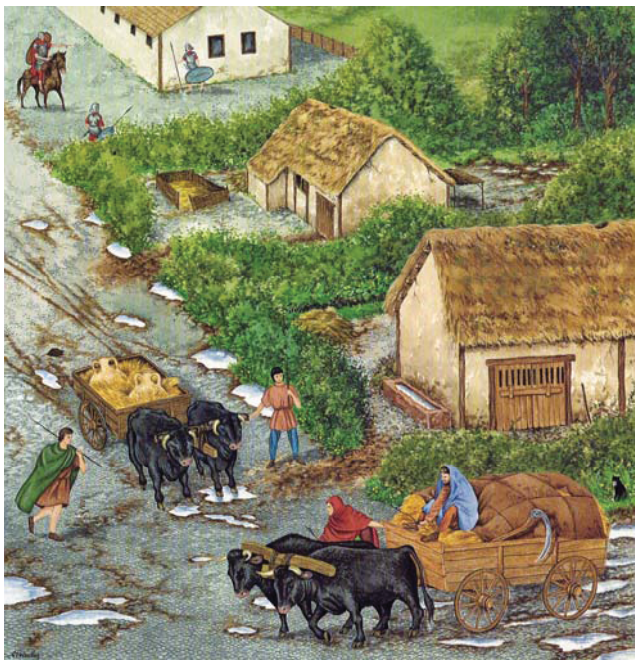

THE SOUTHERN LANES, CARLISLE,

Publication of Existing Unpublished Fascicules: Fascicule 2

Oxford Archaeology North

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ACKNOWLEDGEMENTS

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The following specialists are thanked for taking the time to respond to enquiries about their work on the south Lanes project and, where appropriate, providing advice and information: Kay Hartley, Jacqui Huntley, English Heritage Science Advisor for North East England, Harry Kenward, Tim Padley, Keeper of Archaeology at Tullie House Museum and Art Gallery, Jennifer Price, David Shotter, Sue Stallibrass, English Heritage Science Advisor for North West England, and Cathy Tyers of the University of Sheffield.

For OA North, the south Lanes fascicules project was managed by Murray Cook. The report was written by John Zant and edited by Rachel Newman, who also acted as Project Executive. Other OA North personnel who provided important contributions include Jo Cook, for providing IT advice, Marie Rowland, who digitised the existing manuscript copies of the fascicules and typeset the digital version of Fascicule 3, and Michelle Watson and Joanne Povall, who retyped Fascicule 3 from the manuscript.

The south Lanes fascicule project was funded by English Heritage.

SUMMARY

During the late 1970s and early 1980s, Carlisle Archaeological Unit (CAU) carried out a programme of archaeological excavation prior to the redevelopment of the Lanes, a densely built-up area situated within the north-east angle of Carlisle's medieval city defences (NY 4015 5606). The work confirmed that deeply stratified archaeological deposits relating to the Roman town and the medieval and post-medieval city survived over large parts of the site. For post-excavation purposes, the project was divided into two areas: the north and south Lanes.

Following a period of several years in which the project remained largely static, English Heritage provided funding in the mid-1990s for CAU to undertake a programme of analysis leading to publication. For the south Lanes, it was envisaged that three fascicules, presenting the detailed data for the stratigraphic sequence and environmental remains (Fascicule 1), the artefacts (Fascicule 2), and the pottery (Fascicule 3), would accompany a synthetic monograph. A similar publication strategy was also planned for the northern Lanes.

The south Lanes monograph was published in 2000, by which time CAU had become Carlisle Archaeology Limited (CAL), but the accompanying fascicules were never published, nor were the monograph and fascicules for the north Lanes, and CAL ceased trading in 2001. However, manuscript copies of all three of the south Lanes fascicules were available in the former CAL archive in Carlisle.

In 2009, English Heritage commissioned Oxford Archaeology North (OA North) to make the south Lanes fascicules available on-line through the Archaeology Data Service (ADS). The work was restricted to minor copy-editing and the creation of PDF versions of the existing documents; no new work was undertaken. However, during the course of this work, any obvious mistakes or omissions were noted, and errata lists were compiled. It was found that the published monograph held a fascicule Contents List, and also contained numerous cross-references to the fascicules, many of which were not consistent with the chapter numbering and pagination in the existing manuscript versions of these documents. Consequently, it proved necessary to compile a concordance between the monograph and the fascicules, as well as between the fascicules themsleves.

All three fascicules were placed on the ADS as separate documents; appended to each was a short report, prepared by OA North, detailing the background to the project and the methodologies employed to produce digital versions of the fascicules from the existing manuscript copies. Each report also contained, as appropriate, an errata list and a monograph concordance.

1. INTRODUCTION

1.1 BACKGROUND

1.1.1 From 1978 to 1982, Carlisle Archaeological Unit (CAU) carried out a programme of archaeological excavation and standing building recording, funded in part by the then Department of the Environment, prior to the redevelopment of the Lanes, a densely built-up area of approximately 2.8ha (6.9 acres) situated within the north-east angle of Carlisle's medieval city defences (NY 4015 5606). In total, some 26 excavation trenches were opened over the site as a whole, and a further 20 areas were subjected to watching brief. The work confirmed that deeply stratified archaeological deposits relating to the Roman town and the medieval and post-medieval city survived over large parts of the site. For post-excavation purposes, the project was divided into two areas: the north and south Lanes.

1.1.2 Following completion of the fieldwork and basic post-excavation processing, the project remained static for several years. During the 1990s, however, English Heritage provided funding for CAU to undertake a programme of analysis leading to publication. For the south Lanes, it was envisaged that three fascicules, presenting the detailed data for the stratigraphic sequence and environmental remains (Fascicule 1), the artefacts (Fascicule 2), and the pottery (Fascicule 3), would accompany a synthetic monograph. A similar publication strategy was also planned for the northern Lanes.

1.1.3 The south Lanes monograph was published in 2000 (McCarthy 2000a), by which time CAU had transferred from Carlisle City Council to the University of Bradford, to become Carlisle Archaeology Limited (CAL). The accompanying fascicules (the contents of which are tabulated in the monograph) were never published, nor were the monograph and fascicules for the north Lanes, and CAL ceased trading in August 2001. However, manuscript copies of all three of the south Lanes fascicules (Fascicule 1: McCarthy 2000b; Fascicule 2: Padley 2000; Fascicule 3 (two versions, *Section 1.3.2*): Hird and Brooks 1993; 2000) were found to exist in the archive of CAU/CAL, which is curated by Tullie House Museum and Art Gallery.

1.2 SCOPE OF THE PROJECT

1.2.1 In 2009, as part of a wider initiative to disseminate the results of the Lanes project, English Heritage commissioned Oxford Archaeology North (OA North) to make the mock-ups of the south Lanes fascicules available on-line through the Archaeology Data Service (ADS). The work was restricted to minor copy-editing and the creation of PDF versions of the existing documents; no new work was undertaken.

1.2.2 It is important to note that the specialist reports within each fascicule, most of which were prepared during the mid-1990s or before (the glass report, for

example, which appears in Fascicule 2, was written in 1992), have not been revised or updated, but are presented as being 'of their time'. Work on the north Lanes is subject to a different proposal.

1.3 METHODOLOGY

1.3.1 ***Contacting authors***: in the first instance, all specialists who had contributed reports for inclusion in the south Lanes fascicules were contacted, in order to make them aware of the project and to discuss any relevant issues. In total, 18 specialists were contacted, and replies were received from eight (see *Acknowledgements*), most of whom provided valuable help and information.

1.3.2 ***Digitisation of manuscripts***: for Fascicules 1 and 2, clean, typeset manuscript mock-ups (McCarthy 2000b; Padley 2000) were available in the former CAU/CAL archive; these were simply scanned to create PDF files of the documents. In the case of Fascicule 3, which was available in two parts - an early, heavily annotated copy (Hird and Brooks 1993) and an incomplete photocopy of a later version (Hird and Brooks 2000), the latter obtained from the papers of the late Vivien Swan (see *Acknowledgements*), the entire text was retyped to create the digital document. The accompanying figures and tables were then scanned, except where the tables were illegible, in which case they were retyped. The whole fascicule was then typeset to match Fascicules 1 and 2.

1.3.3 ***Errata***: during the course of this work, any obvious mistakes or omissions, such as missing/incorrect page numbers or incomplete bibliographic references, were noted. In the case of Fascicules 1 and 2, it was not possible to correct the documents themselves, since the digital versions comprised PDFs scanned from the original manuscripts (*Section 1.3.2*). For this reason, all mistakes and corrections are presented in errata lists; that pertaining to Fascicule 2 is presented in *Section 2*, below. Since Fascicule 3 was retyped from scratch (*Section 1.3.2*), any mistakes or omissions present in the extant manuscripts were corrected during retyping, obviating the need for an accompanying errata sheet.

1.3.4 ***Concordance between fascicules***: as part of this process, all cross-references between the different fascicules were checked. Any that proved to be incorrect were added, with amendments, to the relevant errata list.

1.3.5 ***Concordance with monograph***: the published south Lanes monograph (McCarthy 2000a) contains a Contents List for all three fascicules, although these documents had not been published at the time. In this, each fascicule is paginated separately, and contains its own list of Chapters, Illustrations and Tables. Thus, Fascicule 1 comprises Chapters 1 through 13 and runs from page 1 to page 166; Fascicule 2 comprises Chapters 1 though 13 and runs from page 1 to page 165; and Fascicule 3 comprises Chapters 1 through 6 and runs from page 1 to page 110. All cross-references to the fascicules that appear in the monograph text also follow this system.

1.3.6 However, the extant manuscripts of the fascicules did not follow this system. Instead, pagination, chapter numbering, and numbering of illustrations and tables were continuous across all three volumes. The reason for this is not clear, but it seems likely that the Contents List published in the monograph reflects an intended change that was never realised (at least in the available versions of the fascicules) before CAL ceased trading in 2001. Thus, whilst the numbering of Fascicule 1 is largely consistent with that given in the published Contents List (with the exception of Chapter 13, The Human Bone, which is given in the monograph Contents List but does not actually exist), the pagination, chapter numbering and numbering of Illustrations and Tables for Fascicules 2 and 3 were wholly incompatible with those published in the monograph.

1.3.7 In the case of Fascicule 3 this problem could be resolved, since retyping of the document from scratch (see above) allowed for the adoption of the system of pagination and numbering given in the monograph. For Fascicule 2, however, which was simply scanned and converted to a PDF file from manuscript version (*Section 1.3.2*), this was not possible, and the original pagination and numbering had to be retained. Consequently, a concordance was required between the pagination and numbering published in the monograph and that which appears in the digital fascicules hosted on the ADS. The concordance for Fascicule 2 is presented in *Section 3*, below.

1.3.8 For Fascicule 3, it was found that neither of the extant manuscript copies (Hird and Brooks 1993; 2000) contained an Introduction chapter, though this was included in the Contents List for Fascicule 3 that appears in the published monograph (Fascicule 3, Chapter 1; McCarthy 2000a, x). Consequently, during the retyping of this document, the introductory chapter for Fascicule 2 was copied and, with minor changes of wording to render it 'fit for purpose', was inserted into Fascicule 3 to serve as Chapter 1.

2. FASCICULE 2 ERRATA LIST

2.1 INTRODUCTION

2.1.1 The manuscript copy of the south Lanes Fascicule 2 (Padley 2000) was scanned to create a PDF file for hosting on the ADS (*Section 1.3.2*). Consequently, it was not possible physically to correct any mistakes, omissions or out-of-date bibliographic references that were noted during the course of the project. For this reason, an errata list was compiled, in which all errata are noted and corrections/amendments are given (*Section 2.2*). The errata are organised in the sequence that they appear within the manuscript.

2.2 FASCICULE 2 ERRATA LIST

Title Page: the title of south Lanes Fascicule 1 (McCarthy 2000a) as it appears on the cover of the manuscript is

Roman and medieval Carlisle: the southern Lanes. Excavations 1981-2.

Fascicule 2
Roman and medieval finds

Cumberland and Westmorland Antiquarian and Archaeological Society
Research Series Number N

However, in order to be consistent with the title of the south Lanes monograph report (McCarthy 2000a), the title page should read as follows:

Roman and medieval Carlisle: the southern Lanes. Excavations 1981-2.

Fascicule 2
Roman and medieval finds

Department of Archaeological Sciences, University of Bradford Research
Report Number 1

List of Contents: for revisions to chapter numbering and pagination, see *Section 3*, below.

The following additional authorship credits should be added:

Ch 15 (Ch 3 in McCarthy 2000a): should include *with contributions by I D Caruana and T G Padley*;

Ch 16 (Ch 4 in McCarthy 2000a): should include *with contributions by P M Cracknell and G Lloyd-Morgan*;

Ch 17 (Ch 5 in McCarthy 2000a): should include *with contributions by M Henig and R S O Tomlin*;

Ch 18 (Ch 6 in McCarthy 2000a): should include *with contributions by J Bayley, I D Caruana, P M Cracknell, B M Dickinson and L E Webster*;

Ch 19 (Ch 7 in McCarthy 2000a): should include *with a contribution by M R McCarthy*;

Ch 21 (Ch 9 in McCarthy 2000a): should include *with a contribution by S M Stallibrass*.

Acknowledgements: this section was never completed.

Page 167 (column 2, line 5): for 'Volume 1 monograph' read 'south Lanes monograph'.

Page 167 (column 2, line 5): for 'McCarthy 1994' read 'McCarthy 2000'.

Page 172 (column 1, line 8): for 'Fasc 2, No G13' read 'Fasc 2, pp224-5, No G13'.

Page 172 (column 1, lines 10-11): for 'McCarthy 1994, 00' read 'McCarthy 2000, pp17-19'.

Page 176 (column 1, line 15): for 'Fasc 2, No F15' read 'Fasc 2, p221, No F15'.

Page 176 (column 1, line 18): for 'Fasc 2, No C12' read 'Fasc 2, p197, No C12'.

Page 176 (column 2, line 12): for 'Fasc 3, pp416-7', read 'Fasc 3, pp90-2'

Page 188 (column 2, line 4): for 'Padley 1994, pp00-00' read 'Padley *et al* 2000, pp93-121'.

Page 189 (line 1): for 'Carson *et al* 1960' read 'Hill *et al* 1960'.

Page 189 (line 2): for 'Mattingley and Sydenham 1923-84' read 'Mattingly *et al* 1923-2007'.

Page 189 (table 46): the following corrections are required for the catalogue of Roman coins:

Cat. No. A3: for '*RIC* 99A' read '*RIC* 2^2, 943'; for 'AD 76' read 'AD 77-8'

Cat. No. A6: for '*RIC* 473' read '*RIC* 2^2, 270'
Cat. No. A7: for '*RIC* 580/581' read '*RIC* 2^2, 890-3'
Cat. No. A9: for '*RIC* 580 or 581' read '*RIC* 2^2, 890-3'
Cat. No. A13: for '*RIC* 332' read '*RIC* 2^2, 486'

It should be noted that *RIC* 2^2 refers to the second edition of *Roman Imperial Coinage, Volume 2*, revised by I A Carradice and T V Buttrey (Carradice and Buttrey 2007).

Page 191 (column 2, line 8): for 'Shotter 1980, 8ff' read 'Shotter 1980, 8ff; 1993'.

Page 192 (column 1, line 7): for 'Shotter forthcoming' read 'Shotter 1995, 27-30; in prep'.

Page 211 (column 1, line 56): for 'Ch 21, p 000' read 'Ch 9, pp262-3'.

Page 226 (column 1, line 38): for 'Caruana forthcoming b' read 'Caruana and Cherry 1994'.

Page 227 (column 1, lines 2-3): for 'Padley forthcoming b' read 'Zant and Howard-Davis in prep a'.

Page 235 (column 2, line 18): for 'Foote and Wilson 19XX, pl 00', read 'Foote and Wilson 1970, pl 1b'.

Page 236 (column 2, line 23): for 'McCarthy forthcoming' read 'Zant and Howard-Davis in prep b'.

Page 237 (column 1, line 6): for 'McCarthy forthcoming a' read 'Zant and Howard-Davis in prep a'.

Page 238 (column 1, lines 1 and 13): for '810' (fragments/pieces of glass) read '816' fragments/pieces.

Page 238 (table 59): In Table 59, the stated number of fragments of window glass in OGL A and A West should be increased from 21 to 27. Consequently, the total number of window glass fragments in the same table should be increased from 49 to 55.

Page 242 (column 1, lines 25-6): for 'Price and Cool forthcoming' read 'Cool and Price 2008'.

Page 242 (column 2, lines 28 and 50): for 'Price and Cottam forthcoming c' (twice) read 'Price and Cottam 1997'.

Page 258 (column 2, line 28): for 'forty-nine fragments of window glass' read '55 fragments of window glass'.

Page 278 (column 1, lines 3-4): the reference to 'McCarthy 1994, Plate 000' should be disregarded, as the object in question is not illustrated in the published monograph (McCarthy 2000).

Page 278 (column 2, line 15): for' Fasc 1, p00' read 'Fasc 1, p37'.

Page 309 (column 1, line 3): for 'McCarthy forthcoming b' read 'Zant and Howard-Davis in prep b'.

Bibliography: the bibliography within the Fascicule contains references to unpublished work that has subsequently been published.

For 'Carson, R A G, Hill, P V, and Kent, J P C, 1960 *Late Roman Bronze Coinage, London*' read 'Hill, P V, Carson, R A G, and Kent, J P C, 1960 *Late Roman Bronze Coinage*, London'

For 'Caruana, I D, forthcoming b' (etc), and also 'Caruana, I D, forthcoming c' (etc) read 'Caruana, I D, in prep *The Roman forts at Carlisle: excavations at Annetwell Street 1989-90*'

For 'Leeds, E T, 1911' (etc) read 'Leeds, E T, 1912 Notes on examples of late Anglo-Saxon metalwork, *Liverpool Annals Archaeol Anthropol*, **4**, i-io'

For Liversedge, J, 1977 (etc) read 'Liversedge, J, 1977 Wooden furniture fragments, in A Rogerson, Excavations at Scole, 1973, *East Anglian Archaeol*, **5**, Norwich, 97-224'

For McCarthy, M R, 19XX' (etc) read 'McCarthy, M R, 2000 *Roman and medieval Carlisle: the southern Lanes, excavations 1981–2*, Univ Bradford Res Rep, **1**, Carlisle'

For 'McCarthy, M R, forthcoming a' read 'Zant, J, and Howard-Davis, C, in prep a *Roman and medieval Carlisle: the northern Lanes, excavations 1978-82. Volume 1, the Roman period*'

For 'McCarthy, M R, forthcoming b' (etc) read Zant, J, and Howard-Davis, C, in prep b *Roman and medieval Carlisle: the northern Lanes, excavations 1978-82. Volume 2, the post-Roman period*'

For 'Mattingley, H, and Sydenham, E A, 1923-84 *The Roman Imperial Coinage*, London' read 'Mattingly, H, Sydenham, E A, Sutherland, C H V,

Carradice, I A, and Buttrey, T V, 1923-2007 *The Roman Imperial Coinage*, London'

For 'Price, J, and Cool, H E M, forthcoming' (etc) read 'Cool, H E M, and Price, J, 2008 The glass vessels, in H E M Cool and D J P Mason (eds), *Roman Piercebridge. Excavations by D W Harding and Peter Scott 1969-1981*, Architect Archaeol Soc Durham Northumberland Res Rep, **7**, Durham, 235-40'

For 'Price, J, and Cottam, S, forthcoming a' (etc) read 'Price, J, and Cottam, S, 1996 Glass from the A27 excavations, in B W Cunliffe, A G Down, and D J Rudkin, *Chichester excavations IX. Excavations at Fishbourne 1969-1988*, Chichester, 161-88'

For 'Price, J, and Cottam, S, forthcoming b' (etc) read 'Price, J, and Cottam, S, 1994 Glass, in S Cracknell and C Mahany (eds), *Roman Alcester: southern extramural area, 1964-1966 excavations. Part 2: finds and discussion*, CBA Res Rep, **97**, York, 224-9'

For 'Price, J, and Cottam, S, forthcoming c' (etc) read 'Price, J, and Cottam, S, 1997 Roman glass, in T Wilmott, *Birdoswald: excavations of a Roman fort on Hadrian's Wall and its successor settlements*, 1987–92, English Heritage Archaeol Rep, **14**, London, 341-55'

For 'Shotter, D C A, forthcoming The Roman coins, in McCarthy forthcoming a' read 'Shotter, D C A, in prep The Roman coins, in Zant and Howard-Davis in prep a'

For 'Spawforth, A J S, 1990' (etc), read 'Spawforth, A J S, 1990 Roman medicine from the sea, *Minerva*, **1.6**, 9-10'

For 'Tomalin, D J, 1987 Roman Wight: A Guide Catalogue to "The Island of Vectis, very near to Britannia", [PLACE OF PUBLICATION???]' read 'Tomalin, D J, 1987 Roman Wight: A Guide Catalogue to "The Island of Vectis, very near to Britannia", Newport

2.3 ADDITIONAL BIBLIOGRAPHIC REFERENCES FOR THE FASCICULE

Carradice, I A, and Buttrey, T V, 2007 *The Roman Imperial Coinage*, *Volume 2*, 2nd edn, London

Caruana, I D, and Cherry, J, 1994 A microlith from Carlisle, *Trans Cumberland Westmorland Antiq Archaeol Soc*, n ser, **94**, 281–2

Foote, P G, and Wilson, D M, 1970 *The Viking achievement*, London

Howard-Davis, C, in prep The Roman architectural stone, in Zant and Howard-Davis in prep a

Padley, T G, Richardson, C, Shotter, D C A, Price, C, and Cottam, S, 2000 The finds, in McCarthy 2000a, 93-121

Shotter, D C A, 1993 Coin-loss and the Roman occupation of North West England, *Brit Numis J*, **63**, 1-19

Shotter, D C A, 1995 *Roman coins from North West England: first supplement*, Lancaster

3. CONCORDANCE OF CROSS-REFERENCES FROM THE SOUTH LANES MONOGRAPH TO FASCICULE 2

3.1 INTRODUCTION

3.1.1 The published south Lanes monograph (McCarthy 2000a) includes a Contents List for the three accompanying specialist fascicules (*op cit*, x), although these documents were not published at the time. For each fascicule, a list of chapters is provided, which includes the chapter title, the author(s), and page numbers. Additionally, the monograph text also contains numerous cross-references to the fascicules; these were checked against the manuscript copies of the fascicules present in the former CAU/CAL archive, and any divergences were noted.

3.2 CROSS-REFERENCES FROM THE MONOGRAPH TO FASCICULE 2

3.2.1 ***Chapter concordance***: the list of chapters given in the monograph is entirely inconsistent with that present in the manuscript version of the fascicule itself. The concordance between the two is presented in Table 1.

Monograph Contents List (McCarthy 2000a)	**Page nos**	**Actual contents of Fascicule 2**	**Page nos**
Chapter 1: Introduction	1	*Chapter 13*: Introduction to the Sites	167
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Table 1: Chapter concordance between south Lanes monograph (McCarthy 2000a) and Fascicule 2

3.2.2 ***Concordance of page cross-references***: there are eight cross-references to Fascicule 2 in the published monograph (McCarthy 2000a), on pages 62(2), 78, 79, 106, 111(2), and 112. All are inconsistent with the pagination in the manuscript copy of Fascicule 2, and a concordance is therefore provided below.

Page 62 (column 1, line 39): for 'Fascicule 2, chapter 13' read 'Fascicule 2, chapter 13 (formerly chapter 25)'.

Page 62 (column 1, line 50): for 'Fascicule 2, pp144-5' read 'Fascicule 2, pp304-5'.

Page 78 (column 1, line 7): for 'Fascicule 2, chapter 10' read 'Fascicule 2, chapter 10 (formerly chapter 22)'.

Page 79 (column 1, line 20): for 'Fascicule 2, chapter 10' read 'Fascicule 2, chapter 10 (formerly chapter 22)'.

Page 106 (column 1, line 8): for 'Fascicule 2, chapter 11, No L1' read 'Fascicule 2, chapter 11 (formerly chapter 23), No L1'.

Page 111 (column 1, line 17): for 'Fascicule 2, chapter 6' read 'Fascicule 2, chapter 6 (formerly chapter 18)'.

Page 111 (column 2, line 2): for 'Fascicule 2, p 56' read 'Fascicule 2, p 220'.

Page 112 (column 2, line 5): for 'Fascicule 2, chapter 12' read 'Fascicule 2, chapter 12 (formerly chapter 24)'.

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Hird, M L, and Brooks, C, 1993 *Roman and medieval Carlisle, the Lanes Volume 1: excavations at Old Grapes, Crown and Anchor and Lewthwaite's Lanes 1981-2. Fascicule 3: the Roman and medieval pottery*, unpubl manuscript (early draft), Tullie House Museum and Art Gallery archive, Carlisle

Hird, M L, and Brooks, C, 2000 *Roman and medieval Carlisle, the Lanes Volume 1: excavations at Old Grapes, Crown and Anchor and Lewthwaite's Lanes 1981-2. Fascicule 3: the Roman and medieval pottery*, unpubl manuscript (later draft), Tullie House Museum and Art Gallery archive, Carlisle

McCarthy, M R, 2000a *Roman and medieval Carlisle: the southern Lanes. Excavations 1981-2*, Dept Archaeol Sci, Univ Bradford Res Rep, 1, Carlisle

McCarthy, M R, 2000b *Roman and medieval Carlisle, the Lanes Volume 1: excavations at Old Grapes, Crown and Anchor and Lewthwaite's Lanes 1981-2. Fascicule 1: the stratigraphic sequence, absolute dating and the environmental remains*, unpubl manuscript, Tullie House Museum and Art Gallery archive, Carlisle

Padley, T G, 2000 *Roman and medieval Carlisle, the Lanes Volume 1: excavations at Old Grapes, Crown and Anchor and Lewthwaite's Lanes 1981-2. Fascicule 2: the Roman and medieval finds*, unpubl manuscript, Tullie House Museum and Art Gallery archive, Carlisle

ROMAN AND MEDIEVAL CARLISLE, THE LANES VOLUME 1: Excavations at Old Grapes, Crown and Anchor and Lewthwaite's Lanes 1981-2

Fascicule 2
The Roman and Medieval Finds

By
T G Padley

With contributions by
E R T Allnutt, J Bayley, I D Caruana, S Cottam, P M Cracknell, B M Dickinson, M Henig, M L Hird, J Jones, G Lloyd-Morgan, M R McCarthy, E J E Pirie, J Price, C Richardson, D C A Shotter, S M Stallibrass, R S O Tomlin, L E Webster and S Winterbottom

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C M Brooks

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ABBREVIATIONS

CAL	Crown and Anchor Lane
ETS	East Tower Street
GLL	Globe Lane
KAL	King's Arms Lane
KLA	Keay's Lane
LAL	Law's Lane
LEL	Lewthwaite's Lane
LOL	Longcake's Lane
OBL	Old Bush Lane
OGL	Old Grapes Lane
PHL	Pack Horse Lane
PLA	Peascod's Lane
SEL	Sewell's Lane
UCT	Union Court

ACKNOWLEDGEMENTS

CHAPTER 13 INTRODUCTION

by M R McCarthy

Location and background

Carlisle lies on the south bank of the River Eden, nine miles south of the present-day border with Scotland (Fig 92). On the north side of the Eden lies the suburb of Stanwix; Hadrian's Wall runs through Stanwix, crossing the Eden close to its confluence with the River Caldew immediately north of the Castle.

The Lanes area as a whole occupies an area over 6 acres (2.43ha) in extent, on the eastern side of the Roman settlement and the medieval walled city. The Lanes derived its name from the large number of narrow lanes or vennels which ran between Scotch Street and Lowther Street. The excavation sites dealt with here were at the southern end of The Lanes in an area bounded by Scotch Street, Lowther Street, Bank Street and the former Old Bush Lane (Figs 92-4).

The history of the project, together with its scope and strategies, is set out in Fascicule 1, Chapter 1. A limited amount of small-scale work had been undertaken in The Lanes in the 1950s (Hogg 1955), and by Peter Clack and Paul Gosling working for the University of Durham and the Department of the Environment in 1975. Although these investigations provided little of substance, the 1975 interventions were useful in confirming the intensity of occupation in medieval and later times, as well as giving an indication of the likely depth of archaeological deposits.

The main programme of excavation commenced in 1978 and lasted for three and a half years, exposing in all approximately 1.3 acres (0.53ha) of the Roman settlement. In addition a substantial area of medieval townscape, including several lanes with their buildings, yards, pits, wells and other features, was investigated at Keay's and Law's Lanes at the northern end of The Lanes (Fig 93).

Two other programmes of work were put in hand, a detailed survey of existing buildings and a systematic programme of documentary research. The combined archaeological, architectural and historical strands add up to one of the largest urban projects ever undertaken in north Britain.

Method of publication

The size of this project, and the amount of data recovered, necessitate the division of this publication into three volumes. Volume 1 deals with the results of work at the southern end of the development area, and covers all periods from the prehistoric to the twentieth century. Volumes 2 and 3 cover the Roman and medieval to post-medieval features respectively at the northern end of The Lanes area. The results of the architectural survey will be incorporated into Volumes 1 and 3 where appropriate. The documentary research is published separately (Summerson 1993), although salient information from this is incorporated into Volumes 1 and 3.

Following the precedent established with the publication of Castle Street, Carlisle, the archaeological detail is published as a series of fascicules with separately produced volumes of synthesis. The rationale behind this approach has been described elsewhere (McCarthy 1991a; McCarthy *et al* 1992).

The Volume 1 monograph (McCarthy 1994) provides an illustrated summary and overview of the archaeological remains, together with general discussions, contributed by the relevant specialists, of the plant, insect and parasite remains, the animal and bird bone, the finds and the Roman and medieval pottery. The supporting data for the monograph are published as a series of three fascicules, arranged as a continuous sequence of chapters, the contents and authors of which are also listed in the monograph. Figure and table numbers in the fascicules are also arranged as a continuous sequence. Due to technological restrictions, half-tones only appear in the monograph.

This fascicule covers the organic and inorganic finds. The stratigraphic sequence, dendrochronology, and the environmental and economic remains appear in Fascicule 1, and the Roman and medieval pottery can be found in Fascicule 3.

The site archive, including the paper and photographic records, together with the artefacts and environmental data, is held by Tullie House Museum and Art Gallery, Carlisle.

Phasing

Each trench was investigated as a self-contained unit with its own numbering sequence of contexts and finds, and the data were examined independently of the other trenches, irrespective of whether they were contiguous or not. Within each trench the sequence was divided into periods, which are identified by number. Some periods were then sub-divided, the divisions being identified by letter. It should be noted that contexts containing finds or pottery may not be separately identified on plans in Fascicule 1.

On completion of the phasing, an attempt was made to correlate the details of contiguous trenches. In some cases the correlation is secure but in others there is an element of doubt. An attempt was also made to correlate sequences between all trenches, and here there is a considerable element of doubt. Where the physical evidence was absent, pottery has been used as a guide to contemporaneity. Table 29 below is a very tentative stab at linking the phasing against a chronological framework.

Dating

The site chronologies have been based very largely on pottery, especially samian ware, as very few coins were discovered in useful positions. Absolute dates for many of the timbers were obtained (Fasc 1, pp 103-6), but many of the felling dates are too early, being first century BC or early first century AD, and are of no use in dating individual structures, with the possible

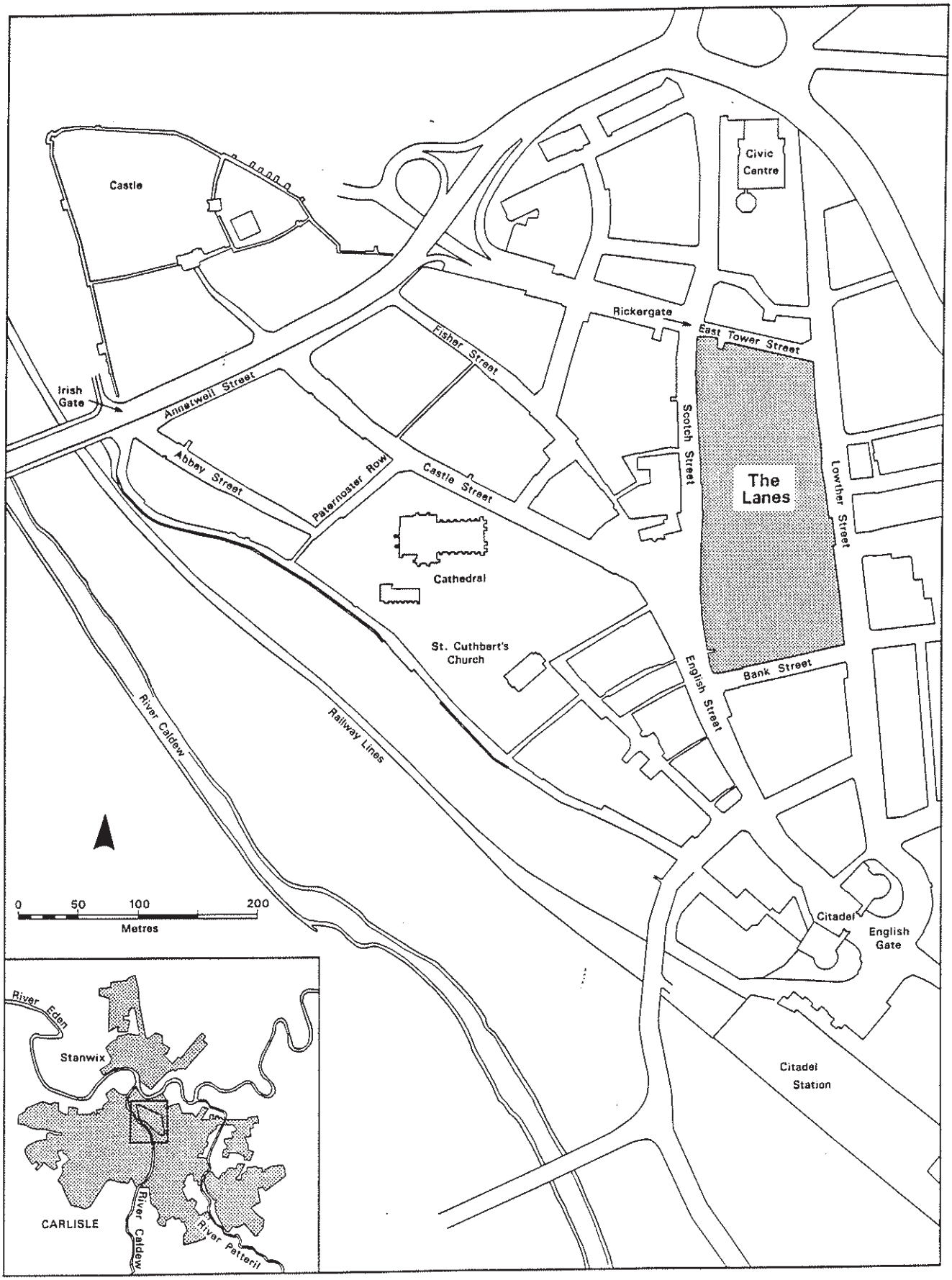

Fig 92 Location plan of The Lanes

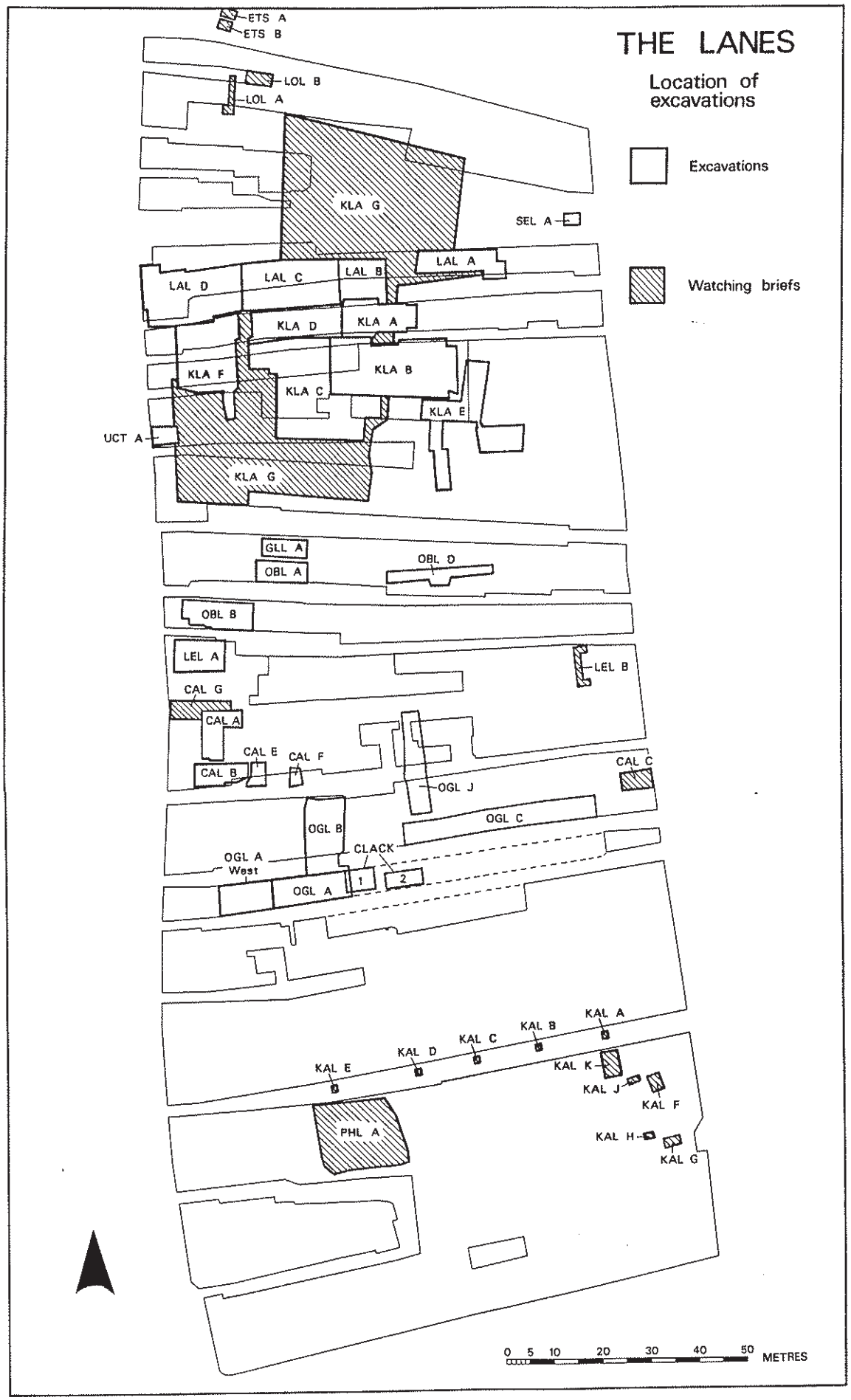

Fig 93 Location of excavations in The Lanes

Fig 94 Location of major excavations in the southern Lanes area

exception of OGL A Periods 6 and 13, and OGL B Period 2A. It is very difficult, therefore, to establish the dating with any degree of precision.

The problems of dating are compounded by the difficulty in deciding how to interpret some deposits. Period 4 in OGL B, for example, appeared to be remarkably clean compared with its equivalent in OGL A (Period 6). This could be explained if the assumption is made that Period 4 in OGL B was deliberately kept clear of rubbish for a specific purpose. However, Periods 5A and 5B in OGL B yielded over 1,000 sherds of pottery, including nearly 300 sherds of samian ware, and over 40,000g of animal bone. In this case it is possible to suggest that the deposits of Periods 5A and 5B derived from Period 4 and were midden material which was later spread across the site. The samian spectrum appears to bear this out in that it compares fairly well with OGL A Period 6, which ended about AD 160.

Summary of the excavations

The earliest features

The old ground surface was recorded at several sites but, unlike excavations on the western side of the city, at Black-friars Street (McCarthy 1990, 13-14) and Annetwell Street (Caruana forthcoming a), no traces of plough marks were

Table 29
Concordance of sites and periods

Horizon	*OGL A*		*OGL B*		*CAL B*		*CAL A*		*LEL A*		*OGL C*		*OGL J*
Natural	0	=	0	=	0	=	0	=	0				
	1A	=	1A										
	1B												
Old ground surface	1C	=	1B	=	1B	=	1	=	1	=	1		
Round-house	2												
Late 1st century	3-5	=/=	2A-3		2A-B	=	2A-B	=/=	2A-B				
AD 90s	6	=	4A				2C	=/=	3		2		
			4B-D				2D	=/=	4				
							2E	=/=	5-6C				
					3A-B	=	3A	=/=	7A				
							3B-C	=/=	7B-C				
							4		8				
									9				
Late 2nd century	7A-8C	=/=	4E-5C				5		10				
	9A	=/=	5D										
2nd-3rd century	9B	=/=	6A								3	=	2
	9C-E	=/=	6B-D						11				
	9F-H	=/=	6E										
	10A-D	=/=	6F						12				
	10E-F	=/=	7A-B										
3rd-12th century	11-12A		8A-B						13				
					OGL A West 1-3				14				
									15				
									16-19A				
Medieval	13	=	9	=	*OGL A West* 4-7		=		19B-22				
Post-medieval					*OGL A West* 8		=		23				

Periods linked by = are probably or certainly the same; periods linked by =/= may be the same but there is an element of doubt

found. The nearest possible example was observed at 46-52 Lowther Street in 1991 (Fasc 1, p 101).

The only potential prehistoric feature was part of a round-house, which cut the old ground surface in OGL A. The round-house cannot be reliably dated, and could theoretically belong almost anywhere from the early Bronze Age to the early Roman period. Apart from a barbed and tanged arrow-head from the same site (No G13), the lithic assemblage is undiagnostic. On balance it seems likely that the round-house was either late Iron Age or early Roman in date (McCarthy 1994, 00).

A small number of Neronian to early Flavian samian ware sherds, together with the occasional example of Lyon ware and Terra Nigra, may indicate Flavian period activity in the vicinity. There is no corroborative artefactural evidence from the sites excavated to indicate occupation that early, and it seems likely that this material is rubbish emanating from somewhere else.

The earliest Roman activities are represented by pits, soil spreads and postholes. Period 2B at OGL B includes a timber with a *terminus post quem* for felling of AD 83 (Fasc 1, p 104). It is thought that the early phases in OGL A and B belong to the late 80s or early 90s. Periods 2 to 5 in LEL A, thought to be contemporary, include a sequence of patchy surfaces associated with gulleys, slots and some postholes.

The late first to the mid second century

In the winter of AD 93-4 a timber and wattle building, Building 674, was erected within a fenced or hedged enclosure in OGL A, Period 6 (Period 4 in OGL B) (Fig 95). The building probably had a life of 50-60 years, extending to around AD 160, on the evidence of associated samian ware. The function of the building, which contained at least two rooms and a possible outshut, cannot be determined with certainty, but the insect and botanical remains suggest that the building might have been, in part at least, a stable or byre. Around the building were metalled open areas which were probably yards, perhaps for stock. The stockyards were bounded by a damp gulley and a hedge to the west, whilst a mixed hedge and fence alongside a road defined the property to the north.

This road ran from the heart of the Roman settlement eastwards towards the crossing of the River Petteril; its alignment was secured through work at CAL B-C and OGL J, and more recently at 46-52 Lowther Street. The date at which this road was first laid down could not be established, but because it was bedded directly on the old ground surface, it is assumed to have been at least as early as Building 674 in OGL A. Further east, along the south side of this road in OGL C, a complex of slots, posts and surfaces recorded in section, and which are assumed to belong to this period, suggest that the settlement extended at least as far as this.

On the north side of the road successive buildings (125 and 97) were erected in CAL A (Period 2; Fig 95), the property being screened from the road by a fence. Its northern boundary is thought to have been in LEL A where, in Period 6, there was an east-west gulley bounded by a stake fence; this also formed the southern limit of another property to the north. The CAL A building (97) probably stood within a plot containing yards and working areas, seen both in CAL A and LEL A. The building was similar to that in OGL A-B in terms of width and construction techniques, but unlike the latter, the CAL A building was reconstructed on at least two occasions. In OBL B, Building 117 is also tentatively associated with this phase (Fig 95).

Correlating phases between trenches and the search for patterning in the evidence are clearly difficult in the absence of absolute dates, and there are several possible interpretations of the evidence for the building history. These buildings and boundaries could be seen either as piecemeal development along the street frontages, or as a layout of plots and buildings that owed their origin to a deliberate act of planning, the latter being the interpretation preferred by the present writer. It is suggested that a series of enclosed plots were established in the mid 90s AD along both the east-west road leading out of the city and the present Scotch Street frontage leading towards the crossing of the River Eden. After the initial layout had been established, however, piecemeal rather than uniform development may be expected.

The mid second to the fourth century

In the mid second century, from around AD 160, deposits at OGL A-B and LEL A seem to represent combinations of dumping, soil accumulating *in situ*, cobbled surfaces and other miscellaneous features including fence lines and pits. Precisely what was going on is not clear, except that much activity was taking place. Period 6B in OGL B and Period 10 in LEL A, both attributed to the later second century, witnessed the erection of major buildings. Building 663 in LEL A (Fig 96) may have been on the frontage of the Roman predecessor of Scotch Street, and Building 362 in OGL B occupied a position on the frontage of the CAL B-C road (Fig 97). The function of neither structure is certain as too little of the plans was recovered. Both structures may be domestic, but the LEL A building could be relatively large. Attention is also drawn to a probable building in CAL A Period 5 (Fig 96), and it may have been at this time that the surfaces and ovens represented in the cellar sections at CAL A (Periods 4B and 5) were in use.

Building 377 was erected, set back some distance from the known road at the junction of the two trenches, in the late second or early third century, after which the OGL A-B sequence seems to peter out. Although the absence of pottery and finds of third- and fourth-century date seems decisive, the OGL A West excavation included a small amount of late Roman material associated with buildings and surfaces, however (Periods West 1 to West 3). This may imply that some late Roman deposits had been removed in antiquity or by machining.

In LEL A the Roman sequence was not affected by machine excavations or cellarage, and continued through multiple phases. Although traces of buildings were recognized in most periods, it is rarely possible to attempt any functional interpretation because of the size of the excavation.

Within this period it seems likely that a programme of defence building commenced, as shown by work at OGL C and J (Fig 97), although there is little associated pottery and dendrochronology cannot refine the dating of this important

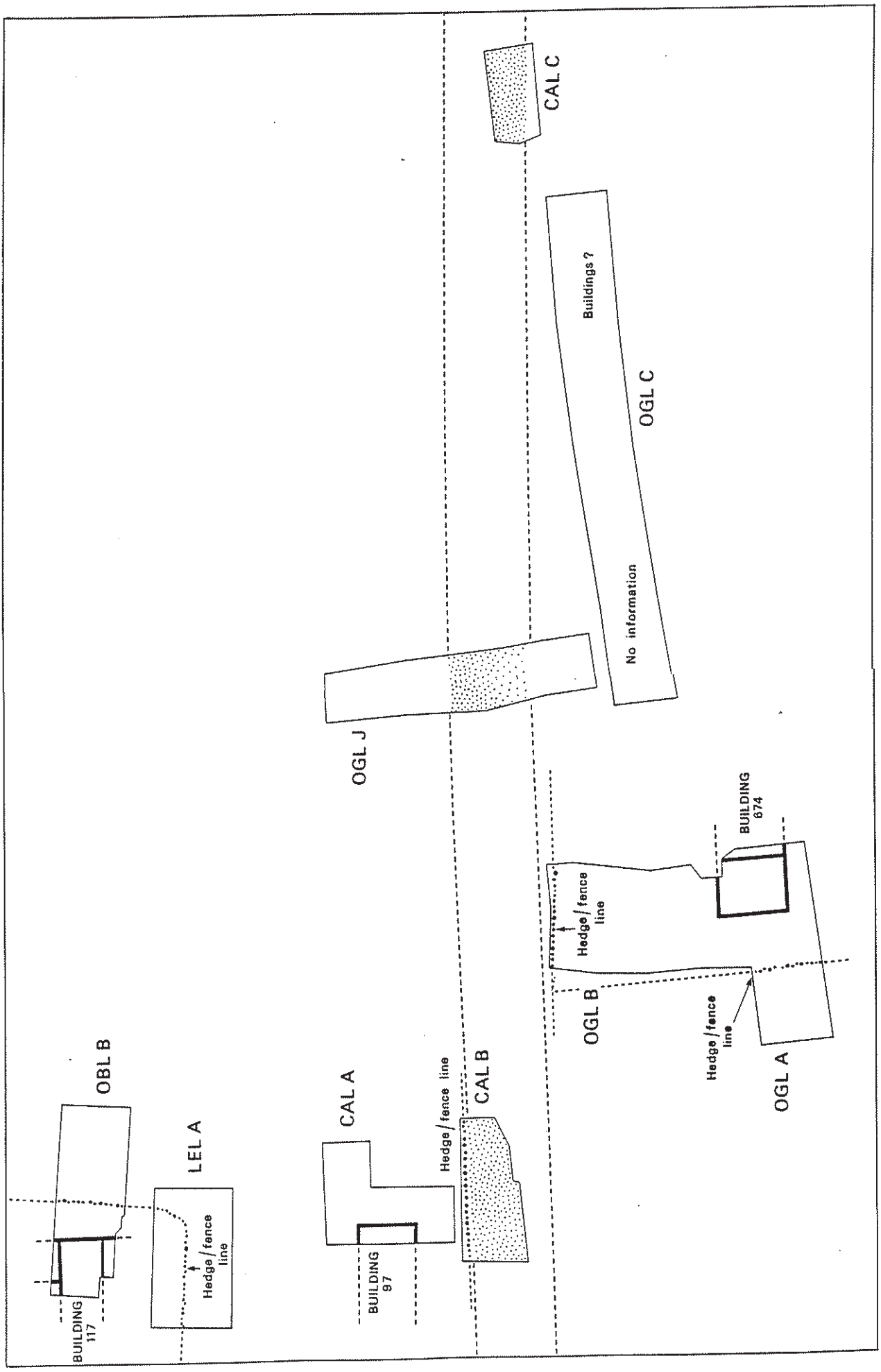

Fig 95 Schematic plan of major features thought to be broadly contemporary: the late first to mid second century (CAL A Period 2E, OGL A Period 6, OGL B Period 4, OGL C Period 2, LEL A Period 4, OBL B Period 2-7)

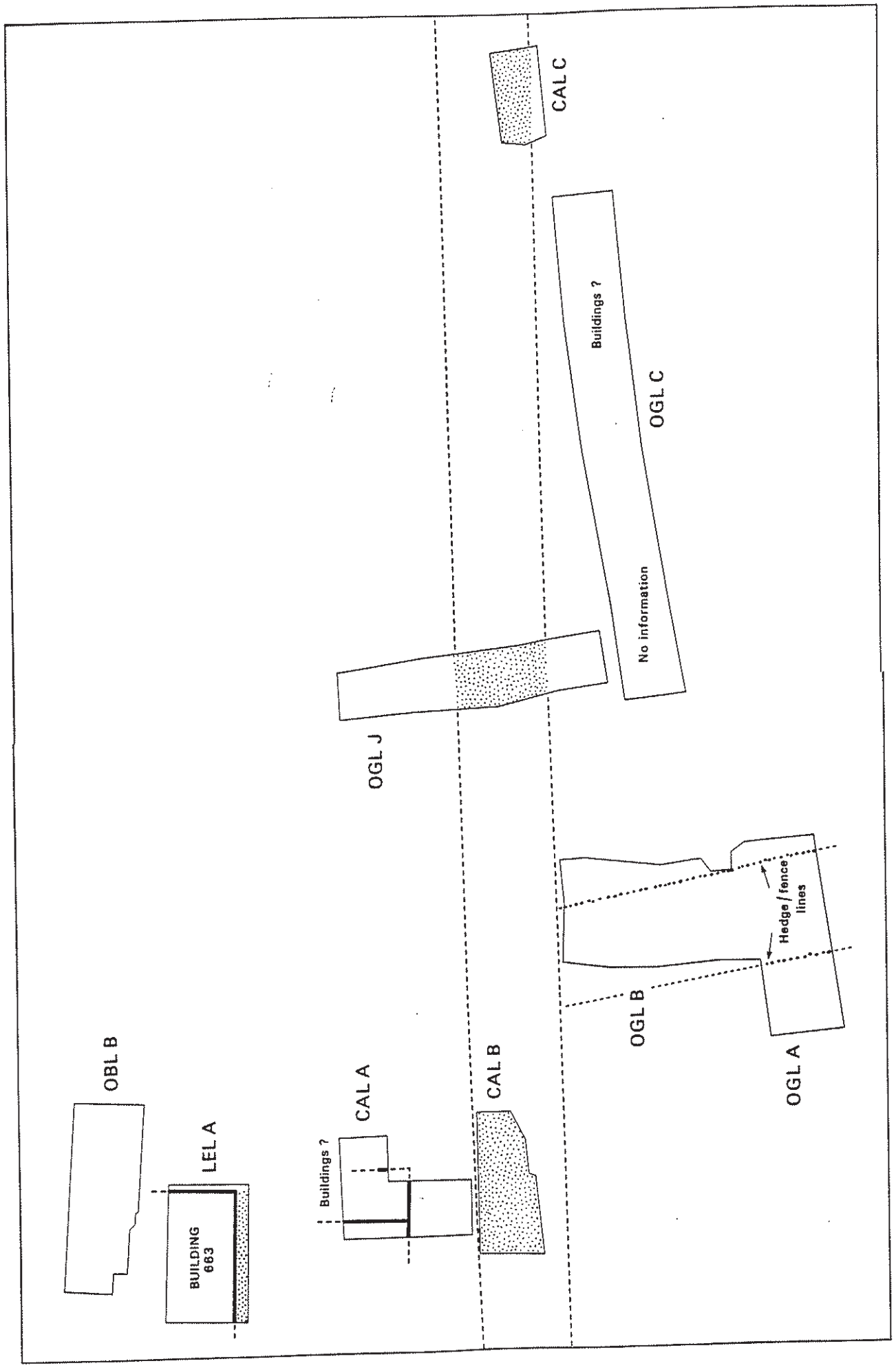

Fig 96 Schematic plan of some major features thought to be broadly contemporary: the late second century (CAL A Period 5, OGL A Period 8-9, OGL B Period 5, LEL A Period 10)

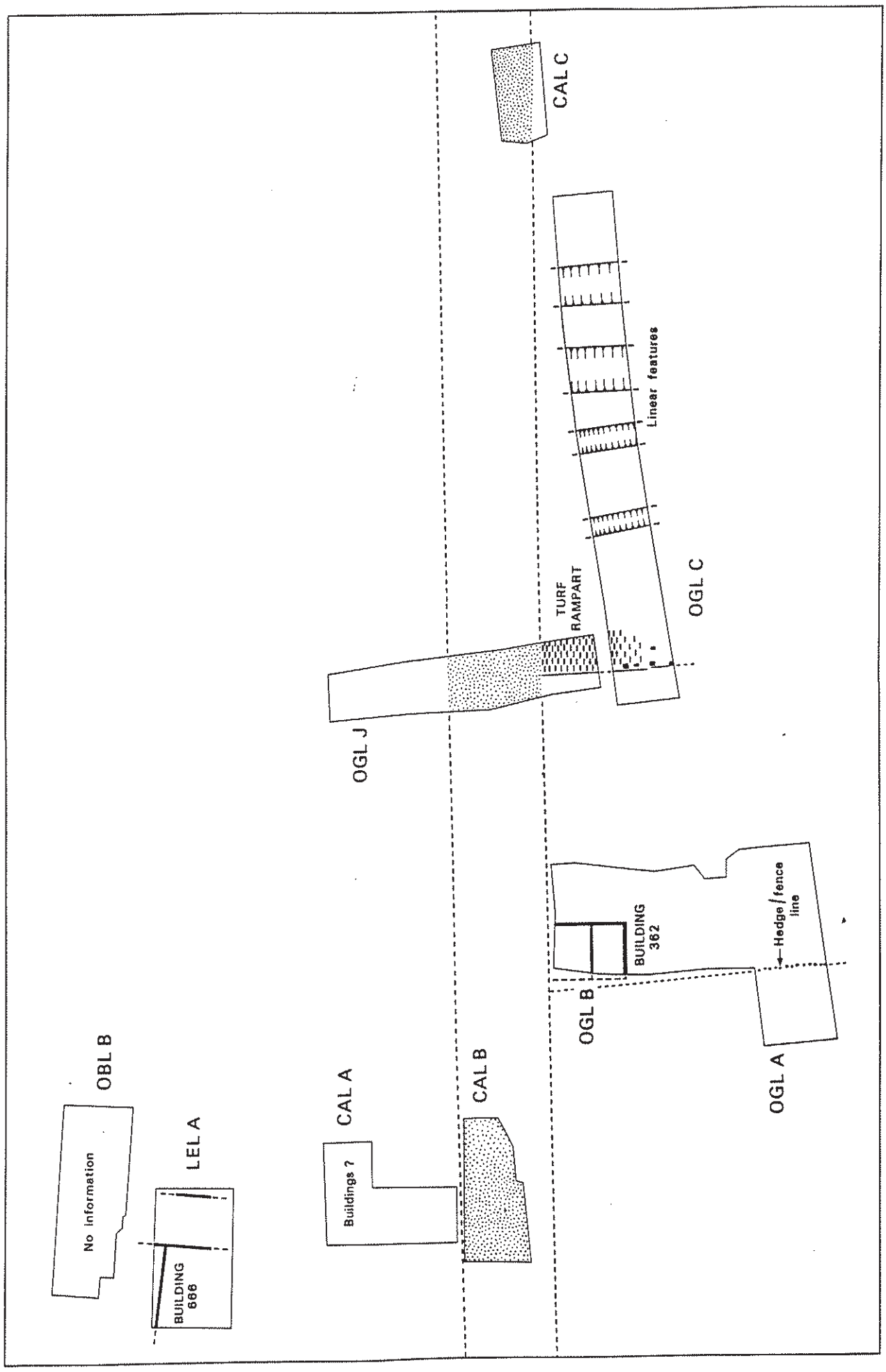

Fig 97 Schematic plan of major features thought to be broadly contemporary: the late second or early third century (OGL A Periods 9D-F, OGL B Periods 6B-E, OGL C Period 3, OGL J Period 2, LEL A Period 12B)

development. It is clear, however, that the turf rampart was not finished. No evidence for it was found on the northern side of the road in OGL J, and none was present either in OBL D further north.

The post-Roman to Anglo-Scandinavian periods

There is no reason to doubt that activity continued into the fourth century in the vicinity of LEL A. What is not clear from any of these Lanes sites is the nature and dating of deposits at the interface between the Roman and post-Roman periods, which at LEL A must occur somewhere between Periods 11 and 20. There are no 'dark earth' deposits, and features ostensibly of twelfth-century or later date are in direct contact with those associated only with Roman finds. Yet some Anglian or Anglo-Scandinavian period activity would not be surprising. A Trewhiddle-style strap-end mould from CAL A (No F15), the late eighth- to early ninth-century dendrochronology dates for CAL A, and a late tenth- to eleventh-century brooch from OGL A West (No C12), together with features on the St Alban's church site on the opposite side of the road to LEL A (Keevill, in prep), provide some pointers. It may be supposed that the junction of the CAL B-C Roman road and Scotch Street was a focus of settlement within this period. It is possible that a wattle building (668) in LEL A Period 15 belongs here.

The medieval and post-medieval periods

Medieval features are not well preserved. A large timber hall-like building (Building 669), perhaps dating to the later twelfth/thirteenth century, is present at LEL A (Period 21). A series of pits in OGL B (Period 9), tentatively regarded as having an industrial function, perhaps for tanning, probably date to the early thirteenth century, as does the infill of a timber-lined well (1237, Period 13) at OGL A. The road identified in CAL probably continued in use into the medieval period, when a number of pits containing twelfth-century pottery were dug into the surface (CAL E-F; Fasc 3, pp 414-6).

At none of the sites does the sequence continue unbroken into the post-medieval period. Given the history of the medieval town (Jones 1976; Summerson 1993), it is inconceivable that an area such as this, so close to the heart of the city, should have been unoccupied. Here is a case where the relative lack of archaeological information can be confidently ascribed to the removal of deposits in later times.

This process probably took place in the late seventeenth and early eighteenth centuries when the Scotch Street frontage was gradually rebuilt in brick. An example of this can be seen at LEL A, the site of no 65 Scotch Street.

CHAPTER 14 INTRODUCTION TO THE FINDS

by T G Padley

Introduction

The Lanes finds report differs from that written for Castle Street (Padley 1991) in that it only contains entries for the 'Class 1' material. Before the post-excavation phase of The Lanes project was started, an assessment of the small find material was undertaken. Following on from this a revised research design and work programme was formulated. In order for the work to be completed within a reasonable time-scale, it was decided that rigorous selection criteria would have to be applied to the choice of finds for further study and analysis. Two classes were devised. Class 1 comprises that material which it is worth spending time on, either because it can be identified as to type, or because enough of it survives that it can be described and illustrated in a meaningful way. The remaining material is Class 2, and includes for example unrecognizable fragments of metal and sheet leather fragments without stitching. Class 1 material is catalogued and discussed in this fascicule, while the record of Class 2 material by context and provisional identification forms part of the site archive. The main drawback of this approach is its subjectivity, but this is outweighed by the fact that it allows the concentration of resources on those objects which really need it.

