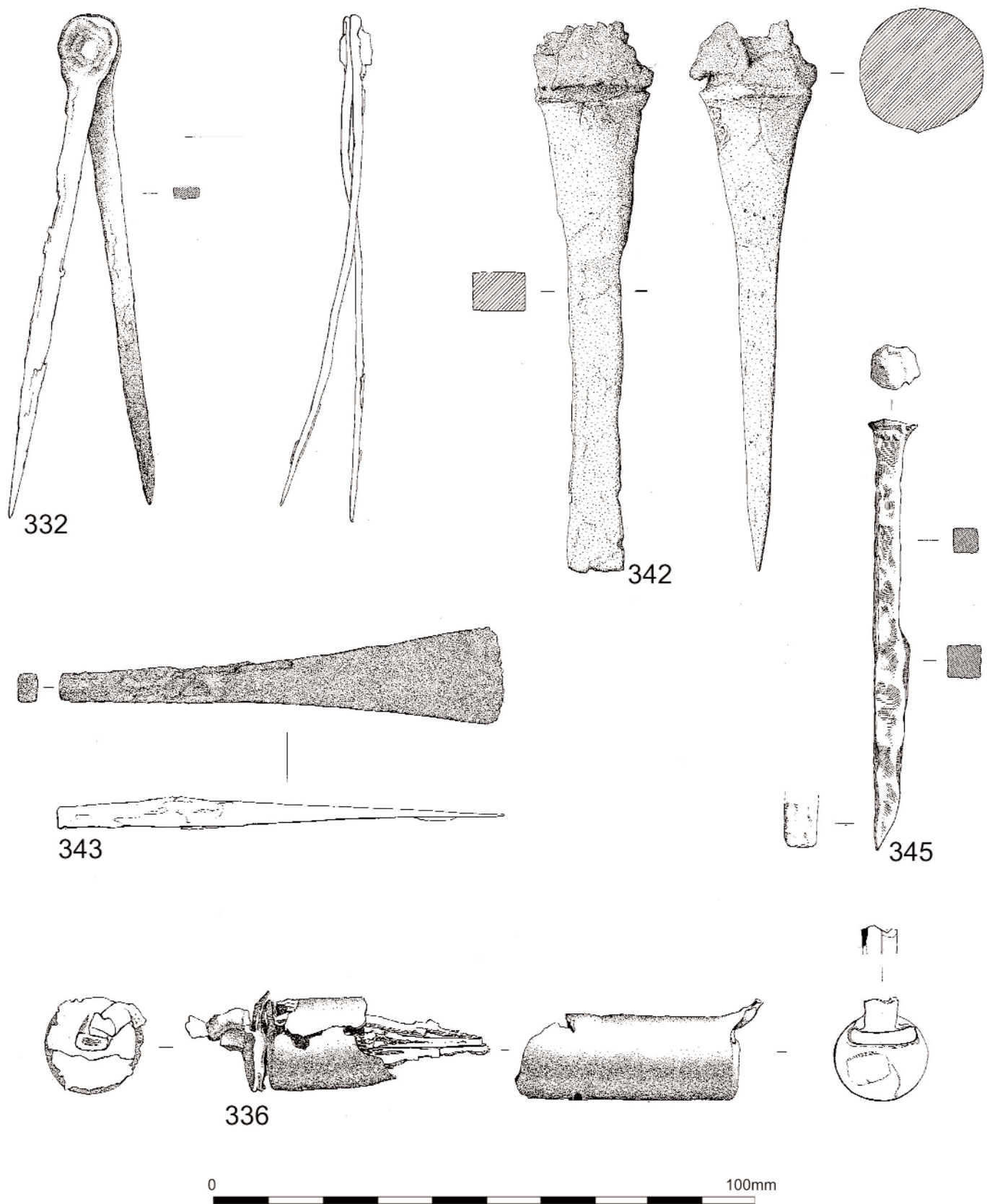


Fig 14.17 Iron objects (scale 1:2).

As chestnut is usually considered to be a tree imported to Britain during the Roman period it is possible that this tool was imported. Chisels with similar blades, identified as 'former chisels' by Manning (1985, B31) have been found at Newstead (Curle 1911, 280, pl LIX, 7) and Old Penrith (Austen 1991, 203, fig 103, no. 759). The Old Penrith example was also hafted with chestnut. L:177mm, W of cutting edge:20mm, D of socket:38mm

343. 1309 H13:7:1 (Fig 14.17)

Chisel with a wide spatulate blade, slightly rounded at the edge. The shank is rectangular in section and expands slightly at the junction with the blade.

Paring chisel? See Manning 1985, Type 1, fig 4, no. 1. A paring chisel of similar size from Housesteads is published by Manning (1976, no. 59), but has a tang for a wooden handle instead of the solid handle of this example.

L:162mm, W across blade:33mm, max T of handle:12 × 10mm

344. 1179 H13:-:0

Fragment of a very corroded iron tool, possibly a short chisel or mason's booster with a wedge blade and a tapering shank.

L:68mm, max W:18mm

345. (813677) (Fig 14.17)

Tool with a rectangular-sectioned shank and a hammered end. At a mid-point the shank thickens suddenly and then tapers to a sharp edge. Smith's punch? See Manning 1985, 9-10.

L:156mm, max W:12mm, max T:12mm

346. 3111 H13:10:31 (Fig 14.18)

Thin, square-sectioned rod expanding in the middle before tapering to its missing end. The other end is encased by fragments of bone, presumably from a handle. Awl?

L:95mm, max W:5.5mm, max T:5mm

347. 2139 H13:0:12 (Fig 14.19)

Small hand hammer with a circular eye set in a lozenge-shaped head. The striking face is rectangular in section and splayed with use. The other face is curved and tapered.

L:125mm, D of eye:17mm

348. 288 H13:9:0 (Fig 14.19)

Drop hinge staple with a rectangular-sectioned tapering shank bent to a right angle. See Manning 1985, R12.

L:90mm, max W:10mm

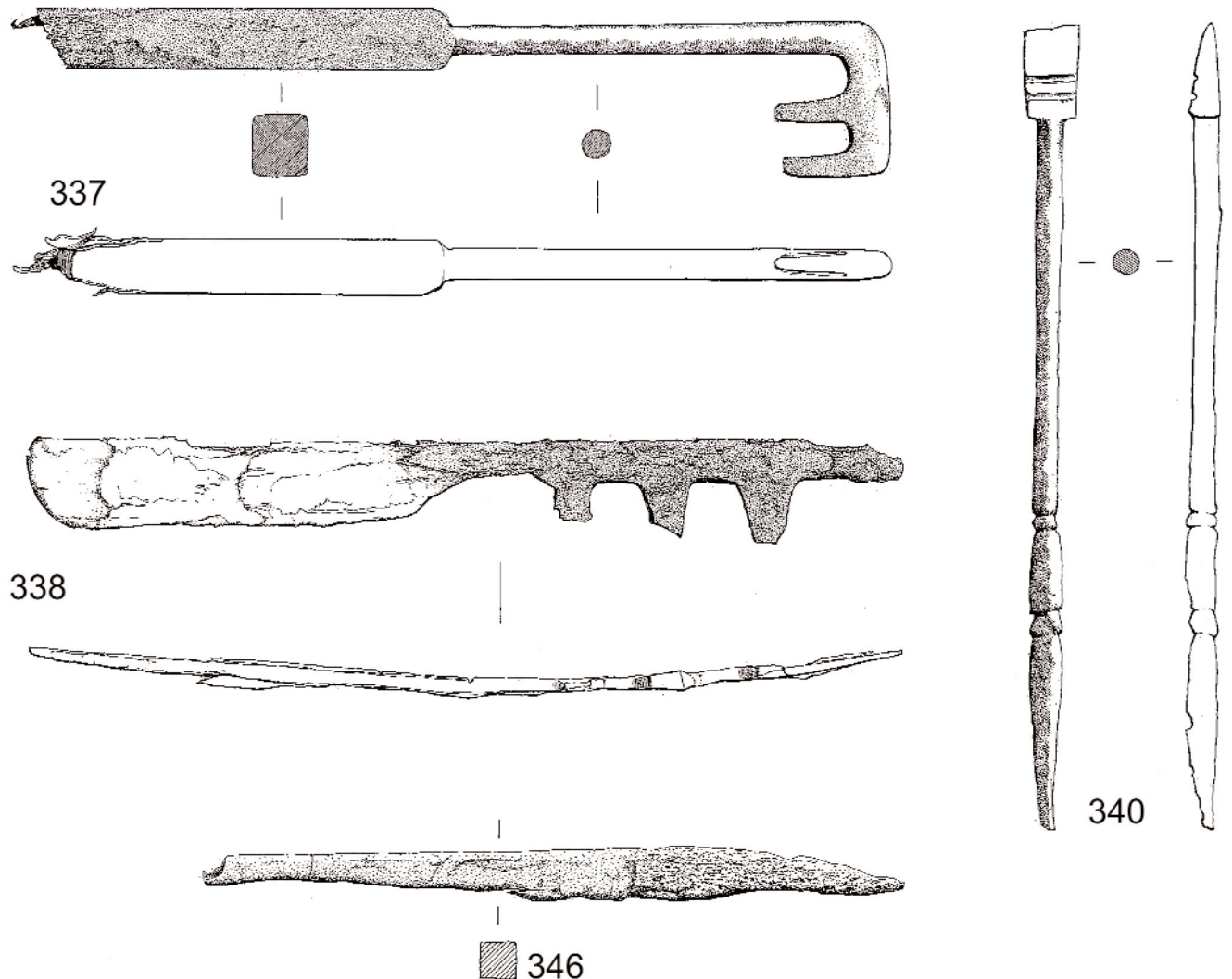


Fig 14.18 Iron objects (scale 1:1).

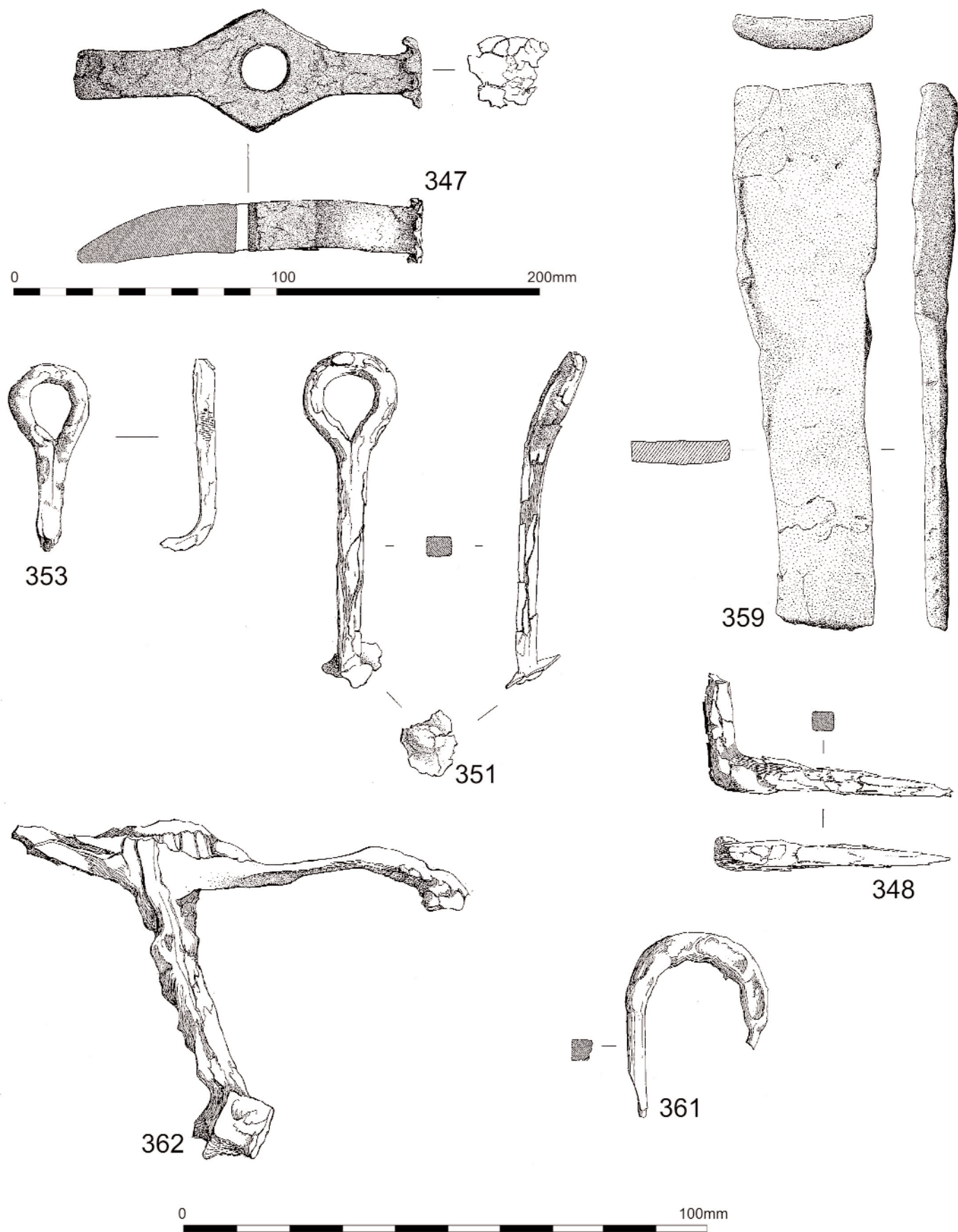


Fig 14.19 Iron objects (scale 1:2, except No. 362: 1:1).

349. 8650 H21:2:26
Annular ring of circular section threaded through a double-spiked loop.
D of ring:44mm, T of ring:6mm, L of split pin:54mm
350. 698 H13:1:12
Annular ring of circular section with a rod hooked around the shank.
D of ring:43mm, L of rod:73mm
351. 506–8 H13:1:0 (Fig 14.19)
Swivel of rectangular section with an oval loop and a disced end.
L:116mm, W across loop:34mm
352. 5116 H20:4:1
T-clamp. See Manning 1985, 131–2.
Surviving L:50mm, surviving W:53mm
353. 721–2 H13:5:3 (Fig 14.19)
Double-spiked loop. See Manning 1985, 130.
L:83mm, W across loop:28mm, T:6mm
354. 7807 H20:7:41
Double-spiked loop.
L:77mm, W across loop:21mm
355. 5789 H20:7:0
Single-spiked loop. See Manning 1985, 130.
L:75mm, W across loop:24mm
356. 5790 H20:7:0
Single-spiked loop, as above.
L:68mm, W across loop:31mm
357. 7358 H20:8:8
Single-spiked loop, as above.
L:71mm, W across loop:23mm
358. 147 H20:10:33 (North Curtain – 1984)
Large block of stone with an iron disc attached to it. The disc has a cylindrical block across its diameter.
D of disc:10mm
359. 6754 H20:4:23 (Fig 14.19)
Roughly rectangular bar splaying slightly at one end. One face is convex, the other concave. The wider end is chamfered on the convex face. Rough-out for a tool?
L:205mm, W:34–52mm, T:7mm
360. (no SF no.) H13:0:0
Dome-headed bolt or nail with a thick tapering rectangular-sectioned shank.
L:81mm, D of head:21mm
361. 171 H20:10:30 (North Curtain – 1984) (Fig 14.19)
Broad flat hook tapering to the terminal.
L:55mm, W:10–22mm, T:3mm
362. 1774 H13:0:9 (Fig 14.19)
Rod of irregular rectangular section which passes through a loop of oval section.
L of loop:65mm, L of rod:90mm
363. 109 H20:10:33 (North Curtain – 1984)
Bar with parallel sides and a triangular end, apparently complete.
L:81mm, W:40mm, T:5mm
364. 5278 H20:7:0
Fragment of a rectangular plate with a large circular rivet hole.
Surviving L:39mm, W:25mm, hole:9mm
365. 5420 H20:6:2
Fragment of a strap pierced by at least two holes.
Surviving L:75mm, W:21mm, holes:8mm
366. 1449 H13:3:1
Oval-sectioned bar which expands slightly to rectangular section.
L:110mm, W:18–24mm
367. 126 H20:10:21 (North Curtain – 1984)
Bar with parallel sides and pierced by at least one rivet hole.
L:66mm, W:20mm, T:2.5mm, hole:5mm
368. 1745 H13:9:12
Slightly curved bar.
L:71mm, W:36mm, T:9mm
369. 2223 H13:1:12
Bar with parallel sides.
L:90mm, W:22mm, T:4mm
370. 7217 H20:9:1
Tapering, rectangular-sectioned bar.
L:101mm, maximum W:19mm, T:7mm
371. 2229 H13:10:7
Fragment of curved sheet, possibly piping.
L:77mm, T:3mm
372. 6611 H20:4:13
Curved strip.
L:90mm, W:30mm, T:4mm
373. 180 H20:10:– (North Curtain – 1984)
Incomplete bar.
L:61mm, W:32mm, T:5mm
374. 2327/8 H13:5:22
Bar.
L:75mm
375. 6931 H20:4:29
Strip.
L:98mm, W:36mm
376. 734 H13:4:3
Annular ring of oval section.
Internal D:38mm, W:10mm, T:9mm

Nails

Large numbers of iron nails were found on the site, and without exception almost all were disc-headed, varying in size from small carpentry tacks to large masonry nails. Their condition, however, made accurate measurements pointless.

A list of the contexts in which the nails were found is contained in the archive report.

Hobnails

During the course of the excavations 498 loose hobnails were uncovered, as well as two large groups from H20:8:7 and H13:5:12 that were corroded together in masses, as if they had been in bags.

The majority of hobnails were found in small groups, but some larger groups were identified:

<i>Context</i>	<i>no. of hobnails</i>
H20:7:2	13
H20:8:8	224
H20:3:10	324
H20:3:11	289
H20:3:20	233
H20:4:1	64
H20:4:13	14
H20:4:16	511
H20:5:1	212

Even with an average of 80 hobnails per sole, which would not be excessive, this is a considerable number of hobnails and it could be suggested that a shoemaker or

mender was plying his trade in the north rampart area (H20). However, the contexts are mostly dump layers belonging to the reinstated rampart of H20 Phases 3b/d and Phase 4 and the hobnails are therefore more likely to relate to the activities taking place in the areas from which these deposits were extracted, presumably outside the fort, or represent the disposal of rubbish – cobblers waste or old footwear – during the construction of the rampart bank.

A full list of the contexts with hobnails may be found in the archive report.

Lead (Fig 14.20)

377. 1814 H13:5:8 (Fig 14.20)

Large globular lead ball with two iron rods passing right through. This was probably associated with the copper alloy steelyard (No. 59 above, H13:5:4).

Weight:187.5g, max D:49mm, H:40mm

378. 2434 H13:10:24 (Fig 14.20)

Lead weight in the shape of an acorn. The top is pointed but incomplete.

Weight:25g, H:32mm, D:19mm

379. 1778 H13:0:2

Plain disc with two circular dimples on one face.

D:34mm, T:4mm

380. 3554 H13:0:34

Undecorated oval disc. Possibly an 18th/19th-century dress weight.

D:32mm × 25mm, T:2mm

381. 5242 H20:5:0

Fragment of a ring with convex upper face.

External D:40mm, W:10.5mm, T:5mm

382. 1618 H13:10:0

Fragment of a rectangular-sectioned ring or hook.

L:13mm

383. 3667 H13:1:138

Nail with a split oval head and a square-sectioned, tapering shank.

Head:22 × 16mm, total L:33mm

384. 8353 H20:8:63

Fragment of a strip with one straight edge and a tiny hole drilled 5mm from the edge. The hole once held a rectangular-sectioned nail or rivet (2 × 2mm).

L:100mm, maximum W:45mm, T:3mm

385. 505 H13:1:0

Loop made from an oval-sectioned strip.

L:34mm

386. 2508 H13:5:23

Tapered strip with one rounded end, bent to form a slight hook.

L:43mm, W:9–11mm, T:4mm

387. 4413? H20:6:0

Fine curved strip of U-section pierced by 1mm circular holes at random intervals.

L:79mm, W:5mm

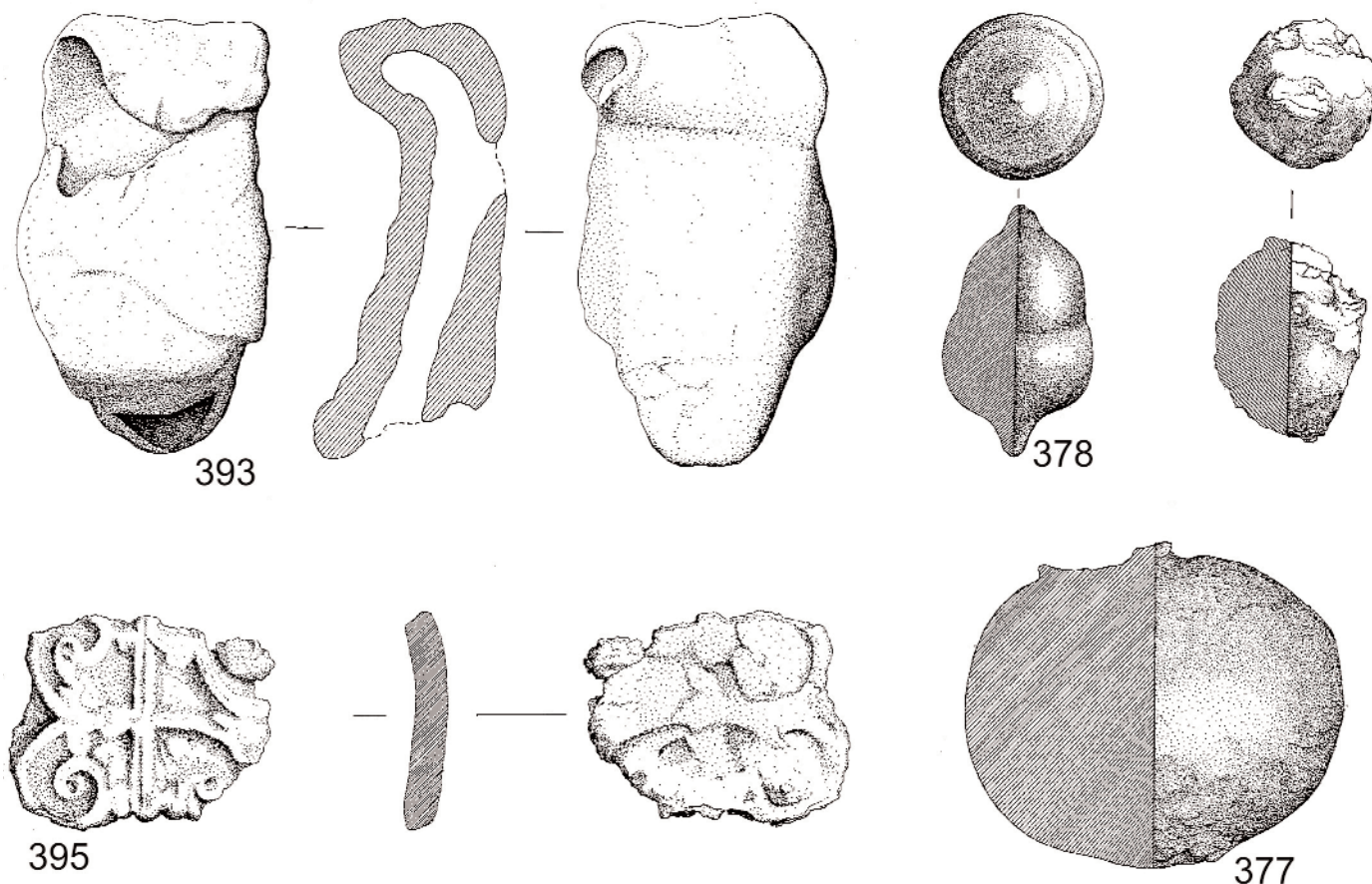


Fig 14.20 Lead objects (scale 1:1).

388. 7393 H20:9:5
Strip with one straight edge and oblique ends.
L:59mm, W:16mm, T:4mm
389. 7234 H20:8:16
Tube formed by rolling a sheet.
L:39mm, D:11mm
390. 3536 H13:1:170
Incomplete tube.
L:28mm, D:22mm
391. 130 H13:7:0
Fragment of a twisted lump.
392. 202 H13:8:0 (Fig 14.20)
Large globular lump. Possibly lead shot (*glandes*) although the condition is such that it is impossible to make a firm identification or assign it to a type. For a general discussion see Griffiths 1989, and Greep 1987 (and cf Griffiths below: 'Stone missiles').
L:45mm
393. 1903 H13:10:7 (Fig 14.20)
Block which rises to a curved, hollow point at one end and forms a flat curl at the broader end.
L:54mm, maximum W:33mm
394. 2643 H13:5:26
Solid, bun-shaped block.
D:16mm, H:7mm
395. 9290 H21:1:38 (Fig 14.20)
Lead sheet with an embossed design on one face of two scrolled *peltae* projecting from a central ribbed bar. Post-medieval?
L:32mm, W:27mm, T:4mm
396. 6403 H20:4:16
Crumpled sheet.
T:1mm
397. 743 H13:2:2
Large lump, flat on two sides.
L:87mm
398. 914–5 H13:5:3
Two fragments of lead, one a sheet with two oblique parallel lines scratched on one face.
399. 1611 H13:9:0
Lump of lead which appears to have been used as caulking.
L:52mm
400. 6212 H20:4:1
Caulking which has held an 11mm circular shank off-centre within a 14 × 26mm setting.
D:22mm
401. 5682 H20:4:1
Caulking from the side of a 9mm diameter oval-sectioned rod.
L:36mm
402. 1935 H13:10:1
Large lump of waste.
L:132mm
403. 3523 H13:11:30
Length of lead sprue.
L:30mm, D:7mm
404. 9463 H21:2:6
Lead sprue.
L:50mm
405. 9315 HSE:1:29
Fragment of strip.
L:29mm, W:11mm, T:2mm
406. 9486 H21:2:56
Fragment of lead.
L:30mm

407. 9425 HSE:1:11
Lead waste.
408. (no SF no.) H21:4:2
Several fragments of waste.
Unidentified lead was also found in the following contexts:
- | <i>SF no.</i> | <i>context</i> |
|---------------|----------------|
| 1690 | H13:1:17 |
| 2457 | H13:5:8 |
| 1726 | H13:6:12 |
| 3110 | H13:10:31 |
| 2678 | H13:11:0 |
| 5322 | H20:4:0 |
| 6756 | H20:4:19 |
| 7911 | H20:6:60 |
| 7373 | H20:8:8 |
| 8172 | H20:8:22 |
| 8517 | H20:8:75 |
| 9302 | H21:1:54 |
| 8636 | H21:4:7 |
| 8664 | H21:4:9 |
| 8830 | HSE:1:1 |

Lead objects from consolidation

409. 31 HS:–:1
Roughly triangular lead sheet.
L:29mm, T:3mm
410. 52 HS:–:1
Incomplete disc with rough surfaces.
D:25mm, T:6mm

Bone (Fig 14.21)

411. 1869 H13:1:6 (Fig 14.21)
Bone rod of rectangular shape and section, expanding at the ends and around the central rectangular hole, which is flanked by triangular depressions. A similar piece from Richborough is referred to as a 'toggle' (Bushe-Fox 1949, pl LIV, 148, no. 227; pre c AD 85), but an alternative identification might be a sword or dagger guard, or bridle cheek-piece (Dalton 1925, 144, fig 163).
L:46mm, W:13mm, T:10mm, hole:11 × 5mm
412. 2257 H13:0:22
Waisted bone handle made from two pieces of ungulate long bone. The front has spall damage but originally was decorated by incised bands of cross-hatching and oblique lines separated by plain areas. Two small circular holes have been drilled through to take iron rivets. This is a common form which can be paralleled locally at Corbridge: Bishop and Dore 1988, 207, no. 16.
L:60mm, W:25mm
413. 1758 H13:1:12
Small disc of burnt bone with a convex face.
D:13mm, H:3.5mm
414. 2527 H13:0:17
Counter with a bevelled upper edge and a dished face with a central lathe stock centre-mark.
D:19mm, T:3.5mm
415. 3622 H13:1:121
Burnt counter with lathe-turned concentric circles on the upper face.
D:19.5mm
416. 9276 H21:1:43
Bun-shaped counter or inset of bone with file marks on the flat base.

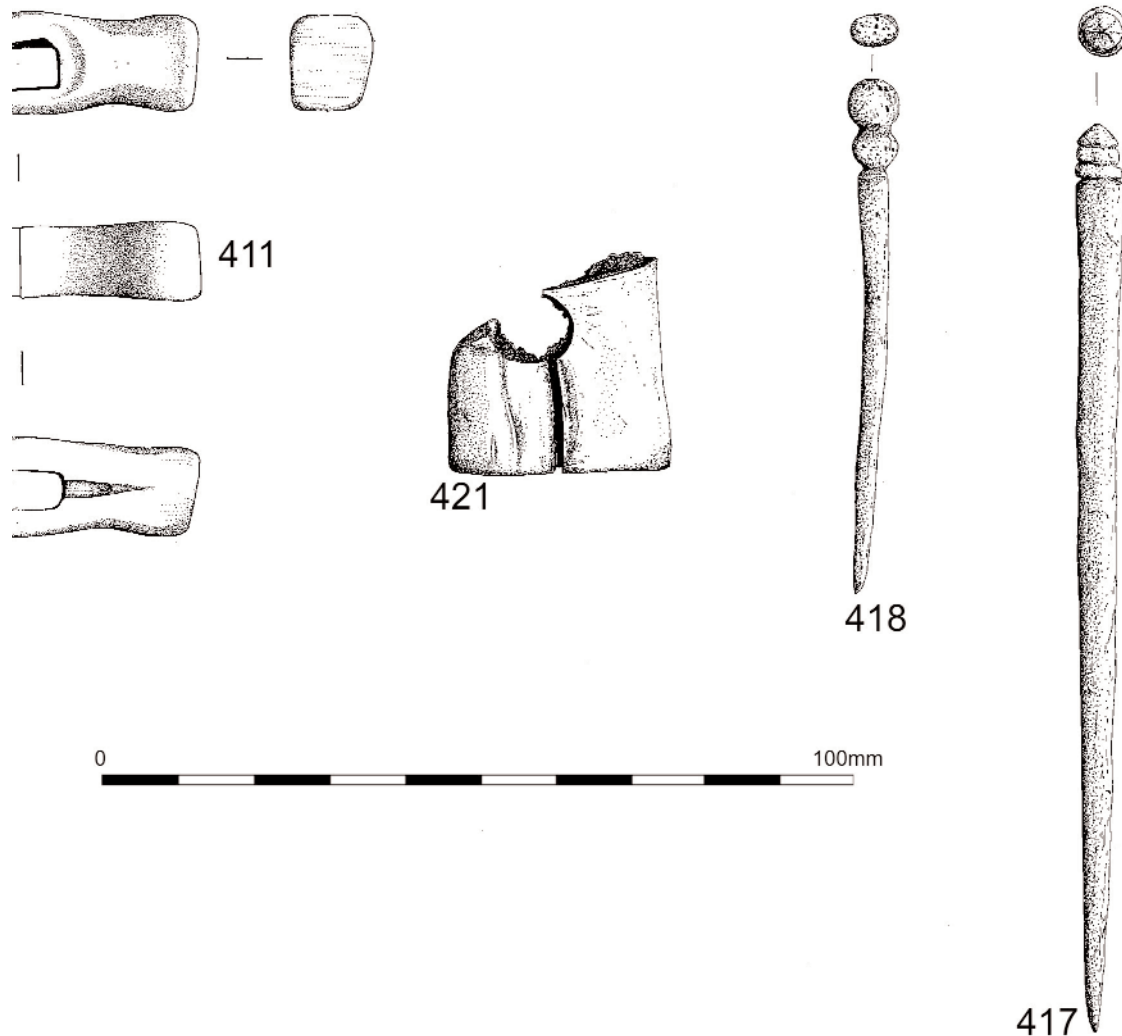


Fig 14.21 Bone objects (scale 1:1).

D:16mm, H:8mm

417. 5042 H20:7:0 (Fig 14.21)

Complete polished pin with three deep grooves decorating the head. The shank is circular-sectioned and tapers from the head. See Crummy 1979.

L:119mm, maximum T:6mm

418. 7979 H20:7:33 (Fig 14.21)

Pin made from a fowl bone. The shank is circular in section and curves slightly. The head is spherical and sits on an expanded neck – the head, neck and shank are separated by grooves. The cortex of the bone is visible on one side of the head.

L:68mm, Head:6mm

419. 8417 H20:9:10

Long bone of an ungulate whittled to a rough rod, the first stage in bone pin manufacture.

L:115mm

420. 9272 H21:2:6

Roughly whittled end of a pin.

L:47mm, T:5mm

421. 7903 H20:5:43 (Fig 14.21)

Cylinder cut from end of ungulate long bone with a transverse hole drilled through the shank.

W:30 × 22mm, SH:28mm, hole:10mm

The intaglios (Fig 14.22)

M Henig

Catalogue

422. 8606 H21:1:13 (Fig 14.22)

Cornelian intaglio with blackish inclusions, ovoid in shape and with flat upper face. (Form Fl, cf Henig 1978, 35 fig 1).

Dimensions: 15mm × 12mm × 3mm

The device, described as usual for an impression, is a pantheistic goddess in profile to the left. Standing on a short base-line, the deity has on her head the plumed helmet of Minerva, with the great aquiline wings of Victoria sprouting from her shoulders, and holds both the rudder of Fortuna and the corn-ear of Ceres in her right hand. Close in iconography and style as well as material is a gem from the drain of a legionary bathhouse at York (Henig 1976, 8 no. 11, and Henig 1978, no. 79), which has thus enabled the Housesteads intaglio to be confidently dated to the 2nd century AD. I have cited comparanda in reporting on the York gem, showing that this type is evidently common on intaglios. In a North British context the resemblance of this type to *Dea*



422



423



424



425



426



427



428

Fig 14.22 The intaglios (scale 2:1).

- Brigantia* on the Birrens relief (Keppie and Arnold 1984, 7–8, no. 12), should be noted. There Minerva and Victory are syncretised with Juno Caelestis and a city (or territorial) goddess, emphasising the same idea of the accumulation of the powers of individual gods within a single figure.
423. 2642 H13:6:0 (Fig 14.22)
Cornelian intaglio of diminutive size, almost circular in shape and with a slightly convex upper face (Form A4). Dimensions: 8mm × 7mm × c 1.7mm
The gem evidently depicts the god Mars or perhaps a hero (such as Theseus or Achilles). He stands to the front and faces left. He is bare-headed and evidently nude, but a chlamys is draped over his left arm. In his right hand he holds a short sword, its blade upwards, and behind him is a transverse sceptre.
The gem is paralleled by a cornelian, set in a silver ring found in Lincolnshire (Henig 1978, no. 92), as well as by an intaglio in the mid- to late 2nd-century cache of cornelians and silver jewellery from Snettisham, Norfolk (information Catherine Johns; the stone is no. 184 in the listing). The style of cutting is similar, but not identical to the second of these stones.
424. 6964 H20:8:8 (Fig 14.22)
Mottled red jasper intaglio (Form F1). In good condition apart from a chip on the left edge. A goat stands on its hind legs in profile to the left, attempting to reach the branches of a tree. There is a ground line.
Dimensions: 11mm × 8.5mm × 2mm
This is a common type on gems and we may note examples from High House Milecastle, Cumbria (Henig 1978, no. 611), Caerleon (Zienkiewicz 1986, 139, no. 77), Charterhouse on Mendip (Henig 1978, no. 612), Cirencester (Henig 1978, no. 610), and the Ditches site, North Cerney (information S D Trow). All are cut in red jasper. Related types show a goat browsing on a palm, examples of which have been found at Caerleon (Henig 1978, no. 609), in a bath-house drain in the *Classis Britannica* fort at Dover (Philp and Henig 1985, 464, no. 5), and from Wallsend (information P Moffat). Interestingly, these are cornelians. For some reason different compositions are sometimes prevalent on different materials.
425. 58 H13:5:0 (Fig 14.22)
Pale cornelian intaglio, elongated oval with a slightly convex (nearly flat) face (Form A4 or F1). Chips on side, above and below figure; also some surface wear.
Dimensions: 12mm × 8mm × 2.5mm
Previous publication: Henig 1978, 298, and pl lxviii, no. App 98 (wrong dimensions given).
Mars Gradivus. The god is shown marching to the right (impression). He is nude, apart from a scarf-like garment or *subligaculum* around his loins. He holds a spear in his right hand and a trophy in his left, the latter supported upon his left shoulder. At his feet is a star.
This type is a common one among examples from military sites. We may note specimens from Vindolanda, the York bath-house drain, and two intaglios from a similar outfall at the *Classis Britannica* fort of Dover (Henig 1978, no. App 29; *ibid*, no. App 86. Henig 1976, 6 no. 9; Philp and Henig 1985, 463–4, nos 1 and 2). There is also one from Brancaster (Henig 1985, 198, no. 3).
The gem is cut boldly but fairly simply with a round-headed drill. Compared to two gems depicting the same subject, formerly in The Hague, now in Leiden, attributed by Professor Maaskant-Kleibrink to her Round Head Style (Maaskant-Kleibrink 1978, 225f, nos 804 and 805), the Housesteads gem is probably of 2nd-century date.
426. 41 H13:5:1 (Fig 14.22)
Chalcedony intaglio, rounded oval with flat upper face and bevelled edge (Form F4). There is slight wear on upper face, as well as traces of iron corrosion adhering to the underside of the stone.
Dimensions: 13.5mm × 11mm × 4mm
Previous publication: Henig 1978, 304 and pl lxviii, no. App 131 (wrong dimensions given).
This intaglio depicts Venus nude, standing in profile to the right (impression). She has raised her left leg and is tying on or removing her sandal with her left hand. She supports herself with her right hand upon a rudder.
Among comparanda is a similar intaglio cut on a brownish chalcedony in Cornwall (Walford and Henig 1983). The only other example of this type from Britain is a rather poor cornelian set in a fine gold ring from Bignor, Sussex (Henig 1978, no. 278, and Frere 1982, 192–3). Although the device is well placed in its field, the cutting is more simplified than, for example, the gem in the Hague/Leiden collection (Maaskant-Kleibrink 1978, no. 891), which is ascribed to the Cap With Rim Style, and may be assigned to the Plain Grooves Style. It should date to the 2nd century AD.
427. 9288 H14:3:13 (Fig 14.22)
Cornelian intaglio, ovoid with slightly convex upper face and sides bevelled outwards (Form A6, but with flat underside). It would have stood proud on the surface of the ring in which it was set. The underside of the stone is chipped and there is some wear on its face.
Dimensions: 11mm × 8mm × 3.5mm
This intaglio depicts Victory wearing a long chiton, kneeling on her chariot and urging on her two-horse team. For Victory driving a *biga* (see Henig 1978, no. 293), a cornelian from York is a good example, but here the goddess stands and the horses walk in what is clearly a lap of honour. More vigorous movement is portrayed on a glass gem from Wroxeter (Henig 1978, no. 294). An earlier and finer version of this type is represented by Maaskant-Kleibrink (1978, no. 542). Later and stylistically closer is *ibid*, no. 791, related to the Small Grooves Style. The gem dates to the later 2nd century or the early 3rd century AD.
428. 49 H13:5:0 (Fig 14.22)
Red glass intaglio, ovoid in shape, with a flat face. The intaglio is moulded not engraved.
Dimensions: 11mm × 9.5mm × 1.75mm
This intaglio depicts a standing male figure, considerably stylised. He may be holding a transverse spear and a shield, suggestive of the god Mars. This is an example of a type of intaglio that I formerly designated as the Romano-British Imitation (Henig 1978, 133 and nos 539–578), but which I subsequently renamed as the Shavard's Farm Type, after a type site in Hampshire. These imitations are almost all from southern Britain, with a few outliers in the Wall region. Also apparently from Northern Britain is a bronze stamp said to be from Brough on Humber, which may have been used to make these signets. While not identical to the Housesteads example, the 'Brough' stamp also portrays a warrior with transverse spear and holding a shield (Henig 1984). A date in the 3rd century seems probable.
429. 2174 H13:10:12
Nicolo glass intaglio, ovoid in shape. Flat face with bevelled edge. The intaglio was moulded, not engraved and is now somewhat decayed. Set in an iron ring.

Dimensions: 13mm × 11mm

A helmeted man stands in profile to the left on a short ground line (impression described). He appears to be nude though a *chlamys* hangs over his left arm. In his right hand he holds a spear before him and he rests his left hand on his hip. Before him is a much smaller woman seated on a pile of rocks. She wears a mantle and the position of her arms, bent at the elbows and held before her, the left raised towards the man's elbow, suggests she is addressing him.

The device recalls that of gems that show Meleager visiting Diana who is also depicted on a rocky cliff (Maaskant-Kleibrink 1978, no. 607), though on the Housesteads intaglio the man is a warrior not a huntsman and nothing distinguishes the expostulating figure as Diana. A clue is given by a gem-type showing a young warrior addressing an oracle represented by a bird on a column (Henig 1994, no. 133). In the case of the Housesteads gem, the episode that comes most readily to mind is the visit of Aeneas to the Sibyl in her cave at Cumae, described by Virgil in the sixth book of the *Aeneid* (vi 42 ff). This identification is in part confirmed by comparing the female image of the Sibyl shown on a Roman Imperial coin of Eretria (Caltabiano 1994, 755, no. 15). However, the most important evidence is a nicolo gem in the British Museum depicting Aeneas and the Laurentian sow (*Aeneid* viii, 42–8). Walters (1926, 206, no. 1951, pl xxiv) sees the accompanying woman seated on a rock as 'one of the Laurentian nymphs' but it is far more likely that two distinct scenes, the hero's visit to the Sibyl and the sacrifice of the sow with her piglets, were chosen to represent decisive moments in the hero's destiny.

Apart from the British Museum gem I have not found any other parallel to what was evidently quite a rare subject. It is a find of considerable importance with a significance beyond the purely iconographic. The owner is unlikely to have chosen such an unusual device unless he was fully conversant with the *Aeneid*. There is direct evidence for such knowledge in military circles at a somewhat earlier date (c AD 100) in the form of a writing exercise from Vindolanda, line 473 from book ix (Bowman 1994, 91–2, pl iii). A panel, evidently from a shrine of Roma Aeterna from Corbridge perhaps dating to the early 3rd century depicting a fawn, evidently alludes to *Aeneid* viii, 314 (Phillips 1977, 12–13, no. 38). The former is probably associated with the family of the commanding officer, the latter comes from a public shrine. There is no reason to ascribe the ring under discussion to anyone higher than an ordinary soldier; if so it is a vivid expression of Romanisation within the ranks.

Discussion

It is by no means surprising that Mars (Nos 423 and 425), Victory (No. 427), or the pantheistic deity (No. 422) should have appealed to soldiers with their need for protection. Venus (No. 426) was also a guardian-deity of Rome, though it is difficult not to think that our intaglio rather alludes to the owner's need for female companionship. The goat on No. 424 also seems to have been a popular device for military seals judging from the find spots of some of the comparanda,

probably because it was an animal associated with increase, prosperity and life (also evoked in the blood-red material of the stones).

Much the most exciting intaglio is No. 429 showing Aeneas and the Cumaean Sibyl, with its literary connections and its expression of belief in Rome's destiny. All the stones are of a 2nd-century date with the possible exception of the intaglio showing Victory (No. 427) and virtually certainly the glass intaglio (No. 428).

Glass (Fig 14.23)

Beads

430. 8571 H21:3:19 (Fig 14.23)

Small annular bead with a swirled design of white, black, green and yellow opaque glass. Badly made with an off-centre hole.

This bead does not fall obviously into any of Guido's (1978) classes as it is small in comparison with examples in Class 7 and involves more colours than is usual in Class 14 beads.

D:14mm, T:6mm

431. 893 H13:0:2 (Fig 14.23)

Globular bead of 'black' opaque glass, decorated with blue trails and three horns of yellow, each with a central natural glass blob.

Guido (1978, 60) discusses such beads in Group 3 although asserting that 'these beads do not in any way form a Class'. A similar bead of very dark blue glass with yellow and blue horned eyes is known from Chesters (Guido 1978, 125).

D:13mm, T:9mm

432. 1412 H13:6:13 (Fig 14.23)

Small square-sectioned rectangular bead of light blue opaque glass with a red chevron band enclosed in white. Guido (1978) has suggested that this group of beads was probably imported from North Africa or the Eastern Mediterranean, and that they are usually found on British sites in late contexts. Examples are known from Great Chesters and Vindolanda (Guido 1978, 223), the latter stratified in a late 3rd to 4th-century context.

L:4mm, T:3mm

433. 5210 H20:6:2 (Fig 14.23)

Large biconical bead of opaque light blue glass with a chevron band of red enclosed by white around the middle. This falls into the same group as No. 432 above.

L:11mm, T:4mm

434. 2228 H13:1:22 (Fig 14.23)

Globular white glass bead enclosing gold foil.

Segmented beads with gold foil have been fully discussed by Boon (1966 and 1977) and Guido (1978), and a possible centre of manufacture in Egypt has been suggested. In Britain they are largely confined to late Roman or post-Roman contexts. In the Hadrian's Wall area they have been found at Vindolanda (Guido 1978, 206), Chesters (Boon 1966, 105), South Shields (Allason-Jones and Miket 1984, no. 4.22) and Coventina's Well (Allason-Jones and McKay 1985, 37, no. 127).

D:7mm, T:6mm

435. (no SF no.) U/S

Flat rectangular bead of dark blue opaque glass with a single elliptical hole pierced longitudinally.

L:20mm, W:13mm, T:5mm

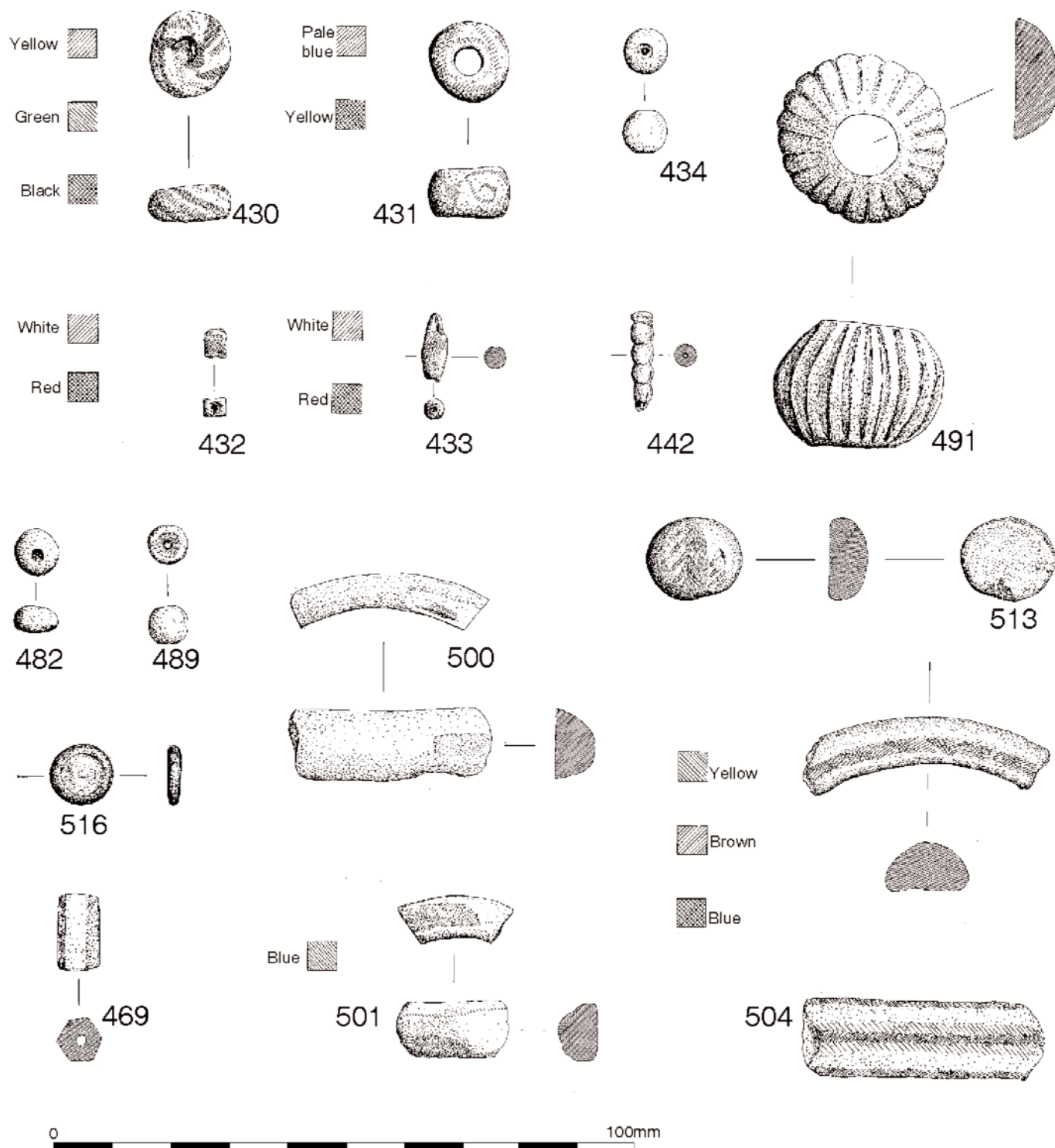


Fig 14.23 Glass objects (scale 1:1).

436. 12 H13:3:0

Flat circular bead of opaque light blue glass pierced laterally rather than centrally. Guido (1978, 177) refers to parallels from Meare (G25) in Somerset and Badsey in Worcestershire.

Segmented beads of blue glass

The various methods used to make segmented beads are discussed by Guido (1978, 91–2). They are found in Britain in contexts dating from the early 2nd century

to the late 4th. Blue segmented beads are otherwise unknown from Hadrian's Wall although the gold enclosed white beads (*see above*) and the green and turquoise opaque form (*see below*) are known.

437. 130 H13:7:0

L:6mm, T:4mm

438. 7762 H14:9:2

L:87mm, T:4.5mm

439. 9161 H21:2:29

L:5mm, T:3.5mm

Segmented beads in green glass

These are of a similar date to the blue segmented beads and examples are known from Carrawburgh, Chesters and Great Chesters (Guido 1978, 202).

440. 42 H13:2:4
L:13mm, T:6mm

Segmented beads in turquoise glass

Examples are known in the north at Old Yeavinger (Guido 1978, 203) and from an earlier excavation at Housesteads (Guido 1978, 202).

441. 1 H13:--:0
L:5mm, T:4mm
442. 1046 H13:0:1 (Fig 14.23)
L:16mm, T:3.5mm
443. 1165 H13:2:2
L:12mm, T:4mm
444. 1474 H13:10:0
L:8mm, T:11mm
445. 6039 H20:6:14
L:6mm, T:4mm

Cylinder beads of blue glass

This type is common throughout the Roman period in Britain although more so after the 2nd century. Guido has identified a predominantly southern distribution but examples are known from the northern frontier at South Shields (Allason-Jones and Miket 1984, nos 4.28–30) and Corbridge (Corstopitum Museum 75.542).

446. 681 H13:2:5
L:11mm, T:5mm

Cylinder beads of green glass

This form is more widely distributed than the blue cylinder beads and can be found in earlier contexts, although still continuing beyond the Roman period. Northern parallels are known from South Shields (Allason-Jones and Miket 1984, nos 4.23–7), Chesters (Boon 1966, 105), and Great Chesters (Guido 1978, 210), as well as from earlier excavations at Housesteads (Guido 1978, 210).

447. 17 H13:3:0
L:2.5mm, T:5mm
448. 27 H13:1:0
L:4mm, T:6.5mm
449. 31 H13:2:0
L:3mm, T:3.5mm
450. 1195 H13:2:0
D:3mm, L:3mm
451. 1727 H13:10:0
L:2.5mm, T:5mm
452. 1844 H13:0:6
L:3mm, T:5mm
453. 1967 H13:10:10
L:10mm, T:4mm
454. 2682 H13:11:0
L:3.5mm, T:6mm
455. 4969 H20:4:1
L:8mm, T:2mm, W:3.5mm
456. 6163 H20:4:17
L:7mm, T:3mm, W:5mm

457. 6560 H20:6:28
L:11mm, T:4mm, W:5mm
458. 7719 H14:9:1
L:24mm, D:5mm

Square-sectioned beads of blue glass

These are largely found in 3rd- and 4th-century contexts. In the north, examples are known at South Shields (Allason-Jones and Miket 1984, nos 4.32–3) and Great Chesters (Guido 1978, 214).

459. 6561 H20:4:20
L:5mm, T:3.5mm
460. 3095 H13:6:27
L:3mm, T:3mm
461. 6247 H20:4:16
L:4mm, T:2mm, W:3mm
462. 7971 H20:7:48
L:5mm, W:3.5mm
463. 8936 H21:1:37
L:4mm, T:2mm

Square-sectioned beads of green glass

These are to be found in similarly dated contexts to those of blue, but are less common in the north. See Allason-Jones and Miket 1984, no. 4.31, for a single example from South Shields.

464. 1042 H13:0:1
L:9mm, T:3mm, W:4.5mm
465. 4984 H20:4:0
L:4mm, T:4mm
466. 7950 H20:8:34
L:4mm, T:3mm, W:2.5mm

Square-sectioned bead of turquoise glass

467. 364 H13:8:0
L:5mm, T:3.5mm

Hexagonal-sectioned beads of green glass

These were produced from the time of the Conquest to post-Roman throughout the Empire as imitations of emerald crystals. A gold chain necklace from Winkle in Cheshire has both emerald and glass beads mounted together (Johns *et al* 1981). They are common finds on northern forts.

468. 153 H13:8:0
L:6mm, T:4mm
469. 850 H13:0:2 (Fig 14.23)
L:12mm, T:6mm
470. 5633 H20:7:0
L:10mm, T:6mm, W:7mm
471. 7483 H20:8:7
L:8mm, D:7mm

Hexagonal-sectioned beads of blue glass

These are less common, except in Scotland: see Guido 1978, 217.

472. 36 H13:2:0
L:4mm, T:4mm

Blue biconical beads

These fall into three main types, depending on size. Those measuring between 5 and 7mm in diameter are mostly of late date but can be found in earlier contexts.

The smaller group of translucent light blue measure only 3mm in diameter and 2mm in thickness and are invariably found in 4th-century contexts. Longer beads (>10mm) were already current by the 2nd century and continued into the 3rd century. They are known in Northumberland, but tend to concentrate in the southern counties. See Guido 1978, 219–20.

473. 3 H13:–:0
D:5mm, T:3mm
474. 187 H13:7:0
D:5mm, T:3mm
475. 226 H13:8:0
D:4mm, T:2mm
476. 2685 H13:11:0
D:7mm, T:3mm
477. 8946 HSE:1:20
L:3mm, D:6mm
478. 9310 HSE:1:29
D:6mm, T:4mm
479. 9404 HSE:1:29
L:3mm, D:6mm

Annular beads

Guido (1978) grouped undecorated annular beads under Group 6 but subdivided them by size and colour.

480. 26 H13:1:0
Small annular green bead of Group 6viii – a rare type paralleled at Traprain Law (Guido 1978, 164).
L:3mm, D:5mm
481. 2426 H13:8:26
Small annular bead of opaque dark blue glass: Group 6ivb. This is not a common type in the north although an example has been found at Close House West in Northumberland (unpubl).
L:1mm, D:5mm

Globular beads

Globular beads were also divided by Guido according to size and colour.

482. 65 H13:5:0 (Fig 14.23)
Small globular bead of clear natural coloured glass, rather roughly made: Group 7ii. These appear to have been made from recycled Roman bottle glass. Examples are known from Great Chesters (Guido 1978, 167).
L:5mm, D:7mm
483. 7521 H20:7:2
Globular bead of translucent ‘natural’ glass.
L:9mm, D:9mm
Small globular beads of cobalt blue glass, Group 7iv, had a long period of popularity but were only known previously in the north at Chesters and Great Chesters (Guido 1978, 170).
484. 1415 H13:5:4
L:5mm, D:4mm
485. 1773 H13:0:0
L:4.5mm, D:6mm
486. 7436 H20:8:8
L:6mm, D:7mm
487. 187 H13:7:0
Small globular bead of translucent light blue glass:

Group 7v. Examples are known from South Shields: Allason-Jones and Miket 1984, no. 4.36.
L:4mm, D:6mm

Two globular beads of turquoise glass appear to be from the same tradition as the melon beads discussed below.

488. 5786 H20:5:4
L:6.5mm, D:6mm
489. 8211 H14:9:5 (Fig 14.23)
L:4mm, D:5mm

Melon beads

Melon beads of opaque turquoise glass are the most common type to be found in the Roman north, both on military sites and civilian settlements. Guido (1978, 100) has shown that the earliest melon beads in Britain are of Roman date and mostly come from Flavian and Antonine sites before disappearing until post-Roman times. A centre of manufacture at Castleford (Yorks) has been suggested. It is possible that melon beads had a talismanic role, worn to ward off the Evil Eye, rather than merely trinkets (see Allason-Jones 1991).

It should be noted that the Housesteads melon beads are consistently smaller than is normal for the type.

490. 97 H13:7:0
L:18mm, D:27mm
491. 3522 H13:5:4 (Fig 14.23)
L:8mm, D:12mm
492. 6955 H20:4:11
H:10.5mm, D:13mm
493. 8077 H20:5:59
L:8mm, D:10mm
494. – H13:1:225
L:8mm, D:8mm
495. – U/S
L:10mm, D:13mm
496. Number not used
497. 9553 H14:1:0 (consolidation)
Mid-blue, bun-shaped bead.
L:3.5mm, D:4mm
498. 425 H13:10:0
Pear-shaped, peacock green bead.
L:9mm, D:5mm

Glass: miscellaneous objects

499. 3613 H13:5:0
Shank of a hipped blue glass pin or stirring rod. Cf Allason-Jones and Miket 1984, nos 4.1–2.
SL:38mm
500. 4089 H20:1:0 (Fig 14.23)
Fragment of a white opaque armlet with a slightly blue sheen. Triangular in section. Kilbride-Jones 1938, Type 3A.
W:8mm, T:12mm
501. 5233 H20:4:0 (Fig 14.23)
Fragment of a white opaque armlet with a blue sheen and blue marvering. Semi-circular in section. Kilbride-Jones 1938, Type 3C.
W:6mm, T:9mm
502. 9552 H14:1:0 (consolidation)
Fragment of a pale turquoise translucent armlet with a

- single opaque white marvered line. One end appears to have been cut deliberately. Kilbride-Jones 1938, Type 3F. Internal D:60mm, W:6mm, T:9mm
503. 38 H13:10:0
Fragment of a translucent mid-blue armlet with a faint pale blue opaque trail. Kilbride-Jones 1938, Type 3. Internal D:60mm, W:6.5mm, T:11mm
504. 16 H13:1:0 (Fig 14.23)
Armlet of greenish translucent glass with a central rib consisting of a wavy blue line between two trailed yellow lines and two marginal cables of blue and white. This is an unusual combination of trailed lines and cables although some examples of Kilbride-Jones (1938) Type 2 have swirled dots in conjunction with cables of blue, white and yellow.
W:7.5mm, T:12.5mm
505. 185 H13:9:0
Dark blue translucent bun-shaped counter or inset.
D:14mm, H:5.5mm
506. 1475 H13:1:6
Counter cut from a fragment of window glass.
D:17mm, T:4mm
507. 2724 H13:1:59
Dark blue translucent bun-shaped counter or inset.
D:14mm, H:7mm
508. 3549 H13:1:118
Dark green opaque bun-shaped counter or inset.
D:17 x 15mm, T:7mm
509. 3552 H13:1:156
Dark blue translucent bun-shaped counter or inset.
D:14mm, H:6.5mm
510. 3555 H13:1:56
Dark blue translucent bun-shaped counter.
D:12mm, H:6mm
511. 9500 H14:6:1
Fragment of a bun-shaped jewellery inset of pale yellow and mustard yellow millefiori.
D:16mm, H:8mm
512. 4096 H20:1:0
Oval inset for a finger-ring, of clear natural glass with a convex top.
D:6 x 5mm, T:4mm
513. 6042 H20:5:26 (Fig 14.23)
Irregular disc of opaque dark blue with an inlaid heringbone trail in white. One surface is flat, the other convex. Counter or inset.
L:16mm, W:14mm, H:6.5mm
514. 8554 H21:1:1
Dark blue translucent bun-shaped inset or counter.
D:14mm, H:6.5mm
515. 8906 HSE:1:2
Fragment of a greeny-blue translucent bun-shaped inset or counter.
H:4mm, D:6.5mm
516. 9242 HSE:1:29 (Fig 14.23)
Flat disc of black opaque glass with a translucent blue glass centre. Inset for jewellery.
D:10mm, T:2.5mm
517. 7395 H20:7:2
Ball of dark blue glass frit.
D:7mm
518. 8659 H21:3:69
Pear-shaped drop of dark blue translucent glass. Manufacturing waste?
L:9mm

Glass objects found in consolidation

519. 30 HS:-:0
Tiny fragment of the convex outer face of an armlet of dark blue glass with white marvering. Kilbride-Jones 1938, Type 3I.
No measurements possible.
520. 8 HS:6:0
Bun-shaped counter or inset of very dark green opaque glass.
D:18mm, H:7mm
521. 59 HS:-:1
Barrel bead of dark blue opaque glass.
L:12mm, maximum T:5mm
522. 58 HS:-:1
Fragment of a tiny square-sectioned cylinder bead of blue opaque glass with a red line sandwiched between two white lines running along the base. *See* No. 432 above.
L:4.5mm, T:3mm
523. 20 HS:-:1
Small bright green opaque drum bead.
D:6mm, hole:2mm, T:2.5mm
524. 39/1 HS:-:1
Tiny dark blue disc bead with a chamfered face.
D:5mm, hole:1.5mm, T:2mm
525. 39/2 HS:-:1
Opaque dark blue barrel bead.
L:16mm, W:5mm
526. – H13 Spoil heap
Tiny blue translucent bead of square section with a wire-pulled hole.
L:4mm, W:3mm, T:3mm
527. 27A H13:2 (south wall)
Mid-blue translucent globular bead, distorted when the hole was pulled.
D:4mm, T:4mm
528. 18 HS:-:1
Fragment of a turquoise blue melon bead.
No measurements possible.

Tile

529. 5405 H20:6:2
Incomplete disc of tile with a central circular hole.
D:41mm, T:14mm, hole:9mm
530. 1515 H13:1:22
Circular lid cut from a tile with incised cross-hatching on one face. The lines have been made with a sharp pointed object and ruled rather than freehand.
D:90mm, T:16.5mm

Ceramic objects

(fabrics identified by J N Dore)

Pipeclay

531. 8028 H20:8:7
Feet and hollow-domed base of a pipeclay Venus figurine. The British group of pipeclay figurines and the cult of the 'Pseudo Venus' in Kent was discussed by Frank Jenkins in 1958. Since then the number of examples from Hadrian's Wall has multiplied with at least one from each of the forts in the northern zone. *See* Allason-Jones and Miket 1984, 339–41 for parallels and discussion. Unfortunately, not enough survives of the Housesteads figurines for them to be assigned to one of Jenkins's types.

D of base:34mm

532. 8556 H21:3:1

Front section of a pipeclay Venus figurine lacking its upper body and feet. The figure's left hand appears to hold back drapery by its left hip.

Surviving L:75mm

Pipeclay from consolidation

533. 50 HS:-:1

Fragment of the domed base of a pipeclay figurine. All that survives of the figure is a pair of bare feet.

Surviving H:35mm

Perforated discs

534. 1878 H13:5:8

Disc of grey ware with a central circular hole and a second, slightly smaller, hole to one side.

D:33mm, T:6mm, holes:6mm, 4mm

535. 48 H13:1:0

Disc of grey ware with central circular hole.

D:36mm, T:7mm, hole:5.5mm

536. 57 H13:1:0

Disc of grey ware with central circular hole.

D:42mm, T:8mm, hole:8mm

537. 289 H13:9:0

Disc of grey ware with central circular hole.

D:31.5mm, T:7.5–11mm, hole:6mm

538. 725 H13:1:11

Disc of burnt samian with a central circular hole. Drag 31R?

D:37mm, T:8mm, hole:6mm

539. 2086 H13:7:15

Fragment of a samian disc with a central circular hole.

D:29mm, T:5mm, hole:6mm

540. 8984 HSE:1:2

Fragment of a ?spindlewhorl cut from wall sherd of Central Gaulish ware, form unknown.

D:33mm, T:8mm, hole:4mm

541. 9406 HSE:1:29

?Spindlewhorl cut from wall sherd of East Gaulish ware (Drag 31R).

D:31mm, T:7mm, hole:6mm

542. 3267 H13:9:23

Disc of grey ware with a central circular hole.

D:29mm, T:5.5mm, hole:5mm

543. 3355 H13:11:1

Small disc of red ware with a central circular hole.

D:26mm, T:6mm, hole:4mm

544. 3442 H13:11:11

Disc of grey ware with a central circular hole. BB2?

D:31mm, T:5mm, hole:8mm

545. 3660 H13:1:170

Half of a samian disc with a central circular hole. East Gaulish.

D:39mm, T:8mm, hole:6mm

546. 4715 H20:5:0

Disc cut from the base of a colour coated beaker with a central circular hole. This is not a typical Nene Valley fabric.

D:38mm, T:4.5mm, hole:6mm

547. 5752 H20:4:2

Fragment of a grey ware disc with a central circular hole.

D:32mm, T:8mm, hole:5mm

548. 6542 H20:4:16

Incomplete disc of samian with a central circular hole. Central Gaulish.

D:29mm, T:5.5mm, hole:2.5mm

549. 6954 H20:4:9

Half of a samian disc with a central circular hole.

Central Gaulish, Drag 31R: post AD 160

D:38mm, T:6mm, hole:6mm

550. 7432 H20:9:8

Fragment of a samian disc with a central circular hole.

East Gaulish?

D:26mm, hole:5mm

551. 7507 H20:9:9

Samian disc with an off-centre circular hole. Central Gaulish, Drag 18/31R?

D:26mm, hole:5mm

552. 8561 H21:5:1

Disc of calcite-gritted ware with a central circular hole.

D:38mm, T:11mm, hole:7mm

553. 8647 H21:4:2

Disc of coarse red ware with a central circular hole.

D:38mm, T:8mm, hole:6mm

554. 8667 H21:3:41

Half of a burnt samian disc with a central circular hole.

D:32mm, T:6mm, hole:6mm

555. 9255 HSE:1:23

Fragment of a samian disc with a central circular hole. East Gaulish?

D:37mm, T:7.5mm, hole:6mm

Pottery discs

556. 3106 H13:6:27

Disc of samian with two small dimples drilled into the face on either side of a central circular hole giving an anthropomorphic appearance.

D:35mm, T:11mm, hole:8mm

557. 44 H13:5:0

Disc of grey ware.

D:19mm, T:4mm

558. 350 H13:9:1

Disc of East Gaulish samian.

D:15mm, T:6mm

559. 937 H13:2:2

Disc of worn East Gaulish samian.

D:21mm, T:4.5mm

560. 1159 H13:6:5

Disc of worn samian.

D:16.5mm, T:5mm

561. 1654 H13:9:11

Disc of samian.

D:12mm, T:5mm

562. 2116 H13:1:11

Disc of Central Gaulish samian.

D:22mm, T:11mm

563. 2225 H13:10:20

Small disc of East Gaulish samian.

D:12mm, T:6mm

564. 2411 H13:5:23

Disc of grey ware.

D:19mm, T:6mm

565. 3417 H13:1:56

Disc of Central Gaulish samian. Drag 33.

D:17mm, T:6mm

566. 3492 H13:2:27

Disc of Central Gaulish samian. Drag 33

- D:18mm, T:6mm
 567. 3722 H13:1:170
 Large disc of Central Gaulish samian. Drag 31R: post AD 160.
 D:43mm, T:8mm
 568. – H15:1:10
 Disc cut from wall sherd of amphora.
 D:40mm, T:8mm
 569. 4633 H20:6:0
 Disc of East Gaulish samian with a bevelled upper edge.
 D:19mm, T:6mm
 570. 5143 H20:5:1
 Disc of Central Gaulish samian.
 D:15mm, T:6.5mm
 571. 5144 H20:5:1
 Disc of grey ware. BB2? post AD 140.
 D:21mm, T:6.5mm
 572. 5345 H20:6:2
 Disc of grey ware.
 D:23mm, T:6mm
 573. 5583 H20:4:0
 Roughly cut disc of Central Gaulish samian.
 D:29mm, T:10mm
 574. 5634 H20:6:0
 Small disc of Central Gaulish samian.
 D:12mm, T:8mm
 575. 5718 H20:4:13
 Disc of grey ware. BB1?
 D:16mm, T:7mm
 576. 5774 H20:7:2
 Disc of grey ware. BB1?
 D:17mm, T:4mm
 577. 5878 H20:4:1
 Disc of grey ware with a small central hole.
 D:24mm, T:5.5mm, hole:4mm
 578. 5943 H20:7:4
 Roughly cut disc of grey ware.
 D:20mm, T:8mm
 579. 6155 H20:4:13
 Disc of Central Gaulish samian with a dimple drilled into one face. Hadrianic?
 D:28mm, T:6mm
 580. 6267 H20:5:12
 Roughly cut disc of Central Gaulish samian. Drag 31R?
 D:19mm, T:9mm
 581. 6405 H20:4:16
 Disc of East Gaulish samian. Drag 31R: post AD 160.
 D:22mm, T:5mm
 582. 6464 H20:5:11
 Roughly cut disc of East Gaulish samian.
 D:18mm, T:8mm
 583. 6819 H20:6:48
 Roughly cut disc of Central Gaulish samian.
 D:21mm, T:7mm
 584. 6956 H20:4:13
 Roughly cut disc of Central Gaulish samian.
 D:22mm, T:5mm
 585. 7433 H20:8:8
 Burnt disc of Central Gaulish samian. Drag 31R?
 D:24mm, T:5.5mm
 586. 7545 H20:9:8
 Roughly cut disc of grey ware with cross-hatched decoration.
 D:20mm, T:6mm
 587. 7778 H20:8:36
 Disc of grey ware with rouletted decoration on one face, cut from a jar.
 D:28mm, T:4mm
 588. 7787 H20:9:5
 Disc of Central Gaulish samian with rosette decoration
 Drag 37, possibly Doeccus.
 D:21mm, T:7mm
 589. 7813 H20:3:39
 Disc of East Gaulish samian.
 D:23mm, T:5.5mm
 590. 7959 H20:5:58
 Roughly cut disc of Central Gaulish samian.
 D:16mm, T:8mm
 591. 8034 H20:4:63
 Disc of Central Gaulish samian. Drag 33? Hadrianic.
 D:15mm, T:5mm
 592. 8387 H20:8:1
 Roughly cut disc of grey ware. BBI?
 D:22mm, T:3mm
 593. 8501 H20:6:74
 Roughly cut disc of samian with a small dimple bored into one face.
 D:28mm, T:7mm
 594. 8512 H20:8:80
 Disc of clay or badly fired pot.
 D:20mm, T:6mm
 595. 8520 H20:8:1
 Disc of redware.
 D:18mm, T:5mm
 596. 8547 H21:1:1
 Disc of grey ware.
 D:21mm, T:6mm
 597. 9223 H21:2:3
 Roughly cut disc of Central Gaulish samian.
 D:23mm, T:6mm
 598. 9554 H21:2:1
 Roughly cut disc of Central Gaulish samian.
 D:14mm, T:6mm
 599. 4855 H20:5:0
 Square cut from a Central Gaulish mortaria with one corner chipped off and with an off-centre circular hole.
 L:30mm, W:30mm, hole:4mm, T:6mm
 600. 8288 H20:3:63
 Small domed block of pink fired clay.
 D:12mm, H:8mm
- Pottery objects from consolidation**
601. 48 HS:–:1
 Small disc of samian with a central circular hole. Burnt.
 D:24mm, T:7mm, hole:7mm
 602. 18A H13:1 (south end)
 Small disc of abraded samian. Carefully made with a countersunk hole and a rounded edge.
 D:30mm, T:8.5mm
 603. 33A H13:4
 Disc of Central Gaulish samian with a central circular hole and cut from a wall sherd. Worn around the hole on one face.
 D:33/34mm, T:7mm, hole:5mm
 604. 28A H13:3 (flagging south end)
 Large disc with a proportionally small central hole. Samian with a very abraded surface.
 D:39.5mm, T:8mm, hole:5mm

605. 2A H13:1 (east wall)
Part of a disc of East Gaulish samian.
D:33mm, T:6mm
606. 22A H13:2 (south wall)
Disc of samian.
D:17mm, T:8mm

Jet and shale (Fig 14.24)

607. 6115 H20:5:11 (Fig 14.24)
Fragment of a jet finger-ring of semi-oval section with deep oblique lines across the outer face giving a cabled effect. Cf Hastenwath: Hagen 1937, A.4.
Internal D:15mm, W:3mm, T:5.5mm
608. 5530 H20:4:0
Fragment of a jet finger-ring of expanding, roughly circular section.
Internal D:15mm, W:3mm, maximum T:6mm
609. 9559 H14:7:1 (Fig 14.24)
Incomplete jet finger-ring of elliptical section expanding to notched shoulders. A wide groove separates each shoulder from the flat rectangular panel which is decorated with an incised saltire cross.
Internal D:17mm, panel:12 × 8mm
610. 1420 H13:5:4 (Fig 14.24)
Incomplete jet finger-ring of triangular section expanding to conical shoulders. The raised oval panel is offset.
Internal D:16mm, panel:10 × 6mm
611. 4088 H20:1:0 (Fig 14.24)
Fragment of a rectangular-sectioned shale finger-ring with a series of wide rib and groove motifs across the outer face.
Internal D:18mm, W:6mm, T:8mm
612. 7898 H14:9:1
Fragmentary cylindrical jet bead decorated with equally spaced incised bands. Cf South Shields: Allason-Jones and Miket 1984, nos 7.4–16.
Approximate L:18mm, D:4mm
613. 2 H13:—:0 (Fig 14.24)
Short jet cylinder bead decorated by a single incised median band. Cf South Shields: Allason-Jones and Miket 1984, no. 7.22.
L:4mm, D:6mm
614. 717 H13:5:3 (Fig 14.4)
Flat jet armlet bead of semi-circular shape with a chevron effect on the edge formed by notching the edges. The two lateral holes are large in proportion to the size of the bead. Cf Lawson 1975, 246. fig 2g; Allason-Jones and Miket 1984, nos 7.28–30.
L:2mm, W:17mm, Depth:9mm, D of holes:3mm
615. 8668 H21:3:41
Fragmentary, flat, elliptical armlet bead with raised N-shapes along its more curved edge. Pierced by two lateral holes. Cf Allason-Jones and Miket 1984, no. 7.28.
L:30mm, Depth:13mm, T:3mm
616. 5390 H20:4:1 (Fig 14.24)
Small jet melon bead. See Hagen 1937, Taf 27 for parallels from the Rhineland, and Allason-Jones and Miket 1984, nos 7.34–5 for British examples.
L:6mm, D:10mm
617. 98 H13:7:0 (Fig 14.24)
Circular shale bead with one convex face which is decorated by a marginal groove and a central dot and double ring motif. The sides are bevelled and the bead is pierced laterally by two circular holes, one of which has
- worn through. Cf Lawson 1975, 244, fig 1.7; Allason-Jones and Miket 1984, nos 7.55–67.
D:15mm, L:4mm
618. 7 H13:2:0 (Fig 14.24)
Globular shale bead with flat ends. The hole is not countersunk as is usual with this form. Cf Lawson 1975, 244, fig 1.2; Allason-Jones and Miket 1984, no. 7.32.
L:8mm, D:12mm
619. 32 H13:1:0 (Fig 14.24)
Barrel-shaped shale bead, with one flat face and one convex, pierced laterally by two circular holes. Cf Allason-Jones and Miket 1984, no. 7.25.
L:30mm, T:8mm
620. 4148 H20:4:0 (Fig 14.24)
Fragment of an octagonal ?shale armlet with two grooves running around the angled outer face. This is not a common type in Britain and examples from Cologne suggest that the grooves may have held gold wire (Hagen 1937, B.25).
Internal D:60mm, W:7mm
621. 8581 H21:2:1 (Fig 14.24)
Fragment of a shale armlet of D-section with a series of stamped dot-and-ring motifs around the face. Cf Allason-Jones and Miket 1984, nos 7.114–15.
Internal D:70mm, W:7mm, T:7mm
622. 5689 H20:6:11 (Fig 14.24)
Fragment of a rectangular-sectioned shale armlet with a chevron effect on the face achieved by notching the edges. Cf Allason-Jones and Miket 1984, no. 7.108.
W:10mm, T:6mm
623. 3192? (perhaps actually 3143) H13:11:20
Fragment of a shale armlet of semi-oval section. Undecorated.
Internal D:40mm, W:6mm, T:8mm
624. 3510 H13:11:29
Two fragments of lozenge-sectioned shale armlet.
Internal D:40mm, W:5mm, T:6mm
625. 1410 H13:1:13
Fragment of a shale armlet of oval section. Undecorated.
No measurements possible.
626. 30 H13:1:0
Fragment of a plain ?shale armlet of oval section with flat inner face.
Internal D:80mm, W:5mm, T:6mm
627. 46 H13:3:0
Fragment of a ?shale strip armlet.
Internal D:60mm, W:5mm, T:10mm
628. 66 H13:4:6
Fragment of an elliptical-sectioned ?shale armlet. File marks are still evident on the inner face.
Internal D:65mm, W:6mm, T:7mm
629. 1912 H13:0:2
Fragment of semi-oval-sectioned ?shale armlet.
Internal D:40mm, W:5mm, T:6mm
630. 5531 H20:4:0 (Fig 14.24)
Fragment of a jet pin with a faceted head. Cf York: *RCHM* 1962, pl 69; South Shields: Allason-Jones and Miket 1984, nos 7.191–202.
L:35mm, T of head:7mm
631. 516 H13:1:11 (Fig 14.24)
Fragment of jet pin with a circular-sectioned shank and a large faceted cube head.
SL:36mm, head:9 × 9mm

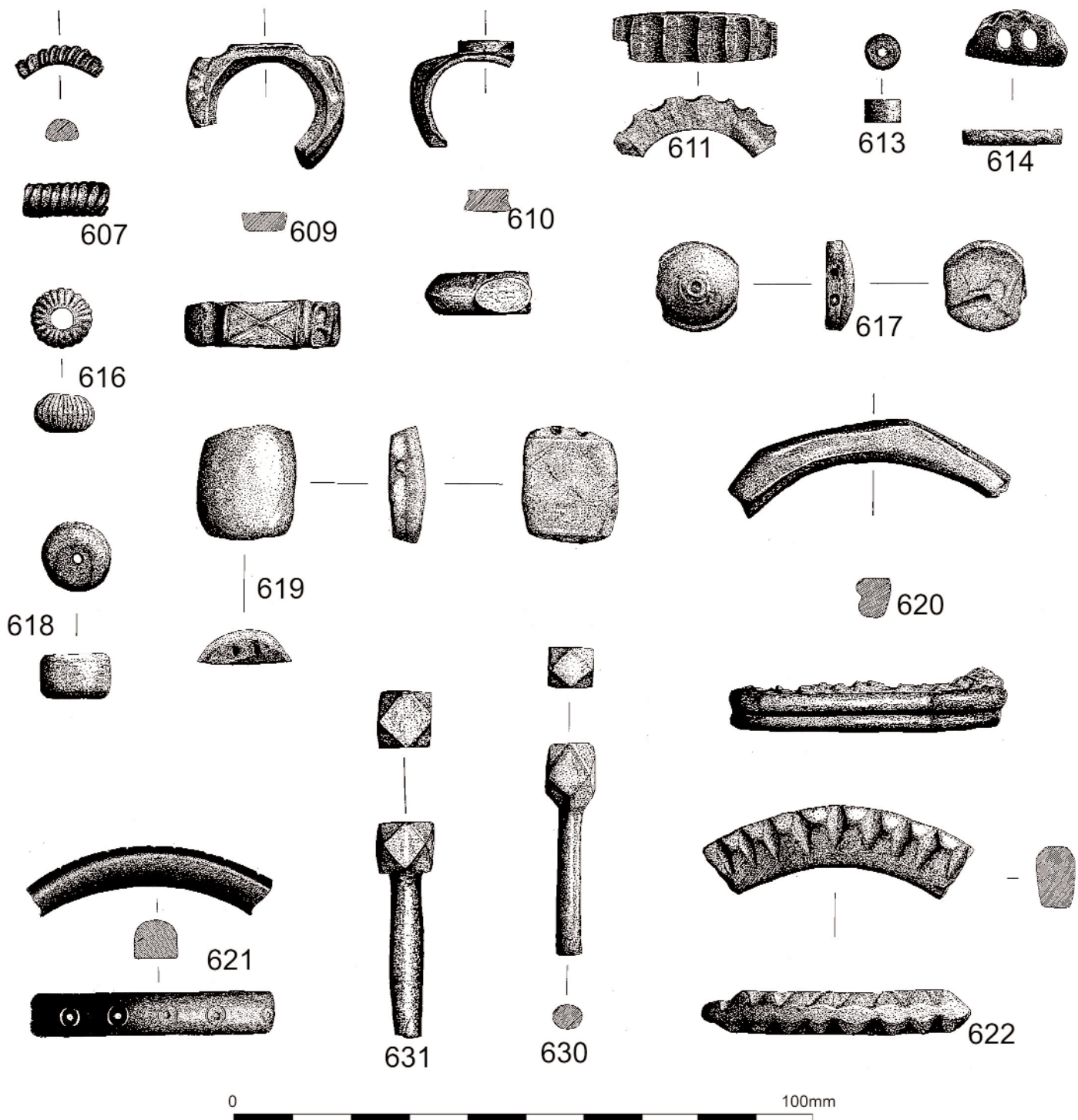


Fig 14.24 Jet and shale objects (scale 1:1).

Jet and shale objects from consolidation

632. 32A H13:3:2 (west wall)
Fragment of a plain shale bracelet of oval section with a residual lathe scar around the inner face.
Internal D:70mm, W:6mm, T:7mm
633. 14 HS:-:0
Fragment of the circular-sectioned shank of a jet pin.
L:37mm, T:4.5mm

Stone (Fig 14.25)

634. 1602 H13:9:11 (Fig 14.25)
Disc bead or pendant of agalmatolite or lithomarge. The hole is slightly off centre.
Lithomarge beads, rings and egg-shaped amulets are known from Cairnhill, Camelon, Newstead and Rainton in Scotland and at Corbridge, while both an egg amulet and a similar ring are already known from Housesteads (unpublished; Museum of Antiquities Acc No. 1956.151.31.A). Lithomarge deposits spread from the north coast of the Mediterranean through Italy, France and Yugoslavia, and during the Iron Age and later centuries were widely used for the manufacture of amulets, as the veined appearance was considered to imbue the stone with apotropaic properties similar to that of steatite. For a general discussion and finds list see Stevenson and Collins 1976.
D:26mm, T:9mm
635. 892 H13:2:0
Natural, ovoid pebble of ?granite, possibly an amulet. Cf lithomarge egg-amulet from Housesteads: Museum of Antiquities Acc No. 1956.151.31.A.
L:23mm
636. 1101 H13:0:1
Natural stone which has been water-worn to a phallic shape and probably used as an amulet as a result.
L:57mm

637. 1777 H13:1:6
Flat disc of lithomarge.
D:19mm, T:5mm
638. 4970 H20:4:1
Annular amber disc bead. Amber was more popular in Britain in the Bronze Age than during the early years of the Roman occupation. It was only after the late 2nd century that amber was imported from the Baltic in any quantity.
D:9mm, T:5mm
639. 3103 H13:6:27
Fragment of a large amber disc ?pendant of tapering semi-oval section pierced centrally by a circular hole.
D:50mm, W:19mm, T:12–21mm
640. 9254 HSE:1:23 (Fig 14.25)
Incomplete slate palette, originally rectangular or square with bevelled edges on one face. Small palettes were used for mixing ointments and pigments. The bevelled edges were designed to slide into grooved metal frames. Cf Allason-Jones and Milet 1984, no. 12.68.
L:79mm, surviving W:63mm, T:6.5mm
641. 51 H13:4:6
Incomplete large slate whorl or lid with a carefully made central hole and a rounded edge.
D:56mm, T:6mm, hole:11mm
642. 452 H13:9:3
Disc cut from micaceous sandstone.
D:30mm, T:6mm
643. 1014 H13:1:0
Disc cut from micaceous sandstone.
D:25mm, T:9mm
644. 4498 H20:5:0
Slate disc.
D:15mm, T:2.5mm
645. 4499 H20:5:0
Slate disc.
D:16.5mm, T:4mm

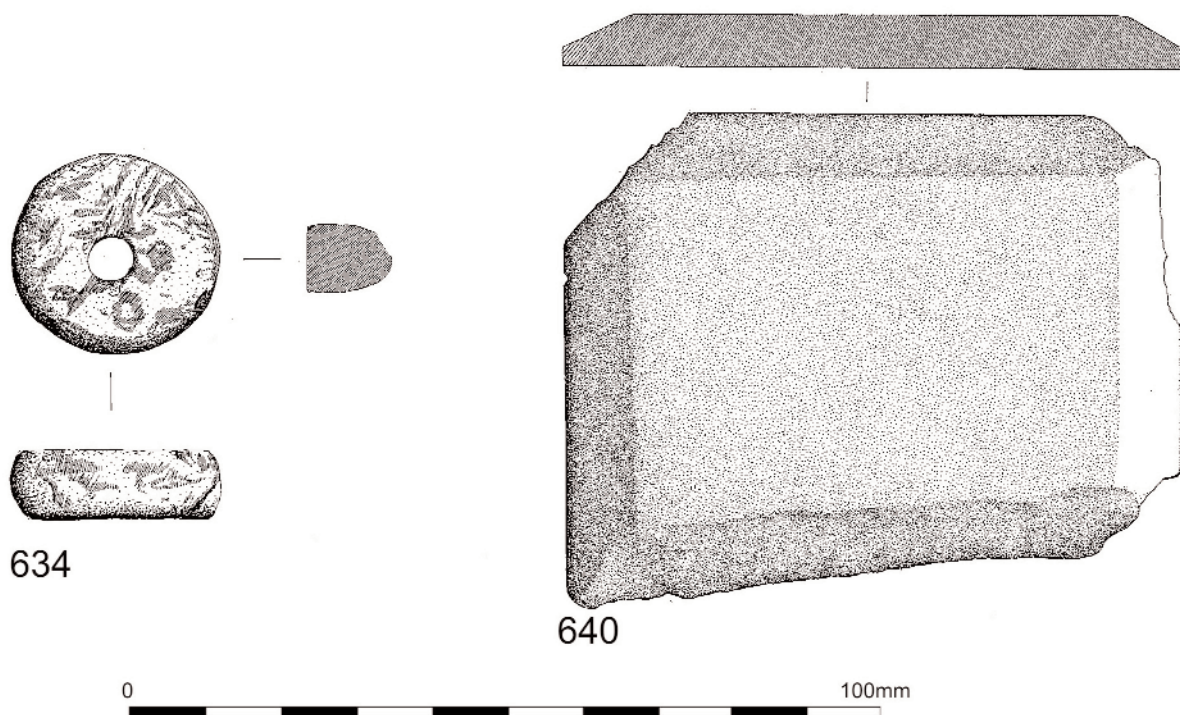


Fig 14.25 Stone objects (scale 1:1).

646. 5635 H20:6:0
Slate disc.
D:22mm, T:5mm
647. 8263 H20:8:42
Sandstone disc with a rounded edge.
D:19mm, T:5.5mm
648. 8634 H21:5:4
Oval slab of slate. Pot lid?
D:60mm x 73mm, T:8mm
649. 9035 HSE:1:2
Oval slab of sandstone. Pot lid?
D:52mm x 53mm, T:9mm
650. 9386 HSE:1:31
Disc of slate.
D:16mm, T:4mm
651. 9395 H15:1:2
Disc of slate.
D:15mm, T:2.5mm
652. 8498 H20:7:0
Small sandstone ball.
D:37 x 45mm, Weight:110g
653. 396 H13:9:0
Small rectangular granite block with bevelled edges at both ends.
L:50mm, W:26mm, T:13mm
654. 1237 H13:2:8
Rectangular block of a fine green stone with bands of limestone.
L:69mm, W:31mm, T:18mm
655. 9009 HSE:1:2
Small fragment of a burnt slate block, apparently rectangular with a rounded edge on one face.
Surviving L:28mm, surviving W:17mm, surviving T:7mm
656. 181 H13:8:0
Hone made from a long narrow whinstone pebble rubbed flat on two faces.
L:104mm, W:29–21mm, T:14mm
657. 395 H13:9:0
Rectangular-sectioned hone, tapering to one end, of pink sandstone. Both ends are angled and rounded.
L:107mm, maximum W:29mm, T:16mm
658. 472 H13:4:3
Large hone of micaceous sandstone, rectangular in shape and section, tapering slightly to one end.
L:122mm, W:41–32mm, T:17mm
659. 583 H13:0:0
Fragment of a whinstone hone of rectangular shape and section with a flattened end.
L:51mm, W:21.5mm, T:10mm
660. 744 H13:2:2
Whinstone pebble of roughly rectangular shape used as a hone.
L:102mm, W:28mm, T:28mm
661. 758 H13:5:3
Sandstone hone of rectangular shape and section. One end has been snapped off from a longer bar.
L:96mm, W:22mm, T:14mm
662. 803 H13:1:11
Incomplete hone of micaceous sandstone. Rectangular in section, it tapers markedly from one end to the other.
L:55mm, W:38–25mm, T:20mm
663. 941 H13:2:2
Hone made from a fine micaceous sandstone pebble of semi-oval section with rounded end.
Surviving L:70mm, W:37mm, T:14mm
664. 993 H13:2:2
Incomplete hone of pink sandstone, of oval section with slightly curved tapering edges.
Surviving L:68mm, W:41mm, T:19mm
665. 1048 H13:6:5
Incomplete hone of micaceous sandstone, split along its length although originally oval in section with one rounded end.
Surviving L:56mm, W:27mm, surviving T:13mm
666. 1084 H13:6:5
Long oval-sectioned hone of fine sandstone, with a rounded end.
L:87mm, W:24mm, T:11mm
667. 1199 H13:2:2
Hone of fine sandstone. Rectangular in shape and section, tapering slightly from one of the bevelled ends.
L:71mm, W:18–23mm, T:9mm
668. 1207 H13:6:0
Small hone of fine micaceous sandstone, rectangular in shape and section with two marginal grooves down one side.
Surviving L:62mm, W:22mm, T:15mm
669. 1308 H13:7:1
Incomplete hone of pink sandstone, rectangular in shape and section with one rounded end.
Surviving L:78mm, W:41mm, T:19mm
670. 2694 H13:11:1
Hone of micaceous sandstone of rectangular section with a pointed end.
Surviving L:123mm, W:31mm, T:19mm
671. 2695 H13:11:1
Oval pebble of fine micaceous sandstone, snapped at both ends and used as a hone.
Surviving L:72mm, W:37mm, T:15mm
672. 2700 H13:11:0
Large whinstone pebble with polished faces, probably as a result of having been used as a hone.
L:167mm, W:55mm, T:27mm
673. 3107 H13:11:1
Hone of micaceous sandstone, rectangular in shape and section and roughly snapped from a block at both ends.
L:100mm, W:31mm, T:25mm
674. 3108 H13:11:0
Long whinstone pebble of semi-oval section with a curved end, probably used as a hone.
L:94mm, W:29mm, T:14mm
675. 3607 H13:5:4
Fragment of an oval-sectioned hone of fine sandstone.
Surviving L:24mm, W:31mm, T:22mm
676. 4657 H20:5:0
Incomplete hone of micaceous sandstone, rectangular in shape and section.
L:127mm, W:47mm, T:20mm
677. 5145 H20:5:1
End of a large hone of fine sandstone cut obliquely. The hone is rectangular in section with slightly convex faces.
Surviving L:68mm, W:45mm, T:19mm
678. 5241 H20:5:0
Small rectangular block of fine micaceous sandstone. Hone?
L:42mm, W:19mm, T:10mm
679. 6279 H20:4:10
Fine micaceous sandstone hone, roughly rectangular in section and expanding to the surviving end.
L:105mm, W:37mm, T:23mm

680. 6958 H20:4:21
End cut obliquely from a whinstone hone of rectangular section but with convex faces and concave sides and end.
Surviving L:56mm, W:36mm, T:18mm
681. 7995 H20:6:62
Hone of fine sandstone. Rectangular in shape and section but well worn in the centre of all faces.
L:65mm, W:25mm, T:18mm
682. 8829 HSE:1:1
End of an oval-sectioned hone of very fine sandstone.
Surviving L:31mm, W:33mm, T:22mm
683. 8985 HSE:1:2
Oblique end of a hone of fine micaceous sandstone. Rectangular in shape and section.
Surviving L:59mm, W:26mm, T:20mm
684. 8986 HSE:1:2
Rectangular block of fine micaceous sandstone with rough untrimmed faces. Blank for a hone?
L:54mm, W:32mm, T:10mm
685. 9007 HSE:1:2
Incomplete hone of pink sandstone. Rectangular in shape and section with a slightly rounded end.
L:45mm, W:28mm, T:16mm
686. 9008 HSE:1:2
Sandstone hone of rectangular shape and section with an oblique end.
L:104mm, W:31mm, T:22mm
687. 9034 HSE:1:2
Incomplete hone of pink sandstone. Rectangular in section but oval in shape.
Surviving L:75mm, W:48mm, T:18mm
688. 9119 H15:1:2
Fragment of a fine sandstone hone of rectangular shape and section.
L:36mm, W:26mm, T:18mm
689. 9474 HSE:1:29
Three whetstones:
a) rectangular with chamfer to upper face.
L:69 × 30 × 14mm
b) incomplete but with rounded ends.
L:90 × 33 × 17mm
c) Fragment with chamfered edge.
L:44mm
690. 8676 H21:3:78
Roughly square slab of slate broken across a circular hole.
L:36mm, W:32mm, T:4mm

Stone missiles

W B Griffiths

Sling-stones

During the excavations several stones were kept as possible sling-shots. Identifying individual sling-stones is effectively impossible as they are usually nothing more than rounded water-worn pebbles. Only when such pebbles are found collected together can their function be more assuredly stated; however, the apparent discovery of lead *glandes* (sling-shots) at Housesteads (Breeze 1982, 145 and *see* No. 392 above) indicates that the sling was in use at the site as indeed at many other Roman military sites throughout the Empire (Greep 1987, 198–9; Griffiths 1989; Volling 1990).

Given the impossibility of identifying individual sling-stones, the following catalogue lists only those stones recovered from the excavations that fall into a pre-defined tolerance of 15–186g (Korfmann 1973, 39), with a length of 20–50mm and with a tolerably rounded shape that could have caused their selection by slingers (Griffiths 1994, 204). The inclusion of stones in the list indicates only that they could have functioned as sling-shots; it is not a positive identification.

691. – H13:2:0
Water-worn pebble. Granite
Wt:119g, D:28–55mm
692. 14 H13:3:0
Does not appear water worn. Sandstone.
Wt:61.4g, D:34–37mm
693. 2676 H13:5:27
Water-worn pebble. Sandstone.
Wt:58.2g, D:32–40mm
694. 1432 H13:6:13
Water worn? But with groove on one side of long axis. Sandstone.
Wt:45.2g, D:24–41mm
695. 2321 H13:7:13
Roughly rounded pebble. Sandstone.
Wt:85.9g, D:39–41mm
696. 1378 H13:8:1
Has been split or cut. Whinstone.
Wt:51.6g, D:40–24mm
697. 1377 H13:8:1
Water-worn? Pebble. Whinstone.
Wt:62.3g, D:29–39mm
698. 1376 H13:8:1
Water worn?, cracked, no sign of burning. Limestone.
Wt:119g, D:40–46mm
699. 2474 H13:8:28
Water-worn pebble. Sandstone.
Wt:66.9g, D:32–41mm
700. 3025 H13:8:44
Water-worn pebble. Sandstone.
Wt:99.1g, D:36–46mm
701. 4156 H20:5:32
Well rounded, possibly water worn, ideal shot shape. Pink sandstone.
Wt:44g, D:28–36mm
702. 6853 H20:5:32
Rounded, ideal shot shape. Sandstone.
Wt: 49.4g, D: 31–36mm
703. 4495 H20:5:0
Possibly fire cracked, some reddening. Whinstone.
Wt:161.5g, D:46–51mm
704. 7029 H20:6:50
Pebble. Soft sandstone.
Wt:16.8g, D:21–27mm
705. – H20:5?:95?
Pebble, traces of mortar. Limestone?
Wt:122.7g, D:42–48mm
706. 8508 H20:8:1
Water-worn? pebble, traces of mortar. Soft sandstone.
Wt:49g, D:33–36mm
707. 9358 H21:1:71
Fractured water-worn pebble. Whinstone.
Wt:28.7g, D:25mm
708. 8987 HSE:1:2
Water-worn? pebble. Sandstone.
Wt:45.3g, D:30mm

'Ballista' stones

A number of larger, heavier stones, several worked, were also retained during the excavation as possible missiles. Several of these have the rounded shape with flattened sides traditionally ascribed to 'ballista' shot (Marsden 1969, 80); however, this interpretation has been questioned in recent years (Batz 1983, 136) and it is possible to argue that such stones may have been manufactured for throwing by hand. Several classical authors attest the use of stones for hand throwing in both the Greek and Roman periods (Griffiths 1994, 205; 1992, 2–6), while recent practical experiments show that such stones would have formed a useful component of the defensive system of a fort (Griffiths 1992, 6–10). Of the 11 larger stones listed here, four are of the 'ballista' shot type, although one appears unfinished, and seven are not obviously worked to this shape. It may be that these latter were collected for throwing, hence their inclusion here, but it is just as possible that they could have been transported to the fort for use as general rubble, or for road surfaces etc.

It is of interest to note that two of the four more probable 'ballista' stones (717 and 718) were recovered from the vicinity of the interval tower, although this cannot reveal whether they were intended for artillery or hand throwing.

709. 2718 H13:7:4
Fits hand, flattened sides, chipped 'ballista' ball. Pink sandstone.
Wt:681.3g, D:79–87mm
710. 3026 H13:9:11
Round, ?worked, fits hand. Sandstone.
Wt:848.2g, D:85–94mm
711. 3024 H13:8:44
Fairly well rounded, worked? Sandstone?
Wt:228.6g, D:54–75mm
712. 5561 H20:2:2
Water-worn stone, natural 'ballista' ball. Whinstone.
Wt:601.8g, D:78–67mm
713. 7544 H20:9:4
Signs of burning and cracking, rounded cube fits hand reasonably, all sides flattened. Sandstone.
Wt:375.3g, D:85mm
714. 9329 H21:1:35
Fits hand snugly, 3 flat sides, not obviously a shot or worked. Sandstone.
Wt:404.8g, D:68–72mm
715. – H21:2:29
Possibly a 'ballista' shot with a third cut away, flat side is very smooth. Sandstone.
Wt:520g, D:55–87mm
716. – H21:3:1
Water-worn stone, fits hand. Whinstone
Wt:468.1g, D:62–76mm
717. 8679 H21:3:17
Roughly worked 'ballista' shot. Sandstone?
Wt:633.6g, D:60–85mm
718. 8680 H21:3:18
Appears to be an unfinished 'ballista' shot, hexagonal, some sides slightly concave. Sandstone?
Wt: 609.8g, D:74–52mm

719. 8681 H21:3:39

Unwashed, rounded triangular stone, all sides roughly flattened, just rubble? Sandstone.

Wt:421.3g, D:84–89mm

Leather*Q Mould*

All the leather, with the exception of the material recovered in excavations of the north rampart during 1979, and some scraps from Chalet 5, Building XIII in 1974, was examined after conservation by freeze-drying by the then Guardianship branch of the Ancient Monuments Laboratory Conservation Department of English Heritage. The leather from the north rampart and Building XIII was air-dried when examined. Much of the leather was heavily worn but, where possible, species identification was made by grain pattern, using low-powered magnification. In the text the term goatskin is used where the grain pattern of sheep/goat has been identified and cannot be differentiated.

The seams, hems and stitch types referred to are those devised by Mrs Groenman-van Waateringe when studying the Valkenburg material (1967, 24–30, figs 5 and 6) and subsequently expanded by Carol van Driel-Murray when looking at tentage from Vindolanda (1990, 109–38; 1993, 24–30) and Sue Winterbottom studying that from Carlisle (1991, 244–317). Hobnailing patterns on the bottom units of shoes are classified according to Rhodes (1980, 105–7) and van Driel-Murray (1983, 21, fig 3) and hereafter referred to as Rhodes Type and van Driel-Murray Type respectively. Constructional thonging is classified according to the numbering used by Padley in describing the shoe leather from the Lanes, Carlisle (Padley forthcoming).

Leather from the 1976 watching brief of the vicus near Chapel Hill

Six items of leather were found in 1976 during the watching brief of the *vicus* near Chapel Hill to the south of the fort. The leather comprised discarded shoe fragments and two pieces of waste from shoe-making. Three types of shoe construction were represented: the nailed shoe, the one-piece/moccasin shoe and the sandal. The construction and broad shape of the sandal fragments (*766369a, b) suggested an early to mid-3rd-century date for the small assemblage; the other shoe fragments had features commonly found throughout the occupation of the frontier. All the items, with the exception of a fragment of secondary waste, are illustrated and described in the following discussion so that their full catalogue description is not published here, but is available in the research archive.

Nailed shoe (*766396d), Fig 14.26, Nos 1–2

The bottom unit of a shoe of nailed construction was found, comprising a sole, middle and insole with a heel stiffener and fragment of nailed lasting margin from the upper, placed



Fig 14.26 Leather items (scale 1:4).

between the middle and the sole. The middle and insole are joined by Type 2 constructional thonging, the component parts of the bottom unit being held together by nailing of van Driel-Murray Type 3d.

One-piece/moccasin shoe (*766396c), Fig 14.26, No. 3
A fragment of a shoe of one-piece construction had part of the right side of the upper and a fragment of the integral sole remaining, with a butted back seam sewn with whip stitching and a line of grain/flesh stitching around the heel. The top edge was cut straight and a fragment of the top loop with a decorative lobe remained, the lower loops had been torn away.

Sandals (*766396a, b), Fig 14.26, Nos 4–5
Two laminated fragments of bottom unit (probably insole) from broad-toed sandals were found with a decorative nailing pattern (Rhodes Type A) and Type B peripheral thonging, having a series of rouletted thong slits around the perimeter lying to the inside of the marginal nailing (Mould 1997). The broad shape of the toe and the position of the thong slits suggests a 3rd-century date.

Waste (*766396e), Fig 14.26, No. 6
Two pieces of waste leather with knife-cut edges were also found. One, a triangular intersectional-cutting piece of cattle-hide, comes from the pattern cutting of shoe soles and had marking out lines visible on the grain surface.

Leather from Building XIII

Two small fragments of shoe upper (61) were found in topsoil over Chalet 5 in Barrack Block XIII (H13:5:0) during 1974.

Leather from the north rampart (H20)

The forepart of a shoe of nailed construction (8521), torn across the toe and waist, was recovered from an early 2nd-century construction phase deposit sealed at the base of the north rampart of the fort (H20:5:95). The bottom unit was heavily nailed at the tread, with Type 2 constructional thonging. A fragment of upper lasting margin was present on the right side, held in place by nailing and thonging around the edge.

Leather from the north-east corner of the fort (H21)

Illustrated items, prefixed with an asterisk (*) in the text, are accompanied by a catalogue description below; a full catalogue of all the leather recovered is available in the research archive.

Twenty items of leather were found during the 1981 excavations of the north-east corner of the fort, occurring in one context (H21:2:40) sealed below the base of the east rampart and dating to the period of fort construction during the early 2nd century, and a second context (H21:1:80), the phasing of which is more problematic. The latter context was initially interpreted as primary rampart deposit, its composition being similar to deposits H21:2:40 and H20:5:95. However, H21:1:80 was seen at the base of the robber trench (H21:1:78) for the primary north-east angle tower and did not appear to extend beyond the limits of that trench (*see* discussion of the north-east angle in

Chapters 3 and 4 and Figs 2.5 and 3.1). On the basis of the sketched section drawing it is not possible to establish conclusively whether H21:1:80 represented a rubbish deposit at the base of the primary rampart, which was later cut and briefly exposed by the robber trench at the end of the 2nd to the beginning of the 3rd century, or, on the other hand, comprised rubbish contemporary with the demolition and robbing of the primary angle tower which was deposited in the trench before it was backfilled. The latter must remain a distinct possibility, however.

The leather from these contexts comprised principally tentage, including a complete panel and various fragments that had been cut up to salvage the reusable leather before being discarded. A possible fragment of shield cover, fragments of shoe and a small quantity of waste leather was also found.

Tentage

The small complete panel (Fig 14.27, No. 7, *815948a) of goatskin with three straight and a single, angled side can be paralleled by others from Vindolanda (van Driel-Murray 1993, 30, fig 15 V11 from Tent L1200) and Castle Street, Carlisle (Winterbottom 1991, 299, fig 262, no. 1192). It is an end panel from the eaves flap which, inserted at the junction of the tent roof and the wall and lying on top of the guy ropes, deflected rain water away from the tent walls.

The seven other fragments of sheet leather recovered (eg Fig 14.27, No. 8, *811413a; Fig 14.27, No. 9, *815947; Fig 14.27, No. 10, *815946a; Fig 14.27, No. 11, *815948b) are also likely to come from tent panels, having remains of seams characteristic of tentage (Winterbottom 1991, 245–51). Lengths of binding from narrow reinforced seams of Types NRi (Fig 14.27, No. 12, *811411) and NRii (Fig 14.27, No. 13, *815946b) were also recovered. Two fragments (Fig 14.27, Nos 10–11, *815946a; and *815948b) had stitching marking the former position of circular patches for the attachment of guy ropes or tie fastenings. The latter, a large panel fragment (Fig 14.27, No. 11, *815948b), had a concave area present in a hemmed edge where a flawed area of the hide had been replaced by a separate infill piece during original manufacture (Type B infill Winterbottom 1991, 263 and fig 230). A small tear in the panel had been repaired with whip stitching.

The majority of the tentage fragments from the 1981 and 1984 excavations at Housesteads (Mould 1988, 115–17), like those from the recent excavations of the fort at Birdoswald (Mould 1997, 340–1) and Vindolanda (van Driel-Murray 1993, 57) were of goatskin, as was that found at forts on the Rhine. The large tentage assemblage from the promontory fort at Birdoswald was said to be of calf or cattle hide (McIntyre and Richmond 1934, 76). The extraordinary tentative identification of pigskin tentage at Old Penrith may be the result of the particular burial

conditions at the site affecting the surface of the leather, which was noted to be very degraded (Mould 1991, 224, fig 117).

Shield cover

A fragment of worn calfskin (Fig 14.27, No. 14, *815946) with irregularly cut edges had a line of alternating horizontal and vertical stitches that may suggest it was cut from a shield cover.

Nailed shoe

The forepart of a shoe of nailed construction (Fig 14.27 nos 15–16, *815945) of *calceus* type was found, torn away across the tread. The remaining fragment of goatskin upper (Fig 14.27 no. 16) had a nailed lasting margin and the beginnings of openwork straps with decorative lobes and a central butted seam at the toe. A small fragment of goatskin with whipped stitching (811412) came from an internal shoe lining.

Waste

Four lengths of trimming (815946d) were secondary waste pieces produced during the manufacturing process when individual parts were undergoing final shaping.

Unprovenanced leather from Housesteads

A cattlehide insole (Fig 14.27, No. 17, *81072050) from a right foot shoe of nailed construction had Type 2 constructional thonging and came from a heavily nailed sole of van Driel-Murray Type 3c, as was found on the nailed shoe fragments from the 1984 excavations of the north curtain wall (Mould 1988, 113). A sub-circular piece of heavily compacted leather (811599) appears to be a wedge from the seat of a bottom unit. It is comparable with a heel wedge found in a small shoe from Billingsgate Buildings, London (Rhodes 1980, fig 61, no. 571).

Catalogue

Abbreviations

e/f = edge/flesh; g/f = grain/flesh; Ht = height; inc = incomplete; L = length; sl = stitch length; ST = seat; st = stitch/es; Tr = tread; W = width; Wt = waist

Nailing pattern refers to the surviving hobnails and/or the holes left by them.

Fig 14.27, No. 7 815948a H21:1:80 9536

Leather tent panel

Complete rectangular panel with three straight sides, the fourth is angled and now slightly distorted into a 'dog-leg'. The longer horizontal edge and the angled edge have a folded hem of Type Va with a line of large g/f st sl 10–13mm with continuous thread impressions visible on both upper and lower surfaces indicating it was sewn with a Type 1b st. The straight vertical edge has a Type IIaii seam with a folded edge with g/f st and a line of tunnel st running horizontally c 7mm

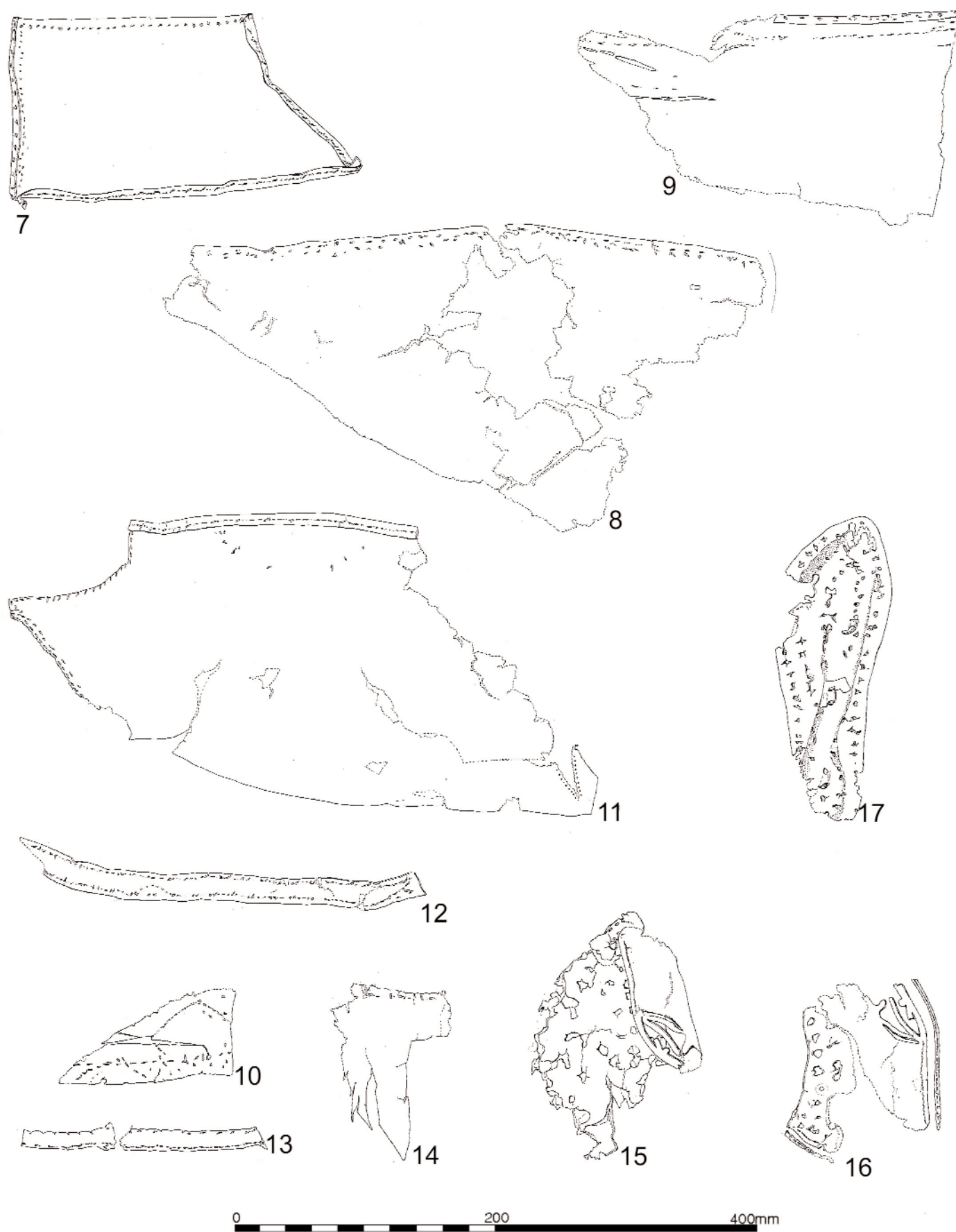


Fig 14.27 Leather items (scale 1:4).

below the fold on the flesh side. The short horizontal edge has an NRb seam with g/f st sl 6mm some 7mm from the edge, with no thread impression visible on either side; the grain side had been protected from wear along the seam. An oblong slit is present at the bottom of the left-hand corner. Stretch/stress lines present. Leather worn ?sheep/goat. L:263mm, W:140mm

Fig 14.27, No. 8 811413a H21:2:40 9062

Leather tentage

Fragment of sheet with a IIbi seam, the remaining edges are torn. The seam comprises a line of widely spaced g/f st sl 11mm running 5mm below the cut edge with a second line of irregular g/f st running below the first and merging into it at the left side. A small figure-of-eight shaped hole L 6mm lies 30mm below the seam and appears to be a natural insect hole. Stretch/stress lines present. Leather worn ?calf/cattlehide.

L:209mm inc, W:138mm inc

Fig 14.27, No. 9 815947 H21:1:80 9535

Leather tentage

Fragment of tent panel with a length of Type IIIaii seam, a vertical knife-cut edge and the other edges torn. The panel has been cut for reuse and has two cut and stretched slits close to a torn edge. The IIIaii seam comprises a folded edge with g/f st sl 10mm running along the fold and a line of crudely executed tunnel st running horizontally to the edge c 16mm below the fold and coming through slightly on to the grain side. A scatter of g/f st are present around the stretched slits suggesting that this area was patched. Leather worn ?sheep/goat (from thickness).

L:286mm inc, W:164mm inc

Fig 14.27, No. 10 815946a H21:1:80 9534

Leather tentage

Triangular piece of sheet with knife-cut edges, cut for reuse. The two straight edges are followed by a line of widely spaced g/f st with no thread impression visible, suggesting an NRb seam. A circle of g/f st with thread impression present on the flesh side indicates the former position of a circular patch and a semi-circle of g/f st close to the longer straight edge indicates the position of a second. Leather worn ?sheep/goat. L:134mm, W:67mm

Fig 14.27, No. 11 815948b H21:1:80 9536

Leather tentage

Large fragment of sheet with a length of folded hem of Type Va with widely spaced g/f st sl 17mm with continuous thread impression on both the upper and lower surfaces from a st Type 1b. To the right side of the hem the seam drops into a concave curved recess with a line of small g/f st with thread impressions on the grain side. This edge infill meets a vertical sloping seam of Type IIbii with a double row of g/f st, the line

of st closest to the edge having st impressions visible. The horizontal edge opposite the hem has a gently curved knife-cut edge, indicating that the sheet has been cut for reuse. The left vertical edge has been torn away, the bottom corner has an area of cut edge with an oblique slash close to it which has been repaired using a fine whip st. A series of widely spaced g/f st in a semi-circle from the hem indicates the position of a patch or tab attachment. Stretch/stress lines present. Leather sheep/goat.

L: c 450mm inc, W:215mm inc

Fig 14.27, No. 12 811411 H21:2:40 9061

Leather seam reinforcement strip

Length of reinforcement strip for a NRi seam with knife-cut sides and one end, the other is torn. Edges have a line of widely spaced g/f st sl 15mm with continuous thread impression visible on the grain side only. Leather worn, unrecognisable.

L:314mm, W:21mm

Fig 14.27, No. 13 815946b H21:1:80 9534

Leather seam reinforcement strip

Two lengths of reinforcement strip for seam NRbii with knife-cut sides and a cut and a torn end. Each strip has a line of widely spaced g/f st sl 10–13mm along one edge with continuous thread impression having been sewn with two threads or a backstitch (Groenman Type 1b), the other edge has been whip-stitched. Leather sheep/goat.

L:113mm, W:17mm; L:70mm, W:13mm

Fig 14.27, No. 14 815946 H21:1:80 9534

Leather ?shield cover

Sheet fragment with irregular knife-cut edges, cut for reuse. The remains of a slightly pleated or puckered seam with very widely spaced vertical and horizontal g/f st is present along one edge with an oblique line of widely spaced g/f st at right-angles to it. No thread impressions visible. Leather worn ?calf.

L:136mm inc, W:89mm inc

Fig 14.27, Nos 15–16 815945 H21:1:80 9533

Leather nailed shoe

Forepart of nailed shoe with oval toe and wide tread. The bottom unit comprises fragments of laminated sole, middle, rectangular strip of middle lamina and insole. Heavily nailed at the tread Rhodes Type C, van Driel-Murray unknown. Insole and middle have no thong slots visible. The fragment of vamp upper has a nailed lasting margin and a straight butted e/f toe seam sl 5mm with the beginnings of openwork straps, one with decorative lobes. Leather worn ?sheep/goatskin.

Bottom unit L:155mm inc, W Tr:98mm

Upper L:131mm inc, Ht from lasting margin:40mm

15 The samian ware

B D Dickinson

Introduction

This report is divided into two principal sections. The first part comprises an examination of the samian recovered by the excavations in the north-east corner of the fort between 1974–81, with a catalogue of the potters' stamps and the decorated ware. The second part is a study of decorated ware and potters' stamps found during the excavations of the *vicus* directed by Eric Birley in the 1930s. Most of this material had been lost and was rediscovered in the Department of Archaeology at Newcastle University during the course of the post-excavation assessment.

Those stamps and decorated ware that were recovered from stratified contexts in the fort are noted, with their catalogue numbers, in the appropriate 'Finds' section of the main structural account. Other chronologically significant material is referred to in the 'Dating evidence' sections. The entire samian assemblage from the 1974–81 excavations is set out, in tabular form, in the research archive, which is available for consultation in Corbridge Museum, at Corbridge Roman Site.

Abbreviations

The following abbreviations are used throughout this report:

D	= figure-type in Déchelette 1904
Dr	= Dragendorff
O	= figure-type in Oswald 1936–7
Rogers	= motif in Rogers 1974
S & S 1958	= Stanfield and Simpson 1958 (<i>Central Gaulish Potters</i>)

The fort

The excavations under discussion produced a maximum of 2964 vessels, comprising:

South Gaulish	0.2%
Central Gaulish (Les Martres-de-Veyre)	0.3%
Central Gaulish (rest)	84.8%
East Gaulish	14.7%

The material was in a generally poor state of preservation, and most of the sherds showed some degree of wear, with many of their surfaces and fractures badly affected by acid soil. This meant that relatively few joins or matches between contexts were detected and there were also many small sherds that could not be assigned to forms. Attribution of many of the decorated sherds to particular potters was often difficult, though their dates were usually clear enough. Table 15.1 shows the vessel forms and their origins.

Discussion

As at many Hadrian's Wall forts, a small amount of Trajanic samian from South Gaul and Les Martres-de-Veyre was found, here comprising less than 0.5 per cent of the assemblage.

The proportion of Hadrianic ware was also extremely small, a maximum 2 per cent. Among this material was a Trajanic–Hadrianic decorated bowl from Montans. Samian from this factory, while common in Antonine Scotland (Hartley 1972, 42–5), is rare in the Hadrian's Wall system and only four other examples have been recorded so far, three from Wallsend and one from Stanwix. There is also one from South Shields.

The samian offers strong indications that the fort was abandoned, or not fully garrisoned, in the early Antonine period. Of the two commonest 2nd-century cups, form 27 did not finally give way to form 33 until *c* AD 160, and usually turns up in fair quantity on sites occupied throughout the Hadrianic and early Antonine periods. The baths site at Wroxeter, for instance, produced 159 examples of Lezoux form 27s against 408 of form 33 (Dickinson 2000). In contrast, the Lezoux samian from Housesteads contains merely 4 examples of form 27 to 185 of form 33. Similarly, the rouletted dish, form 18/31R, which went out of production in Central Gaul *c* AD 160 to 165, is represented only 11 times, against 228 examples of its later 2nd-century variant, form 31R. In addition, the cup and dish versions of form 42 are missing and forms Curle 11 and 81 both make poor showings. Such examples as there are will almost certainly belong to the Hadrianic occupation.

The decorated ware and potters' stamps tell a similar story. Unfortunately, the proportion of stamped samian from this collection is unusually small, and so may not represent the true picture. Nevertheless, with one possible exception none of the stamped samian from these excavations is likely to belong to the first period of occupation at Housesteads. Most of it was not made before *c* AD 160 and much of the rest could be of this date, or later. The stamp of F Patillus is the only one that might have come from Period I, but as no foot-ring survives, the state of wear of the vessel cannot be seen. Although it is unlikely, the possibility that it would have been in use in the 160s cannot be entirely excluded.

Decorated ware of potters whose careers embraced the late Hadrianic and early Antonine periods is similarly sparse. For instance, bowls by Cettus (the Small S Potter), the only named maker of decorated ware at Les Martres-de-Veyre in the late Hadrianic to early Antonine period, are common in Scotland in general,

Table 15.1 Samian vessel forms and origins

<i>Form</i>	<i>SG</i>	<i>CGMV</i>	<i>CGLZ</i>	<i>EG</i>	<i>total</i>	<i>%</i>
15/31	—	—	1	—	1	0.03
18/31	—	—	17	—	17	0.57
18/31 or 31	—	—	58	1	59	1.99
18/31R	—	—	9	2	11	0.37
18/31R or 31R	—	—	7	—	7	0.23
27	—	3	4	—	7	0.23
30	1	—	9	1	11	0.37
30 or 37	—	1	129	16	146	4.92
31	—	—	346	64	410	13.83
31 or 31R	—	—	9	4	13	0.43
31R	—	—	175	53	228	7.69
32	—	—	—	6	6	0.20
33	—	—	185	33	218	7.35
35	—	—	4	—	4	0.13
35/36	—	—	1	—	1	0.03
36	—	—	26	8	34	1.14
37	2	—	232	54	288	9.71
38	—	—	51	34	85	2.86
38 or 44	—	—	34	1	35	1.18
40	—	—	1	—	1	0.03
44	—	—	1	—	1	0.03
45	—	—	62	19	81	2.73
46	—	—	1	1	2	0.06
72	—	—	4	—	4	0.13
79	—	—	30	—	30	1.01
79 or Tg	—	—	11	—	11	0.37
79R	—	—	2	—	2	0.06
79R or TgR	—	—	4	—	4	0.13
80	—	—	1	—	1	0.03
80 or Tx	—	—	1	—	1	0.03
81	—	—	1	—	1	0.03
Curle 11	—	—	2	—	2	0.06
Curle 15	—	—	5	—	5	0.16
Curle 15 or 23	—	—	3	—	3	0.10
Curle 21	—	—	8	2	10	0.33
Curle 23	—	—	6	—	6	0.20
Tb	—	—	—	3	3	0.10
Tx	—	—	1	—	1	0.03
Dish	—	2	98	38	138	4.65
DishR	—	—	8	—	8	0.26
Dish or bowl	—	—	216	36	252	8.50
Bowl	—	—	2	4	6	0.20
Cup	2	—	8	2	12	0.40
GSM	—	—	60	7	67	2.26
Beaker	—	—	2	—	2	0.06
Flagon	—	—	3	—	3	0.10
Jar	—	—	17	1	18	0.60
ENC	—	—	14	—	14	0.47
—	—	1	645	48	694	23.41
Total	5	7	2514	438	2964	

key: SG = South Gaulish; CGMV = Central Gaulish (Les Martres-de-Veyre); CGLZ = Central Gaulish (Lezoux);
EG = East Gaulish

though slightly less so at Newstead (9.2 per cent against 6.7 per cent: Hartley 1972, 33). They also feature strongly on some sites that were occupied continuously through the early Antonine period and beyond, such as Carlisle (Dickinson 1991, 344) and Castleford (Dickinson and Hartley 2000). On Hadrian's Wall as a

whole Cettus's work is of marginal importance, with 1.4 per cent of the attributed Antonine bowls (Hartley 1972, 33), and there are no examples at all from these particular excavations. His absence is another strong hint that full occupation of the fort was interrupted at the time when Scotland was occupied. But perhaps the

strongest evidence of change in the density of occupation in the early Antonine period is the comparative scarcity of decorated ware by the Cerialis ii–Cinnamus ii group, whose bowls were so common throughout Britain at that time.

The Lezoux bowls as a percentage of all the attributed Central Gaulish decorated ware correspond fairly closely to the figures produced by B R Hartley when comparing the samian from Hadrian's Wall and its hinterland forts with that from Antonine Scotland (ibid). Although this paper was written over a quarter of a century ago, subsequent excavations have not altered the picture substantially. Table 15.2 follows Hartley's division of the potters into: i) mainly Hadrianic, but perhaps still at work in the very early Antonine period; ii) potters starting work under Hadrian, but with mainly early Antonine careers; iii) early- and mid-Antonine potters; iv) Antonine potters working after *c* AD 160. Newstead is not included in the figures for Scotland but is considered separately, because of its longer occupation. Ilkley is included as a separate item in view of the independent evidence for its reoccupation. Because of the problem of distinguishing between the work of Paternus v and that of associated potters, caused by the condition of the samian, all relevant bowls have been assigned to the Paternus v group, both at Housesteads and elsewhere.

The Central Gaulish decorated ware seems to belong to a rather restricted range of potters, but this impression may be due to the large number of sherds

that have undiagnostic features. The main difference between the Housesteads samian and that of the other Hadrian's Wall decorated ware is the apparently much greater proportion of bowls by the Paternus v group at Housesteads. If this is genuine, and not merely due to the difficulty of spotting joining sherds, this may be the first fort on the Wall where the work of Paternus and his associates outnumbers that of Cinnamus and his.

Central Gaulish ware is so widely dispersed throughout Britain that it is difficult to discern the routes of distribution. Therefore, the question of whether the supply for the Wall forts come in via the Tyne or Solway or was brought overland, or a mixture of the two, must remain unanswered for the present.

The East Gaulish ware comes from the following sources:

Rheinzabern	339	77.3%
Trier	69	15.7%
La Madeleine	max 10	2.2%
Argonne	max 8	1.8%
Chémery–Faulquemont	1	0.2%
Unassigned	11	2.5%

The wares of Chémery–Faulquemont have never been found in large quantities in Britain, but seem to be commoner on Hadrian's Wall than elsewhere. Examples are known from Birdoswald, Carrawburgh, Halton Chesters, South Shields, Stanwix and Wallsend.

Table 15.2 Percentages of Lezoux bowls assigned to potters

<i>Potter</i>	<i>HSTDS</i>	<i>%</i>	<i>HW</i>	<i>I</i>	<i>H</i>	<i>S</i>	<i>N</i>
Docilis i	1	1.2	1.7			1.6	0.6
Drusus ii	1	1.2	0.4			0.8	0.6
Sacer	1	1.2	0.8			0.8	2.2
Secundinus ii (Rogers's I)	1	1.2	0.6			0.2	0.0
P-10	1	1.2	0.0			0.0	0.0
X-6 etc	1	1.2	4.5			1.6	2.8
Criciro v	3	3.4	6.8	2.4	1.5	6.2	4.5
Cerialis ii–Cinnamus ii	6	6.9	3.4	6.0	3.4	15.6	19.3
Cinnamus ii	13 + 2?	17.4	20.8	15.3	18.0	38.3	38.2
Secundus v	4 + 1?	5.8	2.4	1.6	0.7	2.5	2.5
Advocisus	4	4.6	5.8	4.8	4.1	0.0	1.4
Casurius ii	7 + 1?	9.3	8.8	4.8	6.5	0.6	5.8
Censorinus ii etc	2	2.3	2.9	2.4	3.5	0.0	0.4
Do(v)eccus i	8	8.3	8.5	11.7	13.9	0.0	0.0
Iullinus ii	1	1.2	4.1	8.3	5.9	0.0	0.0
Paternus v group	29	33.7	23.4	16.4	16.9	0.0	1.4

key: HSTDS = Housesteads
 HW = Hadrian's Wall
 I = Ilkley: Antonine potters only
 H = hinterland forts of Hadrian's Wall: Antonine potters only
 S = Scotland
 N = Newstead

Argonne ware also occurs on the Wall, from Wallsend to Bowness, but never, it seems, in large quantities.

After Rheinzabern, but usually a good way behind, La Madeleine appears to have been the next largest supplier of East Gaulish ware to Britain. Though its wares are present on Hadrian's Wall, they are much commoner in Scotland. The very small number of La Madeleine vessels here were all Hadrianic–Antonine, and this is a further hint of interrupted, or reduced, occupation after the Hadrianic period.

With one exception, all the Trier ware seems to belong to the late 2nd century or the first half of the 3rd century. The decorated ware includes two bowls in the Afer/Dubitus–Dubitatus/Paternianus style and one probably by Paternianus. Trier's share of the East Gaulish samian, 15.7 per cent, is probably rather higher than normal for Hadrian's Wall, and suggests that samian was in regular use in the fort well into the 3rd century.

Rheinzabern ware accounts for the bulk of the East Gaulish samian, as it does in Britain in general. However, only six of the decorated bowls are assignable to their makers. They are by Iulius (Ricken's Iulius I), Primitius, Reginus vi (Ricken's Reginus I) and Victor–Ianuco, with two more with the Iulius I–Lupus ovolo. With the exception of Reginus, all these potters were still at work in the 3rd century. Reginus's career, which began at Heiligenberg, is unlikely to have outlasted the 2nd century.

Unusually, the proportion of decorated to plain ware is higher for East Gaul (16.2 per cent) than for Central Gaul (14.7 per cent), a further hint that samian was still an important commodity on the site in the 3rd century.

All the East Gaulish ware comes from factories that almost certainly traded with Britain, even if only on a small scale. Its distribution offers much stronger hints of its means of dispersal than does the Lezoux ware. It seems extremely likely that a good deal of East Gaulish ware bypassed the southern ports in favour of ones on the east coast, often being landed much closer to the Wall and its supporting hinterland forts. For the eastern half of the Wall, at least, the most obvious port would be South Shields.

The samian potters' stamps

With the exception of fragmentary, unassignable stamps each entry gives: Name of potter (i, ii, etc, where homonyms are involved); Die number; Form of vessel; Reading of stamp; Pottery; Parallels; Date; Site:area:context number; Small finds number.

^a and ^b indicate:

^a Stamp attested at the pottery in question.

^b Not attested at the pottery in question, but other stamps for the same potter known from there.