The amount of material

The size and character of the finds assemblages from the trenches in the southern part of The Lanes are discussed below. The trenches are arranged in the following order: Crown and Anchor Lane Trenches A, B and E, Old Grapes Lane Trenches A, A West, B, C, D and J, Clack Trenches 1 and 2, Lewthwaite's Lane Trench A and Old Bush Lane Trench B.

Where there is enough material to justify it, the finds have been tabulated (Tables 30-44). The majority of the trenches have two tables. In each case the assemblage is broken down by period, or group of periods. Where the periods have been amalgamated the groups are the same as those used in the discussion of the pottery and in the structural analysis of the site, so that the spatial and temporal distribution of the material within the site can be seen. The first table for each site

Table 30
The small finds from CAL A arranged by class

		Period								
Category	*Class*	*2C*	*2E*	*3A*	*3B and 3C*	*4*	*5*	*Post-Roman*	*Uns*	*Totals*
Coins	Class 1					1				1 / 1
Copper alloy	Class 1			1	1					2
	Class 2					1	1			2 / 4
Clay	Class 1							1		1 / 1
Stone	Class 1						1			1 / 1
Glass	Bottles - Class 1			1						1
	Artefacts - Class 1				1					1
	Bottles - Class 2						3			3
	Vessels - Class 2			1				1		2
	Non-Roman - Class 2							19	257	276 / 283
Bone	Class 1			1						1 / 1
Wood	Class 1				2				2	4 / 4
Leather	Shoes - Class 1			1	10	3	4			18
	Sheet objects - Class 1			1	1	2	8			12
	Offcuts - Class 1	1		1		11	35		4	52
	Sheet objects - Class 2		1		7	4	4		8	24
	Offcuts - Class 2				1	10	34		1	46 / 152
Totals		1	1	7	23	32	90	21	272	447

Table 31
The Class 1 small finds from CAL A arranged by functional group

Group	Type	Period							Totals
		2C	3A	3B and 3C	4	5	Post-Roman	Uns	
Personalia	Jewellery - bangles			1					1
	Shoes		1	10	3	4			18
									19
Toilet articles	Containers - wood			1					1
									1
Household utensils and furniture	Bottles - glass		1						1
	Vessels - other materials			1					1
	Utensils		1					1	2
									4
Transport and trade	Coins - Roman				1				1
									1
Tools and industry	General purpose					1			1
	Textile-working equipment			1					1
	Leather offcuts	1	1		11	35		4	52
	Other						1		1
									55
Fasteners and fittings	Other		1						1
									1
Militaria	Sheet leather objects		1	1	2	8			12
									12
Miscellaneous								1	1
									1
Totals		1	6	15	17	48	1	6	94

quantifies the complete assemblage by material and then by class, while the other arranges the Class 1 material into functional groups. These are loosely based on those defined by Crummy (1983, 5-6), and are the same as those used in the analysis of the Castle Street assemblage (Padley 1991a, 98-9).

Crown and Anchor Lane Trench A

CAL A produced 447 finds (Table 30). Of these, over half consisted of post-medieval glass fragments, the vast majority of which were unstratified. The most significant collection is the leatherwork from Periods 3B and 3C, 4 and 5. The majority of the shoes come from Periods 3B and 3C, while the offcuts and sheet leather came from Periods 4 and 5. The survival of wood and leather shows that waterlogged conditions on the site continued up to the end of Period 5.

The functional analysis of the material holds few surprises (Table 31). The main articles of clothing recovered are the shoes. There is not much domestic debris, as only fragments of glass from one vessel and one bottle were found. The main activity appears to have been connected with leather working, as over half of the finds are offcuts. To this can be added sheet leather objects, which are classed as militaria as they have a

Table 32
The small finds from CAL B arranged by class

Category	Class	Period			Totals
		1B	2A	Uns	
Copper alloy	Class 2		1	1	2
					2
Stone	Class 1	1			1
					1
Leather	Sheet objects - Class 1			1	1
	Offcuts - Class 1			2	2
					3
Totals		1	1	4	6

Table 33
The small finds from CAL E arranged by class

Category	Class	Period	Totals
		Medieval	
Coins	Class 1	3	3
			3
Copper alloy	Class 1	1	1
	Class 2	4	4
			5
Clay	Class 1	1	1
			1
Stone	Class 1	1	1
			1
Glass	Artefacts - Class 1	1	1
			1
Totals		11	11

Table 34
The small finds from OGL A arranged by class

Category	Class	Period											Totals
		1	*3 and 4*	*5 and 5-6*	*6*	*7 and 7-8*	*8, 8-9 and 9*	*10*	*10-11 and 11*	*12*	*13*	*Uns*	
Coins	Class 1				1	1					3	7	12 / 12
Gold	Class 1								1				1 / 1
Copper alloy	Class 1				5		6	2	3		4	5	25
	Class 2				1			4	3	1	1	12	22 / 47
Iron	Class 1				2			1				1	4
	Class 2		1	1	3	1	2	3	6		3	4	24 / 28
Lead	Class 1				2					2		1	5
	Class 2		2						1		1	1	5 / 10
Clay	Class 1			1	1	1				3	1	4	11 / 11
Stone	Class 1	2	3	3	5	2	1		1	1	1	7	26 / 26
Glass	Bottles - Class 1			1	2		3	1		2	1	4	14
	Vessels - Class 1			1	2	1	4	1		1	3	7	20
	Artefacts - Class 1				1	1	2						4
	Window glass - Class 1						1	3	1	2	3	7	17
	Bottles - Class 2			2	4	3	8	4	3	12	14	23	73
	Vessels - Class 2		1	1	4	5	5			1	6	9	32
	Non-Roman - Class 2					1	1				3	35	40 / 200
Bone	Class 1		1	2	1	1	3	1		2	3	2	16 / 16
Basketry	Class 1				1								1 / 1
Wood	Class 1		1		6	3					6	3	19 / 19
Leather	Shoes - Class 1			2	13	3	11			1	5	2	37
	Sheet objects - Class 1				8		1					3	12
	Offcuts - Class 1				20						2	1	23
	Sheet objects - Class 2		1	1	3	2					1		8
	Offcuts - Class 2				34						1		35 / 115
Totals		2	10	15	119	25	48	20	19	28	62	138	486

military origin, but here were probably being recycled (p 305).

Crown and Anchor Lane Trench B

There were only six finds from CAL B (Table 32); the only stratified Class 1 find is a flint blade fragment (No G7). The unstratified material consists of three pieces of leather, a fragment of seam reinforcing strip and two offcuts, indicating that there were waterlogged deposits at the site.

Crown and Anchor Lane Trench E

There are 11 finds from this trench (Table 33), and all of them come from medieval contexts. The seven Class 1 finds, with the possible exception of the building stone (No G49), are all residual. The coins range in date from a very worn Vespasianic *denarius* (No A3) to a very worn coin of Constantinian (No A59). The clay object is a stamped fragment of a *tegula* (No F12, Fig 110), which had a probable production date of AD 170-200 (p 220). The glass bead (No I119) is of a type which is found throughout Roman Britain and cannot be dated precisely, but appears to belong to the later Roman period (p 256).

Old Grapes Lane Trench A

This trench has produced the second largest assemblage of finds from this part of The Lanes (Table 34). There is a handful of material from contexts which predate Period 6, where the number of finds peaks; thereafter there is a decline in numbers, with a smaller peak in Period 13. In this last period there

Table 35
The Class 1 small finds from OGL A arranged by functional group

Group	Type	Period 1	3 and 4	5	6	7 and 7-8	8, 8-9 and 9	10	10-11 and 11	12	13	Uns	Totals
Personalia	Jewellery - bangles						1						1
	Jewellery - beads						1						1
	Jewellery - brooches				1		3		1				5
	Jewellery - pins					1	1		2	1	1		6
	Shoes			2	13	3	11			1	5	2	37
													50
Toilet articles	Combs		1			2							3
	Containers - all materials				1							1	2
	Toilet implements and spoons						2				1		3
	Tweezers										1		1
	Chatelaine							1					1
													10
Household utensils and furniture	Bottles - glass			1	2		3	1		2	1	4	14
	Jugs - glass			1			1			1		1	4
	Bowls - glass							1				1	2
	Cups - glass					1						3	4
	Jars - glass				1								1
	Vessels - other glass				1		3				3	1	8
	Vessels - other materials								1			1	2
	Lamps					1				2		1	4
	Querns									1		1	2
	Other				3							1	4
													45
Written communication	Stylus writing tablets				1							2	3
	Styli				2							1	3
	Inkwells				1					1		1	3
	Tags									1			1
													10
Recreation	Counters					1	1					2	4
													4
Transport and trade	Coins - Roman				1	1					3	5	10
	Coins - post-medieval											2	2
													12
Buildings	Building stones											3	3
	Window glass						1	3	1	2	3	7	17
	Pegs										5		5
	Antefix			1									1
													26
Tools and industry	Lithics - prehistoric	2	3	3	4	2	1		1		1	3	20
	General purpose tools				1								1
	Whetstones				1								1
	Textile-working equipment						1			1	1	1	4
	Leather offcuts				20						2	1	23
	Utilized antler pieces										1	1	2
	Other		1	1				1			1		4
													55
Fasteners and fittings	Studs				2							1	3
	Other				1			2		1	2	1	7
													10
Militaria	Sheet leather objects				8		1					3	12
	Harness						1						1
													13
Miscellaneous				1	6	1					1	3	12
													12
Totals		2	5	10	70	13	32	9	6	14	32	54	247

are a number of medieval finds in the form of leather shoes (Nos M96-100) and a spindle-whorl (No J24), together with a background scatter of residual material. Waterlogging appears from Periods 3 to 13, but there is a gap during Periods 10, 10-11 and 11 where there are no wooden or leather finds, suggesting that the later periods produced this kind of material

Table 36
The small finds from OGL A West arranged by class

		Period					
Category	*Class 1*	*West 1 and West 2*	*West 3*	*West 4 and West 5*	*West 6*	*West 7*	*Totals*
Coins	Class 1	3		4		6	13 13
Copper alloy	Class 1	3	3	2		2	10
	Class 2	5		1	1	3	10 20
Iron	Class 2					3	3 3
Lead	Class 1					1	1
	Class 2					1	1 2
Stone	Class 1		1			2	3 3
Glass	Bottles - Class 1	2	1	1			4
	Vessels - Class 1		2	1			3
	Artefacts - Class 1	1					1
	Window glass - Class 1	3	1				4
	Bottles - Class 2	1	1				2
	Non-Roman - Class 2				1		1 15
Bone	Class 1	1				1	2 2
Totals		19	9	9	2	19	58

only from pits which extended below the water table. Although Periods 7 and 7-8, and 8, 8-9 and 9 are attributed to the late second century to third century AD (Table 29), there is some intrusive material as each of them has produced a sherd of non-Roman glass.

The distribution of the Class 1 material follows a similar pattern to that of the total number of finds from the site (Table 35). In Period 1, the only finds recovered were two prehistoric lithics (Nos G14 and G28), neither of which are more than fragments. However, one of them is made of pitchstone (No G28), which indicates contact with the prehistoric communities of the north. The rest of the small amount of material which predates Period 6 consists of a handful of Roman artefacts and six more prehistoric lithics. The Roman objects include a comb (No K1), which may have been discarded as it was broken, and could not even be re-used for dehairing hides. Three tools made from bone and antler were recovered, none of which has a clearly defined purpose. The most obvious is an anvil made from an antler (No J21, Fig 137), which may have been involved with shoe-making (p 263). The other two comprise a chisel-shaped object (No J20, Fig 136), which seems too delicate to have been used for heavy work, and a point (No J27, Fig 138) which is similar to others found in Roman Carlisle, but more crudely made (pp 264-5).

Period 6 is the earliest period to produce a finds assemblage large enough to permit analysis. The only jewellery found was the wire headloop of a brooch which had become detached (No C4). Among the containers is a small wooden box (No K9, Fig 139) which could be carried around, as could the four glass vessels (No I71, and Nos I42, I60, I74, Fig 130). The first coin (No A7), a very worn *as* of Vespasian, comes from this period. Leather working appears to be important during this period as over half the finds are made up of leather items. These include 13 shoes, of all types, as well as offcuts and stitched leather objects. Finally, this is the only period which has produced letter-writing materials, comprising two styli (Nos D2-3, Fig 105) and an inkwell, as well as a fragment of possible stylus writing tablet (No K27).

The only other possibly significant cluster of material occurs in Periods 8, 8-9 and 9, where most of the jewellery occurs. Window glass is also present from these periods onwards.

Old Grapes Lane Trench A West

There is no unstratified material from OGL A West specifically (Table 36); all the unstratified finds are included in the main OGL A sequence. When compared to OGL A and the size of the area covered is taken into account, there is a larger quantity of material from OGL A West, but with no waterlogged component. The coins have a different temporal distribution as the majority of them come from coin period XII (AD 235-59) or later, while the majority of those from the main part of OGL A are from the earlier periods.

Old Grapes Lane Trench B

OGL B produced only about half as many finds as OGL A (Table 38). The largest number of finds come from Period 5A.

Table 37
The Class 1 small finds from OGL A West arranged by functional group

Group	Type	Period				Totals
		West 1 and West 2	West 3	West 4 and West 5	West 7	
Personalia	Jewellery - brooches			1		1
	Jewellery - pins	1				1
	Buckles				1	1
						3
Household utensils and furniture	Bottles - glass	2	1	1		4
	Jugs - glass			1		1
	Bowls - glass		1			1
	Vessels - other glass		1			1
	Querns		1			1
						8
Recreation	Counters	1				1
						1
Transport and trade	Coins - Roman (periods I-XII)				2	2
	Coins - Roman (periods XIII-XIX)	3		4	4	11
	Bridle-bit	1				1
						14
Buildings	Window glass	3	1			4
						4
Tools and industry	Lithics - prehistoric				1	1
	Whetstones				1	1
	Textile-working equipment				1	1
	Utilized antler pieces				1	1
						4
Fasteners and fittings	Studs	2		1		3
	Other		2		1	3
						6
Miscellaneous			1			1
						1
Totals		13	8	8	12	41

Material preserved by waterlogging is found from Periods 2 to 6E, and again in Period 9, where medieval pits penetrated the water table. The trench is also one of two which have produced amber beads (Nos H1 and H2, Fig 123), the other being LEL A. Periods 5B, 7A, 8A, 8B and 9 have all produced fragments of glass that are probably intrusive, as they are post-medieval in date.

The functional analysis of the Class 1 material shows that the earliest activity on the site was probably prehistoric (Table 39), as the only finds from Period 1B are three prehistoric lithics (Nos G10-11 and G24). None of these are diagnostic of any particular period or culture. Between these and the Period 5A collection there is only a handful of finds. Most of these are distinctively Roman, like the copper alloy spoon from Period 3 (No C36), or the prismatic glass bottle from Period 4 (No I114), but prehistoric lithic material still occurs (Nos G25, G30). The main activity represented is leather working, as there are 11 offcuts from Period 4. Period 5A shows an upsurge in numbers of Roman finds; there are four nailed shoes (Nos M38-41, Fig 154), and a sandal (No M77, Fig 156), as well as combs and vessel glass. Window glass is found in Periods 6A to 6E, 6F and 7B. The first coin comes from Period 5B (No A20), a little-worn Trajanic *dupondius* dating to AD 116, which is probably residual.

Old Grapes Lane Trench C

The majority (nearly two-thirds) of the finds from OGL C are leatherwork, followed by glass (Table 40). The leatherwork (Table 41) comprises nailed shoes (Nos M47-60, Fig 154) and stitched shoes (Nos M82-3, Fig 157), together with sheet leather objects and offcuts.

Old Grapes Lane Trench D

As only four finds were recovered from this trench and they are all unstratified, these have not been tabulated. Only the trumpet brooch (No C1) is a Class 1 find.

Old Grapes Lane Trench J

Only ten finds were recovered from OGL J (Table 42). The only piece of copper alloy is a medieval buckle of probable thirteenth-century date (No C15, Fig 100). The only coin (No A2) is a medium-worn *sestertius* of Tiberius, dated to AD 22-3. This is obviously residual, but is a rare survivor as such coins are not usually found circulating after the Julio-Claudian period (p 191).

Table 38
The small finds from OGL B arranged by class

Material	Class	Period															Totals
		1B	*2*	*3*	*4*	*5A*	*5B*	*5C*	*6A to 6E*	*6F*	*7A*	*7B*	*8A*	*8B*	*9*	*Uns*	
Various	Coins - Class 1						1		1			1				1	4 / 4
Copper alloy	Class 1			2		2	2		2	1		2					11
	Class 2					1			1			2			2	1	7 / 18
Iron	Class 1												1			1	2 / 2
Lead	Class 1																
	Class 2			1		1											2 / 2
Clay	Class 1												1				1 / 1
Stone	Class 1	3		2		1			1			1			1		9 / 9
Amber	Class 1					1	1										2 / 2
Glass	Bottles - Class 1				1	3			2			3	2	1		2	14
	Vessels - Class 1					3	1		2	2	1	2			1	1	13
	Artefacts - Class 1					2						1					3
	Window glass - Class 1								4	3		6				3	16
	Bottles - Class 2			1	1	5	6	2	4		1	8	3	2	3	7	43
	Vessels - Class 2					3	1		4	3		1	1				13
	Non-Roman - Class 2						1				1		1	2	5	5	15 / 117
Bone	Class 1			1	1				1			1			1	1	6 / 6
Wood	Class 1			1	1	4	1	2	1						2		12 / 12
Leather	Shoes - Class 1		1			5	4	1							3	1	15
	Sheet objects - Class 1						1									1	2
	Offcuts - Class 1				6	8									3		17
	Sheet objects - Class 2		1	2		5	2								1		11
	Offcuts - Class 2				5	7			1								13 / 58
Totals		3	2	10	15	51	21	5	24	9	3	28	9	5	22	24	231

Clack Trenches 1 and 2

There are nine Class 1 finds from Trench 1 and seven Class 1 finds from Trench 2. As the assemblages were incomplete when handed over for study, and all the Roman finds occur residually in contexts of medieval and later date, these have not been tabulated. A description of the Class 1 material is included in the catalogues. The most interesting item, from Trench 1, is the leg of a medieval vessel (No C34, Fig 101), which could have come from an ewer or a cauldron (p 202).

Lewthwaite's Lane Trench A

This trench has produced the largest number of finds from southern end of The Lanes (Table 43). Waterlogging has preserved wood and leather artefacts up to Period 11, which is dated to the second to third century AD. Shoes are found in Periods 6, 7 and 8, but there are fewer than might be expected (p 281). Amber beads were recovered from this site, occurring in Periods 6 and 7. Period 7 produced the earliest stratified collection of coins (Nos A6, A9 and A13), a *dupondius* and an *as*, both very worn, of Vespasian, and an *as* of Domitian, which showed a medium amount of wear. The latest date recorded on the coins is AD 86 (No A13), from Period 7A, which has been dated to the earlier part of a period which began in the AD 90s and ended in the late second century.

The chronological distribution of finds shows two peaks, in Periods 6 and 8 (Tables 43-4), which date from the late first century and late second century respectively, and where notably more finds occur than in other periods. There are certain groups of Class 1 material which show distinct distributions. The stylus writing tablets are found in Periods 5 to 7. This is contemporary with the later part of Period 6 at OGL A, where the other collection of writing materials was found. The personalia, made up of shoes and jewellery, cluster in Periods

Table 39
The Class 1 small finds from OGL B arranged by functional group

Group	Type	Period 1B	2	3	4	5A	5B	5C	6A to 6E	6F	7A	7B	8A	8B	9	Uns	Totals
Personalia	Jewellery - beads					2	1		1			1					3
	Jewellery - brooches								1								2
	Jewellery - pins																1
	Jewellery - other						1										1
	Shoes		1			5	4	1							3	1	15
																	22
Toilet articles	Combs					1		1									2
	Containers - glass											1					1
																	3
Household utensils and furniture	Bottles - glass				1	3			2			3	2	1		2	14
	Jugs - glass					2			1						1		4
	Bowls - glass									1							1
	Vessels - other glass					1	1		1	1	1	1				1	7
	Vessels - other materials			1		2											3
	Spoons			1													1
	Querns								1								1
																	31
Recreation	Counters			1		1						2	1				5
																	5
Transport and trade	Coins - Roman						1		1			1				1	4
																	4
Buildings	Window glass								4	3		6				3	16
	Mouldings								1								1
	Pegs						1								2		3
																	20
Tools and industry	Lithics - prehistoric	3		2		1									1		7
	Whetstones											1					1
	Textile-working equipment				1												1
	Leather offcuts				6	8									3		17
	Other							1							1		2
																	28
Fasteners and fittings	Studs			1					1	1							3
	Other					2	1						1			1	5
																	8
Militaria	Sheet leather objects						1									1	2
																	2
Miscellaneous					1	1						1				1	4
																	4
Totals		3	1	6	9	29	11	3	14	6	1	17	4	1	11	11	127

6 to 8, with an outlier comprising two glass bangles in Period 5 (Nos I126 and 127, Fig 134). The rest of the material, from Periods 10 to 20, could all be residual. A similar distribution can be seen in the toilet articles, but there is a clear cut-off point after Period 10. The tools and industry, fasteners and fittings, and militaria groups also have similar distributions.

There are some exceptions, however. The glassware appears fairly evenly distributed throughout the site. The querns are not found before Period 18, and as they are of typical Roman form, are probably all residual. The counters are concentrated in Periods 12 to 21. This cannot be solely accounted for by the re-use of samian ware to make counters at a later date (No F8, and two un-numbered ones), as glass (Nos I135, Fig 135, I136 and I138) and bone counters (Nos J15 and 16) of Roman type were recovered also.

The coin distribution shows that the later coins (those that date to coin periods XIII to XXI) have a different distribution from the earlier ones. However, these later ones are only found from Period 19B onwards, which means that they are residual as 19B has been dated to the medieval period. The only medieval coin (No A70) is a styca of the second reign of Æthelred II, AD 843/4-9, occurring residually in Period 21B. There is a stone mould (No G62, Fig 121) from the same period, which may be similar in date to the styca. They were found not far from the clay strap-end mould at CAL A (No F15, Fig 113), and, although residual, may provide corroborative evidence for the Period 15 building (668) at LEL A belonging to the Anglo-Scandinavian period.

The window glass begins with an isolated fragment in Period 9, and then occurs in the later periods, 13, 19B, 20, 21A

Table 40
The small finds from OGL C arranged by class

Category	Class	Period				Totals
		2 and 2?	3 and 3?	Post-3	Uns	
Coins	Class 1		2		2	4
						4
Copper alloy	Class 1				4	4
	Class 2				2	2
						6
Ironwork	Class 1				1	1
	Class 2	2			1	3
						4
Glass	Bottles - Class 1	1				1
	Vessels - Class 1	1		1		2
	Window glass - Class 1				2	2
	Bottles - Class 2				2	2
	Vessels - Class 2		1		1	2
	Non-Roman - Class 2				4	4
						13
Bone	Class 1				1	1
						1
Wood	Class 1				1	1
						1
Leather	Shoes - Class 1	8	3		5	16
	Sheet objects - Class 1	14			1	15
	Offcuts - Class 1	11	3		1	15
	Sheet objects - Class 2	4	2			6
	Offcuts - Class 2	21			2	23
						75
Totals		62	11	1	30	104

Table 41
The Class 1 small finds from OGL C arranged by functional group

Group	Type	Period				Totals
		2 and 2?	3?	Post-3	Uns	
Personalia	Shoes	8	3		5	16
						16
Toilet articles	Containers - glass	1				1
						1
Household utensils and furniture	Bottles - glass	1				1
	Vessels - other glass			1		1
	Weights				1	1
						3
Recreation	Counters				1	1
						1
Transport and trade	Coins - Roman		2		2	4
						4
Buildings	Window glass				2	2
						2
Tools and industry	Leather offcuts	11	3		1	15
						15
Fasteners and fittings	Other				1	1
						1
Militaria	Sheet leather objects	14			1	15
	Other				1	1
						16
Miscellaneous					3	3
						3
Totals		35	8	1	18	62

Table 42
The small finds from OGL J arranged by class

Category	Class	Period 2	Post-2	Med	Uns	Totals
Coins	Class 1		1			1 / 1
Copper alloy	Class 1			1		1 / 1
Glass	Bottles - Class 1		1			1
	Bottles - Class 2	2	1	1		4
	Vessels - Class 2		1			1
	Non-Roman - Class 2				1	1 / 7
Leather	Shoes - Class 1	1				1 / 1
Totals		3	4	2	1	10

and 22. Finally, the number of miscellaneous objects peaks in the middle of the sequence, Periods 12B and 12C to 20.

Old Bush Lane Trench B

The majority of the finds from OBL B (72%) come from a single context in Period 6, a very large pit, 100 (fill 108) (Table 45). As these are all leather, they are likely to be a deposit of debris from cobbling; they were found together with a fragment of Kilbride-Jones type 2 glass bangle (No I128, Fig 134). The other periods have not produced enough finds for any interpretation to be offered, but it is worth noting that the sling stone from Period 1 (No G61, Fig 120) is one of the four pieces of militaria which are not leatherwork from the whole of this part of The Lanes. However, it is possible that it represents hunting rather than military activity, as slings were used for both.

Table 43
The small finds from LEL A arranged by class

Category	Class	Period 1	2 to 5	6	7	8	9	10	11	12A	12B and 12C	13	14 to 17	18	19B	20	21A	21B	22	Uns	Totals
Coins	Class 1				3					1		3	1	2	8	3	3	3	1	6	34 / 34
Copper alloy	Class 1		1	4	5	2	1	6			2	1	1	3	3	3		2	2	1	37
	Class 2		1			1	1				1		1	2	12	2	4	1	4	6	36 / 73
Iron	Class 1		1	2	1							1		3	2			1			11
	Class 2		1			1					1			1	2					1	7 / 18
Lead	Class 1											1	2	1				1		1	6
	Class 2							1				2								1	4 / 10
Clay	Class 1												1	1	1	1	1				5 / 5
Stone	Class 1	1				1				1	1	1	1	1	6	1	1	1		3	19 / 19
Amber	Class 1			1	2																3
	Class 2				1																1 / 4
Glass	Bottles - Class 1		1	4	2			2	2					1	1		1				14
	Vessels - Class 1		3	2	2	2		1	4	1	1	2	3	3	1	3				1	29
	Artefacts - Class 1		2	1		1					2	1	1		2					1	11
	Window glass						1					1			1	1	3		1		8
	Bottles - Class 2		22	18	28	6	1	6	7	1		5		6	3	1	3			1	108
	Vessels - Class 2		4		5				4	3	1	6	5	4	1		2	1	1	1	38
	Non-Roman - Class 2														1		1		1	9	12 / 220
Bone	Class 1			1		2					1		1		2						7 / 7
Wood	Class 1		2	4	1	1			1												9 / 9
Leather	Shoes - Class 1			3	2	1														1	7
	Sheet objects - Class 1			7	1	7		1												1	17
	Offcuts - Class 1			15	2	24	2		1												44
	Sheet objects - Class 2				4	7	3														14
	Offcuts - Class 2			10	1	33	11	1												2	58 / 140
Totals		1	38	72	60	89	20	18	19	7	10	24	17	28	46	15	19	10	10	36	539

Table 44
The Class 1 small finds from LEL A arranged by functional group

Group	Type	Period 1	2 to 5	6	7	8	9	10	11	12A	12B and 12C	13	14 to 17	18	19B	20	21A	21B	22	Uns	Totals
Personalia	Jewellery - bangles		2																		2
	Jewellery - beads			1	2	1									1						5
	Jewellery - brooches					1						1				1					3
	Jewellery - pins				1	1		2			1				1						6
	Jewellery - other				1																1
	Shoes			3	2	1														1	7
																					24
Toilet articles	Containers - glass		1	1																	2
	Toilet spoons				1			1													2
	Tweezers				1			1													2
	Mirrors						1														1
																					7
Household utensils and furniture	Bottles - glass		1	4	3			2	2					1	1		1				15
	Jugs - glass			1	2					1	1			1							6
	Bowls - glass					1		1													2
	Cups - glass		2						3				3			2				1	11
	Vessels - other glass					1			1			2		2	1	1					8
	Vessels - other materials							1			1			1							3
	Lamps												1								1
	Querns													1	4		1			2	8
																					54
Written communication	Stylus writing tablets		2	4	1																7
																					7
Recreation	Counters			1							2	1	2	1	3	1	1			1	13
																					13
Transport and trade	Coins - Roman (periods I-XII)				3					1		3	1	2	3		1	1	1	1	17
	Coins - Roman (periods XIII-XXI)														5	3	2	1		4	15
	Coins - medieval																	1			1
	Coins - post-medieval																			1	1
	Other								1												1
																					35
Buildings	Building stones						1						1		1					1	3
	Window glass											1			1	1	3		1		8
																					11
Tools and industry	Lithics - prehistoric	1				1									1						3
	General purpose tools			1										1	1			1			4
	Whetstones									1		1				1					3
	Textile-working equipment			2	2																4
	Leather offcuts			15	2	24	2		1												44
	Utilized antler pieces			1																	1
	Other													1				1			2
																					61
Fasteners and fittings	Studs		1	1									1		1			2			6
	Handles			1																	1
	Other			1		1										1			1	2	6
																					13
Militaria	Sheet leather objects			7	1	7		1												1	17
	Armour					1															1
																					18
Miscellaneous			1			1		1			2	2	2	4	3	1		1	1		19
																					19
Totals		1	10	44	22	41	4	10	8	3	7	11	11	15	27	12	8	9	4	15	262

Conclusions

The amount of material recovered from this part of The Lanes is much smaller than for sites on the western side of the city. Old Grapes Lane Trench A is almost the same size as the Castle Street site, but has produced only 18.5% as many Class 1 Roman objects. Indeed, if all the trenches are taken together, they have produced only 62% as many Class 1 Roman finds

Table 45
The small finds from OBL B arranged by class

Category	Class	Period 4	5	6	6 or later	Uns	Totals
Iron	Class 2			1			1 / 1
Glass	Artefacts - Class 1			1			1
	Bottles - Class 2			1			1
	Non-Roman - Class 2				1		1 / 3
Stone	Class 1		1			1	2 / 2
Wood	Class 1			1	2		3 / 3
Leather	Shoes - Class 1			10			10
	Sheet objects - Class 1			1	2	1	4
	Offcuts - Class 1		1	6			7
	Sheet objects - Class 2	2					2
	Offcuts - Class 2			7	1		8 / 31
Totals		2	2	28	6	2	40

as Castle Street.

The distribution of the finds by trench is not necessarily significant. The trenches vary in size and depth of deposits surviving, and were not all excavated in the same way. Thus any comparison between the amounts of material recovered from the different trenches would need a normalizing figure to be included. In addition to taking account of the volume removed from each trench, such a figure would have to be adjusted to remove the redeposited and residual material in those trenches where more than just the below-cellar archaeology remained.

Presentation

This fascicule contains mainly the catalogue of the finds material. There is a short introduction at the beginning of each section which gives quantification, the amount of material from each trench by functional group and the relative amounts of Class 1 and Class 2 material (where applicable). Specialist comment is included in the catalogue where appropriate. An overview of the finds and a discussion of their possible significance in terms of the site interpretation is given in the monograph chapter on the finds (Padley 1994, pp 00-00).

The catalogues are arranged primarily by material. Within each material the items are generally grouped by function and then by typology. The functional groups contain items dating to both the Roman and medieval periods. The prehistoric artefacts are confined to flintwork, which appears in a separate section at the beginning of the stonework chapter. The Roman glass is arranged with the cast glass first, followed by the blown glass.

The catalogue numbers are preceded by an upper case letter which identifies the category of material. There is a separate sequence of numbers for each category. The catalogue entries begin with the type of object and a figure number (where appropriate), followed by a description, and conclude with the site details. These include the site code (eg OGL) and trench code (eg A), followed by the find number (eg Au 1) and the period from which it was recovered (eg Period: 11).

At the end of the fascicule there is a concordance of finds. This is arranged by site, trench and period, and contains all the Class 1 finds. The concordance shows the catalogue number, identification, and figure number (if any) of each object.

Abbreviations used in catalogues and tables

Dia	diameter
Dim	dimensions
Ht.	height
L.	length
P Ht.	present height
Th.	thickness
W.	width
W Th.	wall thickness
Wt.	weight
approx	approximately
int	internal
ext	external
max	maximum
min	minimum
Med	medieval
Uns, unstrat	unstratified

CHAPTER 15 THE COINS (A)

by D C A Shotter and E J E Pirie

The Roman Coins
by D C A Shotter

In the coin list (Table 46) reference is made to the following concordances: *Hill* (Hill 1970), *LRBC* (Carson *et al* 1960) and *RIC* (Mattingley and Sydenham 1923-84).

Table 46
The Roman coin list

Cat no	*Site and context*	*SF no*	*Period*	*Coin type*	*Reference*	*Wear*	*Date (AD)*
Republican (1 coin)							
A1	OGL B 79	N 3	6E	AR *Den*		VW	*c* 100-30 BC
Tiberius (1 coin)							
A2	OGL J 11	N 1	Post-2	Æ *Sest*	*RIC* I^2.50	MW	22-3
Vespasian (10 coins)							
A3	CAL E 3	N 2	Med	AR *Den*	*RIC* 99A	VW	76
A4	LEL A 84	N 23	18	Æ *Sest*		VW	69-79
A5	CAL A 52	N 1	4	Æ *Dp*		VW	69-79
A6	LEL A 550	N 33	7A	Æ *Dp*	*RIC* 473	VW	73
A7	OGL A 707	N 22	6	Æ *As*	*RIC* 580/581	VW	76
A8	Clack 1 +	N 6	Uns	Æ *As*		VW	69-79
A9	LEL A 550	N 35	7A	Æ *As*	*RIC* 580 or 581	VW	76
A10	LEL A 270	N 29	13	Æ *As*		VW	69-79
A11	LEL A 84	N 24	18	Æ *As*		VW	69-79
A12	LEL A 98	N 21	19B	Æ *As*		VW	69-79
Domitian (2 coins)							
A13	LEL A 550	N 34	7A	Æ *As*	*RIC* 332	MW	86
A14	LEL A 204	N 26	14	Æ *As*		VW	84-96
Trajan (8 coins)							
A15	LEL A 258	N 28	13	AR *Den*		VW	103-11
A16	OGL A 633	N 21	7B	Æ *Sest*	*Hill* 731	LW	116
A17	OGL A 185	N 20	13	Æ *Sest*	*Hill* 239	MW	105
A18	LEL A 250	N 27	13	Æ *Sest*		VW	103-11
A19	LEL A +	N 1	Uns	Æ *Sest*		VW	103-11
A20	OGL B 181	N 5	5B	Æ *Dp*	*Hill* 732	LW	116
A21	OGL C 5	N 3	3?	Æ *Dp*	*Hill* 683	VW	115
A22	LEL A 335	N 31	12A	Æ *Dp*	*Hill* 243	LW	105
Hadrian (3 coins)							
A23	LEL A 94	N 20	19B	Æ *Sest*		VW	117-38
A24	OGL B 15	N 2	7B	Æ *Dp*		VW	117-38
A25	OGL C 5	N 4	3?	Æ *As*	*Hill* 141	MW	119

Cat no	*Site and context*	*SF no*	*Period*	*Coin type*	*Reference*	*Wear*	*Date (AD)*
Faustina I (4 coins)							
A26	OGL A 36	N 4	13	Æ *Sest*	*Hill* 376	LW	141
A27	OGL A 199	N 7	West 7	Æ *Sest*		VW	138+
A28	OGL A 9	N 3	13	Æ *Dp*		VW	141+
A29	LEL A 28	N 10	21A	Æ *Dp*		VW	141+
Faustina II (1 coin)							
A30	OGL A 2	N 1	Modern	Æ *Dp*		VW	145+
Commodus (1 coin)							
A31	LEL A 60	N 8	21B	Æ *Sest*		MW	180-92
Julia Domna (1 coin)							
A32	LEL A 93	N 22	19B	AR *Den* (frag)		MW	193-217
Gordian III (1 coin)							
A33	OGL A 199	N 5	West 7	AR *Ant* (frag)	*RIC* 68 or 69	LW	240
Postumus (1 coin)							
A34	OGL A 532	N 24	West 2	Æ (radiate copy: frag)		MW	260-8
Claudius II (3 coins)							
A35	LEL A 80	N 15	19B	Æ (radiate copy)	*RIC* 53	LW	268-70
A36	LEL A 93	N 25	19B	Æ (radiate copy: frag)	*RIC* 79	LW	268-70
A37	LEL A +	N 6	Uns	Æ (radiate copy)		MW	268-70
Tetricus I (3 coins)							
A38	LEL A 28	N 9	21A	Æ (radiate copy)		MW	271-3
A39	OGL A 513	N 11	West 5	Æ (radiate copy)		MW	271-3
A40	OGL A +	N 25	Uns	Æ (radiate copy)	*RIC* 68	VW	271-3
Unassignable radiate copies (10 coins)							
A41	CAL E 4	N 3	Med	Æ (frags)		MW	*c* 270
A42	OGL A 532	N 18	West 2	Æ (frag)		MW	*c* 270
A43	OGL A 532	N 19	West 2	Æ (frag)		MW	*c* 270
A44	OGL A 199	N 9	West 7	Æ (frag)		MW	*c* 270
A45	OGL B +	N 1	Uns	Æ (frag)		MW	*c* 270
A46	Clack 2 20	N 1	10A	Æ (frags)			*c* 270
A47	LEL A 74	N 16	20	Æ (frags)			*c* 270
A48	LEL A 74	N 17	20	Æ (frags)			*c* 270
A49	LEL A 64	N 11	21B	Æ (frags)			*c* 270
A50	LEL A 5	N 7	22	Æ (frags)			*c* 270
Tetrarchic (2 coins)							
A51	LEL A 82	N 19	19B	Æ (Constantius I)	*RIC* VI (Trier) 146a	LW	294
A52	LEL A 28	N 36	21A	Æ (frag)		LW	294+
Constantine I (1 coin)							
A53	Clack 1 65	N 3	7	Æ	*RIC* VI (London) 279	LW	321-3
Constantinian (11 coins)							
A54	LEL A 80	N 14	19B	Æ (**SOLI INVICTO COMITI**)		LW	313

Cat no	*Site and context*	*SF no*	*Period*	*Coin type*	*Reference*	*Wear*	*Date (AD)*
A55	LEL A +	N 2	Uns	Æ (**SOLI INVICTO COMITI**)		LW	313
A56	OGL A 2	N 16	Modern	Æ (Crispus)	*RIC* VII (London) 233	MW	321-2
A57	OGL A 199	N 10	West 7	Æ (Crispus)	*LRBC* I.15	LW	324-30
A58	LEL A 82	N 18	19B	Æ (frag)	as *RIC* VII (London) 291	MW	323-4
A59	CAL E 4	N 1	Med	Æ (Victory on Prow)	*LRBC* I.185	VW	330-5
A60	OGL A 513	N 13	West 5	Æ (Victory on Prow: frag)		MW	330-5
A61	OGL A 513	N 14	West 5	Æ (**GLORIA EXERCITVS**, 2 std: frag)		MW	330-5
A62	LEL A +	N 5	Uns	Æ (**GLORIA EXERCITVS**, 2 std)		LW	330-5
A63	OGL A 199	N 6	West 7	Æ (**GLORIA EXERCITVS**, 1 std: frag)		MW	335-41
A64	OGL A 199	N 8	West 7	Æ (**GLORIA EXERCITVS**, 1 std)	as *LRBC* I.87	MW	335-41
Constantius II/Constans (2 coins)							
A65	LEL A 73	N 13	20	Æ ('Fallen Horseman' copy)		MW	*c* 350
A66	LEL A +	N 3	Uns	Æ ('Fallen Horseman' copy: frag)		MW	*c* 350
Illegible Coins (3 coins)							
A67	OGL A 513	N 12	West 5	Æ (frags)			
A68	OGL A 2	N 15	Modern	Æ (frags)			
A69	OGL A +	N 17	Uns				

Æ= copper alloy, AR = silver, *Ant = antoninianus*, *Den = denarius*, *Dp = dupondius*, *Sest = sestertius*, std = standard(s), Med = medieval, Uns = unstratified, frag = fragment
LW = little wear, MW = moderate wear, VW = very worn

Discussion

The Roman coins were in general poorly preserved; extensive corrosion rendered precise identifications difficult in many cases. The samples for individual sites are too small to permit detailed comment (Table 47); thus the discussion will be based upon the *total* group of sixty-six legible coins (Table 46).

Early coins from the sites include a very worn Republican *denarius*, which would have been a normal feature in circulating coinage in Britain up to the Hadrianic period. A rather more rare survivor is the *sestertius* of Tiberius' reign from Old Grapes Lane; such coins feature little in the money in circulation beyond the Julio-Claudian period.

The relationship between Flavian (period IV) and Trajanic (period V) issues would normally suggest a site with a mid-Flavian foundation (Table 47). However, it should be noted that this relationship is largely due to the heavy preponderance of Flavian issues from Lewthwaite's Lane. In any case most of the Flavian and Trajanic issues display a considerable degree of wear; the only fresh coins of these periods are two *aes* issues of the last years of Trajan's reign from Old Grapes Lane. These coins *may* provide a more significant indication of the beginnings of Roman activity *in this part* of Carlisle. However, there is a dendrochronological date of AD 93-4 for Period 6 at Old Grapes Lane Trench A (Fasc 1, pp 103-4), and so Periods 1 to 5 must be earlier. It is further possible that the relatively low showing of coins of period V reflects an interruption in their circulation, perhaps in the Hadrianic period; a context for this might be the changes in frontier policy at this time.

The Hadrianic and Antonine issues also exhibit a good deal of wear. Further, it may be worth noting that the 'normal' relationship of periods VI and VII is reversed in the present sample. Larger samples which contain more Antonine than Hadrianic issues are frequently indicative of a factor affecting the circulation of Hadrianic coins. This is perhaps most reasonably connected with the renewed Roman interest in southern Scotland in the reign of Antoninus (Shotter 1980, 8ff).

Little can be said of the later second and third centuries, beyond the fact that the mere appearance of issues of periods IX, X and XII may be significant in a sample of this size. As is usual with sites in Carlisle, radiates and poor copies of them (period XIII) bulk large, occupying more than 25% of the sample (Table 47).

The strength of Tetrarchic and early Constantinian issues (period XV) is very marked, with the same proportion of the sample as the normally more prolific late Constantinian period (XVII). The relatively low showing of issues of periods XVII and XVIII, together with the total absence of Valentinianic issues (XIX), suggests that activity was not prolonged on these sites or in the vicinity much beyond the middle of the fourth century.

The small number of coins recovered from these sites is itself a matter of note, particularly when compared with the heavy volume of coin-loss noted at other sites in Carlisle. In the case of some of the sites, the explanation *may* lie in the nature of the excavations or in the removal of archaeological deposits as the result of cellar-construction. In those sites where complete excavation was possible, however, the reason for low coin-loss must lie in the nature of the occupation: the most obvious explanations are either that the sites lay on the

Table 47
Chronological distribution of coins by trench

Period	*CAL A*	*CAL E*	*OGL A*	*OGL A West*	*OGL B*	*OGL C*	*OGL J*	*Clack 1*	*Clack 2*	*LEL A*	*Total*	*%*
I (-AD41)	-	-	-	-	1	-	1	-	-	-	2	3.0
II (41-54)	-	-	-	-	-	-	-	-	-	-	-	-
III (54-68)	-	-	-	-	-	-	-	-	-	-	-	-
IV (68-96)	1	1	1	-	-	-	-	1	-	8	12	18.2
V (96-117)	-	-	2	-	1	1	-	-	-	4	8	12.1
VI (117-38)	-	-	-	-	1	1	-	-	-	1	3	4.6
VII (138-61)	-	-	3	1	-	-	-	-	-	1	5	7.6
VIII (161-80)	-	-	-	-	-	-	-	-	-	-	-	-
IX (180-92)	-	-	-	-	-	-	-	-	-	1	1	1.5
X (192-222)	-	-	-	-	-	-	-	-	-	1	1	1.5
XI (222-35)	-	-	-	-	-	-	-	-	-	-	-	-
XII (235-59)	-	-	-	1	-	-	-	-	-	-	1	1.5
XIII (259-75)	-	1	1	5	1	-	-	-	1	8	17	25.8
XIV (275-94)	-	-	-	-	-	-	-	-	-	-	-	-
XV (294-324)	-	-	1	-	-	-	-	1	-	5	7	10.7
XVI (324-30)	-	-	-	1	-	-	-	-	-	-	1	1.5
XVII (330-46)	-	1	-	4	-	-	-	-	-	1	6	9.0
XVIII (346-64)	-	-	-	-	-	-	-	-	-	2	2	3.0
XIX (364-78)	-	-	-	-	-	-	-	-	-	-	-	-
XX (378-88)	-	-	-	-	-	-	-	-	-	-	-	-
XXI (388-)	-	-	-	-	-	-	-	-	-	-	-	-
Totals	1	3	8	12	4	2	1	2	1	32	66	

periphery of the occupied area, or (more likely) that those who occupied these areas of Carlisle were not strongly involved in a coin-based economy.

A fuller discussion of the significance of the chronological distribution of these coins will appear in the context of the far larger samples from the sites at Keay's Lane and Law's Lane (Shotter forthcoming). In that context too an analysis of the denominations represented and the mints of origin of the fourth-century issues will be undertaken.

The Northumbrian Coin
by E J E Pirie

The excavations in Lewthwaite's Lane produced one copper alloy styca attributable to the second phase of production, *c* AD 837-55 (see Pirie 1987).

A70 Group C: Ci. Æthelred II: second reign, *c* AD 843/4-9
Moneyer: Earduulf.
Obverse: [+EDILRED REX, round central cross-in-annulet]; the legend is virtually illegible because of corrosion.
Reverse: +EARDVVLF, round central pellet-in-annulet.
Wt. 0.37g (5.7gr.); die-axis uncertain
LEL A 64 N 12 Period: 21B

The coin, which is chipped and heavily corroded, is difficult to match exactly with dies recorded in the Yorkshire Collections. The reverse is almost certainly that of Yorkshire Collections 1073; the obverse may well be related to that specimen too.

The coin has been recovered from a context later than one can reasonably associate with its time of circulation. It would seem, therefore, that it is at the very least residual, or that the location is the inadvertent result of later ground disturbance, which has included the specimen in a secondary deposit.

The Post-Medieval Coins
by T G Padley

With the exception of the turner (No A72), the post-medieval coins are listed in Table 48.

Table 48
The post-medieval coins

Cat no	*Site and context*	*SF no*	*Period*	*Coin type*	*Wear*	*Date (AD)*
George III (4 coins)						
A72	Clack 1 2	N 2	11	Halfpenny	VW	1760-1820
A73	Clack 2 2	N 2	11	Halfpenny	LW	1807
A74	Clack 2 2	N 3	11	Halfpenny	LW	1806
A75	LEL A +	N 4	Uns	Halfpenny	MW	1806
Victoria (1 coin)						
A76	Clack 2 2	N 4	11	Penny	LW	1863
Edward VII (1 coin)						
A77	OGL C +	N 1	Uns	Penny	VW	1905
George VI (2 coins)						
A78	OGL C +	N 2	Uns	Halfpenny	LW	1944
A79	Clack 1 2	N 1	11	Sixpence	LW	1949
Elizabeth II (1 coin)						
A80	OGL A +	N 23	Uns	New penny	LW	1971

Uns = unstratified, LW = little wear, MW = moderate wear, VW = very worn

A71 **Turner**
I D Caruana writes:
Very worn third issue Scottish turner (two pence) with CR monogram of Charles I. Despite the worn state of the coin it is clear that the numeral *II* is absent from above right of the initials.
Dia. 20mm
OGL A 2 N 2 Period: Modern

The issue dates from AD 1642 and later. This type was possibly struck after Charles' death, as late as AD 1650 or 1663 (Stewart 1967, 110-1, pl 18, no 239). Scottish coins circulated widely in the area in the seventeenth century, and are known from sites such as Blackfriars, Newcastle (Robson 1987, 121), and Holy Island (Archibald 1985, 113). Two turners of the same issue were found by metal detector near the River Eden several years ago, together with a *tournois* of Louis XIII.

CHAPTER 16 THE GOLD (B) AND COPPER ALLOY (C)

The Gold (B)

The excavation in this part of The Lanes produced only one gold item (No B1).

B1 Pin Fig 98

Head only survives.

The pin head is made of two hollow domed pieces, giving it a sub-spherical shape with a marked carination around the widest point. The seam joining the two parts is clearly visible. In the centre of the underside is a round hole with a 'flap' on one side. There is a slight neck around the hole, which has a 'torn' edge. The flap is too small to fill the hole, but is slightly dished, has a 'torn' edge and is slightly twisted. This is evidence of the head having been removed from the shaft forcibly. The size of the hole suggests that the shaft was made of metal.

Dia. (of head, max) 5mm Ht. (of head) 5mm

Dia. (of hole) <1mm

OGL A 64 Au 1 Period: 11

The Copper Alloy (C)

Introduction

The sites have produced 208 pieces of copper alloy. Of these, 46% are Class 1, and are described in the catalogue below. The distribution of the material by site can be seen in the tables in Chapter 14. Some 75% of the Class 1 material was recovered from two sites, OGL A and LEL A. Table 49shows the distribution of the Class 1 objects by functional groups.

The personalia consist mainly of Roman brooches (11 examples), which have a date range from the mid first century to the third century. A spiral finger-ring (No C13) and several pins (Nos C16-9), which are not closely datable, were recovered. Two buckles were found (Nos C14 and C15) which could possibly be military, but as this is not definite, they are included here.

All of the items in the toilet, pharmaceutical and surgical instruments category relate to domestic toilet use. The toilet spoons (Nos C22-4) were probably used to remove unguents from long-necked flasks, to mix cosmetics on a palette, or in other ways, for example as the equivalent of a 'hoof' in pushing back the cuticle of a finger-nail. The tweezers (Nos C26-8) are of the type which is often found as part of a toilet set, and are not in themselves closely datable (Crummy 1983, 58-9). A full report on the mirror (No C29) is given by G Lloyd-Morgan. The most unusual item is the handle in the form of a fluted shaft with a cloven hoof at the end (No C25). It is not possible to say what this was used for, as the diagnostic features are missing, but its long slender shape suggests that it was a toilet implement.

There are the remains of four copper alloy vessels in the household utensils category. Two of these come from jugs with fitted lids (Nos C30-1), while the other two are from open, bucket-shaped vessels (Nos C32-3). The spoons (Nos C35-6) are of the normal Roman round-bowled type dating from the mid first century to the second century.

The fragment of copper alloy stylus (No C38), which is the only piece connected with written communication, is the only one recorded so far from recent excavations in Carlisle, although many iron ones are known from Castle Street

Table 49

The Class 1 copper alloy objects arranged by site and function

Site	*Personalia*	*Toilet*	*Household*	*Writing*	*Transport*	*Tools*	*Fittings*	*Militaria*	*Other*	*Total*
CAL A	-	-	-	-	-	1	1	-	-	2
CAL E	-	-	-	-	-	-	1	-	-	1
OGL A	6	5	3	1	-	1	7	1	1	25
OGL A West	2	-	-	-	1	-	6	-	1	10
OGL B	3	-	1	-	-	-	6	-	1	11
OGL C	-	-	1	-	-	-	1	1	1	4
OGL D	1	-	-	-	-	-	-	-	-	1
OGL J	1	-	-	-	-	-	-	-	-	1
Clack 1	-	-	1	-	-	-	1	-	1	3
Clack 2	-	-	-	-	-	-	-	-	1	1
LEL A	6	5	2	-	-	4	11	1	8	37
Totals	19	10	8	1	1	6	34	3	14	96

(Padley 1991a, 133-8, figs 108-9) and the fort site at Annetwell Street, as well as from The Lanes (see below, Nos D2-3).

Among the tools, the only Roman industry represented is textiles, as there are four needles (Nos C40-3). As discussed below, however, it is possible that the two Crummy type 2a needles could be styli.

The majority of the fittings recovered were studs (16 examples). All of these have decorative heads which range from large, like the bell-stud (No C47) and the lion-headed one (No C62), to small, like the bun-headed studs (Nos C48-50). The only examples to give any clue as to what was being decorated are the lion-headed stud (No C62) and a dome-headed stud (No C57); the conservation report states that burnt wood was found inside the head of the former and possible leather inside the latter.

There are three definite pieces of militaria. The armour fastener (No C80) is of a type used to fasten *lorica segmentata*, and many examples were found at the Annetwell Street fort (Padley forthcoming a, nos F8-17).

The majority of the material is Roman, but there are also a number of objects of medieval and post-medieval date. The most important medieval piece is a small disc brooch (No C12) of the late tenth to eleventh century, which is discussed by P M Cracknell below. Other items include a vessel foot (No C34) and a knife hilt-plate (No C45). The post-medieval objects are a thimble (No C44) and a weight (No C37). It is not clear what Number C37 was for, as 10.7 grammes does not approximate to any weight which could be related to the number 27 which appears on the object.

The catalogue

Personalia

C1 Trumpet brooch Not illustrated

The pin, and parts of the spring, catchplate and foot are missing.

The pin was originally sprung, and four coils can still be identified, but the chord is missing. The spring was attached to the underside of the head by the leg of a separate head-loop, of which only the leg survives. The spring sticks out beyond the edge of the head. The highest point of the bow is decorated. The details are difficult to see, but it appears to be a knob with three opposed acanthus leaf cusps on each side. The decoration is carried round on to the underside of the bow. There are the remains of a moulding on each side of the central ornament. The leg of the bow has a lozenge-shaped cross-section. It ends in a foot knob, the detail of which is missing. The remains of the catchplate are visible on the underside of the rear of the leg.

L. 46mm W. (of head, excluding spring) 12mm
OGL D + Ae 1 Period: Unstratified

This is a brooch of the true trumpet type (Hattat 1987, 124 and table 3), dating from the mid first century to the end of the second. It belongs to Collingwood's type Rii, which has a central button flanked by acanthus leaves and has the decoration carried on to the underside of the bow. The distribution of this type is weighted towards the north of England.

C2 Thealby-type brooch Fig 98

The majority of the pin is missing.

The pin is hinged and held in position by an axial bar, the ends of which can both be seen. The pin is flat and has a large square spur at the front. The axial bar is housed in a tube under the head, which has a central gap for the pin. The front of the head has a cast-on D-shaped head-loop, which has a triangular projection into the perforation. The short wings are decorated with two triangular-sectioned mouldings, one at the end and one 1mm from the end. The bow rises centrally from the front of the head. This is strongly arched and decorated with a broad central U-shaped groove, which has a central raised triangle at the front. The foot is separated from the bow by a triangular moulding, and consists of a hollow moulding and a larger triangular one. The actual foot is flat. The catchplate has a cut-away front which begins just behind the highest point of the bow. The actual catch is a curl to the right.

L. 39mm W. (across head) 16mm
OGL A 436 Ae 53 Period: 9E

This type of brooch is related to the headstud, but is less common. The small triangular projection into the headloop is a feature that is often found on this type of brooch (Hattat 1987, 122-4, nos 945-6, fig 41). They date to the first to second century and have a northern distribution, mainly centred on Yorkshire and Humberside.

C3 Knee brooch Fig 98

The catchplate and most of the pin are missing.

The pin was sprung. The remains of the spring can be seen inside the cylindrical spring-box which makes up the head of the brooch. A short fragment of pin is visible sticking out. The ends of the axial bar retaining the spring are visible at each end of the box. The upper surface of the head is curved and undecorated. The rectangular-sectioned bow rises from the centre of the rear of the head. It is decorated with two transverse ridges, above which the bow arches over and becomes narrower and thicker, ending by splaying out to a flat foot.

The conservation report states that there are traces of white metal plating visible.

L. 30mm W. (of head) 18mm
LEL A 74 Ae 15 Period: 20
LEL A 65 Ae 13 Period: 21B

This knee brooch is of the commonest shape. It has a northern distribution and dates from the second to the third century.

C4 Brooch: wire headloop only Not illustrated

One leg is missing.

The wire has a rectangular cross-section at the end of the surviving loop, which has been worked to a more rounded cross-section at the shoulders and for the loop itself. There is a groove visible running along the wire. The collar is a rectangular-sectioned strip which has been bent round the loop and had its ends overlapped. For part of its length it has raised edges.

L. (of loop) 16mm W. (of loop) 19mm
L. (of collar) 9mm W. (of collar) 2mm
OGL A 817 Ae 64 Period: 6

C5 Brooch: pin only Not illustrated

The spring end is broken.

The spring and pin are made in one piece. The wire has a circular cross-section. The spring survives for one and a half curls. The pin tapers to a point. At the junction between the spring and the pin the wire is thinner, but this may just be the result of corrosion.

L. 31mm Dia. (of curl) 9mm Dia. (of wire) 2mm
LEL A 251 Ae 49 Period: 13

C6 Penannular brooch: type A2 (Fowler 1960) Fig 98

The pin is missing.

The hoop has a circular cross-section. The knobs have coarse diagonal milling.

Dia. (of hoop) 28mm Dia. (of wire) 2mm
OGL A 429 Ae 54 Period: 9E

C7 Penannular brooch: type A2 (*ibid*) Fig 98

The hoop has a circular cross-section, and ends in bulbous milled knobs. The pin is carefully made and wound around the hoop with one and a half curls. It is humped asymmetrically. It has a simple point, formed by a straight diagonal line on each side.

Dia. (of hoop) 28mm Dia. (of wire) 2mm
OGL B 15 Ae 4 Period: 7B

C8 Penannular brooch: type B1 (*ibid*) Fig 98

The pin and one terminal are missing.

The circular-sectioned hoop swells in diameter as it goes away

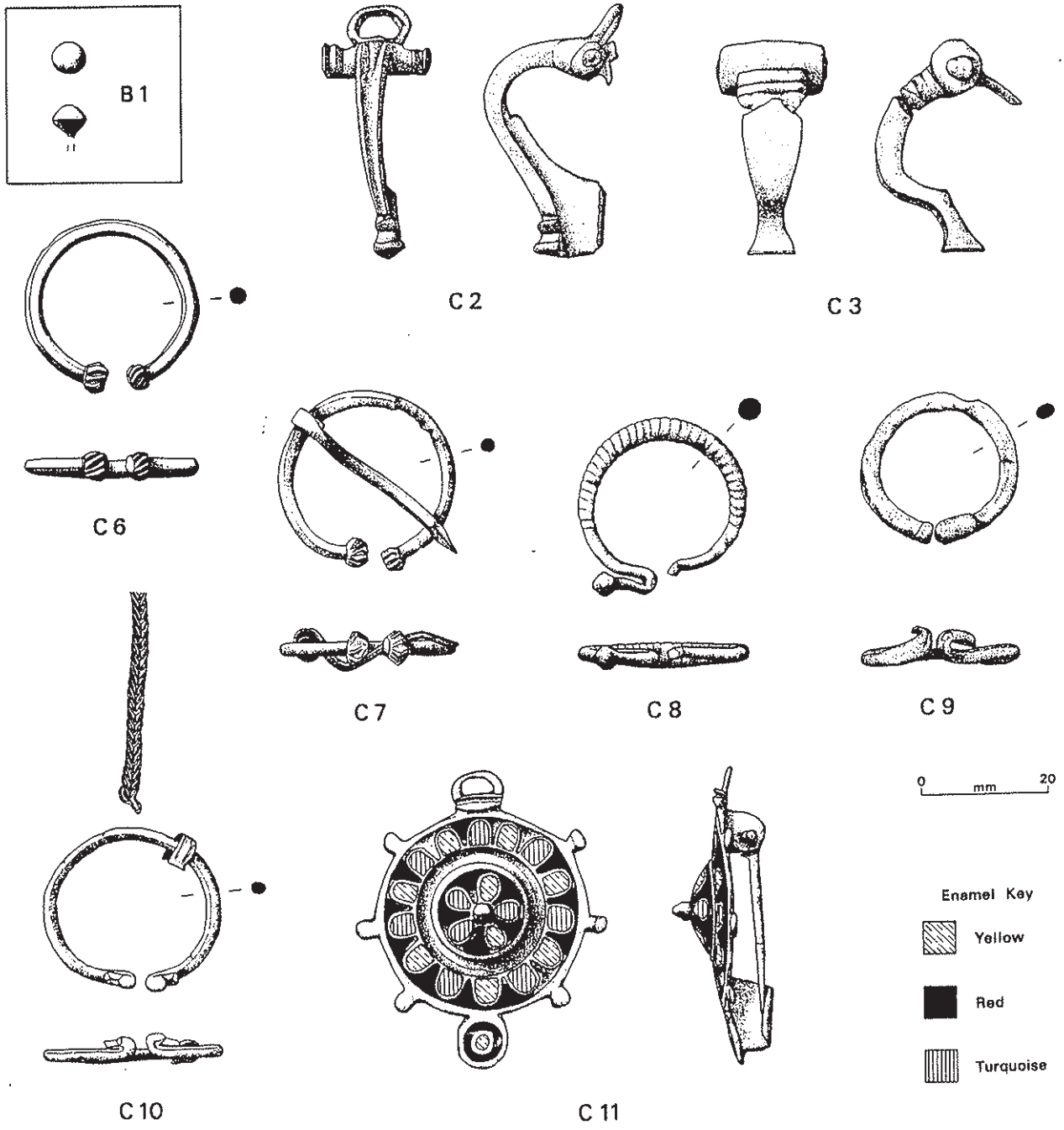

Fig 98 Gold pin (B1) and copper alloy brooches (C2-11) (scale 1:1)

from the terminals, becoming largest opposite the gap. It is decorated on its surface with parallel transverse ridges. The surviving terminal is bent outwards in the same plane as the hoop, and ends in a biconical knob. The other terminal has broken off part-way through the bend outwards.
Dia. (of hoop) 26mm Dia. (of wire) 2-4mm
OGL B 32 Ae 9 Period: 6E

C9 Penannular brooch: type D (*ibid*) Fig 98
One terminal is damaged and the pin is missing.