1. Amandus v 3e 31 (Ludowici Sa) AM[ANDVSF.] Rheinzabern.^b
Like many Rheinzabern potters Amandus v is only dateable by his forms. His use of forms 32, 40 and Ludowici Sa suggests a late 2nd- or 3rd-century date.
H13:0:2 906
2. Clemens ii 3b 31R [CLII]MIINS Lezoux.^b
Two other examples of this stamp are known from Hadrian's Wall and there is one from Catterick. Stamps from his other dies occur on form 79, 79R and Ludowici Tg and one is on a decorated mould which is also stamped by Priscus iii. *c* AD 160–90.
H20:5:70 9548
3. Dagodubnus la 33[DAGOD]V
All the examples noted are on form 33; one comes from Bainbridge. Probably mid- to late Antonine.
H20:5:1 6110
4. Hibernalis la 31 HIBIIRNALI2F Rheinzabern.^a
Hibernalis's forms include 31R 32 and 40 and one of his stamps comes from Old Penrith. Late 2nd or early 3rd century.
H20:4:21 6957
5. Libertus iii 2a 38 or 44 LIBIIRTIM Lezoux.^a
This stamp occurs on form 37s of early to mid-Antonine date and on forms 33 and 79/80 (the former from Malton). *c* AD 140–70.
H13:7:2 1320
6. Lupus iv 2a 31R [L.V]PVSFE Rheinzabern.^a
A stamp recorded from Niederbieber fort and its civil settlement and on decorated ware of the late 2nd or early 3rd century.
HSE:1:28 9542
7. Lutaesus la 37 (rim) [L]VTAEVSFEC Rheinzabern.^b
Several of Lutaesus's plainware stamps appear on the rims of, or inside the bases of, decorated bowls, applied after moulding. His stamps are usually associated with the work of Ianus ii and Reginus vi. This particular stamp is on a bowl in the style of Reginus; others from the same die occur on one of his stamped bowls (from Corbridge), and on one in the style of Ianus. Both the mould-makers started work at Heiligenberg before moving to Rheinzabern, and so it is certain that Lutaesus, too, will have been a 2nd-century potter. *c* AD 160–90.
H21:2:42 9078
8. Mainacnus 2a 31 MA[INCNI] Lezoux^a (Smith 1905–1907, 285).
There are many examples of this stamp in a group of late Antonine samian recovered off Pudding Pan Rock, Kent. It is also known from South Shields and was used on forms introduced in the later 2nd century, such as 31R and 79/80. *c* AD 160–200.
H20:8:80 8495
9. Mansuetus ii 2a/ 33 [MΛ. S]V. ETIc Lezoux.^a
A stamp from a broken die which originally ended in a small o. It occurs at Benwell, Halton Chesters (2) and Malton, and there is an example from the complete die at Chesterholm. Both versions were used on form 27. *c* AD 150–80.
H14:3:– 9551
10. Martius vi 3a 33 (burnt) MARTIVSF Ittenweiler,^a Rheinzabern.^b
Over half the examples noted of this stamp come from Britain, which suggests that the die was perhaps used at Rheinzabern as well as at Ittenweiler. The site record

- includes Corbridge (3), Hadrian's Wall (3) and Chesterholm. A stamp from one of his other dies occurs inside the base of form 37 impressed after moulding. Internal stamps on Rheinzabern decorated bowls, such as this, are almost certainly all 2nd century. Mid- to late Antonine.
H20:5:36 6771
11. Materninus iii 2a 31 (?) [M]ΔTIIRM[AVS] Rheinzabern.^a
A stamp from a die used also on forms 31R; and 32. Late 2nd or early 3rd century.
H20:5:11 6587
 12. Mercator iv 3a 37 MERCATOR M retr Lezoux^a (S & S 1958, pl 169).
The letters are not distinguishable, but the label is the correct length for this stamp and it is damaged diagonally in the same way as an example from Lezoux. Late 2nd-century date is indicated by the style of the potter's decorated ware and his use of plain forms, which were not introduced before the later 2nd century. This particular stamp occurs on decorated bowls from Chesters and South Shields. *c* AD 160–90.
H20:4:21
 13. F Patillus Incomplete 1 concave base ?. F. PATI[Lezoux.^b
No other stamps have been noted from this die, but the potter's record includes form 18/31R or 31R from Period IIC at Verulamium (*c* AD 140–50) and cups of form 27, which will not be later than *c* AD 160. It is not clear whether the initial F is an abbreviation of *fecit*, though its position before the name would be unusual, or whether it represents the potter's *nomen*, Florius or the like, as with stamps of F Albinus. The fabric and glaze suggest Hadrianic–Antonine date.
H21:4:7 8580
 14. Patricius ii 7d 18/31R [PATRI]CIM Lezoux.^b
A stamp noted on forms 38 and 44 and at Malton. Patricius ii's wares reached Rhineland forts, suggesting activity before *c* AD 150. His stamps also appear at Corbridge and Catterick, in Antonine Scotland and in the Verulamium Second Fire deposits. *c* AD 140–60.
H21:1:3 8627
 15. Paullus iv 5a 33 PAVLLM Lezoux.^a
Some of the earliest recorded examples of Paullus iv's stamps are from the Rhineland, the Birdoswald Alley and a group of burnt samian of *c* AD 140–50 at Castleford. The latest form noted for him is Walters 79/80. This particular stamp occurs in a burial at Riempest (Belgium) with stamped vessels by early- to mid-Antonine Lezoux potters. *c* AD 140–65.
H20:4:62 8478
 16. Primanus iii 6f 31 PRIM[ANI] Lezoux.^a
A stamp from a die used on forms 31R, 79, 79R and 80 or Ludowici Tx. There are two examples from Pudding Pan Rock. *c* AD 160–200.
H20:4:9 7652
 17. Probus ii 2a 33 PROBVSF Rheinzabern,^b Trier.^b
The lettering of this stamp is more typical of Trier than Rheinzabern, and it occurs on form 18/31 from Chester-le-Street in a fabric which does not belong to the Rheinzabern range. There are examples from Benwell, Great Chesters and Newstead. His output at Rheinzabern includes form 32. Early- to mid-Antonine.
H21:4:52 9543
 18. Quintus v 5a 33(?) [QVI]NTIM Lezoux.^a
A stamp noted from Pudding Pan Rock and on forms 31R, 79 and 79R. *c* AD 160–200.
H13:9:0 9545
 19. Sacrilus 3a 31 SACRILLI-NN Lezoux.^a
This dish has the low kick and wide diameter foot-ring of form 31R, but lacks the band of rouletting on the base. The stamp is known from Carrawburgh and Pudding Pan Rock and on the rim of a stamped, decorated bowl of Do(v)eccus i. *c* AD 160–200.
Building XV U/S 9550 found during consolidation, 1981.
 20. Sacrilus 5a 33 SACRILLI Lezoux.^b Found with four adjoining sherds from the base.
This stamp occurs at Halton Chesters, South Shields and Pennine forts reoccupied *c* AD 160. *c* AD 160–200.
H20:7:0 4962
 21. Sedatianus 2b (probably) 33 SED[ATIANI] Lezoux.^a
Sedatianus's output seems to have consisted mainly of cups of form 33, but this stamp occurs also on forms 31R and 79/80. There is an example from Old Penrith. *c* AD 160–200.
H20:5:29 7901
 22. From rampart soils associated with revetment retaining wall C Suadullius 1a 33 2VADVLLIV2I Rheinzabern,^a Ittenweiler.^b A hole is drilled through the centre of the base for reuse as a spindlewhorl.
The fabric of this piece suggests origin at Rheinzabern. One of his stamps appears on the rim of a stamped, decorated bowl of Reginus vi from Carlisle, also made at Rheinzabern, and another occurs on a dish at Great Chesters. *c* AD 160–90.
H20:4:44 6668
 23. Verus vi 3f 31 or 31R VER VSE Rheinzabern.^a
A stamp noted from Niederbieber and the Regensburg fortress. It has been recorded on forms 31R, 32 and Ludowici Tb. A late 2nd- or early 3rd-century date is certain, therefore.
H21:2:1 8582
 24. [I]IXIXIX on form 31, Central Gaulish.
Other examples of this illiterate stamp occur on forms 15/31 and 31R (2). As they are all from Britain, the potter is likely to have worked at Lezoux. Mid- to late Antonine.
H21:4:2 8575
- ### Unidentified
25.]IO2IK on form 18/31R, East Gaulish, probably from either La Madeleine or one of the Argonne factories. Early- to mid-Antonine.
H20:7:33 9547
 26.]ASIL[on form 31, Central Gaulish. There is a graffito]att[inscribed, *post cocturam*, under the base. Antonine.
H20:4:1 9549
 27. M[on form 31, Central Gaulish. Antonine.
H20:4:1 9541
 28.]IXS[on form 31, Central Gaulish. Antonine.
H20:4:13 7654
 29.]ΛΛIMI on form 31, Central Gaulish. Antonine.
H15:1:4 9546
 30.]IM on form 31R, Central Gaulish. Mid- to late Antonine.
H20:U/S 9544

31. ..ST..SIVS on form 31 (Ludowici Sa), East Gaulish, probably from Trier. The surviving letters suggest that this is not a stamp of a known potter. Late 2nd or early 3rd century.
H13:10:0 979
32. V[or] V on form 18/31, Central Gaulish. Hadrianic.
H13:1:210
33. \IO[? on form 31, Central Gaulish. Antonine.
H20:4:20
34.]ALV[on form 31R, Central Gaulish. Mid- to late Antonine.
H13:6:0
35. [I]IXIXIX on form 31R, Central Gaulish. Mid- to late Antonine.
H21:4:2
36. IN[. (lost)
H21:4:2

Decorated ware (Figs 15.1–2)

1. Form 37, South Gaulish, with an internal groove level with the top of the ovolo, as on 2nd-century Montans bowls. The double-bordered ovolo, with tongue touching and turned to the left at the tip, is on a bowl from Richborough with a mould-stamp of Attilus iv (Bushe-Fox 1932, pl XXX, 1) and on a bowl from Strageath (Hartley 1989, fig 106, D34). It is also probably the same as the one on two moulds from Montans (G Simpson 1976, fig 6, 23–4). Montans ware is common in Antonine Scotland, but scarcely features on Hadrian's Wall, the only other pieces known to the present writer being from South Shields, Stanwix and Wallsend (3). *c* AD 110–45. (Not illustrated)
H13:0:25
2. Form 37, Central Gaulish. All the motifs are noted in Rogers for his Secundinus I (= Secundinus ii in the forthcoming *Leeds Index of Potters' Stamps*). They are: trifid motif on a stalk (G233), fan-shaped plant (G18), acanthus (K30) and beads (A2). Stamps of this potter are relatively common in the Rhineland, from which there seems to be little, if any, Central Gaulish samian after *c* AD 150. The potter is known to have worked at Les Martres-de-Veyre, but it is likely, though not proven, that he moved to Lezoux, where this bowl seems to have been made. *c* AD 125–40.
H13:0:24
3. Form 37, Central Gaulish. Probably by Drusus ii, who used the rosette-tongued ovolo (Rogers B15?) and seven-beaded rosette (Rogers C280) on a signed bowl from Verulamium (Dickinson 1984, D10). The Cupid (O.396) is on another signed bowl, from Doncaster (Dickinson 1986b, fig 29, 29). The other figures are two warriors, one with a shield (D.131 = O.197), the other kneeling (D.132 = O.208). *c* AD 125–45.
H15:1:112; H20:7:17
4. Form 37, Central Gaulish. Most of the ovolo was removed when the rim was finished, but the rosette-tipped tongue can be seen, with a wavy line below (Rogers A23) and both these suggest Hadrianic or early Antonine date. The decoration includes a serpentine motif (Rogers U280 or 281). (Not illustrated)
H20:3:25
5. Form 37, Central Gaulish, probably roughly shaped as a counter. The decoration consists of a mask (O.1346?), tier of cups (Rogers Q48?) and an athlete (D.133 = O.198). Probably by Rogers's potter P-10, who seems to have been Hadrianic. I am indebted to Mr G B Rogers for the information.
H20:5:10
6. Form 37, Central Gaulish. A bowl in the style of Cinnamus ii, with his characteristic hollow bead terminals. The Venus at an altar (D.184 = O.322), the acanthus (Rogers K12) and the medallion are on a stamped form 30 from York (S & S 1958, pl 159, 34). The acanthus recurs, with the bear (D.820 = O.1627) on a bowl from Alcester in a pit filled in the 150s (Hartley *et al* 1994, 118, 285). The cornucopia is probably Rogers U247. *c* AD 150–80.
H13:9:21
7. Form 37, Central Gaulish. A sherd cut as a counter, from a freestyle bowl in the style of Cinnamus ii, with a stag to right (D.852 = O.1720) and his distinctive cornstook (Rogers N15). See a stamped bowl from London (S & S 1958, pl 163, 70). *c* AD 150–80. (Not illustrated)
H21:3:69
8. Form 37, Central Gaulish. A freestyle bowl in the style of Secundus v, whose work has affinities with that of Cinnamus ii. The dolphin, one of his characteristic figure-types (D.1057 = O.2401) is on a stamped bowl from Great Chesterford (Simpson and Rogers 1969, fig 6, 4). The horseman (D.158 = O.249 variant) is on a bowl in his style from Dragonby (Dickinson 1996) and the leaf (Rogers H101) is on another (unpublished) from Carlisle. The dog is D.934 = O.1980. *c* AD 150–80.
H13:6:0
9. Form 37, Central Gaulish. The ovolo (Rogers B103) and beads (Rogers A2) were used by Advocisus. *c* AD 160–90. (Not illustrated).
H20:3:46
10. Form 37, Central Gaulish. A bowl in the style of Advocisus, with his larger ovolo (Rogers B103), beads (Rogers A2) and double-headed arrow (Rogers U104). He is known to have used both the Cupids (D.229 = O.383 and D.275 = O.503). The latter is not common in his work, but occurs on a stamped bowl from Corbridge (Simpson 1953, fig 16, 29), with the ovolo and arrow motif. Although Advocisus used several Diana-with-hind types, this particular one (D.65 = O.107 variant) does not seem to be known for him. The blobs above the Cupids may be blurred impressions of his small cross (cf S & S 1958, pl 113, 22). *c* AD 160–90.
H21:4:36
11. Form 37, Central Gaulish. The ovolo (Rogers B223, but with a slighter tip to the tongue) and the large beads (Rogers A3) were used by Casurius ii. *c* AD 160–90. (Not illustrated).
H20:4:29
12. Form 37, Central Gaulish. Style of Casurius ii, with his large beads (Rogers A3) and paired leaves (Rogers J58), as on a stamped bowl from Corbridge (S & S 1958, pl 132, 11). The stalks are the tips of an arrow-head motif (Rogers U295), which appears more fully supporting a different leaf on another (unstamped) bowl from Corbridge (S & S 1958, pl 137, 56). *c* AD 160–90.
H20:9:49

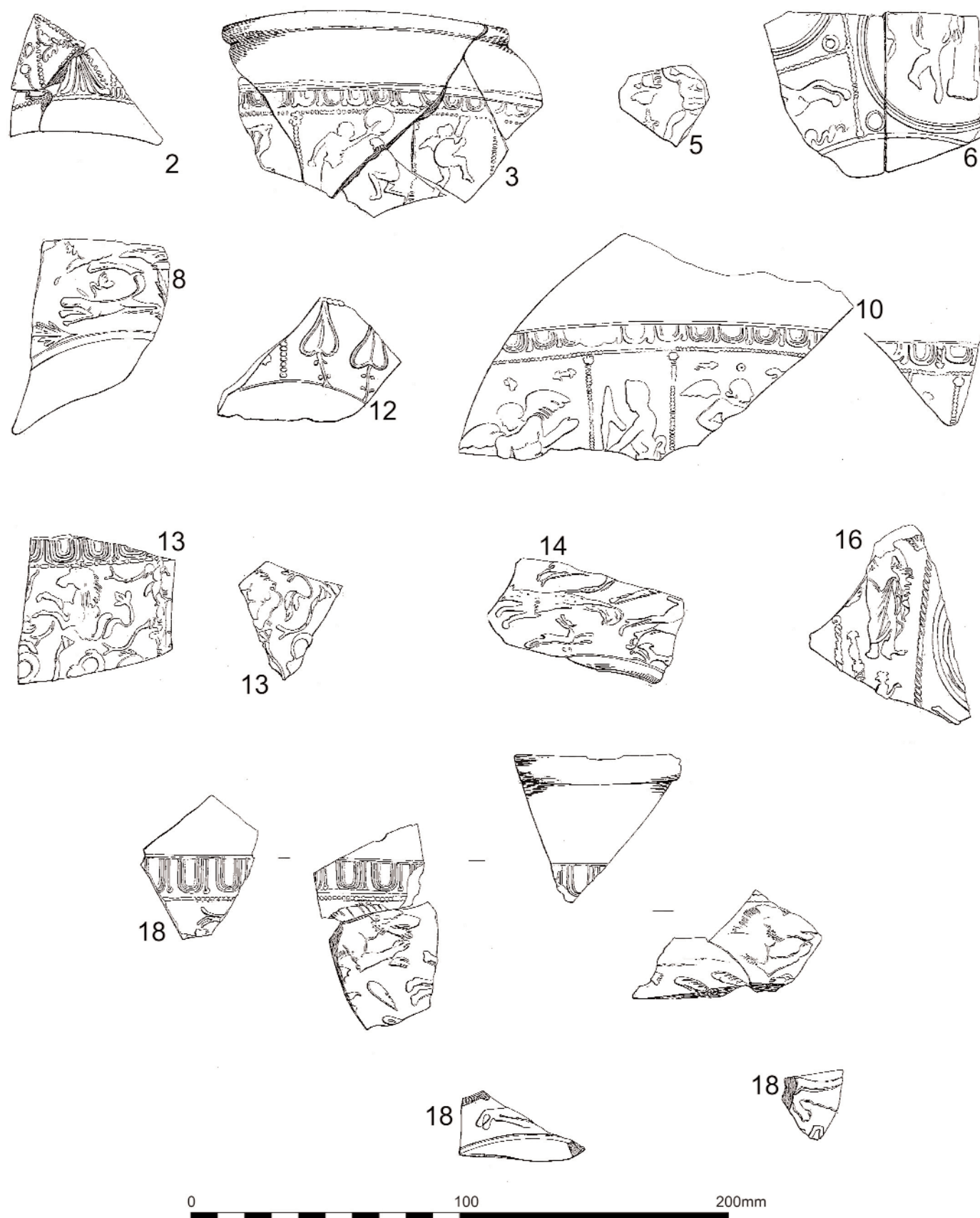


Fig 15.1 Decorated samian vessels from the 1974–81 excavations.

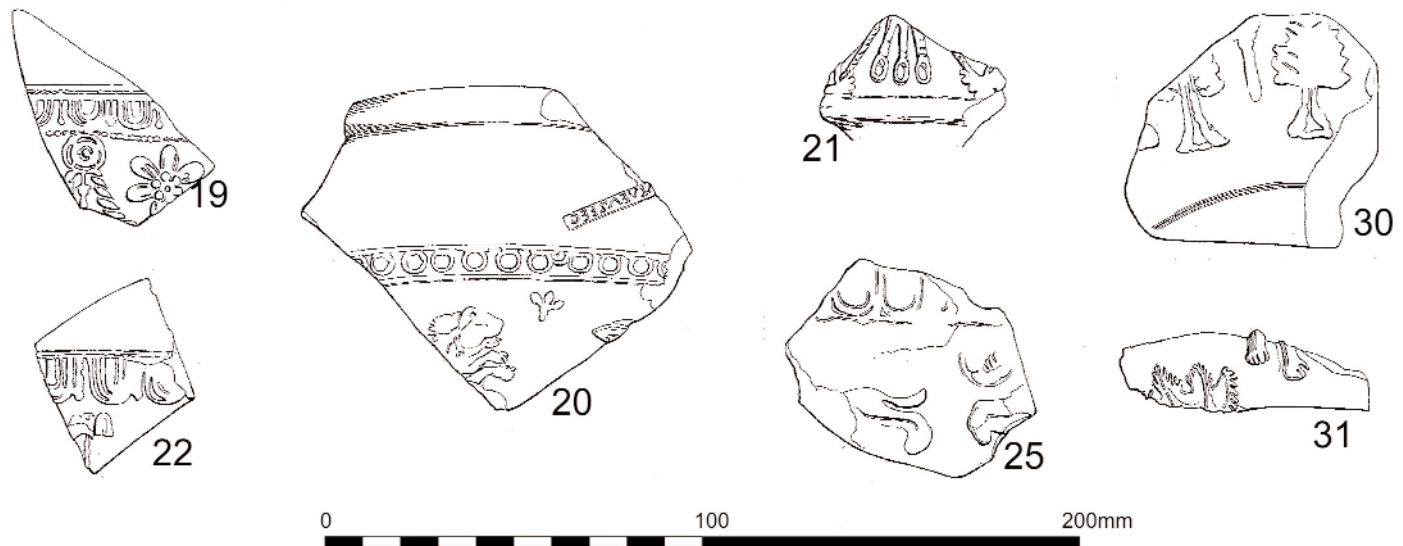


Fig 15.2 Decorated samian from the 1974–81 excavations.

13. Form 30, Central Gaulish. Both Paternus v and Censorinus ii used all the details, but the combination of ovolo (Rogers B206) with the astragalus border (Rogers A10) and the theme of the decoration make this attributable to Censorinus. The freestyle marine scene includes a sea-horse (a larger version of D.33 = O.33), triton (D.16 = O.19), dolphin (D.1050 = O.2382), siren (D.499 = O.862 variant), column (Rogers P3?) and serpentine motifs (Rogers U281). Most of these are on an unprovenanced bowl in Basle Museum (S & S 1958, pl 101, 4). The horse and serpentine motif are on stamped bowls from Gloucester (unpublished) and Corbridge (S & S 1958, pl 101, 5), respectively. *c* AD 160–90. H20:5:36, H20:8:63
14. Form 37, Central Gaulish. The freestyle scene includes a dog or leopard to left, leaping stag (D.860 = O.1732), small ?dog to left and an ungulate to right. Part of a raised rectangular label can be seen, which is almost certainly a mould-stamp of Mercator iv (S & S's Mercator 2). The stamp is damaged diagonally in the same way as on one of his bowls from Lezoux. The stag is on form 30 in his style from the Wroxeter Gutter (Atkinson 1942, pl 35, G8). *c* AD 160–90. H20:4:21
15. Form 37, Central Gaulish. The ring-tongued ovolo (Rogers B105), used by Paternus v and several of his associates, appears here in overlapping impressions, where it has overrun. *c* AD 160–95. (Not illustrated). H20:4:22
16. Form 37, Central Gaulish. A panelled bowl, with rhomboidal beads (Rogers A36), philosopher (D.524 = O.907), athlete (D.406 = O.683), obelisk (Rogers P68), lozenge (Rogers U32?), double medallion and astragalus. The beads are common to Iustus ii and Paternus v. Paternus is known to have used the obelisk (S & S 1958, pl 104, 4, from London) and the philosopher (Paunier 1981, 188, 120, from Geneva). Stamped bowls of Iustus show, respectively, the medallion (Lezoux, Musée des Antiquités Nationales, Saint-Germain-en-Laye), the athlete (Vichy, Terre-Franche) and the lozenge (York). The lozenge tips the balance slightly in favour of Iustus, but the attribution is only tentative. A date *c* AD 160–95 would cover the ranges of both potters. H20:4:35
17. Form 37, Central Gaulish. Three fragments from a bowl in the style of Paternus v. The top half of a panel contains a dolphin to left (O.2394A) in a chevron medallion (Rogers F15). These occur on a stamped bowl from Wilten-Veldidena (Karnitsch 1960, Taf 1, 7). The lower half of the panel has a dolphin to right (a much bigger version of O.2383). *c* AD 160–95. (Not illustrated) H20:8:63
18. Form 37, Central Gaulish. A freestyle bowl in the style of Paternus v, with his ring-tongued ovolo (Rogers B105), beads (Rogers A2), bear (D.810 = O.1589), horse and rider (D.157 = O.246), goat (D.968 = O.1843), dog (D.919 = O.1940) and his characteristic striated spindles. For the ovolo, beads, bear, goat and rider see a stamped bowl from Wingham, Kent (S & S 1958, pl 106, 22). The dog is on another, from York (*ibid*, 20). There is a faint, uneven, laying-out line between the ovolo and the bead row. *c* AD 160–95. H20:4:19, H20:4:44, H20:4:55 and, probably, H20:5:36
19. Form 37, East Gaulish, with ovolo (Ricken 1934, Taf VII, A), corded festoon (*ibid*, Taf VIII, 13), pendant (perhaps *ibid*, Taf VII, 81), rosette and roundel. The ovolo and beads identify this as a La Madeleine bowl, though the roundel and festoon were also used at Heiligenberg by Ciriuna (Forrer 1911, Taf XX, 3 and XXI, 6, respectively). The rosette is similar to one used at Rheinzabern (Ricken and Fischer 1963, O37a), though it has fewer petals. This bowl is a good illustration of the connections between East Gaulish factories, which may have involved the copying of motifs and figure-types as well as the migration of potters *c* AD 130–60. HSE:1:29
20. Form 37, East Gaulish. A bowl in the style of Reginus vi (Ricken and Fischer's Reginus I), with a plainware stamp of Lutaeus on the rim. The ovolo replacement of

beaded rings with straight line below (Ricken and Fischer 1963, R73) and the trilobed leaf (*ibid*, P132) are on a mould from Rheinzabern in Reginus's style (Ricken 1948, Taf 18, 11F). The lion (Ricken and Fischer 1963, T15) is on a stamped bowl (Ricken 1948, Taf 14, 1). The other detail is probably a bird. *c* AD 160–90.

H21:2:42

21. Form 30, East Gaulish. A stamped mould of Primitius (in his style 1) from Rheinzabern shows the trifold motif (Ricken and Fischer 1963, P117), the corded border (*ibid*, O242) and the acanthus (*ibid*, P145), in a fuller impression than here. *c* AD 200–60.
H13:11:0
22. Form 37, East Gaulish. The ovolo (Ricken and Fischer 1963, E42) and astragalus (*ibid*, O111, here blurred) are on a stamped mould of Ricken's Iulius i from Rheinzabern (1948, Taf 152, 9F). The Z-twist border is too blurred for precise identification. *c* AD 200–50.
H13:11:0
23. Form 37, East Gaulish, with ovolo as on the last and a double medallion or arcade. A bowl in the Iulius i-Lupus style. *c* AD 200–50. (Not illustrated).
H20:7:0
24. Form 37, East Gaulish, with ovolo as on the last and a double medallion (Ricken-Fischer 1963, K20). A bowl in the Iulius I-Lupus style. *c* AD 200–50. (Not illustrated).
H13:11:0
25. Form 37, East Gaulish. The tongueless, double-bordered ovolo is on a stamped bowl of the Trier potter Paternianus iii from Verulamium, where it has a straight line below, as here. Neither of the animals has been identified. *c* AD 225–50.
HS1 XIII 78
26. Form 37, East Gaulish. The tongueless, double-bordered ovolo (Fölzer 1913, Taf XXXII, 953) is on Trier ware in the Afer/Dubitatus-Dubitus/Paternianus style. The decoration includes a beaded arcade or medallion (*ibid*, Taf XXXI, 819?). *c* AD 200–60. (Not illustrated).
H13:6:0
27. Form 37, East Gaulish, with the same ovolo as the last. *c* AD 200–60. (Not illustrated).
H13:5:0
28. Form 37, East Gaulish. The tongueless, double-bordered ovolo (Fölzer 1913, Taf XXXII, 954) is on Trier ware in the Afer/Dubitatus-Dubitus/Paternianus style. *c* AD 200–60. (Not illustrated).
H13:6:11
29. Form 37, East Gaulish. The ovolo, with L-shaped tongue, is on two bowls from Trier (Fölzer 1913, Taf X, 57, 61) and is assigned by Gard (1937) to Succio, or an associate. Probably first half of the 3rd century. (Not illustrated).
H13:1:21
30. Form 37, East Gaulish. The tree is on signed moulds of the 3rd-century Trier potter Dubitatus-Dubitus. *c* AD 225–60.
H13:11:0
31. Form Déchelette 72, Central Gaulish, decorated with appliqué figures and motifs, including a leaf (almost certainly Déchelette 1904 nol 2, 234, 157) and, probably, a lioness (*ibid*, 230, 137). Mid- to late Antonine.
H20:7:15

The *vicus*

This small collection of decorated samian and one stamped plainware sherd may not be typical of the samian from the *vicus* as a whole, but the Central Gaulish ware, as at the fort, tends to be the work of the commoner Lezoux potters whose bowls are widespread in Britain. Most of them are represented in the finds from the fort.

The East Gaulish ware is more interesting, with three bowls from Werkstatt II at Trier, of Antonine date. The 3rd-century Trier ware includes a stamped bowl of Paternianus iii. The Rheinzabern ware has more 2nd-century bowls than the fort, comprising three of Ianus ii and one each of Cerialis v and Cobnertus iv. The 3rd century is represented by Iulius i and a bowl that may be by Perpetus.

No firm conclusions should be drawn from this small collection, but it contributes useful information about the sources of the decorated samian on Hadrian's Wall.

Potters' stamps

(for the rubric, see the fort report)

1. Do(v)eccus i 11e 31 or 31R [D]OVIICCVS Lezoux.^b
A stamp of one of the latest Lezoux potters to have exported to Britain. His wares are common on Hadrian's Wall and this particular one is known from Wallsend and the fort at Housesteads (H68/6).
79208126
2. Ianus ii 3a 37 I NVF Heiligenberg^a Rheinzabern^a (Ludowici 1927, 241).
Ianus ii (Ricken's Janu(arius) i) began work at Heiligenberg and moved to Rheinzabern, where his decorated bowls turn up in a group of wasters, in association with some of the earliest plain forms produced there (Rau 1977, 64). However, the complete absence of Rheinzabern ware from Scottish forts with normal Antonine occupations suggests that it was not reaching Britain before *c* AD 160. Other stamped bowls of this potter occur at Benwell and Ilkley. *c* AD 160–90.
79208147–50
3. H31 IV E. of furnace, t-1 Iulius viii (= Ricken's Iulius i) 5a 37 IVLIVSF retr Rheinzabern^a (Ludowici 1927, 242c).
There is no close dating for this potter. Late 2nd to first half of the 3rd century. See No. 23, above, for the decoration.
4. Paternianus iii 1a 37 P TER I_V retr. Trier^a (Dickinson 1986a, 193, 3.138).
Stylistically, the decorated bowls on which this stamp appears are 3rd century, and his use of the same stamp on plain forms such as Lud Sa and 32 etc does not conflict with this. *c* AD 225–50.
79208132

Decorated ware (Fig 15.3)

1. Form 37, Central Gaulish. A freestyle bowl in the style of Attianus ii, with lion (O.1404), leopardess (a larger version of D.793 = O.1537), goat (O.1849A) and snake on

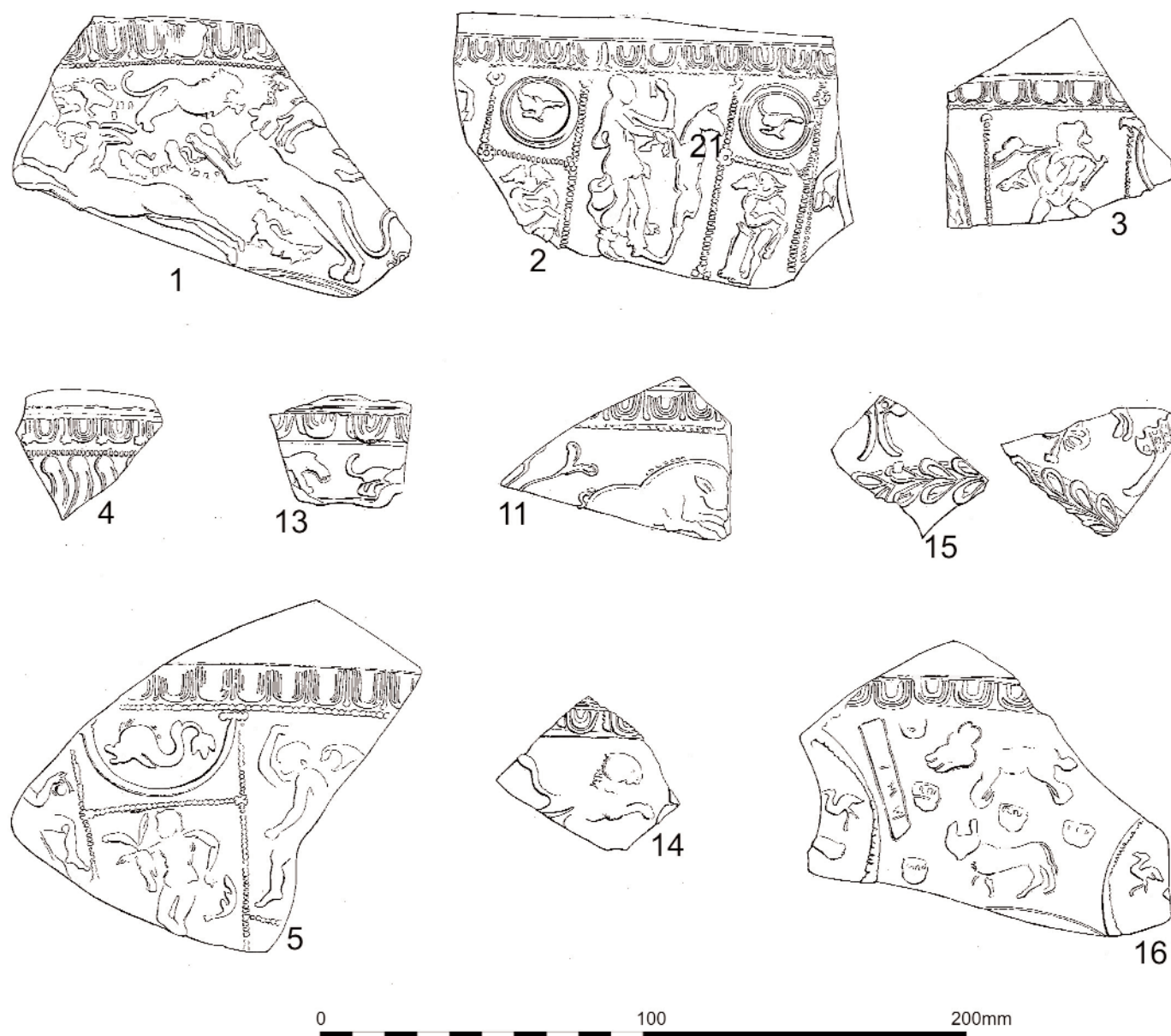


Fig 15.3 Decorated samian from the vicus.

- rock (D.960 bis = O.2155). The lion and snake are on a stamped bowl from Verulamium (S & S 1958, pl 86, 12), the leopardess is on a signed bowl from Wroxeter (ibid, 15). All the animals are on a stamped bowl from Segontium and all except the goat are on one from Stanwix (Dickinson forthcoming). *c* AD 125–45. 79208131
2. Four fragments of form 30, Central Gaulish. The trident-tongued ovolo, apparently not paralleled in either Rogers or S & S, and the wavy-line border are on a bowl in the style of Criciro v from Woodperry (Oxon). The Diana and hind (D.64 = O.106) and bird (O.2298) are on a signed bowl in a pit of *c* AD 150 to 160 at Alcester (Hartley *et al* 1994, 116, 278). Both Criciro and Divixtus i used beaded rings as junction-masks and the ones here, though rather blurred, look more like those of Criciro. A much smaller version of the erotic group (Oswald, pl XC, H) was used by Divixtus on a stamped bowl from Aldborough.

The Bacchus (O.566) is not known for either potter. On balance, this bowl is likely to be by Criciro. *c* AD 135–65.

- 79208152
3. Form 37, Central Gaulish. The ovolo (Rogers B106) was used by members of the Paternus v group, including, very occasionally, Albucius ii. He also used the astragalus borders (Rogers A9), though usually only as vertical divisions. A stamped bowl from Caerleon has the ovolo, borders and, possibly, the single festoon. The warrior (D.114) is on a stamped bowl from Wroxeter (S & S 1958, pl 120, 4). *c* AD 150–80. 79208145
4. Form 37, Central Gaulish. A bowl in a style used by Cinnamus ii at the Terre-Franche kilns at Vichy, with a rosette-tongued ovolo (Rogers B24) and reversed S-shaped gadroons. However, the fabric suggests origin at Lezoux. Mid- to late Antonine. 79208140

5. Form 37, Central Gaulish. A bowl in the style of Lactucissa, with his ring-tongued ovolo (Rogers B105), Cupids to right (D.282 = O.508) and left (D.251 = O.442), dolphin (D.1051 = O.2392), Apollo (D.55 = O.92) and frond (Rogers J162). The bead-rows, Rogers A2 (vertical) and A10 (horizontal) are both known for him. The Apollo and frond are on a stamped bowl from Vichy (S & S 1958, pl 100, 23) and the dolphin is on one from Silchester, but the Cupids have not been noted on his stamped bowls. *c* AD 155–85.
79208130
6. Form 37, Central Gaulish. A panelled bowl in the style of Advocisus, with his larger ovolo (Rogers B103) and a caryatid (D.655 = O.1207). The adjacent panel has a large ring. All the details are on a stamped bowl in the Wroxeter Gutter hoard (Atkinson 1942, pl 33, G1). *c* AD 160–90. (Not illustrated).
79208143
7. Form 37, Central Gaulish. A bowl by Paternus v or an associate, with panels: 1) double medallion with widely spaced borders. 2) Pan (D.411 = O.709). The following panel is divided horizontally. The Pan is one of Paternus's commonest figure-types. Cf S & S 1958, pl 105, 12, from Carrawburgh. *c* AD 160–95. (Not illustrated).
79208143
8. Form 37, Central Gaulish. A bowl in the style of Do(v)eccus i, with his ovolo 2 (S & S 1958, fig 44, 2) and panels: 1) double festoon with hare to left (D.950a = O.2116). 2) Double medallion, with a sea-bull (a smaller variant of D.35 = O.52A). The latter is on a stamped bowl with the same ovolo from Lezoux and on one with the potter's double-D motif, from Colchester (S & S 1958, pl 150, 41). Neither of the figure-types is common in Do(v)eccus's work, but the ovolo is exclusive to him. *c* AD 165–200. (Not illustrated).
79208129
9. Form 37, Central Gaulish, in the style of Do(v)eccus i, with ovolo as last and adjacent panels with double festoons, the second perhaps with a hare to left, as on the previous bowl. *c* AD 165–200. (Not illustrated).
79208129
10. Seven fragments of form 37, East Gaulish, one with a rivet hole. Rheinzabern ware, with mould stamp of Ianus ii (Ricken's Janu(arius) i), ovolo and roped border (Ricken and Fischer 1963, E19 with O242), corded medallion (ibid, K48), leaf-cross (ibid, O31), trifid motif (ibid, P127), beaded rosettes (ibid, O42–3) and mask (ibid, M22). Ricken 1948, Taf 4, 10, has identical decoration, apart from the mask. However, this is on an unstamped bowl with all the other motifs (ibid, 14). *c* AD 160–90. See *Vicus* Stamp 2 for discussion of date. (Not illustrated).
79208147–50
11. Form 37, East Gaulish. A bowl in the style of Ianus ii, with ovolo and roped border as last, bifid motif (Ricken and Fischer 1963, P142) and boar (ibid, T71). The animal is not recorded for Ianus at Rheinzabern, but was used by him at Heiligenberg; cf Knorr 1910, Taf XIV, 15 (Rottenburg). The bifid motif was also used there (Forrer 1911, Taf XXVI, 6). However, the ovolo seems to have been used only at Rheinzabern, and the fabric of this piece is consistent with origin there. *c* AD 160–90.
79208151
12. Form 37, East Gaulish, in the style of Ianus ii, with ovolo and border as last. Panels, separated by the roped border, Ricken and Fischer 1963, O242, contain: 1) a single-bordered medallion (ibid, K10), with ewe to left (ibid, T120). 2) Putto (ibid, M141). 3) Medallion, as before, with goat to right (ibid, T123). The rosettes at the tops of the panel borders are ibid, O41. Stamped bowls from Rheinzabern show the putto and animals (Ricken 1948, Taf 6, 1) and the medallions (ibid, 12). A stamped mould (ibid, Taf 4, 1) has the rosette. All these have the same ovolo and border. *c* AD 160–90. (Not illustrated).
79208140
13. Form 30, East Gaulish. The ovolo, used in Werkstatt II at Trier (Huld-Zetsche 1993, E16) has a faint guide-line below. The tiny lion to right (ibid, T44) is on stamped bowls of Maiiaaus from London (BM) and Valkenburg ZH. The animal behind, a boar to right (ibid, T63), and all the other details are on an unstamped bowl from Trier (ibid, Taf 72, F203). *c* AD 160–200.
79208135
14. Form 37, East Gaulish, with ovolo and guide-line as last. The lion (Huld-Zetsche 1993, T41) was used in Werkstatt II at Trier and appears on the same bowl as the details on the last bowl (ibid, Taf 88, F203). *c* AD 160–200.
79208136
15. Form 37, East Gaulish, from Werkstatt II at Trier, with tree (Huld-Zetsche 1993, O152), leaf (ibid, O129 variant) and wreath of bifid motifs (ibid, O124). For all the motifs except for the leaf, see Taf 74, F121–2 and Taf 75, F126–8, 130. All the bowls have the same ovolo as Nos 13–14, above. *c* AD 160–200.
79208138–9
16. Form 37, East Gaulish, with mould-stamp of Paternianus iii. The decoration includes a tongueless ovolo (Fölzer 1913, Taf XXXII, 954), cow (a smaller version of O.1882), ?dog or perhaps a boar (Fölzer 1913, Taf XXX, 609?), used by Attilus vii and Dubitus/Dubitatus), stork, crowns (Gard 1937, motif 118) and, perhaps, a peacock to left in the first beaded medallion. The cow is probably the same as on a mould of Dubitatus at Trier and the crowns were used there by Perpetus and Primanus v. In spite of the guide-lines below the ovolo and half-way down the main zone, this is an untidy bowl, with the medallions placed at different levels and truncated by the finishing of the zone. See also Stamp 4. *c* AD 225–50.
79208132

Appendix

The following sherds from the *vicus* were seen by the present writer in the old site museum at Housesteads, but are now missing.

17. Form 37, Central Gaulish. A bowl in the style of Cinnamus ii, with his ovolo 4 (Rogers B145) and a scroll with a polygonal leaf (Rogers J86) in the upper concavity. The lower concavity contains a kneeling stag (a larger version of O.1704A) and acanthus (Rogers K12), in a double medallion. *c* AD 150–80.
H32

- 18 Form 37, Central Gaulish. Scroll decoration, with a vine leaf (Rogers H13), used by Cinnamus ii and associated potters. The astragalus used to bind the scroll suggests the work of Cinnamus himself. *c* AD 150–80. H32
19. Form 37, Central Gaulish. A bowl with Advocisus's smaller ovolo (Rogers B102) and panels with; 1) a (?double) medallion. 2) a figure with a staff (a larger version of D.99 = O.159). *c* AD 160–90. H32 V 8t-1
20. Form 37, East Gaulish. One of the Rheinzabern motto bowls, with the legend [bi]bie etc in the decoration. A bowl of Cerialis v has the same zone of paired ovolos (Ricken and Fischer 1963, E1), dots and streamers below the inscription and a trellis of large, square beads. It also has a mould-signature Lu, retrograde, in the decoration and the mottoes *bibie*, *tribie*, *quadribie* between groups of two, three and four wayside deities (Ludowici 1927, 164). *c* AD 160–90. H31 IV, W of furnace, t-1–2e
21. Form 37, East Gaulish, in the style of Cobnertus iv of Rheinzabern, in Ricken's Style I. Scroll decoration, with ovolo Ricken and Fischer E44, wavy line (ibid, O248) and leaf (ibid, P59). Cobnertus's scrolls are rather untidy and one of the leaf tendrils intrudes into the ovolo zone, as on a stamped bowl from Rheinzabern (Ricken 1948, Taf 21, 5). Cf stamped moulds (ibid, 1–2) for similar scrolls. *c* AD 160–90. H32 VIII, S Side
22. Form 37, East Gaulish. A bowl in the style of Ianus ii (Ricken's Janu(arius) I), probably with ovolo Ricken and Fischer E19 and roped border (ibid, O242). The decoration includes a bird (ibid, T252) and a warrior (ibid, M211), all known to have been used by him. *c* AD 160–90.
23. Form 37, East Gaulish, with a mould-stamp of Iulius I in the decoration (see *Vicus* Stamp 3, above). The ovolo (Ricken-Fischer 1963, E42), astragalus (ibid, O111) and divider are on No. 22 from the fort. The *vicus* bowl also has a double medallion (ibid, K20). *c* AD 200–50. H31 IV, E of furnace, t-1
24. Form 37, East Gaulish, with the same ovolo as the last, triple poppy heads and a figure, perhaps the Hercules (Ricken and Fischer 1963, M84), in a single medallion or arcade. Perpetus used the figure at Rheinzabern (Ricken 1948, Taf 237, 7) and he is known to have used the ovolo. The bowl is tentatively attributed to him. *c* AD 200–50. H32 III

16 The coarseware

John N Dore

Introduction

Method

The assemblage that forms the subject of this study totals some 17,000 sherds and represents all the material that was recovered from the excavations. Every sherd from every context was examined. Examination, analysis and reporting was carried out as a three-stage process.

Stage 1

The assemblage was examined in context order. From each context grouping all rim sherds and any other sherds considered significant were extracted. These were grouped, in the first instance according to identifiable vessels, and each sherd or sherd-group was marked with a unique code (known as the Featured Vessel number, abbreviated to FVN). Rim percentages were recorded for all rims. A database was established (originally in dBASE II – *see below*) in which the mapping between context and FVN was recorded.

Stage 2

The featured material was laid out and typed according to form, and within each form according to fabric. Codes were allocated to the forms and fabrics defined. One example of each type was drawn. A database was established in which the mapping between FVN and form codes, and the fabric information was recorded.

Stage 3

A third database was created into which information on dating derived from established current typologies and chronologies was input for each type. The three databases were linked and processed to produce the final full catalogue, which was transferred into Microsoft Word for text addition and editing.

Timescale

Stages 1 and 2 were completed for most of the assemblage during 1988 and 1989, though a small amount of additional material was discovered and processed in 1996 and added to the database. Stage 3 was carried out between 1996 and 2000.

Drawings

The origination of the majority of the drawings was carried out by the author. Drawings of the beakers were originated and inked by Tony Liddell, and drawings of a number of the jars were originated by Richard Bayliss.

At one stage it was planned to generate the final drawings in AutoCAD, and to this end many of the sections of the pencil originals were digitised by Louisa Ward. In the end it was realised that the AutoCAD generation would be extremely time-consuming and an alternative method was used to produce the final illustrations. The pencil originals were traced and inked in outline, at full size. These inked outlines were scanned as line-art at 300 dpi, orientated, cleaned and finished, then finally pasted up and numbered at 1:4 on A4 page templates. In some cases more than one drawing of a type was made to indicate variations within one overall form. In these cases a letter rather than a number has been appended to the form code on the appropriate figure, eg BO 39B.

Databases

Data were initially entered into dBASE II and were subsequently transformed into dBASE III+ and processed on a succession of laptops. The data were translated into Access in 1999 and final editing then took place.

The format of the report

The coarseware is presented as an ordered type-series. This seemed to be the most logical and consistent approach, since the site stratigraphy was too fragmented with ‘floating’ sequences of contexts with little reliable lateral linkage to allow presentation by stratified context.

The main catalogue is organised by pottery type. The definition of each type is largely formal. Types have been grouped into classes (bowls, jars etc) and within each class into meaningful sub-classes (eg lid-seated jars, jars in BB1, etc). Each type is identified by a code which was originally allocated during stage 2 processing and has been maintained through to the report in order to achieve consistency. The full code has three parts, though the last part is seldom used.

1. A mnemonic alphabetic code: JA for jar, BO for bowl, etc
2. A three-figure numeric code in the range 000–999
3. A two-figure numeric code in the range 00–99. This is not always used.

A decimal point separates the two parts of the numeric code in cases where both parts are used. Thus a full code might be JA 037.02. The second part of the numeric code was provided to allow, during typing, subdivision or addition of types, though its use need not imply any kind of nested, hierarchical relationship.

A code should be regarded simply as an identifier, and some codes were either not assigned to a form or were deleted during the course of the report's preparation.

The occurrence of coarseware types in the site stratigraphy is presented in two places. Lists of the types occurring in particular contexts or groups of contexts are presented in the dating sections of the main structural report. Lists of all the contexts in which a particular coarseware type occurs are presented following the catalogue. The form types have been grouped together into a number of blocks on the basis of common formal characteristics – eg Block 2 represents all the early bowls in non-BB fabrics. Each block is represented by a drawing of a characteristic form and Table 16.2 shows all the forms included in each block together with all the contexts in which they occur.

Catalogue

Bowls and dishes (Figs 16.1–16.9)

Wide-mouth jars or bowls (Fig 16.1)

Two groups:

- 1) Fabric allied to BB2 (Bidwell and Speak 1994, 230 – Necked Bowls (South Shields), Monaghan 1987 Type 4A – S-profile bowls). *c* AD 220+.
- 2) Grey fabrics. Given the East Yorkshire industry's domination of the north from *c* AD 270, these are likely to be from either Crambeck (Corder 1928; 1937; Wilson 1989) or Throlam (Corder 1932; Hicks and Wilson 1975; Halkon 1983).

Group 1

Type	Total	Eve	Fabric
BO 2	5	107	Grey or orange-brown, often a core in a contrasting shade of grey; darker grey surface, sometimes smoothed; inclusions: up to 0.5mm, quartz and red and black iron-rich grains.

Group 2

BO 1	2	20	Pale grey with thick black core and dark grey surface; inclusions: up to 0.5mm, quartz and black iron-rich grains.
BO 3	3	56	Pale grey with darker core and mid- or dark grey surface; inclusions: up to 1.0mm, quartz and black iron-rich grains.
BO 4	2	16	Grey or grey-brown, pale grey surface; inclusions: up to 1.0mm, sometimes sparse, quartz and black iron-rich grains.
BO 5	6	72	Pale grey with thick, darker grey core, burnished surface; inclusions: average 0.1–0.2mm, max up to 0.5mm, mostly quartz.
BO 6	1	12	Mid-blue-grey, smooth dark grey surface; inclusions: up to 1.0mm, quartz, iron-rich grains and limestone.
BO 7	4	64	Mid-blue-grey, with darker grey or orange-brown core and smooth dark grey surface; inclusions: up to 0.3mm, sparse, quartz and black iron-rich grains.

BO 8	1	7	Mid-grey; inclusions: quartz, up to 0.5mm.
BO 9	1		Pale grey with dark grey surface; inclusions: up to 0.5mm, mostly quartz.
BO 10	2	81	Pale grey with thick black core; smooth micaceous black surface; inclusions: up to 0.5mm, sparse, mostly quartz.
BO 11	1	62	Mid-grey, grey-brown core, dark grey surface; inclusions: up to 0.5mm, mostly quartz.
BO 12	3	26	Grey; inclusions: up to 0.5mm, quartz.
BO 13	10	162	Body colour can be any shade of grey from pale to mid-, and occasionally orange-brown, sometimes with a core in a contrasting shade of grey. Surface is smooth dark grey or black, sometimes micaceous. Inclusions: up to 0.5mm, mostly quartz, some black iron-rich grains.
BO 14	1	32	Pale grey, smooth micaceous black surface; inclusions: up to 0.5mm, mostly quartz.
BO 15	1	33	Mid-grey; inclusions: up to 0.5mm, quartz and iron-rich grains.
BO 16	1	11	Off-white, dark grey or black surface; inclusions: average up to 0.5mm, max up to 1.0mm, mostly quartz, some red iron-rich grains.
BO 17	1	14	Dull mid-brown, dark grey core, dark grey surface; inclusions: up to 0.5mm, sometimes sparse, mostly quartz.

Early bowls with flange rims

(Figs 16.1, 16.7 and 16.9)

BO 148	1	15	Carinated or hemispherical bowl with reeded flange rim. Very pale pinkish-brown, pale yellow core, micaceous surface; inclusions: \leq 0.1mm, quartz, red iron-rich grains, gold mica, up to 2.0mm, quartz and red iron-rich grains. Similar vessels known from Vindolanda (Hird 1977, eg no. 72) and Corbridge (unpublished). Probably locally produced. Late 1st century. (Fig 16.9)
BO 127	1	15	The precise combination of features and decoration cannot be closely paralleled, but the rim could be regarded as a variant of the distinctive rim type known on carinated bowls from Corbridge (eg Bishop and Dore 1988, fig 118, no. 70, now thought to have been produced at Corbridge). Pale brown; inclusions: up to 0.5mm, mostly quartz. Late 1st to early 2nd century. (Fig 16.7)
BO 18	1	35	One model of morphological development of the carinated bowl with reeded rim from the late 1st to the early 2nd century would place this vessel towards the end of that range at the point where flat-rim bowls in BB1 are making an appearance, ie somewhere in the first half of the 2nd century AD. However, hemispherical and carinated bowls with

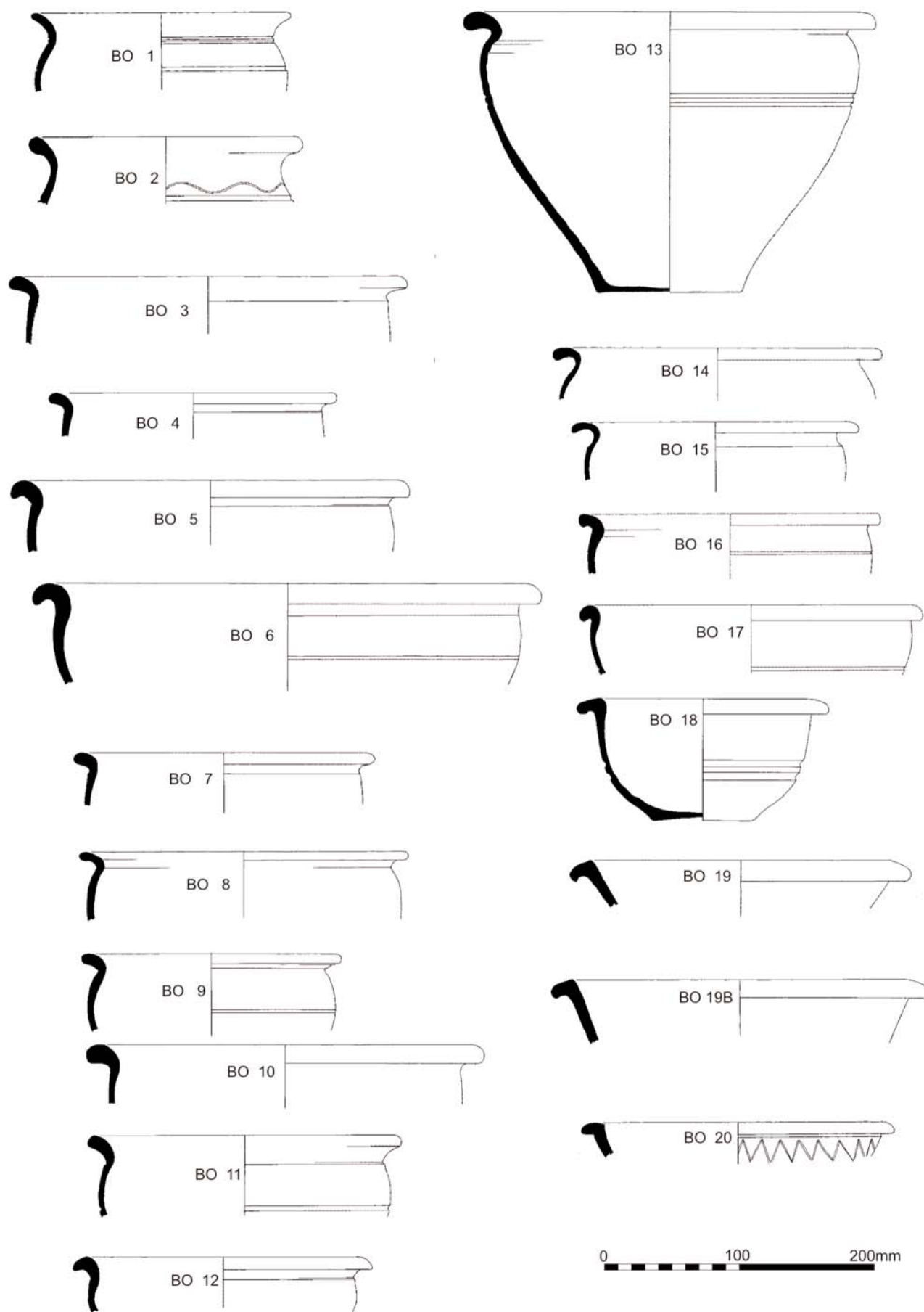


Fig 16.1 Coarseware: the bowls and dishes (scale 1:4).

plain rather than reeded or grooved flange rims do occur in Flavian (and pre-Flavian) contexts so the model is far from proved. Gritty mid-grey; inclusions: up to 0.5mm, mostly quartz. Late 1st to early 2nd century. (Fig 16.1)

Flat-rim bowls and dishes (Figs 16.1–16.2)

Two groups:

- 1) Non-BB1
- 2) BB1 (dating from Gillam 1976)

Group 1

BO 19	4	45	Grey or grey-brown, occasionally with core in a contrasting shade of grey, dark grey or black surface; inclusions: average up to 0.5mm, max up to 1.0mm, mostly quartz, some black iron-rich grains. Mid- to late 2nd century.
BO 21	2	57	Grey, occasionally with darker core; smooth dark grey or black surface; inclusions: up to 1.0mm, occasionally sparse, mostly quartz, some black iron-rich grains. Mid- to late 2nd century.
BO 24	1	8	Mid grey-brown; inclusions: average up to 0.2mm, max up to 1.0mm, quartz and black iron-rich grains. Mid- to late 2nd century.
BO 28	1	8	Very pale yellowish-white; orange-brown colour coat; inclusions: ≤ 0.1 mm, max up to 1.0mm, quartz and red iron-rich grains. Late 2nd to 3rd century?
BO 29	11	204	Pale or mid-grey, dark grey surface, sometimes smoothed; inclusions: 0.2–0.5mm, quartz. Mid- to late 2nd century.

Group 2

BO 20	1	12	Mid-2nd century.
BO 22	1	16	Early to mid-2nd century.
BO 23	16	144	Early to mid-2nd century.
BO 25	7	126	Mid- to late 2nd century.
BO 26	2	18	Mid- to late 2nd century.
BO 27	8	65	Mid- to late 2nd century.

Bowls and dishes in BB2 (Figs 16.2–16.3, 16.5)

Despite a recent study of the source area of BB2 (Monaghan 1987) and the initiation of publication of the excavations at South Shields, a site of crucial importance for the study of the ware in the north (Bidwell and Speak 1994), little progress has been made in sourcing the BB2 found in the north to the known production centres in the south-east. The principal problem is that of rationalising the disparities in the fabric series of production and market areas, and at present this is proving intractable.

The sample of bowls and dishes from Housesteads is not really large enough to facilitate intensive analysis, but one grouping may be tentatively advanced as a distinguishable fabric.

Fabric 1

This seems to be characterised particularly by a smooth, deep black surface which is quite often micaceous. In the majority of examples (63%) the body colour is some shade of red, orange or brown (rather than grey) with a dark grey or black core. Quartz dominates the inclusions with iron-rich grains also present. The inclusions are generally well sorted, ranging from 0.1–0.5mm in diameter.

Of the four BB2 (and allied) fabrics defined for the National Fabric Reference Collection, the description of Fabric 1 most closely matches that of Cooling BB2 (COO BB 2).

The numbers of vessels occurring in Fabric 1 and Other fabrics is given below for each type. Types BO 35, 36, 91 and 92 occur exclusively in Fabric 1 (though it should be pointed out that only the numbers of BO 36 and 91 approach the threshold of significance and that just barely).

As far as dating is concerned, the scheme proposed by Gillam still serves and is used below, though closer examination of the evidence throws up disquieting elements. The principal chronological indicator, in bowls and dishes having rims forming a projecting flange or bead, is seen as being a transition from rims whose sectional profile is triangular or beaked to those having a much more rounded sectional profile. The types considered early (triangular or beaked) are found in quantity on sites on the Antonine Wall. The types considered later (rounded) are almost entirely absent from the Antonine Wall and from two other deposits that are usually dated subsequent to the abandonment of the Antonine Wall, the Corbridge destruction deposit and the filling of the Vallum ditch at Benwell. They then occur in the level over the sealing of the Vallum ditch filling, at Carpow, and in contexts that should date to the closing years of the 2nd century or the early years of the 3rd at Vindolanda and at South Shields.

The problem is that, as can be seen in Table 16.1, the rounded-rim types are not *completely* absent from the Antonine Wall or the Corbridge Destruction deposit, and these two occurrences, though negligible when compared to the quantities of the triangular/beaked-rim types that occur in these two deposits, are **not** negligible when considered as a proportion of the total number of examples of the rounded-rim types known from stratified deposits (approaching 25%).

Thus, while it is perfectly possible that Gillam's model of a rounded-rim type that arrives in the north in the 160s if not the 180s is correct, the evidence from dated deposits does not rule out an alternative model in which the rounded-rim type initially arrives in the north no later than the triangular/beaked-rim type, the massive proportional imbalance between the two types in Antonine deposits (many triangular/beaked to very, very few rounded) being due to factors related to supply and distribution rather than chronology.

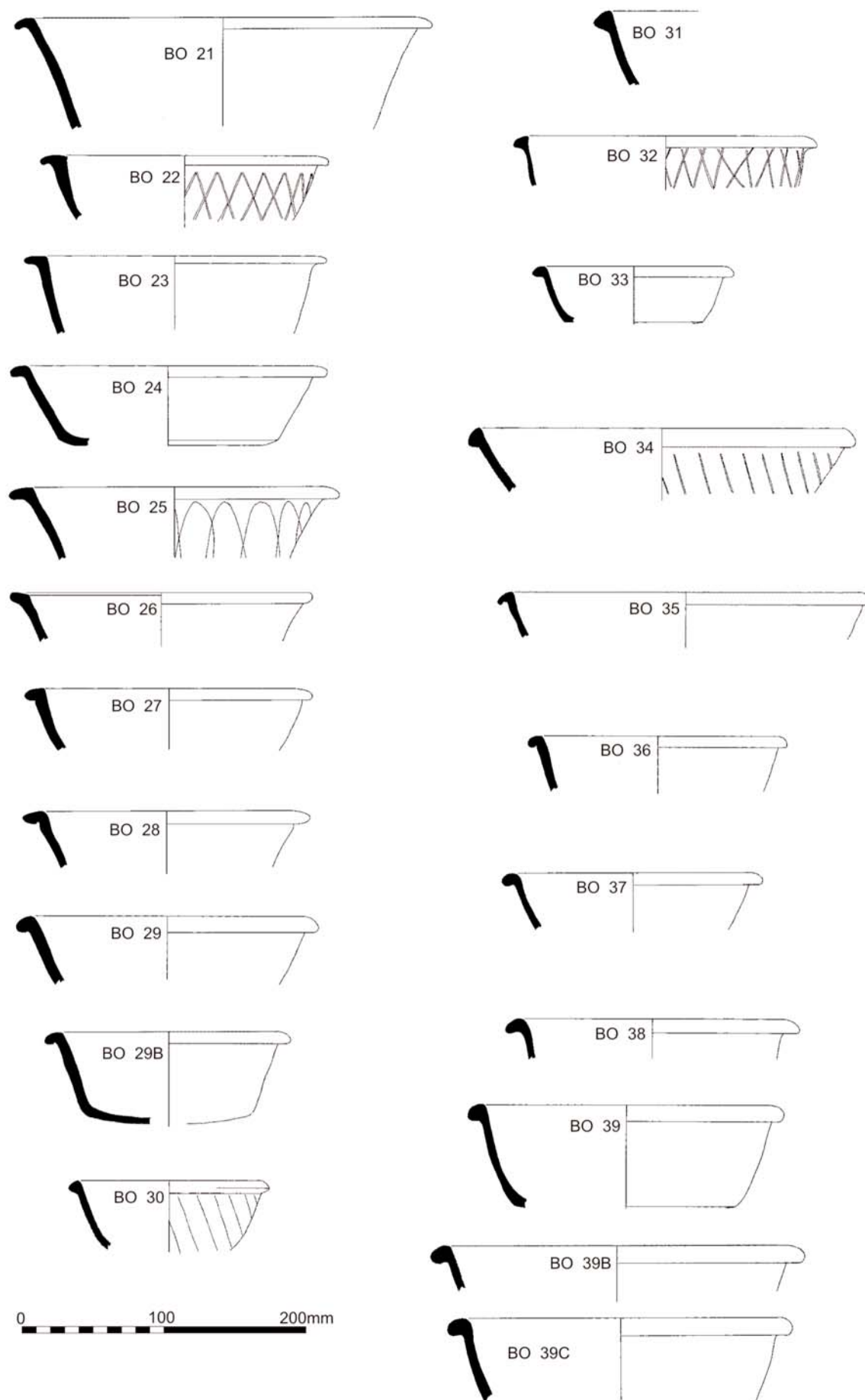


Fig 16.2 Coarseware: the bowls and dishes (scale 1:4).

Table 16.1 Occurrence of rounded-rim BB2 types in deposits from the northern frontier

site deposit	no.	reference
Mumrills	1	MacDonald and Curle 1929, fig 101, no. 24
Corbridge destruction deposit	1	Richmond and Gillam 1950, fig 10, no. 82, but not (<i>contra</i> Bidwell and Speak 1994, 227) Forster and Knowles 1912, fig 6, no. 81 which is from a deposit on Site 30 that contains some manifestly much later pieces – an east Yorkshire grey ware flanged bowl and a Huntcliff-type cooking pot
Benwell Vallum ditch filling	0	Swinbank 1955
Benwell occupation over sealed ditch fill	2	Swinbank 1955, fig 2, nos 17 and 20; decorated samian gives a <i>TPQ</i> of <i>c</i> AD 180
Carpow	3	Birley 1963, and the subsequent excavations of Leach and Wilkes (Dore and Wilkes 1999)
Vindolanda Period 1b	1	Bidwell 1985, fig 66, no. 9; <i>TPQ</i> from samian of <i>c</i> AD 165.
South Shields Period 4c	1	Bidwell and Speak 1994, fig 8.8, no. 26; context should be late 2nd century immediately prior to building of early 3rd-century fort 5.

BO 30	2	39	Fabric 1: 0; AD 140+	hard mid-grey, micaceous surface; inclusions: up to 0.5mm, quartz, black vitreous grains, black iron-rich grains, mica.
BO 31	1	5	Fabric 1: 0; AD 140+	Remainder: BB1
BO 32	4	46	Fabric 1: 0; AD 140+	
BO 33	1	13	Fabric 1: 0; AD 140+	
BO 34	1	43	Fabric 1: 0; AD 140+	
BO 35	5	74	Fabric 1: 1; AD 140+	
BO 36	6	55	Fabric 1: 5; AD 140+	
BO 42	35	379	Fabric 1: 13; AD 140+	
BO 43	1	30	Fabric 1: 0; AD 140+	
BO 37	11	100	Fabric 1: 0; AD 160+?	
BO 38	1	15	Fabric 1: 1; AD 140+?	
BO 44	8	149	Fabric 1: 1; AD 160+	
BO 39	24	375	Fabric 1: 15; AD 160+	
BO 40	15	274	Fabric 1: 3; AD 160+	
BO 41	4	86	Fabric 1: 0; AD 160+	
BO 91	18	188	Fabric 1: 5; AD 140+ (Fig 16.5)	
BO 92	2	35	Fabric 1: 2; AD 140+ (Fig 16.5)	

Miscellaneous

BO 45	3	69	Mid-blue-grey, burnished dark grey surface; inclusions: up to 0.5mm, mostly rounded quartz, a few black iron-rich grains.
BO 46	1	22	Mid-blue-grey, smooth dark grey surface; inclusions: sparse quartz, 0.1–0.2mm.

Bowls with flat, grooved rims in BB1 (Fig 16.3)

The type occurs at Carpow whose occupation is thought to be confined within the first quarter of the 3rd century AD. Gillam (1976, 70) regarded the type as part of a formal development leading to the truncated conical bowls with bead and flange rims. Holbrook and Bidwell (1991, 98) have advanced a convincing case against this.

BO 50	20	598	BB1
BO 51	4	40	BB1
BO 52	5	36	BB1
BO 53	1	13	BB1
BO 54	6	87	BB1
BO 55	1	9	BB1
BO 56	12	307	FV 582: pale grey with dark grey micaceous surface; inclusions: ≤ 0.1 mm, max 0.5mm, limestone, quartz and red iron-rich grains. (?Crambeck); FV 1583:

Bowls of truncated conical form with bead and flange rims (Figs 16.3–16.5)

Holbrook and Bidwell (1991, 99) place the general appearance of this type in BB1 *c* AD 270, but suggest that there is a distinct possibility that its origin may have been up to a quarter of a century earlier. Gillam (1976, 72) dated its emergence to the late 3rd century.

The appearance of the type in Crambeck grey ware seems to have occurred in the 270s or early 280s (Evans 1989, 79). The appearance of a single or double burnished wavy line on the upper inside wall of the vessels can be dated to *c* AD 360 (Corder 1937, 409; Evans 1989, 79).

Three fabrics:

- 1) Crambeck: pale or very pale grey, smooth dark grey surface; inclusions: average 0.1–0.2mm, max 0.5mm, quartz, black iron-rich grains and mica
- 2) Other east Yorkshire
- 3) BB1

BO 57	26	403	FVs 206, 327, 407, 497, 760, 1414, 1515: mid- or dark grey, smooth micaceous surface; inclusions: up to 1.0mm, quartz and black iron-rich grains. Remainder: Crambeck; internal burnished wavy line on FV 66.
BO 58	2	57	Crambeck.
BO 59	10	190	FVs 284, 669: dark grey, smooth surface; inclusions: average 0.2–0.5mm, max up to 1.0mm, quartz, black iron-rich grains, mica. (?Throlam); remainder Crambeck).
BO 60	5	86	Crambeck; faint internal burnished wavy line on FV 867.
BO 61	4	69	Crambeck; internal burnished wavy line on FV 56.

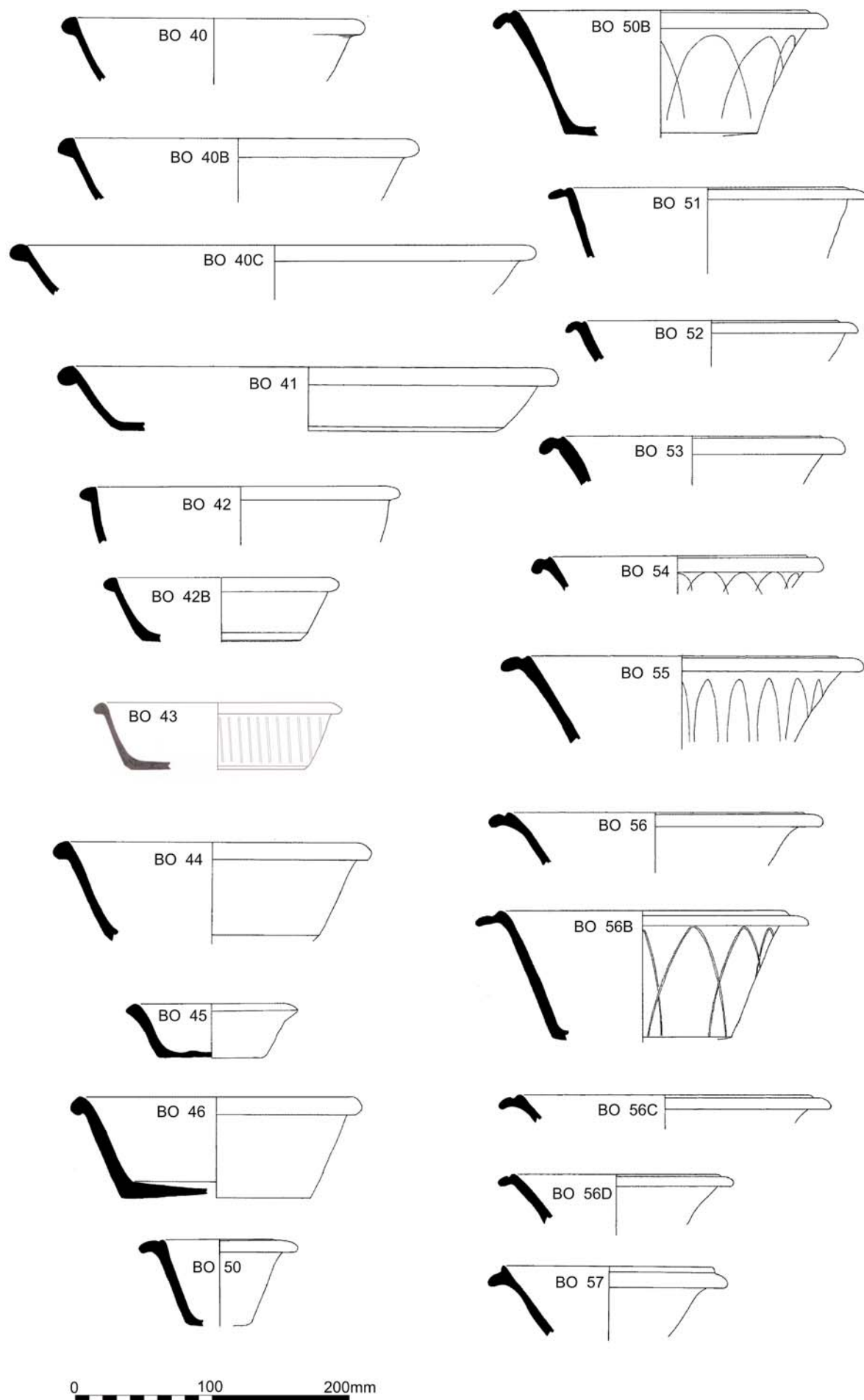


Fig 16.3 Coarseware: the bowls and dishes (scale 1:4).