The hoop has a rectangular cross-section. The terminals are formed by the ends of the hoop being folded back on to the top surface. There is some suggestion of shaping on the upper surface of the complete terminal, but this is very unclear. The other terminal survives only as a stub.
Dia. (of hoop) 24mm W. (of hoop, max) 3mm
Th. (of hoop) 2mm
OGL A 64 Ae 16 Period: 11

C10 Penannular brooch: type D4 (*ibid*) Fig 98
The pin is missing.

The hoop has a flattened oval cross-section. The terminals are bent back up and over the ends of the hoop. There is a D-shaped notch taken out of each side of each terminal, giving them the appearance of stylized ducks' heads. The inner end of one terminal slopes out, while that of the other slopes in.

There is a piece of metal wrapped around the hoop with one and a half curls, which may be the remains of the pin. The outer edge of it is broken.

There is a short length of double loop-in-loop chain associated with the brooch.

The conservation record states that the brooch is made of bronze while the chain is made of brass.
Dia. (of hoop, ext, max) 28mm W. (of hoop) 2mm
Th. (of hoop) 2mm
LEL A 530 Ae 75 Period: 8C

Penannular brooches are not closely datable. The type B1 brooch (No C8) is the first to have been recovered from modern excavations carried out in the city. If thechain with Number C10 is a genuine association, it is unusual as chains are not usually found with penannulars.

C11 Umbonate brooch Fig 98

The pin is broken.

There is a knob in the centre of the central umbo. This umbo is decorated with a cinquefoil of teardrop-shaped cells filled with enamel. There are two yellow ones and three that appear to be turquoise. The inter-spaces are filled with red enamel. The umbo is surrounded by a pronounced groove. On the outer side of the groove is a circle of D-shaped cells filled alternately with yellow and turquoise enamel. The inter-spaces are filled with what now appears to be red enamel. The whole of the top surface is convex.

The outer edge is octagonal. There is a small knob at each of six of the angles. At the seventh is the chain loop, and opposite that, to balance the design, is an enamelled disc which has a yellow dot at the centre separated by a ring of copper alloy from a ring of red enamel. The pin is hinged. It was held between two lugs under the edge of the brooch, at the position of the loop. The trapezoidal catchplate extends under the enamelled disc. The actual catch is a curl at the bottom of the catchplate.

W. (of brooch, including knobs) 38mm
L. (of brooch, from disc to loop) 47mm
OGL A 469 Ae 57 Period: 9A-D

This type dates to the second century. Hattat (1987, fig 58) shows a distribution which is mainly concentrated in the south and east, with one from Humberside. However, this is the second brooch of this type to come from Carlisle (Mackreth 1990, 112, no 21, fig 101).

P M Cracknell writes:

C12 Anglo-Saxon enamelled disc brooch Fig 99

A small gilt copper alloy disc brooch, retaining the majority of the enamel decoration, and missing only the hinge, the pin and part of the catchplate.

The brooch is made up of a base plate of copper alloy sheet cut to the shape of a disc, with six roughly equidistant rounded projections or lobes spaced around the circumference. A circular collar of copper alloy has been soldered to the plate, and this holds a disc of copper alloy decorated with a cloisonné enamel double-quatrefoil flower design.

Each of the six lobes was originally decorated with a sphere of dark blue translucent glass set in a small collar of copper alloy. Four of the lobes are extant but the fifth is completely broken off and only the stump of the sixth remains. The enamelled disc has a background of dark blue translucent enamel. The petals of the outer quatrefoil are an opaque off-white, while those of the inner quatrefoil are translucent blue, slightly lighter in colour than the background blue. The surface of the disc is slightly convex. The face, edges and back of the brooch are gilded, as are the catchplate and the cellwork on the enamelled disc. The catchplate is held in position by two wings soldered to the rear face of the base plate.

Dia. (including lobes) 25mm
Dia. (of enamelled area) 18mm Th. (of central area) 6mm
OGL A 542 Ae 41 Period: West 4

This brooch belongs to a distinct group catalogued by David Buckton (1986), and dated to the late tenth and eleventh centuries. The existing catalogue of 15 brooches from Britain includes seven which have lobes decorated with glass spheres and cloisonné enamel centrepieces. Of these, five have seven lobes, one has six and the other example has four major and eight minor lobes. All of the brooches are made of copper alloy, originally gilded all over including the back. They have discoid gilt copper alloy cloisonné centrepieces, often introduced in such a way that the pin of the brooch does not align with any axis of the design of the enamel, as in this example. Four of the 15 brooches (*ibid*, nos 1, 10, 12 and 13) bear enamelling which incorporates a quatrefoil flower design, but only one, from Saunderton, Buckinghamshire (*ibid*, 8-9, fig 1, no 1), is a good parallel for the Carlisle brooch. Indeed, except for the two diametrically opposed petals of the outer quatrefoil being a translucent pale green enamel and the presence of seven lobes rather than six, the Saunderton brooch is practically identical.

The small size of the brooch and the short distance between hinge and catchplate suggest that these brooches were primarily for adornment rather than for practical use, as for example a cloak fastener, and Buckton (*ibid*, 15) suggests an apotropaic function.

The brooch from Carlisle is by far the most northerly example known from Britain, with the others confined to the counties of the south-east, East Anglia and the Midlands. In addition to these British examples, there are several comparable brooches from Denmark and a few from Sweden, although these have a different border design.

The date range assigned to the type is based upon a number of factors. Professor Evison (1977) has paralleled the enamel motifs with tenth- and eleventh-century Anglo-Saxon manuscripts and metalwork. Similarly the enamelling technique and the range of colours used can be matched in Anglo-Saxon jewellery such as the Minster Lovell Jewel in the Ashmolean Museum, Oxford. However, the archaeological evidence is less positive in that the majority of the brooches have not been recovered from secure contexts. An enamelled disc from Billingsgate, London, came from a site on which there was no medieval activity until the second half of the tenth century (Buckton 1986, 15). A similar brooch from Denmark was found in a well which had been in use for only a few years around AD 1120 (Bartholm 1976). The brooch from Old Grapes Lane, Carlisle, was found in a context containing two sherds of Red Gritty ware cooking pots of probable twelfth-century date.

C13 Spiral finger-ring Fig 100

The ring is made from a spiral of lentoid-sectioned strip, varying in width from 1-3mm. There are three and a half full turns. Each end finishes in a sharp point.

Dia. 21mm Ht. 10mm
OGL B 175 Ae 10 Period: 5B

C14 Buckle Not illustrated

Part of the hoop is missing.

The original shape is uncertain, but it was probably D-shaped

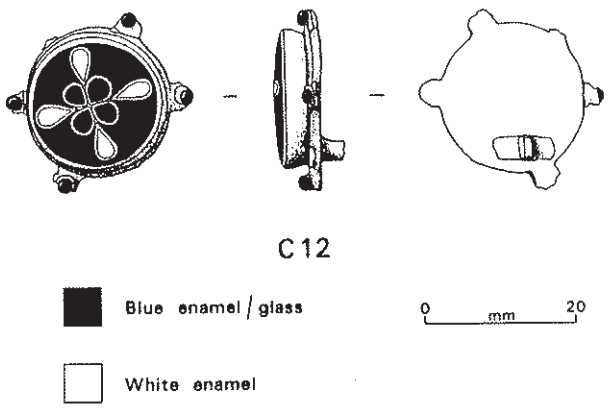

Fig 99 Copper alloy Anglo-Saxon brooch (scale 1:1)

with an oval cross-section. The triangular-sectioned prong is broken at the hinge, where it was curled over the hinge bar.
W. (of hoop) 5mm Th. (of hoop) 3mm
L. (of prong) 12mm W. (of prong) 2mm
OGL A 199 Ae 23 Period: West 7

C15 Buckle Fig 100
One of the rivets is missing, and another lacks the head.

The buckle plate is sub-rectangular. At one end it has been narrowed and folded over the hinge bar. There is a central cut-out in the fold to accommodate the prong. The fold continues on the underside for 14mm. The top surface has five rivet holes through it, one in each corner and one in the centre. These are joined together by a single line of rocked zig-zag ornament. The rivets have solid, circular domed heads, with the shaft in the centre of the underside. The upper part of the shaft is circular while the lower is square, and the bottom end has been flattened deliberately. The front two rivets remain *in situ* and go through both layers of the plate and the strap in between. The central one and one of the back pair are missing (although one survives loose). The other back one survives as a fragment in the hole.

The hoop is a flattened D-shape, with the curve being longer than the flat side, and there is a slight extension of the hinge bar outside the curve. The upper surface is sinuous, as there are alternate raised and lowered areas. The raised areas are decorated with rows of punched dots, while those on the hinge bar are decorated with punched lines.

The prong is cast and has a D-shaped cross-section. It is attached to the hinge bar by being bent round it. There is an ornamental collar, decorated with punched lines, at the base between the hinge and the prong proper.

There is a single scratched line forming a rough trapezoidal shape on the upper surface of the plate.
L. (overall) 46mm L. (of plate) 29-30mm W. (of plate) 25-8mm
W. (of hoop) 33mm Th. (of hoop) 2-3mm
L. (of prong) 20mm L. (of rivet) 4mm
Dia. (of rivet head) 4mm Dia. (of rivet hole) 3mm
OGL J 1 Ae 1 Period: Medieval

This buckle is probably medieval in date as buckles of similar shape (oval frames with narrowed offset bars) are known from London (Egan and Pritchard 1991, 70, fig 42 nos 271, 274 and 277; G Lloyd-Morgan, *in litt*). The five holes in the buckle plate are another feature which can be paralleled on medieval buckles from London (*ibid*, 110-14, nos 498-9, 505-6, 508-9, 513, 520, 522-4, 526 and 529, figs 72-3), as is the collar on the pin (*ibid*, 115-6, nos 541-3 and 545-50, fig 75). The pottery from the context in which it was found (Fasc 3, p 421) suggests an early thirteenth-century date, which is consistent with the London finds.

C16 Group 1 pin (Cool 1990) Not illustrated
Part of the shaft, including the point, is missing, as is part of the edge of the head.

The solid, circular domed head is undecorated. The underside is flat, and has the shaft set in the centre of it. The shaft was probably originally sub-rectangular in section, but this is not certain, as the state of preservation is poor. The whole is bent, with the shaft forming a gentle curve with the head bent over to one side, almost parallel to the shaft.
L. 61mm W. (of shaft) 3mm Th. (of shaft) 2mm
Dia. (of head) 6mm
OGL A 205 Ae 19 Period: 10F-11

C17 Pin Not illustrated
Only the shaft survives.

A tapering rod with a circular cross-section. At the pointed end it starts to thicken again, probably as a result of differential corrosion.
L. (as if straight) 133mm Dia. (max) 2mm
LEL A 539 Ae 64 Period: 7B

C18 Group 1 pin (*ibid*) Not illustrated
The point is missing.

The head is solid, domed and undecorated. It is not much larger than the square-sectioned shaft, which is attached to the centre of the underside. This tapers only slightly, and is bent.
L. (as bent) 11mm Dia. (of head) 3mm
W. (of shaft) 2mm
LEL A 384 Ae 77 Period: 10B

C19 Group 1 pin (*ibid*) Not illustrated
The point is probably missing.

The flattened globular head is solid and undecorated. The long, round-sectioned shaft is attached to the centre of the underside. It has an irregular diameter, because of corrosion, and is bent.
L. (as if unbent) 38mm Dia. (of head) 2mm
Dia. (of shaft) 1mm
LEL A 384 Ae 54 Period: 10B

Toilet, pharmaceutical and surgical instruments

C20 Chatelaine Fig 100
A hollow, triangular fitting made up of three rectangular-sectioned rods. There is a round projection at one apex, which is pierced with a circular hole. The whole was cast in one piece.
W. 29mm Ht. 26mm Dia. (ext) 9mm Dia. (int) 3mm
OGL A 343 Ae 43 Period: 10A

C21 Nail cleaner Fig 100
The bottom end is bifurcated for 1mm, above which is a groove 7mm long which terminates in a circular depression 1mm in diameter. The cross-section is rectangular for the bottom 12mm of the piece. The corners are decorated with grooves going across them. They are arranged in groups which alternate from side to side. The diagonally opposite corners are the same. On the face with the groove there is a second circular depression at the top of the rectangular-sectioned part. The rest of the piece has a round cross-section, and is made up of bead-and-reel decoration. There is a simple loop at the top to hold the chain.

The chain is made up of circular links arranged in pairs forming a double chain. Thirteen links survive. Some of them have a small part missing.
L. (of cleaner) 39mm L. (of chain) 38mm
Dia. (of cleaner) 2mm Dia. (of links) 5mm
W. (of cleaner) 2mm Th. (of cleaner) 1mm
OGL A 32 Ae 7 Period: 13

The chain attached to the nail-cleaner means that it did not come from a toilet set of the type illustrated in Wheeler (1930, pl 39). It does not fit exactly with the typology proposed by Crummy (1983, 57-8), but could be related to her type 3 in that it is more elaborate than type 1, is not leaf-shaped and therefore does not belong to type 2, and is cast and therefore not type 4. However, it is more ornate than the example illustrated (*ibid*, fig 62, no 1875). The date range for type 3 is the mid to late third century.

C22 Toilet spoon Fig 100
The very end of the handle is missing.

The handle is pointed at one end. The upper 73mm of the handle has a circular cross-section, and it becomes larger in diameter as it approaches the bowl. The lower part of the handle has a square cross-section, and is twisted through one and a half full turns. The sub-circular bowl attached to the end is set at an angle to the axis of the handle. The handle is bent into a slight curve.
L. (as surviving, with the curve) 116mm
Dia. (of handle, max) 2mm Dia. (of bowl) 4mm
LEL A 428 Ae 57 Period: 10B

C23 Toilet spoon Not illustrated
Only the handle, which is broken at each end, survives.

An octagonal-sectioned rod which swells towards the bottom third and then diminishes again. The facets are offset by half a facet above and below the widest part.
L. 82mm W. (max) 3mm Th. (max) 3mm
OGL A 445 Ae 56 Period: 9E

C24 Toilet spoon Not illustrated
Only the handle survives.

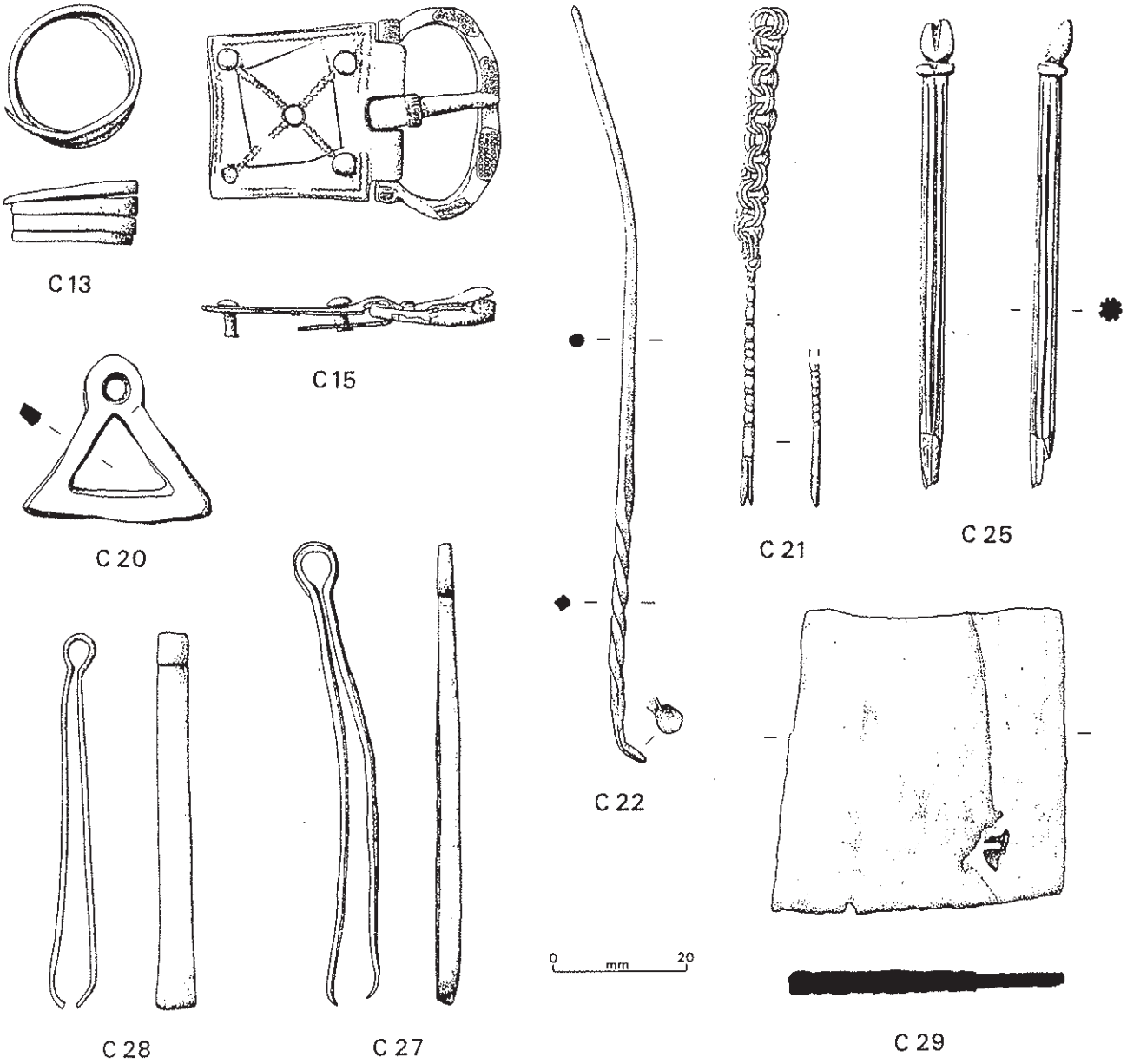

Fig 100 Copper alloy finger-ring (C13), buckle (C15) and toilet accessories (C20-9) (scale 1:1)

The handle has a round cross-section, and tapers towards each end. The point of maximum diameter is closer to one end than the other.
L. 122mm Dia. (max) 1mm
LEL A 548 Ae 65 Period: 7B

The toilet spoon with the twisted stem (No C22) cannot be paralleled from other recent excavations. However, the one with the octagonal handle (No C23) is very similar to ones recovered from Castle Street (Padley 1991a, 110, no 52, fig 74).

C25 Toilet implement Fig 100
One end is broken.

The surviving original end terminates in a three-dimensional representation of a cloven hoof. This is separated from the rest of the shaft by a raised milled band which has a gap in the back. The round shaft is fluted, with eight grooves running down it. At the undamaged end they terminate before reaching the milled band, while at the other end the shaft has been squashed to a roughly rectangular cross-section, and broken.
L. 71mm Dia. 3mm
OGL A 487.3 Ae 62 Period: 8C

C26 Tweezers Not illustrated
Two fragments of blade and a fragment of the bow survive.

The blades were originally rectangular in section. The bow is a simple curl of metal.
L. (of blade, max) 28mm W. (of blade) 5mm
Th. (of blade) 1mm
OGL A 33 Ae 14 Period: 13

C27 Tweezers Fig 100
The tweezers are made from a single piece of metal. The blades are wider than they are thick, and they become thicker as they approach the bow. The ends of the blades are turned in, and as they survive one is shorter than the other. They are joined by an expanded bow. There is no decoration visible on the blades.
L. 71mm W. (of blade, max) 3mm W. (of loop) 2mm
Dia. (of loop, ext) 6mm

LEL A 547 Ae 66 Period: 7B

C28 Tweezers Fig 100
The tweezers are made from a single piece of metal. The ends of the blades are turned in. The blades narrow as they approach the bow. The bow has been expanded almost to form a circle, and the blades almost touch at the beginning of it. The blades are undecorated.
L. 56mm W. (of blades) 5-6mm Dia. (of loop, ext) 5mm
LEL A 450 Ae 55 Period: 10B

G Lloyd-Morgan writes:

C29 Rectangular mirror Fig 100
A fragment only survives.
L. 45mm W. 47mm
LEL A 499 Ae 62 Period: 9

This fragment is a large portion of the corner of a rectangular mirror, one of the most common types found throughout, and beyond the frontiers of, the Roman Empire (Lloyd-Morgan 1981, 3-20). The piece has the edges bevelled to the slightly convex reflecting surface. The surviving sides are slightly bowed and the thickness varies between 1.6mm and 2mm. This variation in thickness is not uncommon, especially amongst the simple types of mirror where an open mould appears to have been used. Like the closely related disc-shaped mirror, the reflecting side was finished and slightly convex, the underside having a characteristic unfinished, pocked surface.

The high percentage of tin in the copper alloy used for these mirrors renders it brittle and the mirrors needed to be handled carefully. Occasionally traces of a wooden frame have been preserved which would have strengthened the piece (cf Lloyd- Morgan in Brown *et al* 1983, 106, no 44, fig 38, and 108, appendix).

At the time of writing (August 1991), some 85 examples of rectangular mirrors have been recorded from Britain, with several tiny less well preserved fragments which might also have belonged to rectangular mirrors. Recent excavations in Carlisle have already brought two examples to light, a corner fragment from Law's Lane (Lloyd-Morgan forthcoming), and a fragment from Blackfriars Street (Caruana 1990, 136, no 103, fig 120F; archive report by G Lloyd-Morgan).

Some mirrors have been found in caskets or toilet boxes buried with their owner for use in the afterlife, as for example the unpublished piece from a rich burial, probably dating to the late first century, found at Duckend Car Park, Stansted Airport; and one found with a cremation burial of the early second century AD at Wavendon Gate, Milton Keynes (Frere 1989, 298; Williams and Hart 1990, 4). Very few complete examples have been found, though some pieces from early excavations at Colchester have survived (May 1930, 265-6, grave 44/26, no 158, pl 81; dated AD 50-80), as has the less well preserved piece from Ash, near Sandwich, Kent (Douglas 1793, 80-1, pl 20, fig 2; Ashmolean Museum no 1836 p.130.235), measuring 86mm by 115mm. Most examples were probably made during the first century AD, as witnessed by the many pieces found at Pompeii and Herculaneum, with some continuing in use, perhaps as heirlooms, into the earlier part of the second century.

Household utensils or furniture

C30 Flagon lid Fig 101
The edges are corroded and missing, and the hinge is broken.
The upper surface is slightly domed, rising to a substantial knob which is joined by a ridge to the remains of the hinge. The underside is concave.
L. 48mm W. 44mm Th. (max) 2mm
OGL A 64 Ae 9 Period: 11

C31 Flagon lid Fig 101
The lid is basically heart-shaped. It has a slightly curved bottom edge rather than a point, and the area between the two lobes at the top is flat. There is a projection in the centre of the top edge which has a curved corner on the underside away from the lid, and is pierced with a hole to take a hinge rod. In front of this projection on the upper surface is a raised rectangular area which has an ornamental projection on its bottom edge. The front part, in front of the lobes, is tilted upwards.
L. 85mm W. (across lobes) 56mm Th. (body of lid) 4mm
Dia. (of hinge hole) 3mm
LEL A 432 Ae 58 Period: 10B

These lids come from metal vessels and would have been attached to the metal handle by the hinge. Similar ones from Nijmegen are dated to the first to third centuries (den Boesterd 1956, 70, nos 247-53, pl 11, nos 245 and 249).

C32 Handle attachment Fig 101
Both ends and the top of the suspension loop are missing.
It is likely that the original object was symmetrical and so it is described as such, although one end is very corroded and laminating while the other is much better preserved. The bottom edge is flat, while the top edge is stepped, with two steps between the suspension loop and the end. There is an ornamental diagonal groove that runs downward towards the centre from the bottom of the first step. The top of the suspension loop is missing, but the shape appears to have been oval. It may be that it was originally circular, but has worn oval. As the object is curved, it probably came from a curved vessel.
The conservation report states that it was plated with white metal.
L. 69mm Ht. 23mm Th. (max) 6mm
Dia. (of hole, assuming it to be circular) 9mm
Dia. (of vessel, estimated) 480mm
OGL A 2 Ae 3 Period: Modern

C33 Handle attachment Fig 101
A basically triangular piece of sheet metal which is slightly curved and is pierced with a central circular hole. The centre of the piece is a plain triangular shape, while at each end there is a dolphin-shaped projection. There is a groove between the triangle and the rear of each dolphin. One end is more corroded than the other. The central hole is slightly wider on the concave side.
L. 64mm Ht. 15mm Th. (max) 4mm Dia. (of hole) 6mm
Dia. (of vessel, estimated) 140mm
LEL A 110 Ae 43 Period: 18

Although these cannot be paralleled exactly, a number of the buckets in the collection of bronze vessels at Nijmegen have ears cast on them to attach the handle (den Boesterd 1956, 45, no 147; 49-51, nos 162-8; pl 6, no 147; pl 7, nos 162, 164 and 167-8). Although the ones considered here are separate, they probably worked in the same way. As they are basically triangular and not heavily decorated, they are not closely datable.

C34 Medieval vessel Fig 101
Only the leg survives.
The leg has a D-shaped cross-section with a V-shaped ridge down the front. At the bottom end is a stylized animal foot with seven toes. At the top, the side view shows that the 'bowl' of the vessel had steep sides, which were almost vertical. The leg was probably cast as part of the vessel, as there are traces of the walls surviving at the top end.
L. 100mm W. (of leg at rear) 28-38mm
Th. (of leg at top) 21mm Th. (of animal foot) 30mm
Th. (of walls of vessel) 2mm
Clack 1 33 Ae 2 Period: 10B

The leg comes from a bulbous-bodied medieval vessel.

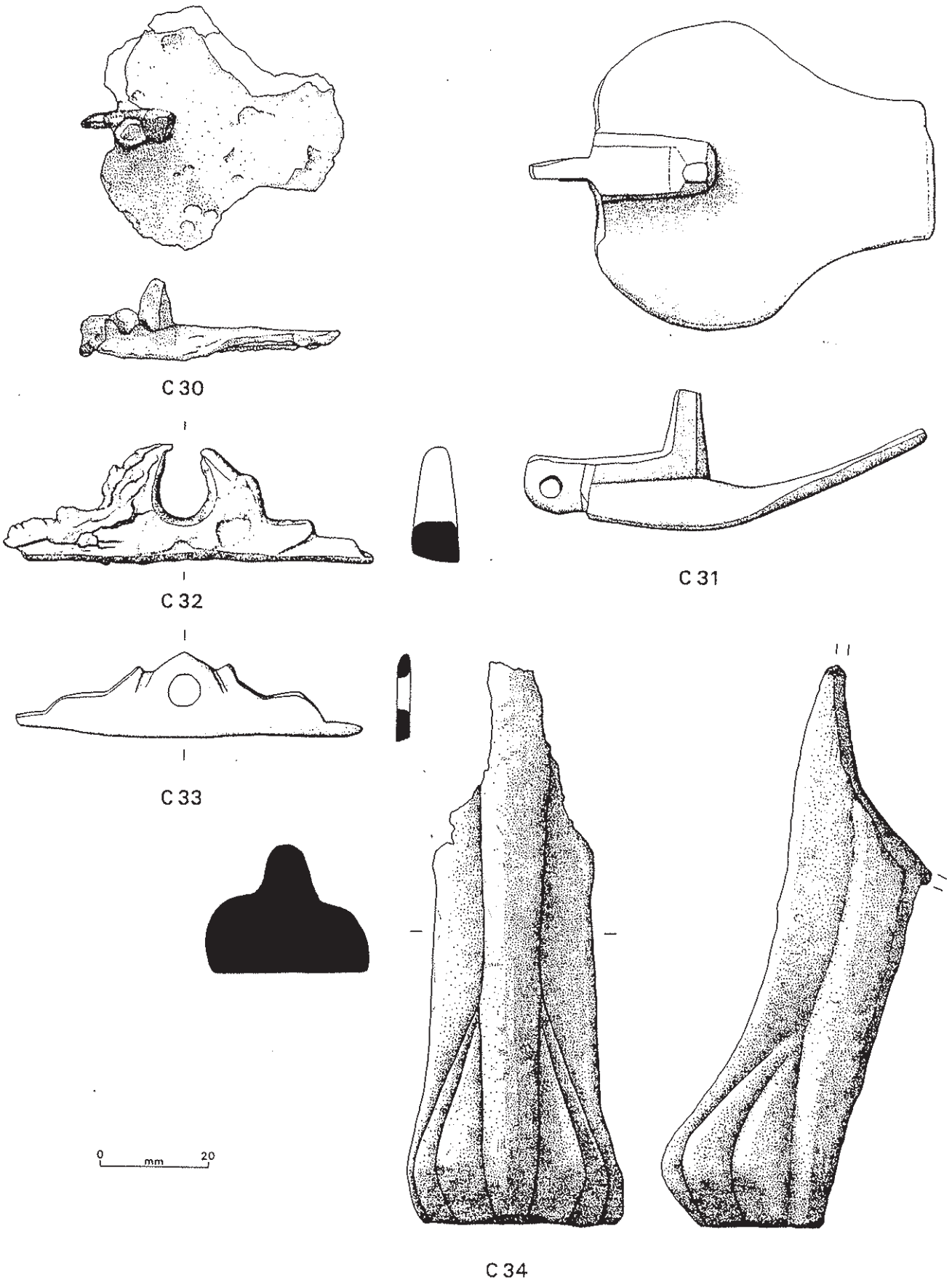

Fig 101 Copper alloy vessel fittings (scale 1:1)

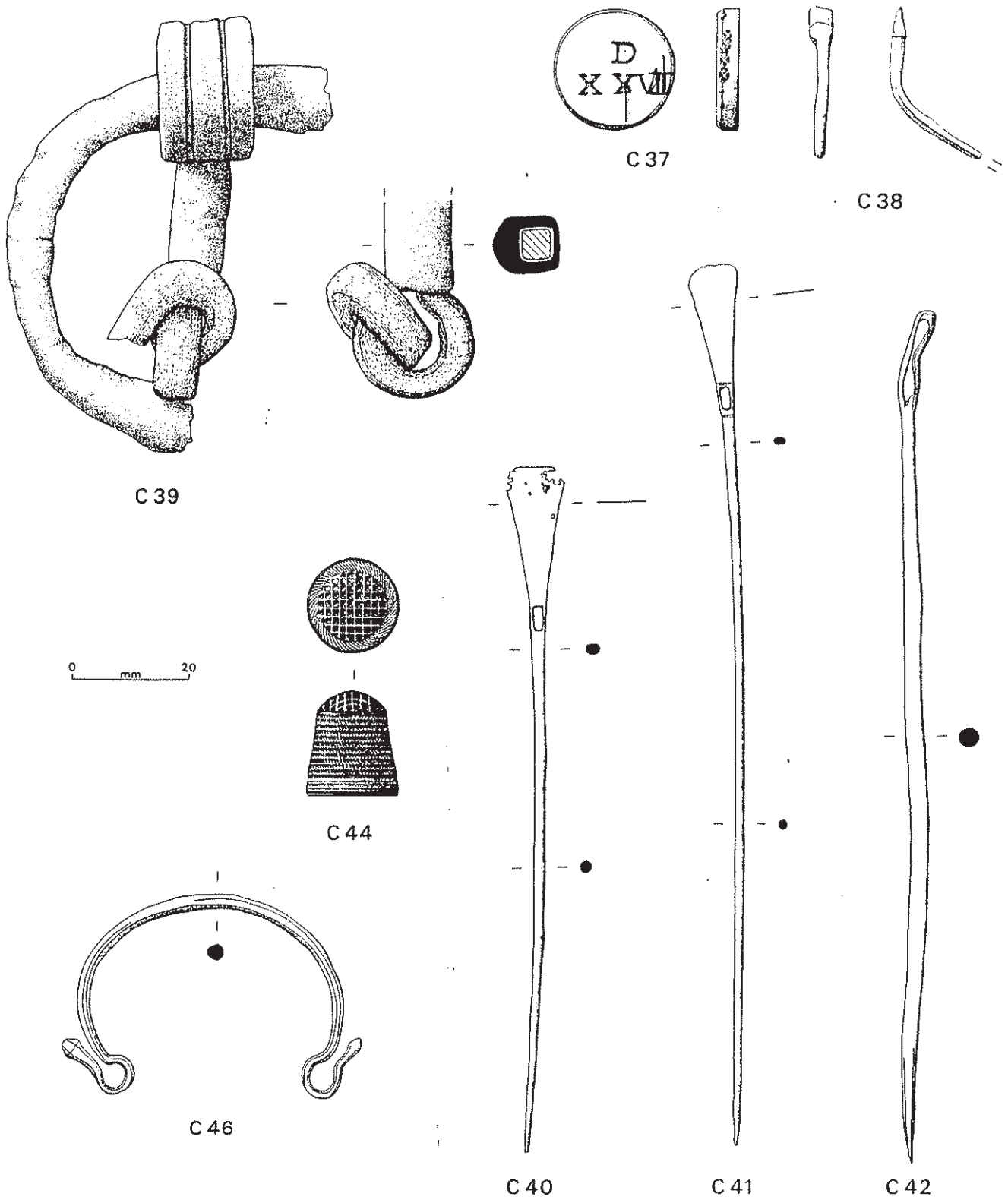

Fig 102 Copper alloy weight (C37), stylus (C38), horse bit (C39), textile working equipment (C40-4) and handle (C46) (scale 1:1)

Not enough of the body survives to say what kind of vessel it came from as both cauldrons (*London Mus Med Cat* pl 56) and tripod jugs or ewers (*ibid*, pl 51) can have animal-foot terminals to the legs.

C35 Spoon Not illustrated

The majority of the bowl is missing.

The circular-sectioned handle has a blunt point at one end. There is no elaboration at the junction between the bowl and the handle, but the handle does continue under the edge of the bowl. The bowl was originally circular and dished.

The conservation report states that the handle and the bowl have the same composition, that of a leaded gunmetal. There is no conclusive evidence of plating, although there could be some tinning.

L. 63mm Dia. (of bowl, estimated) 22mm

Dia. (of handle) 2mm

OGL A 1002 Ae 67 Period: 6

C36 Spoon Not illustrated
The majority of the bowl is missing.
The pointed handle has a circular cross-section which becomes oval as it approaches the junction with the bowl. At the junction it is flattened into a lentoid shape. Only a small fragment of the bowl survives; it is probably a round bowl. The handle is bent.
L. (as if straight) 128mm Dia. (of handle) 2mm
OGL B 289 Ae 14 Period: 3

C37 Post-medieval weight Fig 102
A solid disc with a flat upper surface which has striations from machining on it. There is also an inscription:

D
XXVII.

The *D* and the *XX* are stamped, while the *VII* is hand-cut. The underside is plain.
Around the edge are areas with stamped squares on them. The stamp probably has two complete and two half squares on it. This stamp was used repeatedly and in places the impressions overlap.
Dia. 21mm Th. 4mm Wt. 10.7g
OGL C + Ae 4 Period: Unstratified

Written communication

C38 Stylus Fig 102
Much of the shaft and the point are missing.
The surviving part of the shaft has a round cross-section which expands towards the junction with the eraser. The eraser itself has flat sides and is wedge-shaped. The whole is bent.
L. (as bent) 30mm L. (of eraser) 5mm
W. (of base of eraser) 4mm Th. (of base of eraser) 3mm
Dia. 2mm
OGL A 515 Ae 33 Period: Unphased

Transport

C39 Bridle-bit Fig 102
Only part of one side-ring and part of the bar survive.
The object is very corroded. The surviving side-ring originally had a circular cross-section. Originally the bar was free to move on the side-rings. At one end is a loop which goes round the side-ring. This was ornamented with parallel ridges. At the end attached to the loop the bar is a square-sectioned rod of copper alloy. At the other end it terminates in a rectangular-sectioned iron loop. The rod is broken between the two ends, and examination of the break suggests that the copper alloy was 'cast on' to the iron rod. The iron loop has a second iron loop going through it at right angles. It would have continued on to the other side-ring, but it is broken. What survives is just over half of a two-link snaffle-bit.
Dia. (of side-ring, ext) 73mm
Dia. (of side-ring 'wire') 5mm
Dia. (of iron loop, ext) 19mm W. (of shaft) 6mm
Th. (of shaft) 6mm
OGL A 532 Ae 44 Period: West 2

Tools

C40 Needle: type 2a (Crummy 1983) Fig 102
The needle has a thin flaring triangular head above a rectangular eye. Originally the shaft had a round cross-section and tapered evenly to the point. The head is much thinner than the shaft. The whole is bent.
L. (as if unbent) 122mm W. (of head) 10mm
Dia. (of shaft, max) 2mm L. (of eye) 4mm W. (of eye) 2mm
CAL A 57 Ae 1 Period: 3C

C41 Needle: type 2a (*ibid*) Fig 102
Part of the head has corroded away.
The needle has a thin flaring triangular head above a rectangular eye. There is a single transverse groove above and below the eye. The shaft has a round cross-section and tapers evenly to the point. The shaft is bent 107mm from the point.
L. (as if unbent) 149mm W. (of head, max) 8mm
Dia (of shaft, max) 1.5mm L. (of eye) 4mm
W. (of eye) 2mm
LEL A 550 Ae 67 Period: 7A

This type of needle is a common find in both copper alloy and iron. Crummy (1983, 65) dates it as beginning in the first century and continuing throughout the Roman period. It is possible, however, that these needles may be styli. Manning, when discussing the styli in the British Museum, illustrates one from London (1985, 86, no N9, pl 35) which he calls a type 1A stylus that is almost identical in appearance with this type of needle. It even has an eye in it which he says is 'probably intentional'.

C42 Needle Fig 102
A substantial needle with a rectangular eye. There is a groove between the eye and the top of the needle. The shaft has a circular cross-section which expands below the head. About 20mm from the point, the cross-section becomes square. The shaft tapers more on one side than the other, forming an asymmetric point. There is a sharp bend in the needle 110mm from the point. There is a dent in one side of the eye.
L. (as if straight) 150mm Dia. (of shaft, max) 3mm
W. (of shaft, max) 3mm Th. (of shaft, max) 3mm
L. (of eye) 15mm W. (of eye) 2mm
LEL A 591 Ae 69 Period: 3-6A

C43 Needle Not illustrated
Only the shaft and the lower edge of the eye survive.
The shaft has a round cross-section, becoming slightly flattened as it approaches the eye. The eye was probably rectangular. The shaft tapers to the point. There are three bends in the shaft, 7mm, 46mm and 88mm from the point.
L. (as if straight) 127mm Dia. (max) 2mm
LEL A 553 Ae 68 Period: 7A

C44 Post-medieval thimble Fig 102
The thimble is a truncated hollow cone with a domed top. The top is decorated with a square lattice, the voids of which are pyramid-shaped depressions. The sloping sides have a zone of decoration made up of oblique lines of oval depressions, 12 deep. Below this is a narrow plain band, followed by a double raised milled band. Finally there is a plain edge. The inside has narrow concentric horizontal lines which may be from 'spinning' to finish off the thimble.
Ht. 17mm Dia. (ext) 11-15mm
OGL A + Ae 58 Period: Unstratified

C45 Medieval knife: hilt-plate Not illustrated
A thin flat teardrop-shaped piece of metal pierced with a teardrop-shaped hole. The wide end of the hole is at the wide end of the teardrop. The conservation report says that it is made of copper, tin and some lead. As this is a 'white' alloy it was probably used for an ornamental purpose.
L. (ext) 23mm W. (ext, max) 11mm L. (of hole) 13mm
W. (of hole, max) 5mm W. (of hole, min) 3mm Th. <1mm
LEL A 84 Ae 45 Period: 18

This would have come from a whittle-tang knife (Cowgill *et al* 1987, fig 2).

Fasteners and fittings

C46 Handle Fig 102
The hoop of the handle is D-shaped and has a round cross-section which tapers from the centre towards the ends. At each end there is an open loop. These are separated from the hoop of the handle by being bent inwards slightly. A similar angle separates the loops from the ends of the handle, which have biconical terminals. The cross-section of each loop is rectangular. The terminals are multangular and there are facets visible on the top surface of each. One is better preserved than the other and is therefore larger.
W. (overall, from terminal to terminal) 53mm
W. (of loop) 2mm Dia. (of hoop, max) 3mm
Th. (of loop) 1mm
LEL A 588 Ae 74 Period: 6B-E

C47 Bell stud Fig 103
The circular head is made of copper alloy. The top surface is concave and surrounds a central conical projection which has a flat top. The cone projects above the edge of the stud. The underside slopes in from the edge towards the central cylindrical body. The underside of the body is conical, and in the centre there was a tapering square-sectioned iron shaft (this has become detached because of corrosion). The base of the conical projection has a groove around it. The top surface of the edge is ornamented with a groove.
L. 45mm Dia. (of edge of head) 27mm
Dia. (of cylindrical body) 17mm
LEL A 86 Ae 34 Period: 19B

C48 Bun-headed stud Fig 103
The solid domed head is undecorated. In the centre of the underside is a circular-sectioned shaft, which tapers to a fairly blunt point.
Dia. (of head) 6mm Ht. (of head) 5mm
L. (of shaft) 8mm Dia. (of shaft) 2mm
OGL B 36 Ae 6 Period: 6F

C49 Bun-headed stud Not illustrated
The solid globular head is undecorated. In the centre of the underside is a square-sectioned shaft which tapers to a sharp point. At the junction of the shaft and the head is a slight 'neck' which is less angular than the shaft.
L. 18mm Dia. (of head) 4mm W. (of shaft) 1mm
Th. (of shaft) 1mm
LEL A 566 Ae 70 Period: 6D

C50 Bun-headed stud Fig 103
The solid sub-spherical head is undecorated. There is a square-sectioned tapering shaft in the centre of the underside.
Dia. 5-6mm L. (of shaft) 14mm W. (of shaft) 2mm
Th. (of shaft) 2mm
LEL A 204 Ae 47 Period: 14

C51 Domed stud Not illustrated
The shaft is missing.
The solid circular domed head is undecorated. In the centre of the slightly convex underside are the remains of the square-sectioned shaft, which survives as a shadow on the surface.
Dia. 11mm Ht. 6mm W. (of shaft) 3mm
Th. (of shaft) 3mm
CAL E 6 Ae 2 Period: Medieval

C52 Stud Fig 103
Much of the edge of the head has corroded away.
The solid flat head, originally circular, was plated with white metal. In the centre of the underside is a short round-sectioned shaft which has a blunt point.
The conservation record notes that there are the remains of two tiny iron tack-heads flush with the surface. These are clearly visible on the X-ray.
Dia. (of head) 23mm Th. (of head) 1mm
Dia. (of shaft) 4mm
OGL B 97 Ae 19 Period: 6D

C53 Stud Not illustrated
There is slight damage to one side of the head, and the end of the shaft is broken.
The solid round head, originally flat, is undecorated. Set off-centre on the underside are the remains of a rectangular-sectioned shaft.
Dia. (of head) 10mm Th. (of head) 1mm
L. (of shaft) 4mm W. (of shaft) 3mm
Th. (of shaft) 2mm
LEL A 31 Ae 16 Period: 21B

C54 Stud Not illustrated
The head is damaged in two places.
The solid flat sub-rectangular head is undecorated. The rectangular-sectioned shaft is set off-centre on the underside.
L. (of head) 11mm W. (of head) 10mm
L. (of shaft) 3mm W. (of shaft) 3mm
Th. (of shaft) 2mm
LEL A 31 Ae 18 Period: 21B

C55 Dome-headed stud Not illustrated
There is some damage to the edge of the head.
The hollow circular domed head is undecorated. In the centre of the underside is a round-sectioned tapering shaft. This is bent and has had the end flattened deliberately.
Dia. 12mm Dia. (of shaft) 2mm Ht. 7mm
L. (of shaft, min) 13mm
OGL A 737 Ae 63 Period: 6

C56 Dome-headed stud Not illustrated
The hollow circular domed head is undecorated. In the centre of the underside is a square-sectioned shaft. The head has been squashed on one side.
Dia. 13mm Ht. 6mm L. (of shaft) 10mm
W. (of shaft) 1mm Th. (of shaft) 1mm
OGL A 787 Ae 69 Period: 6

C57 Dome-headed stud Not illustrated
The shaft is broken.
The hollow circular domed head is undecorated. In the centre of the underside is the square-sectioned tapering shaft. This is circular where it joins the head. The head has been crushed slightly and so has cracked.
The conservation report states that traces of possible decayed leather were found inside the stud.
Dia. 13mm Ht. 3mm L. (of shaft) 5mm
W. (of shaft) 1mm Th. (of shaft) 1mm
OGL A 430 Ae 59 Period: Unphased

C58 Domed stud Not illustrated
The shaft is missing.
The circular hollow domed head is undecorated. It is filled with lead. In the centre of the underside of the lead is a fairly large sub-rectangular depression. This originally probably held the shaft which is now missing. By analogy with studs found elsewhere, the shaft was probably made of iron.
The conservation report states that the stud was made of copper and tin, with a little zinc and some lead, and that the filling was lead.
Dia. 19mm Ht. 5mm W. (of depression) 6mm
L. (of depression) 7mm
OGL B 290 Ae 13 Period: 3

All of the lead-filled domed studs recovered from recent excavations in Carlisle had separate iron shafts originally. This was probably the case elsewhere also, and it suggests that this type of stud had a specific (but as yet unidentified) function.

C59 Stud Not illustrated
Over half of the head is missing, and the shaft is incomplete.
The hollow conical head, originally circular, is undecorated. The circular-sectioned shaft is attached to the centre of the underside. This tapers to the missing point. There is a suggestion that the shaft is bent at the point where it has broken, but this is not certain.
Dia. (of head, estimated original) 30mm Ht. 7mm
L. (of shaft) 14mm Dia. (base of shaft) 6mm
OGL A 537 Ae 47 Period: West 2

C60 Stud Fig 103
Much of the flange from the head is missing and there is some damage to the end of the shaft.
The hollow circular domed head has an outer flange, but is otherwise undecorated. The circular-sectioned shaft comes from the centre of the underside of the head and terminates in a flat solid circular disc.
Dia. (of head, surviving) 17mm Dia. (of terminal) 9mm
OGL A 532 Ae 42 Period: West 2

C61 Stud Not illustrated
Only part of the head survives.
The hollow circular domed head had an outer flange with a downturned rim. Apart from that it was undecorated. The shaft is missing.
Dia. (of head, estimated original max) 14mm
OGL A 513 Ae 29 Period: West 5

C62 Lion-headed stud Fig 103
The shaft is missing.
A circular hollow domed stud which has the upper surface decorated with an incised design forming a lion's face. In the centre

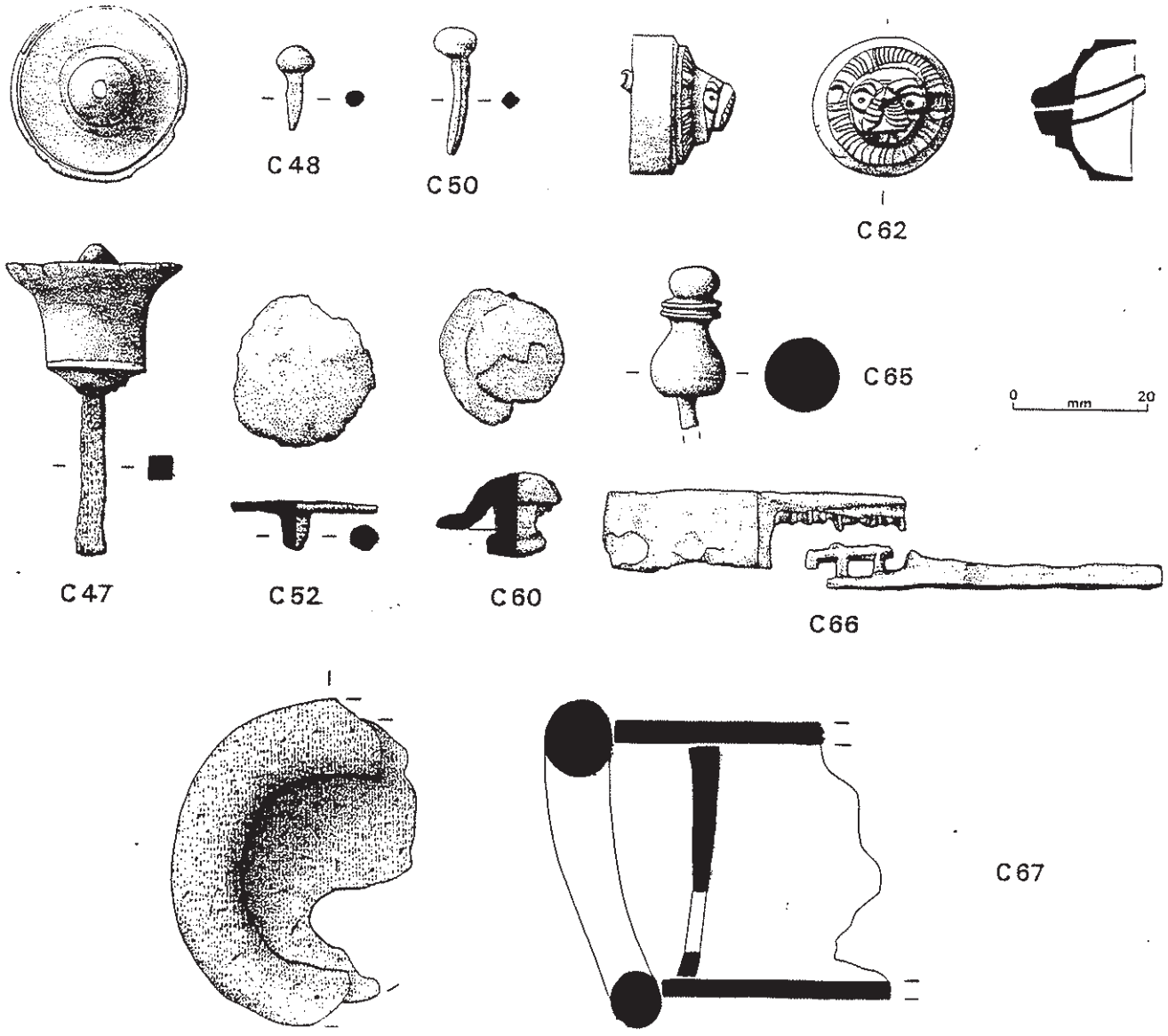

Fig 103 Copper alloy studs (C47-62), terminal (C65), lockbar (C66) and barrel padlock case (C67) (scale 1:1)

of the underside is a hollow copper alloy tube, which has a square-sectioned void and probably held the shaft originally. There is also a small slit, running obliquely from one eye, cut through the nose of the lion. The fragments of organic matter which remain in the rear of the stud have been identified as burnt wood.

The outer surface of the tube has a rough texture, as if cast, and suggests that the stud was 'cast on' to the iron shaft. If this was the case, the metal of the shaft would have filled the slit.

Dia. 20mm Ht. 15mm W. (of shaft) 2mm Th. (of shaft) 2mm
LEL A 599 Ae 71 Period: 5

Examples of this type of stud are known from Verulamium (Waugh and Goodburn 1972, 126, no 108, pl 38d), where one is dated to AD 105-115, and from Richborough (Bushe-Fox 1949, 139, no 168, pl 64), dated to before *c* AD 275-300. At Baldock, burial 10 contained the remains of a box which had its lock plate secured with two studs of this type, and there was a further fragment of sheet bronze with another similar stud attached to it (Stead and Rigby 1986, 73-5, fig 33). The same grave produced a samian vessel of form 36 dating to the Flavian or Flavian-Trajanic period. Further examples of this type of stud from caskets found in burials are considered by Borrill in his discussion of the material from Puckeridge (1981, 315-6, table 46). His study of a small sample from the South-East and East Anglia (75 examples) showed that 73% came from nine burials where they were used either to attach lock-plates or were associated with casket fittings. Only some of these studs had iron shafts, as postulated for The Lanes example (*ibid*, 315, fig 119), while others were different in their manufacture (*ibid*, 312, 316, fig 117). The presence of burnt wood found in the rear of the head of The Lanes stud suggests that it too may have originally been part of a casket. However, the context of this find and the fact that the excavations at the Annetwell Street fort produced two more studs of this type, one of which was plated with white metal (Padley

forthcoming a, nos F293-4), suggest that they were not exclusively used for funerary purposes.

C63 Rivet — Not illustrated
Part of the head is missing.
The rivet is made from sheet metal which has been folded round to form the shaft, and over to form the head. What survives of the head is triangular. One edge is formed by the fold. The shaft is hollow and triangular in section. It tapers to a point.
L. 11mm W. (of head) 4mm Ht. (of head) 4mm
W. (of shaft, max) 3mm Ht. (of shaft, max) 2mm
OGL A 543 Ae 34 Period: West 3

C64 Tag — Not illustrated
There is some damage to the edges.
An irregularly shaped piece of sheet metal which is pierced with a circular hole. There are three places where the edges appear to be original, and these suggest that the shape has not altered very much. Assuming this to be so, the plate was originally an irregular pentagon with the hole in the upper third. The corrosion present suggests that a square-sectioned nail went through it.
L. 14mm W. 13mm Th. 1mm Dia. (of hole) 3mm
OGL A 199 Ae 20 Period: West 7

C65 Terminal — Fig 103
The end of the shaft is missing.
The terminal is a solid baluster shape with a double disc moulding just below the top knob. In the centre of the underside a short length of round-sectioned shaft survives.
L. (overall) 24mm L. (of shaft) 5mm
Dia. (of base, max) 11mm Dia. (of shaft) 3mm
OGL B 197 Ae 12 Period: 5A

C66 Lockbar — Fig 103
Part of the central area with the design is missing.
A rectangular bolt which can be divided into three areas. The first is a solid rectangular-sectioned piece which is wider than it is thick. The central part is separated from this by a vertical edge. This central part contains the tumbler pattern, which is recessed at the bottom. The third part is a solid rectangular-sectioned bar which is narrower than it is tall, and is longer than the first part.
L. (estimated original) 82mm W. (of first part) 12mm
W. (of third part) 3mm Th. (of first part) 3mm
Th. (of second part) 7mm Th. (of third part) 8mm
OGL A 183 Ae 52 Period: 13

C67 Barrel padlock case? — Fig 103
Part only survives.
A cylindrical object made of iron, with much copper alloy corrosion also. The end is at an angle to the axis of the cylinder. Going straight across the same end is a flat sheet of metal with the remains of a circular hole in one side.
L. (max) 52mm Dia. (of cylinder, ext) 36mm
Dia. (of hole) 10mm
LEL A + Ae 3 Period: Unstratified

C68 Binding — Not illustrated
Only a short length, broken at each end, survives.
A U-shaped binding, which is curved. No features such as nail holes are present.
L. (as curved) 89mm W. (ext, max) 5mm
Th. (of binding) 5mm Th. (of metal) <1mm
CAL A 80 Ae 3 Period: 3A

C69 Binding — Not illustrated
Only a short length survives.
A U-shaped binding. No remains of any features such as nail holes survive.
L. 45mm W. (ext) 5mm Th. (of binding) 6mm
Th. (of metal) 1mm
OGL A 380.2 Ae 70 Period: 10A

C70 Binding — Not illustrated
A short length, broken at one end.
A length of U-shaped binding. The curve is made up of three facets rather than being smooth. Part of one original end survives. This is straight and goes at right angles across the binding. In one corner is a rivet hole.
L. 60mm W. (ext) 23mm Th. 13mm W. (of hole) 2mm
OGL C 1 Ae 3 Period: Unstratified

C71 Binding — Fig 104
Broken at each end.
A length of U-shaped binding. There are no nail holes or other fixings visible.
L. 315mm W. (ext) 6mm Th. 4mm Th. (of metal) <1mm
LEL A 607 Ae 73 Period: 6A

C72 Ornamental mount — Fig 104
A small part is missing.
A basically crescent-shaped piece of sheet. The top edge has a symmetrical lobed outline, while the bottom edge is a smooth curve. The whole is slightly curved. The convex surface is decorated with an engraved pattern in a Celtic design. There are also two spheric triangle cut-outs.
X-ray fluorescence shows the alloy to be almost exclusively tin.
L. 81mm W. 26mm Th. 2mm
OGL B 189 Ae 11 Period: 5B

This may have come from a vessel. It is possible that it came from a mirror, but the fact that it is curved makes a vessel more likely. The pattern is based loosely on the palmette. The 'grammar of ornament' cannot be matched in the survey of Celtic metalwork published by MacGregor (1976), however.

C73 Pierced sheet — Not illustrated
Only a fragment survives.
A piece of sheet metal pierced with rectangular holes. The edges of the holes are chamfered on the top surface of the sheet. No original edges survive. The whole is slightly bent.
L. (of fragment) 20mm W. (of fragment) 17mm
Th. (of metal) <1mm L. (of holes) 4mm W. (of holes) 4mm
OGL B 184 Ae 16 Period: 5A

C74 Ring — Not illustrated
D-shaped cross-section.
Dia. (ext) 22mm W. 3mm Th. 4mm
OGL A 745 Ae 60 Period: 6

C75 Ring — Not illustrated
A small penannular ring made from circular-sectioned wire.
Dia. 14mm Dia. (of wire) 1mm
OGL A 36 Ae 11 Period: 13

C76 Ring — Not illustrated
A section is missing.
A triangular-sectioned ring, with the apex towards the centre.
Dia. 36mm Th. 5mm W. 5mm
OGL A 514 Ae 31 Period: West 3

C77 Ring — Not illustrated
Only part survives.
Originally sub-rectangular in section, but now uneven because of corrosion.
Dia. (estimated original, ext) 47mm W. 4-8mm Th. 5-7mm
Clack 1 33 Ae 11 Period: 10B

C78 Ring — Not illustrated
Only about 20% survives.
The cross-sectional shape is obscured by corrosion.
Dia. (estimated original, ext) 40mm W. 4mm Th. 4mm
LEL A 7 Ae 6 Period: 22

C79 Chain — Not illustrated
Only three links joined together.
The surviving complete links are made of wire with the ends butted together to form an irregular ring. They are linked to form a simple chain. The cross-sectional shape of the wire ranges from circular to square.
There are also three partial links probably from the same chain.
L. (of link) 8mm W. (of link) 6mm Th. (of wire) 1mm
LEL A 74 Ae 32 Period: 20

Militaria

C80 Armour fastener — Not illustrated
Part of the loop is missing.