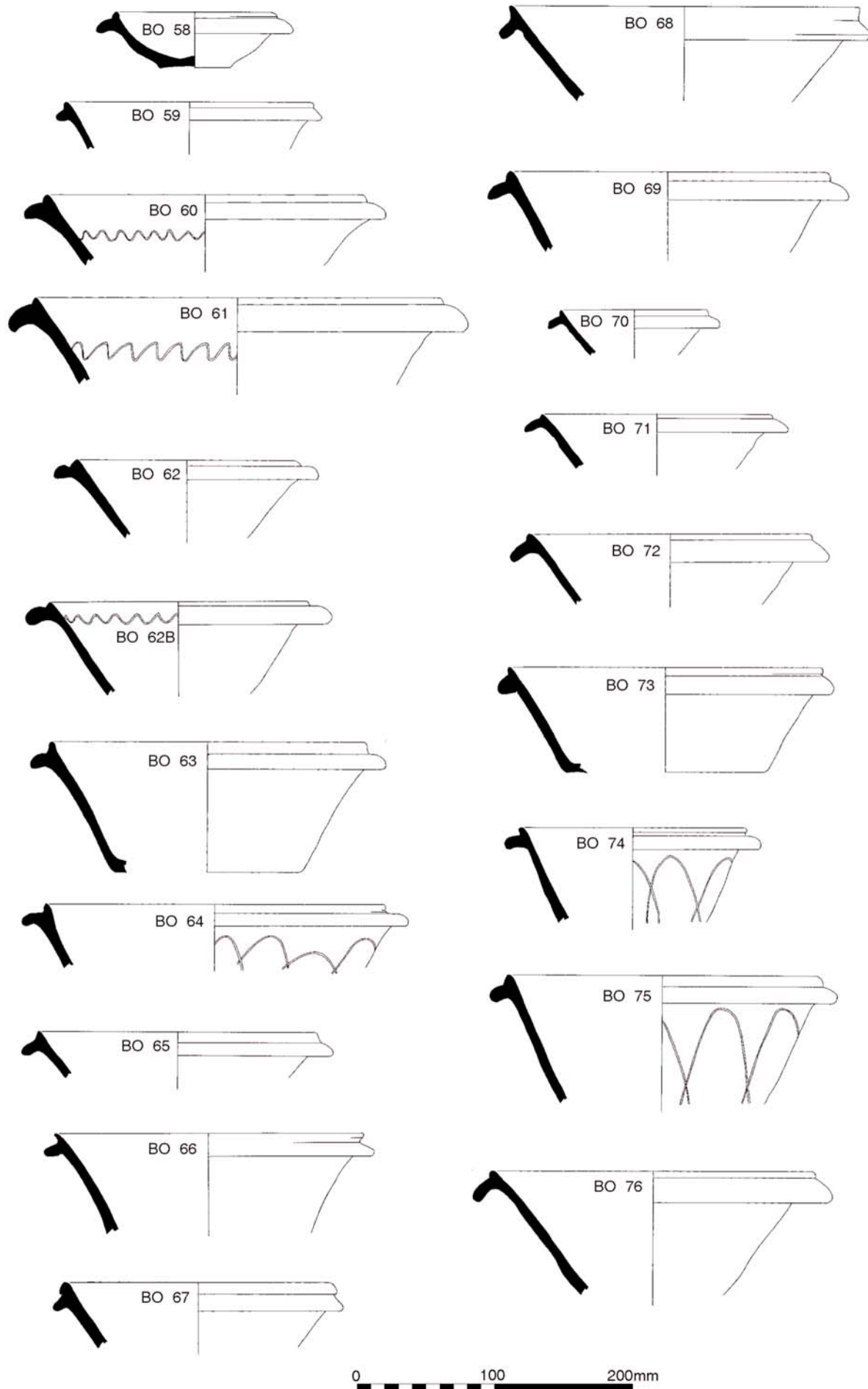


Fig 16.4 Coarseware: the bowls and dishes (scale 1:4).

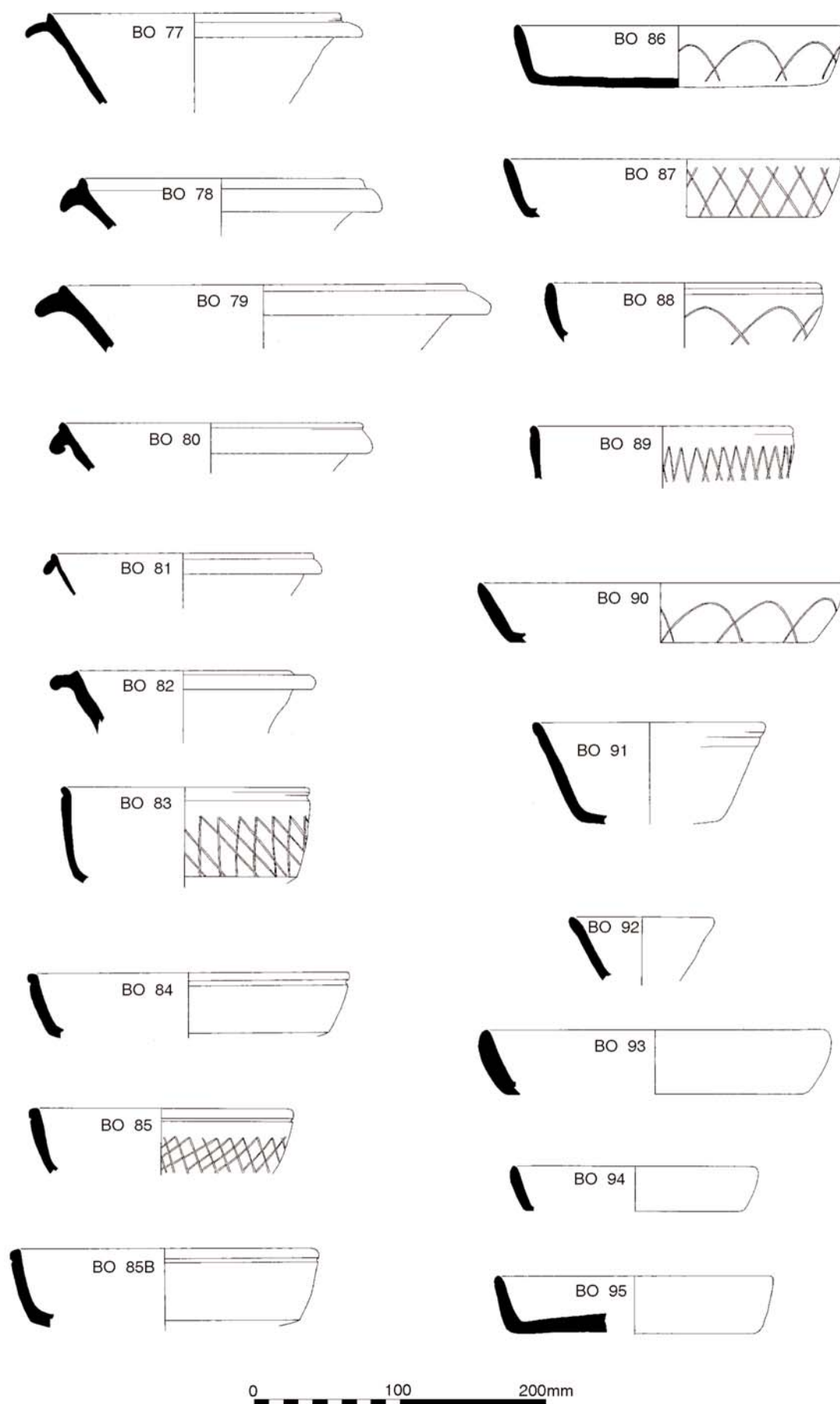


Fig 16.5 Coarseware: the bowls and dishes (scale 1:4).

BO 62	12	278	FVs 409, 1209, 1332: dark grey, smooth micaceous surface; inclusions: mostly quartz, some black iron-rich grains. (?Throlam); remainder Crambeck; internal burnished wavy lines on FV 759 418 1332.
BO 63	17	237	BB1.
BO 64	11	190	BB1.
BO 65	8	109	FV 117, 1007, 2406: Crambeck; FV 923: BB1; FV 149: gritty pale grey, dark grey core; inclusions: sparse, 0.5–1.0mm, quartz and rock fragments; FV 222, 480: orange-brown/grey-brown, smooth black surface; inclusions: 0.1–0.2mm, max 1.0mm, quartz and black iron-rich grains; FV 783: pale brown, dark grey surface, inclusions: 0.1–0.2mm, max 0.5mm, mostly quartz.
BO 66	2	29	FV 2090: Crambeck; FV 576: dull red-brown, pale grey core, black surface; inclusions: up to 0.5mm, quartz and black iron-rich grains.
BO 67	2	47	BB1.
BO 68	2	75	Crambeck.
BO 69	4	23	FV 1060: Crambeck; remainder: BB1.
BO 70	8	140	FV 282, 285, 618: mid-grey, dark grey surface; inclusions: up to 0.5mm, max up to 1.0mm, quartz and black iron-rich grains. FV 541: black, smooth surface; inclusions: 0.1–0.2mm, quartz and limestone. FV 543, 544, 1663, 1680: Crambeck.
BO 71	16	311	Crambeck.
BO 72	3	50	Crambeck.
BO 73	10	155	Crambeck.
BO 74	4	104	FV 2073: Crambeck; remainder: BB1.
BO 75	4	81	BB1.
BO 76	1	47	?Crambeck: orange-red with pale grey-brown surface; inclusions: ≤ 0.1 mm, max up to 0.5mm, quartz, black iron-rich grains, limestone.
BO 77	3	53	Crambeck.
BO 78	1	15	Orange-yellow with very pale grey core, orange-brown colour-coated surface; inclusions: average ≤ 0.1 mm, max up to 0.5mm, quartz and red iron-rich grains.
BO 79	1	33	Orange-yellow; inclusions: average ≤ 0.1 mm, max up to 0.2mm, quartz, red iron-rich grains and limestone.
BO 80	2	21	Mid-grey, dark grey surface; inclusions: up to 1.0mm, rounded quartz and black iron-rich grains.
BO 81	1	28	Off-white, pink surface; inclusions: 0.1–0.2mm, mostly quartz.
BO 82	1	8	Mid-grey, black surface; inclusions: up to 1.0mm, quartz, iron-rich grains, limestone and voids.

Dishes with bead-rims in BB1 (Fig 16.5)

Dating is taken from Gillam (1976, 74)

BO 83	3	36	Early 3rd century.
BO 84	2	43	Late 2nd century.
BO 85	12	131	Early 3rd century.

Plain-rim dishes in BB1 (Fig 16.5)

Dating is taken from Gillam (1976, 77).

BO 86	116	1543	With intersecting arc decoration where it can be discerned. Late 2nd century+
BO 87	2	67	With cross-hatched decoration. Mid- to late 2nd century.
BO 88	5	73	With slight ledge or groove at lip. Late 2nd century+
BO 89	1	8	Early to mid-2nd century.
BO 90	8	65	Late 3rd century.

Plain-rim dishes in Crambeck fabric

(Figs 16.5–16.6)

Date of emergence *c* AD 270

BO 93	11	145
BO 94	17	195
BO 95	1	5
BO 96	10	107
BO 97	4	34

Miscellaneous dishes (Fig 16.6)

BO 98	5	43	Quite thin walled and finely made. Splayed wall and inturned lip. Pale grey with darker core and smooth black micaceous surface; inclusions: ≤ 0.1 mm, max up to 0.5mm, mostly quartz, some black iron-rich grains.
BO 99	1	15	Pale orange, black surface pitted with voids; inclusions: average up to 0.5mm, max up to 2.0mm, quartz, black iron-rich grains, limestone, voids. ?Originally calcite gritted.
BO 100	3	22	Hand-made. Dark grey, black surface pitted with voids; inclusions: 0.1–0.2mm: quartz, black iron-rich grains, clay pellets; up to 2.0mm: voids. ?Originally calcite gritted.
BO 101	1	10	Hand-made. Dark grey, black surface; inclusions: up to 0.5mm: quartz; up to 2.0mm: angular calcite and voids.
BO 102	1	45	Hand-made. Black; inclusions: up to 0.5mm: quartz; up to 2.0mm: calcite and voids.
BO 103	1	8	Hand-made. Mid-grey, yellowish-brown surface; inclusions: up to 0.5mm: quartz, black iron-rich grains, black vitreous grains; up to 2.0mm: calcite and voids.
BO 104	1	10	?Crambeck.
BO 105	1	59	Grey-brown, dark grey surface; inclusions: average up to 0.5mm, max up to 1.0mm, quartz and black iron-rich grains.
BO 106	1	10	Very pale yellow; inclusions: sparse, ≤ 0.1 mm, max up to 1.0mm, quartz and iron-rich grains.
BO 107	1	7	Pale brown, pale orange-brown core, patchy mid-orange-brown; inclusions: up to 0.5mm, quartz and red iron-rich grains.
BO 108	1	15	Pale brown, pale orange-brown core, black surface; inclusions: ≤ 0.1 mm, max up to 0.5mm, quartz and black iron-rich grains.

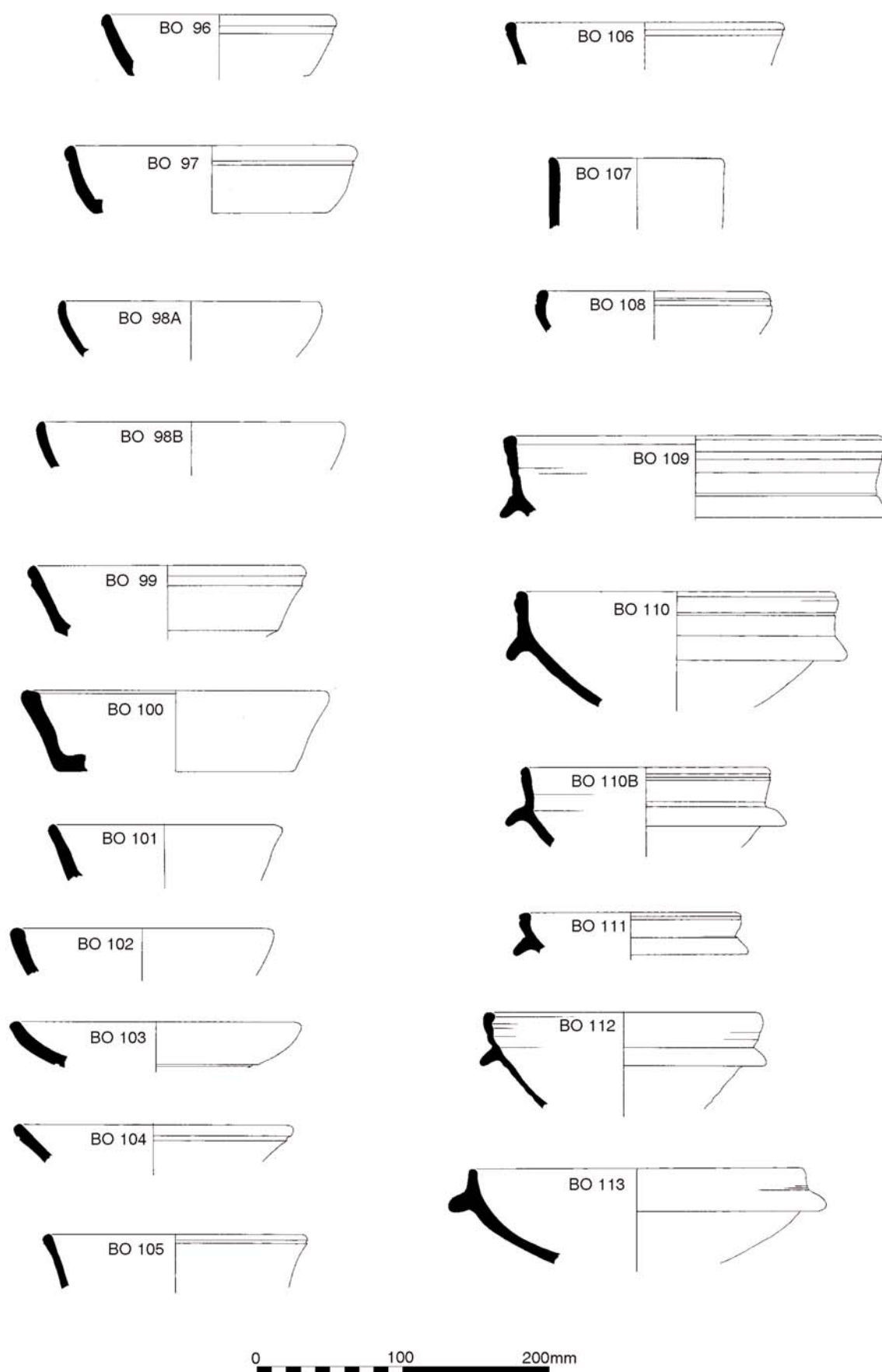


Fig 16.6 Coarseware: the bowls and dishes (scale 1:4).

Bowls with flanges set well below the rim (Figs 16.6–16.7)

The date of neither of the Crambeck fabrics is clear. The grey ware bowls could well emerge at the same time as the other grey ware types, ie *c* AD 270.

BO 109	1	40	Crambeck grey ware.
BO 110	4	74	Crambeck grey ware.
BO 111	3	34	Crambeck grey ware.
BO 112	1	20	Crambeck: the oxidised fabric that is much less frequently encountered than the grey and parchment fabrics: orange-red, burnished surface; inclusions: sparse, up to 0.5mm, quartz, iron-rich grains, up to 2.0mm, clay pellets.
BO 113	1	60	Pale orange-yellow, mid-grey core; inclusions: up to 0.5mm, max up to 1.0mm, quartz, red iron-rich grains, black vitreous grains.
BO 114	1	10	Orange-red, pale orange core; inclusions: up to 1.0mm, mostly quartz, occasional iron-rich grains and limestone. Possibly Crambeck.
BO 115	1	40	Orange-yellow, pale brown core, burnished surface; inclusions: average up to 1.0mm, max up to 2.0mm, quartz and rock fragments.
BO 116	1	32	Orange-red, pale orange core, smooth surface; inclusions: average up to 0.5mm, max up to 1.0mm, mostly quartz some red iron-rich grains. Possibly Crambeck.

Crambeck Parchment Ware (Figs 16.7 and 16.9)

The fabric is hard, cream or cream-yellow, sometimes with a slip of the same colour or very slightly yellower applied to parts of the external surface; there is decoration of red-brown paint on external and/or internal surfaces. The fracture is smooth, the feel rough. Surfaces are wiped and burnished if slipped.

The inclusions are generally well sorted and fine (average size not exceeding 0.2mm). Quartz, silver mica and rounded red or orange iron-rich grains are present. Quartz is common or abundant, mica is common, iron-rich grains are common or sparse.

On mortaria the trituration grits are abundant, well-sorted slag, *c* 2.0–3.0mm.

The Parchment Ware types emerged *c* AD 360–70 (Corder 1937, 409; Evans 1989, 79).

The forms below have been identified as Crambeck Parchment Ware, largely on the basis of the body colour and fabric texture of the vessels. Only a small number of examples show any traces of painted decoration, which is the principal defining criterion of the fabric.

Bowls with flange set well below the rim, in Crambeck Parchment Ware

BO 117	7	98	Painted decoration on FV 864.
BO 118	9	47	
BO 119	2	23	Traces of paint on upper wall of FV 1684.
BO 120	2	8	Traces of paint on upper wall of FV 1025.

Wall-sided bowls (or mortaria) in Crambeck Parchment Ware

Most, if not all, of these vessels are likely to have been mortaria but insufficient of the wall survives to show the grits.

BO 121	1	49	Painted decoration on FVs 841 and 861 (same vessel).
BO 122	6	47	
BO 123	1	7	
BO 124	4	71	Painted decoration on FV 924 and 977.
BO 125	4	120	Painted decoration on FV 862.

Dish with thickened rim in Crambeck Parchment Ware (Fig 16.9)

BO 151	1	15	Painted decoration on FV 2017.
BO 153	1	5	

Bowls (or mortaria) with bifid-moulded face in Crambeck Parchment Ware

Most, if not all, of these vessels would have been mortaria but insufficient of the wall survives to show the grits.

BO 126	5	58	
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Miscellaneous bowls and dishes (Figs 16.7–16.9)

BO 128	1	25	Dull orange-brown, dark grey core; inclusions: up to 0.5mm, quartz and black iron-rich grains, up to 2.0mm, grains of quartz sandstone.
BO 129	1	60	Mid-grey, dark grey micaceous surface; inclusions: average up to 1.0mm, max up to 2.0mm, mostly quartz.
BO 130	1	27	Dark grey, pale grey surface; inclusions: up to 0.5mm, mostly quartz.
BO 131	1	20	Orange-brown with thick dark grey core; inclusions: average up to 0.5mm, max up to 1.0mm, quartz and iron-rich grains.
BO 132	1	26	Orange-yellow; inclusions: up to 0.5mm, red iron-rich grains and quartz.
BO 133	2	65	Pale grey, dark grey surface; inclusions: 0.1–0.2mm, quartz and black iron-rich grains. Probably a product of the Holme-on-Spalding Moor (Throlam) industry (Corder 1930).
BO 134	1	7	Pale grey, dark grey surface; inclusions: ≤ 0.1 mm, quartz, black iron-rich grains and mica. Probably a product of the Holme-on-Spalding Moor (Throlam) industry (Corder 1930).
BO 135	1	8	Orange-red, dark grey surface; inclusions: average up to 0.5mm, max up to 1.0mm, mostly quartz, occasional black iron-rich grains and limestone.
BO 136	1	13	Mid-grey, dark grey surface, inclusions: average ≤ 0.1 mm, max up to 1.0mm, black iron-rich grains, quartz, occasional limestone.
BO 137	1	13	Off-white, very pale grey core, dark grey micaceous surface; inclusions: average 0.1–0.2mm, max up to 0.5mm, mostly quartz, some mica.
BO 138	1	7	Off-white, black core, pale grey surface; inclusions: average 0.1–0.2mm, max up to 0.5mm, quartz and black iron-rich grains.

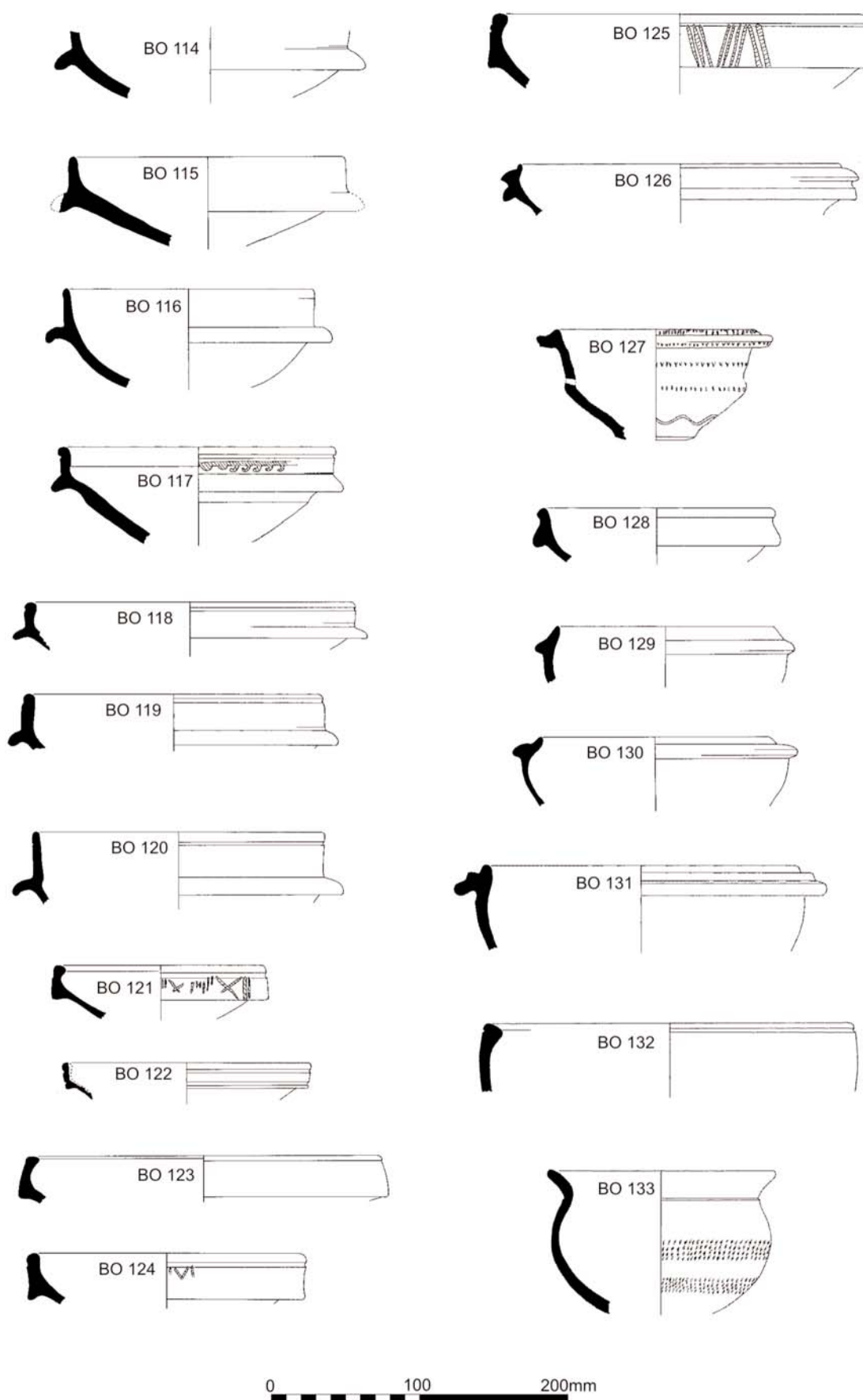
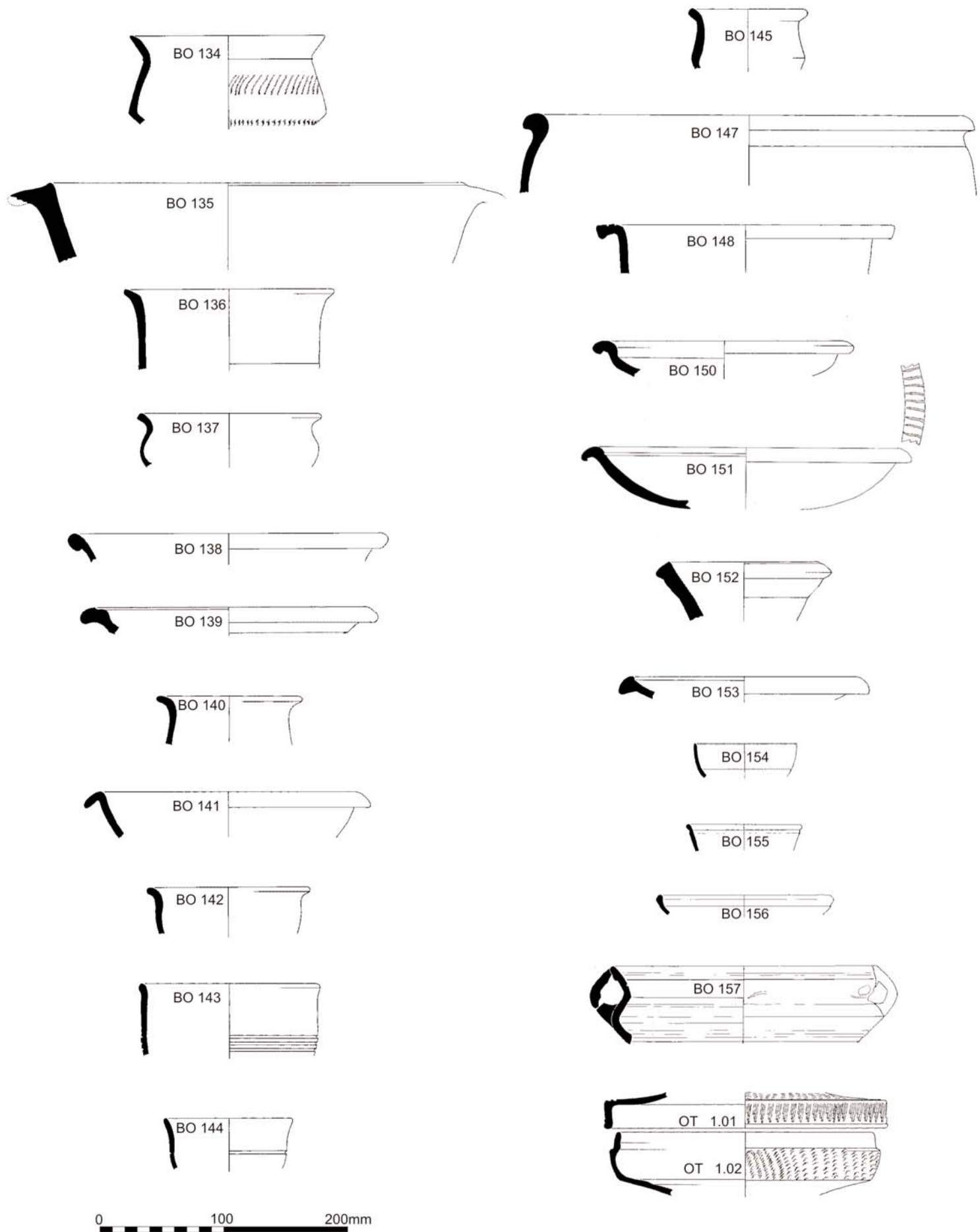


Fig 16.7 Coarseware: the bowls and dishes (scale 1:4).



Figs 16.8–16.9 Coarseware: the bowls and dishes (scale 1:4).

BO 139	1	8	Black, wiped surface; inclusions: up to 1.0mm, calcite and voids.
BO 140	1	12	Mid-grey; inclusions: average 0.1–0.2mm, max up to 0.5mm, grey clay pellets and quartz.
BO 141	1	13	Mid-grey, dark grey outer surface; inclusions: average up to 0.5mm, max up to 1.0mm, quartz and grey grains (clay pellets?).
BO 142	1	11	Black with burnished surface; inclusions: average up to 0.5mm, max up to 1.0mm, sub-round quartz.
BO 143	1	13	Pale grey with black micaceous surface; inclusions: average 0.1–0.2mm, max up to 0.5mm, rounded quartz.
BO 144	1	14	Very pale brown, smooth black surface; inclusions: 0.1–0.2mm, quartz.
BO 145	2	40	Pale grey, dark grey burnished surface; inclusions: up to 0.5mm, mostly quartz, up to 1.0mm, occasional grey clay pellets.
BO 147	1	15	Pink with brown core; inclusions: average up to 0.5mm, max up to 1.0mm, mostly quartz, occasional red iron-rich grains and clay pellets; silty matrix.
BO 150	1	10	Pale orange with grey core; inclusions: up to 0.5mm, quartz and red iron-rich grains; silty matrix.
BO 152	1	10	Dark grey, smooth black surface with dull red-brown margins immediately below the surface; inclusions: up to 0.5mm, quartz.

Small bowls or cups in colour-coated fabrics (Fig 16.9)

Central Gaulish: 'They have the hard red inclusion-free fabric of sigillata, although in some cases this may be paler and softer than would be normal in sigillata. Some of the thin-walled beakers have thin grey layers just beneath the colour coating, giving a "sandwich" effect in section, but this is easily distinguishable from the sandwich-effect often found in the section of Trier vessels where the thin grey layers are separated from the external colour-coating by thin red layers. ... there is considerable variety in the colour-coatings: these may vary from almost black to dark red or dark brown, dark green, and the more definitely green-coloured vessels may also have a brilliantly metallic lustre' (Symonds 1992, 18).

Trier: 'a very hard red fabric with no visible inclusions at all, but often with quite fine grey layers just underneath the colour-coating of the inside and the outside of the vessel, giving a very fine "sandwich" effect. ... The dark colour-coating is generally very glossy, in some instances achieving a truly remarkable depth and quality' (Symonds 1992, 49).

BO 154	2	71	Central Gaulish Colour-coated ware. Symonds (1992) Group 6. Symonds suggests (<i>op cit</i> 20) that continental production may have started as early as the Hadrianic period. Most examples found in Britain are dated Antonine or later.
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BO 155	2	100	Trier Colour-coated ware. Symonds (1992) Group 57. 3rd century.
BO 156	1	45	Trier Colour-coated ware. Symonds (1992) Group 55 or 57. 3rd century.
BO 157	1	23	Two-handle cup imitating a Central Gaulish form (Symonds 1992, Group 7); pale orange fabric with metallic purple colour-coat. Probably Lower Nene Valley ware. Late 2nd century+

Castor boxes (Fig 16.9)

All in Lower Nene Valley fabric: white or very pale yellow, dark brown colour-coat; inclusions: common quartz ≤ 0.1 mm, some red iron-rich grains ≤ 0.1 mm.

OT 1.1	1	12	Lid
OT 1.2	3	27	Base

Jars (Figs 16.10–16.18)

Lid-seated jars (Figs 16.10–16.11 and 16.16)

Five groups:

- 1) Gritty, Dales Type. JA 1, 4, 10, 2, 3, 5, 8, certainly represent a fabric grouping that is sufficiently well defined to equate to a production grouping emanating from a kiln or group of kilns. JA 6, 7, 9, may also be part of this. Present at Vindolanda from *c* AD 250 (Bidwell 1985, 177), South Shields *c* AD 286–318 but perhaps arriving somewhat earlier (Bidwell and Speak 1994, 43 and 232). See also Loughlin 1977 and Webster and Booth 1947 Type H.
- 2) Dales Ware: JA 11; present at Vindolanda from *c* AD 275 (Bidwell 1985, 177), South Shields *c* AD 286–318 but perhaps arriving somewhat earlier (Bidwell and Speak 1994, 43 and 232). See also Loughlin 1977.
- 3) Derbyshire Ware: JA 14, 21, 12, 100, 13; present at South Shields *c* AD 286–318 but perhaps arriving somewhat earlier (Bidwell and Speak 1994, 43 and 232).
- 4) BB2 allied fabric (probably Mucking kilns: see: Jones and Rodwell 1973 and Monaghan 1987). Gillam 151: JA 16–19: the earliest occurrence of an example of this type is now the Period 5 construction of the main *principia* site at South Shields (Bidwell and Speak 1994, 228); early 3rd century if the dating of the construction of the South Shields *principia* by reference to likely historical context is accepted (*ibid*, 28). Necked jar: JA 22–24: Bidwell and Speak 1994, 230 'Jars with out-curved rims' lists the published examples. Present evidence suggests an emergence in the north in the early 3rd century. See also JA 102–107.
- 5) Miscellaneous other.

1) Gritty, Dales Type

Type	Total	Eve	Fabric
JA 1	19	337	Gritty, dark grey or black, occasionally with a brown or reddish-brown tinge; the surface is generally the same colour as the body or somewhat darker; the

			surface texture is pimply rather than gritty, the surface having been smoothed over the protruding grits; inclusions: mainly $\leq 1.0\text{mm}$, occasionally up to 2.0mm ; sub-round quartz, dark coloured clay pellets, and a little lime.
JA 4	1	17	(as JA 1 above)
JA 10	6	103	(as JA 1 above)
JA 2	1	11	Similar fabric to JA 1, 4, 10; variations detailed below.
JA 3	1	22	Micaceous surface; inclusions: all quartz
JA 5	10	225	Inclusions: sub-round quartz and grains of quartz sandstone
JA 8	16	221	The range of grey values is broader (light grey-black) and the surface is generally darker (black). The size range of the inclusions is similar though the average size tends to be finer.
JA 6	1	41	Pale grey with dark grey outer surface; inclusions: mostly $\leq 0.5\text{mm}$, some up to 1.0mm ; quartz and black iron-rich grains.
JA 7	1	15	Mid-blue-grey with dark grey-brown surface; inclusions: mainly $\leq 0.2\text{mm}$, some up to 0.5mm ; quartz.
JA 9	1	17	Brownish-grey with blue-grey core; inclusions: mainly $\leq 0.2\text{mm}$, some up to 0.5mm ; quartz and some black iron-rich grains and lime.
Total	57	1009	

2) Dales Ware

JA 11	19	264	Often very hard; body colour ranges from off-white, pale or medium grey, to buff, pale brown or reddish-brown; surface is black or dark grey, often micaceous and gritty (with the surface wet-smoothed over the grits to give a pimply feel); inclusions: $\leq 1.0\text{mm}$, occasionally larger; quartz, black iron-rich grains, occasional shell fragments.
Total	57	264	

3) Derbyshire Ware (DER CO)

JA 14	5	50	Very hard. Dark bluish-grey, sometimes with red-brown margins and a yellowish-brown surface; inclusions: up to 1.0mm , sometimes larger (up to 2.0mm): quartz, quartz sandstone and grey and black iron-rich grains.
JA 21	1	10	(as JA 14 above)
JA 12	1	19	Mid-grey with dark grey, micaceous surface; inclusions: mainly $\leq 0.5\text{mm}$, some up to 1.0mm ; quartz and grey iron-rich grains.
JA 100	1	26	(as JA 12 above) (see Fig 16.15)
JA 13	5	42	Mid-blue-grey, occasionally with a darker surface; inclusions: mostly $\leq 0.5\text{mm}$; quartz, black iron-rich grains and occasional lime.
Total	13	147	

4) BB2 allied fabric (probably Mucking kilns)

JA 16	18	355	Gillam 151; the body colour can be all shades of brown, from orange-brown through yellow and reddish-brown to
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			grey-brown, occasionally, in the case of the greyer shades, with a redder core; the surface is generally a patchy dark grey and reddish-brown, with a sparkling appearance caused by fine particles of quartz; inclusions: mostly $\leq 0.1\text{mm}$, some up to 1.0mm ; mostly quartz, some black iron-rich grains.
JA 17	1	69	(as JA 16 above)
JA 18	1	7	(as JA 16 above)
JA 19	3	65	(as JA 16 above)
JA 22	3	83	Necked jars; reddish-brown or dark grey with a black, sparkling surface with the texture of fine sandpaper; inclusions: mostly $\leq 0.1\text{mm}$, some up to 1.0mm ; quartz and fine black grains.
JA 23	4	65	(as JA 22 above)
JA 24	2	20	(as JA 22 above)
Total	32	664	

5) Miscellaneous

JA 15	1	41	Orange-brown, mid-grey core; inclusions: sparse, discrete, mainly $\leq 0.5\text{mm}$, some up to 1.0mm ; quartz, rock fragments and red iron-rich grains.
JA 20	5	74	Grey, sometimes reddish-brown, often with a paler grey core; dark grey surface; inclusions: mainly $\leq 0.1\text{mm}$, some up to 1.0mm ; mostly quartz, some black iron-rich grains.
JA 25	2	30	Mid-blue-grey with pale grey margins and black micaceous surface; inclusions: mostly $\leq 0.5\text{mm}$, some up to 1.0mm ; quartz and black iron-rich grains.
JA 26	1	10	Pale grey with finely micaceous, black surface; inclusions: mostly $\leq 0.1\text{mm}$, some up to 1.0mm ; fine black iron-rich grains and occasional large (up to 1.0mm) grains of quartz.
JA 101	2	17	Dull brown with thick dark grey core and dark grey micaceous surface; inclusions: quartz, black iron-rich grains and limestone, $0.1\text{--}0.2\text{mm}$ average, max up to 1.0mm (see Fig 16.16).
Total	11	172	

Jars in calcite-gritted fabric (Figs 16.11, 16.16)

Huntcliff-type

The emergence of the Huntcliff-type cooking pot can be advanced to the 340s AD at least, on the evidence of the Womersley hoard (Pirie 1971).

JA 27	90	1761	Usually dark brownish-grey to black; cloth-wiped surface; inclusions: mostly $\leq 2.0\text{mm}$; large grains of calcite (often represented by voids) and occasional other rock fragments set in a clay matrix containing a fine scatter of quartz and iron-rich grains.
JA 33	12	216	Huntcliff-type less the lid-seating groove on the inner face of the rim. Fabric as JA 27.

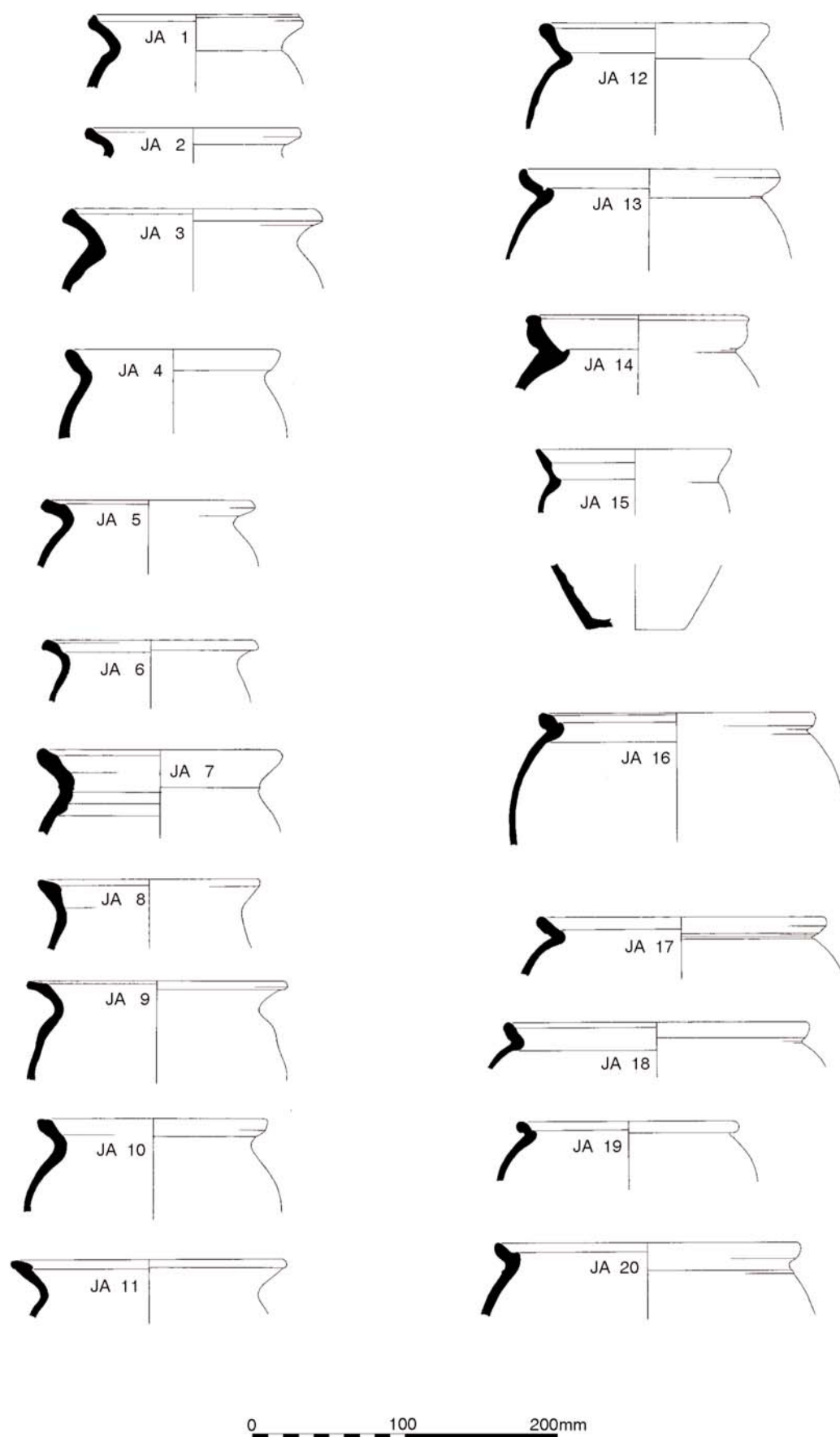


Fig 16.10 Coarseware: the jars (scale 1:4).

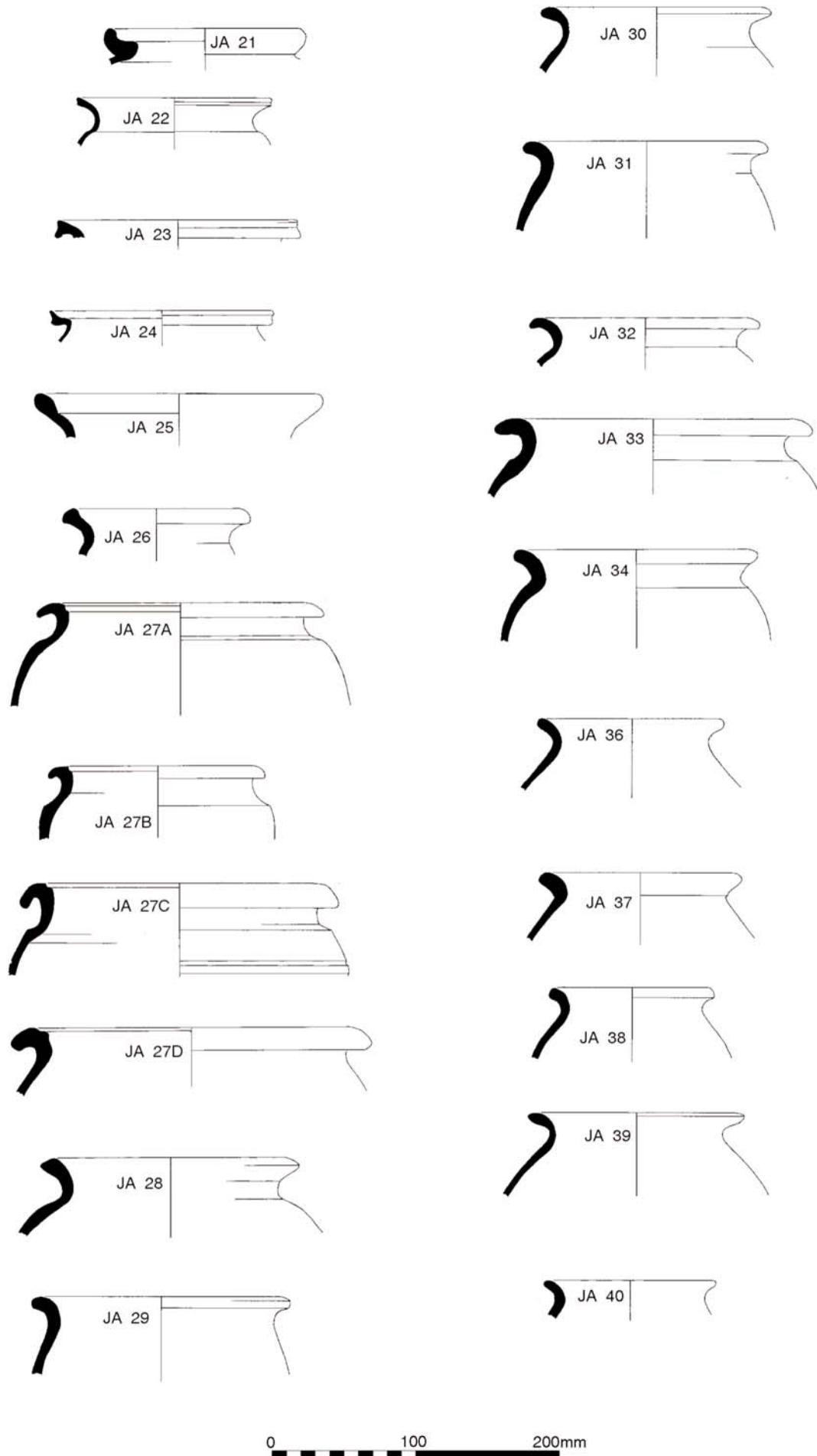


Fig 16.11 Coarseware: the jars (scale 1:4).

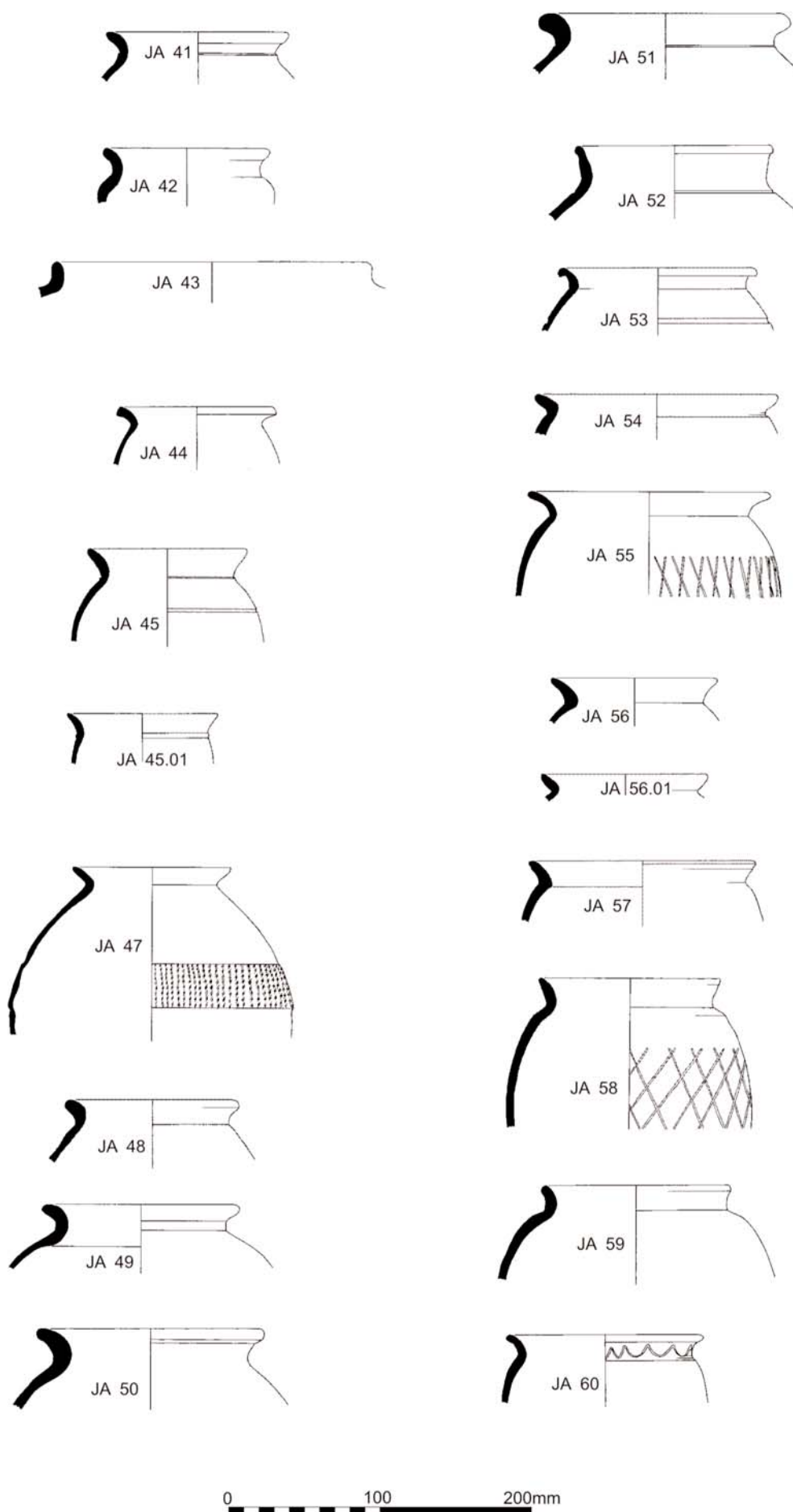


Fig 16.12 Coarseware: the jars (scale 1:4).

Non-Huntcliff types

JA 28	1	17	
JA 29	5	104	
JA 30	17	443	
JA 31	8	285	
JA 32	5	70	
JA 34	3	108	
JA 109	9	218	Miscellaneous – some similarity to Huntcliff-type. Not in calcite-gritted fabric. Dark grey-brown or black, burnished black micaceous surface; inclusions: quartz and black iron-rich grains, average up to 0.5mm, max up to 1.0mm (<i>see</i> Fig 16.16).

Early everted rim jars

(Figs 16.11–16.12, 16.15 and 16.18)

Common in Period I deposits in the turrets and mile-castles of Hadrian's Wall: (see eg: Woodfield 1965). First half of the 2nd century AD.

JA 36	3	159	Pale or mid-grey, darker smoothed or burnished surface; inclusions: sometimes sparse, mostly ≤ 0.2 mm, some up to 2.0mm; mostly quartz, some black iron-rich grains.
JA 38	4	124	(as JA 36 above)
JA 44	4	66	(as JA 36 above) (<i>see</i> Fig 16.12)
JA 98	3	46	(as JA 36 above) (<i>see</i> Fig 16.15)
JA 99	1	16	(as JA 36 above) (<i>see</i> Fig 16.15)
JA 148			Gritty mid-grey; inclusions: average up to 0.2mm, max up to 2.0mm, much quartz, less black iron-rich grains and grey clay pellets (<i>see</i> Fig 16.18).
Total	15	411	

Beakers with everted rims (Fig 16.12)

Probably Yorkshire products (see eg Corder 1932, fig 12 nos 48–9; Hayes and Whitley 1950, fig 13 no. 14), in which case mid- to late 3rd century AD.

JA 45	8	223	Pale or mid-bluish-grey, smooth slightly darker surface, sometimes micaceous; inclusions: sometimes sparse, usually ≤ 0.2 mm; quartz and black iron-rich grains.
JA 45.1	2	22	
JA 47	2	42	
Total	12	287	

Miscellaneous jars (Figs 16.11–16.12 and 16.18)

JA 39	3	77	Bluish-grey, sometimes with darker core; dark grey or black surface; inclusions: sometimes sparse, mostly ≤ 0.2 mm; quartz and occasional black iron-rich grains.
JA 40	1	13	Orange, mid-grey core, orange-pink surface; inclusions: sparse ≤ 1.0 mm; red iron-rich grains and occasional quartz.
JA 41	1	26	Mid-blue-grey, dark grey surface; inclusions: quartz (<i>see</i> JA 45).
JA 42	2	29	Grey or brownish-grey, black surface; inclusions: ≤ 1.0 mm; quartz.

JA 43	1	5	Hand-made; greyish-brown, burnished black surface; inclusions: ≤ 2.0 mm; rock fragments.
JA 49	5	74	Mid- or dark grey, sometimes reddish, smooth micaceous mid- or dark grey burnished surface; inclusions: quartz ≤ 0.5 mm, black iron-rich grains up to 2.0mm.
JA 50	3	32	Mid-grey; inclusions: ≤ 0.5 mm, quartz and black iron-rich grains.
JA 147	1	10	Dark grey, pale grey surface; inclusions: up to 0.5mm, quartz, limestone, quartz-rich clay pellets; silty matrix (<i>see</i> Fig 16.18).
JA 53	1	25	Black, thin pale grey core, dark grey surface; inclusions: ≤ 0.5 mm, quartz and black iron-rich grains.
JA 54	2	35	Off-white, dirty mid-grey surface; inclusions: mostly ≤ 0.5 mm, quartz black iron-rich grains, some matrix coloured clay pellets up to 4.0mm.
Total	20	326	

Storage jars – Throlam Type

(Corder 1932, fig 14 no. 73) (Figs 16.11–16.12)

Late 3rd century AD+

JA 48	2	23	Pale grey with darker or lighter core; greyish-brown surface; inclusions: mostly ≤ 0.2 mm, some up to 1.0mm; red and black iron-rich grains, some quartz and occasional mica.
JA 37	1	40	Very pale grey, dark grey surface; inclusions: quartz ≤ 0.2 mm.
JA 51	1	42	Dark grey with thick pale grey core; micaceous, burnished dark grey surface; inclusions: angular quartz ≤ 0.2 mm.
Total	4	105	

Storage jar – Crambeck Type (Fig 16.12)

Late 3rd century AD+

JA 52	2	17	Pale grey, smooth burnished micaceous grey surface; inclusions: mostly ≤ 0.1 mm, some up to 0.5mm, quartz and black iron-rich grains.
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Cavetto-rim jars in BB2 (Fig 16.12)

Mid-2nd to mid-3rd century AD

JA 55	41	843	
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Everted-rim jars in BB2 (Fig 16.12)

Mid-2nd to mid-3rd century AD

JA 56	3	55	
JA 56.1	1	12	

Jar with inturned rim with beaded lip in BB2 (Fig 16.18)

JA 151	1	5	See Gillam 1961, nos 29–31; mid- to late 2nd century.
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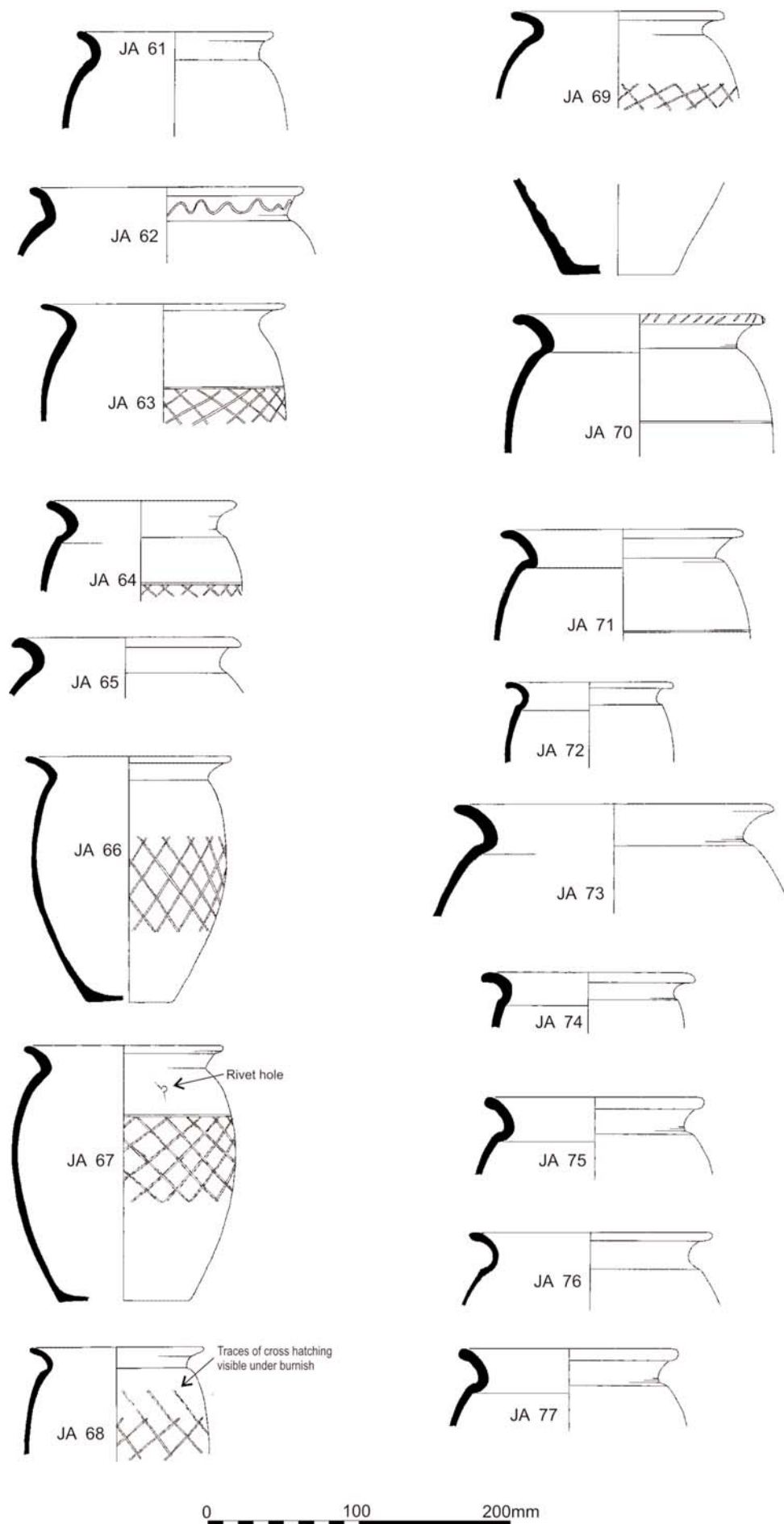


Fig 16.13 Coarseware: the jars (scale 1:4).

Wide-mouth jar or bowl with everted rim, bead lip, neck cordon (Fig 16.15)

JA 80 1 24 Referred to as 'necked bowls' at South Shields (Bidwell and Speak 1994, 230) and 'S-profile bowls' by Monaghan (1987, class 4A). Our example seems to bear more similarity to Monaghan's class 4F, the predecessor of his class 4A which might suggest that it dates to the 2nd century rather than later. Red-brown with dark brown core and smooth mid-grey surface; inclusions: average up to 0.2mm, max up to 1.0mm, quartz, red and black iron-rich grains and mica; BB2 allied fabric.

Cooking-pots in BB1 (Figs 16.12–16.14)

The examples of cooking pots in BB1 were assigned to types on the basis of form-related criteria in the first instance. The presence or absence of certain decorative features (burnished wavy lines on the neck, horizontal scored line above the cross-hatched zone) was not used as a primary classificatory criterion. The types have been arranged in five groups on the following basis:

- Group 1 Short, upright or slightly splayed rims with beaded lips; burnished wavy line present on some necks.
- Group 2 Short (though not as short as those of Group 1), slightly splayed rims; beaded lips barely present; no evidence of burnished wavy lines on necks.

Group 3 Short outcurved rims with beaded lips.

Group 4 Long, markedly outsplayed or outcurved rims; right-angle or obtuse-angle cross-hatching but no evidence of horizontal scored line above the cross-hatched zone in any examples.

Group 5 Long, markedly outsplayed or outcurved rims; obtuse-angle cross-hatching; presence of horizontal scored line above the cross-hatched zone in some examples.

Group 1

JA 59	3	60	Upright rim, beaded lip. Late 1st to mid-2nd century AD (Holbrook and Bidwell 1991, 95 and Type 11).
JA 60	6	85	Rim slightly splayed; bead lip. Burnished wavy line discernible on necks of FV 17 and 393. Late 1st to mid-2nd century (Holbrook and Bidwell 1991, 95 and Type 12, Gillam 1976, fig 1 no. 1).
JA 62	4	76	Similar to JA 60 but taller. Burnished wavy line on FV 341. Late 1st to mid-2nd century (Holbrook and Bidwell 1991, 95 and Type 12, Gillam 1976, fig 1 no. 1).
<i>Total</i>	13	221	

Group 2

Late 1st to mid-2nd century (Holbrook and Bidwell 1991, 95 and Type 12)

JA 57	3	40	Slightly everted rim; lip barely articulated.
JA 58	2	57	(as JA 57)
<i>Total</i>	5	97	



Fig 16.14 BB1 jar JA 67 in situ in a 3rd-century drain in north rampart Workshop 4.

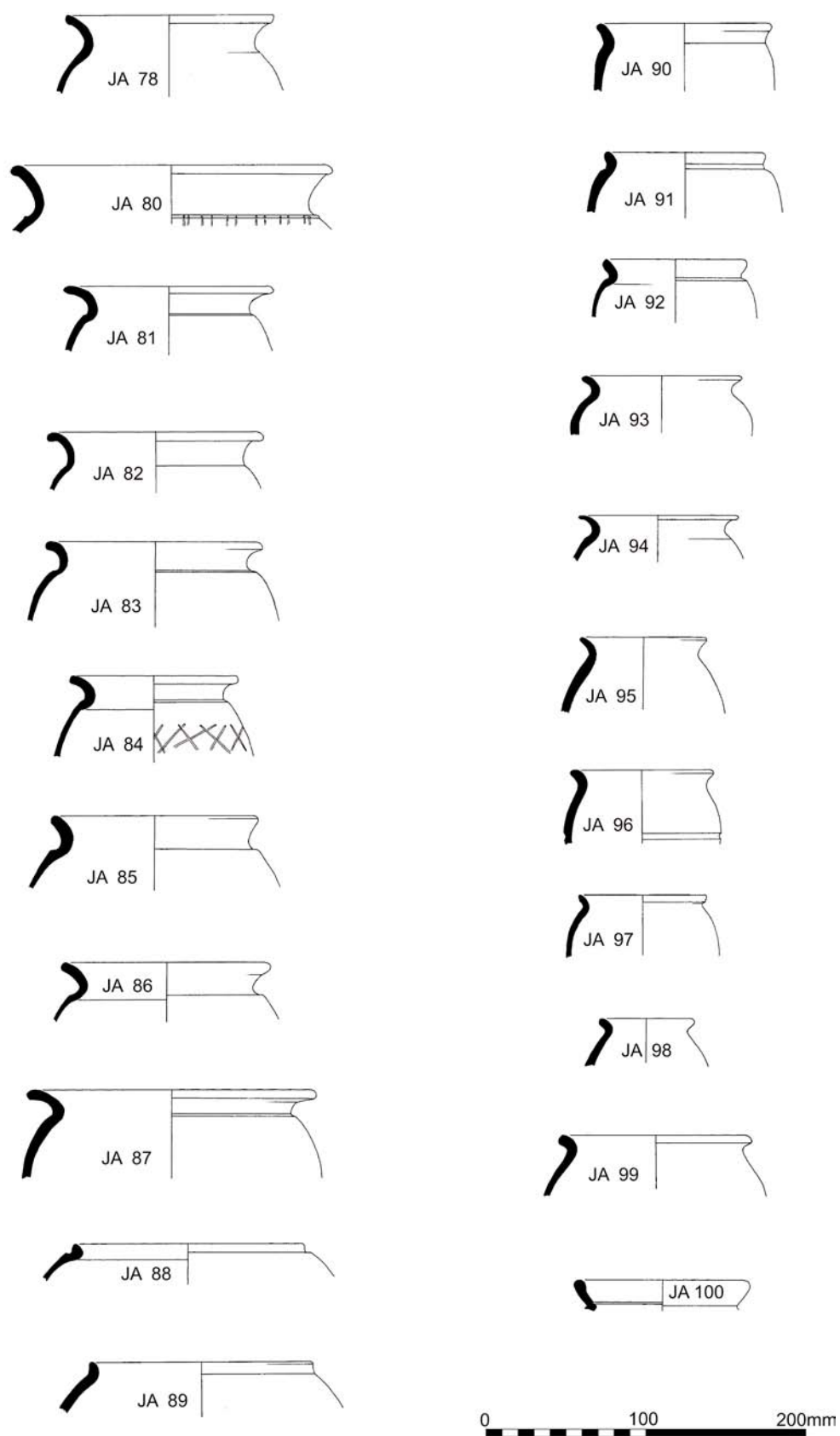


Fig 16.15 Coarseware: the jars (scale 1:4).

Group 3

Mid-2nd to early 3rd century (Gillam 1976, fig 1 nos 3 and 6)

JA 61	8	115	Curved rim, slight bead. No burnished wavy-line decoration discernible on any examples.
JA 65	1	25	Outcurved rim, beaded lip.
<i>Total</i>	9	140	

Group 4

JA 66	3	44	Small vessels, quite thin-walled; out-splayed rim with slightly beaded lip. The angle of intersection of the cross-hatching is almost a right-angle; no scored lines are evident above the cross-hatching on any of the examples. Late 2nd century+ (Holbrook and Bidwell 1991, 96).
JA 69	1	13	Rim outcurved in flattened curve, no bead to lip. Obtuse-angle cross-hatching but no scored line along the top of the cross-hatched zone. Early 3rd century+ (Holbrook and Bidwell 1991, 96).
JA 68	2	50	Small vessel, thin walled; outcurved rim, no bead to lip. Obtuse-angle cross-hatching is visible in FV 1111 but no scored line is visible along the top of the cross-hatched zone. Early 3rd century+ (Holbrook and Bidwell 1991, 96).
JA 72	3	147	Small vessels with outcurved rim with lip of squarish section. Pronounced shoulder (tooled). Featured vessels 309 and 310 show right-angle cross-hatching but no scored line along the top edge of the cross-hatching. Late 2nd century+ (Holbrook and Bidwell 1991, 96).
JA 74	4	41	Medium-sized vessels with short outcurved rims; shoulder present. No cross-hatching visible. <i>c</i> AD 200–250 (Gillam 1976, fig 1 no. 8).
<i>Total</i>	13	295	

Group 5

3rd to 4th century; obtuse-angle cross-hatching seems to have been introduced at the very end of the 2nd century or beginning of the 3rd; the scored line above the zone of cross-hatching had made its appearance before AD 250 (see Holbrook and Bidwell 1991, 97 for discussion).

JA 63	23	510	Long, smoothly outcurved rim with beaded lip. Obtuse-angle burnished cross-hatching can be discerned on featured vessels 736, 1302, 1329, 1373. FV 1329 has a scored line at the top edge of the cross-hatching.
JA 64	7	261	Outcurved rim, thicker than JA 63; no bead to lip; pronounced shoulder; a scored line at the top edge of the cross-hatching can be discerned on featured vessels 817 and 1579; FV 1278 definitely does not have a scored line.
JA 67	1	100	Single vessel similar in form to JA 66; the cross-hatching is obtuse and there is a scored line along the top of the

cross-hatched zone (see Fig 16.14 for view of cooking pot *in situ*). Evidence of repair in antiquity: part of lead rivet surviving.

JA 70	29	529	Long outcurved rim with beaded lip. BB1. The occurrence of obtuse-angle cross-hatching and scored line along the top of the cross-hatched zone is as follows:
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<i>FVN</i>	<i>obt angle</i> <i>xh</i>	<i>scored</i> <i>line</i>	<i>no scored</i> <i>line</i>
191, 208	X	X	
474	X	X	
815			X
1361		X	
1418	X		X

JA 71	3	124	Long, outsplayed rim with beaded lip; pronounced shoulder. Scored line visible in FV 1580.
JA 73	6	170	Large vessels with long outcurved rims of constant thickness; pronounced shoulder. FV 1351 has obtuse-angle cross-hatching and a scored line along the top edge of the cross-hatching.
<i>Total</i>	69	1694	

Jars with everted or outcurved rims in Grey Ware (Figs 16.13 and 16.15)

The variation in fabric colour, composition and texture suggests that these grey wares originated from a number of sources. Within the sample one reasonably distinctive and coherent fabric can be identified. It accounts for 56% of the sample.

Fabric 1

Mostly mid-grey (often bluish-grey) with a well-smoothed or burnished outer surface. The inclusions are sparse in one-third of the sample, and not particularly abundant in the remainder; they are mostly quartz with some black iron-rich grains, and they range up to 1.0mm in diameter

Dating given below is suggested by analogy with corresponding BB1 forms.

JA 85	7	131	Two examples of fabric 1; early to mid-2nd century.
JA 83	23	650	Mostly fabric 1; mid- to late 2nd century.
JA 84	3	108	All fabric 1; mid- to late 2nd century
JA 75	8	335	Four examples of fabric 1; mid- to late 2nd century.
JA 76	2	57	One example of fabric 1; early 3rd century.
JA 77	1	32	Fabric 1; 2nd century.
JA 78	2	85	All fabric 1; 2nd century.
JA 81	10	205	Seven examples of fabric 1; late 2nd to early 3rd century.
JA 82	1	40	Late 2nd century.
JA 86	1	45	Late 2nd to early 3rd century.
JA 87	1	5	3rd to 4th century.
<i>Total</i>	59	1693	

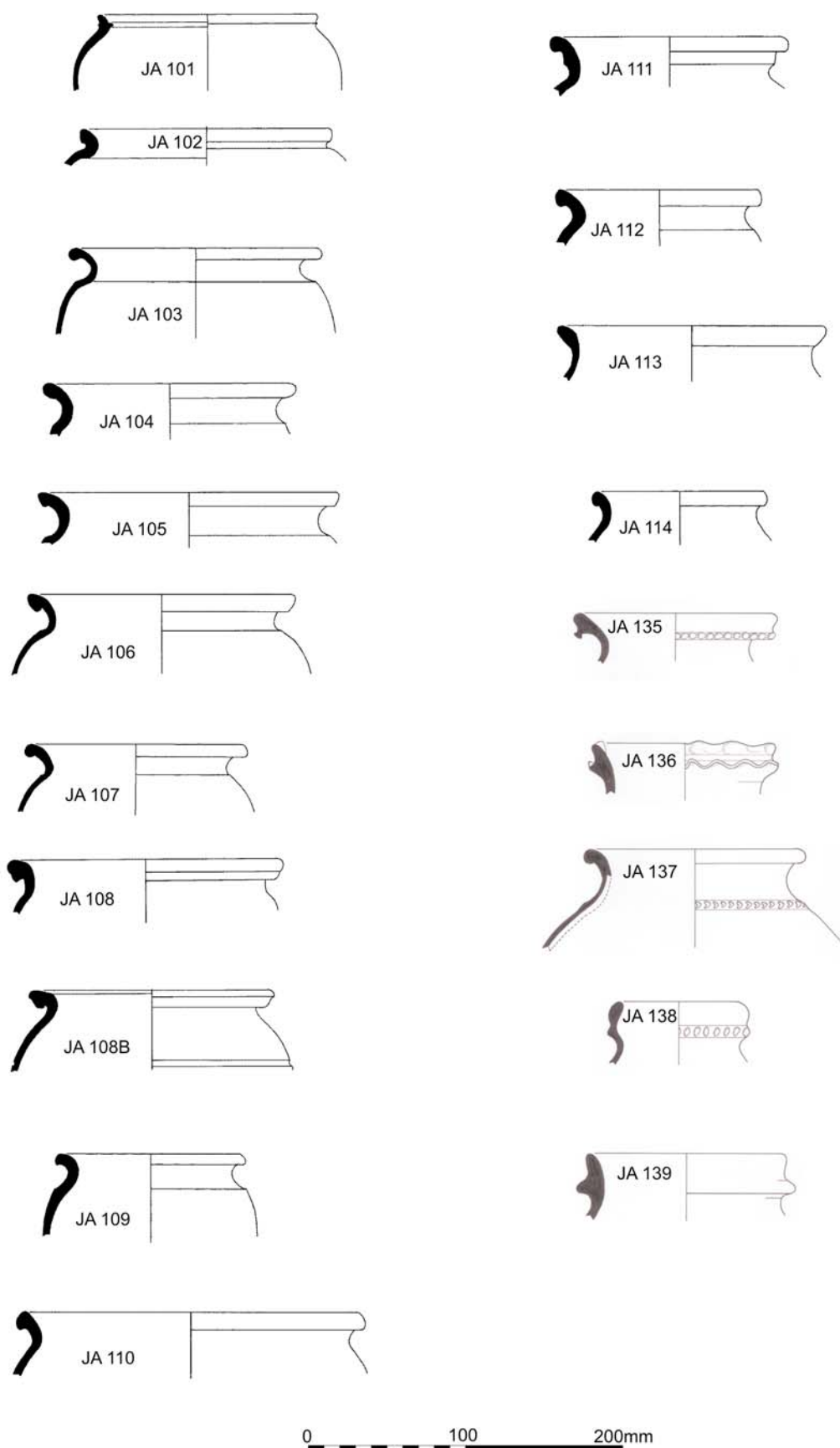


Fig 16.16 Coarseware: the jars (scale 1:4).

Small jars or beakers (Fig 16.15)

JA 88	1	10	Mid-grey-brown, black surface; inclusions: quartz and black iron-rich grains, average up to 0.5mm, max up to 1.0mm. Early to mid-2nd century.	JA 102	1	87	
JA 89	1	7	BB1; early to mid-2nd century.	JA 103	3	90	
JA 90	3	32	BB1; early to mid-2nd century.	JA 104	2	74	
JA 91	2	43	BB1; early to mid-2nd century.	JA 105	3	50	
JA 92	2	41	Pale or mid-grey with darker grey core, and smooth dark grey surface; inclusions: sparse, mostly quartz, up to 1.0mm. Late 1st to early 2nd century.	JA 106	7	111	
JA 93	6	120	Pale grey, grey-brown or orange-brown (1 example) with grey or dark grey core (sometimes with margins in a contrasting shade of grey), smooth dark grey surface (sometimes micaceous – 2 examples); inclusions: 0.1–0.2mm average, max 0.5mm, mostly quartz, with a few iron-rich grains. ?2nd century.	JA 107	1	28	
JA 94	1	13	Pale grey with thick, darker grey core and smooth dark grey surface; inclusions: quartz and black iron-rich grains, average up to 0.5mm, max to 1.0mm. Late 2nd to early 3rd century.	<i>Total</i>	17	440	
JA 95	1	30	Mid-blue-grey with dark grey surface; inclusions: mostly quartz up to 0.2mm.				
JA 96	2	32	Grey or dark orange-brown, smooth dark grey surface; inclusions: quartz, black and red iron-rich grains and limestone, 0.1–0.2mm, max 0.5mm.				
JA 97	1	12	Dark grey, smooth surface; inclusions: quartz and black iron-rich grains, 0.1–0.2mm.				
<i>Total</i>	20	340					

Necked jars in fabric allied to BB2 (Fig 16.16)

Dark orange-brown, red-brown or grey, often with a thin core in a contrasting shade of grey, and a variegated orange-brown and grey surface with a sparkling appearance caused by fine particles of quartz; inclusions: mostly quartz, sometimes well rounded, with a few iron-rich grains and occasional white grains (possibly clay pellets); sizing varies: in JA 102–105 inclusions are usually 0.1–0.5mm; in JA 106 and 107 they are larger, up to 1.0mm.

The basic form has a pronounced shoulder, a well-developed neck and a rim whose lip is accentuated to a greater or lesser extent. JA 102 has a short neck and rim and is essentially a version of Gillam 151 without the lid-seating groove on the inside face of the rim. JA 103 has a beaded lip to the rim. JA 107 has a slightly shorter neck and less pronounced shoulder than JA 103. JA 104 is essentially a larger thicker-walled version of JA 103. In JA 105 the lip has a sloping face and a less pronounced bead. In JA 106 the bead has almost become a flange.

See Jones and Rodwell 1973 (Mucking kilns) and Monaghan 1987. Bidwell and Speak 1994, 230 'Jars with out-curved rims' lists the published examples. Present evidence suggests an emergence in the north in the early 3rd century. *See also* JA 22–24.

Miscellaneous necked jars (Figs 16.16 and 16.18)

JA 108	2	48	Grey or grey-brown; inclusions: quartz and black iron-rich grains, average up to 0.5mm, max up to 1.0mm.
JA 110	1	8	Orange-yellow; inclusions: sparse quartz, up to 2.0mm.
JA 112	1	10	Orange-brown with grey-brown core, and dark grey-brown surface; inclusions: mostly well-rounded quartz, up to 1.0mm.
JA 113	1	11	Black with pale orange-yellow surface; inclusions: quartz <=0.1mm.
JA 114	1	5	Dark grey, mid-grey surface; inclusions: quartz and black iron-rich grains, up to 0.5mm.
JA 145	1	12	Grey-brown; inclusions: up to 0.5mm, quartz, black iron-rich grains and grey clay pellets; silty matrix (<i>see</i> Fig 16.18).
JA 146	1	5	Black, smooth outer surface; inclusions: mostly quartz, up to 0.5mm (<i>see</i> Fig 16.18).
<i>Total</i>	10	157	

Large jars, some with narrow mouths

(Figs 16.16–16.18)

Three groups:

- 1) 2nd to 3rd century
- 2) 3rd to 4th century
- 3) ?Medieval

Group 1

JA 141	1	10	Mid-grey-brown, pale orange-brown surface; inclusions: up to 0.5mm, red and black iron-rich grains, mica; silty matrix.
JA 128	6	144	FV 9 and 1630: orange, pale grey core, smooth dark brown colour-coat; inclusions: red iron-rich grains and quartz, up to 0.5mm, mica <=0.1mm, silty matrix. Remainder: well-fired gritty pale orange with orange-red core; inclusions: quartz up to 2.0mm, red iron-rich grains up to 0.5mm.
JA 129	2	110	Grey or black, burnished outer surface; inclusions: quartz, occasional black iron-rich grains and dark grey clay pellets, average up to 0.2mm, max up to 0.5mm.
JA 130	2	60	Dirty grey-brown, black burnished outer surface; inclusions: 0.5–2.0mm, quartz, black iron-rich grains, large dark grey clay pellets; silty matrix.
JA 126	11	324	Grey or grey-brown, generally with darker surface; inclusions: mostly quartz, some iron-rich grains and clay pellets, 0.1–0.2mm, max up to 1.0mm, occasional silver mica.

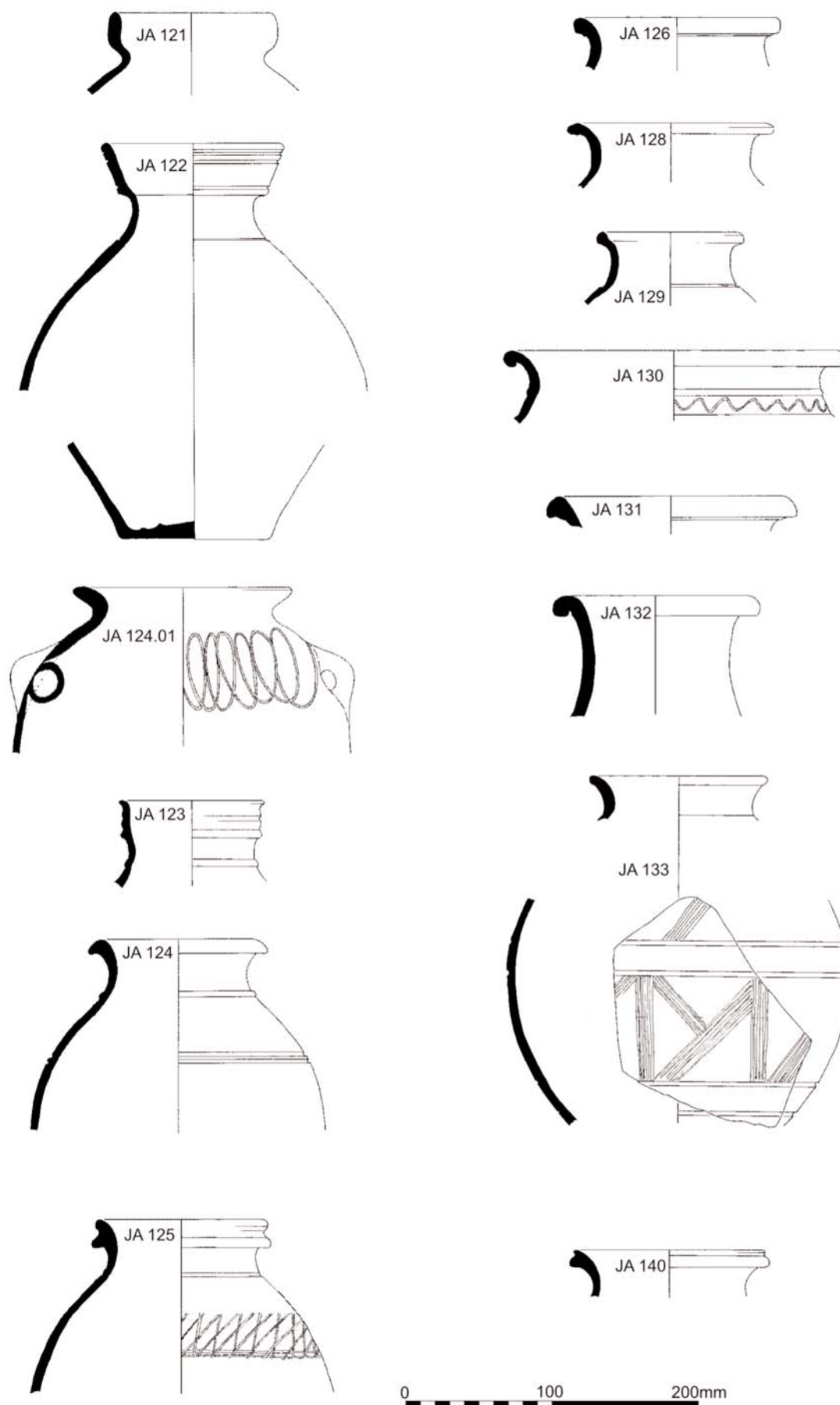


Fig 16.17 Coarseware: the jars (scale 1:4).

JA 137	1	67	Mid-brown with burnished red-brown surface; inclusions: average up to 0.2mm, max up to 1.0mm, much quartz, occasional rock fragments (<i>see</i> Fig 16.16).
JA 132	3	60	Mid-dark grey, smooth outer surface; inclusions: 0.2–0.5mm, quartz, black iron-rich grains and dark clay pellets.
JA 124	7	195	Grey with burnished surface; inclusions: mostly quartz, average up to 0.5mm, max up to 1.0mm.
JA 131	3	38	Orange-brown with grey core; inclusions: up to 2.0mm, quartz, red and black iron-rich grains, dark grey clay pellets, mica; silty matrix.
JA 140	1	5	Orange-brown with browner core; inclusions: sparse, up to 0.2mm, a little quartz and red iron-rich grains; silty matrix.
JA 125	9	179	FV 231, 2416: orange; inclusions: quartz and iron-rich grains, up to 0.3mm, gold mica, in a silty matrix. Remainder: grey or black; inclusions: quartz, iron-rich and dark coloured clay pellets, up to 1.0mm, in a silty matrix.
<i>Total</i>	40	1073	

Group 2

These are likely to have been the products of the later 3rd- and 4th-century industries in East Yorkshire.

JA 111	1	12	Very hard mid-blue-grey with mid-grey-brown surface; inclusions: quartz and black iron-rich grains, average up to 0.5mm, max up to 2.0mm. Probably a Norton product, <i>see</i> Hayes and Whitley 1950, Type 4b.
JA 149	1	10	Gritty dark grey; inclusions: mostly quartz, up to 0.5mm. Probably a Throlam (Holme-on-Spalding Moor) product: <i>see</i> Corder 1932, fig 49, nos 79 and 80.
JA 133	1	30	Grey with smoothed outer surface; inclusions: mostly quartz, 0.2–0.5mm. The girth is decorated with groups of burnished lines which delineate panels filled with St Andrew's cross motifs.
JA 150	1	10	Dull red-brown, black core, burnished black surface; inclusions: mostly quartz, average up to 0.2mm, max up to 1.0mm.
JA 121	8	238	Mid- or dark grey; inclusions: mostly quartz, some black iron-rich grains and dark clay pellets, up to 0.5mm. Probably a Throlam (Holme-on-Spalding Moor) product: <i>see</i> Corder 1932, fig 13.
JA 138	1	60	Dark gritty grey; inclusions: average up to 0.5mm, max up to 1.0mm, mostly quartz, a few black clay pellets (<i>see</i> Fig 16.16).
JA 139	1	5	Dark brown, grey-brown surface; inclusions: mostly quartz, up to 0.5mm (<i>see</i> Fig 16.16). Possibly a Throlam (Holme-on-Spalding Moor) product: <i>see</i> Corder 1932, fig 15.

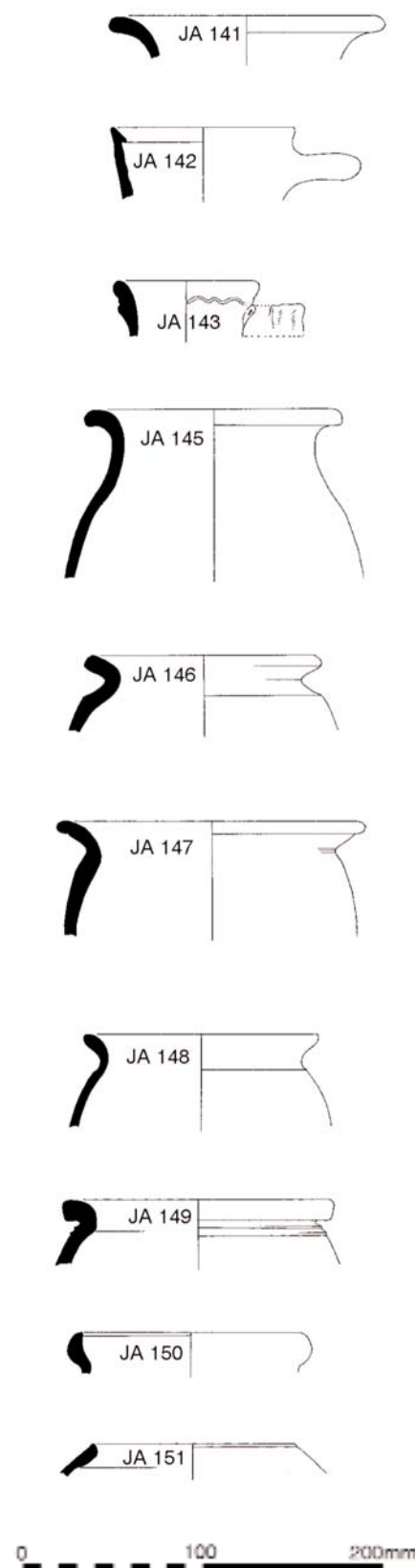


Fig 16.18 Coarseware: the jars (scale 1:4).

JA 135	2	48	FV 681: orange with paler core and burnished surface; inclusions: sparse, up to 0.2mm, quartz, red iron-rich grains, orange clay pellets and gold mica; silty matrix (<i>see</i> Fig 16.16).
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			FV 2200: black, dark grey surface with pale grey thin, subsurface margins; inclusions: average up to 0.2mm, max up to 1.0mm, much quartz, some black iron-rich grains and clay pellets; fused matrix.	M 13	1	14	Pale yellow; inclusions: average 0.1–0.2mm, max up to 1.0mm, quartz and red iron-rich grains. AD 130–80?
JA 136	1	30	Grey, smooth surface; inclusions: average up to 0.1mm, max up to 0.5mm, much quartz and black iron-rich grains, some mica <=0.1mm (<i>see</i> Fig 16.16).	M 5	1	8	Orange-brown; inclusions: up to 0.5mm, quartz, limestone and black vitreous grains. AD 140–80.
JA 122	1	100	Dark grey, dark grey surface with pale grey thin subsurface margins; inclusions: sparse quartz, up to 1.0mm, set in a silty matrix. Probably a Crambeck product, <i>see</i> Corder 1928.	M 6	1	83	Orange-brown, mid-blue-grey core; inclusions: average up to 0.5mm, max up to 1.0mm, quartz and iron-rich grains; trituration grits: quartz and grains of fine-grained sandstone, 1.0–2.0mm. AD 140–80.
JA 123	1	30	Grey with a burnished surface; inclusions: quartz and occasional black iron-rich grains, and dark clay pellets, up to 0.4mm, set in a silty matrix. Possibly a Crambeck product, <i>see</i> Corder 1928.	M 7	1	49	Orange-yellow, mid-grey core, off-white surface; inclusions: average up to 0.5mm, max up to 1.0mm; trituration grits: fine-grained sandstone 1.0–2.0mm. AD 160–200.
JA 124	1	1	37				Pale pink, white surface; inclusions: sparse, average up to 0.5mm, max up to 1.0mm, mostly quartz. Corbridge (form stamped by Bellicus). AD 150–200.
			Off-white, burnished mid-grey surface; inclusions: mostly quartz, occasional black iron-rich grains, average <=0.1mm, max up to 1.0mm. A Crambeck product, <i>see</i> Corder 1928, pl 4.	M 10	1	20	Very pale yellow; inclusions: average up to 0.5mm, max up to 1.0mm; trituration grits: quartz and occasional grains of ?granite, 3.0–4.0mm. Similar form to M9. Corbridge? The fabric used by Bellicus and others at Corbridge does not usually have granite in the trituration grits (though occasional grains of feldspar are present). A vessel in a similar form, with granite in the trituration grits is known from Chester-le-Street (Park View School, context 18 – unpublished). AD 150–200?
Total	20	610					Corbridge fabric – very pale yellow, pale orange-pink surface; inclusions: rounded quartz up to 0.5mm, mica <0.1mm; trituration grits: grains of slag average up to 1.0mm, max up to 8.0mm. Late 2nd to early 3rd century.
Group 3 (Fig 16.18)							
JA 142	1	5	Rim with lid-seating, remains of strap handle. Orange, cream-slipped surface; inclusions: up to 0.5mm, mostly quartz, some red and black iron-rich grains; silty matrix.	M 23.1	1	13	Corbridge fabric; pale yellow, orange-yellow surface; inclusions: average <=0.1mm, max up to 0.5mm, mainly quartz, a few red iron-rich grains. Late 2nd to early 3rd century.
JA 143	1	10	Small vertical strap handle below rim, frilled decoration between handle and lip. Red with red-brown surface; inclusions: fine quartz, black iron-rich grains and mica, <=0.1mm.	M 23.2	1	5	Corbridge fabric. Pale yellow, inclusions: up to 0.5mm, mainly quartz, some red iron-rich grains; silty matrix. Late 2nd to early 3rd century.
Total	2	15		M 23.3	1	12	Corbridge fabric. Pale yellow, inclusions: up to 0.5mm, mainly quartz, some red iron-rich grains; silty matrix. Late 2nd to early 3rd century.
Mortaria (Figs 16.19–16.21)							
M 1	1	21	Orange-red, mid-grey core, white slipped surface; inclusions: average up to 0.5mm, max up to 1.0mm, quartz and red iron-rich grains. AD 100–150.	M 14	3	48	Mancetter-Hartshill. Very pale yellow (cream); inclusions: sparse, average 0.1–0.2mm, max up to 1.0mm, mostly quartz, occasional iron-rich grains. AD 130–80.
M 2	1	13	Orange, very pale yellow slip; inclusions: up to 0.5mm, quartz, red iron-rich grains and black vitreous grains. AD 120–60.	M 15	2	25	Mancetter-Hartshill. White; inclusions: sparse, 0.1–0.2mm, quartz and red iron-rich grains; trituration grits: dark coloured fine-grained rock fragments and quartz, 1.0–2.0mm. AD 160–220.
M 3	1	25	Orange-red, pale yellow slip on inner surface, mostly worn away; inclusions: up to 0.5mm, quartz, black iron-rich grains, limestone and black vitreous grains; trituration grits: quartz, some polycrystalline, <i>c</i> 2.0mm. AD 110–60.	M 16	4	101	Mancetter-Hartshill. AD 160–220.
M 4	1	25	Dull orange-red, pale yellow slip; inclusions: average <=0.1mm, max up to 1.0mm, quartz, red iron-rich grains and limestone; trituration grits: quartz and grains of micaceous sandstone, 1.0–2.0mm. AD 130–60.	M 20	4	56	Mancetter-Hartshill. AD 160–220.
M 11	1	7	Off-white; inclusions: average <=0.1mm, max up to 0.2mm, mostly quartz. AD 130–80.	M 21	1	15	Mancetter-Hartshill. AD 160–220.
M 12	1	11	Pale grey, pale yellow surface; inclusions: average quartz <=0.1mm, quartz and red iron-rich grains up to 0.5mm. AD 130–80.	M 17	7	82	Mancetter-Hartshill. AD 180–230.
				M 18	2	29	Mancetter-Hartshill. AD 180–230.
				M 35	1	15	Colchester?: Pale yellow, pink core, soft powdery surface; inclusions: sparse, 0.1–0.2mm, red iron-rich grains, quartz

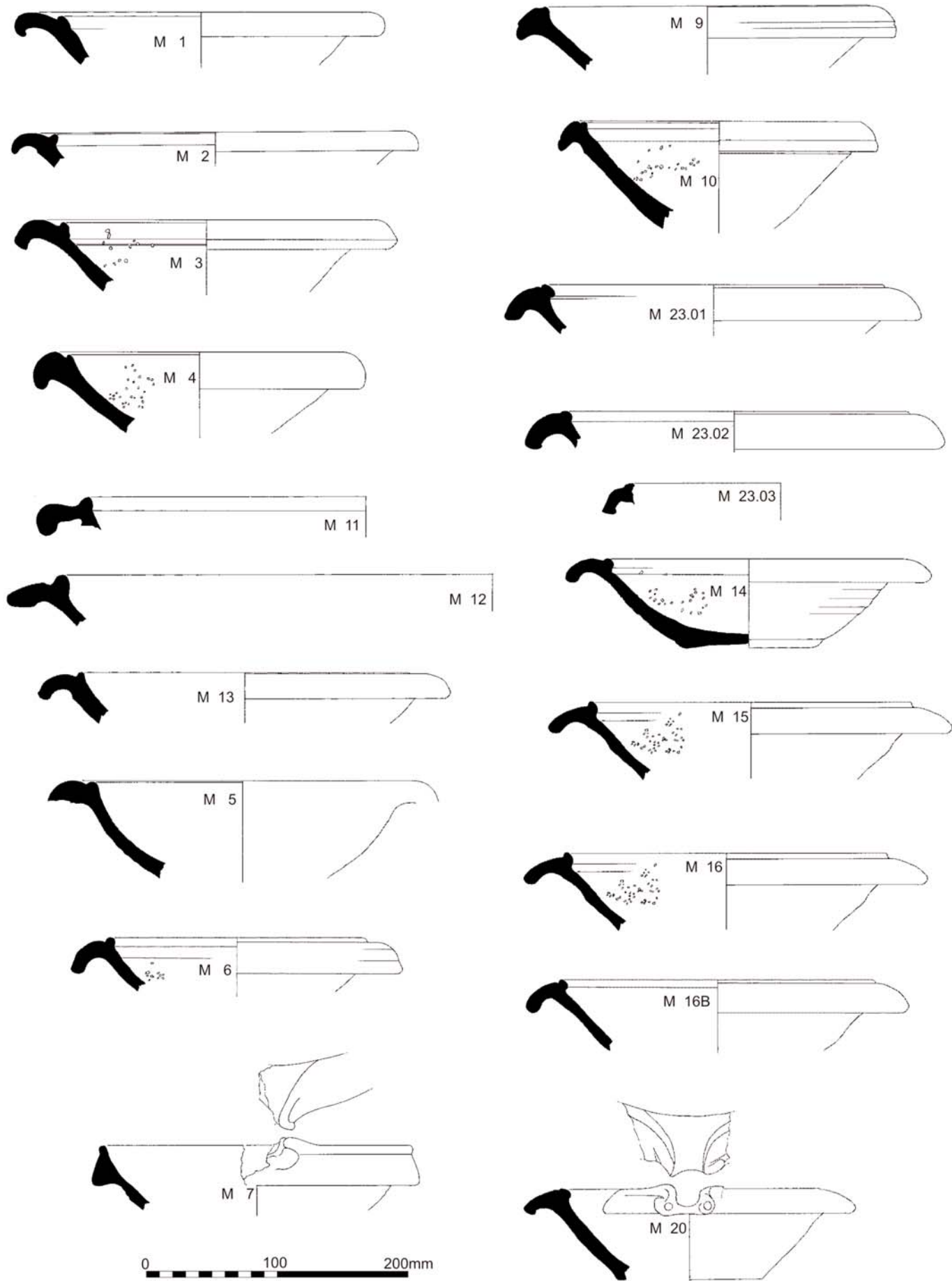


Fig 16.19 Coarseware: the mortaria (scale 1:4)

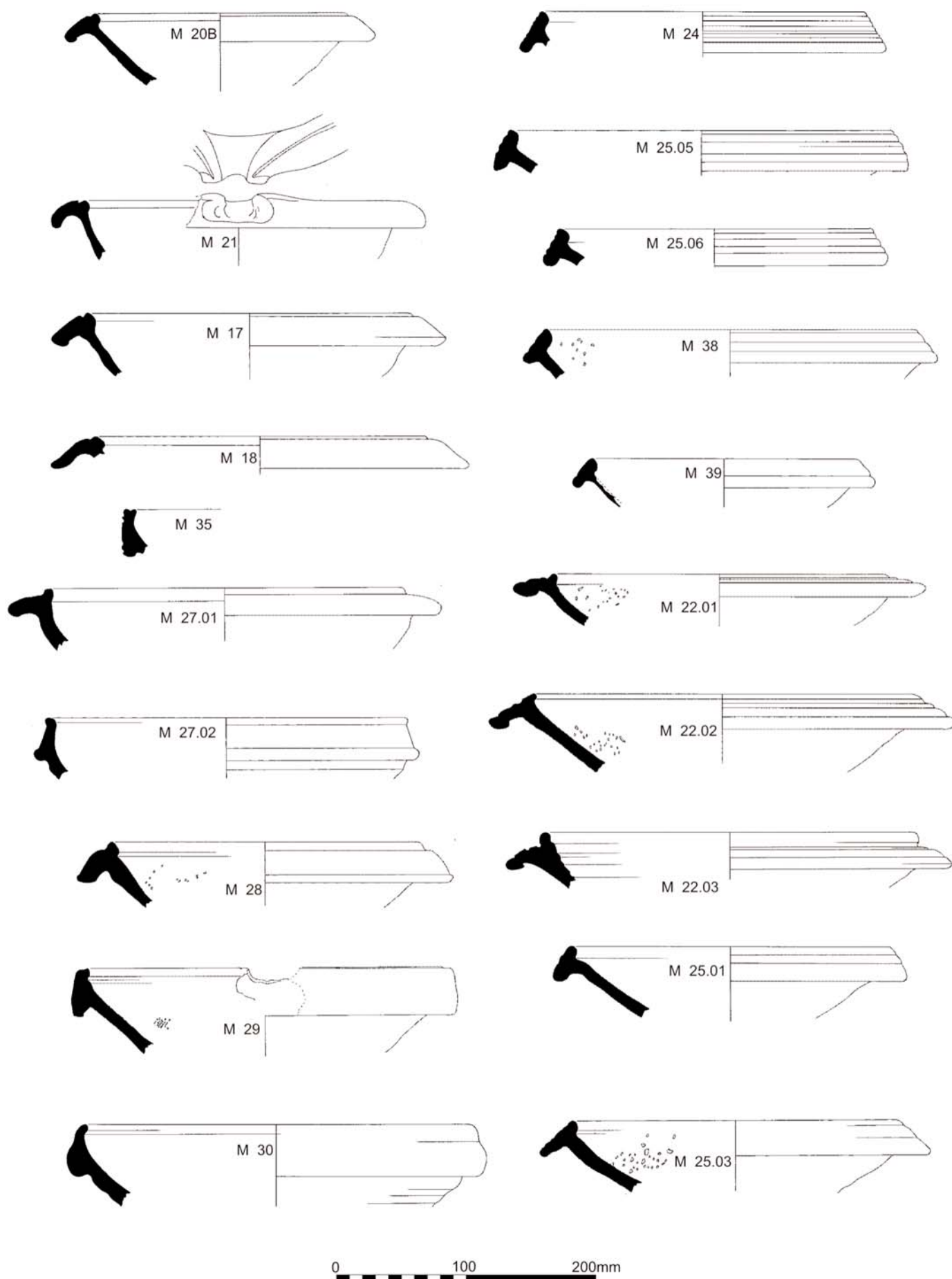
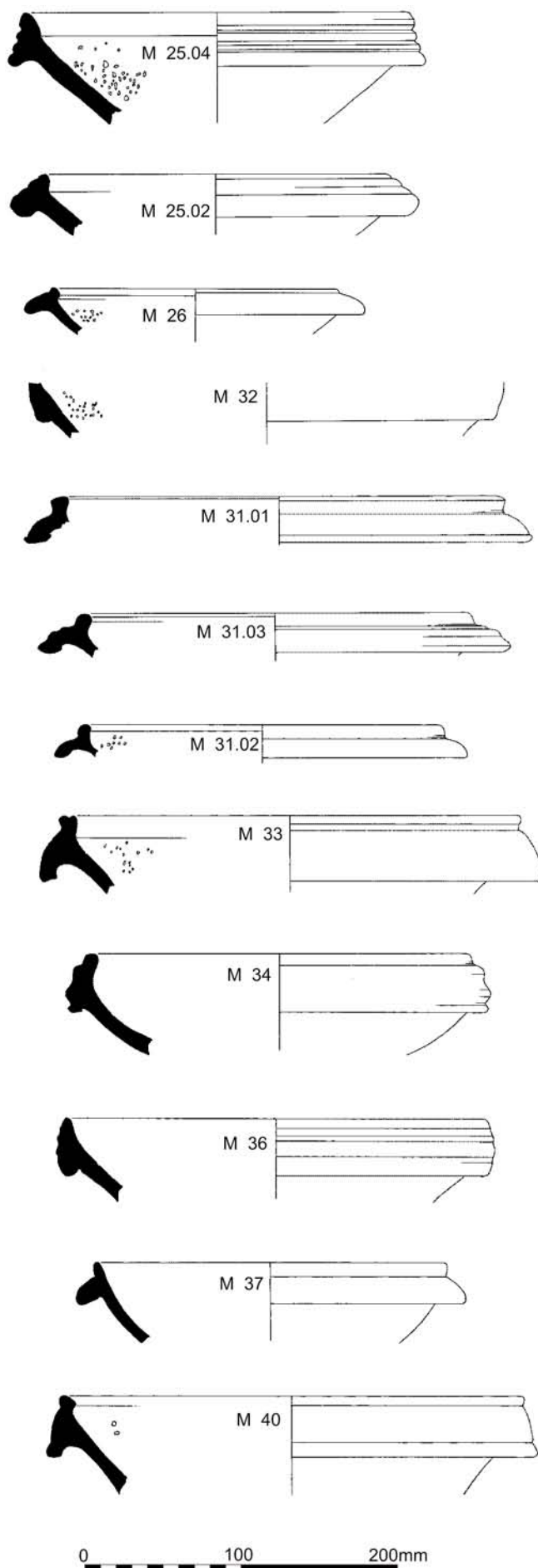


Fig 16.20 Coarseware: the mortaria (scale 1:4).



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|--------|----|-----|---|
| M 27.1 | 1 | 7 | Raetian: orange-brown, dark orange-brown slip on outer surface; inclusions: average up to 0.5mm, max up to 1.0mm, mostly quartz, some red iron-rich grains and occasional clay pellets up to 4.0mm; mica ≤ 0.1 mm; silty matrix. Later 2nd to early 3rd century. |
| M 27.2 | 1 | 25 | Orange with black core and dirty cream slip; inclusions: average 0.1–0.2mm, max up to 0.5mm, mostly quartz, a few iron-rich grains and clay pellets up to 2.0mm. |
| M 28 | 1 | 23 | Possibly Carlisle area; orange-brown with red core, brown surface; inclusions: average 0.1–0.2mm, max up to 0.5mm, mostly quartz, a few black iron-rich grains and clay pellets; a little mica < 0.1 mm. Second half of 2nd century. |
| M 29 | 5 | 93 | ?Rhineland; cream; inclusions: up to 1.0mm, mostly quartz, some red iron-rich grains; silty matrix. <i>c</i> AD 150–250. |
| M 30 | 1 | 89 | North Gaulish White Ware 4; Cream; inclusions: sparse, average 0.1–0.2mm, max up to 0.5mm, mostly quartz, a few black iron-rich grains and mica. <i>c</i> AD 150–250. |
| M 24 | 10 | 124 | Mancetter-Hartshill: FV 2291, 2249, 2252, 2253, 2192, 2197?, 1333?, 2062, 2412, 2330. |
| M 24 | 5 | 79 | Corbridge: 2457, 2289, 1126, 2191, 1558. |
| M 24 | 4 | 56 | Undecided: 2251, 1138, 2240; AD 240–350. |
| M 25.5 | 1 | 25 | Mancetter-Hartshill?; AD 240–350. |
| M 25.6 | 1 | 25 | Mancetter-Hartshill?; AD 240–350. |
| M 38 | 4 | 59 | Mancetter-Hartshill; AD 240–350. |
| M 39 | 1 | 11 | Mancetter-Hartshill; AD 240–350. |
| M 22.1 | 21 | 264 | Lower Nene Valley. very pale yellow or orange, sometimes with pale grey core, pale orange slipped surface; inclusions: mainly ≤ 0.1 mm, occasionally up to 2.0mm; mainly quartz, also red iron-rich grains, mica < 0.1 mm, white or orange clay pellets; trituration grits: slag <i>c</i> 2.0mm, sometimes up to 4.0mm. 3rd century. |
| M 22.2 | 1 | 43 | Lower Nene Valley; 3rd century. |
| M 22.3 | 1 | 10 | Lower Nene Valley; 3rd century. |
| M 25.1 | 4 | 89 | Yorkshire: possibly Cantley (Cregeen 1957, 30–41) or Catterick vicinity?: Orange-brown or red, cream slip; inclusions: average 0.1–0.2mm, max up to 1.0mm, much quartz, some red iron-rich grains; trituration grits: grains of slag up to 4.0mm; 3rd to mid-4th century? |
| M 25.3 | 14 | 252 | Yorkshire: possibly Cantley (Cregeen 1957, 30–41) or Catterick vicinity; 3rd to mid-4th century? |
| M 25.4 | 2 | 47 | Yorkshire: possibly Cantley (Cregeen 1957, 30–41) or Catterick vicinity?; 3rd to mid-4th century? |
| M 25.2 | 5 | 71 | Corbridge? White or pale yellow; inclusions: up to 1.0mm, mostly quartz, occasional red iron-rich grains and |

Fig 16.21 Coarseware: the mortaria (scale 1:4).

			quartz-rich clay pellets; silty matrix; trituration grits: grains of slag, 4.0–8.0mm. 3rd to mid-4th century?
M 26	4	44	Crambeck white ware: pale cream with a cream surface; hard with an irregular fracture and a rough feel; the composition, relative proportion and texture of the inclusions is similar to that of the reduced ware. The main difference is that quartz is common rather than abundant and slightly coarser; the trituration grits are abundant, well-sorted, angular grains of slag, 1.5–5.5mm, average 3.0–4.5mm. <i>c</i> AD 270+
M 26	21	352	Crambeck Parchment Ware: <i>see</i> bowls BO 121–126.
M 32	1	4	Oxford white ware; off-white or cream, dark blue-grey core; inclusions: mostly <=0.1mm, some up to 0.2mm; mostly quartz, a little red iron-rich grains and gold mica <0.1mm; trituration grits: well-sorted rounded quartz up to 2.0mm. Young (1977) Type M 14 – AD 180–240.
M 31.1	1	17	Oxford white ware: Young (1977) Type M 17 – AD 240–300.
M 31.3	1	5	Oxford white ware; Young (1977) Type M 17 – AD 240–300.
M 31.2	1	20	Oxford red colour-coated ware: orange-brown with slip of similar colour; inclusions: quartz 0.1–0.2mm and some mica in a silty matrix; trituration grits: well-sorted, rounded quartz up to 2.0mm. Young (1977) Type C – AD 100 to 4th century.
M 33	3	24	Orange-brown, pale grey-brown core; pale yellow slipped surface; inclusions: average up to 0.5mm, max up to 1.0mm, mostly quartz, a few red iron-rich grains and pale yellow clay pellets; trituration grits: slag, 2.0–4.0mm. 3rd to 4th century?
M 34	1	18	Orange-brown, pale yellow slipped outer surface; inclusions: average 0.1–0.2mm, max up to 1.0mm, mostly quartz, a few red iron-rich grains and rock fragments. 3rd to 4th century?
M 36	1	5	Orange-brown, grey-brown, pale yellow slip; inclusions: up to 0.5mm, much well-sorted quartz, a few iron-rich grains; 3rd to 4th century?
M 37	1	8	Soft, pale orange, pale brown core; inclusions: sparse, 0.1–0.2mm, occasional quartz and red iron-rich grains; silty matrix. 3rd century?
M 40	1	11	Slightly pinkish-white; inclusions: sparse, 0.1–0.2mm, occasional red iron-rich grains and mica. 3rd century?

Stamped mortaria (Fig 16.22)

K F Hartley

The small number (five) of mortarium stamps in more than 400kg of coarse pottery recovered during eight seasons of excavation is striking. Moreover, the overall total of stamped mortaria from Housesteads is ten, again only a small total.

1. 6671 H20:4:44 H20 Phase 3b

Hard, creamy white, fine-textured fabric with moderate, ill-sorted quartz, and fewer grey, black and orange-brown (?slag) inclusions. Trituration grit consists of hard blackish material. Dr 33cm.

Two stamps of Sennius are impressed close together. Sennius worked at Mancetter, Warwickshire (Hemsley 1961, 11). At least 56 of his mortaria are known from sites other than Mancetter, throughout the midlands and north of England. This includes 17 found in a gutter deposit at Wroxeter, in a similar context to an even larger deposit of samian ware (Atkinson 1942, 127–9 and 279–80). The date of his work rests largely on the date of this deposit, where the samian is dated AD 160–80 and the latest associated coins (worn), are dated AD 155. Sennius used only one stamp type and the range of his forms is fairly limited. A date of AD 150–70+ seems to be indicated, though his total absence from Scotland may indicate an initial date nearer to AD 155. He was one of the latest generation of potters to stamp their mortaria in the Mancetter-Hartshill potteries.

2. 7669 H20:4:19 H20 Phase 3b

Fine-textured, rather powdery, cream fabric with moderate+ inclusions of small quartz with some orange-brown material. The surviving trituration grit is red-brown and dark brown. Dr 30cm.

The incompletely impressed stamp, JARRI, is from the most commonly used stamp type of Sarrius, the most prolific of all British potters stamping mortaria in the 2nd century. It was used primarily in his most important workshops in the Mancetter-Hartshill potteries but also at Rossington Bridge and at Bearsden on the western sector of the Antonine Wall. This is clearly a product of the midland factory (for further details of his career see Buckland *et al* 2001, 45–7 and Breeze, forthcoming).

The overall date of Sarrius's activity is assessed from the abundance of his work at forts on the Antonine Wall, its absence from Pennine forts unoccupied *c* AD 120–60, his rim-forms and his possible association with Iunius at one of his Mancetter kilns. A stamp from Verulamium is dated *c* AD 155–60 (Frere 1972, no. 35) and one is recorded from a Period 1a deposit at Birdoswald (Birley 1930, 187, no. 2, 'with illegible stamp'). The evidence points to his overall activity lying within the period AD 135–70 and it is likely that this was one of his later dies.

3. 6779+ H20:5:36, H20 Phases 3b and 4a FV 1233 M7 6829 H20:4:23

Five stamped sherds (three joining), from a mortarium in hard, orange-brown fabric with grey core and cream slip. A further 15 sherds were preserved from this vessel. All but one of the stamped sherds occurred in context H20:5:36. Inclusions: fairly frequent, mostly quartz with rare red-brown and black (?slag). The trituration grit consists of well-mixed, ill-sorted, quartz, red-brown sandstone and haematite. Dr 25cm.

This wall-sided mortarium has one stamp impressed upside down along the wall, reading RBIVSII, with badly damaged R and reversed S, and the upper part of the R of the complementary stamp, also upside down. The potter's name is uncertain, but the two verticals may stand for FE, though it is not a normal use. His mortaria are now known from Bainbridge; Catterick; Corbridge (3); Hartshill; Hibaldstow; Housesteads and probably the York area (Yorkshire Museum) in England, and from Bothwellhaugh in Scotland. All but the Bainbridge, Catterick and Housesteads mortaria are in the white fabric typical of the Mancetter-Hartshill potteries, where he undoubtedly worked. It is not certain where the other three mortaria were made. Orange-brown fabric was occasionally used for mortaria in these potteries, but even that rare use is



Fig 16.22 The mortaria stamps (scale 1:2).

almost entirely, if not entirely, limited to the early 2nd century. The fabric is not considered to have been produced at Rossington Bridge (P Buckland pers comm); the fabric is similar to one believed to have been produced in the Catterick area but only further finds or more detailed examination of the fabric will clarify the issue. The mortarium at Bothwellhaugh and the wall-sided form used for all three mortaria indicates an Antonine date and his remaining rim-profiles, all incidentally flanged, fit such a date, probably within the period AD 140–70. Slightly worn but the slip has only been worn away in bands on the interior, surviving in the basal area; it is only worn away round the edge of the underside of the base.

4. 2683 H13:10:20 (probable backfill of Bosanquet trench) Flange fragment in cream fabric, softened through weathering, with very ill-sorted quartz and red-brown (some very large) inclusions. Part of the V and the upper tip of the D survives from a retrograde stamp of Cudrenus. Mortaria of his are now known from the following sites: Binchester (2); Carrawburgh; Chesters (2–3); Vindolanda (2); Corbridge (at least 13–26); Halton Chesters; Housesteads; Ingleby Barwick; South Shields and Newstead. Cudrenus used only one stamp type and his fabric, distribution and rim-profiles all support activity at Corbridge, and J P Gillam noted similarities in his work to that of the Saturninus whose die was found there (Birley and Gillam 1948, 179). His work is confined to north-eastern England with only one example from Scotland; at least half of his mortaria outside Corbridge are from sites on Hadrian's Wall. AD 155–80+ is the optimum date for his work since there is no question of it pre-dating the Antonine Wall.

5. (no SF no.) H20:6:51 H20 Phase 3b FV 1108 A fragment with almost complete rim-section in hard, fine-textured cream fabric with moderate quartz and red-brown and black (?slag) inclusions. No trituration grit survives. The vessel can be attributed on fabric and the stamp-border to the Mancetter-Hartshill potteries. One corner of a stamp survives with fine borders composed of diagonal bars. It is almost certainly a stamp of Iunius, with part of the initial IVN[...], with reversed N. When a larger example preserving this corner is found it will be possible to get a secure identification. The optimum date based on the use of this type of fine border, which was mainly used by Iunius and Maurius, is within the period AD 140–70.

Flagons (Fig 16.23)

Type	Total	Eve	Fabric
FL 1	1	5	Red, smooth black outer surface; inclusions: average 0.1–0.2mm, max up to 0.5mm, quartz red iron-rich grains and mica.
FL 2	1	5	Pale pink, pale yellow surface; inclusions: up to 0.5mm, iron-rich grains; silty matrix.

FL 3	1	4	Cream; inclusions: sparse, 0.1–0.2mm, mostly quartz; silty matrix.
FL 4	1	6	Brown, with dark grey core, and black surface; inclusions: sparse, up to 1.0mm, quartz and red iron-rich grains; silty matrix.
FL 5	1	5	Dull orange brown, dark grey smooth surface; inclusions: average 0.1–0.2mm, max up to 1.0mm, quartz, red and black iron-rich grains and fine mica (<0.1mm).
FL 6	1	7	Orange pink; inclusions: up to 0.5mm, mostly quartz.
FL 7		5	Orange, browner core, dark brown slipped surface; inclusions: up to 0.5mm, quartz and a few red iron-rich grains.
FL 8	1	3	Pale orange; inclusions: up to 0.5mm, quartz and a few red iron-rich grains.
FL 9	1	5	Orange, smooth surface; inclusions: average <=0.1mm, max up to 1.0mm, quartz, occasional red iron-rich grains, and orange clay pellets.
FL 10	1	5	Pale orange; inclusions: average <=0.1mm, max up to 1.0mm, quartz, occasional red iron-rich grains, and orange clay pellets; same fabric as FL 9.
FL 11	1	5	Pale yellow, black core; inclusions: <=0.1mm, much quartz and few black iron-rich grains (not illustrated).
FL 12	1	7	Dark red with smooth black surface; inclusions: 0.1–0.2mm, quartz and a few iron-rich grains; well-fired.
FL 13	1	4	Orange brown; inclusions: average <=0.1mm, max up to 0.5mm, quartz, a few iron-rich grains, fine mica (<0.1mm); silty matrix.
FL 14	1	30	Pale grey, with dark grey core; inclusions: sparse, 0.1–0.2mm, quartz and a few black iron-rich grains; silty matrix.
FL 15	1	3	Pale yellow; inclusions: 0.1–0.2mm, quartz, black and red iron-rich grains, mica.
FL 16	1	5	Pale yellow; inclusions: up to 1.0mm, quartz and a few rock fragments.
FL 17	1	5	Cream; inclusions: up to 0.5mm, quartz and red iron-rich grains.
FL 18	1	6	Dark grey; inclusions: average 0.1–0.2mm, max up to 2.0mm, mostly quartz, a few black clay pellets up to 2.0mm.
FL 19		4	Gritty orange-brown; inclusions: up to 0.5mm, much quartz, some limestone, a few red iron-rich grains.

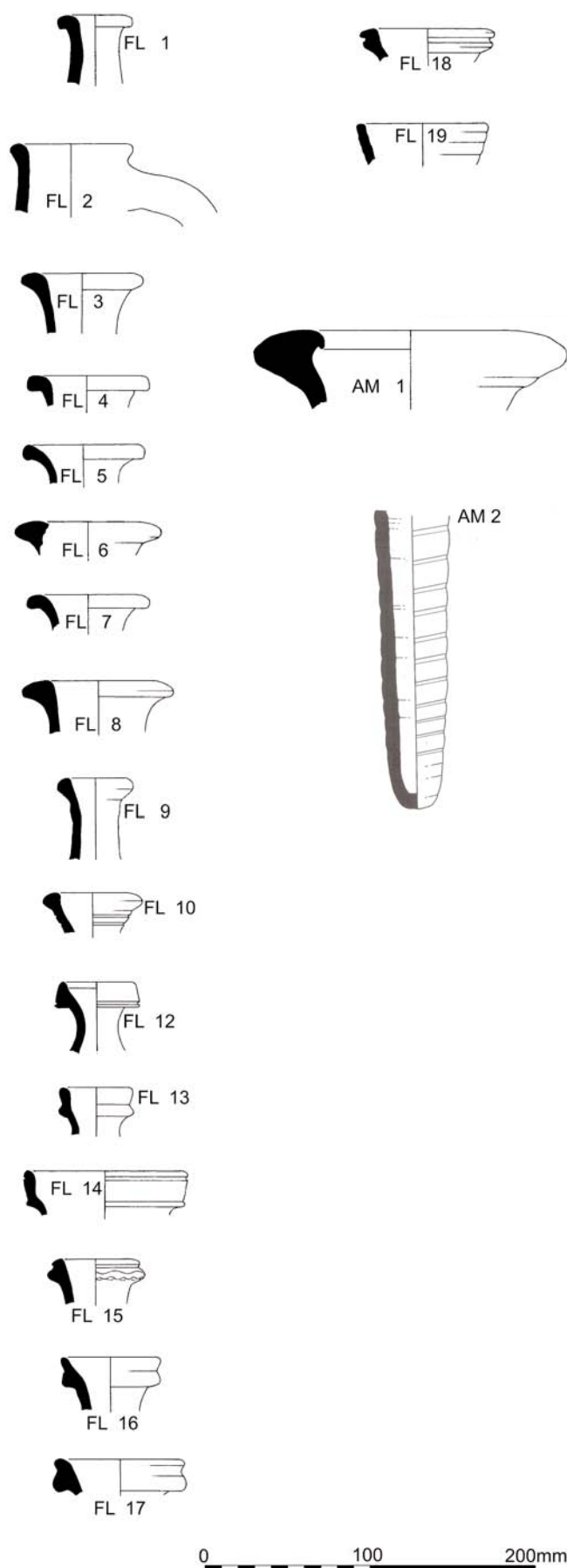


Fig 16.23 Coarseware: the flagons and amphorae (scale 1:4).

Amphorae (Figs 16.23–16.24)

Dressel 20

The amphora is distinguished by a large globular body with thick, sharply bent or oval-shaped handles; short neck, often with an internally concave rim and a small basal knob. The production centre lay in Baetica (southern Spain), along the River Guadalquivir, between Seville and Cordoba. It was the most common amphora type in the Roman West from the late 1st to the early 3rd centuries.

AM 1. Dressel 20 = Baetican (Late) amphorae 2 (BAT AM 2) of the National Fabric Reference Collection (Tomber and Dore 1998, 85). It is distinctive in its dense, very hard and fine appearance with a thick grey core and buff external surface. The external surface is normally slipped or self-slipped to pale brown or buff.

Carrot amphora?

Hollow, ribbed spike of an amphora. The surviving length is 180mm and the diameter at the broken top end only 45mm, suggesting that the complete vessel would have had a narrow body. This is supported by its *in situ* findspot in a stone setting close to the inner face of the west wall of the Barrack XIII centurion's quarters (see Fig 16.24); only a narrow vessel could have stood upright at this spot. It is difficult to identify the exact form involved. In a British context, its resemblance to the shape of a carrot amphora (Peacock and Williams 1986, fig 42; Camulodunum 189, Peacock and Williams Class 12 amphorae) or the even later Chalk 6 type (ibid, fig 118; Peacock and Williams Class 50 amphorae) has been noted, though with the proviso that the fabric of the Housesteads example is very different from those commonly associated with the above forms (D F Williams pers comm, 1989). However, in form the typology of the carrot amphora is rather heterogeneous, including vessels of different sizes, rim diameters, tapered bodies and hollow spikes. Examples very similar to the Housesteads 'base spike' are known and it may well be that the fragment does indeed come from a carrot amphora, but one that was manufactured at a source as yet unidentified (G Forster pers comm).

AM 2. Hollow, ribbed spike of an amphora in a hard, roughish sandy fabric, light pinkish-buff in colour. Contains frequent, well-sorted, subangular grains of quartz, normally under 0.30mm in size, together with flecks of mica and a little ?chert and quartzite, all set in an anisotropic clay matrix. The 'carrot amphora' and Chalk amphora fabrics are respectively Peacock and Williams Class 12 amphorae (P&W AM 12) and Peacock and Williams Class 50 amphorae (P&W AM 50) of the National Fabric Reference Collection (Tomber and Dore 1998, 106, 110).

Beakers (Figs 16.25–16.26)

Symonds = Symonds 1992.

Type	Total	Eve	Fabric
BK 1	1	30	Bag-shaped beaker with fine, everted rim; Central Gaulish fabric (Symonds Group 10). Mid-2nd to mid-3rd century.
BK 2	1	15	Bag-shaped beaker (possibly with barbotine decoration); Central Gaulish fabric (Symonds Group 10 or 11). Mid-2nd to mid-3rd century.



Fig 16.24 Stone setting H13:1:129 with amphora spike in situ in the centurion's quarters.

BK 3	1	15	Body sherd from an unindented globular beaker; Central Gaulish fabric (Symonds Group 9). Mid-2nd to mid-3rd century.	BK 15	3	5	Wilderspool type; pale orange, red core, mid-brown surface; inclusions: sparse quartz and large orange-brown clay pellets up to 2.0mm, set in a silty matrix. <i>c</i> AD 100–160.
BK 4	4	83	Rim sherds from globular beakers; either plain (Symonds Group 9) or indented (Symonds Group 14); Central Gaulish fabric. Early 3rd century (see Symonds 1992, 26).	BK 16			Base sherd of a vessel such as BK 15 0.
BK 5			Wall sherd from a pedestal beaker with barbotine decoration (Symonds Group 11); Central Gaulish fabric. Mid-2nd to mid-3rd century.	BK 17	1	20	Everted rim beaker; Wilderspool type; probably originally rough-cast; pale orange, pale brown core, mid-brown surface; inclusions: mainly ≤ 0.2 mm, some up to 0.5mm; quartz and red iron-rich grains set in a silty matrix. <i>c</i> AD 100–160.
BK 6			Base sherd from a pedestalled vessel: either a beaker (such as Symonds Group 11), or possibly a cup (such as Symonds Group 7, or 8); Central Gaulish fabric. Mid-2nd to mid-3rd century (not illustrated).	BK 18			Wall sherds from pentice beakers; North Gaulish Reduced ware (NOG RE); made in NW Gaul, probably in the Somme Valley area; imported into Britain in the late 2nd and early to mid-3rd centuries (Richardson and Tyers 1984; Richardson 1986) (not illustrated).
BK 7	9	206	Rim sherds from indented beakers (Symonds Groups 33, 34 or 35); Trier fabric ('Moselkeramik'). 3rd century.	BK 19	4	97	Small bag-shaped colour-coated beakers with cornice rims; as Gillam type 86; Lower Nene Valley Colour Coat (LNV CC). 2nd half of 2nd to early 3rd century.
BK 8			Wall sherds from globular beakers as Symonds Group 33; Trier fabric. 3rd century (not illustrated).	BK 20	3	35	Bag-shaped colour-coated beakers with plain rims; some with vegetable decoration <i>en barbotine</i> ; as Gillam types 77, 79; all Lower Nene Valley (LNV CC). Late 2nd to early 3rd century.
BK 10	1	25	Large indented beaker (Symonds Group 35); Trier fabric. 3rd century.	BK 21	5	48	Rim sherds from bag-shaped beakers with devolved cornice rims; as Gillam types 84, 88, 89; some colour coated, Lower Nene Valley (LNV CC): 1077, 1136, 1617; others same fabric as BK 15 and 17: 848, 2292. Late 2nd to early 3rd century.
BK 11			Miscellaneous fragments of beakers in Trier fabric. 3rd century (not illustrated).	BK 22	5	145	Rim sherds from colour-coated plain-rim indented beakers, as Gillam type 53, 54; all Lower Nene Valley fabric (LNV CC). 3rd century
BK 12	1	30	Pinkish-brown, smooth black slipped surface; inclusions: abundant, up to 0.5mm, much quartz, less red iron-rich grains.	BK 23	4	71	Rim sherds from colour-coated globular beakers as BK 7 0; all Lower Nene Valley (LNV CC). 3rd century.
BK 13	6	91	Orange fabric, blue-grey core, dark brown colour coat covering rough-casting composed of fine clay particles; inclusions: abundant quartz, sparse iron-rich grains and mica, all ≤ 0.1 mm. <i>c</i> AD 100–150.				
BK 14	2	25	Wilderspool type; orange-red, orange-brown surface with clay particle rough-casting; inclusions: mainly ≤ 0.1 mm, some up to 0.2mm, sparse quartz and red iron-rich grains. <i>c</i> AD 100–160.				

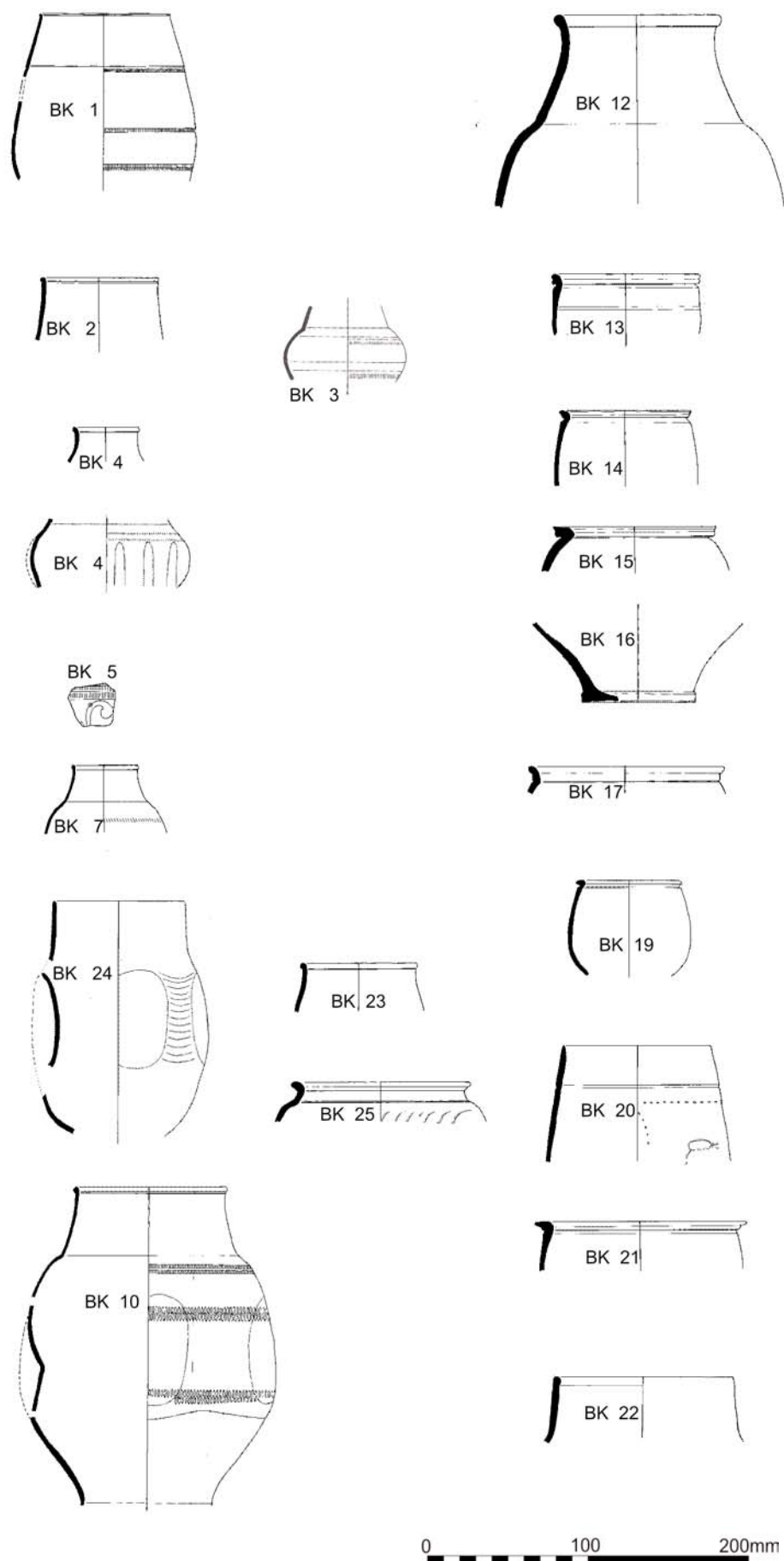
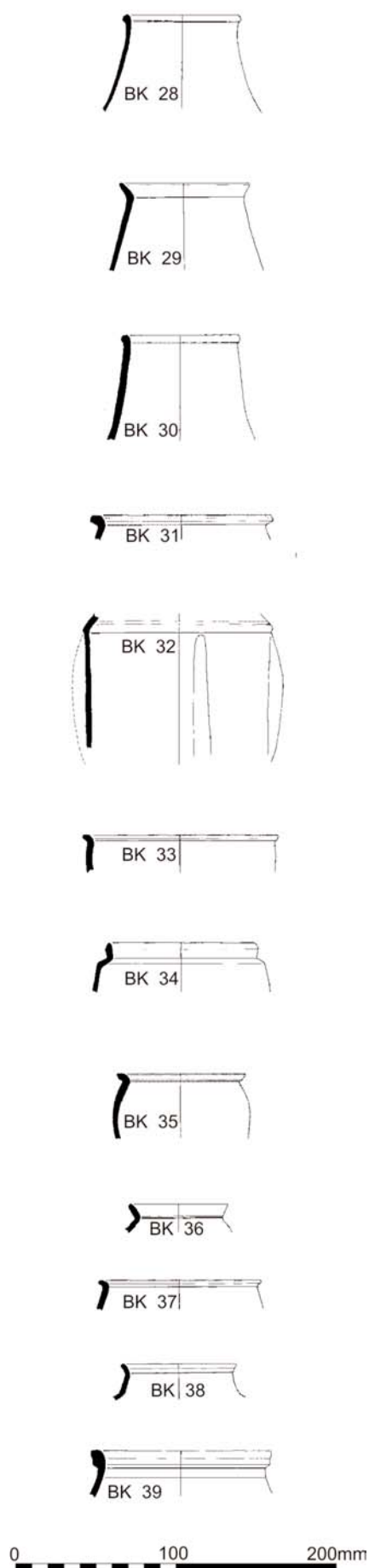


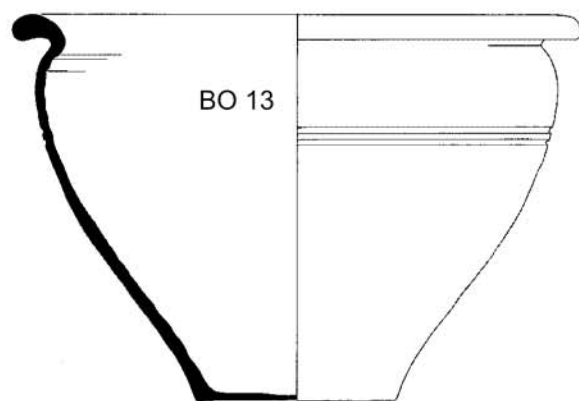
Fig 16.25 Coarseware: the beakers (scale 1:4).