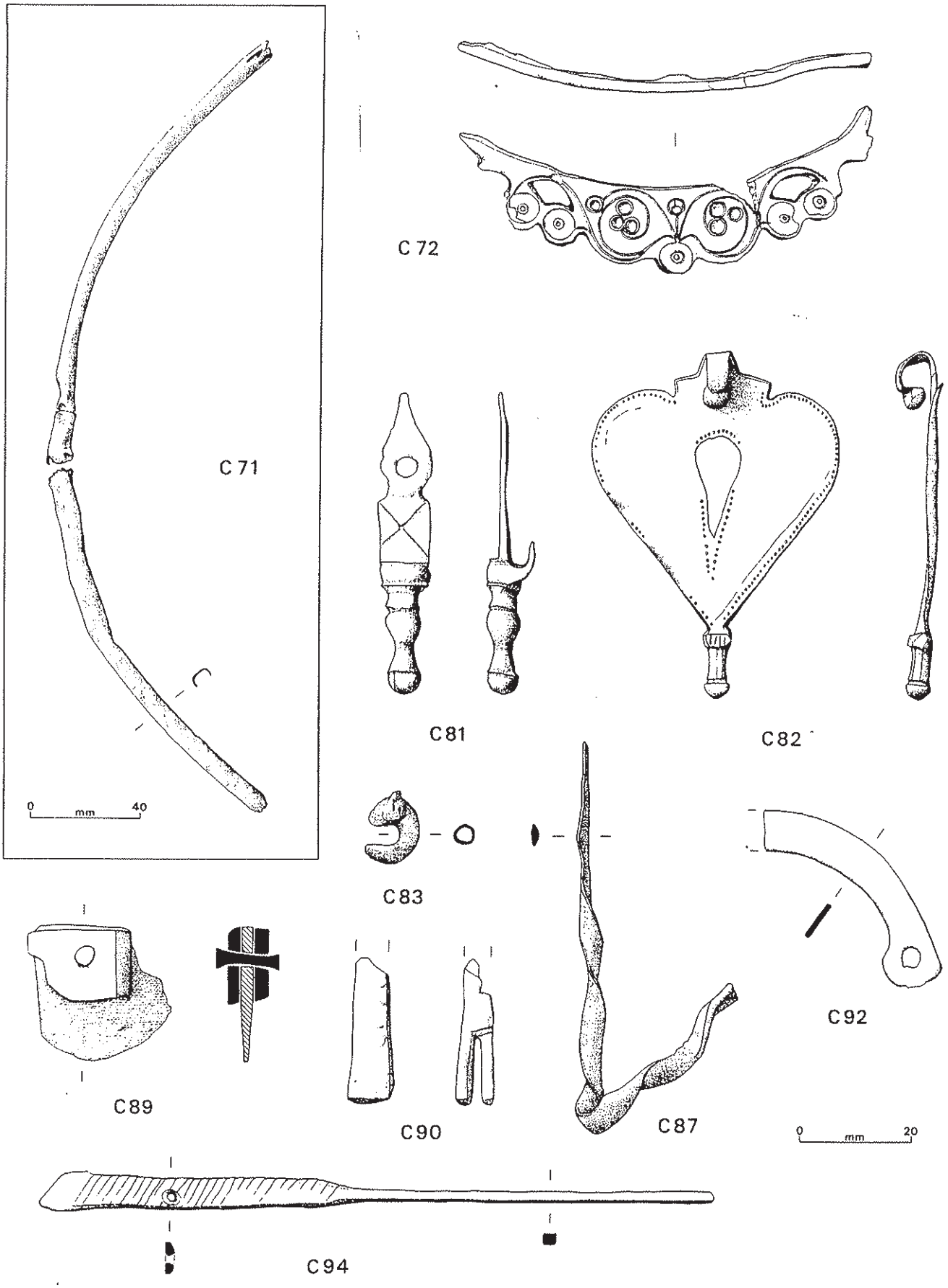

Fig 104 Copper alloy binding (C71), tin ornamental mount (C72), copper alloy military fittings (C81-2) and miscellaneous objects (C83-94) (scale 1:1; C71, scale 1:2)

A D-shaped piece of sheet metal, which has a rectangular projection in the centre of the flat edge. The D is pierced with a circular hole.
L. 19mm W. 17mm Th. 2mm
LEL A 505 Ae 60 Period: 8E-F

C81 Strap end/apron mount Fig 104
Part of the rear 'clip' is broken.
The whole is made in one piece. The terminal at the bottom is a solid figure-of-eight shape. This is joined to the body of the piece by a slightly flaring collar. The top of the collar joins a solid rectangular-sectioned piece which has raised edges and a slightly curved surface between them. This is visible at the front and sides. Above this the front steps in 3mm and continues as a flat sheet. The bottom part is rectangular and decorated with an incised X. This is separated from the top, teardrop-shaped, part by a groove. In the middle of the widest part of the teardrop is a circular rivet hole. The front surface of the hole has a chamfered surface. On the rear of the object, projecting from the rear of the rectangular area are the remains of a 'clip' made in one piece with the rest of the object. The end of the strap (or apron) would have been held between the body of the piece and the clip.
L. 56mm W. (of flat area with X) 10mm
W. (between body and clip) 5mm Dia. (of hole) 4mm
OGL C + Ae 1 Period: Unstratified

C82 Military pendant: type 5c (Bishop 1988) Fig 104
A heart-shaped pendant. This is decorated on the front surface by a line of punched dots, which goes from the point along the lower sloping side and around the curved shoulder on both sides. The dots do not occur on the central projection at the top. On the inside of this is a single incised line. The central projection is trapezoidal, and has a cast lug in its top edge which terminates in a solid knob and has been bent forward to form a suspension loop. There is a second cast projection at the point of the plate, which terminates in a domed knob separated by a groove from a short waisted rod, and has a square-sectioned milled moulding at the other end. The plate is pierced in the centre by a teardrop-shaped hole, which has its point towards the bottom.
L. 65mm W. 45mm Th. <1mm
OGL A 487 Ae 61 Period: 8C

Other copper alloy objects

C83 Hook Fig 104
Broken at each end.
The main feature of the object is a hook made from a round-sectioned tapering rod. At one end the rod expands but not enough survives to say what was attached.
Dia. (of rod, max) 3mm W. (of attachment point) 9mm
LEL A 5 Ae 9 Period: 22

C84 Disc Not illustrated
There is slight damage around the edge.
A thin disc, originally circular. There is no decoration visible on either face. There are three equally spaced small holes around the edge. The conservation report states that the remains of a small tack, probably made of iron, survives in one of them.
Dia. 35mm Dia. (of hole) 1mm Th. 1mm
LEL A 309 Ae 78 Period: 12B

C85 Sheet Not illustrated
No original edges survive.
Two thin sheets of copper alloy which have an irregular rivet through them at one end.
L. 23mm W. 7mm Th. 2mm
OGL A 543 Ae 39 Period: West 3

C86 Sheet Not illustrated
One end is damaged.
An originally rectangular sheet. Along each of the long edges is a row of rivet holes. These are spaced at 20mm intervals along one edge and at 25mm intervals along the other. The whole has been folded lengthways and the surviving end crumpled.
L. 74mm W. (as folded) 23mm Th. <1mm Dia. (of holes) 1mm
OGL C + Ae 5 Period: Unstratified

C87 Strip Fig 104
Broken at one end.
A narrow strip which has a flattened oval cross-section. It has two complete twists in it. The twist starts 30mm from the probable original end. This end is pointed, as one side of the strip approaches the other at an acute angle. The other end is broken straight across. The whole is bent through an acute angle at 37mm from the broken end.
L. (as if straight) 107mm W. 3mm Th. 1mm
LEL A 86 Ae 35 Period: 19B

C88 Strip Not illustrated
Probably broken at the end with the rivet.
A rectangular-sectioned strip with an angled end. This may or may not be original. At the other are the remains of a rivet hole, which has part of the rivet still *in situ*.
L. 43mm W. 10mm Th. 2mm Dia. (of rivet hole) 3mm
OGL B 15 Ae 2 Period: 7B

C89 Unidentified object Fig 104
The object is incomplete.
The object consists of an iron plate with a copper alloy fitting on each side of it. The iron plate has two, probably original, straight edges. One of these runs along one side of the copper alloy fittings, while the other is at right angles to it, and runs along the base of them. The fittings themselves are identical, and are each made of a rectangular strip which has been folded over. There is a space between the two layers of sheet, which may have held something organic. There is a circular-sectioned rivet running through the whole.
L. (of iron sheet) 25mm W. (of iron sheet) 25mm
L. (of fitting) 19mm W. (of fitting) 12mm Dia. (of rivet) 3mm
OGL A + Ae 36 Period: Unstratified

C90 Unidentified object Fig 104
Broken at one end.
The surviving end is split intentionally, forming a gap between two rectangular plates. The plates taper from this end towards the broken one. The broken end shows that the object continued as a rectangular-sectioned shaft, but it is not clear whether this was solid or hollow.
Possibly a scalpel handle fragment.
L. 27mm W. 6-8mm Th. 5-7mm
Clack 1 66 Ae 9 Period: 3

C91 Unidentified object Not illustrated
Broken at one end.
A rectangular-sectioned strip. The original end is straight and has curved corners between it and the edges. The strip narrows towards the broken end. At the centre of the strip, at the original end, is a rivet which remains *in situ*.
L. 43mm W. 9-12mm Th. 1mm Dia. (of rivet) 2mm
Clack 2 37 Ae 1 Period: 10A

C92 Unidentified object Fig 104
One end is missing.
A curved strip with a D-shaped projection at the surviving end. There is a circular hole at the end with the projection. The broken end is thicker.
L. 40mm W. (at break, max) 7mm
Th. (at break, max) 1mm Dia. (of hole) 3mm
LEL A 84 Ae 42 Period: 18

C93 Unidentified object Not illustrated
No original edges survive.
Probably the remains of a hollow object made from sheet metal. One side is convex, with three evenly spaced facets which go along the object. The other side is slightly concave and has been crushed.
Possibly some kind of bead?
L. (of largest fragment) 24mm W. (of largest fragment) 9mm
Th. (of sheet) <1mm
LEL A 105 Ae 40 Period: 19B

C94 Unidentified object Fig 104
Broken at the wider end.
The wider end has a D-shaped cross-section. The convex surface has diagonal ridges going across it. It is pierced by a small circular hole, 24mm from the broken end. At a point 53mm from the broken end the object is shouldered and continues as a square-sectioned rod. The whole is bent.

L. (as if straight) 129mm W. (of wider end, max) 7mm
W. (of thinner end) 2mm Th. 2mm Dia. (of hole) 1mm
LEL A 73 Ae 20 Period: 20

C95 Tube Not illustrated
Broken at each end, and in places the edges are broken also.

A short length of tube made by folding a length of sheet around a former, as is evident on the best preserved fragment. The edges overlap by 3mm.
L. 65mm Dia. 5mm Th. (of metal) <1mm
LEL A 432 Ae 56 Period: 10B

C96 Tube Not illustrated
Broken at each end and in places along the edges.

This is probably a length of tube, but at no point does more than 50-75% of the circumference survive, and so it could be a binding. At one end it has been flattened.
L. 54mm Dia. 7-8mm Th. (of metal) <1mm
LEL A 280 Ae 52 Period: 12C?

CHAPTER 17 THE IRON (D) AND LEAD (E) OBJECTS

The Ironwork (D)

Introduction

The excavations in this part of The Lanes have produced 56 iron objects, as can be seen from the tables in Chapter 14. With the exception of Number D11, no nails have been included in this total, as they were extracted on site. The majority of the nails fall into Manning's class 1B (1985, 134, fig 32), and are therefore of the commonest Roman type. Of the 56 items, about two-thirds are Class 2, consisting mainly of lumps. These have had X-ray photographs taken, which have failed to reveal any diagnostic features. The remainder of the Class 2 material consists of sheet metal fragments, strip and rods which cannot be identified as parts of recognizable artefacts.

The condition of the ironwork is not as good as that recovered from Castle Street (Padley 1991a) or Annetwell Street (Padley forthcoming c). This may be due partly to burial conditions, as only six of the Class 1 items came from periods which also produced waterlogged material (Nos D1-4, D8, D16). However, this in itself does not guarantee good preservation, as the surfaces of the two styli (Nos D2 and D3) are in poor condition.

The quantity of material is also smaller than that recovered at other sites. Old Grapes Lane Trench A, for example, produced only four Class 1 items, compared with 137 from Castle Street, which is similar in size (Padley 1991a). This is also true when considering the proportion of Class 1 ironwork to the rest of the Class 1 metalwork (defined as coins, gold, silver, copper alloy, ironwork and lead all added together). At Castle Street, for example, 31% of the Class 1 metalwork is iron (*ibid*), while only 9.1% is iron in this part of The Lanes. It is also worth noting that there are no household utensils, items connected with transport, window grilles, lock parts, or militaria present (Table 50). The categories which are present contain far fewer examples than at Castle Street, suggesting that there is much less ironwork around generally.

Only one item of personalia was recovered (Table 50), a finger-ring with associated intaglio gem (No D1). The objects in the written communication category comprise two styli from OGL A Period 6 (Nos D2-3). Only a small number of tools are present. These include a needle (No D8), a partially preserved axe (No D6), and a cobbler's (or shoemaker's) last (No D7). This latter piece is not a common find and is the first from northern Britain. It is not unexpected, as recent excavations in Carlisle have recovered over 350 Roman nailed shoes and sandals. There are also a few fittings. While the collar (No D9) could be a binding for a handle, the other items are of a structural nature.

The majority of the ironwork is Roman in date, but there is one medieval knife (No D5) which came from Lewthwaite's Lane Trench A, as did the copper alloy hilt-plate (No C45) which would have come from a similar knife.

Table 50
The Class 1 ironwork arranged by site and function

Site	*Personalia*	*Writing Tools*	*Fittings*	*Other*	*Total*
OGL A	-	2 -	2	-	4
OGL B	-	- -	1	1	2
OGL C	-	- -	-	1	1
Clack 1	-	- -	1	-	1
LEL A	1	- 5	-	5	11
Totals	1	2 5	4	7	19

The catalogue

Personalia

M Henig writes:

D1 Finger-ring Fig 105

Intaglio set in a type II iron ring.

The setting is moulded from clear glass, now slightly corroded, with a flat upper face measuring 10mm by 8mm. It figures a highly stylized rendering of a war-galley. This is shown with a high prow and stern and a flat base (presumably resting upon the water), and is being rowed towards the right (impression described). There is a steering oar at the stern and seven thinner strokes represent oars. The ship contains three marines, each represented by two dots one above the other.

L. (of hoop, ext) 22mm L. (of hoop, int) 18mm
W. (of hoop, ext) 19mm W. (of hoop, int) 15mm
L. (of setting, max) 10mm W. (of setting, max) 8mm
LEL A 553 Fe 20 Period: 7A

There is a very close parallel in an intaglio, likewise moulded in clear glass, from excavations at Castleford, West Yorkshire (Site 1, 1974, level 3, SF 245), which I have ascribed to the first or early second century AD. Somewhat similar is another glass gem from Arles, ascribed by Guiraud (1988, no 552) to the first century. Note also a nicolo of unknown provenance in Vienna (Zwierlein-Diehl 1979, no 912).

A warship is figured on a pale nicolo chalcedony from Alchester (Birch Abbey site), Warwickshire (Henig 1974 and 1978, no 534), again with three marines, and upon other stones from Verulamium (*ibid*, no 533) and London (*ibid*, no 535).

Written communication

D2 Stylus Fig 105

Most of the surface has corroded away.

The point is conical and is separated from the shaft by a decorated shoulder. The detail of the decoration is obscured by corrosion, but three transverse ridges round the shaft can be seen. The shaft has its maximum diameter at the shoulder. The eraser is wedge-shaped and may have had a lyre-shaped outline.

L. 109mm Dia. (of shaft, max) 5mm L. (of eraser) 8mm

W. (of eraser) 6mm
OGL A 732 Fe 22 Period: 6

D3 Stylus Fig 105
The surface is in poor condition.

The conical point is separated from the shaft by a distinct shoulder. The shaft has its maximum diameter at the shoulder. The eraser is wedge-shaped and has straight sides. The shaft between the shoulder and the eraser is decorated with bead-and-spool decoration. The surface corrosion has obscured the detail, but examination of the X-ray suggests that it is a bead followed by four spools, repeated four times.

L. 138mm Dia. (of shaft, max) 5mm L. (of eraser) 9mm
W. (of eraser) 9mm
OGL A 805 Fe 23 Period: 6

Both these styli come from OGL A Period 6, where only one fragment of a possible writing tablet was found (No K27). Number D2 is decorated at the shoulder between the point and the shaft, while the other (No D3) has the whole of the shaft decorated. Among the large collection of styli from Castle Street, many have decoration at the shoulder (Padley 1991a, nos 346-9), while some also have decoration at the junction of the shaft and the eraser (*ibid*, nos 343-4, 348-50). Decoration at these positions is also used at Annetwell Street (Padley forthcoming c, no H122). None have a fully decorated shaft.

Tools

D4 Knife Not illustrated
Only a fragment of the blade and tang survives.

The knife has a thin but fairly wide whittle-tang. This is set asymmetrically on to the blade. There is a slight shoulder between the back of the blade and the tang, and a more pronounced one between it and the cutting edge. The blade has a triangular cross-section.

L. 48mm W. (of blade, max) 17mm
Th. (of back of blade) 2mm
LEL A 576 Fe 26 Period: 6C

D5 Medieval knife Fig 105
The point and cutting edge are damaged.

The whittle-tang is set centrally to the blade. The tang itself has a rectangular cross-section, and tapers to a point. It is separated from the blade by asymmetrical shoulders. The shoulder between the tang and the back of the blade is curved, while that between the tang and the cutting edge is straight. The blade has a triangular section. The back is slightly convex, and dips down just before the point. The cutting edge is damaged and probably missing over much of its length. Just before the shoulder it gets much wider.

L. 107mm L. (of tang) 40mm W. (across shoulders) 15mm
W. (of tang, max) 8mm W. (of blade, max) 13mm
Th. (of tang, max) 5mm Th. (of blade, max) 4mm
LEL A 38 Fe 3 Period: 21B

These knives are not closely datable. Whittle-tanged ones are not common in the Roman period. Number D5 comes from a medieval period and probably dates from the late twelfth into the thirteenth century (Cowgill *et al* 1987). The remains of a probable type 7 iron knife (Manning 1985, 111-3, fig 28) with bone tang scales from OGL A Period 6 is described in Chapter 21 (p 000 below).

D6 Axe Fig 105
Only part of the blade survives.

The top edge of the blade is curved and rises from the broken end where the socket would have been. The bottom edge is more steeply curved, giving the axe an asymmetrical profile. In longitudinal section the axe is wedge-shaped. The transverse section is rectangular. At the edge opposite the cutting one, the sides begin to flare outwards. Either they are flaring to accommodate an eye which has sheared off, or they mark the original edge of the axe. The former seems more likely as the shape of the blade suggests an axe rather than a wedge.

L. 85mm W. (of cutting edge) 58mm
LEL A 80 Fe 5 Period: 19B

D7 Cobbler's last Fig 105
About half of the head is missing.

The head originally had an almost flat top surface, and a slightly curved underside. The condition is such that it is difficult to be certain about the shape. However, it appears that the sides were fairly straight and almost parallel. The surviving end is curved and asymmetrical. The head is mounted on a square-sectioned shaft which tapers to a sharp point.

L. (of shaft, point to top of head) 190mm
L. (of head) 138mm W. (of shaft) 35mm
Th. (of shaft) 25mm W. (of head, at centre) 35mm
Th. (of head, at centre) 15mm
LEL A 114 Fe 14 Period: 18

This item is identified as a last rather than an anvil because of two main features. Firstly, the shaft is longer than that on an anvil. Secondly, the surviving part of the head is thinner than one would expect for an anvil. It is unfortunate that the front portion is missing, as the presence/absence of a beak would have been diagnostic. Lasts are not common, but are known from Sandy, Bedfordshire, Silchester (three examples), and Caerwent (Manning 1985, 42).

D8 Needle: type 3 (Crummy 1983) Fig 105
There is slight damage to the eye and the point.

The head is flattened and has a long oval eye. There is a groove both above and below the eye. Above the eye the groove extends to the end, while below it extends for 25mm. The shaft has a flattened cross-section where the groove is present, otherwise it is circular. The shaft is bent and damaged 86mm from the head end.

L. (as if straight) 117mm Dia. (max) 2mm
L. (of eye) 12mm W. (of eye) 2mm
LEL A 612 Fe 23 Period: 6A

This item contrasts with the needles from Colchester, which were all made of copper alloy. Crummy (*ibid*, 67) suggests that this type dates to the third to fourth centuries.

Fittings

D9 Collar (Manning 1985) Fig 105
The collar is a ring with a deep narrow rectangular cross-section. It is thicker on one side than on the other. Its identification as a collar is supported by a note in the conservation report which says that it was associated with wood.

Dia. (ext) 41mm W. 4-6mm Th. 16mm
Clack 1 42 Fe 1 Period: 10A

This type of collar could be used for many things, some of which are noted by Manning (*ibid*, 140, nos S54-6).

D10 Fitting Not illustrated
Broken at each end.

A flat strip narrowing at one end into a rectangular-sectioned rod, which is bent upwards slightly. There are two rivet holes, each with the remains of rivets still *in situ*, in the centre of the strip. One is 10mm from the broken end, while the other is 70mm from it.

L. 115mm W. (of strip) 27mm Th. (of strip) 3mm
W. (of rod) 10mm Th. (of rod) 10mm Dia. (of rivets) 5mm
OGL A 559 Fe 18 Period: Unphased

D11 Nail Fig 105
The point is missing, and the head may be damaged.

The head, as it survives, is roughly triangular and slightly domed. In the middle of the underside is a long square-sectioned shaft which tapers as it approaches the missing point.

L. 236mm Ht. (of head) 40mm W. (of head) 37mm
W. (of shaft) 19mm Th. (of shaft) 19mm
OGL B 28 Fe 1 Period: 8A

This nail is included because of its large size. A few large

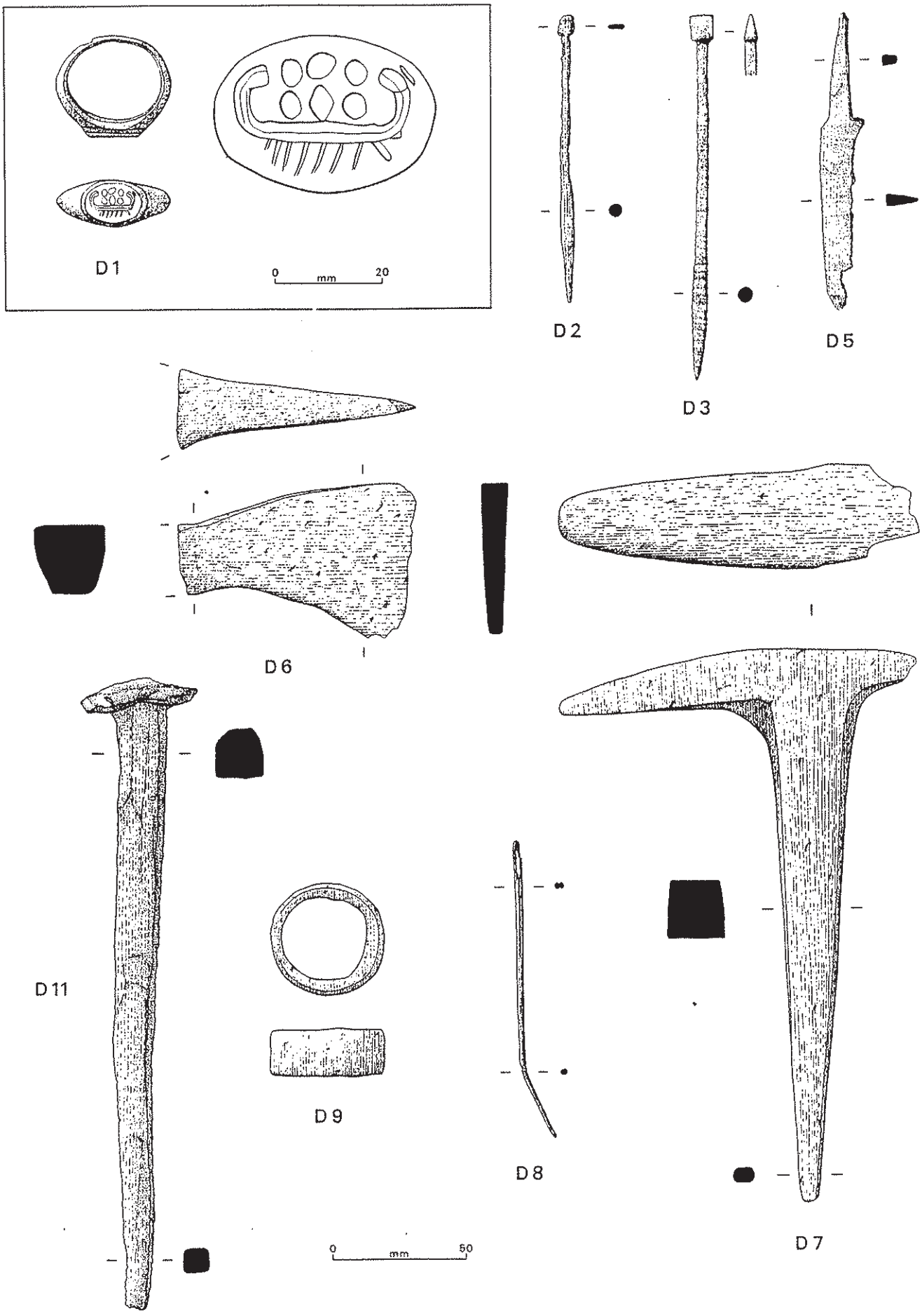

Fig 105 Iron finger-ring (D1), styli (D2-3), knife (D5), axe (D6), last (D7), needle (D8), collar (D9) and nail (D11) (scale 1:2; D1, scale 1:1, detail scale 4:1))

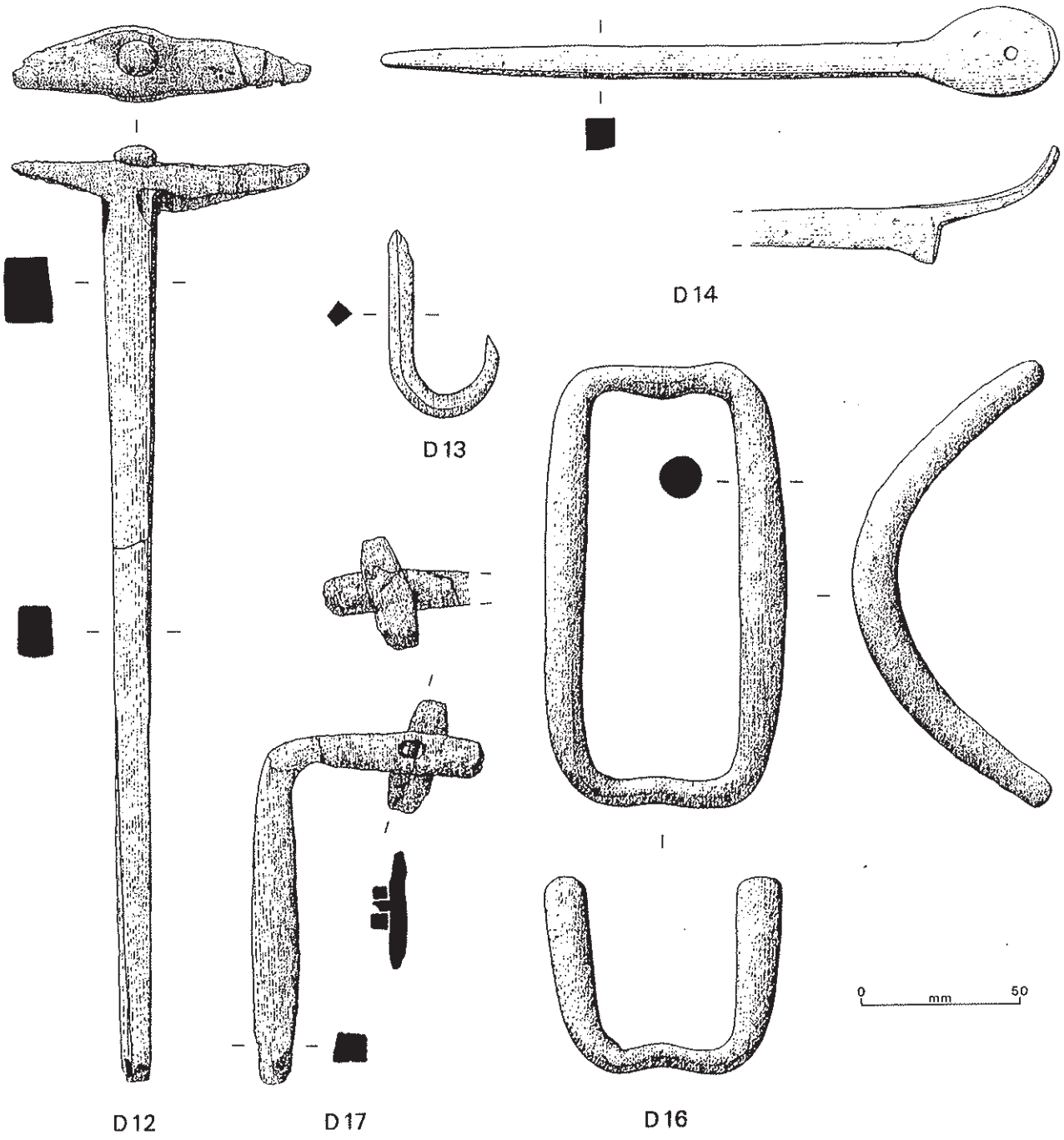

Fig 106 Iron T-clamp (D12) and other iron objects (D13-17) (scale 1:2)

nails were found at Inchtuthil, but they are generally very uncommon (Manning 1985, 134). This is partly because they are a useful source of iron for re-use; they can also be used as implements in their own right, for example as a millwright's stone-chasing tool.

D12 T-clamp Fig 106

Some slight damage.

The main body of the piece consists of a long rectangular-sectioned spike. This tapers, mainly in width, at one end to form a point. At the other end there is a diamond-shaped piece set at right angles to the shaft. The pointed ends may be damaged by corrosion. Set in the widest part of the diamond, but closer to one end than the other, is the circular domed head of a rivet. It is not clear if this held the two components together or not.

L. 285mm W. (of shaft, max) 22mm
Th. (of shaft, max) 16mm L. (of diamond) 93mm
W. (of diamond, max) 22mm Th. (of diamond, max) 14mm
Dia. (of rivet head) 11mm
OGL A 332 Fe 17 Period: 10B

This is a composite object and is therefore different from the usual type of T-clamp, but probably functioned in the same way.

Other iron objects

D13 Hook Fig 106

Damaged at the larger end.

A tapering square-sectioned rod which has been bent into a hook at one end.

L. 62mm W. (max) 7mm Th. (max) 7mm

LEL A 85 Fe 8 Period: 19B

D14 Unidentified object Fig 106
A rectangular-sectioned tapering spike with an oval-shaped 'ear' on one side of the blunt end. The ear is curved away from the shaft and pierced with a circular hole. The shaft is bent at 115mm from the point.
L. 217mm W. (of shaft) 19mm (max)
Th. (of shaft, max) 10mm Dia. (of hole) 5mm
L. (of ear) 47mm W. (of ear) 28mm
OGL B + Fe 2 Period: Unstratified

D15 Unidentified object Not illustrated
Broken at one end.
A circular-sectioned rod which has been bent into a hook at the surviving end. The whole has been bent slightly.
L. 245mm Dia. 6mm
OGL C + Fe 3 Period: Unstratified

D16 Unidentified object Fig 106
The object consists of two parallel circular-sectioned rods which swell towards their middle. They are each curved, forming a double arch. At each end, the main rods are joined by a circular-sectioned rod running at right angles to the first set. These are also arched, in the same plane as the main pieces. The whole is made from a single piece of metal.
L. 141mm W. 73mm Dia. (of main part, max) 13mm
Dia. (of main part, min) 9mm Dia. (of cross part, min) 8mm
LEL A 600 Fe 22 Period: 2C

D17 Unidentified object Fig 106
The main part is a rectangular-sectioned rod. At one end it appears to have been wedge-shaped. The rod bends through a right angle at 100mm from the end. Just beyond this it narrows before widening again. There is a circular hole, 20mm from the end, which has a rivet in it holding a small sub-rectangular bar at right angles to the main rod.
L. 113mm W. 71mm W. (of main rod, max) 11mm
Th. (of main rod, max) 9mm L. (of attached bar) 38mm
W. (of attached bar) 13mm Dia. (of hole) 6mm
LEL A 277 Fe 17 Period: 13

D18 Unidentified object Not illustrated
Probably broken at one end.
An originally rectangular-sectioned rod which has been flattened and expanded at one end. The expansion is on one side of the rod only, and is trapezoidal.
L. 98mm W. (of rod) 7mm Th. (of rod) 4mm
W. (of expanded end) 13mm
LEL A 84 Fe 10 Period: 18

D19 Unidentified object Not illustrated
Broken at each end.
There is one straight, possibly original, edge running along one side of the object. At one end of this it is broken and the metal is curved/bent upwards. At the other end there is a curved corner and another possibly original edge which extends for about half of the width of the object. On the far side of this, and parallel to the long edge, is another possibly original edge which may be the side of a slot.
L. 80mm W. 35mm Th. 3mm
LEL A 110 Fe 15 Period: 18

The Lead Objects (E)

Introduction

Only 27 items made of lead were recovered. Of these, 12 (44%) are Class 1 objects, and are catalogued below. The other 56% is made up of amorphous lumps, strips and solidified drips which have no diagnostic features.

There are only four lead objects which can be assigned to functional groups, and so these have not been tabulated. There is an inscribed lead ownership tag (No E1) which is described by R S O Tomlin. This is the second to be recovered from recent excavations in Carlisle; the other is from Castle Street (Tomlin 1991a, 154-6, no 535, fig 139). The only tool is a crude spindle whorl. The fittings are fairly non-specific in that one is a fastener (No E3) while the other (No E4) is sheathing from some other unknown object. The miscellaneous material contains those items which have some features of note, such as impressed lines (No E7), or folds (No E8), which separate them from the Class 2 material.

The catalogue

Objects associated with written communication

R S O Tomlin writes:

E1 Lead tag Fig 107
Rectangular lead tag, cut from sheet lead, with a hole punched in one corner for attachment. Inscribed on both faces in capital letters with a sharp point.
L. 41mm W. 21mm Th. 1mm
OGL A 122 Pb2 Period: 12A

Obverse (primary text):

.RIL....I

(secondary text):

LVCIAVI

Reverse:

LUCIAVI

.....

The 'obverse' is so called because it is the natural face to inscribe first, with the attachment hole out of the way in the bottom left hand corner. When the tag was re-used, another text was inscribed on top. This would have been less confusing at the time, since the primary text would have oxidized by then, and the secondary text would be bright and clear. It is now difficult to distinguish them (the disctinction is exaggerated by the line-drawing, Fig 107), but the different sequences of letters can be recognized, and the secondary text was more sharply and deeply incised; it also turns out to be the same as the reverse, though not apparently by the same hand. The second line of the reverse is illegible; it may have included a numeral.

Both the primary and the secondary texts were evidently personal names in the genitive case, and the purpose of the tag was to identify someone's property. The secondary name, *Luciavus*, seems to be unattested. (*Lucianus* cannot be read.) It can easily be understood as one of the many cognates of *Lucius* popular in Britain and Gaul, which incorporated a Celtic name-element.

This object has previously been published in *Britannia* (Tomlin 1991b, 297, no 9, fig 4).

Tools

E2 Spindle-whorl Fig 107
An irregular cast ring with a central sub-circular hole. The surface of the ring is uneven, but it is not decorated. The ring has a sub-rectangular cross-section.
Although it is rather crude, it is probably a spindle-whorl rather

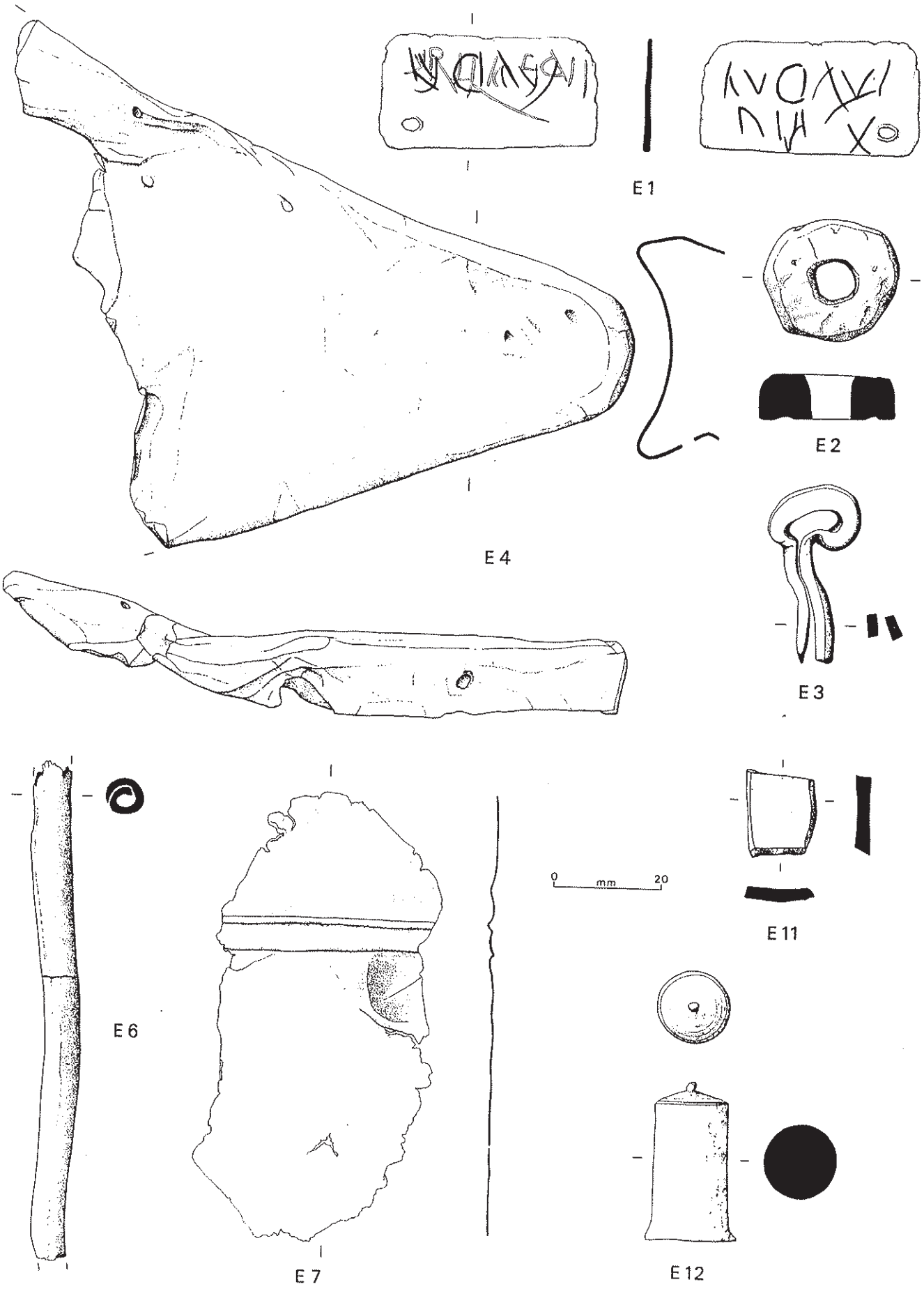

Fig 107 Lead label (E1), spindle-whorl (E2), split-pin fastener (E3), sheathing (E4) and other lead objects (E6-12) (scale 1:1)

than a fishing weight.
Dia. (of ring, ext) 22-24mm Th. 7-8mm
Dia. (of central hole) 7mm Wt. 30g
OGL A 199 Pb 5 Period: West 7

Fittings

E3 Split-pin fastener Fig 107
A rod which has been bent into the shape of a small jew's harp. The bow of the piece is thicker than the legs. It looks like the connector for a drop-handle, but these are usually made of a more durable metal such as copper alloy or iron.
L. 35mm W. (of loop) 18mm W. (of rod) 2-4mm
Th. (of rod) 3-5mm
LEL A + Pb 9 Period: Unstratified

E4 Sheathing Fig 107
One end is broken.
A piece of sheet which has been used to sheathe a pointed object. There are two sides surviving which have been folded up to hold the sheet on to an object; as the third side is broken, the original shape of the object is unknown. The junction between the two surviving sides is curved, and there are 'pleats' in the lead from it having been folded. In the raised sides there are two square nail holes, one in each side. On one side the hole is near the point, while on the other it is further away. There is no decoration on the outer surface of the sheathing.
L. (of bottom edge) 134mm L. (of upper edge) 97mm
Ht. 77mm L. (of nail hole) 3mm W. (of nail hole) 3mm
Th. (of sheet) <1mm
OGL A 122 Pb 3 Period: 12A

Other lead objects

E5 Disc Not illustrated
The edge is damaged in places.
A sub-circular disc with an irregular edge and uneven surfaces.
X-ray fluorescence confirms that the disc is made of almost pure lead.
Dia. 21-25mm Th. (max) 2mm
LEL A 246 Pb 6 Period: 13

E6 Tube Fig 107
Five assorted lengths of tube, three long and two short. The tube is made from sheet metal curled round. The join is clearly visible running along the outside of the tube. The cross-section shows that one end of the rolled sheet either projects into the central void, or lies along the wall of the tube. It is likely that all the pieces were originally part of the same object.
L. (of all the pieces joined together, min) 362mm
Dia. 7mm Th. (of wall of tube) 1mm
LEL A 206 Pb 5 Period: 15

E7 Sheet Fig 107
None of the edges appear to be original.
An irregular piece of thin sheet. Running across the top third are two straight lines. The lower one is impressed into the surface of the sheet, while the upper one is in relief. When the reverse of the sheet is examined it can be seen that the opposite is true. There is a third, broader, line above these two which is parallel to them at the right hand end but curves down towards the upper line at the left hand end.
L. (max) 85mm W. (max) 41mm Th. <1mm
LEL A 110 Pb 3 Period: 18

E8 Strip Not illustrated
A thin strip with rounded ends. It has been folded in both planes. At one end, the strip has a U-shape 15mm long. The rest has irregular folds until it reaches a point 40mm from the end, when there is a diagonal fold across the strip, which continues at right angles to the first part.
L. (as folded) 57mm W. (max) 11mm Th. <1mm
OGL A 800 Pb 8 Period: 6

E9 Strip Not illustrated
A narrow strip of lead with curved ends.
L. 218mm W. 8-10mm Th. 1mm
OGL A 2 Pb 1 Period: Modern

E10 Strip Not illustrated
A rectangular strip. The two long edges have been cut. The two short edges are probably original, but it is not obvious that they are cut. There is no decoration visible. The whole is bent.
L. 40mm W. 20mm Th. (not cut) 3mm
LEL A 38 Pb 2 Period: 21B

E11 Offcut Fig 107
A sub-rectangular piece of sheet with four cut edges. Three of the edges are straight and one is curved.
L. 15mm W. (max) 13mm Th. 3mm
OGL A 658 Pb 7 Period: 6

E12 Unidentified object Fig 107
There is slight damage around the base, and the central spike on the top may be broken.
A solid cylinder with a flanged base and a slightly domed top with a central spike. The basal flange is now irregular and it is not possible to say what its original shape was. There are some facets around the upper part of the cylinder which may be deliberate. There is a narrow groove around the edge of the top surface.
L. 30mm Dia. 14mm
LEL A 120 Pb 4 Period: 17

This object has been shaped deliberately, and it is probable that the top surface was intended to be seen. However, no parallels for it have been found, nor can its function be ascertained. It does not appear to be a handle as there is no evidence for anything having been attached or inserted into it. It does not appear to be a weight, as it is different in shape to other Roman weights known (Padley forthcoming d, nos G6-16).

CHAPTER 18 THE CLAY (F) OBJECTS

by M L Hird

Introduction

The clay objects from these sites comprise five Roman lamps and lamp fragments (Nos F1-5), and a few samian ware counters (Nos F6-8) and inkwells (Nos F9-11), described by B M Dickinson. A discussion of the ceramic building materials is included, which contains a description of a stamped tile (No F12) by I D Caruana, and a decorated antefix (No F13) by P M Cracknell. There is also a metal-working crucible (No F14), described by J Bayley. Finally, there is a late Saxon strap-end mould (No F15), discussed by L E Webster; this may represent evidence for a local production centre for Trewhiddle-style metalwork.

The catalogue

Household

F1 Lamp Not illustrated
Handle fragment in sandy orange fabric.
OGL A 717 CO 5 Period: 7A-8C

F2 Lamp Not illustrated
Fragment in mica-dusted orange fabric.
OGL A 122 CO 4 Period: 12A

F3 Type IIIb lamp (Walters 1914) Fig 108
Made in hard pinkish-white fabric with pink slip. Burning around spout.
OGL A 114 CO 1 Period: 12A-B

F4 Type IIIb lamp *(ibid)* Fig 108
Factory lamp signed **IEGIDI.** Made in Italy, in hard slightly micaceous orange fabric with remains of white slip in places. The discus is decorated with the head of a man wearing a ?Phrygian cap. Rather abraded. *c* AD 100.
OGL A + CO 2 Period: Unstratified

Factory lamps are the most common type found in Britain and the northern provinces. The fabric of this example suggests that it was imported from Italy. This is confirmed by the maker's name, *IEGIDI*, which is one of the most common (Bailey 1972, 24). Type IIIb lamps evolved about AD 100 (Wheeler 1930, 64). Imported factory lamps have not been identified from other sites in Carlisle.

F5 Lamp Not illustrated
Fragment of a lamp with a long spout, as Number F4, in fine-textured, oxidized fabric with grey external slip. Probably Italian, and dating to *c* AD 100.
LEL A 204 Period: 14

Recreation

B M Dickinson writes:

F6 Counter Not illustrated
Sherd of form 31R, Central Gaulish, roughly shaped as a small counter. Mid to late Antonine.

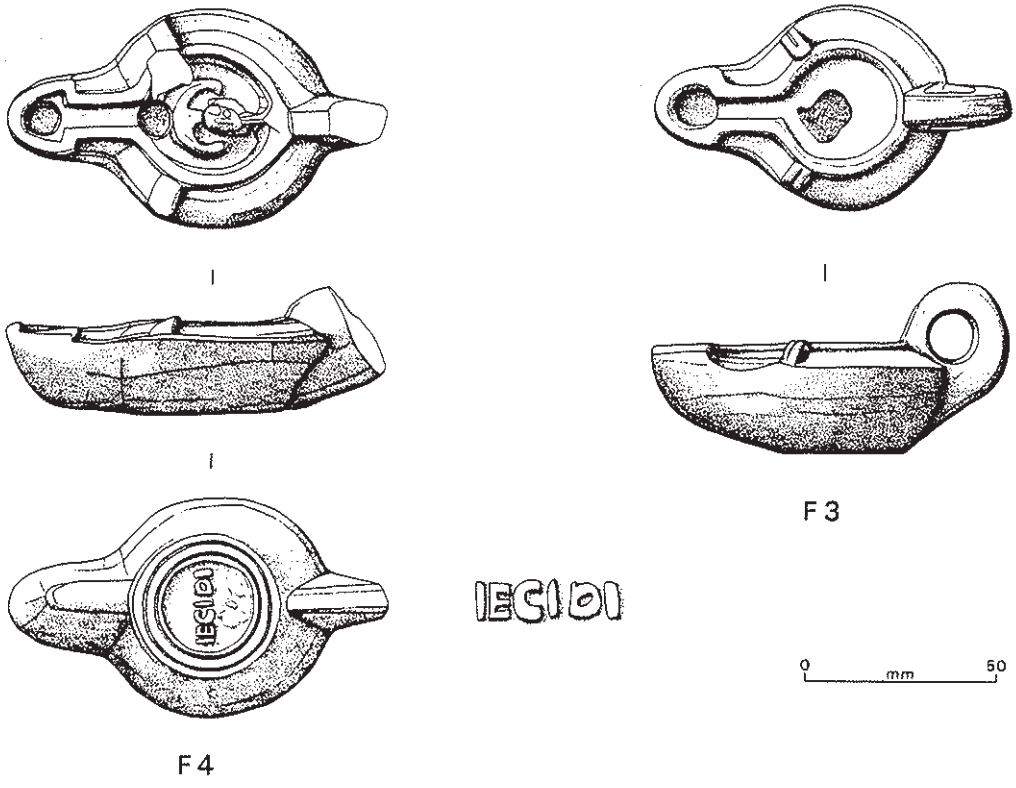

Fig 108 Clay lamps (scale 1:2)

Dim. 22mm x 22mm
OGL A 2 Period: Modern.

F7 Counter Not illustrated
Sherd of form 31R, East Gaulish (Rheinzabern). Shaped for use as a counter. Late second or early third century.
Dim. 34mm x 37mm
LEL A 84 Period: 18

F8 Counter Not illustrated
Sherd of form 31R, Central Gaulish, shaped for use as a counter. Mid to late Antonine.
Dim. 34mm x 35mm
LEL A 88 Period: 19B

In addition to these counters, there are four more described in the decorated samian ware report (Fasc 3, Ch 28, Nos 40 (measuring 49mm x 48mm), 64 (22mm x 20mm), 95 (33mm x 33mm) and 99 (50mm x 54mm).

Written communication

B M Dickinson writes:

F9 Inkwell Not illustrated
Wall sherd of Central Gaulish inkwell. Hadrianic or Antonine.
Dia. (ext, approx) 75mm
OGL A 666 Period: 6?

F10 Inkwell Not illustrated
Collar fragment of Central Gaulish inkwell. Antonine.
Dia. (int, approx) 25mm
OGL A 122 Period: 12A

F11 Inkwell Not illustrated
Collar fragment of Central Gaulish inkwell. Hadrianic or Antonine.
Dia. (int, approx) 25mm
OGL A 2 Period: Modern

Samian inkwells (form Ritterling 13) are produced throughout the period that this type of pottery was imported into Britain. Though there are minor variations in the shape, particularly of the inner rim, they are not closely datable. They have been found at two other sites in Carlisle. At Blackfriars Street, a single fragment of a South Gaulish inkwell came from Building 1 Period 3 (late first to mid second century AD; Taylor 1990, 267), and at Annetwell Street 12 fragments came from Period 3C/4 (which dates to *c* AD 103-5; Caruana forthcoming).

Table 51
The distribution of brick and tile by site

Site	*Fragment count*	*Weight (g)*	*% weight*	*Average weight (g)*
CAL A	46	3820	4.4	83.04
CAL B	3	315	0.4	105.00
CAL E	10	1905	2.2	190.50
OGL A	327	23540	27.2	71.98
OGL B	292	18360	21.2	62.87
OGL C	9	2025	2.4	225.00
OGL J	6	685	0.8	114.16
LEL A	307	35680	41.3	116.22
OBL B	1	70	0.1	70.00
Totals	1001	86400		

Buildings

The tile and brick was recorded by weight, fragment count and thickness. Where possible, the material was categorized as *tegula*, *imbrex*, flat tile, brick, pipe etc (see Tables 18.2 - 18.6). Tegula flange profiles were assigned to type using the system devised for the Annetwell Street report (Caruana and Hird forthcoming). No new forms were found, and the full type series is reproduced as Figure 109 (although not all of

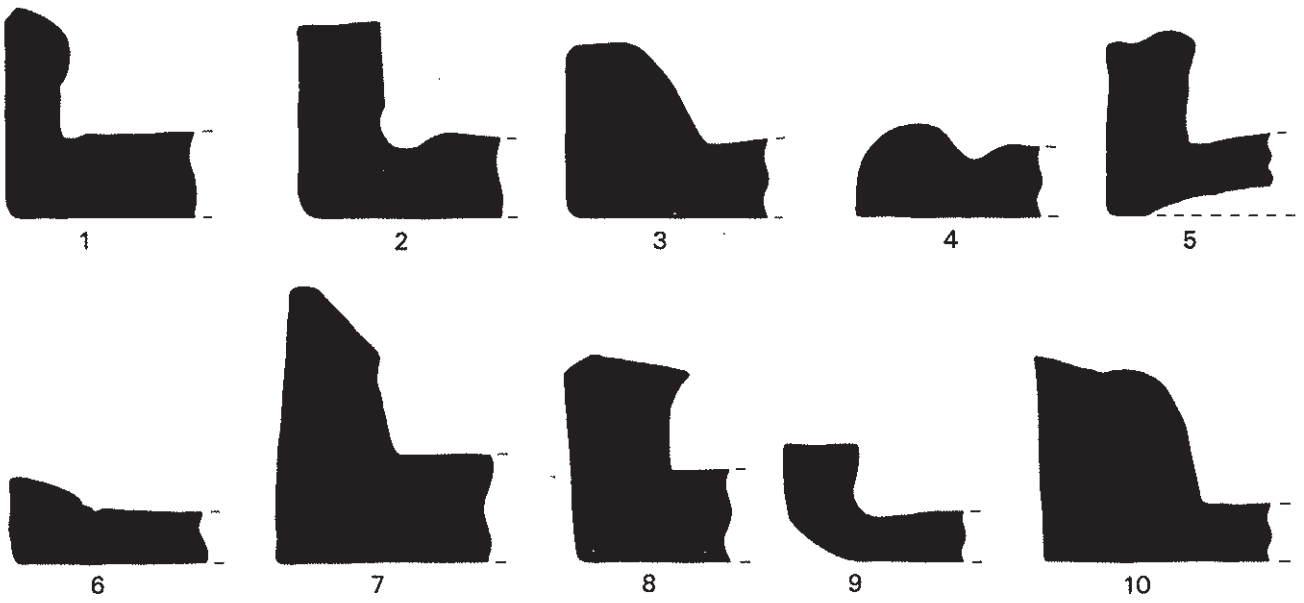

Fig 109 Tile flange forms. Not all forms are represented in The Lanes material (scale 1:2)

the forms are represented in The Lanes material).

The tile and brick from The Lanes is very fragmentary in nature, and consequently fabric differentiation was somewhat subjective. The fabrics from The Lanes are almost certainly from the same sources as the tile and brick from Annetwell Street, although they are less varied. Almost all The Lanes material is made up of Annetwell Street Fabrics 1 and 2, with an occasional fragment of Fabrics 3 and 5 (*ibid*).

Fabric 1 Sandy, rough fabric with hackly fracture. Reddish-orange in colour, and may have paler streaks in fracture.

Fabric 2 Hard, orange-red fabric, finer textured than Fabric 1, with quartz sand; may have larger inclusions of red pebbles and quartz.

Fabric 3 Very hard, rough, abrasive, almost crumbly, red fabric with a purplish tinge. Sandy fabric with quite large (1mm) quartz particles.

Fabric 5 Very hard, fine-textured, purplish-red fabric with large quartz and other inclusions.

Much of the material was made up of flakes, although some fragments had one surface remaining. Measurements of thickness were taken where two surfaces remained and are recorded in the archive. It was not possible on grounds of thickness alone to differentiate between different types of tile, although anything thicker than 45mm was assumed to be a brick. This explains the rather large proportion of uncertain material in Tables 52-6.

As much of the material is very fragmentary it is felt that it travelled some distance from the buildings where it was originally used, and so an average fragment size was calculated (Table 51), which could perhaps give a relative indication of the distance travelled. However, the brick and tile from the Annewell Street fort was also very fragmentary, even from Period 9 (average weight 134g), where the excavator believed it was in use as a roofing material (Caruana and Hird forthcoming). It must be remembered that brick and tile was not used exclusively for roofing but also for such features as hearths.

Table 52
The brick and tile from CAL A by fragment count.
Total weight 3820g

Period	*Tegula*	*Imbrex*	*Flat tile*	*Brick*	*Uncertain*	*Total*
3A		1			7	8
3B					1	1
4	1				1	2
5			1		22	23
Unstratified	2			2	8	12
Totals	3	1	1	2	39	46

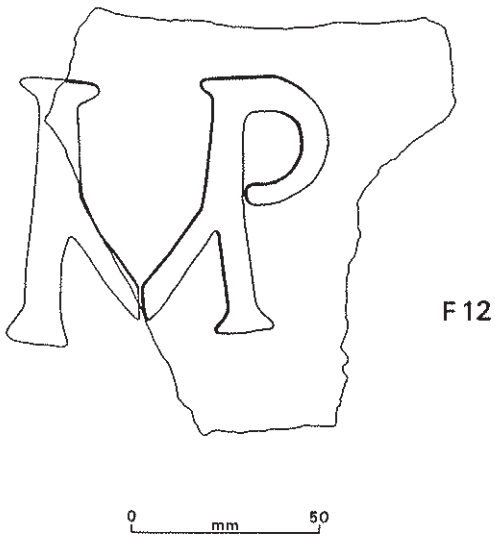

Fig 110 The tile stamp (scale 1:2)

Crown and Anchor Lane Trench A

This site produced 46 fragments of tile and brick (Table 52), 12 of which came from post-Roman contexts. There was a *tegula* flange profile of form 3 from Period 4.

Crown and Anchor Lane Trench B

The site produced three fragments of tile and brick, one of which could have been a fragment of brick, and another a fragment of flat tile with mortar adhering.

Crown and Anchor Lane Trench E

This site produced only 10 fragments but they included a *tegula* flange of form 2 and a tile stamp, both from context 4.

I D Caruana writes:

F12 Tile stamp Fig 110
Most of a ligatured stamp, IMP, from the same die as all other known

Table 53
The brick and tile from OGL A by fragment count.
Total weight 19075g

Period	*Antefix*	*Tegula*	*Imbrex*	*Flat tile*	*Brick*	*Uncertain*	*Total*
1 to 4	1					16	17
5						10	10
6		2	1	7	1	78	89
7		7				8	15
8 to 9		2	5	2	1	45	55
10		3	1	1	1	2	8
11						2	2
12			4			7	11
Totals	1	14	11	10	3	168	207

examples of this stamp. On a *tegula*. The stamp overlies a single-line signature.
CAL E 4 Period: Medieval

The stamp belongs with a number of stray finds of this stamp which seem to be unrelated to any building in the immediate vicinity. The only buildings which are currently known to have used tiles with this stamp were in the Annetwell Street fort, and dated to the late second and third centuries. A production date between about AD 170 and 200 seems likely on the basis of current knowledge.

This object has been published previously in *Britannia* (Hassall and Tomlin 1986, 440 no 28).

Old Grapes Lane Trench A

There were 327 fragments of tile and brick from the whole of this site (Tables 53 and 54). *Tegula* flange profiles of forms 1, 3, 5, 9 and 10 were present, but there were no examples complete enough to supply dimensions.

One tile fragment from Period 10C had an incomplete paw-print. The site also produced an antefix.

P M Cracknell writes:

F13 Antefix Fig 111
A round-topped mould-made clay antefix which is damaged along the lower edge. The rear is flat and plain while the front is decorated with an almost circular stylized female mask. The face is globose with prominent staring lentoid eyes, a long wedge-shaped nose and thick, slightly parted lips. There is a surrounding radiating halo of short spiky hair, which is straight around the lower part and in zig-zags above. The neck is long, thin and rectangular in section. Fabric 1.
Ht. 120mm W. 112mm Th. 28mm (max)
OGL A 1022 CO 3 Period: 1-5

There are no exact published parallels, that is other antefixes from the same mould, as in the case of the examples from Exeter and Caerleon (Bidwell 1979, 149; Bidwell and Boon 1976). However, similar faces appear on both the round-topped and triangular antefixes of the Second Augustan Legion at Caerleon and on the examples of the Twentieth Legion from the Holt kilns and Chester. A far more elaborate triangular-topped antefix from York exhibits the same elongated neck (Toynbee 1964, 430, pl 98c).

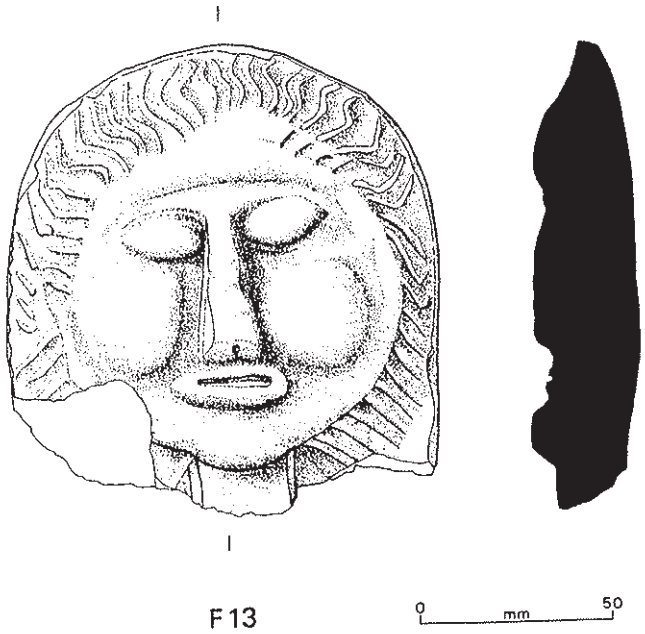

Fig 111 The antefix (scale 1:2)

Table 54
The brick and tile from OGL A West by fragment count.
Total weight 4465g

Period	*Tegula*	*Imbrex*	*Flat tile*	*Brick*	*Uncertain*	*Total*
West 1		1			6	7
and West 2						
West 3	56				1	57
Unstratified	16	3	4	1	32	56
Totals	72	4	4	1	39	120

The antefixes from Caerleon, Chester and York, which are clearly related to the Carlisle example, have been variously described as Celtic gods, Celtic goddesses or Medusae (both male and female).

For the Carlisle example, which is from a context dated to the first century, it is suggested that it is a representation of a female Medusa, and as such may have served as an apotropaic emblem in much the same way as the phallic symbols often found on the exterior of Roman buildings.

There is no impression of an *imbrex* on the rear face. As this is the first antefix from recent extensive excavations in Carlisle, this lends support to the view held by George Boon that antefixes have been found in insufficient numbers in Britain to demonstrate that they were used along the eaves of a building to close the open ends of the *imbrices*, but rather they decorated the gable-end (Boon 1957, 148; 1972, 125-6, note 75).

Although antefixes are far more common on military sites, this is not an exclusive distribution and they do occur on civilian sites.

Old Grapes Lane Trench B

There were 292 fragments from OGL B (Table 55), and the material was even more fragmentary than that from OGL A. *Tegula* flanges of forms 3, 9 and 10 were represented (Fig 109).

Old Grapes Lane Trench C

The site produced 9 fragments, including a *tegula* fragment with a flange of form 7 (Fig 109).

Old Grapes Lane Trench J

There was only one uncertain fragment of tile from a stratified context. There were two joining fragments of *imbrex*, and three other uncertain fragments, from unstratified contexts.

Table 55
The brick and tile from OGL B by fragment count.
Total weight 18360g

Period	*Tegula*	*Imbrex*	*Flat tile*	*Brick*	*Uncertain*	*Total*
2					1	1
3				1	12	13
4	3				64	67
5	5	28	3		128	164
6	2	3	3	4	29	41
7					3	3
8		1				1
Unstratified			1		1	2
Totals	10	32	7	5	238	292

Lewthwaite's Lane Trench A

There were 307 fragments of tile and brick from this site (Table 56). The material was somewhat less fragmentary than that from OGL A and B (Table 51), but there was still nothing complete enough to supply dimensions. *Tegula* flanges of forms 3, 5, 7, 9 and 10 were present (Fig 109). Most of the recognizable fragments were in post-Roman or unstratified contexts.