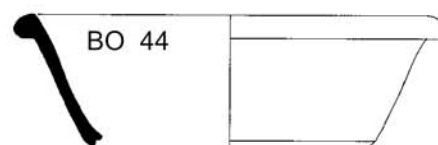
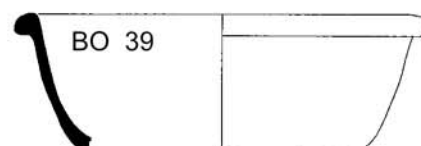
BK 24	1	20	Colour-coated indented beaker with plain rim and scale-pattern decoration; as Gillam type 53; Lower Nene Valley (LNV CC). 3rd century.
BK 25	4	68	Colour-coated indented beaker with developed neck and scale-pattern decoration; as Gillam type 53; all Lower Nene Valley (LNV CC). 3rd century.
BK 26			Wall sherds from colour-coated bag-shaped beakers with animals <i>en barbotine</i> ('Hunt Cups'); all Lower Nene Valley (LNV CC). Late 2nd to early 3rd century (not illustrated).
BK 27			Wall sherds from colour-coated beakers with white painted decoration over the colour coat; all probably lower Nene Valley (LNV CC). 3rd to 4th century (not illustrated).
BK 28	7	80	Rim sherds from colour-coated globular beakers similar to Trier types (Symonds Groups 32–35); all Lower Nene Valley (LNV CC). 3rd to 4th century
BK 29	5	217	Rim sherds from colour-coated beakers with tall 'funnel' necks; all Lower Nene Valley (LNV CC). 4th century.
BK 30	1	30	'Funnel' neck beaker; white, pale blue-grey core, dark grey surface; inclusions: mainly $\leq 0.1\text{mm}$ some up to 0.5mm ; much fine quartz, some larger black iron-rich grains; probably Crambeck. Late 3rd to 4th century.
BK 31	1	15	Everted rim beaker; orange-red, dark purplish-red semi-lustrous colour-coat; inclusions: up to 0.5mm ; red iron-rich grains and white, quartz-rich clay pellets in a well-fired, silty matrix. 3rd century?
BK 32			Off-white, dark grey powdery surface; inclusions: discrete, mainly $\leq 0.2\text{mm}$; quartz and black iron-rich grains. 3rd century?
BK 33	1	14	Dull red-brown, dark grey surface; inclusions: mainly $\leq 0.5\text{mm}$, mainly quartz.
BK 34	1	10	Dark grey-brown, black core, smooth burnished black surface; inclusions: sparse, up to 0.5mm ; matrix coloured clay pellets. Late 1st to early 2nd century.
BK 35	1	22	Pale brown, rough off-white surface; inclusions: mainly $\leq 0.2\text{mm}$, some up to 1.0mm ; abundant quartz, sparse red iron-rich grains.
BK 36	1	20	Dark grey, rough black surface; inclusions: mainly $\leq 0.2\text{mm}$; well-sorted, abundant quartz. Mid-2nd to early 3rd century.
BK 37	1	17	Pale grey, black core, smooth dark grey surface; inclusions: sparse, up to 1.0mm ; clay pellets in a silty matrix.
BK 38	1	20	Dull brownish-grey, pale grey core, brownish-grey surface; inclusions: mainly $\leq 0.1\text{mm}$ some up to 1.0mm ; much fine quartz and black iron-rich grains, larger dark-coloured clay pellets.
BK 39	1	10	Pale grey, dark grey surface; inclusions: mainly $\leq 0.2\text{mm}$; well-sorted, abundant quartz.

Fig 16.26 Coarseware: the beakers (scale 1:4).

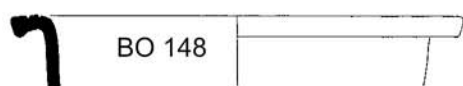
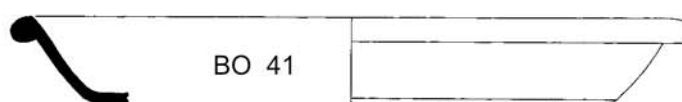
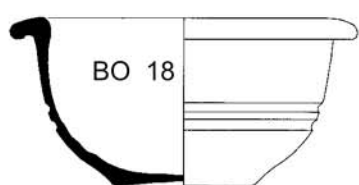
BLOCK 1 All WMJs: Late 3C and later



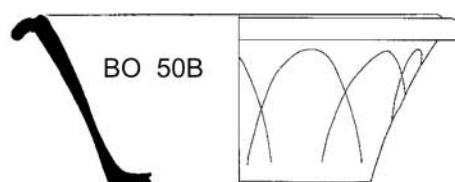
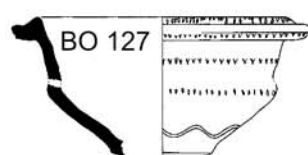
BLOCK 5 BB2 Bowls: Later (Large Rounded Rim) Types



BLOCK 2 Early Non-BB bowls



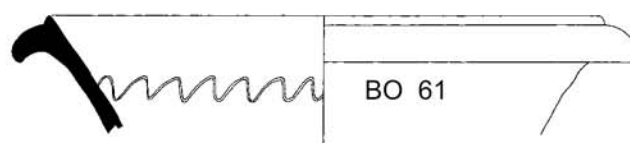
BLOCK 6 Grooved Flange Rim (Incipient Flange) Bowls in BB1



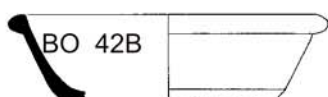
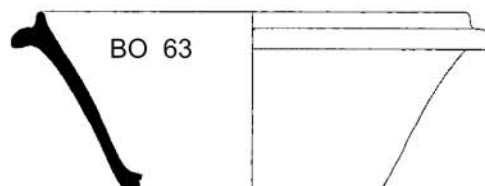
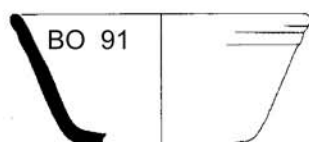
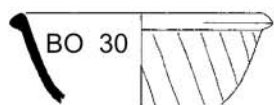
BLOCK 3 Flat Rim Bowls and Dishes in BB1 and related fabrics



BLOCK 7 Truncated Conical Flanged Bowls (All Fabrics)



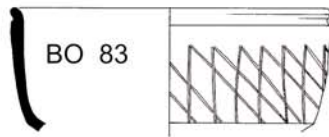
BLOCK 4 BB2 Bowls - Earlier Types



0 100 200mm

Fig 16.27–16.28 (above and facing) Coarseware blocks (scale 1:4).

BLOCK 8 Bowls and Dishes with groove below rim in BB1



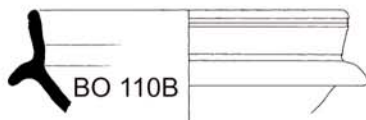
BLOCK 9 Plain Rim Dishes in BB1



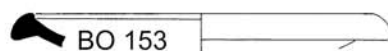
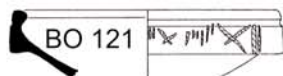
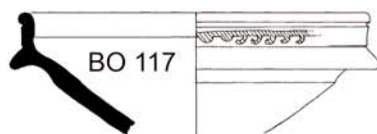
BLOCK 10 Plain Rim Dishes in Crambeck Ware



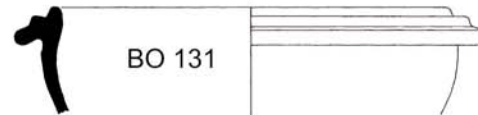
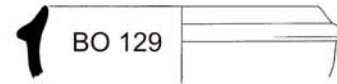
BLOCK 11 Bowls with girth flanges, in red and grey (Crambeck and related) fabrics



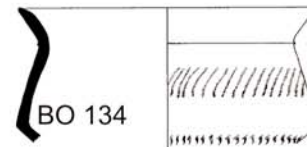
BLOCK 12 All Painted Crambeck Bowls, Dishes and Mortaria



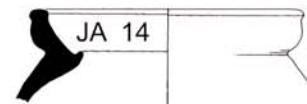
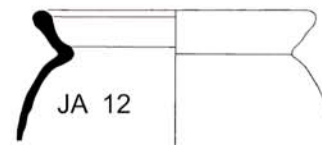
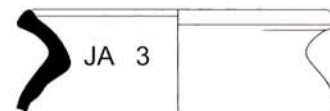
BLOCK 13 Miscellaneous Bowls



BLOCK 14 Throlam/Norton WMJs

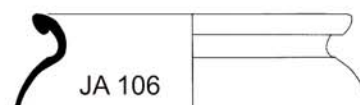
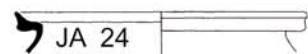
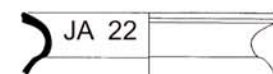
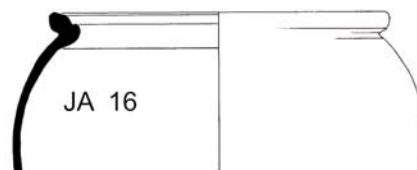


BLOCK 15 All Dales/Derbyshire Lid-seated Jars

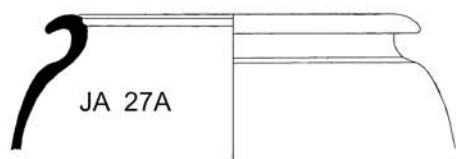
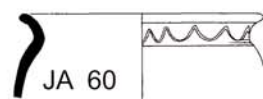


0 100 200mm

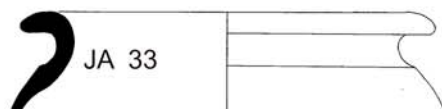
BLOCK 16 All Thameside (Mucking) Jars



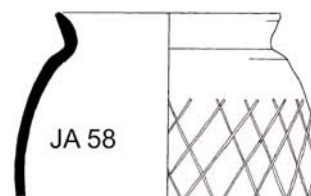
BLOCK 17 Huntcliff Type Jars

BLOCK 23 BB1 Jars Early
- upright rim wavy line on neck

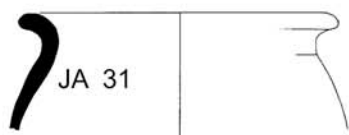
BLOCK 18 Almost Huntcliff Type Jar



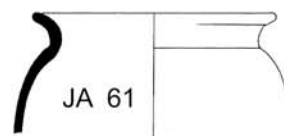
BLOCK 24 BB1 Jars Early



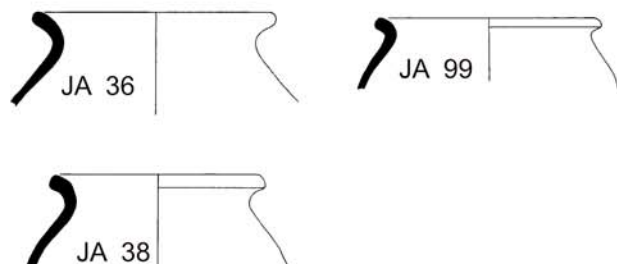
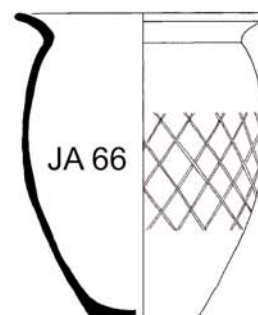
BLOCK 19 Non-Huntcliff Calcite Gritted Jars



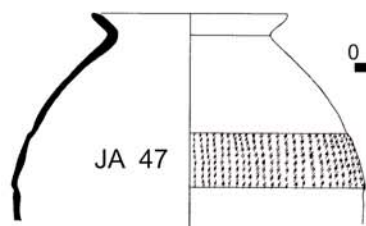
BLOCK 25 BB1 Jars Early



BLOCK 20 Early Everted Rim Jars

BLOCK 26 BB1 Jars Late
(but without scored line)

BLOCK 21 Everted Rim Jars



0 100 200mm

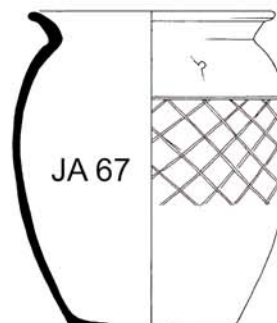
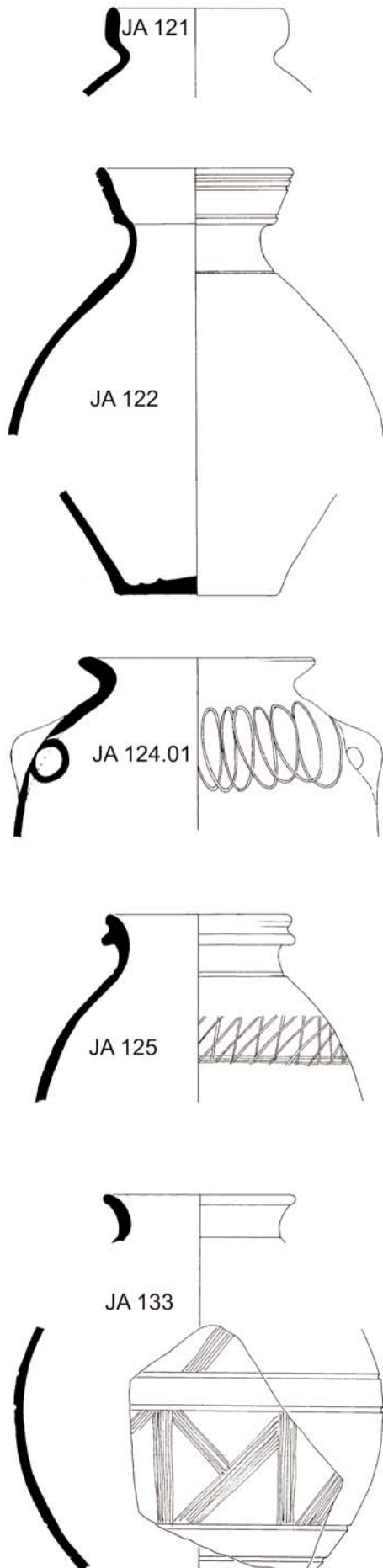
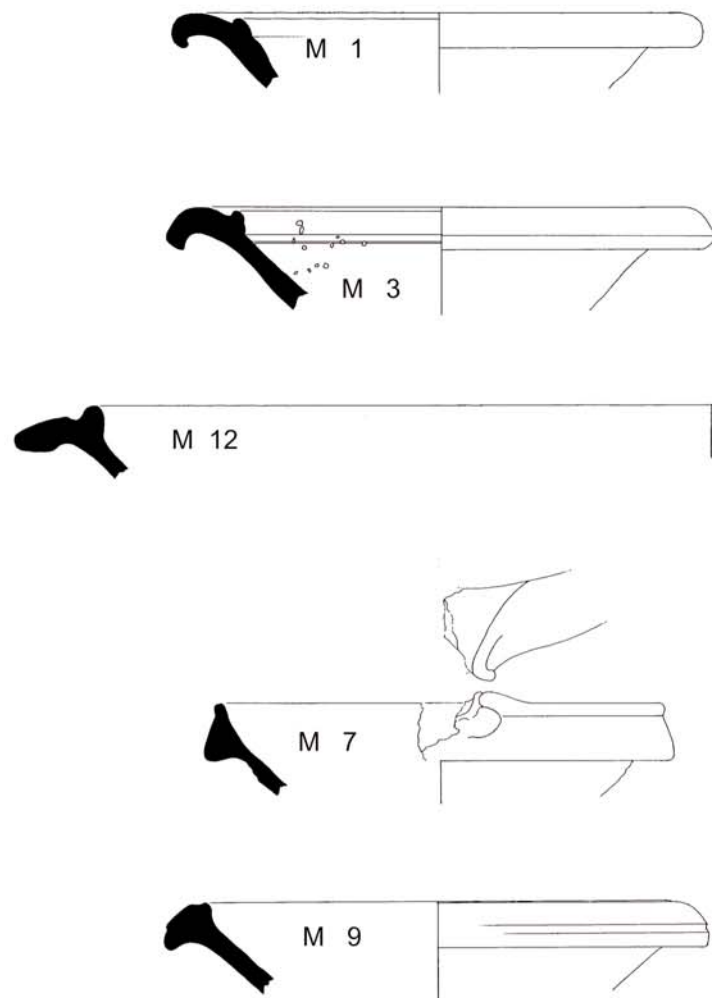
BLOCK 22 All BB2 jars
(including neckless)BLOCK 27 BB1 Jars Late
(with scored line)

Fig 16.29 Coarseware blocks (scale 1:4).

BLOCK 28 Miscellaneous Late NMJs



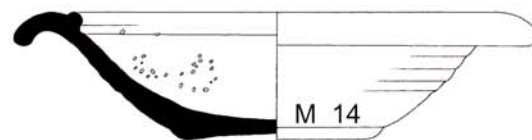
BLOCK 29 Mortaria whose date should be confined to the 2nd C



BLOCK 30 Late 2nd C Hartshill Mancetter Type (Corbridge Fabric)



BLOCK 31 L 2nd - E 3rd C Hartshill Mancetter Type (Hartshill Mancetter Fabric)



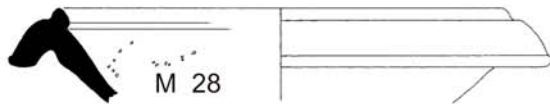
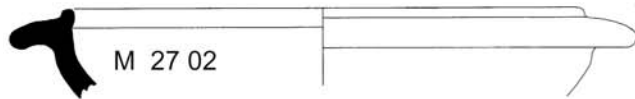
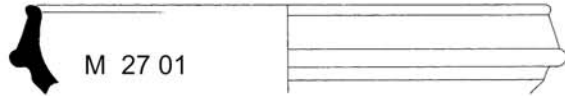
0 100 200mm

Fig 16.30 Coarseware blocks (scale 1:4).

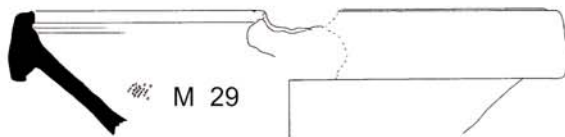
BLOCK 32 Colchester



BLOCK 33 Raetian



BLOCK 34 Rhineland



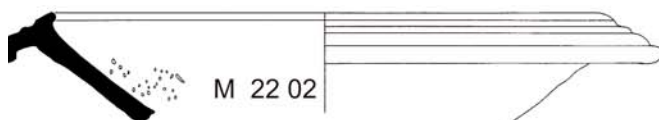
BLOCK 35 North Gaulish White Ware 4



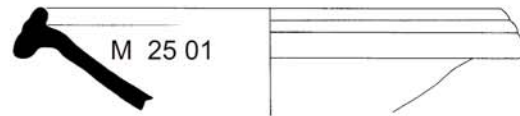
BLOCK 36 3rd C Hartshill Mancetter Hammer Head



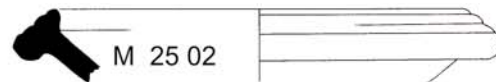
BLOCK 37 Lower Nene Valley



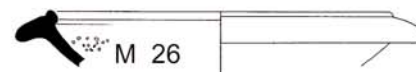
BLOCK 38 Yorkshire (possibly Cantley)



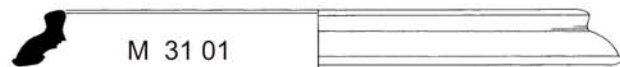
BLOCK 39 Late (Corbridge?)



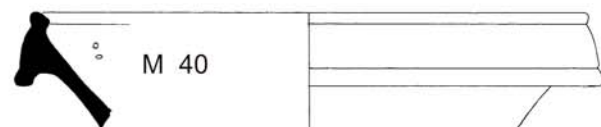
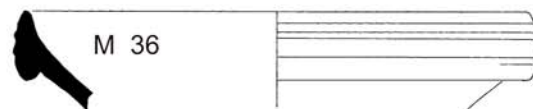
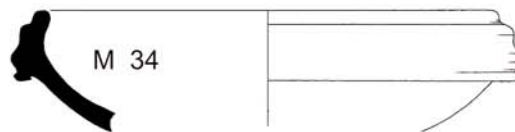
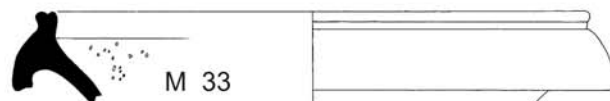
BLOCK 40 Crambeck White Ware



BLOCK 41 Oxford



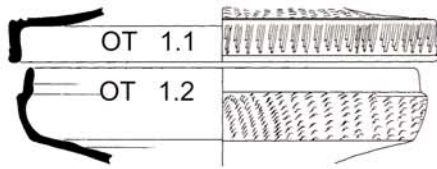
BLOCK 42 Miscellaneous Late



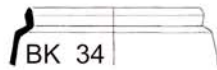
0 100 200mm

Fig 16.31 Coarseware blocks (scale 1:4).

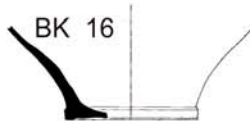
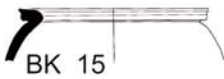
BLOCK 43 Castor Box



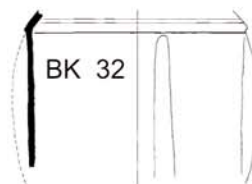
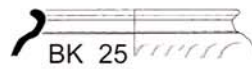
BLOCK 44 L1-E2 C Beakers



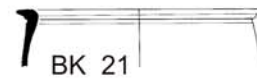
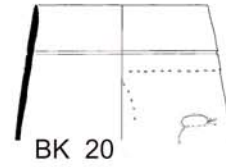
BLOCK 45 Beakers 1st half of 2nd C Many Rough Cast



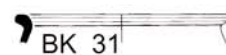
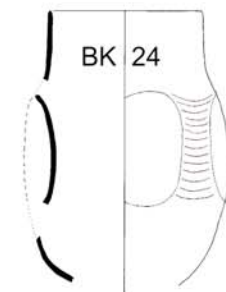
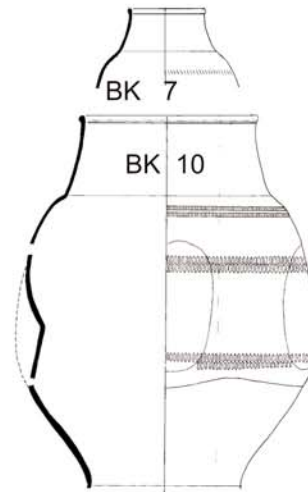
BLOCK 46 Late 2nd-Early 3rd C. Central Gaulish & Rhineland



BLOCK 47 L2 - E3 C Lower Nene Valley



BLOCK 48 3rd C



0 100 200mm

Fig 16.32 Coarseware blocks (scale 1:4).

BLOCK 49 Late 3rd C - 4th C

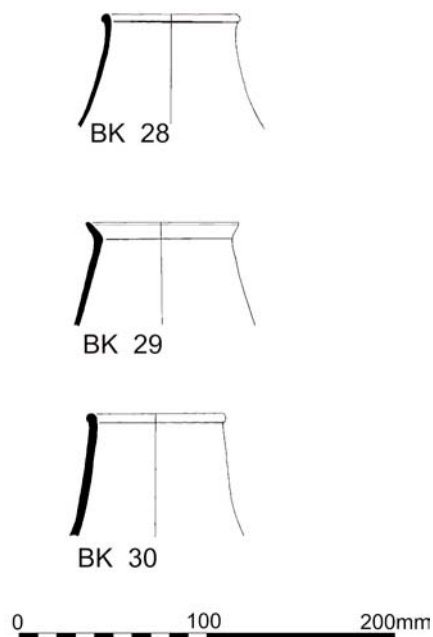


Fig 16.33 Coarseware blocks (scale 1:4).

Table 16.2 Coarseware blocks by context

(see concordance chart Tables 1.3 and 1.4 for a key to the phasing used below; see also Figs 16.27–16.33)

Block no.	phase	site	area	context	form	code		FVN
1			0	0	BO	7	0	1662
1		S1	13	78	BO	13	0	2344
1	3b	20	7	64	BO	5	0	1347
1	4b	20	5	11	BO	14	0	1255
1	4b	20	6	75	BO	2	0	1110
1	4b	20	9	3	BO	7	0	1445
1	4c	20	4	10	BO	13	0	1145
1	4c	20	6	18	BO	7	0	1079
1	4c	20	6	2	BO	12	0	1052
1	4c	20	9	4	BO	7	0	1445
1	BA	13	5	13	BO	13	0	212
1	BA5+	13	1	54	BO	7	0	646
1	CH1	13	2	8	BO	5	0	728
1	CH1	13	4	9	BO	13	0	825
1	CH1	13	6	12	BO	12	0	2086
1	CH3	13	4	3	BO	13	0	825
1	CH3	13	5	3	BO	2	0	189
1	CH3	13	5	3	BO	2	0	189
1	CH3	13	6	5	BO	3	0	580
1	CH3	13	6	5	BO	3	0	571
1	CH3	13	6	5	BO	9	0	577
1	CH3	13	7	1	BO	3	0	525
1	M	13	0	0	BO	16	0	252
1	M	13	0	0	BO	5	0	989
1	M	13	0	2	BO	4	0	286
1	M	13	1	0	BO	10	0	86
1	M	13	2	0	BO	4	0	925
1	M	13	5	0	BO	12	0	124
1	M	13	5	0	BO	5	0	122

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
1	M	13	5	0	BO	13	0	123
1	M	13	6	0	BO	9	0	559
1	M	13	7	0	BO	6	0	502
1	M	13	7	5	BO	2	0	528
1	M	13	8	0	BO	3	0	346
1	M	13	8	0	BO	13	0	344
1	M	13	10	0	BO	6	0	395
1	M	13	10	0	BO	13	0	396
1	M	13	11	1	BO	13	0	880
1	M	13	11	0	BO	10	0	850
1	M	14	9	1	BO	5	0	1645
1	M	20	6	0	BO	17	0	1023
1	M	20	6	0	BO	16	0	1019
1	M	20	6	0	BO	2	0	1020
1	M	20	6	0	BO	2	0	1027
1	M	20	7	0	BO	15	0	1266
1	M	20	7	0	BO	1	0	1281
1	M	20	7	0	BO	5	0	1267
1	M	20	7	0	BO	5	0	1265
1	M	21	2	1	BO	13	0	1584
1	Med?/M	20	8	3	BO	8	0	1380
2		S1	13	78	BO	148	0	2364
2	2b	21	2	44	BO	18	0	1573
2	2e	21	2	37	BO	18	0	1593
2	3b/4b?	21	1	8	BO	18	0	1601
2	4b	21	2	11	BO	18	0	1573
2	M	21	3	1	BO	127	0	1618
3		20	0	0	BO	24	0	1362
3		20	0	0	BO	20	0	1365
3	?	13	11	19	BO	23	0	890
3	1b	21	2	22	BO	27	0	1594
3	2e/3r?	21	2	41	BO	27	0	2432
3	3a	20	5	20	BO	21	0	1474
3	3b	20	3	23	BO	23	0	2312
3	3b	20	3	19	BO	23	0	2308
3	3b	20	4	63	BO	25	0	1170
3	3b	20	4	63	BO	23	0	1174
3	3b	20	4	29	BO	23	0	1201
3	3b	20	4	44	BO	23	0	1165
3	3b	20	4	22	BO	25	0	1183
3	3b	20	4	44	BO	25	0	1163
3	3c	21	1	4	BO	23	0	1599
3	3d/4a/4b	20	9	9	BO	21	0	1464
3	4	15	1	97	BO	23	0	2032
3	4a	20	3	39	BO	27	0	2317
3	4a	20	4	1	BO	23	0	2098
3	4a	20	4	1	BO	25	0	2096
3	4a	20	4	1	BO	27	0	2123
3	4a	20	8	8	BO	25	0	1388
3	4b	21	2	30	BO	27	0	1590
3	4b+	21	2	18	BO	27	0	1594
3	4c	20	4	37	BO	23	0	2435
3	4c	20	4	37	BO	27	0	2436
3	BA	13	6	28	BO	23	0	787
3	BA	13	9	11	BO	22	0	954
3	BA	13	9	11	BO	26	0	955
3	CH1	13	8	5	BO	23	0	738
3	M	13	7	0	BO	23	0	505
3	M	14	5	2	BO	27	0	2078
3	M	20	4	0	BO	23	0	2247
3	M	20	4	0	BO	25	0	2245
3	M	21	2	2	BO	23	0	1578
3	M	21	4	1	BO	25	0	2038
3	Med?/M	20	8	3	BO	26	0	1382

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
4		S1	13	78	BO	35	0	2384
4		S1	13	78	BO	35	0	2384
4	-	20	4	55	BO	42	0	1160
4	?	13	1	98	BO	92	0	612
4	?	13	11	19	BO	32	0	889
4	3b	20	3	46	BO	32	0	2318
4	3b	20	4	35	BO	91	0	1178
4	3b	20	4	29	BO	30	0	1198
4	3b	20	4	29	BO	91	0	1200
4	3b	20	4	44	BO	42	0	1164
4	3b	20	4	44	BO	42	0	1162
4	3b	20	4	62	BO	42	0	1194
4	3b	20	5	36	BO	43	0	1238
4	3b	20	6	48	BO	38	0	1107
4	3b	20	8	23	BO	42	0	1524
4	3b	20	8	44	BO	31	0	1506
4	3b	20	8	63	BO	32	0	1533
4	3b	20	8	63	BO	32	0	1532
4	3b	21	3	44	BO	33	0	1640
4	3b/4b?	21	1	8	BO	42	0	1603
4	3d	20	8	6	BO	92	0	1416
4	4	SE	1	29	BO	34	0	1668
4	4	SE	1	29	BO	91	0	1669
4	4a	20	4	1	BO	42	0	2100
4	4a	20	4	1	BO	35	0	2102
4	4a	20	4	1	BO	42	0	2109
4	4a	20	4	16	BO	42	0	1116
4	4a	20	4	1	BO	42	0	2165
4	4a	20	4	1	BO	35	0	2128
4	4a	20	4	1	BO	91	0	2103
4	4a	20	4	1	BO	42	0	2124
4	4a	20	4	1	BO	35	0	2102
4	4a	20	4	1	BO	42	0	2107
4	4a	20	4	1	BO	42	0	2106
4	4a	20	4	1	BO	91	0	2104
4	4a	20	4	13	BO	42	0	1135
4	4a	20	4	1	BO	35	0	2128
4	4a	20	5	12	BO	35	0	1485
4	4a	20	5	12	BO	35	0	1485
4	4a	20	7	49	BO	91	0	1336
4	4a	20	8	68	BO	42	0	1511
4	4a/4b	20	7	2	BO	91	0	1318
4	4b	20	9	2	BO	42	0	1444
4	4b	21	2	12	BO	91	0	1576
4	4c	20	3	11	BO	91	0	2294
4	4c	20	5	8	BO	35	0	1490
4	4c	20	5	8	BO	35	0	1490
4	4c	20	6	2	BO	91	0	1046
4	4c	20	8	17	BO	42	0	1413
4	4e	20	7	34	BO	42	0	1341
4	BA	13	5	13	BO	42	0	216
4	BA	13	11	31	BO	30	0	893
4	BA4	13	1	100	BO	91	0	617
4	BA5+	13	1	54	BO	91	0	643
4	CH1	13	0	12	BO	42	0	300
4	CH1	13	2	8	BO	42	0	731
4	CH1	13	2	8	BO	42	0	730
4	CH1	13	8	5	BO	91	0	741
4	CH1?	13	11	4	BO	42	0	884
4	CH2	13	6	38	BO	42	0	780
4	M	13	1	0	BO	91	0	94
4	M	13	1	170	BO	91	0	643

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
4	M	13	8	0	BO	42	0	339
4	M	13	8	0	BO	42	0	338
4	M	13	9	3	BO	91	0	705
4	M	13	10	0	BO	42	0	401
4	M	13	11	0	BO	42	0	843
4	M	20	2	0	BO	42	0	1502
4	M	20	3	0	BO	35	0	2272
4	M	20	3	0	BO	35	0	2272
4	M	20	3	0	BO	91	0	2267
4	M	20	4	0	BO	42	0	2241
4	M	20	4	0	BO	42	0	2235
4	M	20	4	0	BO	42	0	2224
4	M	20	6	0	BO	42	0	1036
4	M	21	2	1	BO	42	0	1585
4	M	21	4	1	BO	42	0	2040
4	M?	14	3	4	BO	91	0	2071
5		20	0	0	BO	41	0	1366
5		C	13	78	BO	41	0	2414
5	-	20	6	62	BO	40	0	1083
5	2b	20	4	79	BO	39	0	1148
5	3a	20	5	20	BO	41	0	1476
5	3b	20	4	22	BO	39	0	1184
5	3b	20	4	35	BO	39	0	1179
5	3b	20	5	36	BO	39	0	1234
5	3b	20	5	36	BO	44	0	1235
5	3b	20	5	31	BO	39	0	1227
5	3b	20	6	23	BO	39	0	1153
5	3b	20	6	23	BO	39	0	1152
5	3b	20	6	48	BO	40	0	1105
5	3b	20	8	23	BO	39	0	1523
5	3b	20	8	63	BO	37	0	1531
5	3b	20	8	63	BO	40	0	1530
5	3b	20	8	63	BO	39	0	1525
5	3b	20	9	45	BO	39	0	1451
5	3b	20	9	10	BO	39	0	1436
5	3b	20	9	10	BO	40	0	1649
5	3b	20	9	10	BO	40	0	1435
5	3b/4b?	21	1	8	BO	37	0	1604
5	3c/M	21	1	3	BO	37	0	2430
5	3d	20	8	22	BO	39	0	369
5	3d	20	8	22	BO	37	0	1550
5	3d/4a/4b	20	9	9	BO	39	0	1651
5	3d/4a/4b	20	9	9	BO	44	0	1466
5	3d/4a?	20	6	19	BO	40	0	1092
5	4a	20	4	1	BO	37	0	2101
5	4a	20	4	16	BO	39	0	1117
5	4a	20	4	1	BO	37	0	2127
5	4a	20	4	1	BO	37	0	2125
5	4a	20	6	4	BO	39	0	1062
5	4a	20	6	4	BO	44	0	1063
5	4a	20	7	15	BO	44	0	1357
5	4a	20	8	8	BO	41	0	1390
5	4a	20	8	8	BO	40	0	1391
5	4a/4b	20	7	2	BO	40	0	1315
5	4a/4b	20	7	2	BO	44	0	1314
5	4b	20	9	2	BO	39	0	1443
5	4b	21	2	30	BO	44	0	1589
5	4b+	21	2	18	BO	40	0	1595
5	4c	20	6	2	BO	40	0	1053
5	4c	20	9	5	BO	39	0	1440
5	BA	13	10	7	BO	39	0	431
5	BA5	13	0	29	BO	39	0	603
5	BA5	13	0	29	BO	40	0	604
5	CH1	13	5	4	BO	44	0	774

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
5	CH1?	13	10	8	BO	40	0	962
5	CH1?	13	10	8	BO	39	0	437
5	M	13	1	0	BO	40	0	87
5	M	13	1	170	BO	40	0	626
5	M	13	4	0	BO	39	0	795
5	M	13	5	0	BO	39	0	765
5	M	13	5	0	BO	40	0	131
5	M	13	5	0	BO	39	0	128
5	M	13	6	0	BO	44	0	551
5	M	13	8	0	BO	39	0	340
5	M	13	9	0	BO	39	0	684
5	M	13	10	10	BO	39	0	440
5	M	13	11	0	BO	39	0	842
5	M	15	1	1	BO	37	0	2001
5	M	20	4	0	BO	37	0	2236
5	M	20	4	0	BO	37	0	2237
5	M	20	4	0	BO	37	0	2244
5	M	20	5	4	BO	40	0	1472
6	2b	20	3	12	BO	50	0	2307
6	2e	21	1	43	BO	50	0	1611
6	3a	20	5	20	BO	50	0	1475
6	3d/4a/4b	20	9	9	BO	50	0	1652
6	3d/4a/4b	20	9	9	BO	50	0	1467
6	3d/4a/4b	20	9	9	BO	53	0	1468
6	3d/4a?	20	6	19	BO	54	0	1095
6	3r/4r	21	3	18	BO	56	0	1624
6	4a	20	3	39	BO	52	0	2313
6	4a	20	4	1	BO	54	0	2167
6	4a	20	4	1	BO	50	0	2091
6	4a	20	4	1	BO	54	0	2115
6	4a	20	4	1	BO	50	0	2122
6	4a	20	4	1	BO	52	0	2129
6	4a	20	4	1	BO	52	0	2112
6	4a	20	6	33	BO	50	0	1103
6	4a	20	7	1	BO	52	0	1300
6	4a	20	8	8	BO	50	0	1387
6	4a/4b	20	7	2	BO	56	0	1313
6	4b	20	8	16	BO	56	0	1419
6	4b	20	8	16	BO	50	0	1420
6	4c	20	6	2	BO	56	0	1044
6	4c	20	7	3	BO	55	0	1331
6	BA	13	5	13	BO	51	0	215
6	BA	13	11	20	BO	50	0	891
6	BA3	13	1	172	BO	50	0	26
6	BA5/CH1	13	0	22	BO	50	0	305
6	CH1	13	4	4	BO	54	0	826
6	CH1	13	8	18	BO	54	0	366
6	CH1	13	8	5	BO	51	0	746
6	CH1	13	11	14	BO	50	0	888
6	CH1?	13	11	4	BO	50	0	883
6	CH3	13	5	3	BO	50	0	192
6	CH3	13	5	3	BO	50	0	192
6	M	13	0	0	BO	52	0	244
6	M	13	1	0	BO	56	0	62
6	M	13	5	0	BO	56	0	118
6	M	13	5	0	BO	50	0	114
6	M	13	6	0	BO	50	0	546
6	M	13	8	0	BO	56	0	587
6	M	13	8	0	BO	56	0	586
6	M	13	10	0	BO	50	0	403
6	M	13	11	0	BO	50	0	844
6	M	20	3	0	BO	51	0	2275

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
6	M	20	4	0	BO	51	0	2219
6	M	20	6	0	BO	54	0	1009
6	M	20	7	0	BO	56	0	1268
6	M	20	7	0	BO	56	0	1260
6	M	21	2	1	BO	56	0	1583
6	M	21	2	1	BO	56	0	1582
7		C	13	78	BO	71	0	2418
7		C	13	78	BO	71	0	2417
7		S	13	0	BO	57	0	2405
7		S	13	0	BO	65	0	2406
7		S	13	0	BO	69	0	2421
7		S1	13	78	BO	57	0	2394
7		S1	13	78	BO	80	0	2341
7		S1	13	78	BO	57	0	2366
7		S1	13	78	BO	73	0	2347
7		S1	13	78	BO	63	0	2387
7		S1	13	78	BO	57	0	2340
7		S1	13	78	BO	71	0	2338
7		S1	13	78	BO	61	0	2343
7		S1	13	78	BO	71	0	2342
7		S1	13	78	BO	71	0	2337
7		S1	13	78	BO	73	0	2346
7		S1	13	78	BO	73	0	2348
7		S1	13	78	BO	73	0	2373
7		S1	13	78	BO	73	0	2393
7		S1	13	78	BO	73	0	2355
7	-	21	2	39	BO	64	0	1559
7	3d	20	8	22	BO	58	0	1547
7	4	SE	1	2	BO	70	0	1680
7	4	SE	1	25	BO	70	0	1663
7	4	SE	1	23	BO	63	0	1665
7	4	SE	1	13	BO	69	0	2447
7	4	SE	1	29	BO	62	0	1667
7	4a	20	4	1	BO	60	0	2131
7	4a	20	7	1	BO	57	0	1299
7	4b	20	5	11	BO	63	0	1253
7	4c	20	6	2	BO	57	0	1042
7	4c	20	6	22	BO	77	0	1085
7	4c	20	6	2	BO	71	0	1043
7	4c	20	7	3	BO	62	0	1332
7	4c	20	8	34	BO	57	0	1515
7	4c	20	8	17	BO	57	0	1414
7	4c	20	9	5	BO	71	0	1438
7	4c	20	9	4	BO	64	0	1647
7	4r	21	4	2	BO	71	0	2043
7	CH1	13	0	23	BO	64	0	311
7	CH1	13	6	12	BO	64	0	2085
7	CH1	13	6	12	BO	58	0	581
7	CH2	13	0	1	BO	59	0	276
7	CH2	13	0	13	BO	64	0	302
7	CH2	13	1	56	BO	68	0	619
7	CH2	13	1	35	BO	70	0	618
7	CH2	13	6	20	BO	65	0	480
7	CH2	13	8	3	BO	60	0	359
7	CH3	13	1	21	BO	59	0	11
7	CH3	13	1	17	BO	75	0	24
7	CH3	13	1	12	BO	59	0	223
7	CH3	13	1	12	BO	65	0	222
7	CH3	13	3	1	BO	75	0	917
7	CH3	13	4	3	BO	64	0	811
7	CH3	13	4	3	BO	67	0	810
7	CH3	13	4	3	BO	74	0	809
7	CH3	13	5	3	BO	64	0	188
7	CH3	13	5	3	BO	64	0	188

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
7	CH3	13	6	11	BO	64	0	475
7	CH3	13	6	11	BO	73	0	473
7	CH3	13	6	5	BO	66	0	576
7	CH3	13	6	5	BO	64	0	579
7	CH3	13	7	1	BO	57	0	517
7	CH3+	13	1	11	BO	79	0	45
7	CH3+	13	1	11	BO	72	0	46
7	CH3+/M	13	8	1	BO	57	0	2452
7	CH3+/M	13	8	2	BO	76	0	354
7	M	13	0	0	BO	63	0	259
7	M	13	0	0	BO	71	0	2089
7	M	13	0	0	BO	63	0	2088
7	M	13	0	0	BO	74	0	984
7	M	13	0	0	BO	62	0	253
7	M	13	0	0	BO	75	0	251
7	M	13	0	0	BO	71	0	248
7	M	13	0	2	BO	70	0	285
7	M	13	0	0	BO	57	0	245
7	M	13	0	0	BO	61	0	257
7	M	13	0	0	BO	63	0	258
7	M	13	0	0	BO	66	0	2090
7	M	13	0	2	BO	70	0	282
7	M	13	0	2	BO	59	0	284
7	M	13	0	0	BO	57	0	254
7	M	13	1	0	BO	72	0	65
7	M	13	1	0	BO	59	0	57
7	M	13	1	0	BO	59	0	61
7	M	13	1	0	BO	63	0	68
7	M	13	1	0	BO	61	0	56
7	M	13	1	0	BO	63	0	63
7	M	13	1	0	BO	81	0	75
7	M	13	1	0	BO	62	0	59
7	M	13	1	170	BO	72	0	639
7	M	13	1	0	BO	57	0	60
7	M	13	1	0	BO	57	0	66
7	M	13	1	0	BO	79	0	64
7	M	13	1	0	BO	57	0	58
7	M	13	1	170	BO	67	0	638
7	M	13	1	0	BO	59	0	67
7	M	13	2	0	BO	65	0	923
7	M	13	2	0	BO	71	0	922
7	M	13	3	0	BO	77	0	899
7	M	13	3	0	BO	61	0	901
7	M	13	4	0	BO	73	0	804
7	M	13	4	6	BO	63	0	830
7	M	13	5	0	BO	62	0	759
7	M	13	5	2	BO	57	0	206
7	M	13	5	0	BO	57	0	760
7	M	13	5	0	BO	65	0	117
7	M	13	5	0	BO	77	0	761
7	M	13	5	0	BO	74	0	116
7	M	13	5	0	BO	74	0	115
7	M	13	5	0	BO	63	0	119
7	M	13	5	0	BO	65	0	149
7	M	13	5	0	BO	63	0	120
7	M	13	6	0	BO	70	0	543
7	M	13	6	0	BO	65	0	783
7	M	13	6	0	BO	82	0	542
7	M	13	6	0	BO	62	0	464
7	M	13	6	1	BO	63	0	467
7	M	13	6	0	BO	70	0	541
7	M	13	6	0	BO	70	0	544

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
7	M	13	7	0	BO	57	0	495
7	M	13	7	0	BO	76	0	498
7	M	13	7	0	BO	57	0	497
7	M	13	8	0	BO	75	0	324
7	M	13	8	0	BO	73	0	325
7	M	13	8	0	BO	59	0	322
7	M	13	8	0	BO	63	0	329
7	M	13	8	0	BO	57	0	326
7	M	13	8	0	BO	57	0	327
7	M	13	8	0	BO	62	0	321
7	M	13	9	0	BO	71	0	665
7	M	13	9	0	BO	71	0	672
7	M	13	9	0	BO	63	0	670
7	M	13	9	0	BO	60	0	667
7	M	13	9	0	BO	59	0	669
7	M	13	9	0	BO	71	0	671
7	M	13	9	0	BO	57	0	666
7	M	13	9	0	BO	63	0	668
7	M	13	10	11	BO	57	0	447
7	M	13	10	0	BO	80	0	405
7	M	13	10	0	BO	62	0	409
7	M	13	10	1	BO	62	0	418
7	M	13	10	11	BO	57	0	446
7	M	13	10	0	BO	57	0	407
7	M	13	11	1	BO	62	0	868
7	M	13	11	1	BO	57	0	869
7	M	13	11	0	BO	64	0	837
7	M	13	11	1	BO	60	0	867
7	M	13	11	0	BO	62	0	836
7	M	14	4	1	BO	74	0	2073
7	M	14	9	2	BO	78	0	1642
7	M	15	1	1	BO	71	0	2007
7	M	20	3	0	BO	73	0	2271
7	M	20	3	0	BO	69	0	2270
7	M	20	4	0	BO	63	0	2210
7	M	20	5	0	BO	62	0	1209
7	M	20	6	0	BO	63	0	1005
7	M	20	6	0	BO	68	0	1006
7	M	20	6	0	BO	64	0	1011
7	M	20	6	0	BO	69	0	1060
7	M	20	6	0	BO	71	0	1010
7	M	20	6	0	BO	59	0	1008
7	M	20	6	0	BO	65	0	1007
7	M	20	9	1	BO	57	0	1423
7	M	20	9	1	BO	60	0	1422
7	M	21	4	1	BO	63	0	2039
8	3b	20	5	31	BO	84	0	1225
8	3b	20	5	43	BO	85	0	1492
8	3b	20	5	36	BO	85	0	1242
8	3b	20	9	45	BO	85	0	1450
8	3r?	21	2	10	BO	85	0	1562
8	4a	20	4	13	BO	84	0	1129
8	4a	20	6	4	BO	85	0	1075
8	4a	20	6	4	BO	85	0	1064
8	4b	20	6	3	BO	85	0	1058
8	4c	20	8	12	BO	85	0	1409
8	BA3	13	1	202	BO	83	0	42
8	CH1	13	8	5	BO	85	0	742
8	CH1	13	11	8	BO	83	0	886
8	M	13	5	0	BO	85	0	133
8	M	13	5	0	BO	83	0	126
8	M	13	10	1	BO	85	0	427
8	M	20	6	0	BO	85	0	1035
9	2b	20	6	40	BO	86	0	1081

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
9	2r/3r	21	3	121	BO	86	0	1629
9	3a	20	5	20	BO	86	0	1477
9	3b	20	7	64	BO	90	0	1350
9	3d	20	8	22	BO	86	0	370
9	3d	20	8	22	BO	86	0	371
9	3d/4a/4b	20	9	9	BO	86	0	1463
9	4a	20	4	1	BO	86	0	2162
9	4a	20	4	1	BO	86	0	2159
9	4a	20	4	1	BO	86	0	2158
9	4a	20	4	1	BO	86	0	2157
9	4a	20	4	1	BO	86	0	2153
9	4a	20	4	1	BO	86	0	2156
9	4a	20	4	1	BO	86	0	2154
9	4a	20	4	1	BO	86	0	2152
9	4a	20	4	1	BO	86	0	2121
9	4a	20	6	21	BO	90	0	1096
9	4a	20	7	15	BO	86	0	1359
9	4a	20	7	1	BO	86	0	1301
9	4a	20	7	17	BO	86	0	1352
9	4a	20	7	27	BO	86	0	1293
9	4a	20	7	49	BO	86	0	1338
9	4a	20	8	40	BO	86	0	1513
9	4a	20	8	8	BO	86	0	1389
9	4a	20	8	48	BO	86	0	1519
9	4a	21	3	31	BO	86	0	1619
9	4a/4b	20	7	2	BO	86	0	1320
9	4a/4b	20	7	2	BO	86	0	1319
9	4a/4b	20	7	2	BO	86	0	1328
9	4b	20	5	11	BO	86	0	1254
9	4b	20	6	75	BO	86	0	1112
9	4b	20	8	16	BO	86	0	1421
9	4b	20	8	2	BO	86	0	1372
9	4b	21	2	12	BO	86	0	1577
9	4b	21	2	30	BO	88	0	1592
9	4b+	21	2	18	BO	86	0	1596
9	4b+	21	2	28	BO	90	0	1557
9	4c	20	3	11	BO	86	0	2295
9	4c	20	4	2	BO	86	0	2177
9	4c	20	4	2	BO	86	0	2178
9	4c	20	5	8	BO	86	0	1488
9	4c	20	7	4	BO	86	0	1309
9	4c	20	9	5	BO	86	0	1441
9	4c	20	9	39	BO	86	0	1433
9	BA	13	6	27	BO	86	0	786
9	BA	13	7	4	BO	86	0	529
9	BA	13	9	11	BO	86	0	708
9	BA	13	9	11	BO	86	0	956
9	BA	13	11	29	BO	86	0	597
9	BA/CH1	13	9	13	BO	86	0	953
9	BA4/5	13	0	28	BO	87	0	601
9	BA5	13	0	11	BO	86	0	297
9	BA5+	13	1	54	BO	88	0	633
9	BA5+	13	1	54	BO	86	0	632
9	BA5+	13	1	54	BO	86	0	645
9	BA5+	13	1	86	BO	90	0	621
9	BA5+	13	1	54	BO	86	0	644
9	BA5/CH1	13	0	22	BO	87	0	2458
9	CH1	13	0	12	BO	90	0	299
9	CH1	13	1	82	BO	86	0	610
9	CH1	13	2	8	BO	86	0	732
9	CH1	13	5	17	BO	86	0	173
9	CH1	13	8	5	BO	86	0	739

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
9	CH1	13	11	14	BO	86	0	594
9	CH2	13	0	13	BO	86	0	303
9	CH2	13	0	14	BO	86	0	304
9	CH2	13	6	4	BO	86	0	470
9	CH2	13	6	4	BO	86	0	2084
9	CH2	13	10	30	BO	86	0	961
9	CH2	13	10	20	BO	86	0	944
9	CH2?	13	1	46	BO	86	0	623
9	CH3	13	1	17	BO	86	0	22
9	CH3	13	1	21	BO	88	0	14
9	CH3	13	4	18	BO	86	0	608
9	CH3	13	4	3	BO	86	0	824
9	CH3	13	5	3	BO	86	0	186
9	CH3	13	5	3	BO	88	0	187
9	CH3	13	5	3	BO	88	0	187
9	CH3	13	5	3	BO	86	0	186
9	CH3	13	5	3	BO	86	0	194
9	CH3	13	5	3	BO	86	0	194
9	CH3	13	6	5	BO	86	0	566
9	CH3	13	7	1	BO	86	0	520
9	CH3+	13	6	13	BO	86	0	584
9	CH3+/M	13	8	2	BO	86	0	2456
9	CON	13	7	15	BO	90	0	950
9	M	13	0	0	BO	86	0	243
9	M	13	0	0	BO	86	0	993
9	M	13	0	0	BO	86	0	249
9	M	13	0	2	BO	86	0	280
9	M	13	0	0	BO	86	0	242
9	M	13	0	2	BO	86	0	287
9	M	13	1	0	BO	86	0	95
9	M	13	1	0	BO	86	0	90
9	M	13	1	170	BO	86	0	627
9	M	13	1	0	BO	86	0	92
9	M	13	1	0	BO	89	0	93
9	M	13	1	170	BO	86	0	628
9	M	13	4	6	BO	86	0	828
9	M	13	4	0	BO	86	0	792
9	M	13	4	0	BO	86	0	791
9	M	13	5	0	BO	86	0	130
9	M	13	5	2	BO	86	0	205
9	M	13	5	0	BO	86	0	764
9	M	13	5	0	BO	86	0	763
9	M	13	6	0	BO	86	0	547
9	M	13	8	0	BO	88	0	336
9	M	13	8	0	BO	86	0	337
9	M	13	9	3	BO	86	0	703
9	M	13	9	3	BO	86	0	707
9	M	13	9	0	BO	86	0	676
9	M	13	9	3	BO	86	0	704
9	M	13	9	3	BO	86	0	706
9	M	13	10	17	BO	86	0	460
9	M	13	10	17	BO	86	0	459
9	M	13	10	11	BO	86	0	449
9	M	13	10	0	BO	90	0	400
9	M	13	10	0	BO	86	0	398
9	M	13	11	0	BO	86	0	849
9	M	14	3	1	BO	86	0	2064
9	M	20	3	0	BO	86	0	2266
9	M	20	4	0	BO	86	0	2227
9	M	20	4	0	BO	86	0	2230
9	M	20	4	0	BO	86	0	2229
9	M	20	4	0	BO	86	0	2225
9	M	20	4	0	BO	86	0	2222
9	M	20	4	0	BO	86	0	2223

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
9	M	20	4	0	BO	86	0	2231
9	M	20	4	0	BO	86	0	2226
9	M	20	6	0	BO	86	0	1034
9	M	20	6	0	BO	86	0	1033
9	M	20	7	0	BO	86	0	1270
9	M	20	7	0	BO	86	0	1269
9	M?	14	5	4	BO	86	0	2080
9	PR	13	8	28	BO	90	0	376
10		S1	13	78	BO	94	0	2358
10		S1	13	78	BO	97	0	2349
10		S1	13	78	BO	94	0	2351
10	-	20	4	55	BO	94	0	1159
10	4	SE	1	12	BO	93	0	1659
10	4	SE	1	29	BO	94	0	1670
10	4a	20	5	29	BO	93	0	1247
10	4a	20	7	43	BO	96	0	1339
10	4b+	21	2	18	BO	94	0	1597
10	4c	20	5	8	BO	94	0	1489
10	4c	20	6	22	BO	94	0	1087
10	4c	20	8	34	BO	93	0	1516
10	4c	20	8	34	BO	96	0	1517
10	4c	20	9	6	BO	94	0	1447
10	CH2	13	1	8	BO	96	0	721
10	CH2	13	1	8	BO	93	0	720
10	CH2	13	8	3	BO	93	0	362
10	CH3	13	2	2	BO	93	0	935
10	CH3	13	2	2	BO	94	0	936
10	CH3	13	7	1	BO	95	0	521
10	CH3	13	7	1	BO	97	0	519
10	CH3+	13	1	11	BO	94	0	47
10	M	13	0	2	BO	96	0	290
10	M	13	0	0	BO	97	0	599
10	M	13	1	0	BO	94	0	89
10	M	13	4	0	BO	94	0	789
10	M	13	4	0	BO	93	0	790
10	M	13	5	0	BO	96	0	129
10	M	13	6	0	BO	96	0	550
10	M	13	6	0	BO	93	0	548
10	M	13	7	0	BO	94	0	501
10	M	13	7	0	BO	94	0	500
10	M	13	9	0	BO	93	0	679
10	M	13	9	0	BO	93	0	678
10	M	13	9	0	BO	97	0	677
10	M	13	10	11	BO	96	0	448
10	M	13	10	0	BO	94	0	397
10	M	13	10	0	BO	94	0	399
10	M	13	10	1	BO	96	0	419
10	M	14	9	2	BO	96	0	1643
10	M	20	2	0	BO	93	0	1499
10	M	20	9	1	BO	96	0	1427
10	M	21	4	9	BO	94	0	2052
11		S1	13	78	BO	110	0	2392
11	3	14	9	5	BO	111	0	1644
11	4	SE	1	2	BO	109	0	1675
11	4r	21	4	2	BO	111	0	2046
11	CH3	13	1	21	BO	113	0	15
11	CH3	13	7	1	BO	115	0	516
11	M	13	0	0	BO	109	0	256
11	M	13	0	0	BO	116	0	982
11	M	13	1	0	BO	110	0	96
11	M	13	2	0	BO	116	0	921
11	M	13	5	0	BO	111	0	132

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
11	M	13	6	0	BO	110	0	545
11	M	13	9	0	BO	110	0	673
11	M	13	9	0	BO	114	0	674
11	M	13	10	0	BO	109	0	404
11	M	13	10	11	BO	110	0	445
11	M	13	11	1	BO	112	0	860
11	M	21	3	19	BO	111	0	1623
12		S	13	0	BO	126	0	2403
12		S	13	0	BO	126	0	2402
12		S1	13	78	BO	117	0	2334
12		S1	13	78	BO	118	0	2335
12		S1	13	78	BO	118	0	2390
12		S1	13	78	BO	118	0	2322
12		S1	13	78	BO	126	0	2339
12		S1	13	78	BO	122	0	2333
12		S1	13	78	BO	118	0	2323
12		S1	13	78	BO	118	0	2331
12		S1	13	78	BO	122	0	2362
12		SE	1	0	BO	119	0	1684
12	4	SE	1	29	BO	122	0	1672
12	4	SE	1	2	BO	122	0	1678
12	4	SE	1	2	BO	117	0	1676
12	4a	20	4	1	BO	118	0	2140
12	4c	20	6	2	BO	126	0	1038
12	4r	21	4	2	BO	153	0	2047
12	CH2	13	1	8	BO	118	0	723
12	CH3	13	2	2	BO	118	0	933
12	M	13	0	2	BO	117	0	288
12	M	13	0	0	BO	124	0	977
12	M	13	0	0	BO	124	0	267
12	M	13	2	0	BO	124	0	924
12	M	13	3	0	BO	125	0	898
12	M	13	5	0	BO	117	0	864
12	M	13	5	0	BO	122	0	139
12	M	13	5	0	BO	126	0	121
12	M	13	7	0	BO	125	0	494
12	M	13	8	0	BO	124	0	315
12	M	13	9	0	BO	122	0	680
12	M	13	11	1	BO	117	0	595
12	M	13	11	1	BO	121	0	861
12	M	13	11	1	BO	125	0	862
12	M	13	11	1	BO	117	0	863
12	M	13	11	1	BO	119	0	865
12	M	13	11	1	BO	120	0	866
12	M	13	11	0	BO	121	0	841
12	M	13	11	1	BO	117	0	864
12	M	15	1	2	BO	118	0	2012
12	M	20	6	0	BO	120	0	1025
12	M?	21	3	20	BO	123	0	1620
13	M	13	1	0	BO	131	0	85
13	M	13	8	0	BO	130	0	323
13	M	13	9	0	BO	129	0	675
13	M	13	10	0	BO	130	0	408
13	M	13	11	0	BO	129	0	835
13	M	20	7	0	BO	131	0	1276
14	4a	20	4	1	BO	133	0	2172
14	CH3	13	4	3	BO	133	0	814
14	CH3	13	4	3	BO	134	0	813
15		S1	13	78	JA	8	0	2350
15	-	21	1	20	JA	13	0	1609
15	?	13	4	2	JA	14	0	806
15	3b	20	6	23	JA	100	0	1154
15	4a	20	4	16	JA	1	0	1120
15	4a	20	7	15	JA	8	0	1360

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
15	4a	20	7	32	JA	5	0	1294
15	4a/4b	20	7	2	JA	13	0	1323
15	4b	20	6	56	JA	11	0	1100
15	4b	20	8	2	JA	8	0	1375
15	4c	20	4	11	JA	8	0	1128
15	4c	20	6	2	JA	13	0	1047
15	4c	20	6	22	JA	11	0	1088
15	4c	20	7	4	JA	10	0	1306
15	4c	20	7	3	JA	10	0	1344
15	4c	20	7	3	JA	1	0	1343
15	4c	20	8	12	JA	11	0	1415
15	4c	20	8	12	JA	1	0	1407
15	4e	20	9	26	JA	5	0	1430
15	CH1	13	2	8	JA	11	0	733
15	CH1	13	5	4	JA	8	0	200
15	CH1	13	9	12	JA	8	0	710
15	CH2	13	1	56	JA	1	0	620
15	CH2	13	2	10	JA	8	0	941
15	CH2	13	7	3	JA	11	0	527
15	CH2	13	8	9	JA	11	0	364
15	CH3	13	1	12	JA	5	0	225
15	CH3	13	1	12	JA	4	0	224
15	CH3	13	4	3	JA	8	0	818
15	CH3	13	4	3	JA	1	0	819
15	CH3	13	4	3	JA	14	0	812
15	CH3	13	5	3	JA	8	0	185
15	CH3	13	5	3	JA	8	0	185
15	CH3	13	7	1	JA	11	0	526
15	CH3	13	8	11	JA	11	0	364
15	CH3+	13	6	13	JA	10	0	582
15	CH3+/M	13	8	1	JA	11	0	2453
15	M	13	0	0	JA	11	0	238
15	M	13	0	0	JA	8	0	986
15	M	13	0	2	JA	9	0	289
15	M	13	0	0	JA	8	0	255
15	M	13	0	0	JA	13	0	241
15	M	13	0	0	JA	11	0	992
15	M	13	1	0	JA	1	0	91
15	M	13	1	170	JA	5	0	640
15	M	13	4	0	JA	1	0	796
15	M	13	5	0	JA	2	0	152
15	M	13	5	0	JA	1	0	148
15	M	13	5	0	JA	8	0	150
15	M	13	5	0	JA	21	0	146
15	M	13	6	0	JA	1	0	558
15	M	13	6	0	JA	1	0	784
15	M	13	6	0	JA	11	0	556
15	M	13	6	0	JA	5	0	557
15	M	13	6	0	JA	1	0	539
15	M	13	7	0	JA	5	0	483
15	M	13	7	0	JA	1	0	484
15	M	13	8	0	JA	11	0	331
15	M	13	8	0	JA	5	0	332
15	M	13	8	0	JA	1	0	333
15	M	13	8	0	JA	13	0	334
15	M	13	8	0	JA	6	0	330
15	M	13	9	0	JA	11	0	690
15	M	13	9	0	JA	7	0	691
15	M	13	9	0	JA	14	0	693
15	M	13	9	0	JA	7	0	689
15	M	13	9	0	JA	8	0	692
15	M	13	10	0	JA	1	0	389

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
15	M	13	10	1	JA	1	0	426
15	M	13	10	0	JA	11	0	388
15	M	13	10	17	JA	1	0	458
15	M	13	10	11	JA	10	0	452
15	M	13	11	1	JA	5	0	881
15	M	13	11	1	JA	10	0	878
15	M	15	1	1	JA	11	0	2004
15	M	20	2	0	JA	1	0	1501
15	M	20	4	0	JA	11	0	2242
15	M	20	4	0	JA	8	0	2232
15	M	20	5	0	JA	3	0	1248
15	M	20	6	0	JA	11	0	1030
15	M	20	6	0	JA	1	0	1061
15	M	20	6	0	JA	11	0	1032
15	M	20	6	0	JA	8	0	1031
15	M	20	6	0	JA	5	0	1022
15	M	20	6	0	JA	14	0	1018
15	M	20	7	0	JA	5	0	1274
15	M	20	7	0	JA	10	0	1273
15	M	20	7	0	JA	12	0	1272
15	M	20	9	1	JA	8	0	1428
15	M	21	4	9	JA	14	0	2055
15	Med?/M	20	8	3	JA	1	0	1384
15	PR	13	8	28	JA	1	0	373
16		20	0	0	JA	19	0	1363
16	?	13	11	40	JA	16	0	894
16	3b	20	4	22	JA	105	0	1187
16	3b	20	4	44	JA	16	0	1166
16	3b	20	4	22	JA	16	0	1182
16	3b	20	4	22	JA	16	0	1181
16	3b	20	5	31	JA	103	0	1224
16	3b	20	6	23	JA	104	0	1155
16	3d	20	8	22	JA	16	0	1543
16	3d/4a/4b	20	9	9	JA	103	0	1462
16	3d/4a/4b	20	9	9	JA	102	0	1459
16	4a	20	4	1	JA	19	0	2099
16	4a	20	4	1	JA	16	0	2108
16	4a	20	4	1	JA	23	0	2110
16	4a	20	4	1	JA	16	0	2168
16	4a	20	4	13	JA	103	0	1133
16	4a	20	4	1	JA	16	0	2169
16	4a	20	4	1	JA	16	0	2170
16	4a	20	4	1	JA	16	0	2171
16	4a	20	4	13	JA	16	0	1134
16	4a	20	4	13	JA	104	0	1131
16	4a	20	4	1	JA	16	0	2126
16	4a	20	5	12	JA	17	0	1482
16	4a	20	6	4	JA	22	0	1067
16	4a	20	6	4	JA	23	0	1066
16	4a	20	7	1	JA	16	0	1296
16	4a	20	7	49	JA	24	0	1337
16	4a	20	8	42	JA	105	0	1512
16	4a	20	8	47	JA	24	0	1536
16	4b	20	6	56	JA	106	0	1101
16	4b+	21	2	29	JA	106	0	1569
16	4c	20	3	11	JA	16	0	2304
16	4c	20	4	2	JA	19	0	2175
16	BA1	13	1	247	JA	106	0	40
16	CH1	13	4	9	JA	106	0	832
16	CH1	13	8	5	JA	16	0	745
16	CH2	13	10	20	JA	107	0	943
16	CH3	13	1	12	JA	22	0	230
16	CH3	13	4	18	JA	106	0	607
16	M	13	1	170	JA	18	0	629

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
16	M	13	4	0	JA	106	0	799
16	M	13	5	0	JA	106	0	154
16	M	13	10	0	JA	16	0	394
16	M	14	3	1	JA	16	0	2067
16	M	20	2	4	JA	16	0	1503
16	M	20	3	0	JA	105	0	2263
16	M	20	4	0	JA	23	0	2234
16	M	20	7	0	JA	22	0	1288
16	M?	14	5	4	JA	23	0	2079
17		S1	13	78	JA	27	0	2367
17		S1	13	78	JA	27	0	2365
17		S1	13	78	JA	27	0	2369
17		S1	13	78	JA	27	0	2370
17		S1	13	78	JA	27	0	2371
17		S1	13	78	JA	27	0	2398
17		S1	13	78	JA	27	0	2359
17		S1	13	78	JA	27	0	2357
17		S1	13	78	JA	27	0	2361
17		S1	13	78	JA	27	0	2360
17	4	SE	1	2	JA	27	0	1673
17	4	SE	1	2	JA	27	0	1674
17	4	SE	1	10	JA	27	0	1660
17	4	SE	1	29	JA	27	0	1666
17	4r	21	4	2	JA	27	0	2042
17	5	15	1	64	JA	27	0	2027
17	CH1?	13	10	8	JA	27	0	434
17	CH2	13	1	8	JA	27	0	716
17	CH2	13	5	12	JA	27	0	176
17	CH3	13	1	12	JA	27	0	4
17	CH3	13	2	2	JA	27	0	939
17	CH3	13	3	1	JA	27	0	918
17	CH3	13	4	3	JA	27	0	808
17	CH3	13	7	1	JA	27	0	513
17	CH3+	13	1	11	JA	27	0	963
17	CH3+	13	1	11	JA	27	0	965
17	CH3+	13	1	11	JA	27	0	964
17	CH3+	13	1	11	JA	27	0	54
17	EMed?	13	11	24	JA	27	0	892
17	M	13	0	0	JA	27	0	996
17	M	13	0	0	JA	27	0	263
17	M	13	0	0	JA	27	0	250
17	M	13	0	0	JA	27	0	997
17	M	13	0	0	JA	27	0	239
17	M	13	0	2	JA	27	0	972
17	M	13	1	0	JA	27	0	76
17	M	13	1	0	JA	27	0	82
17	M	13	1	0	JA	27	0	83
17	M	13	1	0	JA	27	0	84
17	M	13	1	0	JA	27	0	77
17	M	13	1	0	JA	27	0	79
17	M	13	1	0	JA	27	0	80
17	M	13	3	0	JA	27	0	909
17	M	13	3	0	JA	27	0	904
17	M	13	3	0	JA	27	0	911
17	M	13	3	0	JA	27	0	908
17	M	13	5	0	JA	27	0	161
17	M	13	5	0	JA	27	0	160
17	M	13	5	0	JA	27	0	758
17	M	13	5	0	JA	27	0	757
17	M	13	5	0	JA	27	0	755
17	M	13	5	0	JA	27	0	754
17	M	13	5	0	JA	27	0	159

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
17	M	13	5	0	JA	27	0	158
17	M	13	5	0	JA	27	0	162
17	M	13	5	0	JA	27	0	169
17	M	13	5	0	JA	27	0	163
17	M	13	5	0	JA	27	0	164
17	M	13	5	0	JA	27	0	167
17	M	13	5	0	JA	27	0	166
17	M	13	5	0	JA	27	0	165
17	M	13	6	0	JA	27	0	537
17	M	13	6	0	JA	27	0	540
17	M	13	6	1	JA	27	0	468
17	M	13	7	0	JA	27	0	486
17	M	13	7	0	JA	27	0	959
17	M	13	8	0	JA	27	0	349
17	M	13	9	0	JA	27	0	657
17	M	13	9	3	JA	27	0	702
17	M	13	9	0	JA	27	0	659
17	M	13	9	3	JA	27	0	699
17	M	13	10	11	JA	27	0	454
17	M	13	10	0	JA	27	0	410
17	M	13	10	0	JA	27	0	412
17	M	13	10	0	JA	27	0	413
17	M	13	10	0	JA	27	0	414
17	M	13	10	1	JA	27	0	425
17	M	13	10	11	JA	27	0	453
17	M	13	10	1	JA	27	0	423
17	M	13	10	11	JA	27	0	455
17	M	13	11	0	JA	27	0	852
17	M	13	11	0	JA	27	0	854
17	M	13	11	0	JA	27	0	855
17	M	13	11	1	JA	27	0	875
17	M	13	11	1	JA	27	0	870
17	M	13	11	0	JA	27	0	853
17	M	15	1	2	JA	27	0	2010
17	M	15	1	1	JA	27	0	2003
17	M	20	4	0	JA	27	0	2199
17	M	20	6	0	JA	27	0	1012
18		S1	13	78	JA	33	0	2368
18		S1	13	78	JA	33	0	2400
18		S1	13	78	JA	33	0	2399
18	CH2	13	1	50	JA	33	0	2451
18	CH2	13	1	8	JA	33	0	717
18	M	13	1	0	JA	33	0	81
18	M	13	5	0	JA	33	0	168
18	M	13	5	0	JA	33	0	756
18	M	13	9	3	JA	33	0	698
18	M	13	11	1	JA	33	0	872
18	M	13	11	1	JA	33	0	873
18	M	13	11	1	JA	33	0	871
19		S 2	13	78	JA	29	0	2408
19		S1	13	78	JA	29	0	2377
19		S1	13	78	JA	29	0	2372
19		S1	13	78	JA	29	0	2397
19	?/CH3	13	6	14	JA	34	0	476
19	4c	20	8	33	JA	30	0	1510
19	CH1	13	0	12	JA	30	0	301
19	CH1	13	2	8	JA	30	0	734
19	CH2	13	1	8	JA	30	0	718
19	CH3	13	1	12	JA	29	0	3
19	CH3	13	1	12	JA	32	0	5
19	CH3	13	2	2	JA	30	0	938
19	CH3	13	7	1	JA	30	0	512
19	M	13	1	170	JA	30	0	641
19	M	13	1	0	JA	31	0	78

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
19	M	13	3	0	JA	30	0	906
19	M	13	4	0	JA	30	0	793
19	M	13	6	0	JA	31	0	538
19	M	13	6	0	JA	30	0	463
19	M	13	7	0	JA	30	0	485
19	M	13	8	0	JA	32	0	348
19	M	13	9	0	JA	32	0	658
19	M	13	9	0	JA	30	0	662
19	M	13	9	3	JA	30	0	700
19	M	13	9	3	JA	30	0	701
19	M	13	9	0	JA	30	0	661
19	M	13	9	0	JA	32	0	656
19	M	13	10	1	JA	31	0	424
19	M	13	10	0	JA	31	0	415
19	M	13	10	0	JA	30	0	411
19	M	13	11	1	JA	31	0	877
19	M	13	11	1	JA	31	0	876
19	M	13	11	1	JA	30	0	874
19	M	20	6	0	JA	28	0	1013
19	M	20	7	0	JA	31	0	1263
19	M	20	7	0	JA	34	0	1261
19	M	20	7	0	JA	31	0	1262
19	M	20	8	1	JA	34	0	1370
20	2b	20	6	59	JA	44	0	1080
20	2b	20	9	30	JA	44	0	1431
20	4a	20	4	1	JA	148	0	2134
20	4c	20	8	12	JA	38	0	1410
20	CH1?	13	10	8	JA	36	0	435
20	CH2	13	2	10	JA	38	0	940
20	CH3	13	2	2	JA	36	0	930
20	CH3+	13	1	11	JA	98	0	48
20	M	13	0	0	JA	38	0	990
20	M	13	1	0	JA	38	0	73
20	M	13	5	0	JA	98	0	153
20	M	13	6	0	JA	36	0	554
20	M	13	7	0	JA	99	0	960
20	M	13	7	0	JA	44	0	503
20	M	21	3	1	JA	98	0	1636
20	M	21	3	1	JA	44	0	1635
21	3b	20	5	36	JA	47	0	1241
21	3b	20	7	64	JA	45	0	1346
21	4a	20	4	1	JA	45	0	2150
21	4a	20	8	8	JA	45	0	1402
21	4c	20	6	2	JA	45	1	1049
21	4c	20	7	4	JA	45	0	1305
21	BA	13	5	13	JA	47	0	213
21	CH2	13	1	8	JA	45	0	725
21	CH3	13	5	3	JA	45	0	181
21	CH3	13	5	3	JA	45	0	181
21	M	13	5	0	JA	45	1	151
21	M	20	4	0	JA	45	0	2211
21	M	20	4	0	JA	45	0	2218
22	2b	20	4	79	JA	55	0	1149
22	3b	20	4	35	JA	55	0	1177
22	3b	20	4	44	JA	55	0	1169
22	3b	20	4	19	JA	55	0	2422
22	3b	20	5	43	JA	56	0	1494
22	3b	20	6	48	JA	55	0	1106
22	3b	20	8	63	JA	55	0	1529
22	3b	20	8	63	JA	55	0	1528
22	3b	20	8	23	JA	55	0	1522
22	3b	20	9	45	JA	55	0	1449

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
22	3b	21	4	19	JA	55	0	2056
22	3c	21	1	4	JA	56	0	1600
22	3c	21	1	35	JA	55	0	1610
22	3d	20	8	22	JA	55	0	1537
22	3d	20	8	22	JA	55	0	1545
22	3d/4a/4b	20	9	11	JA	55	0	1456
22	4a	20	3	39	JA	55	0	2315
22	4a	20	4	16	JA	55	0	1122
22	4a	20	4	1	JA	55	0	2113
22	4a	20	4	16	JA	55	0	1119
22	4a	20	4	1	JA	55	0	2130
22	4a	20	4	21	JA	55	0	2426
22	4a	20	4	21	JA	55	0	2425
22	4a	20	4	21	JA	55	0	2423
22	4a	20	4	21	JA	55	0	2424
22	4a	20	6	4	JA	55	0	1074
22	4a	20	8	8	JA	55	0	2428
22	4a	20	8	8	JA	55	0	2429
22	4a	20	8	8	JA	55	0	1398
22	4b	20	8	7	JA	55	0	2427
22	4b	21	2	11	JA	55	0	1572
22	4c	20	3	11	JA	55	0	2302
22	BA	13	6	31	JA	55	0	788
22	BA5	13	0	29	JA	55	0	602
22	CH1	13	8	5	JA	56	0	740
22	CH2	13	0	1	JA	55	0	275
22	CH2	13	1	8	JA	55	0	726
22	CH2	13	5	12	JA	55	0	174
22	CH3+/M	13	8	1	JA	55	0	2454
22	M	13	5	0	JA	55	0	145
22	M	13	11	1	JA	56	1	879
22	M	14	3	1	JA	151	0	2069
22	M	14	5	5	JA	55	0	2081
22	M	14	5	5	JA	55	0	2082
22	M	20	4	0	JA	55	0	2233
22	M	20	4	0	JA	55	0	2220
23	3c	20	4	3	JA	60	0	2179
23	4	SE	1	17	JA	59	0	1661
23	4	SE	1	19	JA	59	0	1661
23	4b	21	2	12	JA	60	0	1575
23	4c	20	3	11	JA	62	0	2300
23	BA	13	9	21	JA	60	0	958
23	BA1	13	1	220	JA	60	0	17
23	BA3?	13	1	145	JA	59	0	616
23	M	13	8	0	JA	62	0	341
23	M	13	9	0	JA	62	0	664
23	M	13	10	0	JA	60	0	393
23	M	20	4	0	JA	62	0	2208
23	PR	13	8	28	JA	60	0	375
24	?	15	1	160	JA	58	0	2036
24	3b	20	4	63	JA	57	0	1173
24	3b	20	8	63	JA	58	0	1552
24	3b	20	8	63	JA	58	0	1526
24	BA	13	5	30	JA	57	0	778
24	M	20	5	10	JA	57	0	1243
25	3b	20	4	44	JA	61	0	1168
25	3b	20	5	43	JA	61	0	1493
25	3d	20	8	22	JA	61	0	1541
25	4a	20	3	39	JA	61	0	2314
25	4c	20	6	2	JA	61	0	1048
25	4c	20	9	39	JA	61	0	1432
25	BA	13	5	13	JA	61	0	214
25	CH2	13	11	11	JA	65	0	887
25	M	13	7	0	JA	61	0	504

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
26	3c	21	1	4	JA	74	0	1598
26	4a	20	7	15	JA	74	0	1358
26	4a	20	7	27	JA	66	0	1292
26	4a	20	8	8	JA	72	0	1404
26	4b	20	6	75	JA	68	0	1111
26	4c	20	7	3	JA	68	0	1330
26	4c	20	7	3	JA	74	0	1345
26	BA5/CH1	13	0	22	JA	66	0	306
26	BA5/CH1	13	0	22	JA	72	0	309
26	BA5/CH1	13	0	22	JA	72	0	310
26	CH1	13	5	4	JA	74	0	199
26	CH2	13	6	4	JA	69	0	471
26	M	13	0	2	JA	66	0	281
26	M	20	4	0	JA	68	0	2215
27		20	0	0	JA	70	0	1361
27	3d/4a/4b	20	9	9	JA	63	0	1461
27	4a	20	4	16	JA	73	0	1124
27	4a	20	4	1	JA	70	0	2093
27	4a	20	5	12	JA	70	0	1484
27	4a	20	6	4	JA	64	0	1072
27	4a	20	6	4	JA	63	0	1071
27	4a	20	7	24	JA	73	0	1290
27	4a	20	7	17	JA	73	0	1351
27	4a	20	8	8	JA	70	0	1392
27	4a	20	8	8	JA	67	0	1386
27	4a	20	8	47	JA	70	0	1535
27	4a/4b	20	7	2	JA	71	0	1321
27	4b	20	5	26	JA	63	0	1496
27	4b	20	6	3	JA	64	0	1056
27	4b	20	6	3	JA	63	0	1059
27	4b	20	6	28	JA	70	0	1470
27	4b	20	8	2	JA	63	0	1373
27	4b	20	8	16	JA	70	0	1418
27	4b	20	8	2	JA	73	0	1374
27	4c	20	3	11	JA	70	0	2298
27	4c	20	3	11	JA	70	0	2297
27	4c	20	3	10	JA	70	0	2284
27	4c	20	3	20	JA	70	0	2311
27	4c	20	3	11	JA	70	0	2296
27	4c	20	3	10	JA	70	0	2286
27	4c	20	3	11	JA	63	0	2303
27	4c	20	3	20	JA	70	0	2309
27	4c	20	6	2	JA	63	0	1051
27	4c	20	6	18	JA	63	0	1076
27	4c	20	7	4	JA	63	0	1302
27	4c	20	7	4	JA	70	0	1307
27	4c	20	7	3	JA	63	0	1329
27	BA5/CH1	13	0	22	JA	63	0	308
27	CH1	13	2	8	JA	70	0	729
27	CH1	13	8	5	JA	63	0	736
27	CH1	13	9	12	JA	63	0	709
27	CH2	13	1	29	JA	63	0	25
27	CH2	13	8	9	JA	63	0	365
27	CH3	13	4	3	JA	64	0	817
27	CH3	13	4	3	JA	71	0	816
27	CH3	13	4	3	JA	70	0	815
27	CH3	13	5	3	JA	70	0	191
27	CH3	13	5	3	JA	70	0	191
27	CH3	13	5	3	JA	70	0	190
27	CH3	13	5	3	JA	70	0	208
27	CH3	13	5	3	JA	70	0	208
27	CH3	13	5	3	JA	70	0	190

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
27	CH3	13	6	5	JA	63	0	574
27	CH3	13	6	11	JA	70	0	474
27	CH3	13	6	5	JA	63	0	573
27	M	13	0	2	JA	63	0	283
27	M	13	4	0	JA	63	0	798
27	M	13	10	0	JA	73	0	390
27	M	13	11	0	JA	64	0	846
27	M	20	3	0	JA	64	0	2265
27	M	20	3	0	JA	70	0	2262
27	M	20	3	0	JA	70	0	2261
27	M	20	4	0	JA	70	0	2201
27	M	20	4	0	JA	63	0	2202
27	M	20	4	0	JA	70	0	2203
27	M	20	4	0	JA	70	0	2204
27	M	20	4	0	JA	70	0	2205
27	M	20	4	0	JA	70	0	2206
27	M	20	7	0	JA	63	0	1277
27	M	20	7	0	JA	64	0	1278
27	M	20	7	0	JA	63	0	1284
27	M	20	7	0	JA	63	0	1286
27	M	20	8	1	JA	73	0	1371
27	M	21	2	1	JA	71	0	1580
27	M	21	2	1	JA	64	0	1579
27	PR	13	8	14	JA	70	0	747
28		C	13	78	JA	125	0	2416
28	3b	20	7	64	JA	125	0	1348
28	4a	20	4	16	JA	133	0	1123
28	4a	20	4	1	JA	133	0	2147
28	4c	20	4	10	JA	125	0	1143
28	4c	20	8	12	JA	123	0	1408
28	4c	20	9	5	JA	121	0	1439
28	BA	13	5	13	JA	122	0	195
28	CH1	13	9	12	JA	121	0	711
28	CH2	13	1	13	JA	121	0	8
28	CH3	13	0	21	JA	125	0	973
28	CH3	13	1	12	JA	124.1	0	233
28	CH3	13	1	12	JA	121	0	219
28	CH3	13	1	12	JA	125	0	231
28	CH3	13	2	2	JA	138	0	932
28	CH3	13	5	3	JA	122	0	195
28	CH3	13	5	3	JA	122	0	195
28	M	13	0	0	JA	121	0	987
28	M	13	1	0	JA	125	0	71
28	M	13	5	0	JA	125	0	142
28	M	13	5	0	JA	136	0	141
28	M	13	7	0	JA	139	0	499
28	M	13	9	0	JA	135	0	681
28	M	13	9	15	JA	121	0	946
28	M	13	10	0	JA	121	0	402
28	M	13	10	1	JA	125	0	422
28	M	20	3	0	JA	125	0	2273
28	M	20	4	0	JA	135	0	2200
28	M	20	6	0	JA	111	0	1026
28	M	20	6	0	JA	121	0	1021
29	3b	20	4	29	M	2	0	1195
29	3b	20	5	36	M	10	0	1230
29	3b	20	5	31	M	3	0	1222
29	3b	20	5	36	M	7	0	1233
29	3b	20	5	31	M	5	0	1220
29	3b	20	5	32	M	3	0	1434
29	3b	20	6	23	M	7	0	1150
29	3b	20	9	10	M	3	0	1434
29	4	SE	1	29	M	12	0	1671
29	4c	20	8	17	M	13	0	1411

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
29	CH1	13	1	2	M	11	0	41
29	CH3	13	3	1	M	1	0	915
29	CH3	13	4	3	M	4	0	820
29	M	13	0	0	M	9	0	978
29	M	13	0	0	M	6	0	980
30		S1	13	78	M	23	2	2375
30	4a	20	4	9	M	23	0	2180
30	M	20	4	0	M	23	3	2198
31		20	0	0	M	16	0	1369
31	?	20	4	85	M	14	0	1176
31	2e	21	3	82	M	14	0	1639
31	3a/3b	20	6	25	M	17	0	1104
31	3b	20	5	37	M	14	0	1229
31	3d/4a?	20	6	19	M	17	0	1090
31	4a	20	4	1	M	17	0	2141
31	4a	20	4	16	M	20	0	1113
31	4a	20	5	12	M	18	0	1480
31	4a	20	7	15	M	15	0	1356
31	4a	20	7	27	M	18	0	1291
31	4a	20	8	8	M	16	0	1396
31	4b	20	4	20	M	16	0	1175
31	4c	20	3	11	M	17	0	2290
31	BA	13	5	26	M	17	0	2083
31	BA5+	13	1	75	M	20	0	649
31	CH3	13	4	3	M	21	0	823
31	M	13	0	0	M	17	0	976
31	M	13	1	170	M	20	0	636
31	M	13	10	0	M	15	0	378
31	M	13	11	0	M	16	0	834
31	M	13	11	0	M	20	0	833
31	M	14	5	2	M	17	0	2077
31	M	20	5	0	M	16	0	1207
31	M	20	5	0	M	20	0	1219
31	M	21	2	1	M	14	0	1581
31	Med?/M	20	8	3	M	16	0	1377
32	3b	20	5	40	M	35	0	1495
33		SE	1	0	M	27	2	1683
33	1c	21	3	79	M	27	1	1627
33	4a	20	4	1	M	28	0	2136
33	4a	20	4	1	M	28	0	2135
34	3b	20	5	36	M	29	0	1231
34	3b?	20	4	24	M	29	0	1202
34	3d/4a/4b	20	9	9	M	29	0	1458
34	4a	20	4	1	M	29	0	2137
34	M	14	3	1	M	29	0	2068
35	4a	20	4	1	M	30	0	2138
35	M	20	5	0	M	30	0	1206
36		S	13	0	M	24	0	2412
36		S1	13	78	M	24	0	2330
36	4a	20	4	1	M	39	0	2139
36	4b	20	6	56	M	25	5	1098
36	4b+	21	2	28	M	24	0	1558
36	4c	20	3	11	M	24	0	2291
36	4c	20	3	11	M	24	0	2289
36	4c	20	4	11	M	24	0	1126
36	4c	20	4	10	M	24	0	1138
36	4c	20	7	3	M	24	0	1333
36	4c	20	7	3	M	24	0	1333
36	4c	20	8	12	M	25	5	1406
36	4c	20	8	36	M	25	6	1518
36	M	13	3	0	M	24	0	2457
36	M	20	3	0	M	24	0	2253

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
36	M	20	3	0	M	25	6	2257
36	M	20	3	0	M	24	0	2252
36	M	20	3	0	M	24	0	2249
36	M	20	3	0	M	24	0	2251
36	M	20	4	0	M	24	0	2192
36	M	20	4	0	M	24	0	2191
36	M	20	4	0	M	38	0	2195
36	M	20	4	0	M	24	0	2240
36	M	20	4	0	M	38	0	2196
36	M	20	4	0	M	24	0	2197
36	M	20	5	0	M	38	0	1204
36	M	20	6	0	M	38	0	1003
36	M	21	5	3	M	24	0	2062
37		S1	13	78	M	22	1	2324
37		S1	13	78	M	22	1	2329
37	4	SE	1	2	M	22	1	1681
37	4	SE	1	2	M	22	1	1681
37	4a	20	7	1	M	22	1	1295
37	4b	20	6	75	M	22	1	1109
37	CH2	13	1	8	M	22	1	713
37	CH2	13	6	20	M	22	1	479
37	CH3	13	1	14	M	22	1	615
37	M	13	0	0	M	22	3	264
37	M	13	1	0	M	22	1	99
37	M	13	3	0	M	22	1	895
37	M	13	3	0	M	22	2	897
37	M	13	4	0	M	22	1	800
37	M	13	5	0	M	22	1	105
37	M	13	5	0	M	22	1	106
37	M	13	5	0	M	22	1	108
37	M	13	6	0	M	22	2	532
37	M	13	6	1	M	22	1	466
37	M	13	8	0	M	22	1	318
37	M	13	9	3	M	22	1	696
37	M	13	9	0	M	22	1	650
37	M	20	3	0	M	22	1	2254
37	M	20	6	0	M	22	1	1001
38		S1	13	78	M	25	3	2389
38		S1	13	78	M	25	1	2327
38	4b	20	5	11	M	25	3	1252
38	4c	20	6	2	M	25	3	1041
38	4c	20	9	5	M	25	3	1437
38	CH2	13	8	3	M	25	1	356
38	CH3	13	1	17	M	25	4	19
38	CH3	13	6	5	M	25	1	568
38	CH3	13	6	5	M	25	3	563
38	CH3	13	7	1	M	25	3	514
38	CH3+	13	1	11	M	25	3	51
38	M	13	1	0	M	25	1	101
38	M	13	1	0	M	25	3	97
38	M	13	3	0	M	25	3	896
38	M	13	7	0	M	25	3	493
38	M	13	9	0	M	25	3	652
38	M	13	9	0	M	25	3	654
38	M	13	9	3	M	25	4	695
38	M	13	10	0	M	25	3	381
38	M	20	2	0	M	25	3	1497
38	PR	13	8	25	M	25	1	748
39	4a/4b	20	9	13	M	25	2	1452
39	4c	20	6	2	M	25	2	1039
39	4c	20	8	34	M	25	2	1514
39	CH2	13	8	3	M	25	2	357
39	M	20	3	0	M	25	2	2250
39	M	20	4	0	M	25	2	2193

Table 16.2 (*cont'd*)

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
40		C	13	78	M	26	0	2415
40		S1	13	78	M	26	0	2388
40	M	15	1	2	M	26	0	2013
40	M	20	4	0	M	26	0	2194
41	4r	21	4	2	M	32	0	2044
41	M	13	10	0	M	31	3	386
41	M	20	9	1	M	31	2	1424
41	Med?/M	20	8	3	M	31	1	1378
42		20	0	0	M	40	0	1367
42	-	21	2	39	M	33	0	1560
42	3b	20	4	26	M	34	0	1147
42	3r	21	2	3	M	33	0	1560
42	M	13	4	0	M	36	0	801
42	M	13	7	0	M	37	0	496
42	M	21	4	1	M	33	0	2041
44	3b	21	4	36	BK	34	0	2057
45	2b	21	2	6	BK	15	0	1574
45	3a	20	4	38	BK	16	0	1161
45	4	15	1	40	BK	15	0	2026
45	4	15	1	4	BK	14	0	2018
45	4	15	1	75	BK	14	0	2030
45	4b	21	2	11	BK	17	0	1564
45	BA	13	5	26	BK	13	0	777
45	BA2	13	1	213	BK	13	0	28
45	CH1	13	2	8	BK	13	0	1000
45	M	13	5	0	BK	13	0	137
45	M	15	1	5	BK	13	0	2019
45	M	21	1	1	BK	15	0	1612
45	M	21	1	1	BK	13	0	1613
46	4a	20	4	1	BK	36	0	2133
46	4a/4b	20	7	2	BK	2	0	1316
46	M	13	1	170	BK	5	0	631
46	M	13	11	0	BK	1	0	856
47		S	13	0	BK	20	0	2420
47	3b	20	5	31	BK	19	0	1221
47	3b	20	5	30	BK	20	0	1478
47	4a	20	4	13	BK	21	0	1136
47	4a	20	8	8	BK	20	0	1399
47	4b	21	2	11	BK	19	0	1565
47	4b?	21	5	11	BK	20	0	2063
47	4c	20	3	11	BK	19	0	2293
47	4c	20	3	11	BK	21	0	2292
47	4c	20	6	18	BK	21	0	1077
47	CH3	13	4	18	BK	20	0	609
47	M	13	11	0	BK	21	0	848
47	M	21	1	92	BK	21	0	1617
47	M	21	3	1	BK	19	0	1633
48	3b	20	5	36	BK	25	0	1232
48	4a	20	4	21	BK	25	0	1190
48	4a	20	4	1	BK	22	0	2188
48	4a	20	4	1	BK	25	0	2187
48	4a	20	4	1	BK	23	0	2185
48	4a	20	4	1	BK	22	0	2189
48	4a	20	5	12	BK	25	0	1481
48	4a/4b	20	7	2	BK	4	0	1317
48	4c	20	3	10	BK	4	0	2282
48	4c	20	3	10	BK	23	0	2283
48	4c	20	4	11	BK	7	0	1127
48	4c	20	4	10	BK	22	0	1142
48	4c	20	5	8	BK	32	0	1491
48	BA	13	5	13	BK	23	0	2465
48	BA	13	5	13	BK	24	0	211

<i>Block no.</i>	<i>phase</i>	<i>site</i>	<i>area</i>	<i>context</i>	<i>form</i>	<i>code</i>		<i>FVN</i>
48	BA	13	11	29	BK	10	0	596
48	BA5	13	0	29	BK	23	0	605
48	CH2	13	1	8	BK	4	0	722
48	CH3	13	1	21	BK	7	0	13
48	CH3	13	5	3	BK	7	0	182
48	CH3	13	5	3	BK	7	0	182
48	M	13	1	0	BK	7	0	74
48	M	13	1	170	BK	7	0	630
48	M	13	6	0	BK	7	0	552
48	M	13	11	0	BK	4	0	857
48	M	20	3	0	BK	7	0	2260
48	M	20	3	0	BK	31	0	2259
48	M	20	5	0	BK	7	0	1213
48	M	20	6	0	BK	22	0	1017
48	M	21	3	1	BK	22	0	1634
48	Med?/M	20	8	3	BK	7	0	1385
49	3r	21	4	4	BK	28	0	2050
49	4c	20	7	3	BK	30	0	1342
49	BA5+	13	1	86	BK	28	0	622
49	CH2	13	6	20	BK	28	0	481
49	CON	13	7	15	BK	28	0	952
49	M	13	0	0	BK	28	0	600
49	M	13	5	0	BK	28	0	136
49	M	13	11	1	BK	29	0	882
49	M	20	4	0	BK	29	0	2183
49	M	20	5	0	BK	29	0	1211
49	M	20	5	0	BK	29	0	1214
49	M	20	5	0	BK	28	0	1212
49	M	20	6	0	BK	29	0	1014

17 The glass vessels

D Allen

Discussion

This collection of Roman glass from the north-east quarter of Housesteads was in extremely fragmentary condition and, with the exception of bottle No. 19, only very small pieces have survived. However, several have sufficient diagnostic features to make identification possible, and it is clear that several fine items of tableware as well as utilitarian containers were once in use on the site. This report was completed in 1983.

The commonest glass vessel finds were fragments of blue-green bottles, extremely common containers of 1st- and 2nd-century date. A few less common container fragments, some of them of mid- to later Roman date (Nos 29–30) were also present. Among the fragments of better-quality tableware there are several that may be surprisingly early in date, although none were large enough to be completely certain of their identifications (Nos 1, 3 and 4). That some 1st-century glassware was present on the site is shown by the pillar-moulded bowl fragment No. 2, but several common Flavian and early 2nd-century types such as long-necked flagons, globular jars and facet-cut beakers were notably absent. Most interesting among the mid- to later Roman finds is the figure-cut fragment, No. 33, which represents a group of vessels rarely found in Britain and shows once again that tableware of the highest quality was in use at Housesteads, as at other sites along the Wall (see Charlesworth 1959).

Catalogue

Coloured and blue-green glass

Cast and ground

1. 8878–9 H21:1:37

Small fragment of millefiori glass, apparently yellow flowers with turquoise centres in a wine-coloured ground. Not illustrated.

Only one tiny fragment of millefiori glass was included in this collection. Manufacture involved the fusing together of coloured sections of glass rods and it was used until soon after the middle of the 1st century AD for the production of a variety of cast and ground bowls, dishes and cups. Finds are not common in Britain but fragments have been recovered from sites as far north as Chesters and Corbridge (Site Museums), Carlisle (Keays Lane, Carlisle Archaeological Trust excavations), Nether Denton and Tealing in Angus (Charlesworth 1959, 36). During the 2nd and 3rd centuries rare vessels of blown millefiori glass were made, and it is always possible that this fragment belongs to this later group, since it is too small to determine its method of manufacture with any certainty. Examples include a small jug from a grave dated *c* AD 100 at Vindonissa (Berger 1960, 14, no. 14, pls 1 and 20) two more jugs from 3rd-century graves at Cologne and Sackrau (Fremersdorf 1958, 51, pls 110 and a fragment

from a context dated AD 280–90 at Verulamium (Charlesworth 1972, 212, xvi, no. 1 fig 79:63).

2. 3561 H13:11:29

Fragment of a pillar-moulded bowl of blue-green glass; surfaces dulled and chipped. Upper part of one rib extant, fire-polished outside, rotary-polished within. Not illustrated.

Pillar-moulded bowl fragments of blue-green glass are extremely common finds on 1st-century sites in Britain and elsewhere, and a few complete examples have also been found in burials (eg Price 1975, 18–20, no. 1, group 3, fig 10.1 from Thornborough, Bucks). Manufacture continued until *c* AD 75–80, but examples of this sturdy vessel form must have continued in use for some years after this, since fragments have been found in northern Britain and elsewhere on sites that were not occupied until the early 2nd century (Charlesworth 1972, 198–9).

Mould-blown

3. 3819 H13:–:– (Fig 17.1)

Small fragment of blue-green glass with part of three vertical mould-blown ribs extant.

This small fragment of mould-blown glass is most likely to have come from a ribbed bowl of a type made from about the middle of the 1st century AD until sometime within the Flavian period. Two examples were found at Verulamium in contexts dated AD 60–75 and AD 105–15 (Charlesworth 1972, 196, ii, nos 1 and 3, fig 74.2), an almost complete bowl was found in a Neronian pit at Usk (Price 1995), and a fairly large fragment came from excavations in Blackfriars Street, Carlisle (Carlisle Archaeological Trust). Alternatively, the vertical ribs on this fragment may be part of a lower body frieze of a more elaborately decorated vessel belonging to a group of mid-1st-century date. These bear moulded decoration characterised by stylised vegetable motifs, often with convivial inscriptions and/or the signatures of the makers: Ennion, Jason and others (Harden 1935). Many of these were made in Italy and British finds are rare, but include one or possibly two fragments from Camulodunum, dated before AD 65 (Harden 1947, 299–300 nos 48–9, pls LXXXVI–LXXXVII), four from Brockley Hill, Middlesex (Harden 1973, 106–7, fig 8, no. G1; other finds discussed), and a ribbed fragment similar to the Housesteads piece from Quinton, Northants (Harden 1979, 152–3).

Blown

4. 451 H13:9:3

Tiny fragment apparently of two-layered or cased glass: emerald green and colourless. Not illustrated.

This may be a fragment of cased glass, from a vessel that has been formed by blowing a bulb of one metal inside one of another colour. This decorative technique was popular during the middle of the 1st century AD, and was most often used on simple hemispherical cups, substantially complete examples of which come from Vindonissa (Berger 1960, 43–5, no. 104, pls 7 and 17) and Cologne (Fremersdorf 1958, 22, pl 6). Usually the inner layer was opaque white and the outer layer a bright colour such as emerald green, amber or blue, but there is a pink and colourless fragment from a

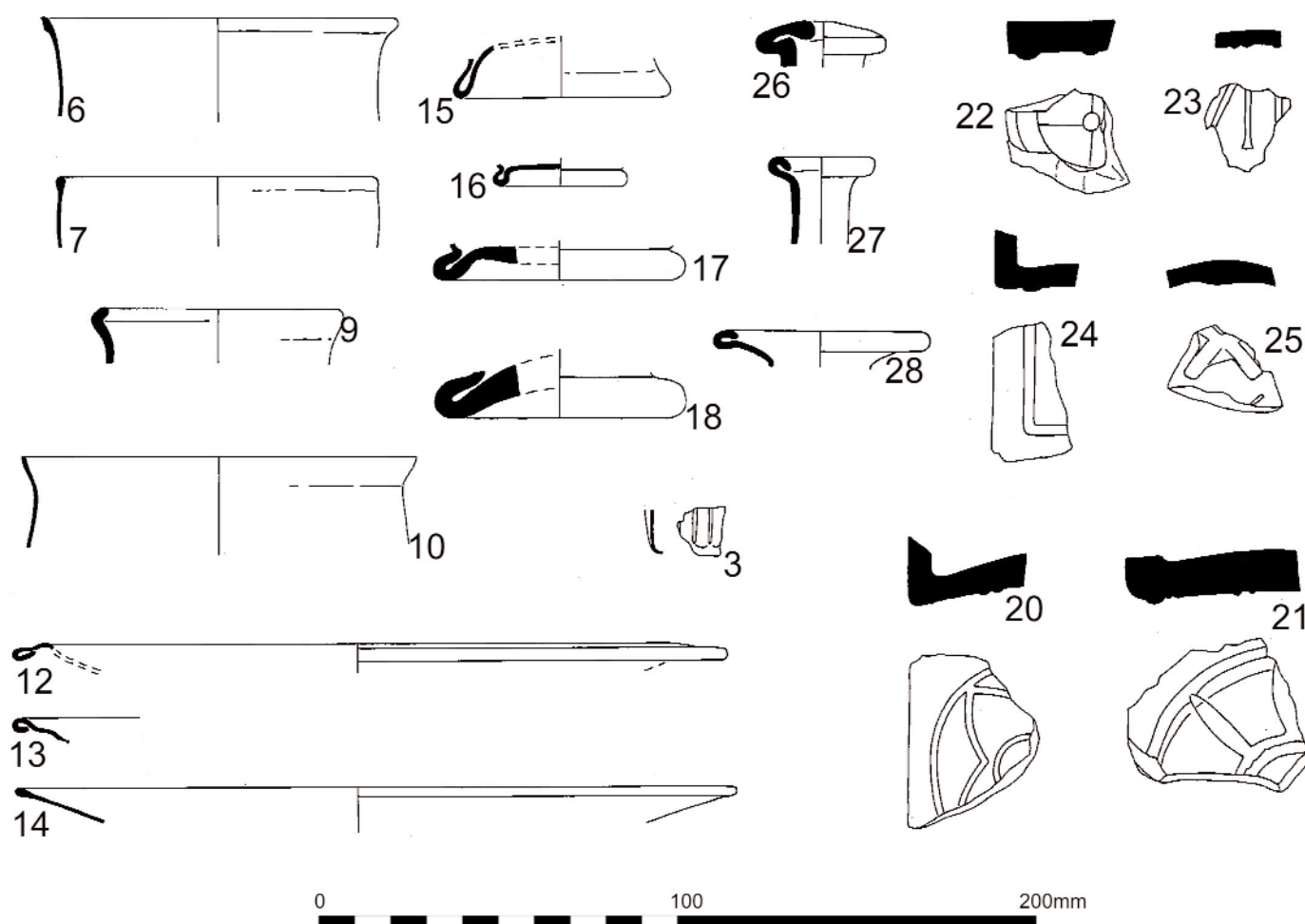


Fig 17.1 Glass vessels.

pre-conquest deposit at Camulodunum (Harden 1947, 297, no. 37, pl LXXXVII) and a blue and colourless fragment from Chichester (Charlesworth 1981, 293, fig 15.1). Finds are quite rare in Britain, and none has previously been found this far north. However, No. 4 is so indeterminate and small that it is always possible that it may only be two pieces of glass fused by fire!

5. 8761 HSE:1:1

Fragment of blue-green glass with part of a marvered spiral thread of opaque yellow extant. Not illustrated.

Marvered threads were used as decoration on a variety of vessels at different dates during the Roman period and this piece cannot therefore be closely identified.

6. 792–802 H13:2:3 (Fig 17.1)

Rim fragment of a bowl or beaker of clear blue-green glass. Rim fire-rounded and thickened and turned outward, diameter *c* 100mm.

7. 9370 H21:2:10 (Fig 17.1)

Rim fragment of a beaker of blue-green glass; surfaces dulled. Rim fire-rounded and thickened and turned very slightly inward, diameter *c* 90mm.

8. 3548 H13:1:13

Rim fragment similar to above, clear blue-green glass, diameter *c* 80mm. Not illustrated.

9. 3490 H13:0:29 (Fig 17.1)

Rim fragment of a beaker of blue-green glass; a few bubbles within the metal. Rim fire-rounded and thickened and turned inward, diameter *c* 60mm.

10. 610 H13:0:0 (Fig 17.1)

Rim fragment of a bowl or beaker of clear blue-green glass; a few bubbles within the metal. Rim outflared, broken off flat and roughly ground, diameter *c* 110mm. Band of very faint horizontal wheel-incised lines beneath rim. One edge slightly distorted by fire.

11. 673–80 H13:1:12

Rim and body fragments of the same vessel as above, or one very similar. More horizontal wheel-incised lines further down side. No fragments joining. Not illustrated.

Rim fragments 6–11 have no sufficient diagnostic features to identify them with certainty. They could represent any of a wide variety of bowls, beakers and cups in use throughout the Roman period.

12. 5773 H20:7:2 (Fig 17.1)

Rim fragment of a shallow plate of thin blue-green glass. Rim folded outward, downward and inward, diameter *c* 198mm.

13. (no SF no.) H13:11:0 (Fig 17.1)

Rim fragment similar to above, clear blue-green glass, diameter indeterminable.

14. (no SF no.) H13:11:0 (Fig 17.1)

Rim fragment of a shallow plate of blue-green glass; surfaces dulled. Rim fire-rounded and thickened, diameter *c* 200mm.

Nos 12–14 are all rim fragments of large, shallow plates that occurred in both oval and circular forms during the mid- to later Roman periods (Isings 1957, 116–17, form 97a–b). A folded rim fragment of this type from a late Roman context at Chichester was found with mortar adhering to it and was

identified by Charlesworth as a piece of crown window glass (1978, 270, no. 48, fig 10.23), and this possible interpretation was also placed on a similar fragment from Exeter (Charlesworth 1979, 227–9, fig 71.42). However, since crown window glass is otherwise virtually unknown in the Roman period it seems likely that most finds actually represent plates. They seem to belong mainly to the later 2nd and 3rd centuries: the Exeter fragment described above is dated to this period, several fragments with both folded and fire-rounded rims came from deposits dated AD 160–230 and mid- to later 3rd century at the Caerleon fortress baths (Allen 1986) and a complete vessel of turquoise glass came from a 2nd-century grave at Langley in Kent (Jessup 1959, 26–7, group 4, pl VIII.1).

15. 3819 H13:— (Fig 17.1)

Base fragment of clear blue-green glass; fairly bubbly. High pushed in tubular base-ring, diameter *c* 60mm, domed base.

16. 6607 H20:6:23 and 6814 H20:6:48 (Fig 17.1)

Joining fragments forming complete base of blue-green glass; surfaces dulled. Pushed-in tubular base-ring, diameter 36mm; broken edges of vessel wall apparently chipped away leaving smooth edge.

17. 6080–82 H20:6:4 (Fig 17.1)

Base fragment of blue-green glass; surfaces dulled. Pushed-in slightly tubular base-ring, diameter *c* 70mm.

18. 2391 H13:5:22 (Fig 17.1)

Heavy base fragment of pale green glass; surfaces scratched and dulled. Pushed-in solid base-ring, diameter *c* 70mm, domed base.

Base fragments 15–18 could represent any of a wide variety of vessel types of any Roman date. Most interesting is No. 16, which has had the broken vessel walls chipped away leaving a smooth-edged disc, presumably for reuse as a gaming piece or counter of some sort. Such reuse of glass fragments was quite common during Roman times. Two more bases are catalogued below (Nos 43 and 49), and others have been found at Fishbourne (Harden and Price 1971, 352, no. 77, fig 141) and York (Yorkshire Museum).

19. 3120 H13:2:8 (Fig 17.2)

Fragmentary square bottle of clear bubbly blue-green glass; broken and mended, some fragments missing but complete profile extant. Blown into a square-sectioned body mould, design in relief on base: two concentric circles with four arcs forming a concave-sided figure between them. Cylindrical neck, rim folded outward, upward and inward; angular multi-ribbed handle attached beneath rim and at shoulder. Height *c* 167mm, diameter of rim 52mm, width of sides at base 88mm.

20. 585 H13:0:0 (Fig 17.1)

Base fragment of a prismatic bottle of blue-green glass; shattered and crystalline. Moulded design in relief: part of two concentric circles extant with ?flower petal between them.

21. 911–13 H13:5:3 (Fig 17.1)

Thick base fragment of a prismatic bottle of dark blue-green glass; surfaces dulled. Moulded design in relief: part of a ?spoked wheel extant.

22. 5455–8 H20:7:0 (Fig 17.1)

Thick base fragment of a prismatic bottle of blue-green glass. Moulded design in relief: part of one circle with central dot extant, very thin right-angled cross visible over centre.

23. 8316 H20:8:8 (Fig 17.1)

Base fragment of a prismatic bottle of blue-green glass; surfaces dulled. Moulded design in relief: part of what are probably letters of the alphabet extant – ?M followed by another vertical.

24. 831–3 H13:2:2 (Fig 17.1)

Base fragment of a square bottle of clear blue-green glass. Moulded design in relief: part of a square extant.

25. 5662–3 H20:4:1 (Fig 17.1)

Base fragment of a prismatic bottle of dark blue-green glass; surfaces dulled. Moulded design in relief: part of a diagonal cross extant together with part of a pontil mark.

Number 19 is the substantial part of a square bottle and fragments 20–5 are all base fragments of similar square or perhaps hexagonal or rectangular vessels. These and the cylindrical bottles of the same broad group were used as containers for a wide variety of liquid and semi-liquid substances, and were extremely common during the 1st and 2nd centuries AD. They represent the commonest glass vessel finds on the site. Characteristics have been discussed by Charlesworth (1966), who describes some of the wide variety of basal trade-marks that provide the opportunity of matching products from the same glasshouses. Commonest are varying numbers of concentric circles, but many other designs also occur. The spoked wheel on No. 21, for example, has been found on bottles from Corbridge, Lullingstone and Silchester (Charlesworth 1966, 34, figs 13–14). The design on No. 20 can be matched by a bottle base from Silchester (Reading Museum) and designs similar to that on No. 19 occur on a square bottle from Caistor-by-Norwich (Norwich Castle Museum) and hexagonal bottles from Oxford Street, Leicester (Jewry Wall Museum), and Girton College, Cambridge (Cambridge Museum of Archaeology and Ethnology). Bottle bases with diagonal crosses surrounded by one, two or three concentric circles and/or squares have been discussed by Charlesworth (1966, 33–4, figs 11–12), as have marks comprising various letters of the alphabet (1966, 36, figs 15–19). There are insufficient remains of Nos 25 and 23 to match them with any more complete vessels. Number 22 is interesting in that the faint diagonal cross over the centre probably shows how the circles were marked out for accuracy on the mould.

26. 5837–46 H20:4:1 (Fig 17.1)

Rim fragment of a bottle or flask of blue-green glass; surfaces dulled. Rim folded outward, upward and inward, leaving only a very narrow opening (4 × 1.5mm). Diameter of rim 36mm.

27. 3041 H13:1:46 (Fig 17.1)

Rim fragment of a flask of clear blue-green glass. Rim folded outward, upward and inward, diameter *c* 30mm.

28. 2579 H13:8:25 (Fig 17.1)

Rim fragment of a flask of clear blue-green glass. Funnel-shaped rim, folded outward, upward and inward, diameter *c* 60mm.

Fragments 26–8 may be from any of a variety of flask or bottle forms. Number 26 is particularly interesting because of the extremely small size of the opening left in the rim. Globular bath-flasks (Isings 1957, 78–9, form 61) were occasionally given this feature, presumably to regulate the flow of oil from the vessel, and it is possible that this is the form represented here. This group of containers was common from the later 1st to the 3rd centuries.

29. 5664 H20:4:1 (Fig 17.2)

Base of an unguent bottle or flask of blue-green glass; pin-head bubbles within the metal. Blown into a hexagonal-sectioned body mould, faint design in relief on base: a hexagon surrounding a smaller central hexagon, not concentric, partly obscured by an off-centre pontil mark. Width of side at base 12mm.

Small mould-blown hexagonal-bodied vessels were occasionally made with two dolphin handles as a variant of the globular-bodied bath-flasks discussed above, and it is probably to this group of vessels that No. 29 belongs. There is a

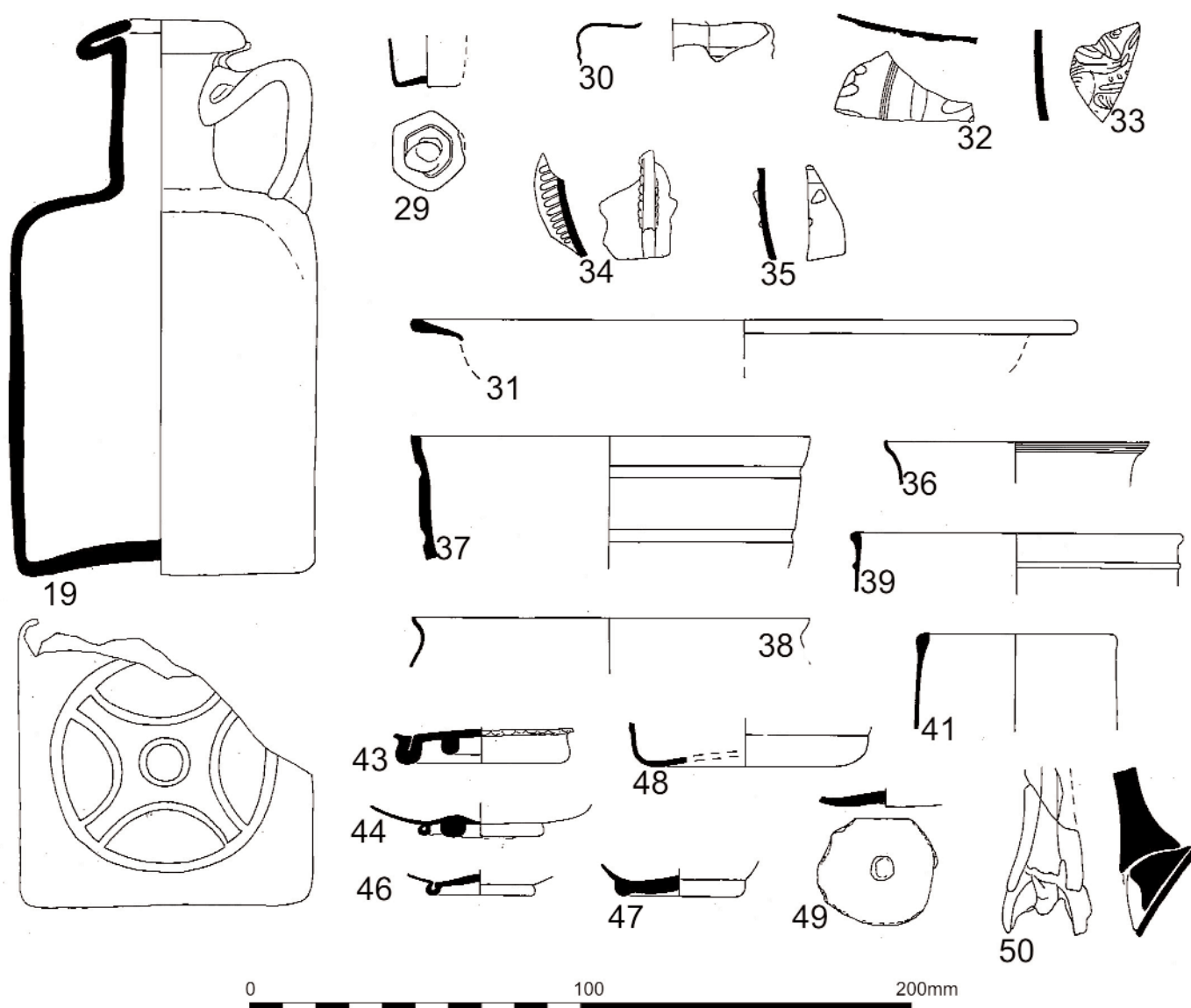


Fig 17.2 Glass vessels.

complete example in Liège Museum (Vanderhoeven 1961, 111–12, nos 125–6, pl XXIX), and another from Silchester (Reading Museum). Dated finds are rare, but they are perhaps most likely to belong to the later 2nd or 3rd centuries, when the greatest variety of bath-flasks were being made.

30 792–802 H13:2:3 (Fig 17.2)

Shoulder fragment, almost certainly from a barrel-shaped bottle of clear, bubbly blue-green glass. Blown into a bipartite mould – part of vertical mould seam and two horizontal cordons extant. Diameter of shoulder *c* 60mm.

Number 30 is almost certainly a shoulder fragment of a mould-blown barrel-shaped bottle of a type fairly common during the 3rd and 4th centuries. Many bear basal trade-marks comprising the maker's name, most commonly Frontinus, and the distribution of finds indicates that they were manufactured in northern France (Price 1978, 76–7, fig 61). Both one- and two-handled vessels occur, and dated examples show that the former were made first, with several coming from contexts of the first half of the 2nd century (Isings 1957, 106–8, form 89; Berger 1960, 83, no. 212, pls 14 and 22 from Vindonissa; Goethert-Polaschek 1977, 203, no. 1246 from Wederath). Most, however, belong to the 3rd and 4th centuries (Isings 1957, 106–8 and 158, form 128).

British finds are much less common than the earlier bottle types discussed above, but complete examples come from Faversham, Kent (Harden *et al* 1968, 62, no. 79), Milton next Sittingbourne, Kent (Thorpe 1949, 6, pl IIb), and Butt Road, Colchester (CAT 1978, 1 and 3), and small body fragments have turned up on a number of sites including York (Minster excavations) and Coventina's Well, Carrawburgh (Chesters Site Museum).

Colourless glass

Cast and ground

31. 3050–51 H13:11:4 (Fig 17.2)

Rim fragment of a shallow bowl or plate of colourless glass. Cast and rotary polished, part of flaring thickened lip extant, diameter *c* 200mm.

Colourless cast and ground bowls and plates replaced coloured vessels made by the same methods during the Flavian period, and continued to be popular until about AD 125–30. Rims were made both with and without an overhanging edge, and No. 31 is an example of the latter. Some of these vessels were made in Alexandria, but north-western

finds are likely to have been imported from glasshouses in Italy. A small bowl of this type came from a deposit dated not later than the mid-2nd century at Wroxeter (Bushe-Fox 1914, 20–1, fig 12), and rim fragments have been found at Corbridge, Caerhun, the latter from a context dated AD 90–110 (Charlesworth 1959, 38–40, figs 2, and 3.4) and Fishbourne, in a context dated AD 75–100 (Harden and Price 1971, 331–2, no. 25, fig 138).

Blown

32. 8790 H21:2:11 (Fig 17.2)

Base fragment of a shallow bowl of buff-colourless glass; surfaces dulled. Outer surface facet- and linear-cut: part of two concentric circles and a series of oval facets extant.

This fragment is part of the base of a shallow curved bowl decorated with facet-cutting. Such vessels were made from the middle of the 2nd to the earlier 4th centuries, and were probably imported from the Rhineland. It is possible that No. 32 belongs to a group manufactured during the earlier part of this date range, characterised by a decoration of rows of oval facets around the sides and on the base, the latter surrounded by a ring of oval facets, and the two zones separated by wheel-cut lines. Examples come from a burial dated AD 140–90 at Ospringe in Kent (Whiting *et al* 1931, 34–5, pl XXXII:340), a burial dated AD 140–70 at Nida-Heddernheim in Germany (Welker 1978, 504f, fig 1, pl 57), a burial at Esch in the Netherlands dated to the late 2nd or early 3rd century, but containing some earlier material (van den Hurk 1975, 85, no. IV.29, fig 30), and there is a deeper vessel from a pit dated AD 155–65 at Park Street, Towcester (Price 1980, 63–4 no. 1, fig 14).

33. 1944 H13:8:11 (Fig 17.2)

Fragment of yellowish-colourless glass. Outer surface facet-cut and engraved, original design indeterminable. Some slight damage by fire has caused some facets to become smoothed.

This fragment, although small, bears very characteristic decoration that identifies it as belonging to a group of vessels with figured scenes formed from cut facets with engraved details. The piece is too small to enable recognition of the subject depicted, and the fact that the surface appears to have been damaged slightly by fire makes this even less possible. Fremersdorf (1951) once claimed that all vessels thus decorated were manufactured in a single Cologne workshop in the early 3rd century but Harden has preferred to see an eastern origin and a manufacturing date in the 2nd century for the group (1960, 45–7). It now seems clear, however, that vessels bearing this style of decoration were made over a considerable period of time and it is quite likely that some originated in the east and others in the west. One of the earliest examples is a beaker from a Flavian deposit in the amphitheatre at Caerleon (Wheeler 1928, 170, no. 1; Boon 1967, 98, fig 3) and late vessels include a bottle from a 4th-century grave at Hohensülzen in Germany and a fragmentary flask from a late 3rd- or 4th-century context at Caerleon (Boon 1968). The vessels most commonly given this style of decoration, however, are hemispherical bowls with curvilinear engraving beneath the rim and mythological or occasionally genre scenes covering the body. This group probably belongs to the later 2nd or earlier 3rd century. Most famous is a complete example showing a scene from the myth of Actaeon and Artemis, from Leuna-Merseburg in Germany, and now in the British Museum (Harden *et al* 1968, 70–71, no. 94). A list of vessels and fragments has been published by Ettlinger (1974, 53–9) with

reference to a fragment from Baden in Switzerland. British finds are quite rare, and include fragments from Castlesteads (Charlesworth 1959, 48 fig 7.3), Bowcombe Down on the Isle of Wight (Harden 1969, 54–5, pl V, G), Caerleon (Boon 1968, 83, fig 6), York (Yorkshire Museum) and Verulamium (Verulamium Museum).

34. 3741 H13:5:0 (Fig 17.2)

Fragment of colourless glass; part of one pinched-out rib extant, decorated with a ribbed pattern, impressed into glass when still warm and pliable.

Decoration comprising series of pinched-out spikes and ribs was used on a variety of vessels, but particularly hemispherical bowls and cups, during the later 2nd and 3rd centuries, and, to a lesser extent, during the 4th century. Several complete examples have been found in the Rhineland and Gaul where they were probably made (Fremersdorf 1962, 31, pls 34–5; Doppelfeld 1966, pls 94–5; Morin-Jean 1913, 226f, figs 307–10), and there is another from a grave at Brougham Roman cemetery (Carlisle Museum and Art Gallery). Fragments occur at a number of sites including Corbridge (Bulmer 1955, 131, no. 20) and South Shields (Museum of Antiquities, Newcastle).

35. 8726 H21:1:9 (Fig 17.2)

Fragment of colourless glass; part of one horizontal wheel-cut groove, and two applied blobs of dark blue glass extant.

The decorative technique of applying blobs of coloured glass, especially blue, amber and green, usually in simple patterns such as single rows or groups of three, was extremely popular in the Rhineland during the 4th century (Fremersdorf 1962). Finds are less common in Britain, but fragments have turned up in late contexts at sites such as Carrawburgh, Corbridge (Charlesworth 1959, 50, fig 8, 2), Portchester (Harden 1975, 371, nos 10c–d, fig 198), Silchester (Reading Museum) and Wroxeter (Clive House Museum, Shrewsbury). The most complete British find, and the only one from a burial known to me, came from a late grave at Chignall St James, Essex (Essex Archaeological Unit excavations).

36. 1933 H13:8:24 (Fig 17.2)

Rim fragment of a beaker of colourless glass. Rim outflared, broken off and ground smooth, thin band of horizontal wheel-incised lines immediately beneath. Diameter of rim *c* 80mm.

37. 7854 H14:9:2 (Fig 17.2)

Rim fragment of a bowl of greenish-colourless glass; very scratched. Rim outflared slightly, broken off and ground smooth, wide horizontal wheel-cut groove beneath and another further down the side. Diameter of rim *c* 120mm.

38. 7970 H20:8:38 (Fig 17.2)

Rim fragment of a bowl of colourless glass; surfaces dulled. Rim outflared and ground smooth, diameter *c* 120mm.

Little can be said about rim fragments 36–7, except that colourless beakers with outflared, ground rims, decorated with horizontal wheel-cut lines were made in a variety of shapes and were common from the Flavian period onwards. The shape of No. 38 suggests that it belonged to a hemispherical vessel; these were made with a variety of decorations from the earlier 2nd to the 4th centuries.

39. 1580–81 H13:7:4 (Fig 17.2)

Two joining rim fragments of a cup of clear colourless glass. Rim fire-rounded and thickened and turned outward slightly, applied horizontal self-coloured trail beneath. Diameter of rim *c* 100mm.

40. Not illustrated:

a. 2513 H13:10:8

Rim fragment similar to above.

b. 5522–9 H20:4:1

Rim fragment similar to above.

c. 3821 H20:U/S

Rim fragment similar to above.

41. 8042 H20:7:33 (Fig 17.2)

Rim fragment of a cup of colourless glass; surfaces streaky and dulled. Vertical rim fire-rounded and thickened, diameter *c* 60mm.

42. Not illustrated:

a. 2114–15 H13:0:2

Rim fragment similar to above.

b. 3043–4 H13:1:63

Rim fragment similar to above.

c. 5392–3 H20:2:2

Rim fragment similar to above.

d. 5388 H20:6:0

Rim fragment similar to above.

e. 8080 H20:8:47

Rim fragment similar to above.

43. 3052 H13:11:4 (Fig 17.2)

Base of a cup of greenish-colourless glass; pinhead bubbles within the metal surfaces dulled. Two concentric base-rings, the outer pushed-in solid, the inner an applied coil with pontil mark on the inside edge. Diameter of outer base-ring 52mm. Broken edges of vessel walls have been chipped away, presumably to enable reuse of base.

44. 7670 H20:3:11 (Fig 17.2)

Base fragment of a cup of greenish-colourless glass, similar to above but more roughly made; metal bubbly. Outer pushed-in tubular base-ring, inner applied coil, neither an exact circle. Outer base-ring *c* 37 × 40mm.

45. Not illustrated:

a. 3139–41 H13:1:80

Fragment of the inner coil of a base similar to above.

b. 2568 H13:8:5

As above.

c. 8515 H20:6:75

As above.

d. 7636 H20:7:27

As above.

e. 6441 H20:7:2

As above.

f. 8786 H21:4:47

As above.

Rim fragments 39–40 and 41–2 belong to two closely related groups of cups, both characterised by a fire-rounded rim, cylindrical body, and usually two concentric base-rings. Base fragments 43–5 may therefore belong to vessels of either type. Differences lie in the rim, which is everted slightly in the case of vessels represented by fragments 39–40, and vertical or turned inward very slightly on those represented by Nos 41–2, and in the decoration.

The first group most often simply has a horizontal self-coloured trail beneath the rim, and another above the base. The most famous example of the type is a complete vessel from a grave at Baldock, Hertfordshire (Percival Westell 1931, 275–6, no. 4828, fig 6) and three more substantially complete cups were found in a deposit dated *c* AD 128–39/42 in the commanding officer's house at Housesteads (Charlesworth 1971b, 34–6, figs 1–3). The type seems to belong mainly to the 2nd century, and was one of the commonest glass types in use at this period. The most famous example of the vessels represented by fragments 41–2 came from a grave at Airlie in Angus (Curle 1932, 291, fig 3), and the name 'Airlie cups' is often given to the type after this piece. These vessels are slightly later in date than the group described above, belonging to the later 2nd and earlier 3rd centuries. They are even more common, and were given a wider range of decoration (Fremersdorf 1970). A small fragment with painted decoration is included among earlier finds from Housesteads (Charlesworth 1959, 44, fig 5). The fact that base fragment No. 43 has been chipped around for reuse has already been noted above.

46. 6665 H20:4:13 (Fig 17.2)

Base fragment, probably of a cup, of clear colourless glass. Pushed-in tubular base-ring, diameter 33mm, base rises to low mound in centre.

47. 8176 H20:9:19 (Fig 17.2)

Base fragment of a beaker or jar of greenish-colourless glass; pinhead bubbles within the metal. Slightly thickened base-ring, diameter 40mm.

48. 3704 H13:1:94 (Fig 17.2)

Base fragment of a beaker or flask of colourless glass; surfaces dulled. Apparently cylindrical body, with part of a horizontal ridge extant around lower part; slightly concave base, diameter *c* 60mm.

49. 3055–92 H13:11:0 (Fig 17.2)

Base fragment, perhaps of a globular bowl or flask of colourless glass; some pinhead bubbles within the metal. Base slightly concave with central pontil mark, broken edges chipped around to make a roughly circular disc, presumably for reuse as a gaming piece or counter, diameter *c* 35mm.

None of base fragments 46–9 can be closely identified but, once again, No. 49 is interesting in that it has apparently been fashioned for reuse.

50. 6080–87 H20:6:4 (Fig 17.2)

Three-ribbed handle fragment of greenish-colourless glass. Lower part extant – three ribs extended into claws to grip another similar three-ribbed shoulder attachment adhering to vessel wall. Width of handle *c* 18mm.

The vessel type to which handle fragment No. 50 belonged cannot be identified with certainty, but the formation of the shoulder attachment, with an extra three-ribbed piece between the vessel wall and the handle itself, is very unusual and is worthy of note.

18 The graffiti

R O S Tomlin

The graffiti from the north-east corner of the fort have all been scratched after firing and, except for No. 7, in capital letters. Where identifiable, they are personal names, either ‘Celtic’ (Nos 7, 13, 14, 15) or ‘Roman’ (Nos 3, 6), in the nominative or genitive case, presumably the owner’s. The most interesting names are *Neuto* (No. 14), apparently Tungrian, and the unique *Paaiatus* (No. 15).

Incised on samian (Fig 18.1)

1. 5926 H20:1:3 *RIB* 2501.27
Two conjoining sherds from the base of a form 31 vessel: AII[...]
Preceded by decorative ?hatching. *Ae[lius]*, etc.
2. 7512 H20:9:9
Wall sherd: R[...]
3. 3560 H13:11:40 *RIB* 2501.622
Wall sherd of a form 31R vessel with Roman repair: VITALI[...]
Probably *Vitali[s]*, but *Vi[tali]anus* is found at Housesteads (*RIB* 1592).
4. 7653 H20:4:13 *RIB* 2501.659
Base sherd of a form 18/31R vessel: [...]ATI
5. 7734 H20:3:30 *RIB* 2501.679
Wall sherd of a form 31 vessel: [...]DAT[...]
6. 2991 H13:11:0 *RIB* 2501.752
Base sherd of a form 18/31R? vessel: [...]MITIV[...]
Probably *[Pri]mitiv[us or i]*
7. 5244 H20:5:0 *RIB* 2501.775
Wall sherd of a form 18/31R vessel, in cursive letters: [...]OVIR
Probably a ‘Celtic’ name-ending, eg *Sacrovir(os)*, *Senovir(os)*, etc
8. 4086 H20:1:0 *RIB* 2501.806
Base sherd: [...]. VAL[...]
9. 9563 H20:4:21 *RIB* 2501.814
Base sherd of a form 18/31R? vessel, on the wall: [...]VIII
10. 7735 H20:3:1 *RIB* 2501.823
Foot-ring sherd: [...]. [1–2]VIN[...]
Perhaps [...]i[Q]uin[t ...]i
11. 9560 H13:5:20 *RIB* 2501.829
Half the base and complete profile of a form 31 vessel, on the wall: [1–3]VNTIVI[...]
There are a few Latin adjectives in *-antivus* and *-entivus*, but apparently none in *-untivus*; just possibly a theophoric personal name from *Vanauns* (or *Vanauntes*), a god worshipped by Tungrians (*RIB* 1991).
12. 2719 H13:4:15
Three wall sherds, two conjoining, of a form 31R? vessel: a crude grid of intersecting lines; not letters.

Incised on coarseware (Fig 18.1)

13. 8114 H20:8:8 FV 1397? *RIB* 2503.206
Sherds from a BB2 round-rim bowl or dish (late 2nd to early 3rd century): BELICIANI.
This ‘Celtic’ name is usually spelt *Bellicianus* (eg *CIL* VII 1255, Caerwent), but is sometimes found with one ‘l’ (for example *RIB* 375, Caerleon).
14. 9564 H21:4:7 and H21:4:36 *RIB* 2503.355
Two conjoining rim sherds of a BB2 bowl with rim of triangular section (Chapter 16, form BO 39: c 160–210), apparently complete: NIIVTO
The name *Neuto* is once attested, on an altar at the shrine of Nehalennia in the East Scheldt estuary (Stuart and Bogaers 1971, no. 30; *AE* 1975, 644); and as *Neutto* once in the territory of the Tungri (*CIL* XIII 3628). It could well be a Tungrian personal name, therefore, of a member of the 3rd- and 4th-century garrison of Housesteads, the *cohors I Tungrorum*. Since this unit had been based in Britain since the Flavian period (Tacitus, *Agric* 36.1, etc), the survival after more than a century of a native personal name, if not of recruitment from the original homeland, is worthy of note.
15. 6965 H20:4:19 *RIB* 2503.369
Rim sherd of a BB2 round rim bowl (Chapter 16, form BO 39: c 160–210): PAIATIVS
The name, unless a mistake (eg for *Pacatius*, cf *RIB* 1599 (Housesteads), *Pacatianus*), seems to be unattested; it is apparently formed from the very rare ‘Celtic’ name *Paius* (*CIL* V 1956, cf *AE* 1976, 392, *C Doius Pa[. Jus]*).
16. 4579 H20:4:0
Wall sherd of a BB1? vessel: R[...]
17. 9561 H20:4:19
Wall sherd of a grey ware jar: S E[...]
The first letter could be *G*. Perhaps the owner’s initials, cf *RIB* 1389, S E? (a centurion).
18. 9562 H15:1:4
Rim sherd of parchment ware mortarium with traces of painted decoration on the rim (Chapter 16, form BO 151: c 360+), scratched on the side: [...]P
Below, a horizontal line; the whole enclosed by a figure like an inverted ‘h’ which could be *M*, *N*, *VI*, etc.
19. 4635 H20:6:0
Rim sherd of a BB1 cooking pot: [...]NA
20. 7198 H20:9:2
Base? sherd of a BB1? vessel: [...]*[...]



Fig 18.1 The graffiti (scale 1:2).

19 The botanical evidence

M Van der Veen

In total, nine samples were analysed for plant remains. Five samples came from waterlogged deposits and, of these, 2.5kg were washed through a series of sieves down to 300 micron mesh size. The samples were then subjected to paraffin separation and sorted microscopically, while the residues were dry sorted. The four samples from the non-waterlogged deposits were processed using water flotation over a 500 micron sieve to extract the carbonised plant remains. This report was completed in 1982, with some further discussion of contexts added by the editor.

The samples came from the following contexts:

H21:1:79–80 organic deposits at the base of the robber trench for the primary north-east angle tower.
date: early 2nd century AD (Hadrianic) or late 2nd to early 3rd century AD.

H21:2:40 organic deposits at the base of the primary east rampart.

date: early 2nd century AD (Hadrianic).

H20:5:94, 6:73 organic deposits within the primary north rampart.

date: early 2nd century AD (Hadrianic).

H21:3:91 lens of charcoal in clay layer 3:90, above flags of oven 3:88.

date: late 2nd to 3rd century.

H20:5:37 charcoal layer, part of the make-up levels for the first phase of the later rampart (H20/3b).

date: second half 3rd century.

H21:3:39 charcoal layer, abutting the large stone hearth (3:40) in the interval tower.

date: late 3rd or early 4th century.

H21:3:25 charcoal layer, sealed below a late cobble surface (3:26); cleaning from the interval tower.

date: mid-4th century?

The results of the analysis of the samples from the waterlogged deposits are shown in Table 19.1. The habitat column indicates where the plants most commonly grow. Of Habitat A, arable land and disturbed places, only *Triticum aestivum*, bread wheat, definitely originates from an arable field. All the other species in this category can occur in arable land, but also occur commonly in other disturbed places, including open land around settlements and buildings, along trackways etc. A large number of species belong to Habitat G, grassland. This includes pasture, meadows, in general open, grassy areas. Four species belong to Habitat W, that of woodland, wood margins and hedgerows. They are hazel, blackthorn, barren strawberry and raspberry. All four can be found in hedges. Several species belong to Habitat M, which represents marshy or very damp ground. One genus in this category, *Carex* sp (sedge), accounts for no less than 1500 seeds.

Some species from the grassland habitat also occur in this habitat, indicating a preference for damp, wet grassland. The presence of *Calluna*, heather, refers to heathland, moors or bogs, Habitat H.