Old Bush Lane Trench B

There was one uncertain fragment of tile from a Period 6 context.

Tools

J Bayley writes:

F14 Crucible Fig 112
Rim fragment of quartz-rich refractory fabric.
Dia. (int, approx) 40mm W Th. 7mm
OGL A 1237 Period: 13

The small size of the sherd makes it difficult to suggest the form of the vessel with any confidence but its diameter and simple rim suggest a handmade thumb pot. This form is common throughout the Roman period but is also known in

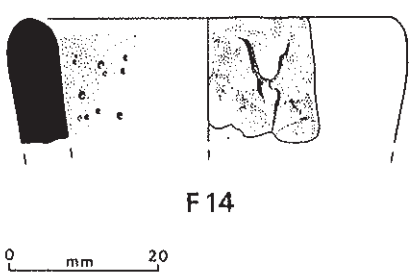

Fig 112 Crucible fragment (scale 1:1)

Table 56
The brick and tile from LEL A by fragment count.
Total weight 35680g

Period	*Tegula*	*Imbrex*	*Flat tile*	*Brick*	*Box tile*	*Pipe*	*Uncertain*	*Total*
4				1			1	2
5				2			2	4
6		1	2	1			3	7
7		1		2			20	23
8			3	2			11	16
9							8	8
10	2	2		1			35	40
11							1	1
12				1			9	10
13	2			1			6	9
14-17							4	4
18		1	1	9		3	20	34
Unstrat	13	5	12	2	2	3	112	149
Totals	17	10	18	22	2	6	232	307

Middle and Late Saxon times. The refractory fabric makes a Roman date more likely than a later one. X-ray fluorescence analysis of the vitreous layer on the inner surface of the crucible identified copper. No other non-ferrous metals were detected, which is unusual though not unique.

L E Webster writes:

F15 Late Saxon strap-end mould Fig 113
Two fragments survive, but only the decorated one is described.

The decorated fragment is sub-rectangular with a curved outer edge. The plain external face is not flat in section but rounded, confirming that the fragment is from the upper half of a sub-rectangular or oval mould, of which approximately one quarter survives. The internal face seems to bear at the damaged top traces of the ingate, leading into a plain sub-circular area surrounding the upper part of the matrix for the decorated face of the strap-end. A positive registration mark, made with the tip of a knife, is visible on the upper left hand side. Only one quarter of the matrix design survives, clearly representing half the attachment end of the piece. The symmetrical design is described below as if it were complete.

A plain frame surrounds the strap-end, curving round at the butt to terminate in two circular elements, one at either side. On the cast product, these would have been pierced for riveting to the strap, which was inserted into a split made in the butt end of the tag. These attachment points were separated by a downward-pointing palmette with forked tendrils contained in a semicircular frame springing from the main border alongside the attachment points. Below this, a small area of the main decorative panel survives in the mould, but its poor condition precludes precise identification and hence description. It is not even certain whether the elements within it represent interlace, plant or animal decoration, all of which are equally possible.

L. (ext) 42mm W. (ext) 27mm Th. (ext, max) 9mm
Th. (int, max) 7mm
CAL A 64 CO 1 Period: Post-Roman

No other mould for the production of a strap-end of this type survives. While the Carlisle mould could conceivably

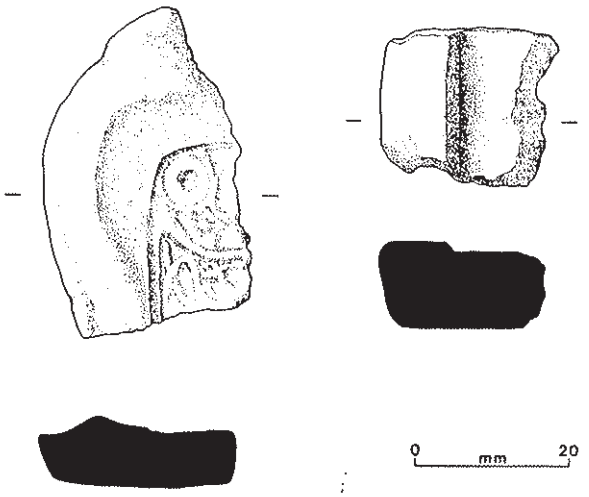

Fig 113 Clay strap-end mould (scale 1:1)

have been imported to the town, it seems more probable that it represents new evidence for local manufacture in the late Saxon period. The strap-end type is one of the best known and most widespread group of late Saxon bronze or silver strap-ends, the insular distribution of which extends from Cornwall to southern Scotland, and which are broadly dated by coin associations to the ninth century (Graham-Campbell 1982). They consist of a bow-sided sub-rectangular or tear-shaped plate, split and pierced at the butt to accommodate the strap; stereotyped decoration in the form of a palmette normally occupies this end, while the other end usually terminates in a stylized animal head seen from above. The central decorative field of the plate carries a wider range of designs, ranging from high-class Trewhiddle-style ornament to lightly incised geometric motifs.

What survives of the Carlisle mould seems to be entirely conventional in its overall decorative formula; yet, despite its fragmentary nature, there is enough decoration to be a little more precise about its origins and affinities. First of all, even allowing for normal shrinkage in the casting process, the strap-end produced by the Carlisle mould would have been unusually large. The vertical distance between the end of the butt and the edge of the palmette is 1.2mm. comparison of this with the similar fields on the largest surviving strap-ends of this type, the two pairs from the burial at Lilla Howe, Yorkshire, shows that this element is altogether larger on the Carlisle strap-end mould, suggesting that proportionately, the Carlisle strap-end could have been some 75.6mm long overall, compared with the 62mm to 63mm of the Lilla Howe sets (Watkin and Mann 1981; Leeds 1911, pl 2, 1, A-D). There are also hints that the Carlisle strap-end would have resembled the Lilla Howe type in more than size. The palmettes on the Lilla Howe strap-end consist of rather sinuous, grooved forking tendrils, in contrast to the more fleshy leaves of the conventional palmette (Wilson 1964, 115-22, pl 40). It is clear that the Carlisle mould bears a very similar version of this unusual variant, which occurs only on one other piece known to me, the strap-end from Coldingham, Berwickshire (*ibid*, fig 3). Indeed the Coldingham palmette has a central loop even closer to the Carlisle example.

On the evidence of the similarities between their distinctive acanthus decoration, the Carlisle, Lilla Howe and Coldingham strap-ends form a small but discrete group, possibly, as the mould itself implies, of local manufacture. No legible animal ornament survives on the Carlisle mould but the animal ornament of the Lilla Howe and Coldingham strap-ends further supports the hypothesis that these pieces form a distinct group.

The four Lilla Howe strap-ends fall into two clear pairs, one decorated with large single animals whose tongues sprout foliage and cross the body diagonally, the other with four creatures intricately interlaced. Both motifs are unusual variants of the Trewhiddle style, but it is only the decoration of the first pair which concerns us here (Leeds 1911, pl 1, A and B). Although the single animals conform to the basic formula of an orthodox Trewhiddle-style, extended quadruped with a tongue or leg crossing the body at a diagonal, the large-scale sprawling coarseness of the Lilla Howe pieces with their distinctive, frog-like heads is quite unlike the elegant miniatures of the Whitby or Talnotrie strap-ends (Wilson 1964, pl 39, no 114, and pl 4, d). The frog-like animal heads are another rare element in the Trewhiddle-style vocabulary, and again their distribution shows a strong northern bias. They occur on the Scales Moor, Ingleton (Yorks), pommel, on a gold ring from Selkirk, and in larger but still related form on the pommel from the River Seine (*ibid*, pl 29, nos 65 and 66; and unpublished). The non-English provenance of this last piece has no bearing on the motif's origin. Another coarse, sprawling animal following the same formula occurs on the Coldingham strap-end, but it is very worn and does not in other respects closely resemble the Lilla Howe and related animals. Its overall appearance, particularly in the way in which the animal's body is pierced by multiple strands, may reflect a chronological as much as a regional distinction.

While the total evidence remains so slight, deductions must remain cautious; but the possibilility that these pieces collectively hint at a common northern tradition cannot be discounted. Despite its fragmentary state, the Carlisle mould clearly shares significant stylistic traits with the other pieces, and by its very nature supports the hypothesis that a sub-group of Trewhiddle-style metalwork was produced in at least one northern production centre.

Since this discussion was published in *Medieval Archaeology* (Taylor and Webster 1984), a strap-end in a related style has been recovered by a metal-detector from the River Eden at Wetheral, some five kilometres from Carlisle (Richardson 1990, 41; the six strap-ends from Carlisle Cathedral which he mentions are not of this type, however). This is decorated in the Trewhiddle style and is a version of the Coldingham strap-end, probably from the same workshop, although it is much smaller, being only 51mm long. This find lends further weight to the suggestion of a northern production centre, possibly in Carlisle itself.

CHAPTER 19 THE STONE (G) AND AMBER (H) OBJECTS

by T G Padley and C Richardson

The lithic material
by C Richardson

Introduction

The lithic material from this part of The Lanes compares closely with the finds previously reported on from Blackfriars Street (Fell 1990) and the fort site at Annetwell Street (Fell forthcoming). While it would be premature to draw any firm conclusions until the remainder of the excavated finds are reported on, this initial sample does contain items of special interest. The material breaks down into 25 pieces of flint, one of stone, five of chert and one of pitchstone, and includes two knives, one end-scraper, three cores, six blades, one arrowhead, nine flakes, three core-trimming flakes, three chips and four unworked pieces (Table 57).

The catalogue

G1 Knife Fig 114
A utilized flake. The distal end has snapped across and there is blunted working at the proximal end. The flake is triangular in cross-section. A broad strip of dirty-white chalk cortex runs the whole length of one side of the dorsal ridge, providing a 'back' to the blade. The sharp edge shows distinct signs of utilization, and the object has probably been used as a knife. The notch at the distal end may have assisted hafting. The material closely resembles Yorkshire chalk flint.
Pale grey flint with white inclusions.
L. 44mm W. 18mm
OGL A 812 St 18 Period: 6

G2 Knife Fig 114
A large flake which has possibly been used as a backed knife. Slight bifacial edge damage has produced a long sharply serrated edge. The ventral surface has step-flaking at the distal end and the bulb of percussion is prominent. The dorsal surface has a pronounced single ridge off-centre.
This flint could also have served as a fabricator.
Light grey flint.
L. 45mm W. 22mm
OGL B 188 St 3 Period: 5A

G3 End scraper Fig 114
Blade fragment which has possibly been used as an end-scraper. The surface is covered with a creamy-white patination containing fine hairline cracks, which indicates subjection to heat. Ventral surface mainly smooth but heavy flaking has undercut one edge. Pronounced ridge on dorsal surface with blunted working at proximal end.
Toffee-brown flint.
L. 44mm W. 19mm
OGL A 32 St 4 Period: 13

G4 Double-platform core Not illustrated
Remains of a double-platform core with a large area of thick white cortex. Possible beach origin or glacial drift.
Light grey flint.
L. 29mm W. 17mm
OGL A 1117 St 34 Period: 3

G5 Single-platform core Not illustrated
Small single-platform core.
Blue-grey and white flint.
L. 12mm W. 11mm
OGL A 1117 St 35 Period: 3

G6 Core Not illustrated
A large battered lump with areas of chalk flint cortex. This piece is

Table 57
The prehistoric lithic material arranged by type and site

Site	*Knives*	*End scrapers*	*Cores*	*Blades*	*Arrowheads*	*Flakes*	*Core preparation flakes*	*Chips*	*Unorked pieces*	*Totals*
CAL B	-	-	-	1	-	-	-	-	-	1
OGL A	1	1	2	2	1	8	1	3	1	20
OGL A West	-	-	1	-	-	-	-	-	-	1
OGL B	1	-	-	2	-	-	2	-	2	7
LELA	-	-	-	1	-	1	-	-	1	3
Totals	2	1	3	6	1	9	3	3	4	32

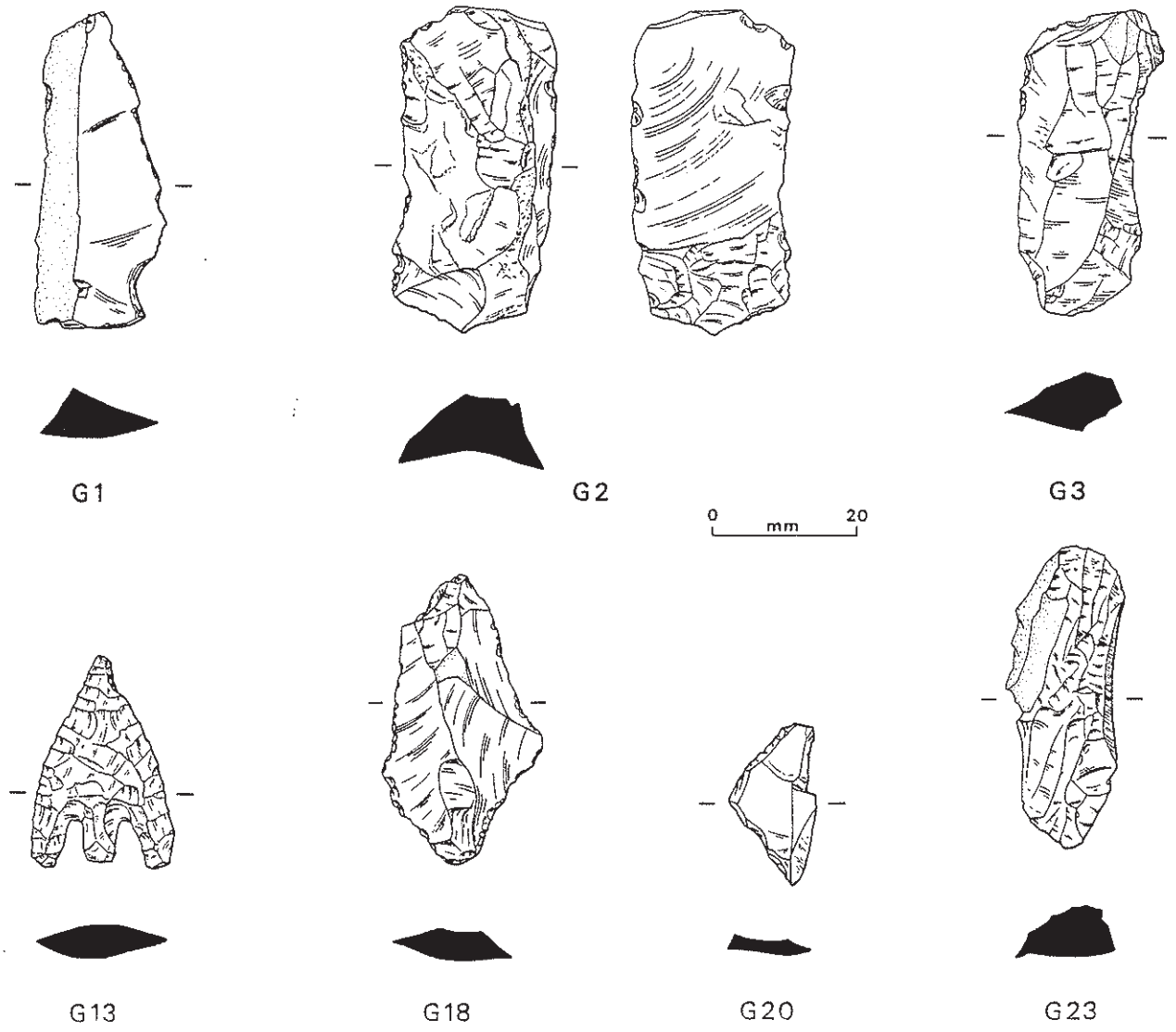

Fig 114 Prehistoric lithic material (scale 1:1)

probably from Yorkshire or Ireland, and is very similar to a flint from the Annetwell Street fort site (Felt forthcoming, no St 477). Several broad surface scars suggest possible use as a core. The angular edges are considerably damaged and blunted.
Black flint with pale grey inclusions.
L. 67mm W. 43mm Wt. 88g
OGL A 199 St 7 Period: West 7

G7 Blade fragment Not illustrated
A fragment from the bulbar end of a blade which has snapped cleanly across. Echinoid hole present. Cortex along one edge.
Translucent grey flint with black inclusions.
L. 21mm W. 16mm
CAL B 6 St 1 Period: 1B

G8 Blade Not illustrated
Distal end of a blade. Dorsal surface is double-ridged with some cortex present. There is slight retouch or edge damage at one end.
Pale grey-brown flint.
L. 29mm W. 9mm
OGL A 1014 St 23 Period: 6

G9 Blade fragment Not illustrated
Small fragment from the distal end of a blade which has broken across at an oblique angle. Triangular in cross-section with a central ridge on the dorsal surface. Slight evidence of utilization along one edge.
Dark brown flint.
L. 12mm W. 8mm
OGL A 672 St 13 Period: 7A

G10 Blade Not illustrated
A narrow sharp-edged blade. Triangular in section with a single ridge on the dorsal surface.
Mid-grey flint.
L. 47mm W. 10mm
OGL B 335 St 5 Period: 1B

G11 Blade Not illustrated
Markedly curved blade with roughening along one curved edge. The ventral surface displays conchoidal rings, while the dorsal surface has a single ridge.
Pale grey-brown flint.
L. 24mm W. 11mm
OGL B 335 St 7 Period: 1B

G12 Blade fragment Not illustrated
Fragment from the distal end of a blade. There is retouch around the edges on both faces, with the dorsal surface exhibiting a central ridge and heavy scarring.

Dark brown translucent flint with pale grey-blue inclusions
L. 15mm W. 14mm
LEL A 642 St 21 Period: 1

G13 Arrowhead Fig 114
A fine specimen of a barbed-and-tanged arrowhead with the extreme tip missing. While the overall form is symmetrical, one edge 'nips in' as it approaches the point, although still exhibiting retouch along this hollow edge. The arrowhead is bifacially flaked, and the edges are irregularly serrated and curve gently away from the barbs to the point. The workmanship is of a reasonable standard, and one interesting feature is the absence of secondary retouch along one edge on one face. The barbs are slightly angled and project beyond the central tang.
Mid-grey flint.
L. (max) 30mm W. (max) 20mm Th. (max) 4mm
L. (of tang) 5mm W. (of tang) 4mm
L. (of each barb) 7mm
OGL A + St 19 Period: Unstratified

The arrowhead is probably a Sutton B-type variant (Green 1980, vol 1, 122, fig 45), although the projection of the barbs below the tang is more akin to the Green Low type (*ibid*, 123, fig 46, j), which has a distribution outside the Cumbrian area. Arrowheads found locally which are similar to The Lanes specimen include Gaythorne 10 (Cherry and Cherry 1987, 24, fig 11, 17), and two from the Tullie House Museum collection: Underbarrow (Acc No 58-1956), and Skirwith Moor (Acc No 27-1926.372). The closest parallel is an example from Brampton (Tullie House Museum Acc No RF 425).

G14 Flake Not illustrated
A small rectangular fragment.
Black chert.
L. 16mm W. 10mm
OGL A 1223 St 28 Period: 1C

G15 Flake Not illustrated
Small flake with one edge exhibiting extremely fine shallow-angled retouch.
Translucent pale grey flint.
L. 8mm W. 9mm
OGL A 1149 St 37 Period: 4

G16 Flake Not illustrated
A thick flake struck from a blade core and exhibiting typical blade scars on the ventral surface. The cross-sectional form is elliptical and there is evidence of utilization along one edge.
Pale grey-brown flint.
L. 41mm W. 17mm
OGL A 1006 St 24 Period: 5

G17 Flake Not illustrated
Flake with creamy-white cortex on one edge. This type of flint has been found at Rayseat, Crosby Garrett, Cumbria (Cherry and Cherry 1987, 51), and is typical Yorkshire material. Ventral surface smooth and concave with bulb and conchoidal rings present. Dorsal surface carries broad flake scars and some flat retouch at the proximal end. Distal end has broken across and there is some slight blunting of the edge.
Pale grey translucent flint.
L. 34mm W. 22mm
OGL A 803 St 26 Period: 6

G18 Flake Fig 114
A flake containing black inclusions, which can be compared to material from Rayseat 1 and 2 (*ibid*, 51). There is evidence of heavy utilization along both edges towards the distal end. Ventral surface is smooth and concave with bulb and pressure rings present. Dorsal surface displays broad flake scars with one area of cortex. Both surfaces are highly polished.
Translucent pale grey flint with black inclusions.
L. 40mm W. 23mm
OGL A 627 St 10 Period: 8B

G19 Unworked flake Not illustrated
Unworked flake exhibiting very fine pebble cortex. There is some slight edge damage, possibly due to use. Truncated and triangular in cross-section. The dorsal ridge is prominent and well off-centre.
Flint; bulbar end is black in colour on ventral surface, shading to toffee- brown and pale green elsewhere.
L. 26mm W. 17mm
OGL A 64 St 5 Period: 11

G20 Flake Fig 114
Triangular-shaped flake. Steeply blunted along both shorter edges which are almost equal in length. Rather like a miniature *tranchet* in form, this flint is Mesolithic in character and a later type.
Grey, brown and black banded flint.
L. 22mm W. 12mm
OGL A 1105.2 St 31 Period: Unphased

G21 Flake Not illustrated
Flake with minute traces of cortex adhering. Slight retouch along one edge near bulbar end.
Honey-coloured flint with white band.
L. 34mm W. 14mm
OGL A + St 29 Period: Unstratified

G22 Unworked flake Not illustrated
Large unworked flake. The flake is triangular in section. The sharp edge has some cortex adhering. There is a well pronounced bulb and conchoidal rings present on the ventral surface, with some deep scars on the dorsal surface.
Honey-grey flint with white inclusions
L. 49mm W. 34mm
LEL A 100 St 8 Period: 19B

G23 Core-trimming flake Fig 114
A core-trimming flake with a pronounced curvature. The dorsal surface is smooth and exhibits pressure rings, while the ventral surface is covered with narrow flake scars, some obliquely angled. A lump of cortex adheres to one edge at the proximal end.
Pale brown flint.
L. 41mm W. 14mm
OGL A 718 St 17 Period: 6

G24 Core preparation flake Not illustrated
Core preparation flake struck off in order to remove the cortex from the face of the core. Much of the surface is covered by cortex.
Blue-grey flint.
L. 25mm W. 19mm
OGL B 335 St 6 Period: 1B

G25 Core preparation flake Not illustrated
A large core preparation flake with thick creamy-white cortex along one edge. Flake scars are evident on the dorsal surface, with slight scarring on the ventral surface.
Grey-black flint.
L. 52mm W. 28mm Wt. 20g
OGL B 290 St 9 Period: 3

G26 Chip Not illustrated
Chip, triangular in section, with cortex adhering.
Mid-grey flint.
L. 21mm W. 11mm
OGL A 1006 St 30 Period: 5

G27 Chip Not illustrated
Irregular-shaped chip.
Dirty-brown cherty material.
L. 16mm W. 9mm
OGL A 672 St 12 Period: 7A

G28 Chip Not illustrated
Rolled and abraded chip.
Pitchstone.
L. 25mm W. 12mm
OGL A 1173 St 27 Period: 1C

G29 Lump Not illustrated
Unworked triangular-shaped lump. Most of the edges are damaged by abrasion.
Yellow-black chert (?).
L. 45mm W. 25mm
OGL A 1006 St 25 Period: 5

G30 Fragment Not illustrated

Small unworked fragment.
Pale brown and red chert.
L. 10mm W. 7mm
OGL B 290 St 8 Period: 3

G31 Piece Not illustrated
Irregular-shaped piece.
Rolled dark grey chert.
L. 17mm W. 17mm
OGL B 8 St 1 Period: 9

G32 Unworked piece Not illustrated
Square-sectioned piece of stone with one smooth face. Core colour almost black, shading to light grey on the surface. Probably a natural formation and not artificial.
L. 11mm W. 4mm
LEL A 530 St 23 Period: 8C

Discussion

The bulk of the finds are from Roman and later mixed deposits, with seven pieces (Nos G7, G10-12, G14, G24 and G28) being recovered from the old ground surface. The flint colouring has local parallels from the city centre, at Blackfriars Street and Annetwell Street, and from outlying areas such as Waterloo Hill, Aglionby (Tullie House Museum Acc No 53-1938). Further afield, there are regional ties with west coast sites and eastern Cumbria, while trans-Pennine links with Yorkshire are well represented. The utilization of beach pebbles or drift material is a common enough aspect of local flint assemblages, but the presence of Arran (?) pitchstone, already noted at Blackfriars Street (Fell 1990, 91, nos 22-3; 96), and Annetwell Street (Fell forthcoming, nos A8 and A21), indicates contact with communities to the north.

The material from this part of The Lanes, which is mostly from the Old Grapes Lane area (Table 19.1), would not be out of place in a Neolithic or Early Bronze Age context, particularly a fine barbed-and-tanged arrowhead (No G13), which is a Sutton B-type variant. One piece in particular, however, may have Late Mesolithic affinities (No G20). This find, in conjunction with the discovery of a microlith on the Tullie House site (Caruana forthcoming b), while not constituting a 'Mesolithic summer' in Carlisle, nevertheless suggests early activity of some form in the heart of the city.

Attention has already been drawn to the considerable numbers of Neolithic and Bronze Age finds from the area surrounding Carlisle (Clack and Gosling 1976, 171; Fell 1990, 96), but the statement by Clack and Gosling that 'no pre-Roman material has yet been discovered within the walled area' of the city is no longer accurate (1976, 171). Since 1977, the increasing amount of lithic material from the historic centre, in addition to pre-Roman settlement evidence (McCarthy 1990, 13-4, figs 5 and 6; Goodburn 1978, 422; Charlesworth 1979a, 146-7, pl 3), is gradually altering the perspective of an area long held to be devoid of prehistoric activity.

The other stone material
by T G Padley

Introduction

Forty-five other stone items were recovered. Of these, 30 (66%) were Class 1. The minor sites (CAL A, B, E and OBL B) each produced only one object, the majority coming from the Old Grapes Lane area and Lewthwaite's Lane (see Chapter 14).

The largest part of the collection is the household utensils and furniture section (Table58). Apart from a small platter made of micaceous schist (No G33), the group is made up of grinding stones. One has a diameter of 600mm (No G43) and is significantly larger than the others, which range from 370mm to 460mm; it is probably a millstone, while the others are querns.

The only tools present are whetstones, apart from one larger piece which has been used as a sharpening stone (No G54). There is a small collection of architectural pieces which include pillar bases, a pilaster fragment, a gutter and a hypocaust pillar (Table 58). Finally, there is a single sling stone which has been placed in the militaria section, and an open mould for casting metal which appears in the section on industry.

A single piece of sculpture was found during the excava-

Table 58
The Class 1 stonework arranged by site and function

Site	*Household*	*Buildings*	*Tools*	*Militaria*	*Industry*	*Total*
CAL A	-	-	1	-	-	1
CAL E	-	1	-	-	-	1
OGL A	2	3	1	-	-	6
OGL A West	1	-	1	-	-	2
OGL B	1	-	1	-	-	2
Clack 2	-	1	-	-	-	1
LEL A	9	3	3	-	1	16
OBL B	-	-	-	1	-	1
Totals	13	8	7	1	1	30

tion. This is assumed to be of Roman date and will be included with the other Roman sculpture in a future volume (Padley forthcoming b). The standing building survey recovered one piece of post-Roman sculpture, which is dealt with here (No G63). It is not included in Table 19.2, which covers only the excavated material.

The catalogue

Household utensils or furniture

G33 Platter Fig 115
Largely complete, but there is some minor damage to the rim in one place, and the rim is missing in another.
A sub-circular disc with a top surface that has a central flat area surrounded by a groove and a rounded rim. The grain of the stone runs across the platter in parallel lines.
Micaceous schist.
L. 90mm W. 91mm Th. (at rim) 8mm
LEL A 280 St 17 Period: 12C?

G34 Quern: upper stone Fig 116
Largely complete, but there is a large spall missing from one side of the grinding surface, and another one nearby.
The upper surface is convex and is dressed with peck marks. At the centre is a circular hopper, feed-pipe and spindle socket. This has a wide mouth with a conical hopper leading to the rest. The original handle socket has broken, and this was replaced on the other side. There is also a pecked depression above the original handle socket, which was probably another attempt at a second handle socket. Running out from the mouth of the hopper is a single groove. The grinding surface is pecked and very slightly convex.
Sandstone.
Dia. 370mm Dia. (bottom of feed pipe) 28mm
Dia. (mouth of hopper) 145mm Th. 98mm
OGL A 2 St 1 Period: Modern

G35 Quern: lower stone Fig 116
About 25% of the stone survives, and the centre is missing.
The convex upper surface is worn, but it is clear that it was tooled with harps. There is a flat area around the outer edge, and then the surface rises towards the missing centre. The underside is roughly tooled and again rises towards the centre. The outer edge is also roughly tooled.
Lava.
Dia. 440mm Th. (at edge) 32mm
OGL A 165 St 3 Period: 12B

G36 Quern: lower stone Fig 116
About 30% of the stone survives.
The convex upper surface is worn, but enough survives to show that it was tooled with harps. There are concentric striations running around the skirt, caused by wear. The underside is concave and has been roughly tooled. There is a flat area around the edge. The central eye is 34mm in diameter. The outer edge is vertical and tooled with vertical lines.
Lava.
Dia. 430mm Th. (at edge) 43mm Th. (at centre) 36mm
OGL A 528 St 16 Period: West 3

G37 Quern: lower stone Not illustrated
About 30% survives.
The convex upper surface was tooled with harps, but is now worn, especially towards the centre. At the centre the top surface rises sharply to form a boss which is pierced by the central spindle hole. The maximum amount of wear is on the outer edge of the boss. The roughly dressed underside is concave. The vertical outer edge is neatly dressed with vertical parallel lines.
Lava.
Dia. 440mm Th. (at outer edge) 57mm
OGL B 142 St 4 Period: 6B

G38 Quern: upper stone Fig 116
About 25% survives.
The upper surface has been tooled with straight lines which run at right angles to each other in the two areas visible. The curb is 63mm wide and is defined on its inner edge by a single line. There is no difference in height or slope between the hopper and the curb, as the whole of the upper surface slopes down towards the centre. Not enough survives to say if the central opening was alate or not. The outer edge slopes out slightly towards the base and was originally tooled with parallel lines. There is a rectangular area on the circumference, 45mm wide at the top and narrowing to 40mm at the bottom, which is set into the edge and may indicate where the handle was attached. The concave grinding surface has no tooling visible. Wear has left a fragment which is thicker on one side than the other.
Lava.
Dia. 440mm Th. (at edge, max) 61mm
Th. (at edge, min) 35mm
LEL A 100 St 11 Period: 19B

G39 Quern: upper stone Fig 116
The whole of the circumference survives, but the central hole is damaged, and part of it is missing.
The upper surface is tooled with straight lines, which divide it into four quarters by alternating the tooling by 90°. There is a raised curb 60mm wide, which is not differentiated by the tooling. The hopper slopes down to the central opening, which is damaged, especially around the wings. The outer edge has vertical parallel tooling visible. The concave grinding surface has seven harps tooled on to it. The grooves have worn away at the centre, and at the edge the ridges between them have become polished through wear. One side of the stone has worn away more than the other, leaving it thinner.
Lava.
Dia. 430mm Th. 38-63mm
LEL A 28 St 3 Period: 21A

G40 Quern: upper stone Fig 117
About 17% of the stone survives, and this does not include its full radius. A large spall is missing from the edge of the upper surface.
The upper surface is flat and smooth. The concave grinding surface is tooled with harps. The tops of the ridges have been worn smooth and almost polished through wear. The outer edge curves in towards the upper surface of the stone.
Sandstone.
Dia. 400mm Th. (at edge) 47mm Th. (at centre) 40mm
LEL A + St 16 Period: Unstratified

G41 Quern: upper stone Fig 117
About 17% of the stone survives. There is a large spall missing from the upper surface.
The upper surface is flat, while the concave grinding surface is tooled with harps. The grooves are clearly visible, while the ridges are flattened on the top. The surface curves down from the centre, but more abruptly at the edge. The edge is vertical and peck-dressed.
Sandstone.
Dia. 460mm Th. (at edge) 88mm
LEL A + St 10 Period: Unstratified

G42 Quern: lower stone Fig 117
About 48% of the stone survives.
Part of the upper grinding surface was tooled with harps, which are clearly visible at the edge, although towards the centre the tooling appears to be pecking. There is evidence of wear between the two zones of dressing, and it may be that the pecking is evidence of re-dressing of the stone. The grinding surface slopes up gently towards the centre until it is 35mm from it, when it rises abruptly to a rounded cone surrounding the spindle hole.
Another part of the convex grinding surface is dressed around the skirt with a zone of radial striations ranging between 30mm and 63mm long. The area inside this zone is rough, but has no obvious dressing. The wear is concentrated around the skirt, with the ridges between the striations being worn smooth.
The outer edge is dressed with parallel vertical lines. The underside is concave and has been peck-dressed except for an outer flat zone 35-40mm wide.
Lava.
Dia. 420mm Th. (at edge) 43mm
LEL A 84 St 9 Period: 18
LEL A 100 St 24 Period: 19B

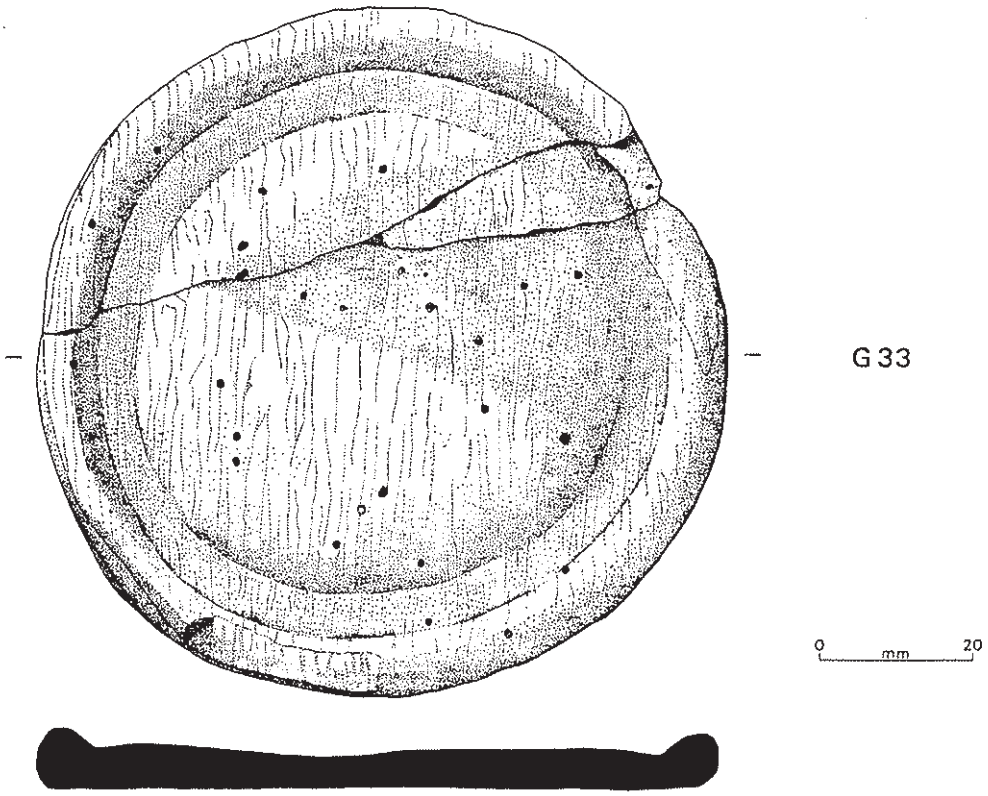

Fig 115 Stone platter (scale 1:1)

G43 Millstone: lower stone Fig 117
About 8% of the stone survives.

The convex grinding surface is tooled with harps. The ends of the oblique ridges and furrows curve before meeting the radial ones. They are visible all the way to the edge. The underside is flat. The original outer edge is flat and slopes in slightly from the bottom. No evidence for the spindle socket/hole survives.
Sandstone.
Dia. 600mm Th. (at edge) 51mm
LEL A 81 St 7 Period: 19B

G44 Quern: lower stone Not illustrated
About 6% of the stone survives.

The convex grinding surface is tooled with harps, and the remains of two can still be seen. There is an area at the centre, about 30mm wide, which does not have them. The outer vertical edge has parallel vertical tool marks. The underside has been hollowed out except for an area about 25mm wide around the skirt.
Lava.
Dia. 460mm Th. (at edge) 39mm
LEL A 88 St 12 Period: 19B

G45 Quern: lower stone Fig 117
About 35% of the stone survives.

The convex grinding surface is tooled with harps, of which three are visible. At the centre, the spindle hole is surrounded by a collar 16mm wide. The wear is concentrated around the skirt. The outer edge is tooled with parallel vertical lines. The underside is hollowed out except for an outer zone 30mm wide. The hollow area is dressed with peck marks. The central perforation is large, with a diameter of 85mm.
Lava.
Dia. 420mm Th. (at edge) 40-43mm
LEL A 100 St 25 Period: 19B

A detailed discussion of the local types of Roman quern will appear in the report on the Annetwell Street fort (Caruana and Allnutt forthcoming a). It is sufficient to say here that of the uppers, one is of beehive type (No G2), and that all the lava uppers fall into the 'uppers with raised curbs' type. The lava lower stones are typical of the group from Annetwell Street.

Buildings

G46 Building stone: pillar base Fig 118
The surface is damaged in a number of places.

A roughly rectangular block of stone with a sloping plinth rising from a flattish bottom surface. In the centre of the flat top is a socket, 56mm square. Three of the sides are decorated with a pentagonal-sectioned moulding at the top of the plinth. The plinth is most pronounced on the side with no moulding.
Sandstone.
L. 615mm W. 580mm Th. 310mm
OGL A 1244 St 36 Period: Unphased

G47 Building stone: pillar base? Fig 118
There is some slight surface damage, but the stone is largely complete.

A roughly square block with a slightly domed upper surface. There is a sub-square depression, 60mm x 70mm x 45mm deep, set slightly off-centre. Level with one edge of the depression but separate from it is a groove which slopes towards the edge of the block. The groove is 30mm wide and is at right angles to the edge of the block. The edge next to the groove is vertical and roughly tooled, while the other three have narrow shallow roll mouldings at the top with two wider ones separated by a distinct groove below them. The base is chamfered for 40mm along the three moulded edges but not along the tooled one.
Sandstone.
L. 410mm W. 430mm Th. 195mm
OGL A 1240 St 38 Period: Unphased

G48 Building stone: pillar base Fig 118
The stone is largely complete, but there is some surface damage.

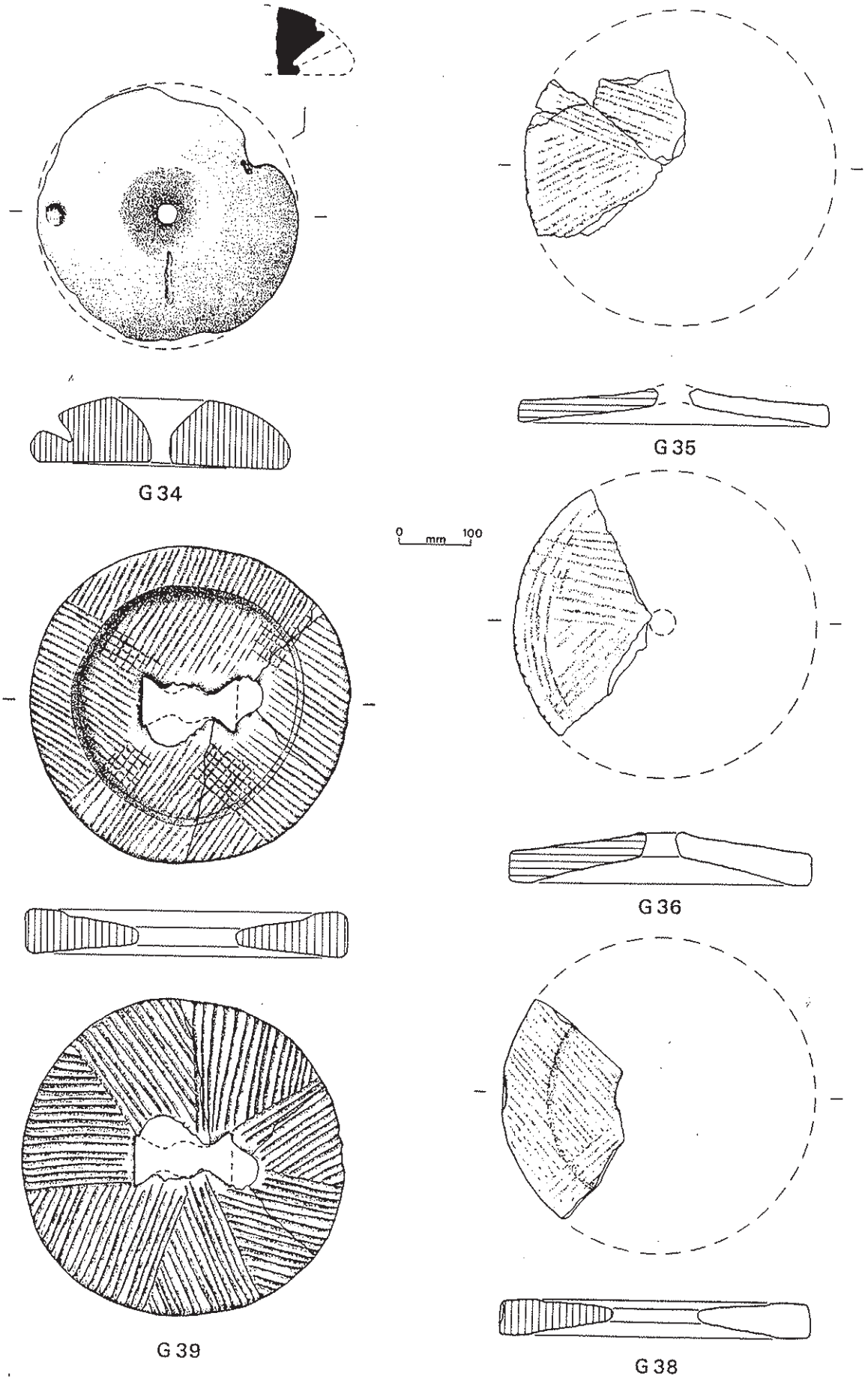

Fig 116 Stone querns (scale 1:8)

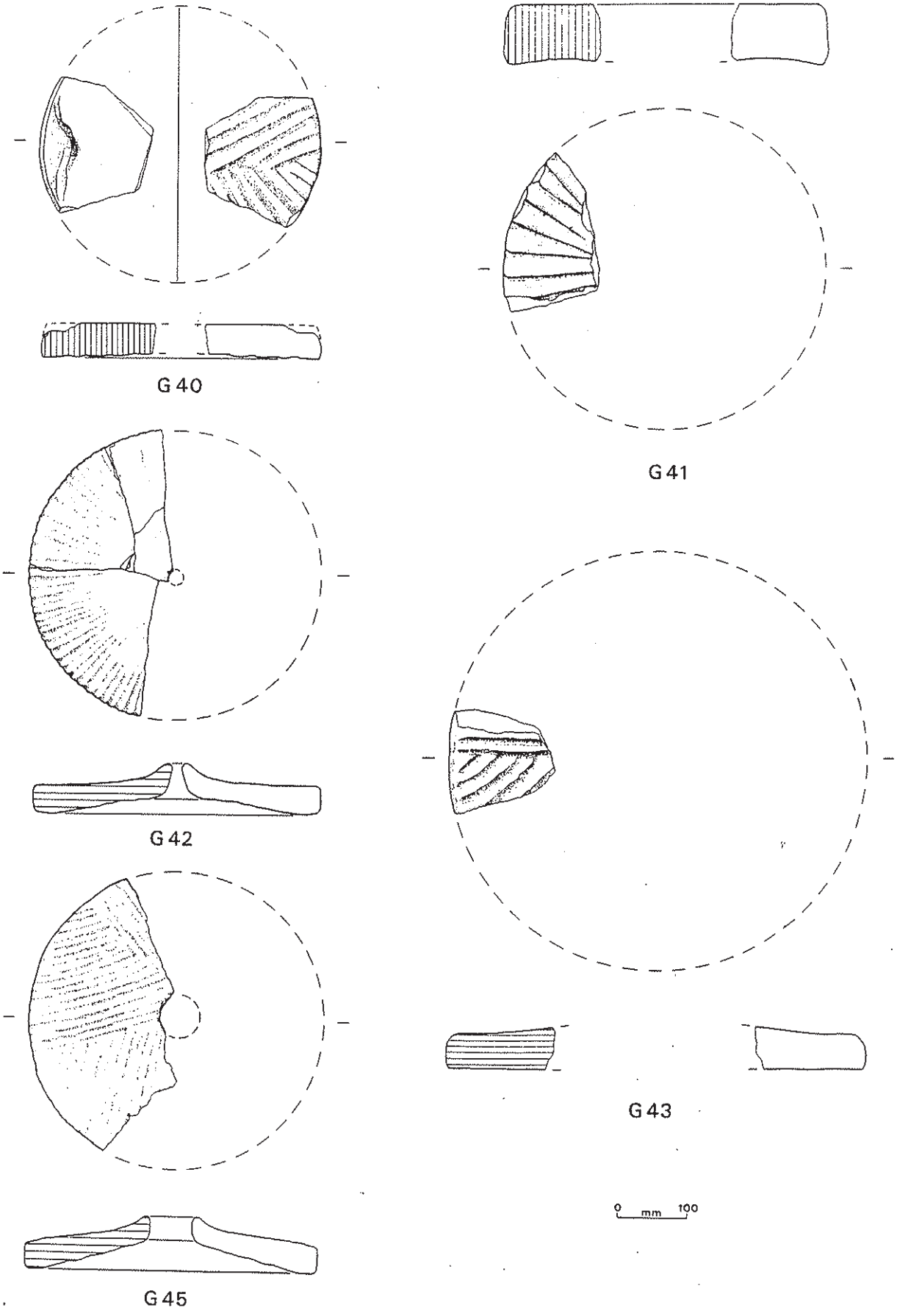

Fig 117 Stone querns (G40-2, G45) and millstone (G43) (scale 1:8)

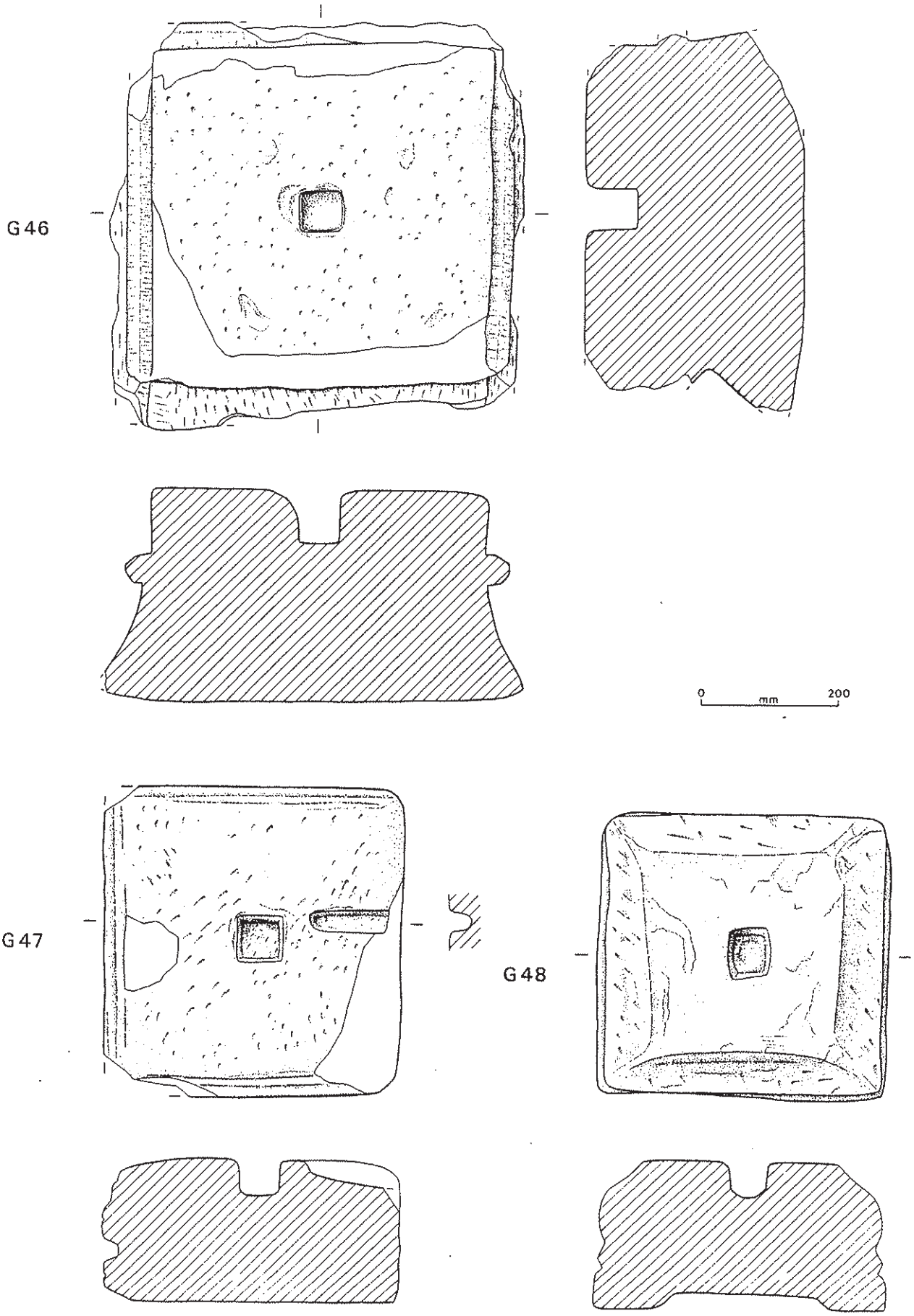

Fig 118 Building stones (scale 1:8)

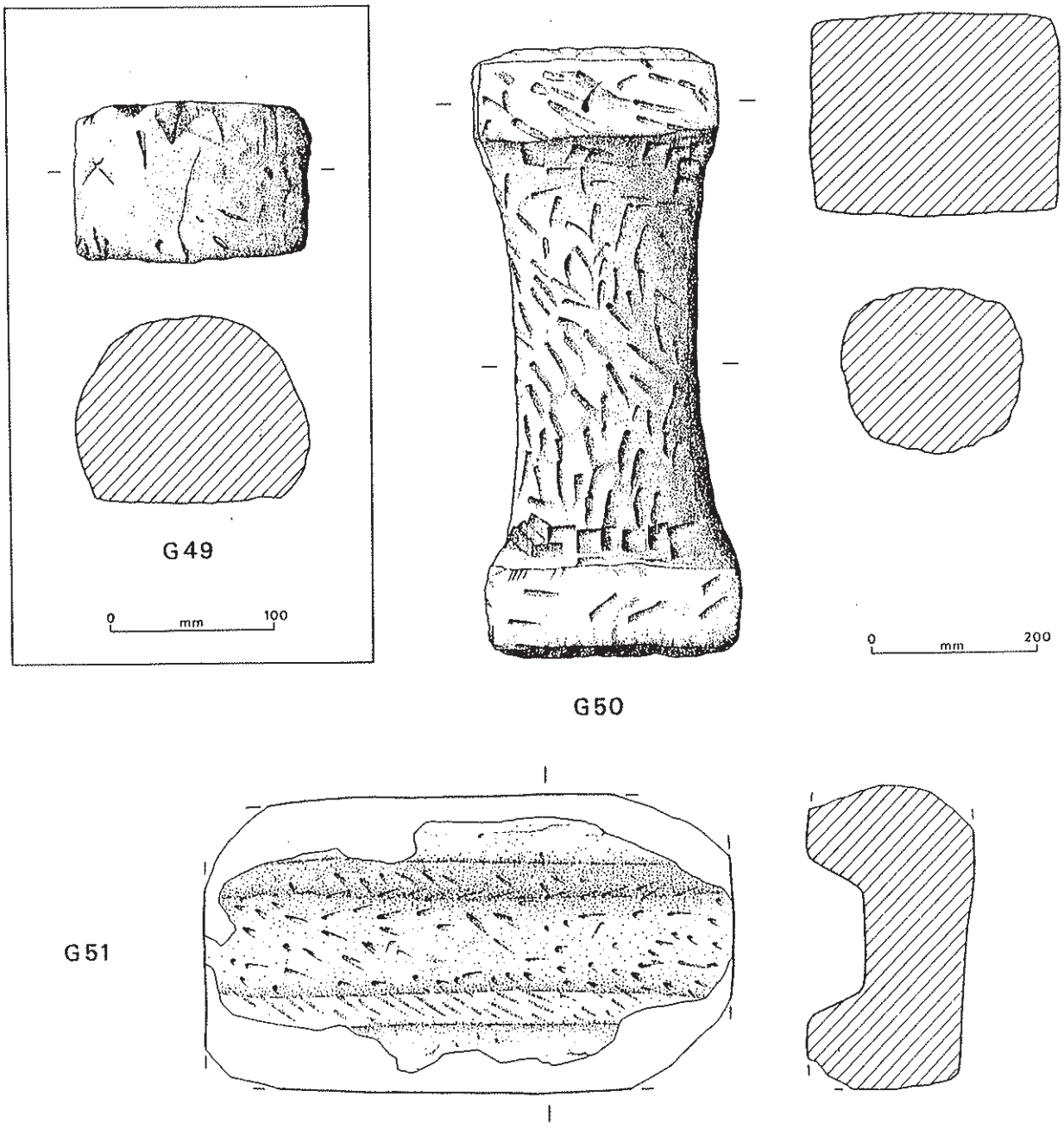

Fig 119 Building stones (scale 1:8; G49, scale 1:4)

A roughly square block. The top is flat and has a central socket, 68mm x 55mm x 45mm deep, in the centre. The flat area measures 290mm x 280mm. At the edge there is a small vertical step, which is more pronounced on two of the opposing sides, with a large roll moulding below it. Below this there are two grooves separating two smaller roll mouldings. Below the lower groove is a roughly tooled vertical plinth. This is more carefully finished on three sides than on the fourth. The base has a dished central area 216mm across.
Sandstone.
L. 410mm W. 400mm Th. 235mm
OGL A + St 33 Period: Unstratified

G49 Building stone: pilaster fragment Fig 119
There is some surface damage to the stone.
A roughly D-sectioned block. The top and bottom surfaces are flat. The straight vertical face is smooth but unworked, while the curved one has been smoothed except for one area which is rougher and has tooling marks visible. The D-shape is more than a semicircle, and is slightly asymmetrical.
Sandstone.
Dia. 138mm Th. 100mm
CAL E 2 St 1 Period: Medieval

G50 Building stone: hypocaust pillar Fig 119
The pillar is made from a single piece of stone. The top has been roughly worked to a flat but not level surface. This top portion is about 115mm deep. Below this, the pillar is chamfered, and the cross-sectional shape becomes more rounded. The depth of the chamfer is irregular and some faces reach halfway along the length of the piece. At the bottom there is a rectangular area similar to that at the top.
Sandstone.
Ht. 720mm W. (at top) 300m W. (at centre) 200mm
Th. (at top) 225-245mm

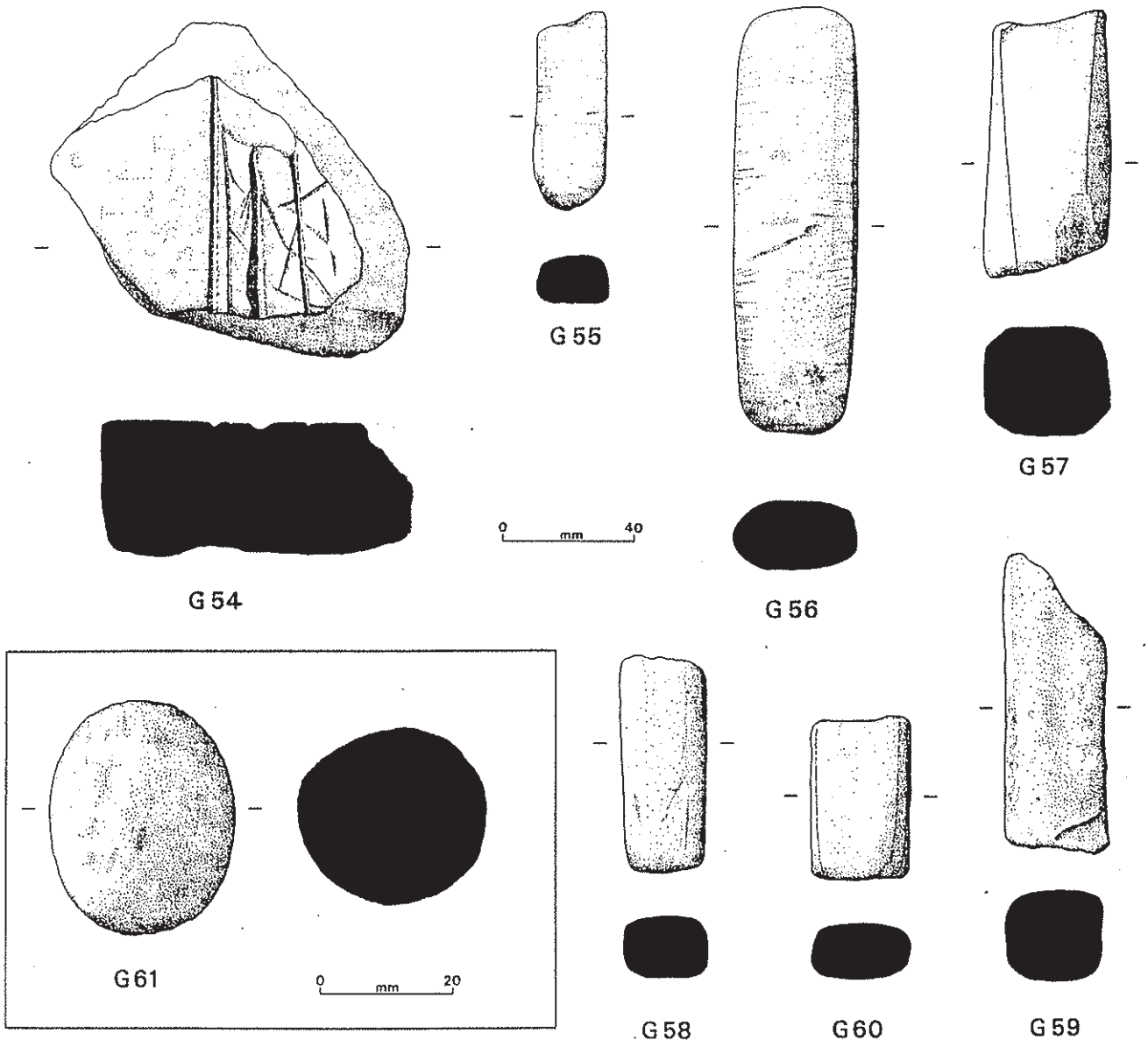

Fig 120 Sharpening stone (G54), whetstones (G55-60) and slingstone (G61) (scale 1:2; G61, scale 1:1)

LEL A + St 22 Period: Unstratified

The small number of architectural fragments discovered reflects the limited use which seems to have been made of stone as a building material in Roman Carlisle. It is unfortunate that neither the pillar bases nor the hypocaust pillar were found in stratified contexts and they cannot be assigned to any of the buildings excavated. An almost identical hypocaust pillar was recovered from Keay's Lane Trench C.

G51 Building stone: gutter Fig 119
The stone is friable, and much of the surface is missing.
An originally rectangular block with a rectangular-sectioned channel in the top. The channel is 70mm deep and ranges from 130mm wide at the base to 190mm at the top.
Sandstone.
L. 640mm W. 357mm Th. 190mm.
LEL A 142 St 18 Period: 17

G52 Building stone: roofing tile Not illustrated
No original edges survive.
An irregular four-sided piece with about half of the fixing hole surviving.
Sandstone.
L. 58mm W. 55mm Th. 11mm Dia. (of hole) 10mm
Clack 2 22 St 1 Period: 10A

G53 Architecture: roofing tile Not illustrated
No original edges survive.
An irregular six-sided piece with the remains of the fixing hole visible.
Sandstone.
L. 122mm (max) W. 101mm (max) Th. 25mm
Dia. (of hole) 10mm
LEL A 82 St 26 Period: 19B

The two roofing tiles have thicknesses and fixing hole diameters which fall within the range of the Roman ones recovered from Annetwell Street (Caruana forthcoming a).