It is not quite clear how accurately the plants found in the samples reflect the local vegetation at the period of the construction of the rampart. The deposits are very localised and do not appear to be part of the old ground surface. It is even more difficult to interpret the samples from within the rampart. Could they originate from turves cut to make up the rampart? The plant remains in H20:5:94 are very similar to the samples from the base of the rampart. The results from sample H20:6:73, however, are rather different. In contrast to the other samples, which contain a large amount of different species, this sample contains almost solely *Juncus* (rush) seeds. (*Editors note:* Most problematic of all is the uncertainty regarding the integrity of contexts H21:1:79–80. These were initially interpreted as primary rampart deposits and their composition is similar to layers H21:2:40, H20:5:94 and H20:6:73, with pieces of leather tentage also present, presumably representing rubbish deposits, as in H21:2:40. However, further analysis of the excavation record has revealed that H21:1:79–80 lay at the base of the robber trench (H21:1:78) for one of the primary north-east angle walls (see Chapters 3 and 4). The sketched section drawing (Fig 2.5) suggests these deposits did not extend beyond the limits of that trench. Unfortunately, the somewhat schematic nature of the drawing means it is not possible to determine whether H21:1:79–80 were simply rubbish deposits that were initially dumped at the base of the primary rampart and were later cut and briefly exposed by the robber trench at the end of the 2nd or beginning of the 3rd century, or, alternatively, represented rubbish contemporary with the demolition and robbing of the primary angle tower which was deposited in the trench before it was backfilled. If the former is the case, then pollen from two different periods could conceivably be present in the sample.)

Assuming the deposits we are dealing with reflect in some way the environment in the immediate vicinity of the fort, the picture that emerges, is one of open grassland, very wet in places, allowing the growth of sedges and rushes, and with some heathland nearby. Except for some hedges with hazel and hawthorn there is no evidence for any trees. The other rare component in the samples is the wasteland habitat. Many different weed species will have grown in and around the fort.

The four samples from the non-waterlogged deposits contained 3 seeds of *Plantago lanceolata* (ribwort), 4 seeds of *Carex* spp (sedges), 1 seed of *Rumex acetosa* (sorrel), 3 unidentified seeds and some *Calluna/Erica* (heather) fragments. So these samples

Table 19.1 Number of seeds and fruits for each sample

Date: early 2nd century AD (Hadrianic), but see discussion of contexts H21:1:79–80

Key to habitat column: A = arable land and other disturbed places

G = grassland

H = heathland, moors, bogs

M = marshy and very damp ground

W = woodland, wood margins and hedgerows

Other abbreviations: × = fragments like leaves present, but not individually counted

<i>species</i>	<i>habitat</i>	<i>H21:1:79</i>	<i>H21:1:80</i>	<i>H21:2:40</i>	<i>H20:5:94</i>	<i>H20:6:73</i>	<i>total</i>
Ranunculaceae							
cf <i>Caltha palustris</i> L (kingcup)	M	1	–	–	–	–	1
<i>Ranunculus acris</i> L (meadow buttercup)	G	5	15	–	3	–	23
<i>Ranunculus repens</i> L (creeping buttercup)	G	28	90	5	8	–	131
<i>Ranunculus</i> sp	–	5	23	–	244	–	272
Cruciferae							
<i>Brassica</i> sp.	A	2	4	–	–	–	6
<i>Raphanus raphanistrum</i> L (wild radish)	A	1	–	–	–	–	1
Violaceae							
<i>Viola</i> sp (violet)	–	–	1	–	15	–	16
Caryophyllaceae							
<i>Agrostemma githago</i> L (corn cockle)	A	3	2	–	–	–	5
<i>Silene vulgaris</i> (moench) Garcke (bladder campion)	A	1	–	–	–	–	1
<i>Stellaria graminea</i> L (lesser stitchwort)	G	9	12	–	–	–	21
<i>Stellaria media</i> (L) Vill (chickweed)	A	17	30	163	6	–	216
Portulacaceae							
<i>Montia fontana</i> L (blinks)	M&G			10		–	10
<i>Montia fontana</i> ssp <i>chondrosperma</i> (Fenzl) S M Walters (blinks)	M&G	13	31	83	3	–	130
Chenopodiaceae							
<i>Atriplex</i> sp	–	–	–	1	–	–	1
<i>Chenopodium</i> sp	–	6	8	3	–	–	17
Linaceae							
<i>Linum catharticum</i> L (purging flax)	G	107	250	–	5	–	362
Rosaceae							
<i>Aphanes arvensis</i> L (parsley piert)	A	8	20	100	2	–	130
<i>Potentilla sterilis</i> (L) Garcke (barren strawberry)	W	66	105	3	25	–	199
<i>Prunus spinosa</i> L (blackthorn)	W	–	1	–	–	–	1
<i>Rubus idaeus</i> L (raspberry)	W	–	1	20	–	–	21
Umbelliferae							
Umbelliferae indet.	–	2	–	–	–	–	2
Polygonaceae							
<i>Polygonum aviculare</i> L (knotgrass)	A	19	9	47	–	–	75
<i>Polygonum convolvulus</i> L (black bindweed)	A	1	–	–	–	–	1
<i>Polygonum lapathifolium/persicaria</i> (pale persicaria)	A	5	5	1	2	–	13
<i>Rumex acetosa</i> L (sorrel)	G	–	3	–	–	–	3
<i>Rumex acetosella</i> L (sheep's sorrel)	G&A	–	90	1	2		93
Fagaceae							
<i>Corylus avellana</i> L (hazel)	W	–	2	–	–	–	2
Ericaceae							
<i>Calluna vulgaris</i> (L) Hull (heather)	H	×	×	–	×	–	×
Scrophulariaceae							
<i>Rhinanthus</i> sp L (yellow rattle)	–	16	13	–	–	–	29
Labiatae							
<i>Ajuga reptans</i> L (bugle)	G	–	–	–	5	–	5
<i>Galeopsis</i> sp (hemp nettle)	–	6	5	96	1	–	108
<i>Prunella vulgaris</i> L (self-heal)	G	81	23	–	25	–	129
<i>Stachys palustris</i> L (marsh woundwort)	M	–	–	–	1	–	1
Plantaginaceae							
<i>Plantago lanceolata</i> L (ribwort)	G	14	4	–	–	–	18

Table 19.1 (cont'd)

<i>species</i>	<i>habitat</i>	<i>H21:1:79</i>	<i>H21:1:80</i>	<i>H21:2:40</i>	<i>H20:5:94</i>	<i>H20:6:73</i>	<i>total</i>
Compositae							
<i>Cirsium</i> sp (thistle)	—	—	1	—	—	—	1
<i>Leontodon</i> sp (hawkbit)	G	1	—	—	—	—	1
Compositae indet	—	—	—	—	5	—	5
Juncaceae							
<i>Juncus</i> sp (rush)	M&G	18	—	—	105	100+	223+
<i>Luzula campestris</i> (L) D C (sheep's brush)	G	12	1	—	—	—	13
Cyperaceae							
<i>Carex</i> spp (sedges)	M	249	414	7	917	1	1588
<i>Eleocharis palustris</i> (L) Roem & Schult (common spike-rush)	M	2	—	—	—	—	2
Gramineae							
<i>Triticum aestivum</i> L (bread wheat)	A	—	1	—	—	—	1
Gramineae indet (grasses)	G	31	103	—	18	—	152
mosses, not further identified	—	×	×	×	×	—	×
indet	—	15	18	3	13	—	49
<i>Total</i>		744	1285	543	1405	101+	4078

also indicate the presence of grassland, damp ground and heathland.

Neither of the two categories of samples contained any evidence for economic or domestic activities.

20 The metalworking debris

D B Dungworth and D Starley

Introduction

This report describes the evidence for metalworking recovered from the excavations carried out between 1974 and 1981 in the north-east corner of the fort (for details see Starley 1996 and Dungworth 2001). Most of the metalworking debris was recovered from the rampart areas. During Phase II the north and east ramparts were removed and several workshops, associated with a number of large hearths of uncertain purpose, were constructed. The excavations of the workshop areas (in particular the northern workshop in the east rampart) recovered substantial quantities of crucibles, slag, moulds and copper alloy scrap and waste. This is a remarkably complete assemblage of all the sorts of metalworking evidence that can be recovered archaeologically. The removal and subsequent reinstatement of the ramparts (and other activities) resulted in limited survival of deposits and features associated with the workshops. Indeed, much of the copper alloy working debris was recovered from a dumped deposit (H21:2:48) within a road surface immediately outside the workshop.

Classification of metalworking debris

The metalworking debris was examined and classified based on simple characteristics such as size, shape, colour and texture (Bayley *et al* 2001). This allows the identification of the types of metalworking activities that took place. The debris includes iron smithing slags (see Starley 1996 for further details) and a wide range of debris from working copper alloys (see Dungworth 2001 for further details). The evidence for working copper alloys was examined in greater detail to investigate if the army produced its own equipment.

The 12kg of ironworking slags recovered included smithing hearth bottoms and non-diagnostic ironworking slags. Smithing hearth bottoms are plano-convex lumps of slag that form inside a blacksmith's hearth (McDonnell 1991). Most of the smithing hearth bottoms were recovered from late Roman or post-Roman contexts, and the north rampart area (H20). None of the ironworking slags recovered showed any diagnostic features to indicate that the production of iron from iron ores (smelting) took place. The non-diagnostic ironworking slags lack any distinctive features that would allow them to be linked to particular ironworking processes (ie smelting or smithing). Given the lack of iron smelting slags, however, it is likely that all of the non-diagnostic ironworking slags were produced during iron smithing. The quantity of iron smithing slag recovered is not particularly great and the assemblage

is likely to have resulted from the occasional repair of iron artefacts rather than the manufacture of large quantities of new artefacts.

The furnaces and hearths used in metalworking activities were commonly built using clay. The high temperatures achieved led to the vitrification of the inner surfaces of the clay. This vitrified ceramic lining material has a distinctive oxidised fired outer surface and a reduced fired, vitrified inner surface. Most of the vitrified hearth lining recovered came from contexts containing evidence for copper working (Fort Phase II and Site H21). It is likely that most of the vitrified hearth lining represents the remains of hearths used for copper working.

A very small amount of fuel ash slag was recovered. This is a very lightweight, light coloured (grey-brown), highly porous material that results from the reaction between alkaline fuel ash and silicates from soil, sand or clay at elevated temperatures. The reaction is shared by many pyrotechnological processes and the slag is not diagnostic of any particular process.

Evidence for the casting and working of copper alloys was recognised in a number of forms: crucibles, moulds, copper alloy scrap/offcuts copper alloy droplets (casting waste) and copper alloy slag. Most of this material was found in Phase II contexts in area H21; the material from later contexts is probably residual.

In all, 75 crucible fragments, weighing over 700g in total and representing around 50 different vessels, were recovered from Housesteads. This is a large assemblage compared to the two or three vessels from the *fabrica* at Exeter (Bayley 1989a, 1), the 12 fragments from Sheepen, Colchester (Bayley 1985), or the 80 fragments from Caerleon (Bayley 1989b). None of the crucibles survived complete, but the fragments clearly represented a wide range of forms; from hand-made triangular to wheel-thrown (with and without extra outer layers of ceramic material, Bayley *et al* 2001, fig 22). The most complete examples had maximum diameters of 50–60mm and maximum heights of 60–70mm, giving internal volumes of 100–200ml. Most of the crucible fragments were heavily vitrified and some had black or red external glazes, the latter being a clear indicator of the presence of copper, while others had copper corrosion products (green) attached.

The surviving mould fragments are not typical of those that are usually found; they lack the characteristic soft fabrics, oxidised-fired outer surfaces and reduced-fired inner surfaces typical of ceramic moulds (Bayley *et al* 2001, 16–17, figs 24 and 26). Most of the moulds were a uniform dark brown to grey colour and a few showed signs of vitrification (both on external surfaces and on the modelled surfaces). This is likely

Table 20.1 Summary of metalworking evidence by phase (weight in grammes)

	<i>Phase</i>					
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>M</i>	<i>total</i>
smithing hearth bottom	0	540	400	1900	1900	4740
non-diagnostic ironworking slag	122	832	1935	1207	3510	7606
vitrified hearth lining	0	399	10	15	475	899
fuel ash slag	0	3	0	0	0	3
crucible	10	514	18	45	146	733
mould	0	126	0	0	0	126
copper alloy scrap/offcuts ^a	0	59	7	19	2	87
copper alloy droplets	6	330	45	13	8	402
'copper alloy slag'	5	716	0	3	57	781
Total	143	3519	2415	3202	6098	15377

a Only a small proportion of the possible copper alloy scrap (offcuts) from the site was submitted for examination, the rest is reported in the catalogue of copper alloy artefacts (*see* Chapter 14).

Table 20.2 Summary of metalworking evidence by area (weight in grammes)

	<i>Site</i>						
	<i>H13</i>	<i>H14</i>	<i>H15</i>	<i>H20</i>	<i>H21</i>	<i>HSE</i>	<i>total</i>
smithing hearth bottom	220	400	660	2050	1410	0	4740
non-diagnostic ironworking slag	995	1500	465	2385	2241	20	7606
vitrified hearth lining	140	0	50	33	671	5	899
fuel ash slag	0	3	0	0	0	0	3
crucible	10	0	0	71	636	16	733
mould	0	0	0	0	126	0	126
copper alloy scrap/offcuts	0	0	0	0	68	19	87
copper alloy droplets	0	0	13	170	219	0	402
'copper alloy slag'	0	0	0	50	731	0	781
	1365	1903	1188	4759	6102	60	15377

to have occurred accidentally after the moulds had been used. Indeed, this extra accidental firing made the moulds more robust and this may account for the survival of these fragments (especially given that most were recovered from a dump of material on a road surface). It is likely that the surviving examples are a small fraction of those made at Housesteads. The condition of the mould fragments makes it difficult to identify the artefacts that had been cast in them; however, they all appear to be fragments of two-piece moulds and the majority had been used to manufacture small, flat artefacts. The use of 'scanning EDXRF analysis' allowed the identification of the artefacts cast as small buckles.

One mould fragment (Fig 20.1), which had suffered relatively little from later reheating, indicates that several buckles may have been cast together in a single operation. The central part of Figure 20.1 shows the dividing line between the actual mould on the left and the packing clay on the right. Another mould would have been fixed to the right of the packing clay. The casting of spoons at Castleford, Yorkshire (Bayley and Budd 1998, 200), and brooches at Mont Beuvray (Bibracte), France (Guillaumet 1994, 11–12), made

use of multiple moulds, whereby the individual moulds were arranged in cones so that 16 items could be cast at once. The arrangement of the Housesteads multiple mould and the number of objects cast together remain uncertain; however, the use of multiple moulds implies that production occurred on a substantial scale and was not just occasional repair or replacement.

Substantial quantities of copper alloy casting waste (amorphous droplets) were included within the assemblage. In the context of the materials described above, these are most likely to be waste products of casting. The offcuts of copper alloy took a limited range of forms; most common were small trimmed fragments of thin sheet, but small bars with tapered ends were also present, showing that copper artefacts were wrought as well as cast. It is assumed that this material was collected for the casting of new artefacts. Most of the scrap and offcuts are reported in the copper alloy catalogue (*see* Chapter 14) which lists over 100 fragments of sheet, wire and rod. Most of these were recovered from the eastern rampart (H21), with lesser amounts from the northern rampart (H20) and almost none from the barrack block (H13).

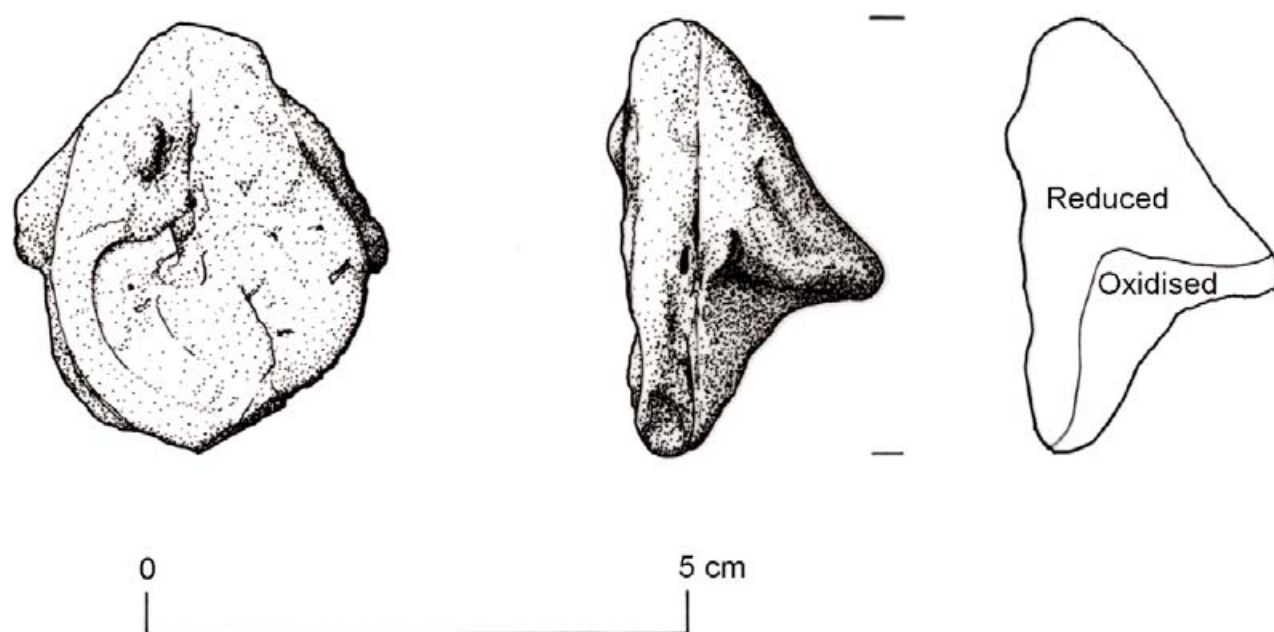


Fig 20.1 Fragment of a multiple mould.

The 'copper alloy slag' consisted of fairly small, generally black lumps of slag which lacked any clear morphology that would link them to a particular process, but which had red or green patches on the surface indicating the presence of copper alloys. Visually these lumps of slag resembled undiagnostic ironworking slags, although they could be distinguished from such slags by their colour. The quantity and morphology of the 'copper alloy slags' recovered shows that they could not have been produced by smelting copper ores. The study of the micro-morphology of several specimens (see below) showed that much of the 'copper alloy slag' actually consists of highly vitrified fragments of crucible.

Analysis of debris from copper alloy working

Some of the copper alloy working debris was investigated using scientific techniques to determine chemical composition and microstructure. Most of the debris was analysed semi-quantitatively using energy dispersive X-ray fluorescence (EDXRF). A selection of metal, crucibles and slag was then analysed quantitatively using a scanning electron microscope with an attached X-ray spectrometer (SEM-EDS). This work explored methodological issues relating to such debris and how it can be used to understand copper-working processes. This report focuses on the results in so far as they indicate which copper-working processes took place at Housesteads; details of the methodological results can be found in Dungworth (2001).

Copper alloys are usually assigned names depending on the range and quantity of other elements present. The terms used for this report are as follows:

- bronze: an alloy rich in tin ($\text{Sn} > 5\%$) with low levels of zinc ($\text{Zn} < 5\%$)
- brass: an alloy rich in zinc ($\text{Zn} > 15\%$) with low levels of tin ($\text{Sn} > 5\%$)
- copper: an alloy containing low levels of zinc and tin ($< 5\%$)
- gunmetal: an alloy containing moderate levels of both zinc and tin

In addition, alloys are classed as leaded or unleaded depending on the lead content (those alloys where $\text{Pb} > 1\%$ are leaded).

Analysis of copper alloy scrap/offcuts

Thirty-one samples of copper alloy scrap/offcuts from context H21:2:48 were selected for quantitative analysis by SEM-EDS (Table 20.3). Most of these are copper or bronze, and the levels of lead are rather low. The low proportion of leaded alloys is to be expected as such alloys are well suited for the sort of wrought (hammered) work that would produce offcuts.

Analysis of copper alloy waste (droplets)

Sixteen samples of copper alloy waste (droplets) from context H21:2:48 were selected for analysis. Most of these are bronze with fairly high levels of lead. The high proportion of leaded alloys is to be expected for casting of copper alloys, as lead lowers the melting temperature of the alloy and lowers the viscosity of the molten metal. Roman cast copper alloys usually have higher levels of lead than wrought metal (Dungworth 1995, table 6:3).

While early Roman military copper alloy fittings (in particular legionary and cavalry equipment) were usually made from brass (Bishop and Coulston 1993, 191),

Table 20.3 Quantitative analysis (SEM-EDS) of copper alloy scrap/offcuts

<i>Sample number</i>	<i>Cu</i>	<i>Zn</i>	<i>Sn</i>	<i>Pb</i>	<i>Fe</i>	<i>alloy type</i>
1	86	<0.1	13.8	<0.5	0.2	bronze
2	85	<0.1	14.4	<0.5	0.1	bronze
3	97	<0.1	1.8	<0.5	<0.1	copper
4	77	19.7	2.4	<0.5	0.6	brass
5	88	0.6	11.7	<0.5	0.2	bronze
6	88	0.4	11.3	<0.5	0.2	bronze
7	97	0.4	1.7	<0.5	0.4	copper
8	83	0.6	15.5	1.2	0.2	lead bronze
9	89	0.5	10.4	<0.5	0.2	bronze
10	97	<0.1	1.6	0.8	0.4	copper
11	97	<0.1	1.8	<0.5	<0.1	copper
12	87	0.4	11.6	0.7	0.3	bronze
13	88	<0.1	10.3	1.0	<0.1	bronze
14	97	<0.1	1.6	<0.5	0.4	copper
15	87	0.5	11.6	<0.5	0.3	bronze
16	87	0.7	11.0	0.7	<0.1	bronze
17	84	11.8	2.1	1.0	0.7	gunmetal
18	87	<0.1	12.1	<0.5	0.2	bronze
19	99	0.6	<0.1	<0.5	0.2	copper
20	89	0.5	10.9	0.7	0.1	bronze
21	86	1.3	11.5	1.9	<0.1	lead bronze
22	87	<0.1	12.4	<0.5	<0.1	bronze
23	98	0.3	1.2	0.7	0.4	copper
24	91	<0.1	9.9	<0.5	<0.1	bronze
25	85	2.4	8.8	4.3	<0.1	lead bronze
26	90	0.4	8.8	<0.5	0.3	bronze
27	89	0.5	9.8	0.7	0.3	bronze
28	86	7.0	5.8	<0.5	0.2	gunmetal
29	89	0.4	9.5	<0.5	0.3	bronze
30	91	<0.1	10.3	4.8	<0.1	lead bronze
31	83	11.0	4.5	1.2	0.3	lead gunmetal
mean	89	1.9	8.1	0.6	0.2	
	±5.3	±4.4	±4.7	±1.2	±0.2	

Table 20.4 Quantitative analysis (SEM-EDS) of copper alloy waste (droplet)

<i>Sample number</i>	<i>Cu</i>	<i>Zn</i>	<i>Sn</i>	<i>Pb</i>	<i>Fe</i>	<i>alloy type</i>
1	95	<0.1	2.3	1.1	0.5	lead copper
2	92	<0.1	4.1	4.1	<0.1	lead copper
3	75	1.1	16.0	7.5	<0.1	lead bronze
4	55	1.2	10.2	33.0	0.2	lead bronze
5	84	0.7	10.1	4.0	0.3	lead bronze
6	80	1.1	8.5	<0.5	<0.1	bronze
7	78	3.2	8.0	10.2	0.3	lead bronze
8	79	0.5	10.9	8.9	0.1	lead bronze
9	84	<0.1	10.4	5.1	0.3	lead bronze
10	72	4.4	7.3	15.5	<0.1	lead bronze
11	77	5.0	9.4	7.5	0.7	lead bronze
12	57	2.3	8.8	30.0	0.2	lead bronze
13	95	<0.1	1.3	0.8	0.5	copper
14	79	0.7	13.3	6.1	0.2	lead bronze
15	82	<0.1	11.6	5.4	0.6	lead bronze
16	90	2.7	6.2	<0.5	0.3	gunmetal
mean	80	1.4	8.7	8.7	0.3	
	±11.5	±1.6	±3.8	±9.8	±0.2	

from the 2nd century AD onwards, many Roman military fittings were made from leaded bronze (Dungworth 1995). Thus the composition of the waste (droplets) are similar to contemporary military equipment.

Comparing the results for the scrap and the waste showed some interesting similarities and differences. The average tin and zinc contents are almost identical, while the lead levels are much higher in the waste (droplets) than in the scrap/offcuts. If the scrap/offcuts were the raw material used in casting then lead must have been added during melting.

Examination and analysis of crucibles

Six crucibles from context H21:2:48 were selected for detailed SEM-EDS examination and analysis. These were selected to represent the range of fabrics, forms and degrees of vitrification. SEM examination was primarily carried out in back scatter mode, which provides atomic number contrast images. This enabled the identification of particular areas of crucible, for example areas largely unaltered by heating, quartz inclusions, porosity, and areas of vitrification (present on internal and external surfaces and at the lip). The results are summarised in Table 20.5.

Despite the apparent variety of fabrics and forms of the crucibles, they all have very similar microstructures and chemical compositions. The crucible fabrics were

moderately porous and contained a high proportion of silica (sand) inclusions (Fig 20.2). Overall, the chemical composition of the crucible fabric (high in silica and alumina) would have ensured that it was suitably refractory.

The vitrified surfaces of the crucible were rich in copper, zinc, tin and lead. These were usually present as oxides within a 'glass' (Fig 20.3), but occasionally as discrete droplets trapped within the vitrified layers (Fig 20.4). The proportions of these elements present in the vitrified surfaces of the crucibles tended to vary from inner to outer surface. Zinc was concentrated on the inner vitrified surfaces, tin was concentrated in the outer surface and the lip, and lead was concentrated at the lip. The proportions of copper, zinc, tin and lead present in the crucibles do not match the proportions found in the copper alloy waste (droplets).

Copper, zinc, tin and lead will migrate from molten alloy to the crucible by volatilisation and oxidation. Which mechanism is dominant depends on the success that the copper worker had in maintaining a proper 'reducing' atmosphere in the crucible. Each element tends to be volatilised or oxidised to varying degrees and so the proportion of copper, zinc, tin and lead present in the vitrified surfaces of crucibles will rarely match that of the copper alloys melted in the crucibles (Dungworth 2000).

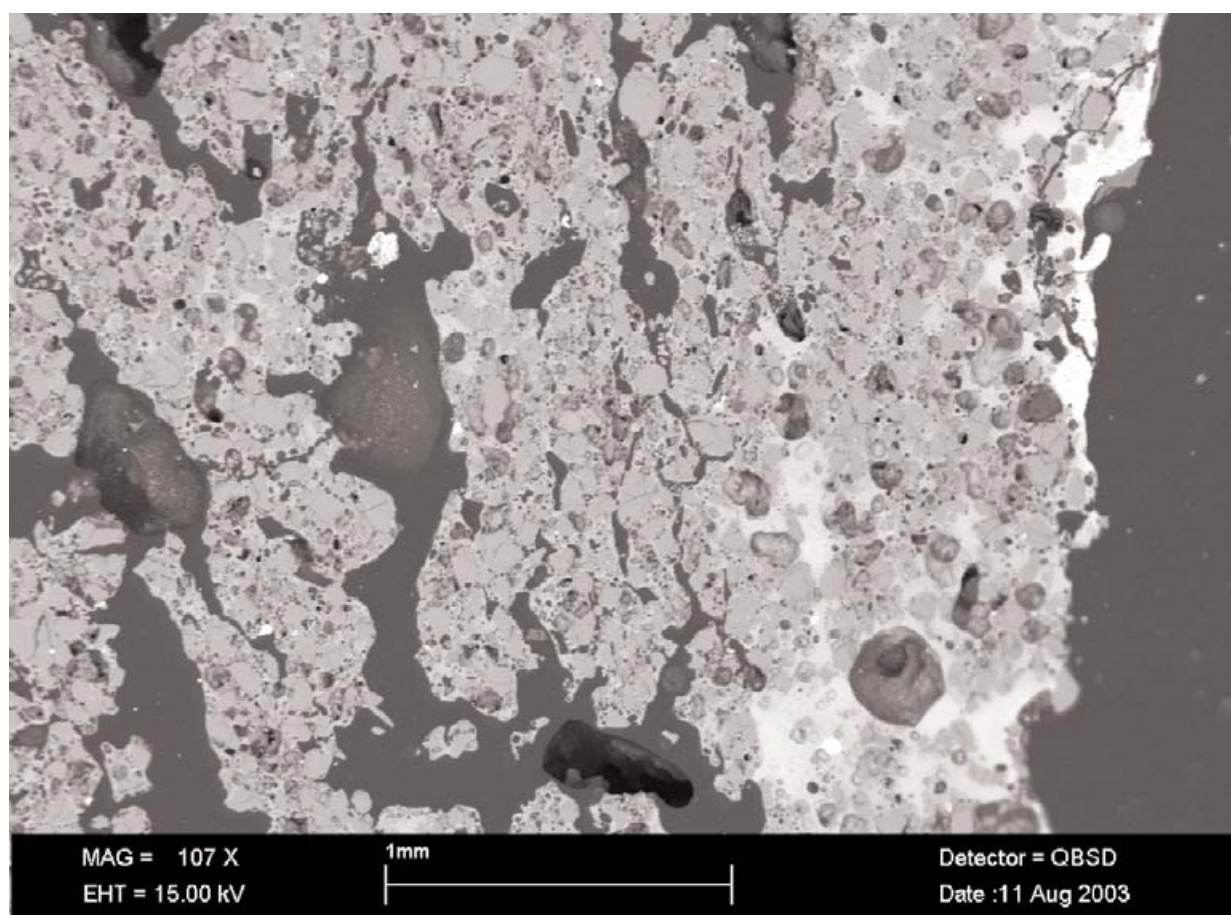


Fig 20.2 SEM image (back scatter mode) of a cross-section through a crucible.

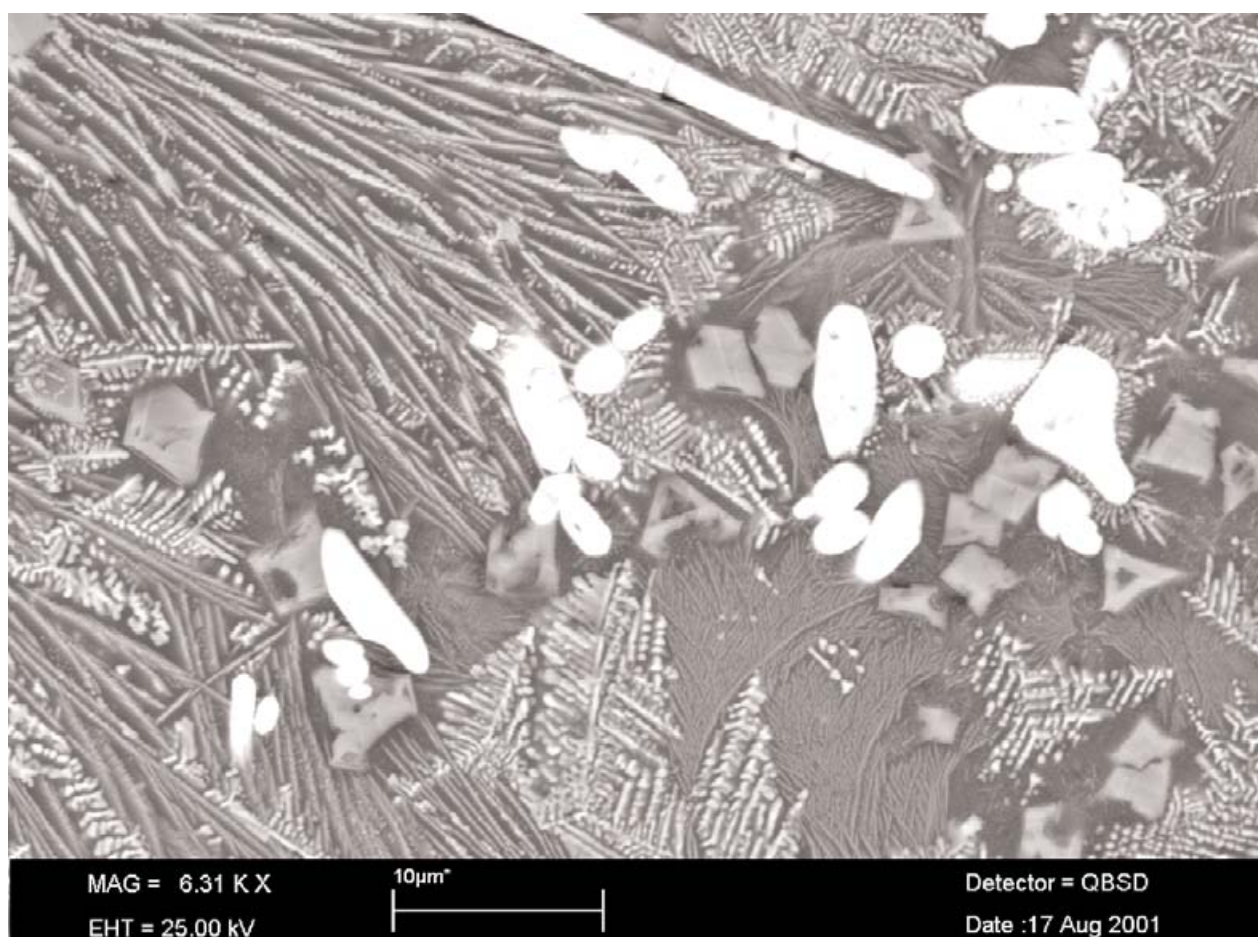


Fig 20.3 SEM image (back scatter mode) of the vitrified surface of a crucible.

Table 20.5 Summary of SEM-EDS analyses of six crucibles
(number in brackets equals the number of analyses)

	MgO	Al ₂ O ₃	SiO ₂	P ₂ O ₅	SO ₃	K ₂ O	CaO	TiO ₂	MnO	FeO	CuO	ZnO	SnO ₂	PbO
Crucible fabric (14)	0.5	20.6	68.7	0.8	0.1	1.7	0.6	0.9	0.1	5.8	<0.1	0.2	<0.4	<0.4
sd	±0.4	±5.9	±8.8	±0.7	±0.1	±0.8	±0.3	±0.3	±0.1	±2.8		±0.4		
Inner surface (14)	0.7	15.0	41.5	0.6	0.1	1.1	1.5	0.7	0.3	27.2	0.5	7.9	1.2	0.8
sd	±0.3	±5.0	±12.6	±1.1	±0.3	±0.6	±1.1	±0.3	±0.6	±12.5	±0.8	±9.0	±1.8	±0.9
Lip (11)	0.9	15.4	46.4	1.2	0.2	1.5	1.6	0.7	0.2	17.6	3.9	3.5	1.4	5.0
sd	±0.3	±4.5	±11.1	±1.3	±0.5	±0.5	±1.2	±0.2	±0.1	±9.2	±4.4	±2.5	±1.6	±10.2
Outer surface (22)	1.0	16.6	46.2	0.5	0.1	1.4	1.7	0.7	0.3	25.4	3.7	0.6	1.6	<0.4
sd	±0.6	±4.4	±12.8	±1.0	±0.2	±0.7	±1.3	±0.3	±0.3	±14.2	±8.9	±0.8	±5.0	

Moulds

A total of 126g of ceramic mould was recovered (almost all from a single context, east *intervallum* road surface H21:2:48). This is a rather small quantity, especially when compared to the large assemblages of ceramic mould that are occasionally recovered archaeologically, eg around 1800 fragments from Castleford (Bayley and Budd 1998). Nevertheless, it is a fairly large assemblage in a Roman military context.

Ceramic moulds are not usually fired to as high a temperature as pottery and so remain friable. Given that the moulds have to be broken open to retrieve the objects cast and that once used the moulds are useless, it is not surprising that such evidence rarely survives. Moulds usually survive in large quantities only when they are quickly dumped in a pit and not subsequently disturbed. The moulds from Housesteads were mostly recovered from a road surface layer immediately

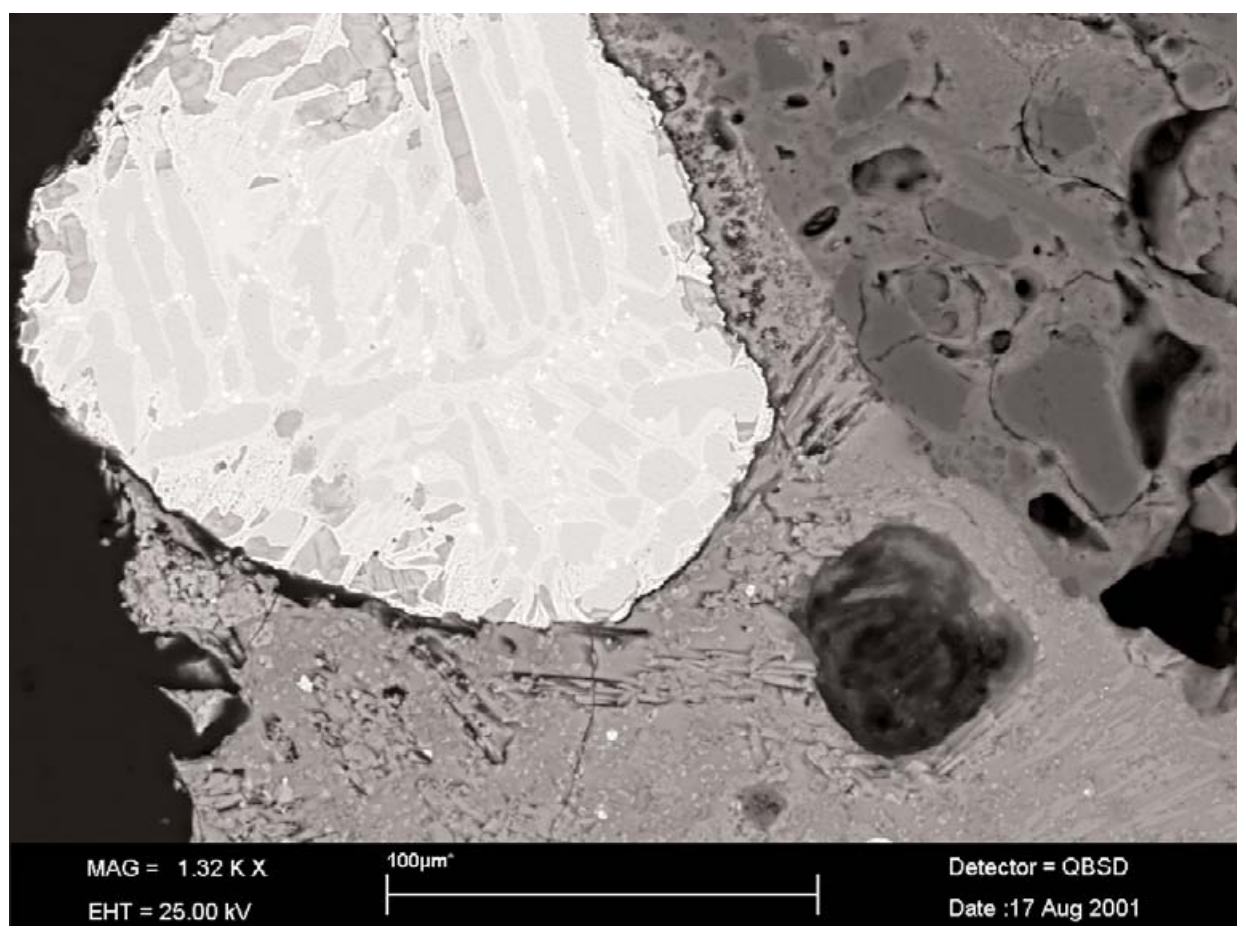


Fig 20.4 SEM image (back scatter mode) of a cross-section through the vitrified surface of a crucible containing a droplet of copper alloy.

outside the north workshop in the east rampart. The survival of the moulds was probably due to the fact that they had been accidentally fired after use, which made them less friable. It is possible that a great many more moulds were used but have not survived. In many cases, the accidental firing of the moulds after use vitrified the modelled surfaces of the moulds, and initially made identification of the artefacts that had been cast somewhat difficult.

The moulds clearly came from two-piece moulds for the manufacture of objects only a few centimetres across and a few millimetres deep. However, a simple visual examination of the moulds was only able to suggest that at least three had been used to make circular or D-shaped objects (Fig 20.1). The crucibles were analysed using EDXRF, which confirmed that they had absorbed small amounts of zinc (the most volatile element present in Roman copper alloys). It was expected that the diffusion of zinc into the mould would be most apparent in those regions where the molten metal had actually been in contact with the mould. Through 'scanning X-ray fluorescence' (cf Scott 2001) it was possible to obtain a series of elemental X-ray maps across the surface of the moulds. Figure 20.5 shows the digital images, silicon X-ray maps and zinc X-ray maps for three of the moulds. While the silicon X-ray maps

simply show the extent of the ceramic mould, the zinc X-ray maps provide some information about the form of the artefacts that had been cast.

In all three cases it appears that the same sort of object was being made: a belt buckle. The type is well known from Roman military sites (eg Oldenstein 1977, Taf 76, no. 1011) and was in use from the second half of the 2nd century to the first half of the 3rd century (Oldenstein 1977, 216). Examples are known from a number of forts along Hadrian's Wall, for instance South Shields (Allason-Jones and Miket 1984, no. 3.617), Carlisle (McCarthy 1990, no. 115), Birdoswald (Wilmott 1997, fig 227, no. 253), Newcastle (Snape and Bidwell 2002, fig 18.3, no. 21), Old Penrith (Austen 1991, fig 93, no. 662), Vindolanda (Bidwell 1985, fig 41, no. 29) and Corbridge (Knowles and Forster 1909, 409, fig 29; Forster and Knowles 1915, 244, plate 1, no. v). Examples are known from other military sites in Britain, such as Catterick (Wilson 2002, fig 253, no. 158), Chester (Newstead 1928, plate 9, no. 13), Caerleon (Zienkiewicz 1986, 175, fig 57, no. 32), and Exeter (Bidwell 1979, fig 73, no. 15), as well as much further afield, notably Dura Europos (Bishop and Coulston 1993, fig 112, 7). Moulds for this buckle type are also recorded at Tibiscum, Romania, for example (Bishop and Coulston 1993, fig 134, 3).

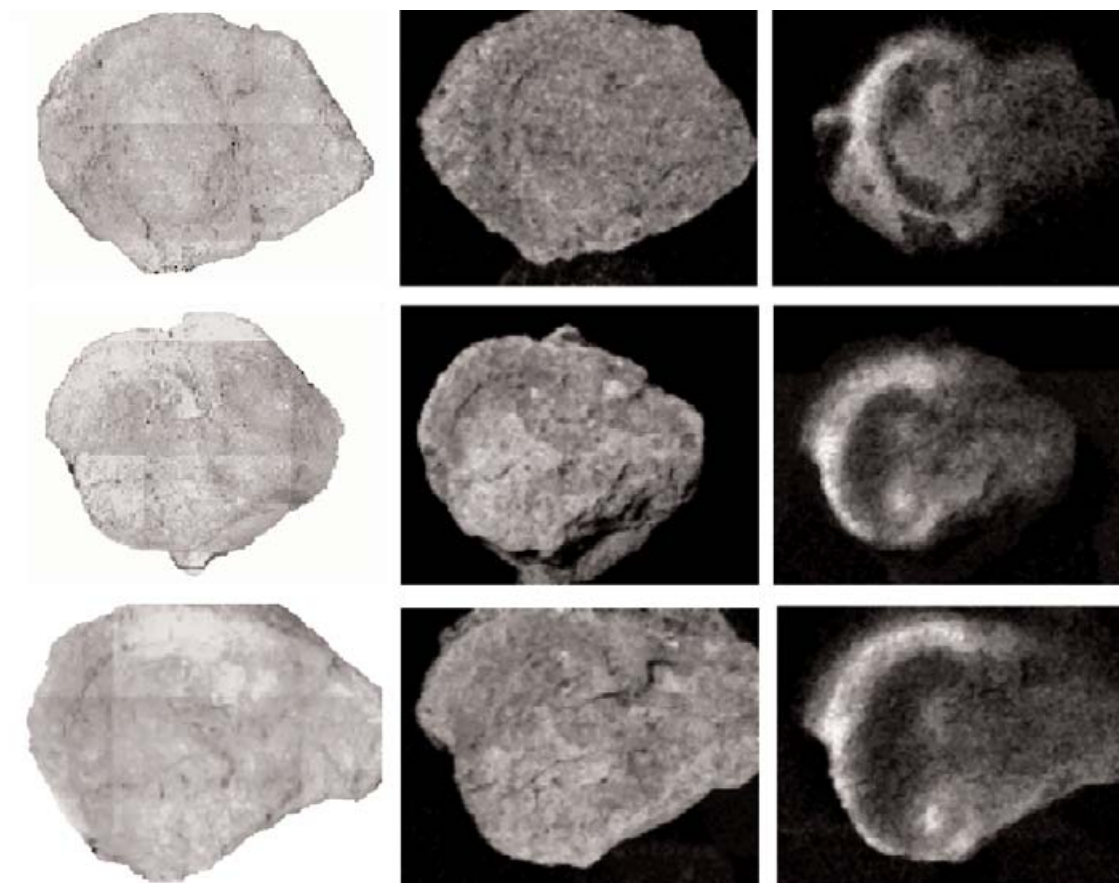


Fig 20.5 Scanning X-ray fluorescence of ceramic moulds.

The Caerleon and Vindolanda examples are both failed castings, indicating that they were probably made close to where they were found.

‘Copper alloy slag’

The examination of five samples of ‘copper alloy slag’ showed that four contained fragments of crucible embedded within them (Fig 20.6). Such slag probably formed when crucibles broke, the contents oxidised and reacted with fuel ash and fragments of the crucible.

Production of Roman copper alloy military fittings

The assemblage of debris from the working of copper alloys provides evidence that small military fittings (in particular buckles) were manufactured within the fort at Housesteads. This is important evidence, as the long-running debates over the mechanisms by which the Roman army obtained its equipment have often been based on indirect evidence.

Ancient literary accounts stress self-sufficiency for armies (eg Vegetius II, 25) and list a wide range of artisans (including blacksmiths, smiths, coppersmiths, helmet-makers, sword-cutlers, trumpet-makers, bow-makers, and arrowsmiths) who should be found within the ranks (cf *The Digest of Justinian* L, 6, 7).

Inscriptions on military equipment (MacMullen 1960), and writing tablets (Bowman 1994) or papyri (eg Youtie and Winter 1951) indicate that some items were privately owned but also show that equipment may have been issued by the army, with soldiers’ pay being deducted to cover the cost. Writing tablets and papyri also show that soldiers worked in *fabricae*. However, attempts to identify buildings within forts that could have served as *fabricae* have rarely provided compelling evidence (Bishop 1985; Bidwell 1997, 90). Nevertheless, forts have sometimes produced evidence for the production of copper alloy objects in the form of moulds, crucibles and failed castings (Bishop and Coulston 1993, 186, fig 134; Esmonde Cleary and Ferris 1996, 103–5; Oldenstein 1974). The limited extent of this evidence has led many to suggest that the Roman army was primarily engaged in repair rather than production (eg Robinson 1975).

A recent review of the evidence for the production of copper alloy artefacts along Hadrian’s Wall (Allason-Jones and Dungworth 1997) identified widespread evidence for at least small-scale copper alloy working. This evidence provided support for the idea of occasional repair/replacement rather than significant production of new objects. At Housesteads, however, there is evidence for production of copper alloy fittings on a much larger scale. Three of the surviving moulds are for identical buckles, and it is likely that more than

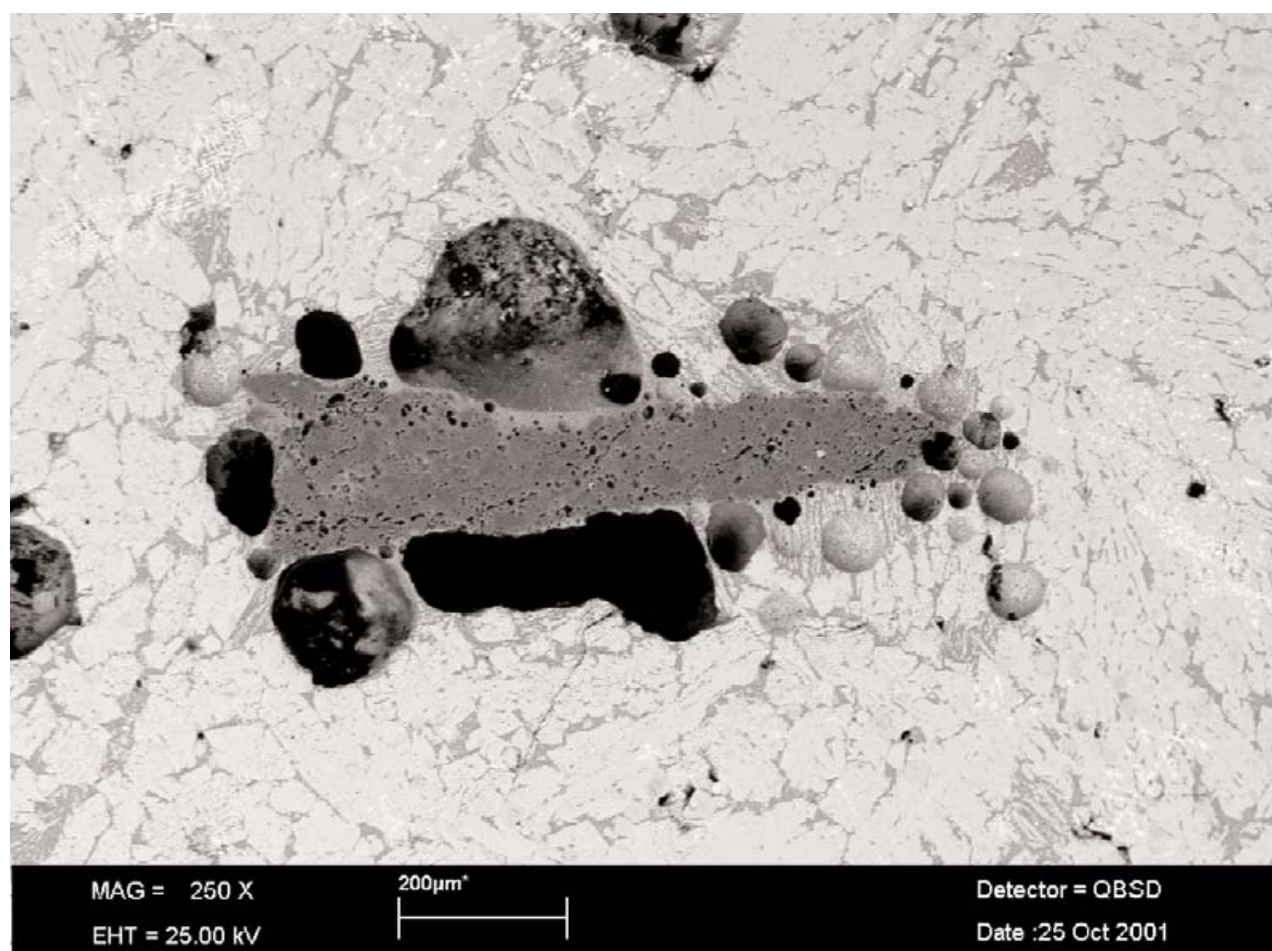


Fig 20.6 SEM image showing a 'copper alloy slag' with a crucible fragment embedded in it.

one was cast at a time. Taken with the relatively large quantities of crucibles and casting debris, it can be seen that the production of copper alloy fittings was a major activity at the fort.

The recovery of significant evidence for metalworking from the north-east corner of Housesteads contrasts with the failure to identify any building there that could be definitely identified as a *fabrica*. The recovery of metalworking evidence from buildings or areas that clearly were not *fabricae* can be paralleled at Caerleon (Zienkiewicz 1993, 54–7), which also had workshops built into the ramparts (Boon 1972, 54). Archaeological excavations of Roman forts have traditionally focused on gates and internal buildings. Ramparts and extra-mural areas have received less attention. It is possible that metalworking, such as that attested at Housesteads, occurred in relatively marginal locations, like the rampart workshops, and so has received less archaeological attention.

Conclusions

The metalworking debris recovered from the excavations of Housesteads fort represents a broad range of activities. Both iron smithing and copper alloy working (especially casting) took place; there was no evidence

of smelting iron or copper on site. The quantity of debris diagnostic of iron smithing recovered from stratified contexts is small and, while it indicates that some iron smithing took place, this is likely to have been an occasional activity.

The quantity of debris diagnostic of copper working is small in absolute terms (2kg) but is large for the area excavated when compared to other Roman military sites. It should also be remembered that the casting of copper alloys generally does not produce large volumes of debris. In addition, much of the debris is normally very fragile and so rarely survives well in the archaeological record. The limited space available inside the fort may have forced artisans to dispose of some debris outside the fort (in areas that have not been excavated). The series of activities in the rampart areas (construction of workshops, reinstatement of rampart and ongoing repairs to the rampart) would not be conducive to the survival of the whole assemblage of debris. The survival of such a broad range of types of debris is unusual and may represent a small fraction of the debris that was originally produced.

The few fragments of ceramic mould that survive show that the workshop products included belt buckles. Three mould fragments were for making buckles that appear to be identical. In addition, one of the

mould fragments comes from a multiple mould. This suggests that the production of these buckles occurred on a large scale. Examples of the buckle type are known on Hadrian's Wall and throughout the whole of the Roman Empire.

The analysis of the scrap metal offcuts and the waste metal droplets shows that lead was probably added to the tin bronze scrap during melting. The

analysis of the crucibles, moulds and 'copper alloy slags' demonstrated that the analysis of such debris does not generally provide a reliable indication of the sorts of alloys being cast. The proportions of alloys present in debris depend more on the chemical and physical properties of the elements than the composition of the alloy being melted.

21 The worked flint

C Waddington

The lithic assemblage, composed entirely of flint pieces, recovered during the Housesteads excavations has all come from unstratified or residual deposits. Nineteen of the flints were recovered during the 1974–81 excavations in the north-east quarter of the fort. Two additional examples, which derive from Tait's excavations in the south rampart in 1962 (HR62; cf Tait 1963), were considered to merit publication. Each flint is described in turn and the following attribute information is included:

- colour
- quality
- length, breadth, thickness (maximum dimensions unless otherwise stated)
- artefact type
- any dating associations
- other relevant information.

Catalogue

1. (no SF no.) H21:1:92
Mottled grey broken flint flake with light white patina, few impurities reasonable quality.
Length:20mm, Breadth:17mm, Thickness:3.5mm
2. (no SF no.) H13:10:20
Flint flake with all-over orange patination.
Length:14mm, Breadth:9.5mm, Thickness:6mm
3. (no SF no.) H14/H15/H21? (Fig 21.1)
Mottled grey high-quality flint flake knife with a small patch of cortex above the serrated edge. The presence of this type of cortex indicates that this piece has been struck from nodular flint. This broad flake has been edge trimmed to blunt the flake along one edge, while the opposing serrated 'corner' provides a sharp cutting edge. A band of gloss across the width of the flake below the serrated end may be the residue of resin used in securing the blade in a handle. The large size and broad nature of the flake on which this knife was produced is a characteristic typical of flakes of later Neolithic date.
Length:50mm, Breadth:28mm, Thickness:9mm (av)
4. 9151 H15:1:2
Mottled grey high-quality flint spall.
Length:16mm, Breadth:8.5mm, Thickness:1.5mm (av)
5. 8618 H21:4:21
Light grey-brown high-quality flint flake broken on at least three, and possibly four, sides. Invasive retouch along one edge with evidence of serration along an opposed edge. May have originally been a projectile point.
Length:26mm, Breadth:15mm, Thickness:2mm (av)
6. 59 H13:1:0 (Fig 21.1)
Mottled grey high-quality flint serrated blade with broken point. Serration evident along both long edges, a characteristic sometimes associated with tools used for plant processing. With a length:breadth ratio of less than 2:1, this tapering broad-bladed implement is characteristic of flintworking associated with later Neolithic assemblages.
Length:44mm, Breadth:24mm, Thickness:3mm (av)
7. 8576 H21:5:3 (Fig 21.1)
Mottled grey high-quality flint with small strip of cortex remaining down one edge. Possibly a small leaf-shaped arrowhead, an artefact type characteristic of the early Neolithic.
Length:18mm, Breadth:11.5mm, Thickness:1mm (av)
8. 4768 H20:3:0 (Fig 21.1)
A thumbnail scraper of white flint which has experienced burning apparently after it was made, giving most of the surface a more brilliant white appearance. The flake on which the scraper is made has been struck from a core that had previously had very narrow bladelets with parallel sides struck from it. Small narrow blades with parallel sides, and thumbnail scrapers themselves, are tool forms that are common in the later Mesolithic.
Length:19mm, Breadth:21mm, Thickness:4mm (av)
9. (no SF no.) H21:5:3
Mottled white and light grey broken flint flake with some impurities.
Length:29mm, Breadth:18mm, Thickness:5mm
10. (no SF no.) H21:5:3
Light grey core preparation flint with a cortical surface running two-thirds of the way up one edge. No evidence of retouch.
Length:43mm, Breadth:7mm (av), Thickness:7mm (av)
11. 9397 H14:3:1
Light grey flint flake with some white mottling. Some bifacial trimming at the broader end suggesting that it may have been used as a tool.
Length:25mm, Breadth:17mm, Thickness:6mm (av)
12. 8770 HSE:1:1
Reddy-brown trimmed flint flake with some cortex remaining along one edge. Very slight serration along the long edge. The serrated edge is still sharp and has probably been used as the working edge for processing plant material.
Length:42mm, Breadth:21mm, Thickness:1mm (av)
13. 8481 H20:8:80
White–light grey flint; small broken flint flake that may have been notched.
Length:17mm, Breadth:11mm, Thickness:1.1mm
14. 7624 H20:9:9
High-quality grey flint, possible rejuvenation flake, which has experienced patination giving most of the surface a mottled white appearance. However, the true colour of the flint is evident as a result of some flaking down one edge since the patina formed. If these latest scars were the result of retouch, and not the result of a rejuvenation attempt on an earlier flake, which had been discarded, the patina should also have been evident on the flaked edge.
Length:25mm, Breadth:22mm, Thickness:6mm (av)
15. 3425 H13:1:103
Reddy-brown high quality broken flint flake with some cortex remaining. Slight evidence of trimming on one edge.
Length:25mm, Breadth:14mm, Thickness:1.5mm (av)
16. 3021 H13:8:40
Mottled grey broken retouched flint flake with orange patina over part of it. Retouch and flaking around the

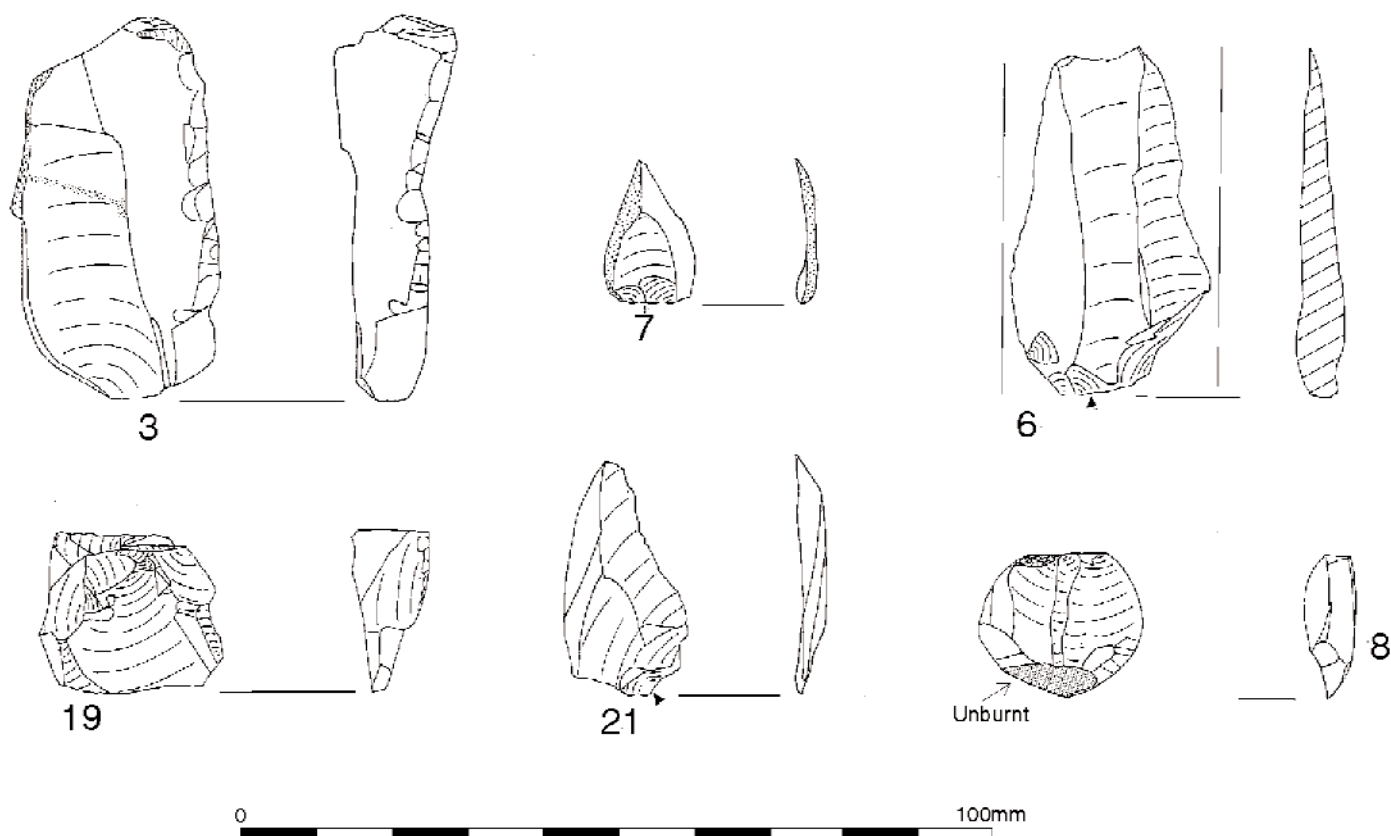


Fig 21.1 The worked flint tools (scale 1:1).

Table 21.1 Summary table of worked flint

flint	SF no. & context	colour	type	date	patinated	burnt
1	H21:1:92	mottled grey	flake	—	white	—
2	H13:10:20	—	flake	—	orange	—
3	H14/15/21?	mottled grey	flake knife	late Neolithic	—	—
4	9151 H15:1:2	mottled grey	spall	—	—	—
5	8618 H21:4:21	light grey-brown	flake (poss projectile point)	—	—	—
6	59 H13:1:0	mottled grey	serrated blade	late Neolithic	—	—
7	8576 H21:5:3	mottled grey	prob leaf-shaped arrowhead	early Neolithic	—	—
8	4768 H20:3:0	white	thumbnail scraper	Mesolithic	—	white
9	H21:5:3	white-grey	flake	—	—	—
10	H21:5:3	light grey	core prep flake	—	—	—
11	9397 H14:3:1	grey-white	flake	—	—	—
12	8770 HSE:1:1	reddy-brown	retouched flake	—	—	—
13	8481 H20:8:80	white-grey	flake	—	—	—
14	7624 H20:9:9	grey	flake, prob rejuvenated	—	mottled white	—
15	3425 H13:1:103	reddy-brown	flake	—	—	—
16	3021 H13:8:40	mottled grey	retouched flake	Neolithic	orange	—
17	2515 H13:10:24	white	flake	—	—	—
18	1751 H13:9:3	light grey	spall	—	—	—
19	68 H13:2:1	medium grey	exhausted core, pyramidal affinities	Mesolithic	—	—
20	HR62:A	reddy-brown	flake	—	—	—
21	HR62:B	light grey	prob microlith	Mesolithic	—	—
Total: 21						

three unbroken sides suggests this tool is one end of a scraper or possibly a threshing tool.

Length:25mm, Breadth:17mm, Thickness:5mm (av)

17. 2515 H13:10:24

High-quality white flint flake.

Length:20.5mm, Breadth:14mm, Thickness:6mm (av)

18. 1751 H13:9:3

Light grey small flint spall with impurities.

Length:8mm, Breadth:10mm, Thickness:3mm (av)

19. 68 H13:2:1 (Fig 21.1)

Medium grey exhausted flint core with light mottling. Narrow blade scars, some with parallel sides, on a number of facets. The shape of the core is reminiscent of a pyramidal core, a type current during the Mesolithic. The small narrow blade scars are also indicative of late Mesolithic flintworking practices.

Length:21mm, Breadth:23.5mm, Thickness:10mm

20–21. HR62 (south rampart)

Flint A Dark reddy-brown high quality flint flake with negative bulb of percussion.

Length:31mm, Breadth:27mm, Thickness:10mm

Flint B (Fig 21.1) Light grey good-quality flint microlith trimmed down both edges with a broken tip, broad butt on bulbar end suggesting it may have been hafted transversely. A broad-bladed microlith, a type more common in earlier Mesolithic assemblages, though some broad forms are manufactured throughout the whole period.

Length:30.5mm, Breadth:16mm, Thickness:2.5mm

Discussion

The lithic material in this mixed assemblage is generally of good quality flint with few impurities. Most of the flint is of nodular origin, as evidenced by the occasional patch of cortex and there being no evidence of beach pebble flint being exploited. There is a wide variety of colour within this small assemblage indicating that over time the flint used by visitors to this area has come from

a wide variety of sources. The proportion of tools to waste (8:21) of more than 1:3 is high, indicating that flintworking was not necessarily a prime activity in this area, although some flint working is represented by the exhausted pyramidal type core (No. 19).

This core has strong Mesolithic affinities, as do the microlith (No. 21) and thumbnail scraper (No. 8), a type of artefact usually associated with processing activities – particularly hides, indicating the presence of Mesolithic groups in the area. In addition, the presence of flints that have experienced heavy patination (Nos 1, 2), a process thought to take place over very long periods, also supports the case for Mesolithic occupations. The probable rejuvenated flake (No. 14), apparently worked after a patina had developed, suggests later visitors to the area were working the discarded material of earlier visitors.

The possible leaf-shaped arrowhead (No. 7) would indicate the transitory presence of early Neolithic activity in this upland area, probably in the form of hunting expeditions. The later Neolithic is better attested with a flake knife (No. 3), broad serrated blade (No. 6) and a broken retouched flake (No. 16) which may have been part of a plant processing implement. This variation in artefact types and the sort of functions with which they are usually associated are suggestive of late Neolithic domestic occupation in the area.

No chronologically diagnostic material of later periods is evident in the assemblage. In summary, the assemblage as a whole represents a chronological palimpsest extending from the later Mesolithic through to the late Neolithic. However, the diagnostic material indicates that occupation of the area was probably of a recurrent nature, probably for hunting purposes, until at least the late Neolithic.

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Abbreviations

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Vindolanda Museum
- AML Ancient Monuments Laboratory
- AE *Archaeologia Aeliana*.
- BAR British Archaeological Reports
- CBA Council for British Archaeology
- CIL *Corpus Inscriptionum Latinarum*
- CSEL *Corpus Scriptorum Ecclesiasticorum Latinorum*.
Vienna
- CSIR Coulston, J C and Phillips, E J 1988 *Corpus Signorum Imperii Romani: Great Britain I*, 6: *Hadrian's Wall West of the North Tyne, and Carlisle*.
Oxford: British Academy
- CUCAP Cambridge University Committee for Aerial
Photography
- DoE Department of the Environment
- EH English Heritage, formerly HBMCE
- HBMCE Historic Buildings and Monuments Commission
for England
- HCP Peter McGowan Associates, Crow, J, Rushworth,
A and Renshaw, J, 2002 *Housesteads Roman Fort*,
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- HWA Hadrian's Wall Pictorial Archive, Museum of
Antiquities, University of Newcastle upon Tyne
- JRS *Journal of Roman Studies*
- NCL Newcastle City Library Local Studies
Photographic Collection
- NRO Northumberland Record Office
- PSAN *Proceedings of the Society of Antiquaries of Newcastle
upon Tyne*
- RCHM Royal Commission on Historical Monuments
(England)
- RCHME Royal Commission on the Historical Monuments
of England
- RIB Collingwood, R G and Wright, R P, 1965 *The
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