Tools

G54 Sharpening stone Fig 120
No original edges survive.
A fragment with a possibly peck-dressed top surface which survives over about half of the area. The other half has grooves on

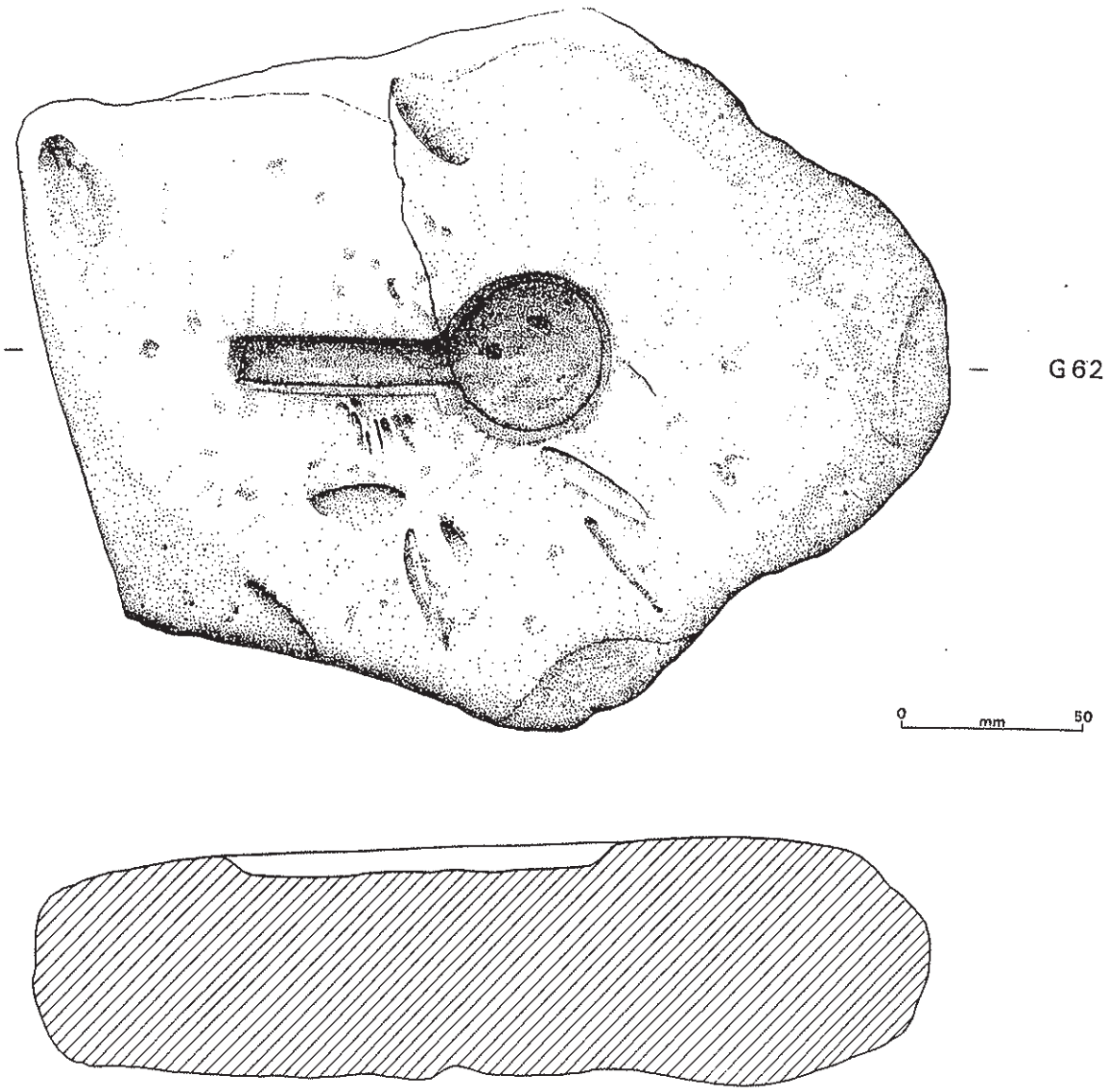

Fig 121 Stone mould (scale 1:2)

it caused by sharpening a blade. There are three main grooves and a few minor ones.
Sandstone.
L. 70mm W. 99mm Th. 40mm
CAL A 66 St 1 Period: Post-4

G55 Whetstone Fig 120
One end is broken.
The top surface of the sub-rectangular-sectioned stone is curved, while the sides are vertical and the underside is flat. The surviving original end is curved. The underside appears to have been smoothed.
L. 57mm W. 21mm Th. 14mm
OGL A 765 St 22 Period: 6

G56 Whetstone Fig 120
The irregular-sectioned stone has curving top and bottom surfaces and one flat vertical side. The stone is basically rectangular, but it slopes in slightly at each end, more at one end than the other. The top surface is smooth, possibly caused by wear.
L. 129mm W. 35mm Th. 21mm
OGL A 199 St 6 Period: West 7

G57 Whetstone Fig 120
Broken at each end.

The sub-rectangular-sectioned stone has all four faces polished through use. It has also become 'waisted' for the same reason.
L. 78mm W. 39mm Th. 34mm
LEL A 373 St 20 Period: 13

G58 Whetstone Fig 120
Broken at one end and eroded at the other.
The sub-rectangular-sectioned stone has straight edges and curved top and bottom surfaces, one of which has a more pronounced curve than the other. The top surface and vertical edges have become polished through use.
Sandstone.
L. 62mm W. 25mm Th. (max) 17mm
OGL B 20 St 2 Period: 7B

G59 Whetstone Fig 120
Broken at each end.
The sub-rectangular-sectioned stone has a coarse texture, but the top surface feels smoother than the rest.
Sandstone.
L. 84mm W. 30mm Th. 26mm
LEL A 335 St 19 Period: 12A

G60 Whetstone Fig 120
Broken at each end.

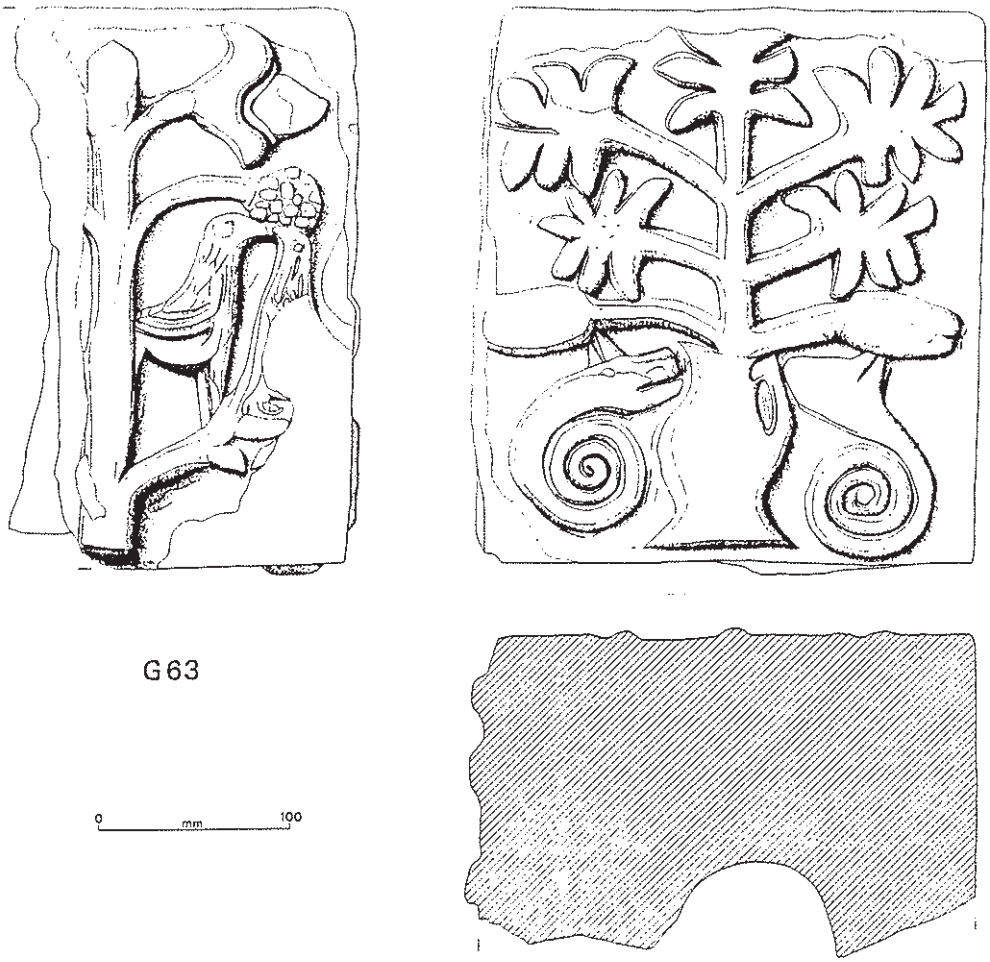

Fig 122 Medieval stone sculpture (scale 1:4)

The wider top and bottom surfaces of the sub-rectangular stone are worn smooth in comparison to the sides.
L. 48mm W. 30mm Th. 18mm
LEL A 74 St 4 Period: 20

Militaria

G61 Sling stone Fig 120
An egg-shaped stone which is flattened on one side.
L. 36mm Dia. 27mm Wt. 38g
OBL B 1 St 1 Period: 5

Eleven sling stones were recovered from the Annetwell Street fort (Padley forthcoming e, nos N98-108). These varied in weight from 4g-49g. Only one (no N98) is in the range 31g-40g, as is the example here. In comparison, the lightest of the lead sling stones from the fort weighed 48g (Padley forthcoming d, no G36).

Industry

G62 Mould Fig 121
The front surface of the stone may have been worked. The top surface is smooth, but has a number of linear marks on it, and there are some spalls missing. The main feature is a carefully made keyhole-shaped depression in the centre of the top surface.
Sandstone.
L. (of block) 250mm W. (of block) 199mm
L. (of depression) 107mm W. (of depression, shaft) 16mm
Dia. (of depression, head) 47mm Depth (of depression) 7mm
LEL A 76 St 2 Period: 21B

This object is thought to be a mould rather than a pivot stone for the following reasons. Firstly, the bottom of the depression is blackened in comparison to the rest of the stone. Secondly, the depression is rather shallow for it to be a pivot stone. Finally, the shaft part of the depression is long and narrow when compared to the head, and the bottom of the depression is flat, the depth of the shaft being the same as that of the head.

M R McCarthy writes:

Stone moulds such as this are not normal features of either Roman or medieval assemblages, but they do occur in contexts variously datable to between the eighth and the eleventh centuries on Anglo-Scandinavian and Norse sites, however. Examples are known at, amongst other places, Whitby Abbey (Foote and Wilson 19XX, pl 00), High Street, Dublin (Ó Ríordáin 1971, fig 21d), Kiondroghad, Isle of Man (Gelling 1969, fig 32, 1-4) and Jarlshof, Shetland (Curle 1935-6, 264-5 and fig 13). The stone moulds, unlike those made of clay, are often for pins or plain ingots.

Sculpture

M R McCarthy writes:

G63 Sculpture Fig 122

Rectangular block of red sandstone. The block is part of a decorative feature which may originally have formed part of a religious monument or a garden ornamant.

The block is damaged, one side having been completely destroyed, perhaps when the hourglass-shaped channel was cut through. The hole is weathered and bears traces of mortar. If the block was originally square in plan, as is suggested by the decoration, it would have measured 260mm square. This dimension is taken from the one complete side. The maximum length surviving on the other two sides is 175mm.

Two adjacent sides are covered in relief decoration. The third side is plain apart from chisel marks and fragments of mortar. The top and bottom are flat and also have chisel marks and mortar.

The decoration on the complete side is symmetrically disposed and consists of a plant standing in a pot, to either side of which is a serpent. The pot is in the form of a jug with a sharply angled handle and a widely splayed base. The plant has three branches to either side and one standing vertically in the middle. The lowest branch on either side terminates in a bulbous feature. It resembles a flower in bud, but its nature cannot now be determined. The other branches terminate in seven leaves. The serpents are tightly coiled with heads facing the pot. The heads appear to have two ears and may have had an eye, although surface abrasion has removed some details.

The other decorated side contains the right hand side of a vine with three branches. Two adorsed birds sit on the lower branch and appear to be pecking at a bunch of grapes on the branch above. The surface of this side of the block is in poor condition and is stained black, possibly with soot.

Fine-grained red sandstone, probably St Bees.
Ht. 295mm W. (complete side) 260mm
Dia. (of hole, at top and bottom, approx) 105mm
Dia. (of hole, in centre, approx) 60mm
OBL B St 8 Period: Unstratified

The stone was found incorporated into the south wall of number 61, Scotch Street. The south wall faced Old Bush Lane which had been locked to public access for several years before excavations commenced. The decorated broken face of the stone showing the birds was exposed in the wall and this may account for the black (?soot) discolouration of the surface. The complete decorated face is much redder in appearance with only a limited amount of dark discolouration.

At least two, and possibly three, periods of use and re-use can be suggested. The decoration belongs to the first period. It is possible that the hourglass-shaped channel belongs to a second period but it is uncertain as to what this may have been. The final period was its use as a building stone in number 61, Scotch Street.

At first sight it was thought that the sculpture was part of an Anglian cross because of the birds pecking at grapes. The form of the vine is, however, quite unlike foliage in Anglian iconography, and it more closely resembles examples in late medieval sculpture. No precise examples are known from Cumbria (Parker 1909) but the motif can be matched on crosses in Ireland attributed to the period AD 1470-1635 (King 1984). The closest example, from Dunsany, County Meath, is attributed to *c* 1480, but another from Seymourstown is dated to 1554.

The carving of the plant in the pot is a little cruder in execution than the vine with birds. The form of the pot, a somewhat angular jug, resembles ceramic and metallic shapes typical of the late medieval period. The motif of a plant in a pot is well known, occurring not only on crosses, but also in sculpture associated with tombs, for example the north face of Leschman's (Prior 1480-91) chantry at Hexham Abbey, which is late fifteenth century in date.

The function of the stone in its first period of use is problematical. The shafts of many market, wayside and churchyard crosses are frequently monolithic pillars set into plinths. Where decoration occurs on freestanding crosses it is usually on all four sides or on two opposed faces, but in Cumbria many crosses are relatively plain. The block from Old Bush Lane is not only decorated on two adjacent sides, but it is very short. These factors suggest that the block was not part of a cross but had some other purpose.

The iconography of the block is unhelpful. Inhabited vines and plants in pots are frequent occurrences in association with religious and non-religious motifs. A religious or funerary association is likely, however. The block probably formed a decorative corner in a church, chantry chapel or one of the two friaries. Stonework from churches was widely available in Carlisle during the sixteenth and seventeenth centuries, as archaeological finds and hints in the written record testify. A fragment of twelfth-century interlace ornament, perhaps from a font, was found in a post-medieval context at Keay's Lane, for example (McCarthy forthcoming). Extensive demolition work at the friaries following the Dissolution, as well as at chantry chapels, the Cathedral in 1644, and later at Queen Mary's Tower in the Castle (Perriam 1987), resulted in there being considerable quantities of sculptured stone in the city available for re-use at several periods.

The Amber (H)
by T G Padley

Introduction

Five amber beads were recovered (H1-5), two from OGL B, and three from LEL A.

Amber beads are not common finds from Roman Britain. Chapman, in his discussion of the necklace from the Walbrook, was able to identify only 14 other pieces of amber from Roman deposits in this country (1974, 274 and note 11), not all of which are beads. None of those mentioned appear to be similar to the four catalogued here. However, the Annetwell Street fort has produced one bead which is very similar to Number H3 below (Padley forthcoming f, no L3), and another (*ibid*, no L5) which is similar in shape to bead Number H5, but larger. Both the Annetwell Street beads come from contexts which are dated to between AD 83 and 94.

All the beads except Number H5 have clear evidence of drilled perforations. The internal surfaces are ridged, with the ridges going round the holes, not along them. The perforations have a discontinuity at the centre, showing that they were drilled from each end.

The waterlogged conditions in Carlisle have allowed a significant amount of Roman amber to survive. Among the nineteenth-century finds in Tullie House Museum is a knife-handle with a terminal shaped like a mouse (McCarthy *et al* 1983, 267-9, pl 31B). The recent excavation carried out at the Annetwell Street fort has produced six beads in addition to the two mentioned above (Padley forthcoming f, nos L1-2,

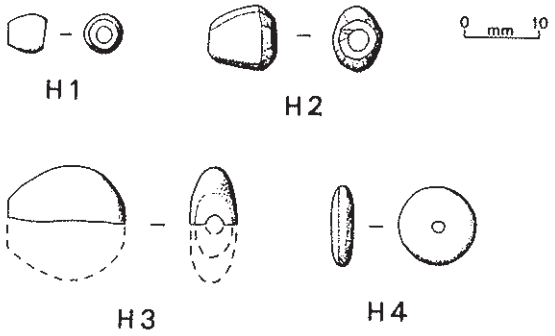

Fig 123 Amber beads (scale 1:1)

L4, L6-8), though two of them have shattered and their original shape is unknown. The excavation on the adjoining site carried out in advance of the new BBC Radio Cumbria building has produced a rectangular bead with a trapezoidal cross-section (Caruana forthcoming c). The excavation at Keay's Lane (McCarthy forthcoming a) has produced a spectacular finger-ring with the head of Minerva carved on it in high relief (McCarthy *et al* 1982, 88-9, pl 4A), which dates to before AD 200.

The catalogue

Personalia

H1 Bead: barrel-shaped Fig 123
The largely complete transparent orange bead has the same maximum diameter as length. The ends are flat and the sides are curved, making it barrel-shaped. The circular perforation is aligned centrally to the ends, and is fairly large when compared to the size of the bead. There is a small U-shaped depression on the edge of the perforation at one end, which may be a wear mark.
L. 5mm Dia. (of bead, at end) 3mm Dia. (of perforation) 2mm
OGL B 186 JS 1 Period: 5A

H2 Bead: trapezoidal Fig 123
The transparent orange bead is largely complete, but has one large chip and some other minor damage. There is also much internal crazing. It is irregular in shape but has flat ends, one larger than the other. One side is flat and the other curved, giving it a trapezoidal elevation. The drilled hole is central to the ends.
L. 9mm W. (max) 8mm Th. (max) 7mm
Dia. (of perforation) 2mm
OGL B 173 JS 2 Period: 5B

H3 Bead: oval Fig 123
Only about half of the translucent yellow bead survives. The surviving original edge is curved in each direction. The ends are flat. The bead has broken along the drilled perforation.
L. 16mm W. (surviving) 7mm Th. 4mm-6mm
Dia. (of perforation) 2mm
LEL A 547 JS 2 Period: 7B

H4 Bead: discoidal Fig 123
The transparent yellow bead is complete. It has a central drilled perforation.
Dia. (of bead) 10mm Th. (of bead, max) 3mm
Dia. (of perforation) 1mm
LEL A 588 JS 3 Period: 6B-E

H5 Bead: rectangular Not illustrated
Less than half of the transparent orange bead survives. It was probably rectangular originally, with an irregular D-shaped cross-section. The outer surface is matt and weathered. The surface of the breaks is also matt, showing that they are not recent, although there are more recent scars visible in places. The interior surface of the perforation is weathered and crazed. Neither drilling details nor a discontinuity can be seen.
L. 9mm W. (max) 5mm Th. (max surviving) 3mm
Dia. (of perforation) 2mm
LEL A 550 JS4 Period: 7A

One other piece of amber was recovered from LEL A (soil spread 553, Period 7A), but this was unworked.

CHAPTER 20 THE ROMAN GLASS (I)

by J Price and S Cottam

Introduction

Four areas from this part of The Lanes produced a total of 810 fragments of Roman glass (Table 59). The most substantial assemblages were those from Old Grapes Lane and Lewthwaite's Lane Trench A. A small number of fragments came from Crown and Anchor Lane and Old Bush Lane Trench B.

The glass from this part of The Lanes is the fourth major assemblage to be studied from Carlisle. The total number of excavated fragments from Blackfriars Street, Castle Street, Annetwell Street and these Lanes sites is now approximately 3,500, a quantity not matched from any other northern British site.

Of the 810 pieces of glass recovered, 140 items are fully described in the catalogue. The remaining fragments are listed in the archive catalogue where they are associated with the most similar catalogued item. Within the catalogue itself, the vessel glass appears first, followed by the window glass and then the objects. The vessel glass is divided according to the method of manufacture, then by colour and type.

The glass has also been divided functionally (Table 60). The personalia consists of beads (Nos I119-23) and bangles (Nos I124-8). The toilet category contains unguent bottles and flasks (Nos I64-8). The household category includes the table-wares (Nos I1-63) and bottles (Nos I69-118), although these latter were used for transport of and trading in liquids as welll as for various household functions. Gaming pieces/counters (Nos I129-39) have been included here under recreation, although such pieces were also used for reckoning with an exchequer board. The building category is represented only by window glass; unlike the other categories, the figures given refer to the number of fragments recovered. Finally, the small cubic piece of blue glass (No I140) has been placed in the miscellaneous category, but this may have been a tessera, and therefore building material.

This chapter comprises an initial typological examination of the vessel forms, followed by a discussion of the dating of the glass from The Lanes, the pattern of glass use at the site, and the relationship of this group to those previously excavated from the city. The catalogue of vessel glass is followed by a discussion and catalogue of the glass objects, and a section on the window glass.

The vessel glass

Many of the vessels in the assemblage from this area of The Lanes are of forms recognized in the groups previously excavated, although there are several notable differences in the proportions of certain types represented. A small number of forms from this part of The Lanes were not recorded in the earlier groups from Carlisle, whilst other types found at those

Table 59
The total number of glass fragments by type and site

Site	*Vessel*	*Window*	*Objects*	*Total*
CAL A	6	-	1	7
CAL E	-	-	1	1
CAL F	1	-	-	1
OGL A and A West	241	21	7	269
OGL B	87	16	4	107
OGL C	6	2	-	8
OGL J	40	-	-	40
Clack 1 and 2	9	2	-	11
LEL A	346	8	11	365
OBL B	-	-	1	1
Totals	736	49	25	810

Table 60
The glass arranged by site and function

Site	*Personalia*	*Toilet*	*Household*	*Recreation*	*Building*	*Other*	*Total*
CAL A	1	-	1	-	-	-	2
CAL E	1	-	-	-	-	-	1
OGL A	2	1	33	1	17	1	55
OGL A West	-	-	7	1	4	-	12
OGL B	1	1	25	2	16	-	45
OGL C	-	1	2	-	2	-	5
OGL J	-	-	1	-	-	-	1
Clack 1	-	-	1	-	2	-	3
Clack 2	-	-	1	-	-	-	1
LEL A	4	2	41	7	8	-	62
OBL B	1	-	-	-	-	-	1
Totals	10	5	112	11	49	1	188

With the exception of the building category, where the total number of fragments recovered is noted, the figures given in this table refer to the objects itemized in the catalogue.

sites are absent. A few vessels have been well preserved and can be substantially restored, a feature noted at Blackfriars Street (Price 1990, nos 39 and 59). The assemblage contains a small group of late first-century material, but appears to be predominantly second century in character. Only two vessels are certainly later than AD 200.

Cast vessels

A small group of cast vessels is amongst the earliest glass from this part of The Lanes. One fragment (No I3, Fig 127) came from a blue/green pillar moulded bowl, a vessel form frequently found in first-century contexts which disappears at the end of the first century (Isings 1957, form 3).

Blue/green pillar moulded bowls have been noted at other sites in Carlisle. Thirteen fragments, nearly all from Flavian-Trajanic contexts, were found at Blackfriars Street (Price 1990, 167-8, nos 3 and 4), seven fragments were found at Annetwell Street (Cool and Price forthcoming, nos P2-4, and P123-5) and one came from Castle Street (Cool and Price 1991, 169, no 624, fig 152).

A nearly complete profile of a polychrome bowl (opaque yellow roundels, dark green ground) with a wide horizontal rim, a shallow convex body and a high base ring was found at OGL A (No I1, Fig 127). A small fragment, possibly from the same vessel, came from OGL B (No I2). This bowl belongs to a group of wide-rimmed bowls and plates found in many parts of the Roman world, some having a sharp overhang at the rim edge, and is one of the few cast forms known to have been made in polychrome, strongly coloured and colourless glass. Colourless examples, which appear in the Flavian period and continue in use until at least the mid second century, are the most numerous and the best dated. The colourless base ring (No I4) may come from a bowl of this type.

Fewer polychrome and monochrome bowls are known, and dating evidence is limited, but these appear to be contemporary with the colourless bowls during the early period of production. At earliest, the polychrome bowl from Old Grapes Lane is likely to have been in use during the very late first century. A smaller bowl from Bakewell, Derbyshire (Price 1985a), is very close to the Carlisle bowl in colour, pattern and form, but does not come from a securely dated context. Another, with a floral mosaic pattern, was found in a context dated to *c* AD 100-130 at Caersws (Cool and Price 1989, 36, no 7, fig 20), and one from Chester probably comes from a Flavian or later context (unpublished). Others are known from Northchurch (Charlesworth 1974-6, 31, no 1, fig 19), Fishbourne (Harden and Price 1971, 324-6, nos 2 and 4, fig 137) and Caerleon (Nash-Williams 1932, 43, no 51, fig 35). Two possible examples of this form of bowl have already been noted in Carlisle. A purple, white, yellow and green high base ring was found at Blackfriars Street (Price 1990, 165, no 1)

and a deep purple low base ring with opaque yellow rods came from Annetwell Street (Cool and Price forthcoming, no P5)

The bowl from OGL A came from a series of contexts containing late Antonine material and is likely to have been old when deposited. Although this form of polychrome bowl post-dates the types which disappear in the Neronian/early Flavian period, only colourless cast bowls are regularly present in second-century contexts.

Blown vessels

Tablewares

First- and early second-century strongly coloured blown vessels were found on four sites, OGL A and B, LEL A and CAL A.

A convex body fragment in very deep yellow/green glass (appearing black), with opaque white marvered trails, was found at OGL A (No I5, Fig 127). This may come from a first-century vessel such as the yellow/brown cup with opaque white marvered streaks, found in a Claudian/Neronian context at Sheepen, Colchester (Charlesworth 1985, MF3:F3, no 16, fig 80), in which case it would be one of the earliest vessels from this part of The Lanes. However, deep yellow/brown blown vessels, appearing black, are not common in first-century contexts, whereas they have been noted on several second-century sites in the north-west provinces. At Esch, North Brabant, barrow 3, a 'black' globular jar with wheel-cut lines and a 'black' bowl with marvered opaque light blue trails below the scalloped rim edge were included among the grave goods (van den Hurk 1976, 224-5, 3, nos 36-7, figs 68-9), and at Seisbach in the Rhineland a burial dated by dendrochronology to AD 173/4 at latest contained several 'black' and opaque white glass fragments, including a beaker with marvered looped trails (Abegg 1989, 206-210, Abb 17, Taf 6, 312).

Intensely coloured 'black' vessels, possibly intended to imitate the effect of obsidian, are not very common elsewhere in Britain, so the incidence of three further such vessels at The Lanes is notable. Number I12, a deep yellow-green base fragment with a narrow trailed base ring, is from the same context as the polychrome fragment Number I5, but comes from a different vessel. A similarly coloured jar from Augst found in association with first- and early second-century pottery also has a trailed base and a central pontil mark (Rütti 1991, 102, no 2006, Taf 89 and 193), but no close parallel can be quoted from Britain. The very deep yellow/brown ribbon handle, appearing black from OGL B (No I8, Fig 127), is also most unusual, and similar jug handles are difficult to identify. A further convex body fragment comes from LEL A.

Yellow/brown is dominant amongst the translucent strongly coloured fragments. The only dark blue fragment comes from a ribbed vessel, probably from a first-century jug or jar, found at CAL A. The majority of the yellow/brown fragments were found at OGL, where 49 fragments came from at least four vessels: a bowl, a jug and two jugs or jars. Number I6 (Fig 127) is a substantially complete deep tubular-rimmed bowl. Tubular-rimmed bowls, although produced at more than one time during the Roman period, were most popular in Britain in the late first and early to mid second centuries. During this period they were made in yellow/brown, yellow/green and blue/green glass. A yellow/brown ribbed bowl was in a pit containing Trajanic samian at Hemel Hempstead (Charlesworth 1974-6, 117, fig 64a, pl 41), and there are plain yellow/brown and blue/green bowls in an Antonine pit at Harlow, Essex (Price 1987, 188, no 4, fig 1). Two rim fragments from a blue/green tubular-rimmed bowl (No I38, Fig 129) and a possible base fragment associated with Hadrianic pottery (No I41, Fig 129) were also found. Other blue/green examples are known from excavations at Blackfriars Street (Price 1990, 172, no 39, fig 162) and Annetwell Street (Cool and Price forthcoming, no P46).

Number I7 (Fig 127) from OGL B is a thick-walled cylindrical neck fragment from a yellow/brown jug. The complete vessel probably had a folded rim, an angular handle and a conical or globular body, either ribbed or plain. Strongly coloured and blue/green jugs are often found in Roman Britain in first- and early to mid second-century contexts, and probably came from production centres in the north-western provinces. As noted above in connection with tubular-rimmed bowls, the most common colours in jugs of the late first and early second centuries are yellow/brown, yellow/green and blue/green. Many examples are known from Britain, including two or three yellow/brown jugs from an Antonine pit at Towcester (Price 1980, 66, nos 9-11, figs 15-6), illustrating the continued use of jugs of this colour in the mid second century. The lower body and base fragments of three yellow/brown vessels, one with vertical ribs, from OGL A and B may come from globular-bodied jugs (Nos I9-10, Fig 127, and I11). Globular and discoid-bodied jugs from Britain and elsewhere in the north-western provinces are discussed in connection with a yellow/brown ribbed example from a pit at Enfield dating to the first half of the second century (Price 1977, 155-8, no 2, fig 27).

A large part of the lower body of a blue/green globular ribbed vessel (No I45, Fig 129), found in association with late first-century pottery, may also come from a jug. The short diagonal ribs are rather unusual, but the body of the vessel is broadly comparable with that of a blue/green spouted jug with similar short diagonal ribs from Colchester (Thorpe 1935, 23, pl 8c).

The frequency of blue/green jugs on later first- and early second-century sites is well illustrated by The Lanes assemblage. At least five examples were found at OGL, and at least four came from LEL A. A neck fragment (No I53) and three body fragments (Nos I56, Fig 129, I55 and I57) from LEL A come from ribbed jugs. The body fragments are from conical jugs, decorated with narrow spiral, probably optic blown, ribs. Number I54 (Fig129) is a fragment of a vertical pinched trail from the base of a handle, a feature found on many conical jugs. The yellow/green base fragment, Number I13, may come from a conical jug with a plain base similar to that on a jug from Turriff, Aberdeenshire (Thorpe 1933-4), but the fragment is too small to be securely classified.

The globular vessels (Nos I9-10, Fig 127, and I11), discussed above as globular jugs, may equally well come from jars (Isings 1957, form 67c), as the body and base fragments are usually indistinguishable. Plain and ribbed jars with vertical tubular collar rims (eg No I42) in blue/green and strongly coloured glass were in use during the same period as the jugs. Yellow/brown jars are known from Britain at Silchester

(Boon 1974, fig 36, no 5), Brading Villa, Isle of Wight (Tomalin 1987, 43, B3), and elsewhere.

Tubular-rimmed bowls, conical and globular jugs and globular jars are the most typical forms of good quality blown serving vessels of the first and early second centuries. They have occurred in considerable numbers on excavated sites in Carlisle.

Few first- and early second-century drinking vessels occur at OGL, but many more were found at LEL A. The entire rim and a large part of the upper body of a colourless facet-cut beaker was preserved in a late first-century context at LEL A (No I16, Fig 128), and a small body fragment, probably from a similar vessel, came from OGL A (No I15). Colourless blown glass became popular in Britain during the Flavian period, facet-cut beakers being one of the first blown vessel forms to be made exclusively in this type of glass.

Facet-cut beakers are quite commonly found in later first- and early second-century contexts in many parts of the Roman world, and numerous fragments are known from occupation sites in Britain. These beakers were generally either tall or short, with one zone of decoration. The outside surface was ground away to form the rim, the ridge below the rim, the decorative area and the base. Number I16 (Fig 128), probably a tall vessel, has a single raised cordon above the decorated area, a feature which identifies it as an Oliver group 2 beaker (Oliver 1984). The decorated area is covered with oval facets closely set to form diamonds in quincunx, one of the most frequently used motifs found on these beakers. Two tall beakers, very similar to the example from LEL A, come from Flavian contexts at Caerleon (Nash-Williams 1929, 257-8, fig 18, no 2) and Fishbourne (Price and Cottam forthcoming a, no 56). Both have two horizontal ridges at the rim and one above the decorated zone. Three unusual facet-cut beakers were found at Annetwell Street (Cool and Price forthcoming, nos P140-2), and at least two came from Blackfriars Street (Price 1990, 168, nos 11-13, fig 160).

An unusual colourless conical beaker (No I17, Fig 128) was recorded from the same late first-century context as Number I16. The vessel was in a very fragmentary condition and is now lost. The only information available comes from a plaster cast taken from the surrounding soil which preserves an impression of part of the decorated outside surface. This has been cut away leaving decoration in relief, including a broad horizontal band decorated with vertical facets. This technique is comparable with the raised decorative zones of Oliver's group 1 beakers (Oliver 1984). Vessels of this group with a raised band containing a single line of facets are uncommon, but a very similar fragment is known from Rottweil (information from B Hoffmann).

A class of drinking cups which remained in use in Britain and the western provinces until at least the mid second century appeared during the third quarter of the first century. They were made in good quality colourless or near-colourless glass with cracked-off and carefully ground rims, and bodies decorated with combinations of horizontal wheel-cut lines and abraded bands. Many varieties of body profile and decoration exist within this class. One of the earliest forms was a thin-walled cup with a cylindrical upper body, a rounded or angular carination and a tubular pushed-in base ring. These were most popular during the later first and early second centuries, although some continued in use into the mid second century, for example cups from Antonine contexts at Felmongers, Harlow (Price 1987, 203, no 14, fig 2), and Towcester (Price 1980, 64, no 4, fig 14). Number I33 (Fig 129) from OGL A appears to belong to this variety of colourless cup. The convex lower body, narrow base ring and domed base are closely paralleled on vessels from late first- and early second-century contexts at Ashley, Northants (Taylor and Dix 1985, 94, fig 6), and Wroxeter (Bushe-Fox 1914, 34, pl 23). Number I32 (Fig129), which has a thin-walled lower body with a horizontal pushed-in base ring and a slightly concave base, may come from a similar vessel, although the form of the base is unusual. Several body fragments from LEL A (Nos I22-3, I25, Fig 128, and I26-7) also come from thin-walled wheel-cut cups. Numbers I22-3 and I26 may be from the same vessel.

Number I21 (Fig 128) from LEL A comes from a colourless drinking cup which has been externally ground below the rim, leaving a shallow horizontal cordon on the upper body. This technique is similar to that used on the upper body of the facet-cut beaker Number I16 (Fig 128), described above, and Number I21 probably also dates from the later first or early second century. No part of the body below the cordon is visible, but the thin walls of this vessel are unlikely to have been decorated with facets. Similarly ground, thin-walled rim fragments are known from Verulamium (Charlesworth 1984, 156, no 107, fig 63, no 58), Fishbourne (Harden and Price 1971, 349, no 60, fig 140) and Pentre Farm, Flint (Price 1989, 81, nos 6-7, fig 29).

Number I27 comes from the upper body of a convex-sided colourless cup. It is not possible to reconstruct the form of the vessel, but the narrow wall and abraded band suggest a late first- to early second-century date.

In addition to these vessels, The Lanes produced fragments from at least a further seven wheel-cut cups (Nos I20, Fig 128, I18-9, and fragments listed in the archive catalogue). The absence of rim and base fragments prevents positive identification, but they may come from biconical cups of the early to later second century. These second-century cups, although in many ways similar in shape to the earlier biconical cups discussed above in connection with Numbers I22-3, I25 (Fig 128) and I26 , generally had thicker walls and a more angular carination, and often had a separately blown foot rather than a pushed-in base ring. Number I20 (Fig 128), from a second- to third-century context at OGL C, comes from a cup with a separately blown foot.

Fragments of second-century biconical cups are known from several sites in northern Britain, and a complete profile of a cup with a separately blown foot was found at Hardknott (Charlesworth 1959a, 37-8, fig, 3). Elsewhere in Britain, an almost complete example came from a pit dated by samian to AD 150-60 at Alcester (Price and Cottam forthcoming b, no 11), and further examples are quoted in connection with at least three vessels from a pit at Felmongers, Harlow, containing samian dating to AD 155-65 (Price 1987, 202-3, nos 8-10, fig 2).

Two thick-walled convex body fragments with horizontal wheel-cut lines from LEL A (No I28, Fig 128) are difficult to identify securely. Globular cups with wheel-cut lines are not as common as the cylindrical and biconical cups discussed above in connection with Numbers I22-7, although a com-

plete example is known from a second-century burial at Fordstreet, Braughing (Harden 1977, 102, fig 43.23). Alternatively the pieces may come from a globular flask.

No cups of this type came from OGL A, a situation which is comparable with previous excavations at Annetwell Street and Castle Street. In contrast, the excavations at Blackfriars Street produced 60 fragments (Price 1990, 169, nos 14-6, fig 160).

Among the sites in this part of The Lanes, OGL A alone produced later second- and early third-century cups, represented by two rim and upper body fragments, Numbers I29-30 (Fig 129). The complete vessels have vertical fire-rounded rims, cylindrical bodies, and either two coiled-trail base rings, or a pushed-in base with a central coiled trail (Isings 1957, form 85b). These cups appear in the third quarter of the second century, the earliest firmly datable example from Britain being one found in the Antonine pit at Felmongers, Harlow, mentioned above in connection with second-century biconical cups.

Colourless cylindrical cups are nearly always present in assemblages from occupation sites of the later second and early third centuries. Not infrequently, these vessels occur in very large numbers, as has been observed in northern Britain at Blackfriars Street, where at least 30 cups were found (Price 1990, 170-2, MF69-72, nos 22-30, fig 161), Corbridge (Bulmer 1955, 128) and Piercebridge (Price and Cool forthcoming).

Number I35 (Fig 129), a fragment of a tubular base ring, also comes from a colourless cup. Although the shape of the body cannot be reconstructed, the presence of a post mark at the base edge is noteworthy. Number I36 is a colourless base fragment separately applied to the vessel, a method used on several forms of cups, bowls and jugs. Neither of these fragments can be firmly identified or dated.

Two further colourless vessels probably date from the later second or early third century. The first, Number I37 (Fig 129) from OGL A, is a rim fragment manipulated to form the spout of a jug. Pouring spouts are found on jugs of the later first and early second centuries, but are much more common on vessels of the later second and third centuries. Colourless or blue/green jugs with spouts were produced in a variety of forms during this period. The rim was either pinched in or pulled out, and the body could be globular or discoid, sometimes decorated with horizontal trails. At the Legionary Baths, Caerleon, a colourless discoid jug with a pulled-out spout and a horizontal trail was found in a deposit dating from AD 160-230 (Allen 1986, 109, no 57, fig 42), and a plain discoid blue/green jug which has a spout pulled out and up to form a beak is known from Colchester (Thorpe 1935, 21, pl 8). The trailed base from OGL B (No I34) may be compared with the base associated with the spouted jug from Caerleon, although Number I34 is too small for positive identification.

One of the most unusual finds in this assemblage is a vessel base of good quality colourless glass, decorated with opaque blue unmarvered trails (No I14, Fig 127). The deposition conditions have badly damaged the structure of the glass, so the remains of the vessel are very fragmentary. Nevertheless, it is possible to identify a flat base with a pontil mark, a central opaque blue unmarvered trail and an outer blue trail. It is not possible to determine the form of Number I14, although the sturdiness of the base suggests that it may come from some form of serving vessel, possibly a flask or jug, rather than a drinking vessel.

Colourless vessels decorated with horizontal blue trails are not common. A similar base with two concentric blue trails was found in association with a coin of Domitian (AD 81-96) and pottery dating from AD 70-100 at Augst (Rütti 1991, 194, no 4756, Taf 177). In Britain, a small thin-walled colourless cup with a blue trailed base ring came from the villa at Thistleton (unpublished).

Vessels with curving snake-thread decoration are frequently found in the north-western provinces in the later second and early third centuries. These occasionally have unscored horizontal lines at the bottom of the decoration, as on a fragment from Blackfriars Street (Price 1990, MF68, no 17, fig 160). Nevertheless, vessels with base rings of coloured trails are very rare.

Apart from the blue/green bowls, jugs and jars of the later first and early second centuries discussed above, only five further forms of tableware in blue/green glass were identified. Number I40 (Fig 129) comes from a drinking cup with a fire-rounded rim and a slightly convex upper body. This is similar to the later second- and early third-century colourless cylindrical cups discussed above (Nos I29-30). Blue/green cylindrical cups are less common than the colourless examples. They have also been found at Blackfriars Street (*ibid*, 163, MF2/73, no 41), Vindolanda (Price 1985b, 209, nos 23-6, fig 77) and Birdoswald (Price and Cottam forthcoming c, nos 33-4). Blue/green cups with fire-rounded rims are also occasionally found in later first-century contexts, for example at Elginhaugh (unpublished), and Number I40 may alternatively come from one of these vessels.

Number I39 (Fig 129) is a complete blue/green tubular base from a thin-walled, wide-bodied vessel, probably a bowl. This cannot be identified as several bowl types had tubular bases. The pontil mark on the base indicates that the bowl was held either whilst the rim was formed by fire-rounding or folding, or while a handle or trails or tooled decoration were added.

Two fragments, Numbers I43 and I44 (Fig 129), probably come from small jars with rolled-in rims and funnel necks. They can be compared with the indented jar from the Antonine pit group at Felmongers, Harlow (Price 1987, 205, no 24, fig 3). Blue/green jars with rims and necks of this type were in use as containers and serving vessels in the later first and second centuries; Number I44 is from a context containing Hadrianic pottery. Similar rim fragments have also been found at Blackfriars Street (Price 1990, 174, no 40, fig 162), Housesteads (Charlesworth 1971, fig 10) and Birdoswald (Price and Cottam forthcoming c, nos 44-7).

A body and handle fragment, Number I52 (Fig 129), probably comes from a blue/green globular-bodied jug with horizontal unmarvered trails, comparable with a jug with a pouring spout from a late second- to third-century context at Verulamium (Charlesworth 1972, 204, fig 76, no 24). The body fragment Number I58 from LEL A is similarly decorated and may also come from a globular jug, or possibly a bath flask, a form occasionally decorated in this manner, as at Carrawburgh (Charlesworth 1959b, 56, fig 10, no 11).

Only two vessels, from OGL A and LEL A, are firmly

identified as fourth century in date (Nos I62-3, Fig 129). Both are rim fragments from drinking vessels. Fourth-century glass has only been found in small quantities in northern Britain, and few other pieces have been noted in Carlisle. The excavations at Blackfriars Street produced about nine vessels (Price 1990, 177-8, nos 72-8, fig 164), and two were found at Annetwell Street (Cool and Price forthcoming, nos P120-1).

The cups from The Lanes illustrate two forms of rim finishing. Number I62 (Fig 129) has a cracked-off rim which is not ground smooth. The form of the vessel cannot be fully reconstructed from the remaining fragment, but it appears to come from a conical or hemispherical cup. Both forms (Isings 1957, forms 96 and 106) are very commonly found on sites in Britain, and both have already been noted in Carlisle. A conical beaker fragment came from Annetwell Street (Cool and Price forthcoming, no P120), and two hemispherical bowls were found at Blackfriars Street (Price 1990, nos 72-3, fig 164).

Number I63 (Fig 129) from LEL A has an out-turned rim with a fire-rounded edge. Conical beakers with this rim form are less common in Britain than those with cracked-off rims, but they have been found in late fourth-century contexts, as in the hoard of glass vessels from Burgh Castle (Harden 1983, 86-8, fig 37, nos 85 and 87-9). A growing body of evidence now suggests that they are present by the mid fourth century, however, as at Towcester (Price and Cool 1983, 117, fig 47, nos 40-44).

Unguent bottles and flasks

Fragments from two unguent bottles (Nos I64-5) were found. Number I64 (Fig 130) from OGL C is a base fragment from a thick-walled discoid unguent bottle, a type found in the western provinces in the second and early third centuries AD (Isings 1957, form 82 A and B2). The underside of the base on these vessels was sometimes stamped with letters or a design, but the base of Number I64 appears to be plain. Number I65, from LEL A, is a base fragment probably from a similar vessel, and has an uneven base which may be an illegible stamp.

In Britain, three closely dated conical unguent bottles, two with base designs, were found in the Antonine pit at Felmongers, Harlow (Price 1987, 205, nos 27-9, fig 4), and the base of another vessel came from a pit dating to the first half of the second century at Enfield (Price 1977, 159, no 14, fig 27). Further examples from Britain are noted in connection with a body and base fragment from a blue/green discoid unguent bottle found at Castle Street (Cool and Price 1991, 173, no 659, fig 153).

Number I66 (Fig 130) is a complete 'dolphin' handle from a blue/green vessel with a horizontal shoulder, probably a bath flask. The looped handles on bath flasks appear to have been used for chain or thong attachments for wrist and stopper. It resembles a handle from a bath flask found at Blackfriars Street (Price 1990, 175, no 45, fig 162, no 46), and one from a bath flask from Aldborough (Ecroyd-Smith 1852, pl 24, no 19).

Number I67 (Fig 130) has an out-turned rim with a rolled-in edge. It probably comes from a blue/green container, either a flask or possibly a small late first- or early second-century jar, such as an example from York (Harden 1962, 137, HG 2, fig 89). Number I68 (Fig 130) comes from a conical vessel.

Bottles

Just under half of the total number of vessel and window fragments (about 48%) came from first- and second-century blue/green bottles. This is a higher figure than is usual for Romano-British occupation sites, but reflects the predominantly first- to second-century character of the rest of the assemblage. High percentages of bottle fragments were also found at Blackfriars Street (approximately 44%), Annetwell Street (45%) and Castle Street (53%).

Blue/green bottles were used as containers throughout the Roman world in the first and second centuries. Cylindrical, square and hexagonal forms were recognized at The Lanes. All had folded rims and angular reeded handles. The wide range of neck diameters (about 20-90mm) suggests that they stored both liquid and semi-liquid products. None of the cylindrical bottles can now be reconstructed to full height, but the body diameters range between 130-180mm. The size of square bottles varies considerably. Two substantially complete square bottles (Nos I102-3, Fig 132) would have held 2.3 litres and 0.6 litres respectively.

Only six cylindrical bottle fragments were found at OGL, whereas 56 fragments came from LEL A. Cylindrical bottles (Isings 1957, form 51) were in production in the Claudian/Neronian period, but were at their most popular during the Flavian period, and went out of use in Britain during the early second century. Cylindrical bottle fragments were present in six periods of occupation at LEL A. Figure 124 shows the number of fragments for each of these phases and illustrates their rapid decline in popularity. Several of the fragments from Periods 5, 6 and 7 are probably from the same vessels, but this does not appear to alter the general trend. A similar pattern can be observed in the small number of fragments from OGL.

Many of the cylindrical bottle fragments show a high degree of wear on the body and base of the vessels, suggesting that they were heavily used before breakage.

Mould-blown prismatic bottles far outnumber cylindrical bottles on all The Lanes sites. One body fragment was recognized as coming from a hexagonal bottle and 51 came from square bottles. The remaining 130 body fragments are also most likely to be from square bottles.

Square bottles (Isings 1957, form 50) are also found in Claudian and Neronian contexts, and like cylindrical bottles they became popular during the Flavian period. They continued in production after the decline of cylindrical bottles at least until the later second century. Hexagonal bottles were also in use during the first and early second centuries, but were never very common and became rare after the mid second century. Figures 125 and 126 show deposition of prismatic bottle fragments from LEL A and OGL A. In contrast to the pattern for cylindrical bottles, these show high a high degree of residuality, with a large number of fragments appearing in post-Roman contexts.

Mould-blown square and other prismatic bottles nearly always have a raised design on the base of the vessel, often consisting of geometric elements, or more occasionally letters

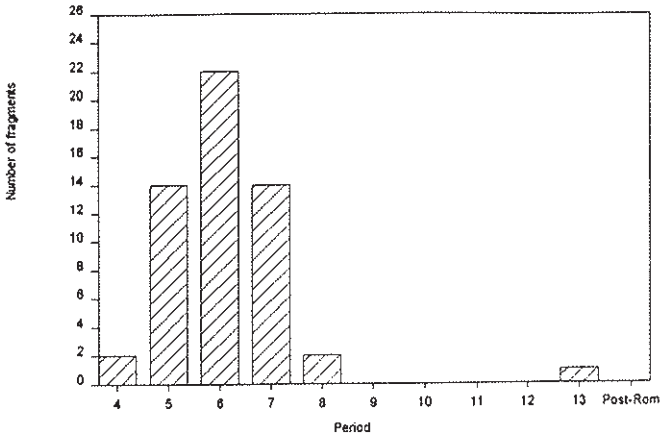

Fig 124 The distribution of cylindrical bottle fragments at LEL A

or pictorial motifs. The most common design consists of two or more concentric circles, probably used to strengthen the vessel base. Fourteen base fragments are decorated with concentric circles (Nos I95-6, I99-100, I102-3, I105, Figs 131-2, and I108-9, I112-4, I116 and I118). Some have central raised pellets (Nos I100-5) and one has L-shaped corner moulding, no doubt to stabilize the vessel. Number I105 (Fig 132) is a high concave base with three concentric circles, one partially obscured by a pontil mark, a rather unusual feature on prismatic bottles.

Number I98 (Fig 131) has a small cross within a circle, a design previously noted in Carlisle on bottles from Blackfriars Street (Price 1990, 177, no 64, fig 163) and Castle Street (Cool and Price 1991, 173-5, no 674, fig 154), although none of the examples come from the same mould. Other examples of this design from northern Britain have been listed in connection with the base fragment from Blackfriars Street. Number I98 has a faintly impressed second cross at a slightly different angle below the central cross. This may be a result of a mistake in cutting the mould design, or of a movement of the mould whilst blowing the vessel.

Two bases (Nos I101, Fig 131, and I117) have more complex geometric designs. Very little of Number I117 survives, but Number I101 can be reconstructed as a square containing four arcs forming a concave-sided diamond. Combinations of circles, squares and arcs are not uncommon on bottle bases, and several examples with this style of design have been noted in northern Britain (Charlesworth 1959b, fig 9). Number I107 has a rather more unusual design, possibly including lettering, though unfortunately too little of the base survives for any reading to be possible.

As with the cylindrical bottles, many of the square bottles are heavily worn. Additionally, several are made of rather bubbly glass with specks and streaks, including Number I102 (Fig 132) from OGL J, a largely complete bottle with purple streaks.

Discussion

The two largest assemblages come from OGL A and LEL A (Table 59). LEL A produced about 100 more glass fragments than OGL A, despite being of much the same area, and excavated under similar conditions. OGL B, although slightly larger than OGL A in area, yielded less than half the number of fragments, possibly as a result of machine excavation and cellarage in the upper layers.

Pre- and early Flavian vessels, such as strongly coloured cast vessels, polychrome and strongly coloured pillar moulded bowls, mould-blown vessels and Hofheim cups, are not present at The Lanes, although they were noted at Annetwell Street and Blackfriars Street. Furthermore, with the exception of one dark blue fragment, the only strong translucent colours used for blown tablewares are yellow/brown and yellow-green , colours known to have continued in use during the late first and early second centuries. Only one small fragment of blue/green pillar moulded bowl was found, at LEL A. This and the cylindrical bottles are the only vessels in the assemblage which are exclusively products of the first century. Glass usage in this area of The Lanes thus appears to begin at the very end of the first century AD or the beginning of the second century.

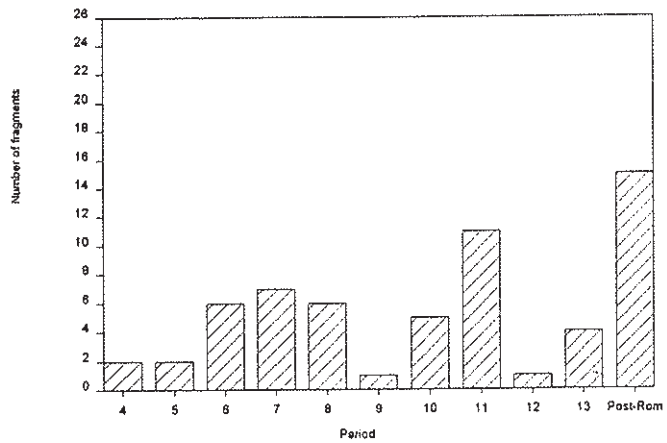

Fig 125 The distribution of prismatic bottle fragments at LEL A

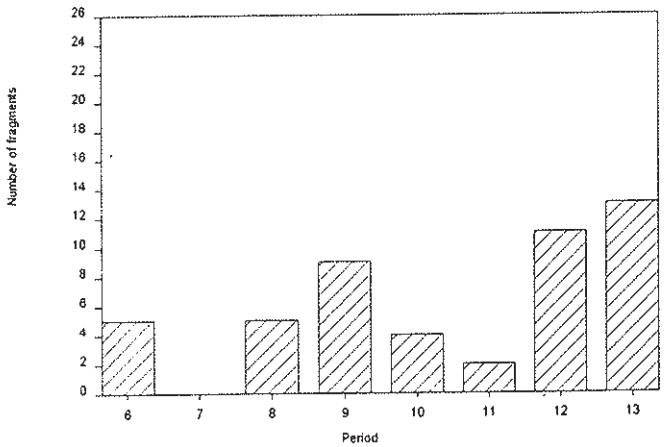

Fig 126 The distribution of prismatic bottle fragments at OGL A

It is clear from the analysis of vessel types that the majority of the assemblage dates from the late first to the mid second century. Of the recognizable vessels, six are likely to belong to the late second or early third century (Nos I29-31, I37, I52 and I58), and only two to the fourth century (Nos I62-3). The apparent reduction in glass usage on the site may be a result of a change in the pattern of glass disposal during the third and fourth centuries, with more fragments being collected for re-use as cullet. However, the dimensions of the few third- and fourth-century fragments are not noticeably smaller than those of the first and second centuries.

The content of the assemblage differs in several respects from those from Blackfriars Street and Annetwell Street, and is probably closest in character to the group from Castle Street. Blackfriars Street and Annetwell Street have more first-century glass, in particular mould-blown tablewares and pillar moulded bowls.

A high proportion of blue/green household containers, particularly bottles, has been noted, but there were also several vessels of high quality, including the facet-cut beakers (Nos I15-7), the black vessels and the cast polychrome bowl (No I1-2). First- to mid second-century jugs and bowls were popular at both LEL A and OGL. Colourless drinking cups of this period were very poorly represented at OGL, however, whereas LEL A produced many examples of cups of this type. The absence of first- to mid second-century colourless wheel-cut cups has twice before been noted in Carlisle. Excavations at Castle Street produced no examples, and at Annetwell Street none could be recognized with certainty. In this respect the pattern from The Lanes resembles most closely that from Blackfriars Street.

Few fragments showed signs of re-use after breakage. Number I74, from a wide bottle neck, has a heavily worn bottom edge and has probably been used for smoothing. In addition, two prismatic bottle fragments have grozed edges, and may have been used as tools for scraping and cutting. Overall, the size and condition of the fragments suggests a normal pattern of deposition associated with nearby settlement activity, and does not support the idea of dumping from elsewhere.

The catalogue

Cast glass

Tablewares

I1 Rim, body, base: bowl Fig 127
Twenty-one fragments, 11 joining in three groups; rim, body and base, bowl. Deep translucent green with opaque yellow roundels. Outurned rim, convex upper body tapering in to horizontal lower body. High base ring, tapering out slightly. Shallow rib around edge of rim. Cloudy weathering.
P Ht. (of rim frag) 27mm Dia. (of rim) 160mm
Dia. (of base) 78mm Th. 2.5-4mm
OGL A 315 G 3 Period: 10E
OGL A 314 G 4 Period: 10F
OGL A 158 G 2 Period: 10F-11
OGL A 205 G 1 Period: 10F-11
OGL A 2 G 218 Period: Modern
OGL A + G 5 Period: Unstratified

I2 Body: bowl Not illustrated
Deep translucent green with opaque yellow roundels. Slightly convex body. Trace of change of angle. Worn.
Dim. 8.5mm x 16.5mm
OGL B 36 G 2 Period: 6F

I3 Body: bowl Fig 127
Lower body fragment, pillar moulded bowl. Blue/green. Convex, part of one narrow rib. Inner surface ground, horizontal band of abraded lines on lower body.
Dim. 14mm x 18.5mm Th. 3-6mm
LEL A 386 G 70 Period: 10

I4 Body and base: bowl/plate Not illustrated
Lower body and base fragment. Colourless. Convex, part of lower body, high base ring, tapering out. Distorted by heat. Cloudy weathering.
P Ht. 13mm Th. 2-4.5mm
LEL A 372 G 65 Period: 11

Blown vessels

Tablewares

Polychrome

I5 Body Fig 127
Convex body fragment. Deep yellow/green, appearing black, with six opaque white trails marvered flush with outer surface. Worn.
Dim. 16.5mm x 17.5mm Th. 1.8-2.5mm
OGL A 36 G 26 Period: 13

Yellow/brown

I6 Rim, body, base: bowl Fig 127
Twenty-nine fragments, 26 joining; rim, body and base, cylindrical bowl. Vertical tubular rim, edge bent out and down. Straight-sided upper body, tapering in slightly. Strong carination. Horizontal lower body, flat base. Applied true base ring, ?pad, with post mark on edge of ring. All surfaces iridescent. Both rim and base slightly distorted.
Ht. 85mm Dia. (of rim) 190-200mm
Dia. (of base) 57-61mm Th. 1.5-3.5mm
OGL A 430 G10 Period: Unphased
OGL A 430 G18 Period: Unphased

I7 Neck: jug/flask Fig 127
Neck fragment. Lower part of narrow cylindrical neck, expanding out slightly above tooled constriction. Heavy vertical scratching. Cracks throughout fragment. Broken lower edge heavily worn.
P Ht. 55mm Dia. (of neck) 19-22.5mm Th. 3.5-5mm
OGL B 15 G 103 Period: 7B

I8 Handle and body: jug Fig 127
Handle and body fragment. Deep yellow/brown, appearing black. Complete narrow vertical curving ribbon handle, applied to upper body, pulled up and bent in towards neck, folded upper attachment, two shallow edge ribs. Part of convex upper body with parts of three shallow ribs. Very heavy opaque white weathering on all surfaces, which in places has caused an apparent pattern.
P Ht. 77mm W. 13.5-29.5mm Th. 4-10mm
OGL B 1 G 6 Period: 9

I9 Body and base: jug/jar Fig 127
Nine body and base fragments, two joining. Convex body tapering in to open pushed-in base ring; concave base. Parts of at least two vertical ribs. Base edge worn.
P Ht. 29mm Dia. (of base) 56mm Th. 1-3mm
OGL A 498 G 160 Period: 8B-C

I10 Body and base: jug/jar Fig 127
Lower body and base fragment. Wide lower body tapering in to open pushed-in base ring; concave base. Base edge worn. Light patchy iridescence.
P Ht. 18mm Dia. (of base) 80mm Th. 1-2.5mm
OGL B 173 G 79 Period: 5B

I11 Body and base: jug/jar Not illustrated
Lower body and base edge fragment. Convex lower body, tapering in to open pushed-in base ring. Light patchy iridescence.

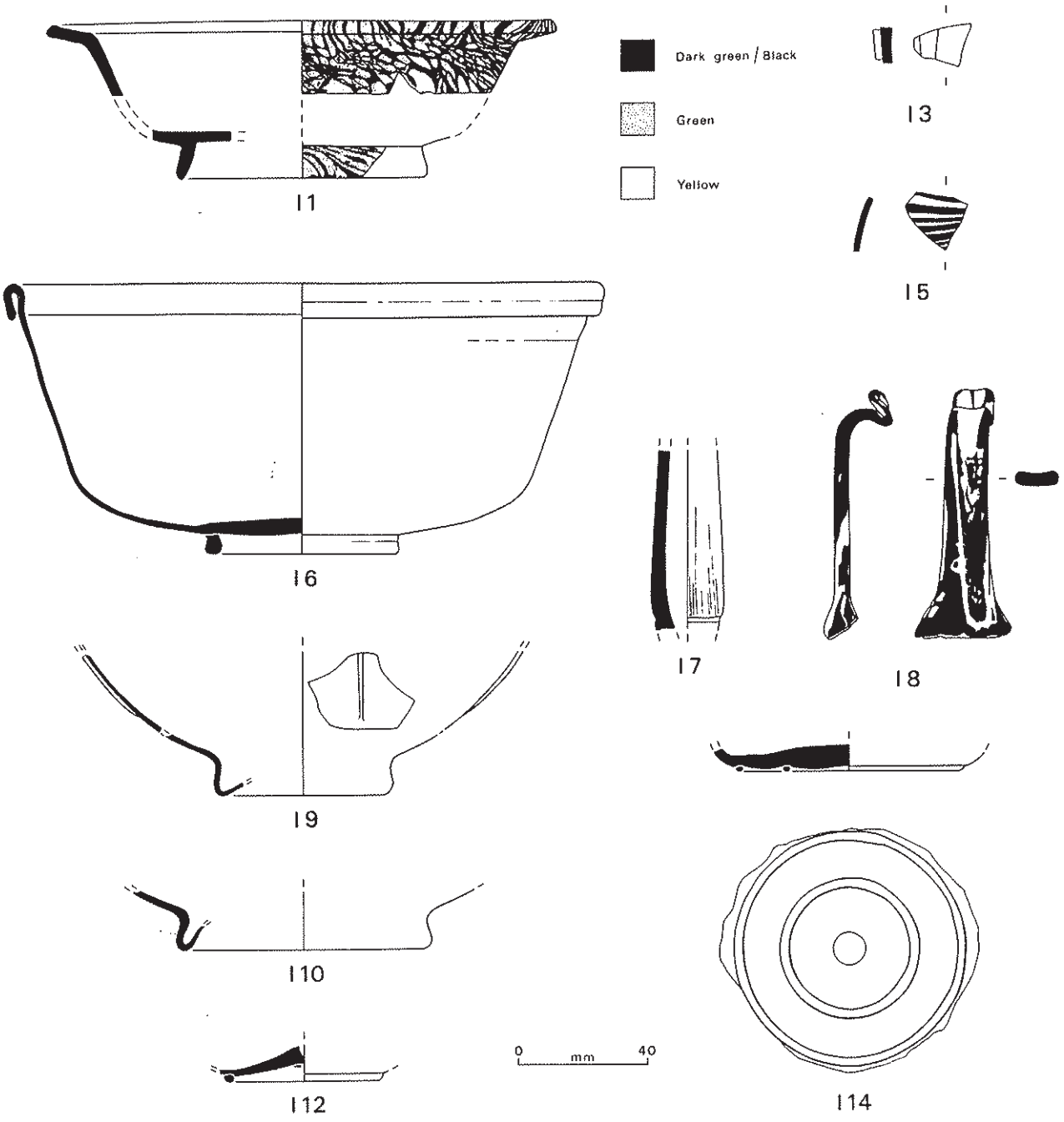

Fig 127 Cast glass vessels (I1 and I3), polychrome (I5) and coloured (I6-14) tablewares (scale 1:2)

P Ht. (about) 25mm Th. 1.2-1.5mm
OGL B 186 G 57 Period: 5A

Yellow/green

I12 Base Fig 127
Base fragment. Dark yellow/green, appearing black. Slightly concave base, thickening towards centre, applied trail base ring. Pontil mark in centre of base. Patchy iridescence.
P Ht. 6mm Dia. (of base) 50mm Th. 4.5mm
OGL A 36 G 63 Period: 13

I13 Body and base: ?jug/jar Not illustrated
Lower body and base fragment. Convex lower body, slightly concave base.
P Ht. 7mm Dia. (of base, about) 120mm Th. 1.5-2mm
OGL A 487 G 121 Period: 8C

Colourless and blue

I14 Base Fig 127
Sixty-five base fragments, 27 joining plus numerous small chips. Colourless and opaque blue. Thick-walled; flat base with two unmarvered concentric blue trails. Central pontil mark. Shattered by strain cracks.
Dia. (of base, about) 70mm Th. 3-7.5mm
LEL A 181 G 3 Period: 13

Colourless

Cups/bowls, facet-cut

I15 Body Not illustrated
Two joining body fragments. Straight-sided. Part of one circular cut facet.
Dim. 9mm x 11mm Th. 2.5-2.7mm
OGL A 308 G 104 Period: 13

I16 Rim, body: beaker Fig 128
Seven joining fragments, rim and upper body, conical beaker. Greenish tinge. Complete rim, edge cracked-off and ground smooth.

Straight side tapering in. Outer surface below rim ground away leaving two horizontal ridges at rim and one on upper body. Five rows of vertical oval facets set in quincunx forming diamonds. Small facets alternating with larger facets on top row. Vertical polishing marks in facets. Occasional strain cracks.
P Ht. 58mm Dia. (of rim) 93.5mm Th. 1-4mm
LEL A 606 G 11 Period: 2C

I17 Rim, body: beaker Fig 128
Vessel missing; information from plaster cast.
Many fragments, vertical rim, conical upper body. Outside surface ground away to form three bands of raised decoration: two close-set horizontal ridges at rim; broad horizontal band on upper body decorated with one row of narrow vertical facets (12 surviving); two close-set horizontal ridges below this.
P Ht. (about) 50mm W. (about) 47mm
LEL A 606 G 12 Period: 2C

Cups/bowls, wheel-cut

I18 Body Not illustrated
Body fragment. Greenish tinge. Straight side, horizontal wheel-cut line. Cloudy weathering.
P Ht. 35mm Dia. (of body) 80mm Th. 1mm
OGL B + G 82 Period: Unstratified

I19 Body Not illustrated
Body fragment. Greenish. Straight-sided body tapering in to strong carination. Wide lower body tapering in slightly. Two close-set horizontal abraded bands above carination, one horizontal abraded band on lower body. Iridescent weathering.
P Ht. 9mm Dia. (of body, about) 100mm Th. 1.5mm
OGL B 62 G 65 Period: 6C

I20 Body and base: cup/bowl Fig 128
Lower body and base fragment. Greenish tinge. Wide convex lower body tapering in. Separately blown foot, missing. Horizontal wheel-cut line on lower body. Occasional small bubbles. Light iridescence.
P Ht. 19mm Dia. (of top of base) 24mm Th. 1.5-3mm
OGL C 65 G 11 Period: 6F

I21 Rim and body: cup Fig 128
Rim and upper body fragment. Out-turned rim, edge cracked-off and ground. Conical upper body. Outer surface below rim ground away, leaving plain band with two horizontal wheel-cut lines below rim and horizontal ridge on upper body.
P Ht. 16mm Dia. (of rim) 90mm Th. 1-1.5mm
LEL A 365 G 121 Period: 11

I22 Rim and body: cup Fig 128
Rim and upper body fragment. Greenish tinge. Curved rim, edge cracked-off and ground. Cylindrical upper body. Horizontal abraded band below rim and on upper body. Light iridescent weathering.
P Ht. 18mm Dia. (of rim) 90mm Th. 0.5-1mm
LEL A 118 G 188 Period: 17

I23 Rim and body: cup Fig 128
Two joining rim and upper body fragments. Greenish tinge. Curved rim, edge cracked-off and ground. Straight-sided upper body. Horizontal abraded band below rim. Occasional tiny bubbles. Patch of cloudy weathering.
P Ht. 13mm Dia. (rim) 90mm Th. 1mm
LEL A 118 G 111 Period: 17

I24 Body: cup Fig 128
Body fragment. Greenish tinge. Almost vertical side, strong carination. Straight lower body tapering in. Horizontal wheel-cut line on lower body. Patches of cloudy weathering. Scratches on outer surface, strain cracks.
P Ht. 16mm Dia. 70mm Th. 1.7-5mm
LEL A 359 G 120 Period: 11

I25 Body: cup Fig 128
Body fragment, cylindrical cup. Greenish tinge. Vertical side, edge of carination. Two horizontal wheel-cut lines within band of abrasion. Worn at carination.
P Ht. 32mm Dia. 70mm Th. 1-1.5mm
LEL A + G 24 Period: Unstratified

I26 Body: cup Not illustrated
Three body fragments, cylindrical cup. Greenish tinge. Vertical side, edge of carination. Band of three horizontal wheel-cut lines and further band of at least three wheel-cut lines on body. Two horizontal abraded bands above carination. Occasional small bubbles. Light wear at carination.
P Ht. 26.5mm Dia. 80mm Th. 0.5-1mm
LEL A 118 G 49 Period: 17

I27 Body: cup Not illustrated
Two joining body fragments. Curved rim, edge missing, convex body. Horizontal abraded band below rim. Patchy yellow weathering.
P Ht. 25mm Th. 1mm
LEL A 69 G 103 Period: 20

I28 Body: bowl/flask Fig 128
Two body fragments. Greenish tinge. Convex body, band of two horizontal wheel-cut lines. Outside surface lightly wheel-polished. Occasional tiny bubbles. Light scratches, strain cracks.
P Ht. 34mm Th. 2-2.5mm
LEL A 181 G 112 Period: 13

Cups/bowls, undecorated

I29 Rim and body: cup Fig 129
Rim and body fragment. Vertical rim, edge fire-rounded. Cylindrical body. Small bubbles.
P Ht. 35mm Dia. (of rim) 92mm Th. 0.5-3.5mm
OGL A 2 G 44 Period: Modern

I30 Rim and body: cup Fig 129
Rim and upper body fragment. Vertical rim, edge fire-rounded. Cylindrical body. Cloudy weathering.
P Ht. 18.5mm Dia. (of rim) 120mm Th. 1.5-4mm
OGL A 2 G 42 Period: Modern

I31 Rim: ?bowl/plate Not illustrated
Rim fragment. Horizontal rim, edge fire-rounded. Elongated bubbles parallel to rim.
Dim. 14.5mm x 19mm Th. 2-3mm
OGL A 543 G 128 Period: West 3

I32 Body and base: ?cup/bowl Fig 129
Lower body and base fragment. Yellowish tinge. Lower body tapering in to horizontal tubular pushed-in base ring; slightly concave base. Strain cracks.
P Ht. 10mm Dia. (of base) 60mm Th. 0.8-1.8mm
OGL A 194 G 98 Period: 9E or earlier

I33 Body and base: cup Fig 129
Lower body and base fragment. Greenish tinge. Convex lower body tapering in to horizontal tubular pushed-in base ring. Trace of concave base.
P Ht. 11mm Dia. (of base, about) 40mm Th. 1.5mm
OGL A 705 G 148 Period: 7B-8C

I34 Body and base Not illustrated
Two joining body and base fragments. Horizontal lower body, narrow trailed base ring.
P Ht. 5.5mm Th. 2-3.5mm
OGL B 76 G 33 Period: 6F

I35 Body and base: ?cup Fig 129
Lower body and base fragment. Greyish tinge. Lower body tapering in to pushed-in tubular base ring; concave base with low central kick. Base ring worn. Post mark.
P Ht. 7mm Dia. (of base) 32-4mm Th. 0.7mm
LEL A 365 G 59 Period: 11

I36 Base Not illustrated
Seven base fragments. Trace of lower body, applied vertical base ring, edge missing. Many fractures.
P Ht. 12mm Th. 2.5-5.8mm
LEL A 88 G 41 Period: 19B

Jugs

I37 Rim and neck: jug Fig 129
Rim and neck fragment, jug with pouring spout. Rim edge rolled in, down, and flattened inside. Funnel mouth tapering in. Small horizontal elongated bubbles. Streaky weathering.

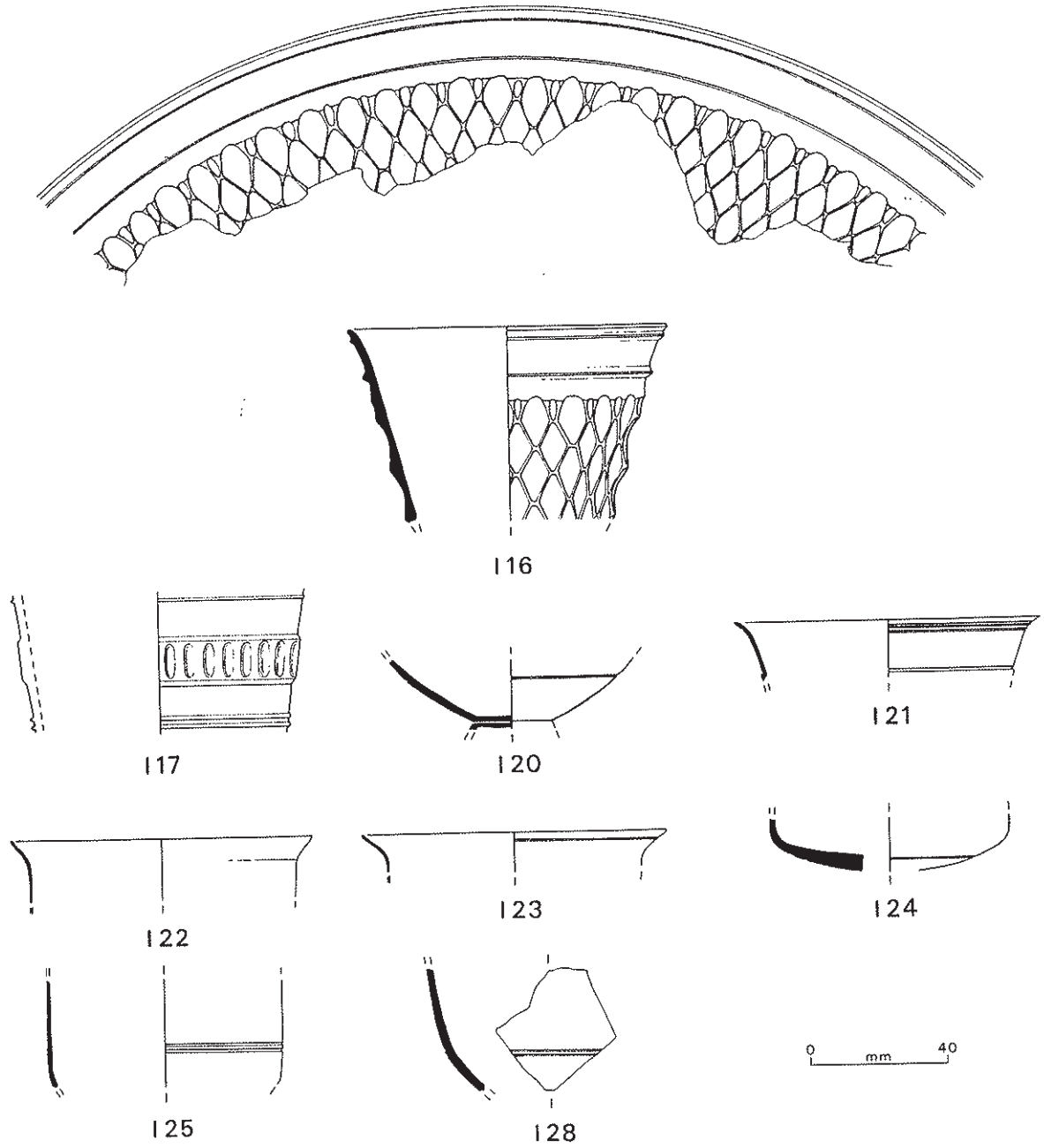

Fig 128 Facet-cut glass beakers (I16 and I17), colourless cups and bowls (scale 1:2)

P Ht. 21mm Th. 1.5-2.5mm
OGL A 513 G 14 Period: West 5

Blue/green

Cups and bowls

I38 Rim and body: bowl Fig 129
Two fragments, rim and upper body. Vertical tubular rim turned out and down. Straight-sided upper body.
P Ht. 16mm Dia. (of rim, about) 140mm Th. 1.5mm
OGL A 543 G 224 and G 225 Period: West 3

I39 Body and base Fig 129
Lower body and complete base. Wide convex lower body tapering in to tubular pushed-in base ring, slightly concave base. Circular pontil mark at centre of base.
P Ht. 9mm Dia. (of base) 58mm Th. 0.7mm
OGL A + G 171 Period: Unstratified

I40 Rim and body: cup/bowl Fig 129
Rim and body fragment. Vertical rim, edge fire-rounded. Slightly convex upper body, tapering in. Grey streaks.
P Ht. 23mm Dia. (of rim) 110mm Th. 1-2.7mm
LEL A 74 G 105 Period: 20

I41 Base: ?bowl Fig 129
Base fragment. Trace of horizontal lower body. High applied base ring tapering out. Tooling marks on inside and outside surface of base. Light scratches, base edge worn. Post scar on inside edge of base.
P Ht. 18mm Dia. (of base) 66mm Th. 5mm
LEL A 531 G 131 Period: 8A-D

Jars

I42 Rim: jar Not illustrated
Rim fragment. Part of vertical tubular rim, edge rolled out, then bent out and down. Worn.

P Ht. 13.5mm Dia. (of rim) 90mm Th.1.5-5mm
OGL A 968 G 159 Period: 6

I43 Rim and body: ?jar Fig 129
Rim and upper body fragment. Tubular rim, edge bent in and down. Upper body tapering in. Black specks and yellow/brown streaks.
P Ht. 20mm Dia. (of rim) 86mm Th. 0.8-1mm
LEL A 114 G 47 Period: 18

I44 Rim and body: ?jar Fig 129
Rim and upper body fragment. Tubular rim, edge bent in and down. Upper body tapering in. Light iridescence.
P Ht. 11mm Dia. (of rim) 90mm Th. 1-1.5mm
LEL A 527 G 128 Period: 8D

Jugs

I45 Body and base: jar/jug Fig 129
Thirty-five fragments, 15 joining in two groups, body and base, jar/jug. Wide convex body tapering in to small concave base. Parts of at least four short diagonal ribs. Base edge worn. Patchy iridescence.
P Ht. (about) 85mm Dia. (of base, about) 70mm
Th. 1-2.5mm
OGL A 1006 G 170 Period: 5

I46 Handle: jug Fig 129
Handle fragment. Part of straight ribbon handle with rounded edge ribs and narrow central rib. Elongated bubbles.
P Ht. 26.5mm W. 26.5-29mm Th. 5.5-7mm
OGL A 114 G73 Period: 12A-B

I47 Handle: jug Not illustrated
Handle fragment. Part of straight ribbon handle. Shallow central groove on inner surface, high central ridge on outer surface. Elongated bubbles.
P Ht. 23mm W. 22.5mm Th. 4.5-6.5mm
OGL A + G 173 Period: Unstratified

I48 Handle: jug Not illustrated
Handle fragment. Part of straight ribbon handle. Broad rounded edge rib. Elongated streaks and bubbles.
P Ht. 34.5mm Th. 2.5-6.7mm
OGL A 445/440 G 114 Period: 9E

I49 Handle: jug Fig 129
Handle fragment. Part of broad straight ribbon handle. Prominent central rib. Elongated bubbles. Black specks and yellow/brown streaks.
P Ht. 45.5mm W. 46mm Th. 3-8mm
OGL B 186 G 50 Period: 5A

I50 Handle: jug Not illustrated
Handle fragment. Part of broad straight ribbon handle. Shallow central groove on inner surface. Diagonal central rib, edge chipped, on outer surface. Elongated bubbles. Black specks. Light scratches.
P Ht. 41mm W. 24.5-25.5mm Th. 4-7mm
OGL B 130 G 106 Period: 6C

I51 Handle: jug Not illustrated
Handle fragment. Part of ribbon handle. Central rib, edge chipped, shallow edge rib. Elongated bubbles.
P Ht. 9mm Th. 5-5.5mm
OGL B 184 G 45 Period: 5A

I52 Handle and body: jug Fig 129
Handle and body fragment. Convex body, edge of lower handle attachment above narrow horizontal unmarvered trail. Bubbly.
Dim. 23mm x 14mm Th. 1-5mm
Clack 2 30 G 12 Period: 10B

I53 Neck: ?jug Not illustrated
Neck fragment. Cylindrical neck, tooled constriction, two vertical shallow ribs. Elongated bubbles.
P Ht. 29.5mm Dia. (of neck) 20mm Th. 3.5-4mm
LEL A 338 G 119 Period: 12A

I54 Handle and body: jug Fig 129
Handle and body fragment. Conical body, part of central pinched trail of lower handle attachment. Elongated bubbles.
P Ht. 33mm Th. 1-11.5mm
LEL A 260 G 55 Period: 12C

I55 Body: ?jug Not illustrated
Upper body fragment. Tooling marks at base of neck, conical upper body expanding out. Seven shallow close-set spiral ribs.
Dim. 18mm x 14.5mm
LEL A 550 G 208 Period: 7A

I56 Body: jug Fig 129
Body fragment. Conical body expanding out. Four shallow spiral ribs. Trace of handle attachment. Patchy iridescence.
Dim. 21.5mm x 29mm Th. 1.5-2mm
LEL A 569 G 215 Period: 6C-E

I57 Body: ?jug Not illustrated
Body fragment. Conical body expanding out. Six shallow spiral ribs. Patchy iridescence.
Dim. 41.5mm x 23mm Th. 1.5-2mm
LEL A 550 G 144 Period: 7A

I58 Body: ?jug/flask Fig 129
Body fragment, convex. Two unmarvered horizontal trails. Small bubbles and black specks. Streaks of weathering.
P Ht. 24.5mm Th. 1-2mm
LEL A 84 G 182 Period: 18

I59 Body and base: ?jug Not illustrated
Lower body and base fragment. Wide lower body tapering in to open pushed-in base ring; edge of base. Tiny bubbles. Iridescent weathering. Base edge worn.
P Ht. 14mm Dia. (of base) 80mm Th. 1-1.5mm
LEL A 84 G 39 Period: 18

Unidentified base fragments

I60 Base Not illustrated
Base fragment. Trace of lower body tapering in to slightly concave base. Edge worn.
Dia. (of base, about) 60mm Th. 1mm
OGL A 776 G 20 Period: 6

I61 Base Not illustrated
Base fragment. Trace of base edge; concave base. Black specks and yellow/brown streaks. Small bubbles. Heavily fractured.
Dim. 37mm x 16mm Th. 3.2-5.5mm
OGL B 51 G 63 Period: 7

Late Roman green

I62 Rim and body: cup Fig 129
Rim and body fragment, cup. Yellow/green. Curved rim, edge cracked-off. Slightly convex upper body. Horizontal abraded band at rim and on upper body.
P Ht. 22mm Dia. (of rim, about) 90mm Th. 2.5-3mm
OGL A 2 G 40 Period: Modern

I63 Rim and body: cup Fig 129
Six joining fragments, rim and upper body. Out-turned rim, edge fire-rounded. Straight-sided upper body. Small bubbles; patchy iridescence.
P Ht. 21mm Dia. (of rim) 60mm Th. 1-3mm
LEL A 73 G 34 Period: 20

Unguent bottles and flasks

Blue/green

Unguent bottles

I64 Body and base: unguent bottle Fig 130
Lower body and base fragment. Trace of constriction, conical lower body expanding out. Flat base. Small bubbles. Light iridescence.
P Ht. 24mm Dia. (of base) 48mm Th. 2.5-5.5mm
OGL C 51 G 10 Period: 2

I65 Body and base: unguent bottle Not illustrated
Lower body and base fragment. Trace of lower body; slightly concave base. Lightly worn.
P Ht. 7mm Dia. (of base) 26mm Th. 2-3.5mm
LEL A 602 G 86 Period: 6A-B

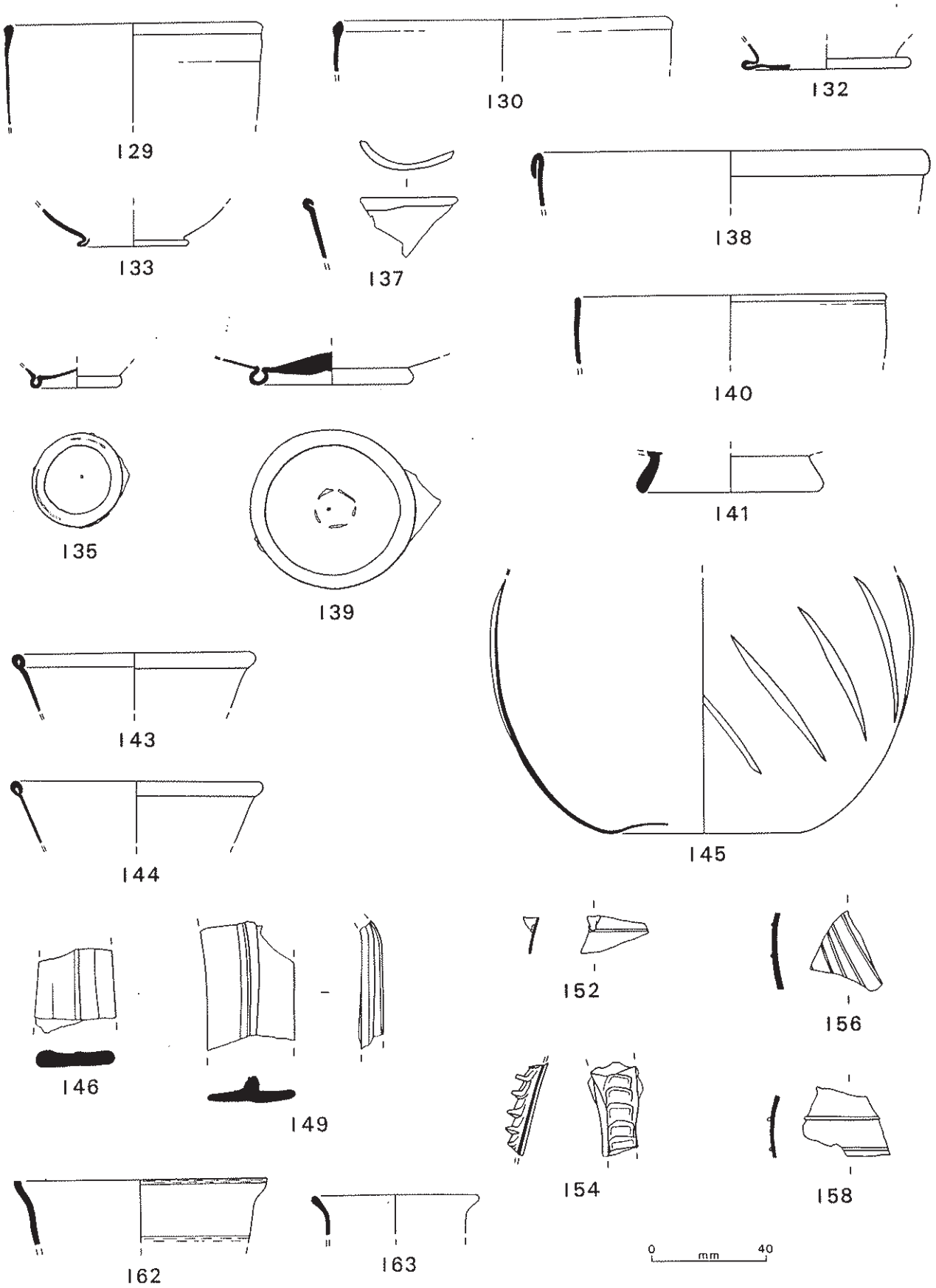

Fig 129 Undecorated glass cups and bowls (I29-35), jugs (I37), blue/green cups and bowls (I38-41), jar (I43), jugs (I45-58) and late Roman green cups (I62-3)

Flasks

I66 Neck, shoulder, handle: flask Fig 130
Neck, shoulder and 'dolphin' handle fragment. Trace of narrow cylindrical neck, horizontal shoulder; small looped handle applied to shoulder, trailed up neck then bent out and down to join shoulder. Narrow vertical return trail. Elongated bubbles. Black specks and yellow/brown streaks.
P Ht. 25mm W. (of handle) 19.5-23.5mm Th. 6-8mm
OGL B 15 G 9 Period: 7B

I67 Rim and neck: ?flask Fig 130
Rim and neck fragment. Out-turned rim, edge rolled in, then bent out. Cylindrical neck. Small specks and bubbles.
P Ht. 5mm Dia. (of rim) 36mm Th. 1-3.5mm
OGL A 2 G 50 Period: Modern

I68 Body and base: flask Fig 130
Two joining lower body and base fragments. Convex lower body; thick, slightly concave base. Bubbly. Cloudy and iridescent weathering.
P Ht. 32mm Dia. (of base) 60mm Th. 1.3-3.8mm
LEL A 599 G 85 Period: 5

Bottles

Blue/green

Rims, necks, shoulders and handles

I69 Rim, neck, handle: bottle Fig 130
Rim, neck, and handle fragment. Horizontal rim, edge folded out, up, in and flattened. Cylindrical neck. Upper folded attachment of handle. Small bubbles, elongated in neck and handle. Rim worn.
P Ht. 19mm Dia. (of rim) 52mm
Dia. (of neck) 18mm Th. 4-5mm
OGL A 558 G 133 Period: West 1

I70 Rim and neck: bottle Not illustrated
Rim and neck fragment. Horizontal rim, edge folded out, up, in and flattened. Cylindrical neck. Trace of upper handle attachment. Distorted by heat. Small elongated bubbles.
P Ht. 26.5mm Dia. (of rim) 60mm Dia. (of neck) 30mm
Th. 7-8mm
OGL A 38 G 65 Period: 12A-B

I71 Rim and neck: bottle Fig 130
Rim and neck fragment. Diagonal rim, edge folded out, up, in and flattened. Cylindrical neck. Strain cracks on surface and inner edge of rim. Patchy weathering.
P Ht. 19mm Dia. (of rim) 56mm Dia. (of neck) 38mm
Th. 4.5mm
OGL A 749 G 151 Period: 6

I72 Rim and neck: bottle Fig 130
Rim and neck fragment. Horizontal rim, edge folded out, up, in and flattened. Cylindrical neck. Patchy iridescent weathering.
P Ht. 17mm Dia. (of rim) 80mm Th. 5.5mm
OGL A 445/440 G 113 Period: 9E

I73 Neck and handle: bottle Not illustrated
Neck and handle fragment. Cylindrical neck. Part of upper folded handle attachment. Elongated bubbles, streaks and specks in handle.
P Ht. 25mm Dia. (of neck) 25mm Th. 4.5mm
OGL A 191 G 92 Period: 9G or later

I74 Neck: bottle Not illustrated
Neck fragment. Wide cylindrical neck. Tooling marks at base of neck. Edges heavily worn from secondary use. Small elongated bubbles.
Dia. (of neck) Th. 6mm
OGL A 844 G 157 Period: 6

I75 Handle: bottle Not illustrated
Handle fragment. Angular reeded handle. Wide rounded edge rib, seven shallow ribs. Elongated bubbles.
P Ht. 27mm Th. 5.5mm
OGL A 122 G 79 Period: 12A

I76 Rim and neck: bottle Fig 130
Rim and neck fragment. Horizontal rim, edge folded out, up, in and flattened. Cylindrical neck. Handle scar at edge of rim. Yellow/brown streaks. Small bubbles, elongated in neck. Strain cracks on inside edge of rim. Lightly worn.
P Ht. 12mm Dia. (of rim) 60mm Dia. (of neck) 22mm
Th. 4.5mm
OGL B + G 59 Period: Unstratified

I77 Rim and neck: bottle Fig 130
Rim and neck fragment. Diagonal rim, edge folded out, up, in and flattened. Cylindrical neck, handle scar. Small bubbles, elongated in neck. Strain cracks on inner edge of rim. Lightly worn. Iridescent weathering.
P Ht. 26mm Dia. (of rim) 52mm Dia. (of neck) 22mm
Th. 6.5mm
OGL B 130 G 38 Period: 6C

I78 Rim and neck: bottle Fig 130
Rim and neck fragment. Horizontal rim, edge folded out, up, in and flattened. Trace of cylindrical neck. Heavy scratching on upper surface and edge of rim.
P Ht. 11mm Dia. (of rim) 60mm Dia. (of neck) 24mm
Th. 4mm
OGL B + G 74 Period: Unstratifed

I79 Rim and neck: bottle Fig 130
Rim and neck fragment. Horizontal rim, edge folded out, up, in and flattened. Cylindrical neck. Elongated bubbles. Black specks and yellow/brown streaks.
P Ht. 28mm Dia. (of rim) 46mm Th. 3mm
OGL B 20 G 95 Period: 7B

I80 Rim: bottle Not illustrated
Two joining rim fragments. Horizontal rim, edge folded out, up, in and flattened. Small bubbles. Heavily fractured.
P Ht. 9mm Dia. 76mm
OGL B 23 G 81 Period: 8B

I81 Rim: bottle Not illustrated
Rim fragment. Horizontal rim, edge folded out, up, in and flattened. Small bubbles. Light scratches; iridescent weathering.
P Ht. 5.5mm Dia. 50mm
OGL B 130 G 68 Period: 6C

I82 Handle: bottle Not illustrated
Handle fragment. Upper part of broad angular handle. Folded upper attachment on cylindrical neck. Trace of reeding below angle.
P Ht. 30mm W. 50-55mm Th. 2.5-10mm
OGL B 15 G 10 Period: 7B

I83 Handle: bottle Not illustrated
Handle fragment. Angular handle, part of three vertical ribs. Elongated bubbles. Red and black specks, yellow/brown streaks. Cloudy weathering. Worn.
P Ht. 36.5mm Th. 3-5.5mm
OGL B 188 G 53 Period: 5A

I84 Handle: bottle Not illustrated
Handle fragment. Angular ribbon handle. Uneven edges. Five irregular shallow grooves on outer surface. Elongated bubbles. Occasional black specks.
P Ht. 34.5mm W. 24.5-25.5mm Th. 4-5.5mm
OGL C 4 G 8 Period: 2

I85 Rim and neck: bottle Fig 130
Rim and neck fragment. Diagonal rim, edge rolled out into fold, then bent out, up, in and flattened. Wide cylindrical neck. Elongated bubbles. Patchy iridescence. Inner edge of rim worn.
P Ht. 25mm Dia. 100mm Dia. (of neck) 70mm Th. 4mm
LEL A 569 G 79 Period: 6C-E

I86 Rim and neck: bottle Fig 130
Rim and neck fragment. Horizontal rim, edge bent out into fold, then out, up, in and flattened. Trace of wide cylindrical neck. Elongated bubbles. Nineteen short radial cracks on upper surface of rim. Inner edge of rim worn.
P Ht. 14.5mm Dia. (of rim) 120mm
Dia. (of neck, about) 80mm Th. 3.5mm
LEL A 440 G 123 Period: 10

I87 Rim and handle: bottle Not illustrated

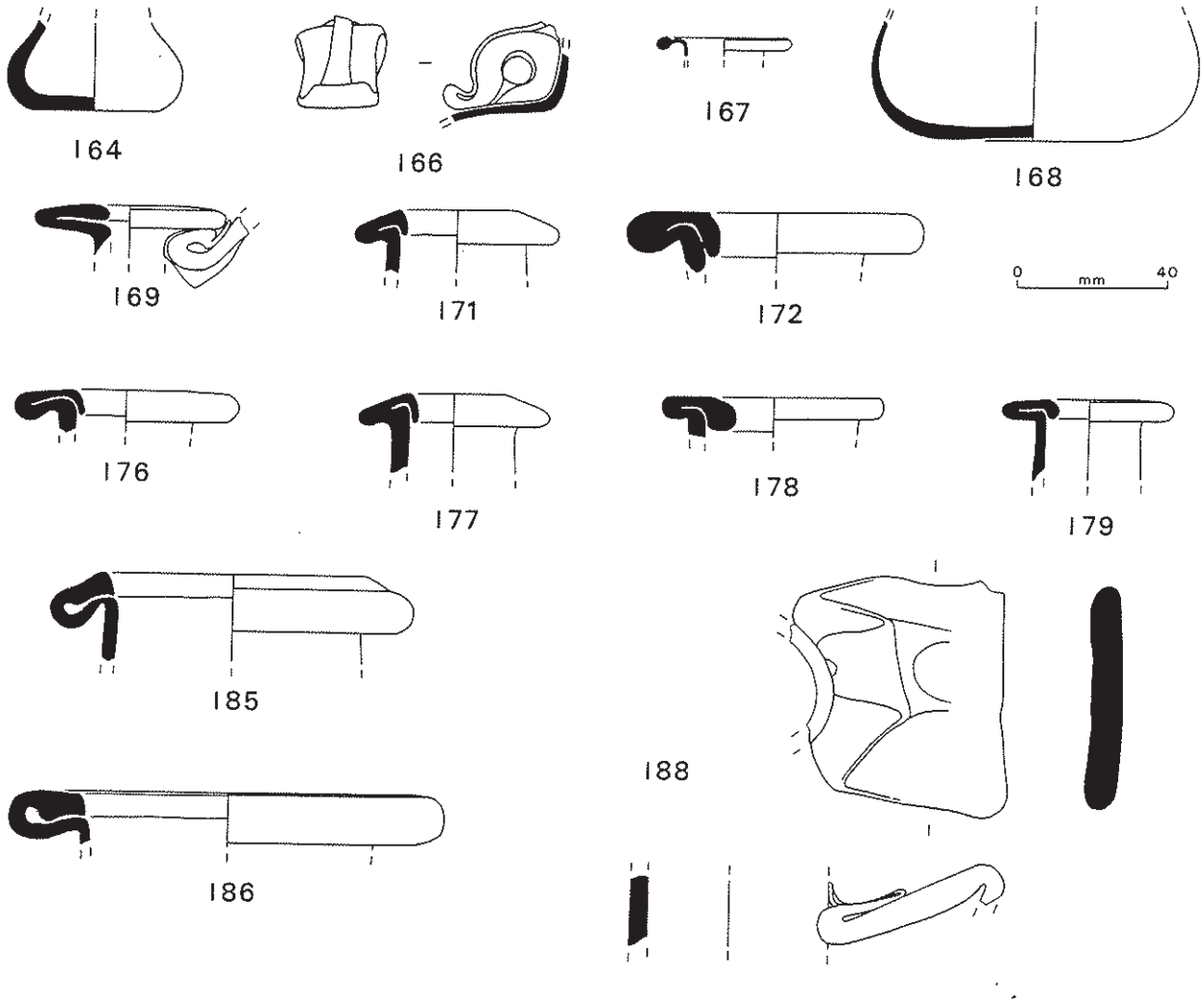

Fig 130 Glass unguent bottle (I64), flasks (I66-8) and bottles (scale 1:2)

Rim and handle fragment. Horizontal rim, folded out, up, in and flattened. Part of upper folded handle attachment. Melted and distorted.
Dim. 17mm x 20mm
LEL A 85 G 106 Period: 19B

I88 Neck and handle: bottle Fig 130
Neck and handle fragment. Cylindrical neck. Upper part of broad plain angular handle. Folded upper attachment. Large elongated bubbles in handle. Black specks and yellow/brown streaks.
P Ht. 35mm Dia. (of neck) 53mm W. 58-66.5mm
Th. 5.5-10mm
LEL A 550 G 77 Period: 7A

I89 Shoulder and handle: bottle Not illustrated
Two joining shoulder and handle fragments. Horizontal shoulder, part of lower handle attachment. Tiny bubbles. Upper surface worn.
P Ht. 11mm Th. 2mm
LEL A 599 G 159 Period: 5
LEL A 550 G 214 Period: 7A

Cylindrical bottles

I90 Body: bottle Not illustrated
Two joining body fragments, cylindrical bottle. Slightly curved below shoulder. Vertical scratches.
P Ht. 138mm Dia. (about) 180mm Th. 2.5-6mm
OGL A 1022 G 169 Period: 1-5

I91 Base: bottle Not illustrated
Base fragment, ?cylindrical bottle. Edge of thick base. Patch of yellow/brown streaks. Heavily worn.
Dim. 22.5mm x 24mm Th. 8.5-9.5mm
OGL B 184 G 46 Period: 5A

I92 Upper body: bottle Fig 131
Nine joining fragments, rim, neck shoulder, handle and upper body. Diagonal folded rim, bent out, up, in and flattened. Narrow cylindrical neck with tooling marks at base. Horizontal shoulder, cylindrical upper body. Angular reeded handle, applied to shoulder and attached to neck below rim with 15 vertical ribs pulled down into long points on shoulder. Patchy weathering. Horizontal scratches on neck, vertical scratches on upper body.
P Ht. 78mm Dia. (of rim) 49.5-50.5mm
Dia. (of neck) 36-7mm Dia. (of body) 132mm
Th. 3.5-6.5mm
LEL A 578 G 10 Period: 6A-E

I93 Body and base: bottle Not illustrated
Four fragments, two joining, lower body and base. Vertical side, slightly concave base. Cloudy and iridescent weathering. Heavy vertical scratching on body; base edge worn.
P Ht. 65mm Dia. (of base) 155mm Th. 2.5-3.8mm
LEL A 578 G 80 Period: 6A-E

I94 Body and base: bottle Not illustrated
Lower body and base fragment. Trace of vertical side; slightly concave base. Iridescent weathering. Base edge worn.
P Ht. 9.5mm Th. 3.5mm
LEL A 550 G 206 Period: 7A

Square bottles

I95 Body and base: bottle Fig 131

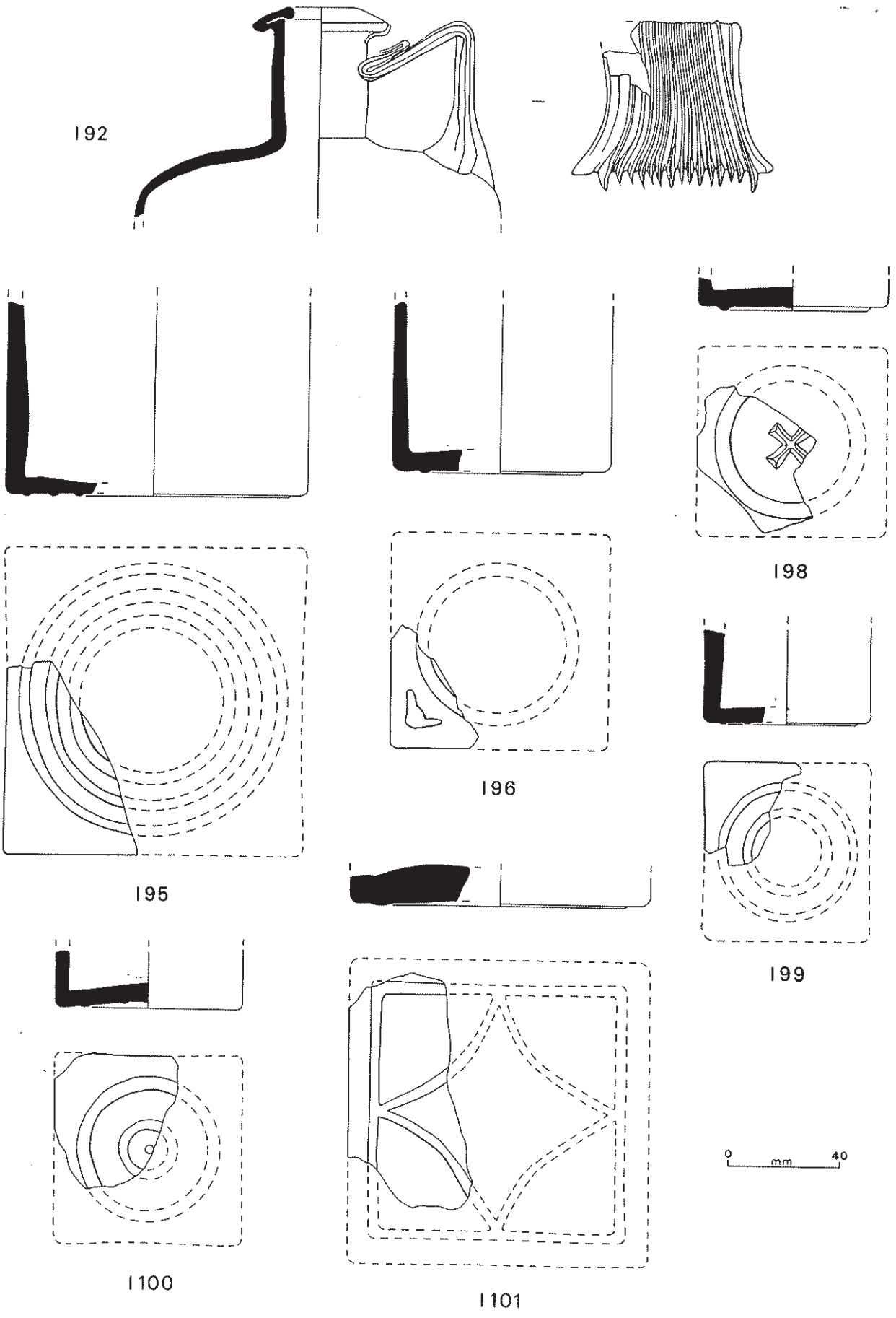

Fig 131 Cylindrical glass bottle (I92) and square bottles (scale 1:2)

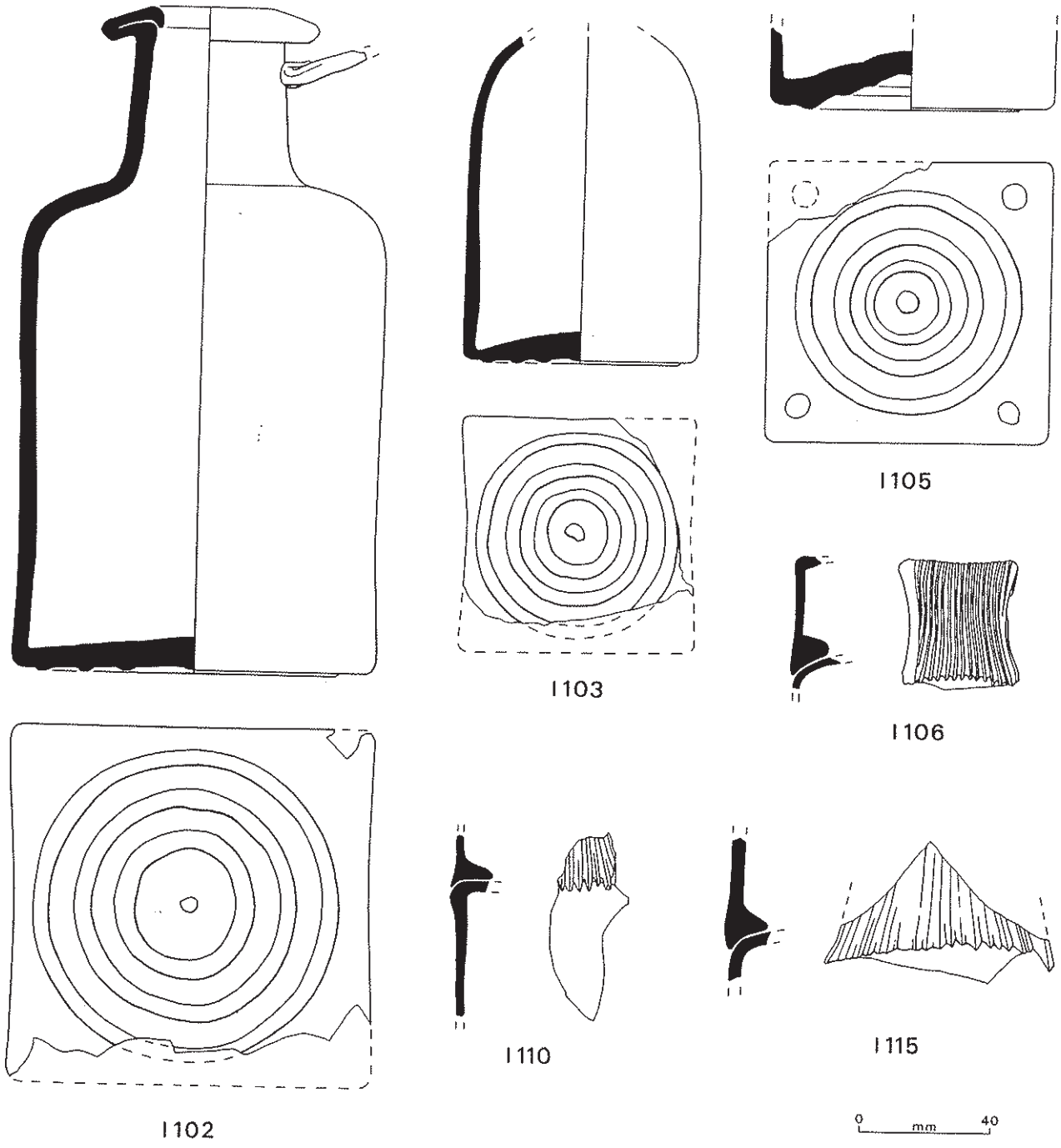

Fig 132 Square (I102-5) and prismatic (I106-15) glass bottles (scale 1:2)

Lower body and base fragment. Part of two straight sides. Flat base. Raised base design; three concentric circles. Patchy iridescent weathering. Vertical scratches on body. Base worn.
P Ht. 71mm Dia. (of outer circle) 96mm Th. 4.5-8.5mm
CAL A 80 G 70 Period: 3A

I96 Body and base: bottle Fig 131
Lower body and base fragment. Part of two straight sides, and trace of third; slightly concave base. Raised base design; L- shaped corner pellet, at least one circle. Small bubbles. Vertical scratches on body; base edge worn. Cloudy and iridescent weathering.
P Ht. 60mm W. (of side) 74mm
Dia. (of circle, about) 55mm Th. 3-9mm
OGL A 190 G 162 Period: 13

I97 Body and base: bottle Not illustrated
Lower body and base fragment. Part of two straight sides and edge of third; flat base. Trace of raised base design. Small bubbles. Vertical scratches on body. Base edge worn.
P Ht. 71mm W. (min) 56mm Th. 3.5-7mm
OGL A 463 G 118 Period: 9A-D

I98 Body and base: bottle Fig 131
Lower body and base fragment. Part of two straight sides; flat base. Raised base design; circle with small central cross, with trace of another cross on a different alignment underneath. Small bubbles; yellow/brown streaks. Worn.
P Ht. 11.5mm Dia. (of circle) 52mm Th. 5.5-8mm
OGL A 2 G 53 Period: Modern

I99 Body and base: bottle Fig 131
Lower body and base fragment. Part of two straight sides; flat base. Raised base design; at least two concentric circles. Small bubbles. Worn.

P Ht. 35mm Dia. (of outer circle, about) 50mm
Th. 5-7.5mm
OGL A 367 G 205 Period: 10A

I100 Body and base: bottle Fig 131
Lower body and base fragment. Part of two straight sides; slightly concave base. Raised base design; two concentric circles and small central pellet. Cloudy weathering. Worn.
P Ht. 21.5mm Dia. (of outer circle, about) 50mm
Th. 5.5-8mm
OGL A 2 G 52 Period: Modern

I101 Body and base: bottle Fig19.8
Lower body and base fragment. Part of one straight side; slightly concave base. Raised base design; one corner of four-sided feature containing half of concave-sided diamond.
Dim. 93mm x 51mm Th. 3-12.5mm
OGL A 513 G 13 Period: West 5

I102 Nearly complete bottle Fig 132
Thirty-three fragments, 24 joining in two groups, rim, neck, shoulder, handle, body and base, square bottle. Slightly diagonal rim, edge bent out, up, in and flattened. Cylindrical neck with slight tooling marks at base. Horizontal shoulder. Small part of angular handle attached to neck below rim. Straight sides; slightly concave base. Raised base design; three concentric circles with central pellet. Bubbles, large and circular in base, small and elongated in vertical alignment in body, shoulder and neck. Black specks and purple streaks. Vertical scratches on body; base worn. Wear round rim aperture; horizontal scratches on neck.
Ht. 220mm Ht. (of shoulder and body, about) 155mm
Dia. (of rim) 70mm Dia. (of neck) 47-51mm
W. (of base) 115mm
OGL J 11 G 6 and G 7 Period: Post-2

I103 Shoulder, body, base: bottle Fig 132
Four joining shoulder body and base fragments, square bottle. Edge of shoulder, part of two straight sides and trace of third. Central indent on side above base. Flat base. Raised base design; three concentric circles with central pellet. Light iridescent weathering. Heavy scratching on sides. Base worn.
Ht. (of body) 90mm W. (of base) 73.5mm Th. 3.5-6.3mm
LEL A 372 G 62 and G 184 Period: 11

I104 Shoulder and body: bottle Not illustrated
Shoulder and upper body fragment, square bottle. Curved shoulder; tooling mark at edge of neck. Part of two straight sides. Patchy iridescent weathering. Vertical scratches on body.
P Ht. 39mm Th. 1.7-5mm
LEL A 569 G 151 Period: 6C-E

I105 Body and base: bottle Fig 132
Lower body and base fragment, square bottle. Part of three straight sides and trace of fourth. Concave base. Raised base design; three concentric circles with central pellet, four corner pellets. Circular pontil mark partly obscuring inside circle. Bubbly; black specks. Vertical scratches on lower body. Base heavily worn.
P Ht. 25.5mm W (of base) 86mm x 87mm Th. 3-5mm
LEL A 367 G 60 Period: 11

Prismatic bottles

I106 Handle, shoulder, body: bottle Fig19.9
Handle, shoulder and body fragment. Lower part of angular reeded handle, curved shoulder edge, straight sided upper body. Sixteen vertical ribs on handle, pulled down slightly into points on shoulder edge. Elongated bubbles; small black lumps and specks.
P Ht. 41mm W. (of handle) 30.5-37mm
OGL A 543 G 127 Period: West 3

I107 Body and base: bottle Not illustrated
Lower body and base fragment. Part of one straight side. Slightly concave base. Raised base design; part of chevron, part of straight diagonal moulding with expanded terminal, and part of curved moulding. Bubbly. Base edge worn.
Dim. 42.5mm x 25mm Th. 7.5-9.5mm
OGL A 558 G 131 Period: West 1

I108 Body and base: bottle Not illustrated
Lower body and base fragment. Part of one side. Raised base design; at least one circle. Distorted by heat.
P Ht. 42mm Th. 7.5-10mm
OGL A 1195 G 15 Period: 6 or later

I109 Base: bottle Not illustrated
Base fragment. Slightly concave base. Raised base design; at least one circle.
Dim. 71mm x 27mm Dia. (of circle, about) 100mm
Th. 3.5-7.5mm
OGL A 429 G 109 Period: 9E

I110 Upper body: bottle Fig 132
Shoulder, handle and upper body fragment. Horizontal shoulder, straight-sided body. Lower part of angular reeded handle with at least eight vertical ribs pulled down into points on edge of shoulder.
P Ht. 58mm Th. 2.5-4mm
OGL B 25 G 16 Period: 8A

I111 Upper body: bottle Not illustrated
Shoulder, handle and upper body fragment. Horizontal shoulder, trace of straight-sided upper body. Edge of lower handle attachment. Bubbly.
P Ht. (about) 30mm Th. 2.5-5mm
OGL B 27 G 78 Period: 8A

I112 Body and base: bottle Not illustrated
Lower body and base fragment. Part of one straight side. Flat base. Raised base design; one circle. Vertical scratches on side. Base worn.
P Ht. 22mm Dia. (of circle, about) 80mm Th. 8.5-11mm
OGL B 15 G 89 Period: 7B

I113 Body and base: bottle Not illustrated
Lower body and base fragment. Part of one straight side. Concave base. Raised base design; one circle. Vertical scratches on side. Base edge worn.
P Ht. 10mm Th. 3.5-4.5mm
OGL B 188 G 52 Period: 5A

I114 Base: bottle Not illustrated
Base fragment. Trace of straight side. Flat base. Raised base design; three circles. Patchy iridescence. Lightly worn.
Dim. 16mm x 22.5mm Th. 7.5mm
OGL B 233 G 56 Period: 4A

I115 Shoulder, handle: bottle Fig 132
Shoulder, handle and body fragment, prismatic bottle. Horizontal shoulder, one straight side. Lower part of angular reeded handle with 18 shallow ribs pulled down on to shoulder. Black specks. Small to medium bubbles, elongated in handle.
P Ht. 46mm W. (of handle) 64.5-71mm Th. 3-4.5mm
Clack 1 68 G 38 Period: 4

I116 Body and base: bottle Not illustrated
Lower body and base fragment. Part of one straight side. Slightly concave base. Raised base design; one circle. Iridescent weathering.
P Ht. 10mm Th. 5-7.5mm
LEL A 440 G 197 Period: 10A

I117 Base: bottle Not illustrated
Base fragment. Slightly concave base. Raised base design; circle with short line inside. Base lightly worn.
Dim. 26.5mm x 42mm Th. 6-10mm
LEL A 84 G 38 Period: 18

I118 Base: bottle Not illustrated
Base fragment. Raised base design; one circle.
Dim. 14mm x 39.5mm Th. 14.5mm
LEL A 28 G 102 Period: 21A

The glass objects

Five beads, five bangle fragments, 11 counters and a single cubic lump were found in this part of The Lanes (Table 59). This is a small group in comparison to the glass objects from Annetwell Street, which had considerably more glass objects than any other Carlisle assemblage, but is comparable with

the assemblage from Castle Street.

Beads

Two beads are of types not previously recorded in Carlisle (Nos I119-20, Fig 133), and three are common types (Nos I122-3, Fig 133, and I121). Frit melon beads (No I121) are frequently found on first- and second-century sites connected with military activity. At Annetwell Street there were 21 frit melon beads, more than two-thirds of which predated AD 150. Number I122 (Fig 133) is a small blue/green annular bead, which appear to be common on Roman sites of all periods in Britain (Guido 1978, 66, iib). The long deep bluish-green cylinder bead (No I123, Fig 133) is of a type found throughout the Roman period, but more frequently on sites of the third and fourth centuries. Examples from northern Britain include beads from Castle Street (Henderson 1991, 177, no 691, fig 157), Great Chesters and Housesteads (Guido 1978, 210).

Number I119 (Fig 133), a deep blue long biconical bead with a white chevron containing a single red strip, is a type found throughout Roman Britain. These beads are either square or biconical in section, often carelessly made, and decorated with a variety of white and red stripes, a white/red/white chevron, as on this example, being the most usual (*ibid*, 98, fig 37, no 15). The type cannot be dated precisely, but appears to belong to the later Roman period. Two small beads from Vindolanda come from late third- to fourth-century contexts, and unstratified examples have been found at Great Chesters and Traprain Law (*ibid*, 223).

Number I120 (Fig 133), a complete large annular bead, is one of the most unusual and pleasing glass objects found at Carlisle. It is blue/green, flattened on the upper and lower surfaces, and decorated with ten yellow/brown and opaque white whorls on the flat surfaces, and a horizontal yellow/brown and opaque white twisted cable, applied in two sections, around the maximum girth. The cable and whorls are all marvered flush with the surface of the bead.

No exact parallel is known for the bead, but it is comparable to two late Iron Age and early Roman bead types, decorated with spirals and cables (*ibid*, 53-7, 60, 77-9). Spirals are a common motif on Iron Age beads, most notably on Guido's 'Oldbury' and 'Colchester' types (*ibid*, 53-7, class 6), but also on beads of miscellaneous shape in a variety of colours (*ibid*, 60, Group 2). Spiral-decorated beads have been found on a number of sites in northern Britain, including Corbridge and Mochrum, Dumfries and Galloway (*ibid*, 123). Beads decorated with two-colour twisted cables (*ibid*, 77, class 9) also form a widespread and diverse group. Number I120, which appears to link these two types, can be compared with a fragment of a blue/green bead from Traprain Law which has an undulating blue and white cable and blue and white whorls (*ibid*, fig 26, no 5, pl 3b). The bead from Carlisle, from a second- to third-century AD context, may be residual, as very few beads of either group have been found after the first century AD.

Spirals and twisted cords were also employed as decoration for certain glass objects other than beads, possibly indicating a common tradition of glassworking. Interlocking spirals, very similar to those on Number I120, were used to decorate a set of glass gaming counters from a burial dated to *c* AD 10 at Welwyn Garden City (Stead 1967, 14-19, fig 10, pl 1 a, c and d), and both twisted cords and spirals are found on Kilbride-Jones type 2 bangles (see discussion of No I128 below).

Bangles

Five fragments from three varieties of bangle were found (Nos I124-8, Fig 134). One (No I127) was of a kind not previously noted at Carlisle. Bangles from northern Britain have received considerable attention in detailed studies carried out by Kilbride-Jones (1937-8), Stevenson (1954-6; 1976) and Price (1988). Kilbride-Jones divided the bangles into three types, a division which has been retained and refined in subsequent studies.

Number I128 (Fig 134) is a fragment from a blue/green bangle with an opaque white and deep blue central horizontal twisted cord. It belongs to Kilbride-Jones' type 2, a form sometimes found in pre-Flavian contexts in southern Britain, but most numerous in the north. These bangles are decorated with central twisted cords, and occasionally whorls, and appear to have been most popular during the later first century (Price 1988, 342-53). Four type 2 bangles, one decorated with a twisted cord and a spiral whorl, were found during excavations at Annetwell Street, two in contexts dated to AD 120-150 (Cool and Price forthcoming, nos P287-90).

Numbers I124-6 (Fig 134), opaque white bangles, belong to type 3a, a variety found on many northern sites of the later first and early second centuries. Previous finds from Carlisle include a fragment from Tullie House, deposited about AD 90, and examples from Annetwell Street (Cool and Price forthcoming, no P291) and Castle Street (Henderson 1991, 179, no 700, fig 158).

Number I127 (Fig 134) is from a type 3I bangle. These are deep blue, usually with a blue/green core and decorated with opaque white marvered trails. Their distribution is principally north British, although examples are known from Wall, Silchester and London (Stevenson 1954-6, 211). Number I127 has four narrow trails and a raised blue and white spiral whorl, which can be compared to the decoration on the annular bead Number I120, discussed above. Type 3I bangles with raised eyes have not often been noted, but one was found at Edgerston, Roxburghshire (*ibid*, fig 1, no 14), and a deep blue bangle from Newstead, classed by Kilbride-Jones as a miscellaneous form, is decorated with opaque white trails and a spiral whorl (Kilbride-Jones 1937-8, 390, no 5, fig 9). Few type 3I bangles can be firmly dated, but a fragment came from a securely dated early Flavian context at Annetwell Street (Cool and Price forthcoming, no P292).

Counters

Eleven plano-convex counters were found, four opaque white, six appearing black, and one blue/green. Counters are common on Romano-British sites. They are very occasionally found in sets, but more usually as single finds or small unmatched groups. Although they occur throughout the Roman period, finds from Annetwell Street, where nearly all the stratified examples came from contexts dating to before AD 200, suggest that monochrome counters are more typical of

the first and second centuries (Cool and Price forthcoming, nos P243-286). The counters from the Lanes differ widely in size, either as an accident of manufacture, or possibly indicative of different values for the counters, either in a board game or for accounting purposes. Two counters have unusual colouring. Number I130 has orange patches, possibly the result of heat damage, and Number I133 (Fig 135) has streaks of opaque pale blue.

Miscellaneous

The opaque blue roughly cubic lump, Number I140, is difficult to interpret. It might be either a small lump of raw material for glass working, or a stray tessera from a mosaic pavement. There are also three melted glass lumps (in archive catalogue only).

The catalogue

Beads

I119 Bead Fig 133
Fragment of biconical bead. Dark blue with central wave of three marvered trails set side by side, one opaque red between two opaque white. Surfaces worn.
P L. 7mm Dia. 2.5-4mm Dia. (of perforation) 1mm
CAL E 4 G 1 Period: Medieval

I120 Bead Fig 133
Complete annular bead. D-shaped cross-section. Blue/green, with yellow/brown and opaque white central twisted cable, marvered flush, five yellow/brown and opaque white whorls on upper surface and five on lower, around central circular perforation. Perforation worn.
Ht. 8mm Dia. 22mm Dia. (of perforation) 6.5-7mm
OGL A 487 G 8 Period: 8C

I121 Bead Not illustrated
Fragment, about 30%, of frit melon bead. Six vertical grooves. Traces of blue/green glaze. One edge worn.
Ht. 20.3mm Dia. 28mm Dia. (of perforation) 13mm
OGL B 188 G 3 Period: 5A

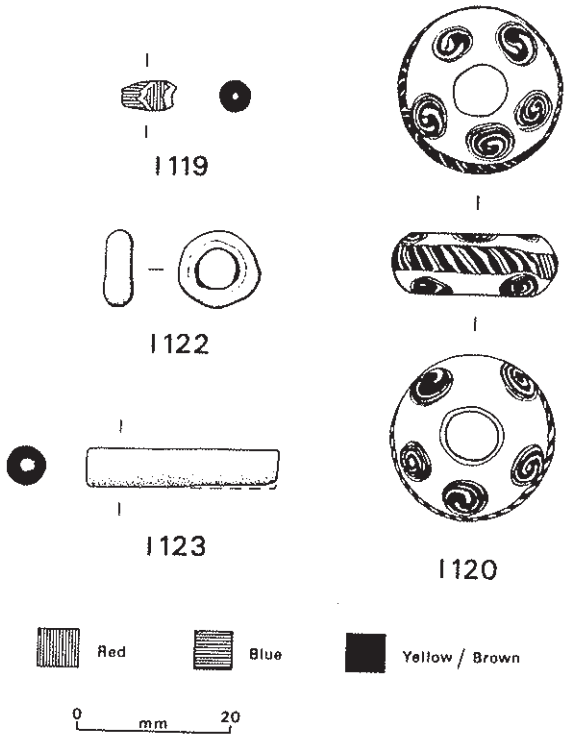

Fig 133 Beads (scale 1:1)

I122 Bead Fig 133
Complete small annular bead. Blue/green. Irregular D-shaped section. Small bubbles.
Ht. 4mm Dia. 10.3-11mm
Dia. (of perforation) 5.3-5.7mm
LEL A 531 G 8 Period: 8A-D

I123 Bead Fig19.10
Fragment, cylindrical bead. Deep blue/green. Longitudinal striations.
L. 25.5mm Dia. 5mm Dia. (of perforation) 2mm
LEL A 80 G 1 Period: 19B

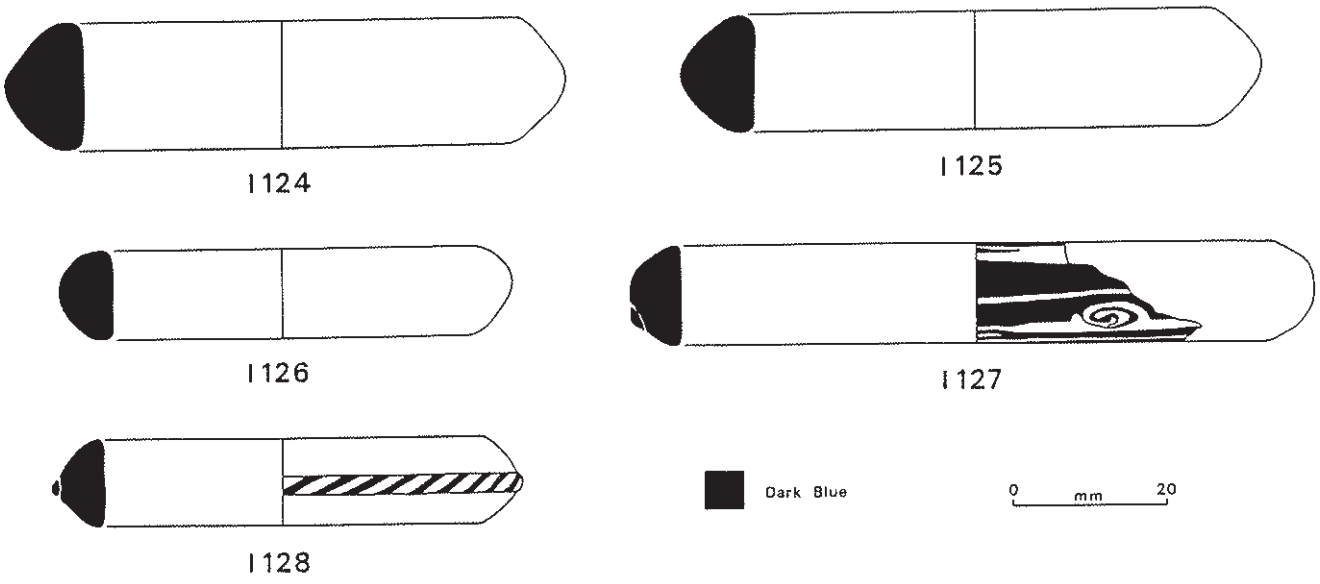

Fig 134 Glass bangles (scale 1:1)

Bangles

I124 Bangle Fig 134
Fragment (about 10%) of bangle. Triangular section with rounded apex. Opaque white. Black specks and tiny bubbles.
Ht. 10mm W. 16.5mm Dia. (int) 54mm L. 28mm
CAL A 71 G 4 Period: 3B

I125 Bangle Fig 134
Fragment (about 20%) of bangle. Triangular cross-section with rounded apex. Opaque white. Black specks. Inner surface worn.
Ht. 9.5mm W. 15.5-16.3mm Dia. (int) 58mm L. 45mm
OGL A 452 G 7 Period: 9A-B

I126 Bangle Fig 134
Fragment (about 30%) of bangle. Triangular cross-section with rounded apex. Opaque white. Black specks. Inner surface pitted.
Ht. 6.5-7mm W. 11-12mm Dia. (int) 46mm L. 42mm
LEL A 603 G 9 Period: 5

I127 Bangle Fig 134
Fragment (about 15%) of bangle. Plano-convex cross-section. Blue/green core with four horizontal dark blue streaks. Three narrow opaque white trails, one across centre and two at edges marvered flush with outer surface. Opaque white and dark blue raised spiral whorl.
Ht. 6.5-7mm W. 13mm Dia. (int) 76mm L. 32.5mm
LEL A 604 G 14 Period: 4

I128 Bangle Fig 134
Fragment (about 20%) of bangle. Plano-convex cross-section. Pale blue/green, with horizontal cord, twisted loosely right-hand, of blue and opaque white. Upper surface worn.
Ht. 7mm W. 11.5-12mm Dia. (int) 50mm L. 35.5mm
OBL B 108 G 1 Period: 6

Counters or gaming pieces

I129 Counter Fig 135
Complete plano-convex counter. Opaque white. Circular. Pitted base.
Ht. 6.5mm Dia. 28-9mm
OGL A 532 G 6 Period: West 2

I130 Counter Not illustrated
Three joining fragments, plano-convex counter. Opaque white and opaque orange. Distorted by heat.
Ht. 6mm Dim. 15mm x 14.5mm
OGL A 717 G 9 Period: 7A-8C

I131 Counter Not illustrated
Complete plano-convex counter. Opaque white. Tiny black specks. Lower surface dimpled.
Ht. 6.7mm Dia. 14.2-15.5mm
OGL B 188 G 4 Period: 5A

I132 Counter Not illustrated
Two joining fragments, complete plano-convex counter. Blue/green. Uneven base surface. Bubbles. Black specks. Cloudy weathering.
Ht. 7mm Dia. 7.2-8.2mm
OGL B 15 G 1 Period: 7B

I133 Counter Fig 135
Complete plano-convex counter. Black with opaque pale blue streaks, weathered to opaque white.
Ht. 6mm Dia. 14.7mm
LEL A 183 G 4 Period: 17

I134 Counter Not illustrated
Complete small plano-convex counter. Appearing black. Bubbles at surface. Base surface pitted.
Ht. 7mm Dia. 13.3-13.7mm
LEL A 280 G 6 Period: 12C?

I135 Counter Fig 135
Complete small plano-convex counter. Appearing black. Upper surface lightly scratched. Base surface pitted.
Ht. 7mm Dia. 12-12.5mm
LEL A 260 G 5 Period: 12C

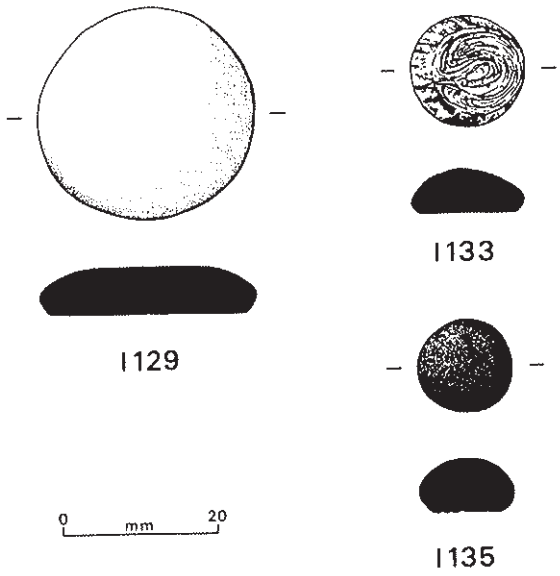

Fig 135 Glass counters (scale 1:1)

I136 Counter Not illustrated
Complete plano-convex counter. Appearing black. Upper surface lightly scratched. Base surface pitted. Iridescent weathering.
Ht. 7.5mm Dia. 14.5-14.8mm
LEL A 253 G 7 Period: 13

I137 Counter Not illustrated
Complete plano-convex counter. Appearing black. Upper surface lightly scratched. Base surface worn smooth. Cloudy weathering.
Ht. 75-6.3mm Dia. 15-16.7mm
LEL A 607 G 13 Period: 6A

I138 Counter Not illustrated
Fragment (about 60%), large plano-convex counter. Appearing black. Large bubble at surface. Base surface pitted but worn. Cloudy weathering.
Ht. 6.5mm Dim. 25.5mm x 18.5mm
LEL A 96 G 2 Period: 19B

I139 Counter Not illustrated
Complete plano-convex counter. Opaque white. Black specks. Base surface pitted but worn.
Ht. 6.5mm Dia. 15.8-17.5mm
LEL A + G 15 Period: Unstratified

Miscellaneous

I140 Lump Not illustrated
Opaque blue lump. Roughly cubic.
Dim. 6mm x 5mm x 4.5mm
OGL A 658 G 138 Period: 6

The window glass

Forty-nine fragments of window glass (details given in the archive catalogue) came from OGL A, B, C and Clack 1, and LEL A, suggesting buildings with glazed windows in these areas (Table 59). The earliest dated fragment came from a Period 6 context at OGL A, and may possibly be related to Building 674 dated to AD 93-4, although found at some distance from it. All the window panes were of first- to third-century matt-glossy type, probably made by pouring molten glass into trays (Boon 1966, 43-4), resulting in a roughened flat lower surface and a glossy uneven upper

surface. Nine fragments retain the rounded edge of a pane and three have carefully grozed edges. These may come from panes cut to fit a specified space (Harden 1974, 280), although in some cases the fragments may have been reworked after the windows were broken.

A little cast window glass has also been found at Blackfriars Street (27 fragments), Castle Street (74 fragments), and Annetwell Street, but late Roman blown window glass, which is absent from The Lanes, has only rarely been noted in Carlisle (Price 1990, 197).

CHAPTER 21 THE BONE, ANTLER AND IVORY (J) OBJECTS

Introduction

The distribution of artefacts by function is tabulated in Table 61. The personalia category comprises nine hairpins of the usual Roman types (Nos J1-9). There are three which are either Crummy type 1 or type 1 variants (1983, 20, 162), and there is one type 3 (*ibid,* 21-2). As at Castle Street (Padley 1991b, 191, fig 161), the commonest is type 2 (Crummy 1983, 21), of which there are five examples, each with two transverse grooves. In addition to the catalogued pins, there is an unidentifiable shaft fragment, with no evidence for an eye, from LEL A context 92, Period 19B. Household utensils are represented by a single spoon (No J10). Recreational items comprise six counters, three of which have their front surfaces decorated with concentric grooves (Nos J14-16), and one of which has a graffito (No J14).

Among the tools (Table 61) there are four unusual objects, as well as the more common needles (Nos J18-19) and a scale-tang knife handle (No J17). There is a possible scoop (No J20), a double-pointed object made from a cattle nasal bone (No J22), a stamp (No J23), probably for decorating pottery or pastry with quatrefoils, and a red deer antler which has been used as an anvil (J21). The only medieval piece, a spindle-whorl (No J24), falls within this section. Fittings are represented by two toggles (J25 and J26).

There are two items which cannot be fitted into any functional group. The first of these (No J27) is a point, of the type found at other Roman sites in Carlisle, while the other (No J28) is a tapering block of elephant ivory with no real diagnostic features; this is probably a modern piece.

Finally there is a group of five pieces of utilized red deer antler (J29-33), comprising fragments bearing saw-marks.

Catalogue

Personalia

J1 Pin: type 1 (Crummy 1983) Not illustrated
The point and much of the shaft are missing.
The whole is smooth and polished.
Antler or bone.
L. 41mm Dia. 2-3mm
OGL A 379 B 8 Period: 9G

J2 Pin: type 1 (*ibid*) Not illustrated
The point and the lower shaft are missing.
The roughly conical head and tapering shaft have irregular facets.
Bone.
L. 55mm Dia. 3-4mm
OGL A 36 B 2 Period: 13

J3 Pin: type 1 (variant) (*ibid*) Not illustrated
The point and much of the shaft are missing.
There is no distinct head, as the sub-rectangular-sectioned blunt end of the pin has been cut across and finished off. Though the whole is polished, there are facets visible running along the shaft.
Bone.
L. 42mm W. (at 'head') 5mm Th. (at 'head') 5mm
Dia. (at break) 4mm
OGL A 558 B 9 Period: West 1

Type 1 pins are dated by Crummy (*ibid*, 20) from the Flavian period to the fourth century, but they could start as early as *c* AD 50.

J4 Pin: type 2 (*ibid*) Not illustrated
The point and part of the shaft are missing.
Two transverse grooves. The pin is faceted both on the head and shaft, despite being fairly well polished.
Bone.
L. 71mm Dia. 2-3mm
OGL A 706 B 12 Period: 7B-8C

Table 61
The Class 1 bone arranged by site and function

Site	*Personalia*	*Household*	*Recreation*	*Tools*	*Fittings*	*Other*	*Utilized antler*	*Total*
CAL A	-	1	-	-	-	-	-	1
OGL A	4	-	1	7	-	2	2	16
OGL A West	1	-	-	-	-	-	1	2
OGL B	1	-	2	1	1	-	1	6
OGL C	-	-	1	-	-	-	-	1
LEL A	3	-	2	-	1	-	1	7
Totals	9	1	6	8	2	2	5	33

J5 Pin: type 2 (*ibid*) Not illustrated
The point and lower shaft are missing.
Two transverse grooves. The head is faceted. The upper part of the shaft has a sub-rectangular cross-section and so the taper is more pronounced when viewed from one side. At the break, the cross-section is round. Some cancellous tissue is visible on one of the wide faces.
Bone.
L. 55mm W. (at base of head) 4mm Th. (at base of head) 3mm
OGL A 114 B 3 Period: 12A-B

J6 Pin: type 2 (*ibid*) Fig 136
There may be some damage to the head, but it is otherwise complete.
Two transverse grooves. There are facets visible running along the shaft. One side of the pin may be damaged as one side of the head has two long facets on it which have removed the grooves, and that side of the shaft appears to be rougher.
Bone.
L. 121mm Dia. 3mm
OGL B 98 B 5 Period: 6C

J7 Pin: type 2 (*ibid*) Not illustrated
The point and part of the shaft are missing.
The conical head is rather degraded. Two transverse grooves. There are facets visible running along it.
Antler or bone.
L. 45mm Dia. 3-4mm
LEL A 500 B 7 Period: 8E

J8 Pin: type 2 (*ibid*) Not illustrated
The point and much of the shaft are missing.
Two transverse grooves. Both the head and shaft are faceted.
Long bone of probably ox-sized animal.
L. 21mm Dia. 3mm
LEL A 280 B 5 Period: 12C?

Type 2 pins are dated by Crummy (*ibid*, 21) from the pre-Flavian period to *c* AD 200. Of the sub-groups recognized at Colchester, those with two transverse grooves around the shaft were the most common. Both type 1 and type 2 pins form part of MacGregor's class of headless pins (1985, 116, fig 64, nos 1-3), which he dates to the same period as Crummy.

J9 Pin: type 3B? (Crummy 1983) Fig 136
The point is missing.
The head is almost spherical but has a slightly conical top surface. Below the head, the multangular shaft swells before tapering towards the missing point. There are facets visible running along the shaft, and fine concentric grooves running around the head and upper part of the shaft.
Long bone of ox-sized animal.
L. 68mm L. (of head) 7mm Dia. (of head) 8mm
Dia. (of shaft) 2-4mm
LEL A 87 B 2 Period: 19B

Type 3 pins are defined (*ibid*, 21) as having a more or less spherical head. Sub-type B has a semicircular or elliptical lower half and a conical or low convex upper half. All of them swell towards the centre of the stem. They are dated from *c* AD 200 to the end of the Roman period (*ibid*, 22). However, MacGregor (1985, 117) states that the type is represented in the mid second century at Walbrook, London, and elsewhere.

Household

J10 Spoon Fig 136
Part of the handle is missing as the top end does not join the rest.
The oval bowl is not dished. The handle joins the bowl with no elaboration. At the junction, the handle has a sub-rectangular cross-section; it becomes more rounded as it approaches the middle, and just before the end, it is again sub-rectangular. The width of the handle remains constant until it reaches the end, where it expands slightly. Cancellous tissue is visible on the rear of the bowl.
Long bone of ox-sized animal.
L. 159mm L. (of bowl) 31mm
W. (of bowl) 25mm W. (of handle) 5mm
Th. (of bowl) 3mm Th. (of handle) 5mm
CAL A 80 B 1 Period: 3A

This spoon is larger than the majority of Roman spoons, which were about the size of a modern teaspoon and are found in both metal and bone (Padley 1991a, 112-3, nos 61-5, fig 76; also see Nos C35-6 above; MacGregor 1985, 181, fig 98, a-c). Larger Roman bone spoons do occur (*ibid*, 181-2, fig 98, d-e), but they are of a different shape from this Lanes example.

Recreation

J11 Counter: type 1 (Crummy 1983) Not illustrated
The surface is slightly damaged.
The top surface has a conical depression in it, which is slightly off-centre. The outer edge of the counter slopes in from top to bottom. The flat underside is plain.
Bone.
Dia. 24mm Th. (max) 4mm Dia. (of central depression) 14mm
OGL A 446 B 10 Period: 9E

J12 Counter: type 1 (*ibid*) Fig 136
The top surface is flat with a central depression. The outer edge is bevelled, and curves in so that the underside has a smaller diameter than the top. The underside is flat and plain.
Long bone of ox-sized animal.
Dia. 17mm Th. 3mm
OGL B 290 B 7 Period: 3

J13 Counter: type 1 (*ibid*) Not illustrated
Some surface damage.
The top surface is flat and has a central conical depression. The outer edge is bevelled. The underside is flat and plain.
Antler or bone.
Dia. 20mm Th. 4mm
OGL C + B 1 Period: Unstratified

J14 Counter: type 2 (*ibid*) Fig 136
Nearly complete, although one side is missing.
The top surface is decorated with five grooves, which are evenly spaced except for the two outer ones which are closer together than the rest. There is a plain outer rim which varies in width between 1mm and 2mm. The central depression is 2mm across. The underside has a graffito in the form of an *X* scratched on it.
Antler or bone.
Dia. 23mm Th. 3mm
OGL B 20 B 4 Period: 7B

J15 Counter: type 2 (*ibid*) Not illustrated
Only half survives.
The top surface is decorated with four concentric grooves, which get closer as they approach the centre; the spacings are 2mm, 1mm, <1mm and <1mm. There is a plain border 1-2mm wide. The underside is plain.
Antler or bone.
Dia. 19mm Th. (max) 2mm
LEL A 120 B 4 Period: 17

J16 Counter: type 2 (*ibid*) Not illustrated
Part of the underside has flaked away, and the top surface is so degraded that some details of the decoration are difficult to make out.
There were probably four grooves surrounding a central depression 2mm across. There is a plain border 2mm wide. The outer edge slopes in slightly towards the plain underside.
Long bone of ox-sized animal; probably a metapodial.
Dia. 23mm Th. (max) 4mm
LEL A 93 B 3 Period: 19B

Type 1 and type 2 counters continued throughout the Roman period but there is no difference in date between the two types (*ibid*, 91). The graffito on the underside of Number J14 is one of the most common (MacGregor 1985, 133).

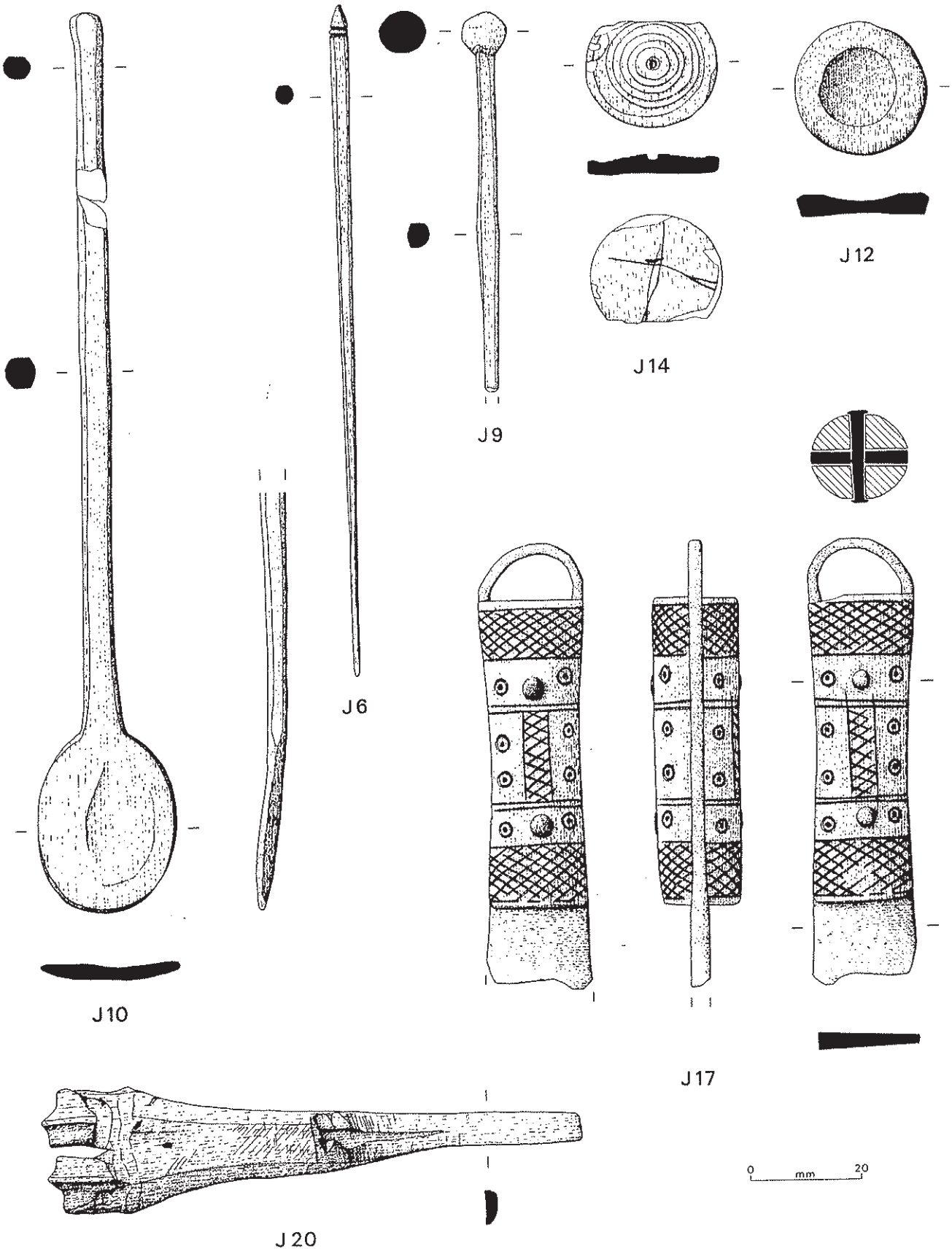

Fig 136 Bone pins (J6, J9), spoon (J10), counters (J12, J14), knife handle (J17) and tool (J20) (scale 1:1)

Tools

J17 Knife: handle only Fig 136
The majority of the iron blade has corroded away.

At one end of the handle is the iron suspension loop. The two tang scales are still in position, attached to the tang by iron rivets. At the other end is the remains of the blade.

The tang scales are D-shaped in section, and rectangular in

shape. Their outer surface is decorated. There is a very narrow plain zone at each end which abuts a zone of cross-hatching bounded on each side by a single transverse groove. In the centre is a plain zone containing the rivets and dot-and-circle motifs. This area is bounded at the inner end by a double transverse groove. The central area also has a longitudinal zone of cross-hatching joining the double transverse grooves. The cross-hatching is bounded along each side by a single groove. There are two more dot-and-circle motifs in the plain area on either side of the cross-hatched zone. These line up with the others, making a row of four along each scale.
Bone or antler.
L. (overall) 84mm L. (of tang scales) 55mm
W. (of tang scales) 19mm Th. (of handle) 16mm
OGL A 787 B 19 Period: 6

Scale-tang handles are the commonest form of handle to be recovered from the Roman period (MacGregor 1985, 169). The shape of the surviving iron tang with its suspension loop suggests that this was originally a type 7 knife (Manning 1985, 111-3, fig 28), a type dated by him to the first to second centuries. Five type 7 knives were found at Castle Street, two with bone tang scales (Padley 1991 a, 142, nos 373-7, fig 120), where they were found in contexts which dated from AD 92-3 to the Antonine period, which is similar to the context for this piece.

J18 Needle Not illustrated
Part of the head and shaft only survive.
The head is flattened and sub-rectangular in section. The eye was probably rectangular, to judge from the surviving bottom portion. The shaft below the head becomes multangular in section and tapers towards the break. There are facets visible running along it. The whole is slightly curved.
Bone.
L. 71mm W. (of head) 3mm Th. (of head) 2mm
Dia. (at break) 2mm
OGL A 470 B 22 Period: 8C

J19 Needle Not illustrated
Part of the head and shaft only survive.
The head has a sub-rectangular section, and the curved base of the eye is visible in the middle of the wider faces. It is not clear if the eye was originally circular or figure-of-eight-shaped. Below the eye the shaft begins to taper and becomes circular in section. The taper is more pronounced in one direction than the other.
Bone.
L. 77mm W. (of head) 4mm Th. (of head) 3mm
Dia. (at break) 3mm
OGL A 114 B 4 Period: 12A-B

J20 Modified metatarsus Fig 136
The tool is complete and made from a sheep metatarsus.
The distal end and first 35mm of the shaft are unmodified. Beyond this point, the walls of the bone have been removed leaving a narrow 'blade' about 6mm wide and 40mm long. One side of the blade follows the shape of the side of the bone, while the other has been cut in from it. The proximal end has been thinned to a chisel shape. The actual end has been damaged at each corner. The final 25mm of the blade have been worked to remove all traces of the central cavity. Transverse scratches from this working can be seen all over this surface and the underside.
Sheep metatarsus.
L. 95mm W. (of distal end) 22mm
Th. (of distal end) 14mm W. (of blade) 6mm
Th. (of blade) 2mm
OGL A 1099 B 16 Period: 5

The function of this tool is unclear. It is made from a utilized bone, and resembles a modern screwdriver. It could be a potter's tool or it may be related to the apple/cheese scoops described by MacGregor (1985, 180, fig 97). However, the Lanes example is much earlier than these scoops, which are dated to the post-medieval period.

S M Stallibrass writes:

J21 Anvil Fig 137
The object appears to be complete.
It is made from an antler which has had the tip of one tine removed and had a piece split off from the beam. What is left forms an object which is stable whichever of the two sides is placed on a flat surface. Each surface is covered with a large number of pock-marks caused by a repeated striking with a hard, probably metal, tool with a chisel end. These marks are 3mm-5mm long, and are up to 3mm deep.
Red deer antler.
L. 252mm W. 185mm
OGL A 990 B18 Period: 4

The antler was chosen for its stability and appears to have been used as an anvil. A similar object was found in the area of the commandant's house at South Shields, in a late Roman context (unpublished). The size and shape of the pock-marks suggest that the anvil could have been used as part of the shoemaking process. In this context it would have been used with a narrow punch to cut the thonging slots in the bottom units of Roman nailed shoes, and sandals (see Chapter 24 below).

J22 Double-point (Macgregor 1985) Fig 138
Complete except for one of the long edges and part of the rear which are broken.
The wear around the notch of the nasal bone suggests that it has been utilized.
Cow nasal bone.
L. 121mm W. 22mm Th. 3mm
OGL B 222 B 6 Period: 4E-F

A discussion of this type of artefact is given in MacGregor (*ibid*, 175-6, fig 93c). The suggested uses range from netting needles, through thread-twisters, to food forks.

J23 Stamp Fig 138
The bone has been modified at one end to reveal and create a quatrefoil shape based on the central cavity.
Sheep metatarsus.
L. 127mm Ht. (of quatrefoil) 15mm W. (of quatrefoil) 13mm
OGL A 206 B 5 Period: 10D-E

It is suggested that this stamp was used to decorate pottery or pastry with a quatrefoil design. The impression of the stamp is shown as J23a on Figure 138.

J24 Medieval spindle whorl Fig 138
There is a small amount of damage to the upper outer edge, and to a lesser degree to the lower outer edge.
A sub-circular disc with a circular hole in the middle. The top surface is decorated with two zones of dot-and-circle motifs. The outer zone, containing 21 motifs 2mm across, is 7-8mm wide and is bounded on the inside edge by a single line, which overlaps itself for part of the circumference. The inner zone contains five evenly spaced radial lines of two to three motifs. As the perforation is not exactly central, some of the lines appear to be truncated at their inner ends. This may suggest that the hole was drilled subsequently to the piece being decorated. Near the edge on one side is a circular depression, 7mm deep and 2mm in diameter. Cancellous tissue is visible on the vertical sides and bottom surface.
Antler.
Dia. 44mm Th. 14mm Dia. (of perforation) 9mm
OGL A 1237.3 B 21 Period: 13

There is some debate as to whether such objects were spindle whorls or counters. Similarly shaped and decorated spindle whorls and gaming counters with central perforations were introduced about the time of the Norman Conquest (MacGregor 1985, 135-7, 187). On balance Number J24 is identified as a spindle whorl.

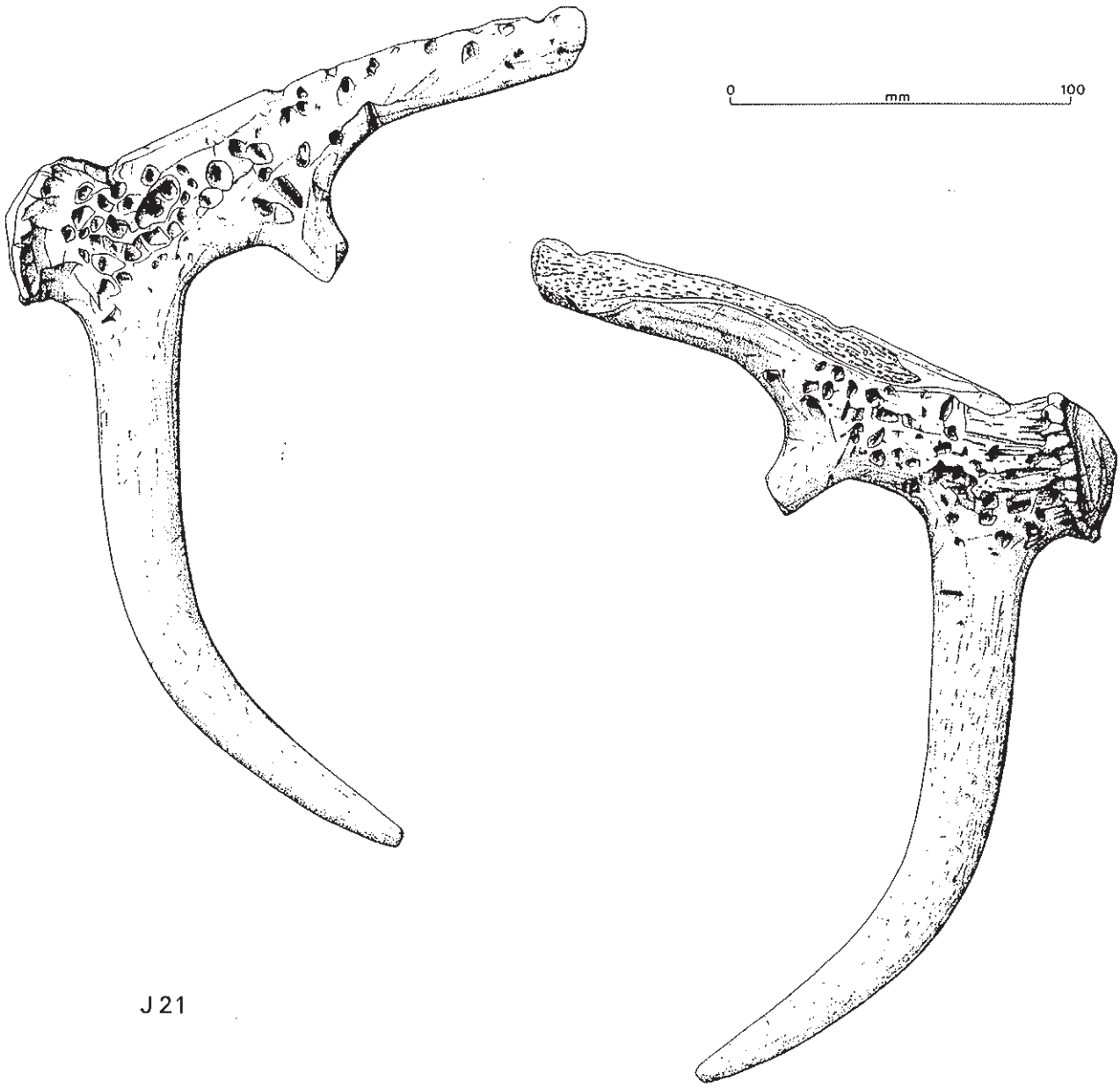

Fig 137 Antler anvil (scale 1:2)

Fittings

J25 Toggle Fig 138
The toggle is incomplete, and there is some cancellous tissue visible at one end. There is some surface flaking.
An originally complete bone which has been modified by having a hole drilled through it.
Juvenile pig metatarsus 3.
L. 63mm Dia. (of hole) 3mm
OGL B + B 3 Period: Unstratified

J26 Toggle Not illustrated
The toggle is incomplete as one end is missing.
An originally complete bone which has been modified by having a hole drilled through it transversely. The hole has been modified after drilling, giving it a sub-circular outline.
Sheep metacarpal.
L. 93mm Dia. (of hole, max) 5mm
LEL A 504 B 8 Period: 8F

These toggles are described by MacGregor (1985, 102-3, fig 59), and he points out that there have been many interpretations of their function. They are made of pig and sheep carpals and metatarsals which have been utilized by having a single perforation cut through the shaft. They have been variously identified as dress-fasteners, bobbins for winding wool, and toys. They occur commonly from the Iron Age to the medieval periods. A similar bobbin to Number J25 was discovered at Castle Street together with two made from sheep metatarsals (Padley 1991b, 200, nos 761-3, fig 174), in contexts spanning the mid second to mid third century.

Other objects

J27 Point Fig 138
Small chips and the surface are missing in places.
The object is cut from the tibia of a sheep and has a straight cut at one end, revealing the central cavity. At the other end there is a series of oblique cuts, again revealing the central cavity. This end has also been shaped to a crude point. The flat surface at the blunt end has been decorated with a crude lattice formed of grooves cut into the surface of the bone. A length of wood, perhaps the remains of a shaft, was found inside the bone in the area which has not been

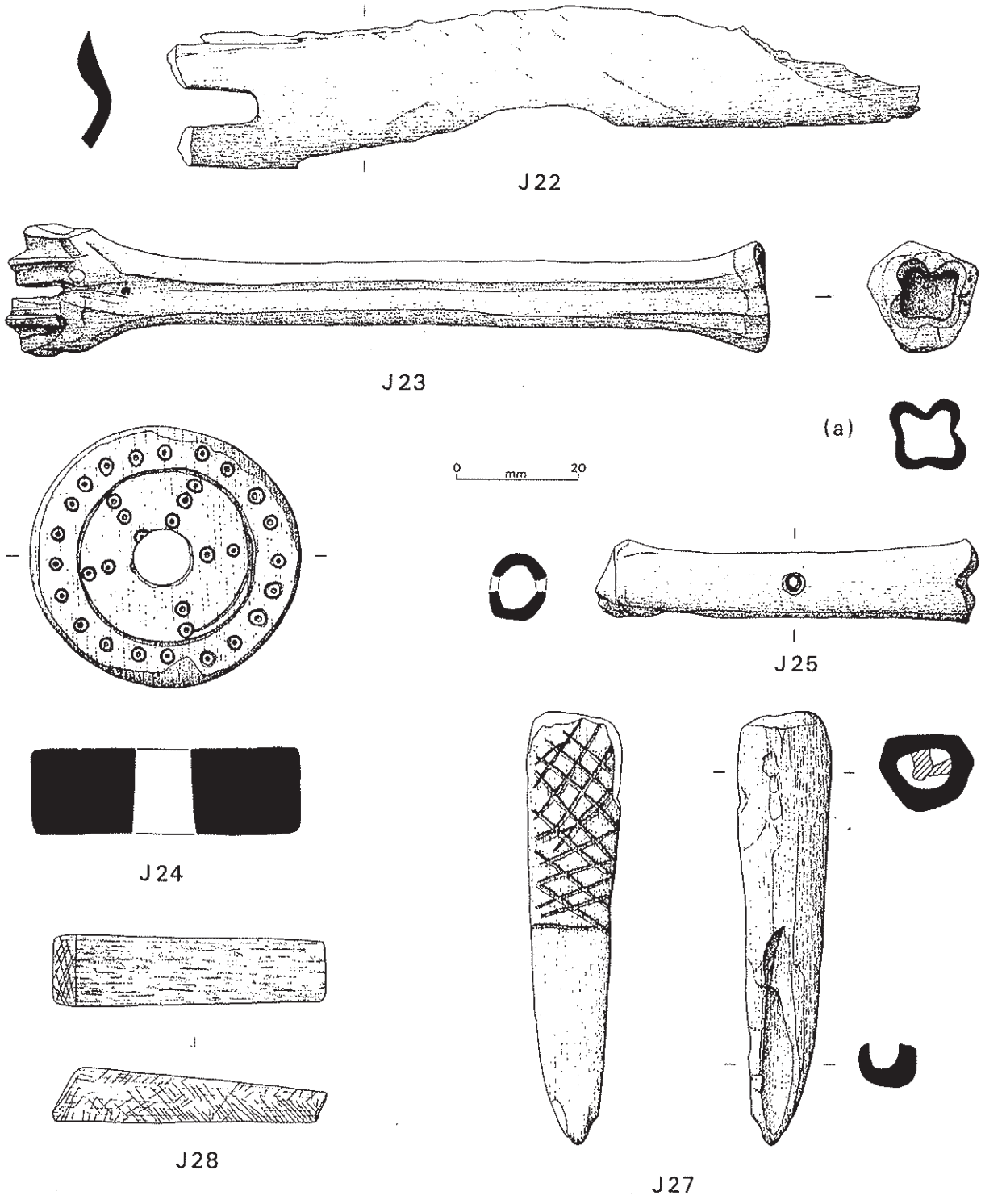

Fig 138 Bone tools (J22-3), spindle whorl (J24), toggle (J25), point (J27) and ivory object (J28) (scale 1:1)

made into a point.
Left tibial shaft of a sheep.
L. 70mm W. (at base) 15mm Th. (at base) 13mm
OGL A 1006 B 17 Period: 5

Many similar points have been found on other sites in Carlisle. A discussion of their possible uses appears in the report on the Annetwell Street fort (Padley forthcoming g). This example differs from the Annetwell Street ones in that it is decorated and more crudely made, but like them it was found with the remains of a wooden shaft inside it.

J28 Unidentified object Fig 138
One end is broken.

A solid rectangular-sectioned block. The unbroken end, which has lightly incised cross-hatching (the remains of initial working), is flat and slopes up at a steep angle towards the top surface. From this junction, the top surface slopes down at a slight angle. The sides are parallel. There is a chamfer between the bottom surface and the unbroken end. The surfaces are all smooth and polished. There is a natural flaw across the bottom surface.
Elephant ivory.
L. 45mm W. 10mm Th. 5-8mm
OGL A 153 B 23 Period: Modern

Utilized antler

J29 Utilized antler Not illustrated
A tine sawn from the main beam.
Red deer antler.
L. 93mm W. (of base) 20mm
OGL A 199 B 6 Period: West 7

J30 Utilized antler Not illustrated
A fragment of main beam which has been sawn at the base and above the surviving tine. Part of the rest has broken away.
Red deer antler.
L. 190mm W. (of base) 56mm Th. (of base) 42mm
OGL A 181.1 B 7 Period: 13

J31 Utilized antler Not illustrated
A fragment of main beam which has been sawn across the base and above the two surviving tines.
Red deer antler.
L. (of longer tine) 191mm W. (of base) 51mm
Th. (of base) 62mm
OGL A 2 B 1 Period: Modern

J32 Utilized antler Not illustrated
An antler which has been sawn off the main beam, from which the tip has also been sawn off. Some secondary knife trimming visible at the base.
Red deer antler.
L. 190mm
OGL B 1 B 8 Period: 9

J33 Utilized antler Not illustrated
A substantial main beam which has been sawn through both above and below an intact tine.
Red deer antler.
L. 251mm W. (of beam) 32mm Th. (of beam) 62mm
LEL A 578 B 9 Period: 6A-E

CHAPTER 22 THE WOODEN (K) OBJECTS

Introduction

The 48 wooden artefacts form only a very small component of all the wood, which ranges from structural components to twig fragments. The toilet, pharmaceutical and surgical instruments category (Table 62) contains combs (Nos K1-6) and small turned wooden boxes (Nos K7-9). With the exception of Number K6, which is probably medieval, both of these types have often been found on Roman sites. The household utensils and furniture section contains a composite wood and iron object (No K10) which is probably part of a piece of furniture; exactly which part is uncertain, although a decorative finial seems the most likely. The two small barrel pieces (Nos K11-2) are placed in this section because their small size suggests a domestic context, while the large barrel (No K28) is in the transport section as it is of a type used to transport large amounts of liquid from place to place. The stylus writing tablets (Nos K18-25) are similar to those recovered from Carlisle and elsewhere, but only single-sided ones were recovered. A full analysis of the fragmentary address on Number K25 is given by R S O Tomlin. The buildings section is small, and contains only pegs. The major structural pieces are dealt with in the structural report (Fasc 1). The unidentified objects (Nos K39-48) are all carefully made pieces, but as their function is unknown they have all been drawn (except for No K42, which has not survived in a state to allow useful illustration) and described so that further work may allow a more precise identification.

The majority of the pieces are Roman in date. However, there is one comb (No K6) which is probably medieval. The spoon (No K16) could be of any date and its recovery from a modern context does not help to suggest one. The same is true for Number K40. The pegs (Nos K29-33) and the unidentified object (No K42) which came from the well (OGL A 1237) are all probably medieval.

The identifiable species used in the manufacture of the wooden artefacts are listed in Table 63. With the exception of one object in Scots pine, the species, and the items made from them, fall within the ranges found at Castle Street (Padley 1991c, 203, table 24) and the Annetwell Street fort (Caruana and Allnutt forthcoming b). There are relatively few wooden artefacts here compared with Annetwell Street, however, and so fewer species are represented.

The species identifications were carried out by J Jones, University of Durham, with the exception of Number K37 which was done by J P Huntley, University of Durham, and Numbers K30-2 and K45-6, which were by T G Padley.

The catalogue

Toilet, pharmaceutical and surgical instruments

K1 Comb Not illustrated

Both ends are missing, as is the majority of the length of the teeth.

The central part of a two-edged comb. The widely spaced teeth are 12 per 20mm, and the narrow ones 24 per 20mm. There is a marking-out line visible along the base of both sets of teeth on one side of the central bar, and one along the base of the widely-spaced teeth on the other side.

Buxus sempervirens (box).

L. 25mm W. 17mm Th. 8mm

OGL A 1149 WD 357 Period: 4

K2 Comb Not illustrated

Only one original end survives.

A double-edged, lozenge-sectioned comb. The widely-spaced teeth are 9 per 20mm, and the narrow ones 22 per 20mm. There is a marking-out line at the base of each set of teeth on one side of the

Table 62
The wooden artefacts arranged by site and function

Site	*Toilet*	*Household*	*Writing*	*Transport*	*Buildings*	*Tools*	*Other*	*Total*
CAL A	1	2	-	-	-	-	1	4
OGL A	4	2	3	-	5	-	5	19
OGL B	2	3	-	-	4	1	2	12
OGL C	-	-	-	-	-	-	1	1
LEL A	-	-	7	1	-	-	1	9
OBL B	2	1	-	-	-	-	-	3
Totals	9	8	10	1	9	1	10	48

Table 63
Species used in the manufacture of wooden artefacts

Species	*Type of artefact*	*No of objects*
Quercus sp (oak)	Furniture fragment	1
	Barrel head	1
	Disc	1
	Pegs	5
	Unidentified objects	4
Abies alba (silver fir)	Barrel head	1
	Bungs	2
	Writing tablets	6
	Peg	1
	Disc	1
Buxus sempervirens (box)	Combs	6
	Boxes	2
Alnus sp (alder)	Spoon	1
	Unidentified object	2
Corylus sp (hazel)	Unidentified objects	2
Pinus sylvestris (Scots pine)	Unidentified object	1
Malus sp (apple/pear)	Bung	1

comb. In addition there are at the broken end some lines going across the central bar from the gaps between the bases of the widely-spaced teeth. The surviving end has a curved outer edge, making it D-shaped. Going across it are two shallow grooves.
Buxus sempervirens (box).
L. 46mm W. 53mm Th. 10mm
OGL A 651 WD 106 Period: 7A

K3 Comb Not illustrated
Only one end survives, and most of the teeth are broken.
A lozenge-sectioned, double-edged comb. The wide teeth are spaced 9 per 20mm and the narrow ones 22 per 20mm. The surviving end is curved along its outer edge, making it D-shaped. Neither the end nor the teeth survive to their full length. The surface of the fragment is damaged.
Buxus sempervirens (box).
L. 75mm W. 42mm Th. 10mm
OGL A 717 WD 128 Period: 7A-8C

K4 Comb Not illustrated
Broken at each end.
A lozenge-sectioned, double-edged comb. The wide teeth are spaced 8 per 20mm and the narrow ones 21 per 20mm. There is a marking-out line at the base of the narrow teeth on each side of the comb, although some of the cuts for the teeth have gone over it. There is a similar line for the widely-spaced teeth, visible for the whole length on one side but only at the end on the other side.
Buxus sempervirens (box).
L. 40mm W. 55mm Th. (at centre) 12mm
OGL B 188 WD 40 Period: 5A

K5 Comb Not illustrated
Only one end survives.
A lozenge-sectioned, double-edged comb. The wide teeth are spaced 10 per 20mm and the narow ones 19 per 20mm. There is a marking-out line visible at the bottom of each set of teeth on one side. The surviving end is D-shaped.
Buxus sempervirens (box).
L. 67mm W. 48mm Th. (at centre) 8mm
OGL B 166 WD 29 Period: 5C

The five lozenge-sectioned combs (Nos K1-5) are of the standard Roman type, which have been found at other sites in Carlisle (Caruana and Allnutt forthcoming b, nos D50-2; Padley 1991c, 204, nos 778-80).

It has been suggested that these combs were used for the dehairing of hides, because one of the combs from Vindolanda had brown/black animal hairs, probably from a cow, in the teeth (Birley 1977, 123-4). However, one of the combs from the Annetwell Street fort is elaborately decorated, and probably formed part of a toilet set (Lloyd-Morgan forthcoming). Two combs from Ribchester were found during examination to have fragments of human head lice (*Pediculus humanis capitis*) in the soil from between the narrow teeth. As lice are host-specific, and cannot live away from their host for any length of time, they must be contemporary with the use of the comb (V Fell, *in litt*). Boon (1985, 98-9) points out that although the Vindolanda comb had cattle hair on it, and that there is evidence in the 19th century for iron combs being used to dehair hides, it is unlikely that combs were acquired new for such a purpose as they were among the favourite toilet items of antiquity.

The delicate, narrow-spaced teeth were sawn by hand. Boon (1985, 99) suggests that a double-bladed saw called a *stadda* was used. He also says that though box (*Buxus sempervirens*) is native to southern England, it is likely that the combs were imported. It is worth noting that boxwood combs were less than half the cost of those made from other species according to Diocletian's price edict (Weeks and Rhodes 1986, 230).

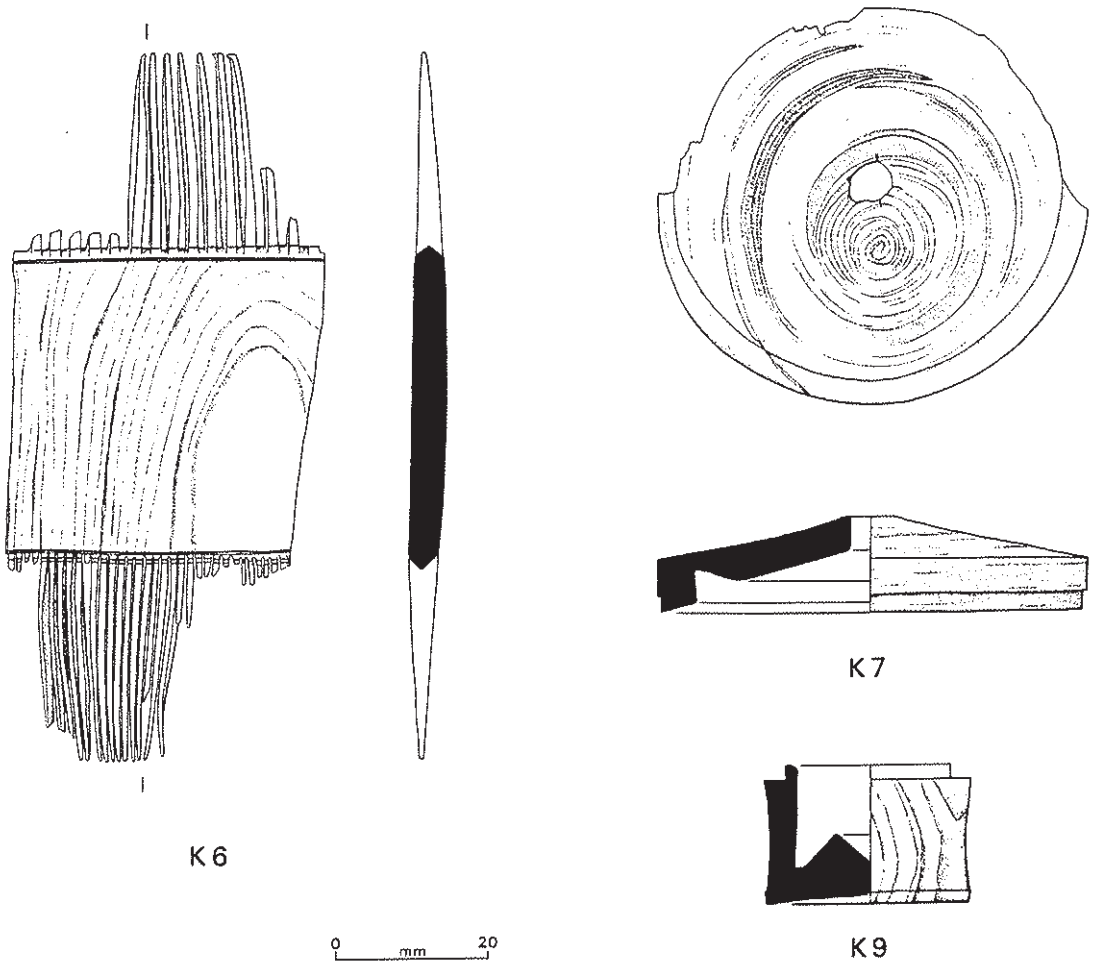

Fig 139 Wooden comb (K6) and boxes (K7, K9) (scale 1:1)

K6 Comb Fig 139

Both ends are missing.

A double-edged comb. The wide teeth are spaced 8 per 20mm and the narrow ones 17 per 20mm. A marking-out line is visible along the base of each set of teeth, on both sides of the comb. The central area of the comb has a rectangular cross-section, while the teeth are triangular.

Buxus sempervirens (box).

L. 45mm W. (overall) 95mm Th. (at centre) 4mm

OBL B 94 WD 39 Period: 6 or later

This comb is different from the others discussed above in that it is larger, wider and thinner, and flatter in section. The solid zone is also wider in proportion to the teeth than in the standard Roman combs. A boxwood comb of the same general shape, but much more elaborate, has been found in London from a fifteenth-century context (Egan and Pritchard 1991, 373, 375-6, no 1745, fig 250). Number K6 is only about three-quarters of the size of the London one, but the spacing of the teeth is almost identical and the proportions of teeth to the solid zone are very similar. However, it is likely that it is Roman in date as only Roman pottery was recovered from this period. The other finds from the same context, an uninscribed bung (No K13) and two pieces of stitched leather (Nos N60-1), are also Roman types.

K7 Box Fig 139

Only the lid survives, and of that part of the outer edge and the vertical rim are missing.

The outer edge of the lid rises vertically for 2mm before there is a small horizontal step of less than 1mm, after which it continues vertically for another 4mm when it reaches the top surface. This is a shallow cone. There is an irregular hole through it at the apex, which may have been for a knob. A single line has been cut into the top surface, 4mm from the edge and concentric to it. Where the edge is missing, it has broken along this line.

The underside of the lid is carefully worked. The bottom of the edge is 5mm wide and slopes up towards the centre. Around the lid at this point there is a groove which has an outer edge that is vertical and 4mm deep. The inner edge slopes in towards the centre. The rest of the underside is a conical depression, with a basal diameter of 35mm.

Buxus sempervirens (box).

Dia. 58mm

CAL A 71 WD 22 Period: 3B

K8 Box Not illustrated

Only a fragment of the lid survives.

The fragment comes from the outer edge of the lid. This went up vertically for 5mm before there was a step out of 1mm, and then continued on vertically. The very small surviving fragment of the top surface shows that it sloped, and was therefore probably conical. The bottom 5mm of the inside face was vertical. The bottom of the edge sloped up towards the centre of the lid.

L. (of fragment) 13mm W. (of fragment) 11mm

Th. (of fragment) 5mm

OBL B 108 WD 44 Period: 6

K9 Box Fig 139

Main body only survives, and that has some damage to the flange at the top and to other parts of the outside edges.

A circular turned box with a concave base. Around the outside of the base is a raised band 2mm high and less than 1mm deep. Above

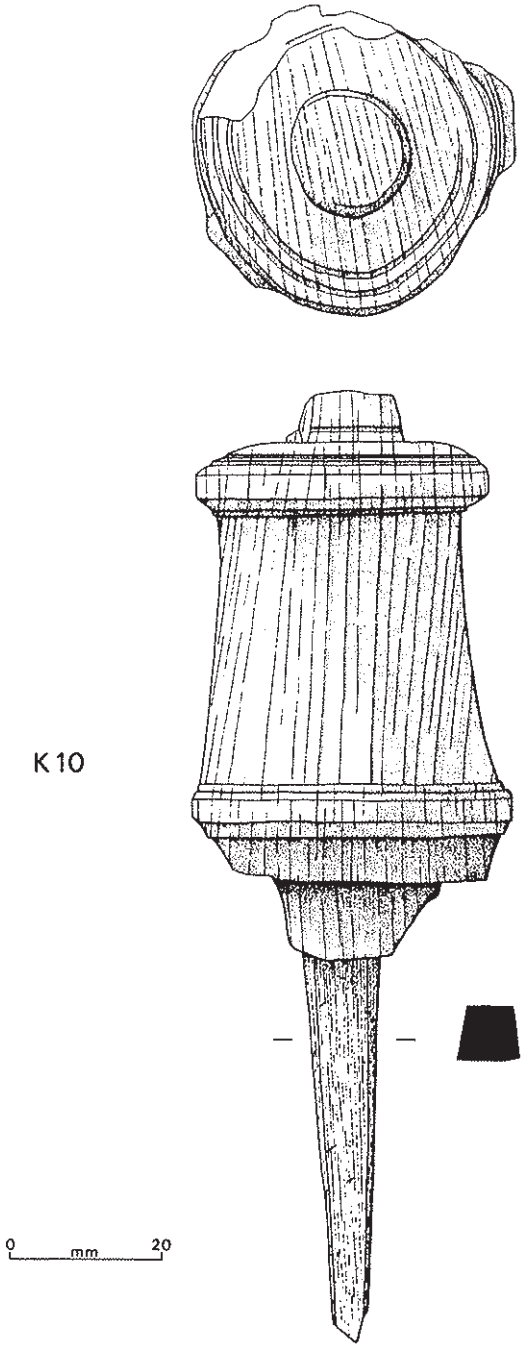

Fig 140 Wood and iron furniture fragment (scale 1:1)

this the wall flares out in a slight curve to the top, where there is a horizontal inset 2mm wide. Rising from the inside edge of this is a vertical flange, 2mm high, which has its inside edge chamfered, sloping towards the interior. The interior has vertical sides. The inside of the bottom is conical and rises to a central conical depression, 8mm in diameter.
Buxus sempervirens (box).
Dia. (ext) 28mm Dia. (int) 21mm Ht. 18mm
OGL A 658 WD 129 Period: 6

Turned wooden boxes of this type are not uncommon. They have been recovered singly from some sites, for example Blackfriars Street (Padley 1990, 156, no 395, fig 144) and Annetwell Street, Carlisle (Caruana and Allnutt forthcoming b, no D41), Newstead (Curle 1911, 311, pl 69 no 3), Bar Hill (Robertson *et al* 1975, 54, no 17, fig 54), Corbridge (Allason-

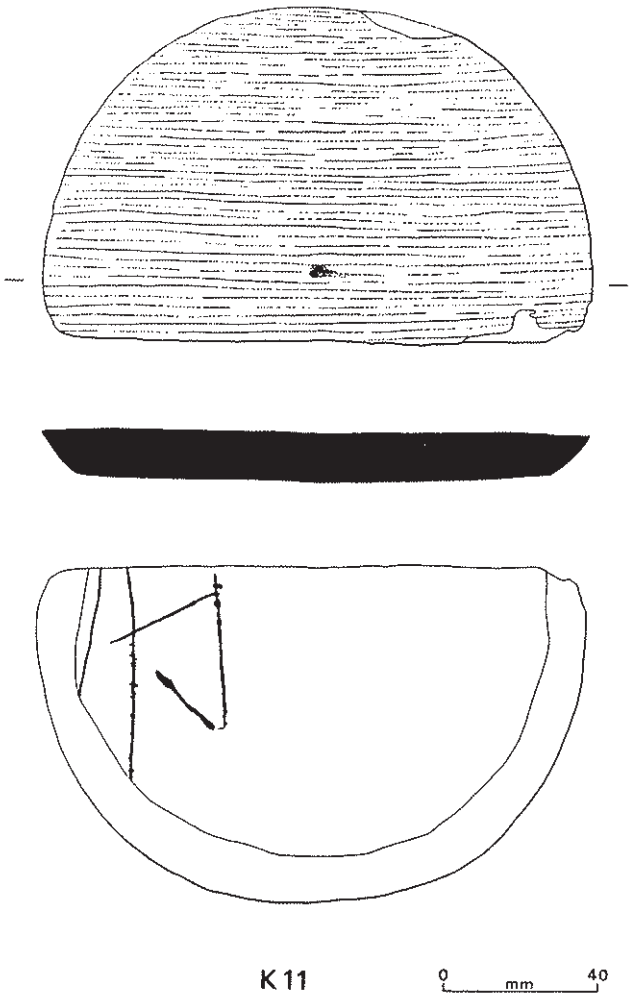

Fig 141 Wooden barrel head with graffito (scale 1:2)

Jones 1988, 218, fig 100) and Bucklersbury House, Walbrook, London (Wilmott 1991, 151, no 602, fig 111), and in small groups from other sites such as Castle Street, Carlisle (Padley 1991c, 204-5, fig 180), and 179 Borough High Street, Southwark (Pirie and Saunders 1990, 146, fig 2). A shipwreck site in the Gulf of Baratti off the coast of Tuscany has produced 136 of them in various sizes (Spawforth 1990).

The boxes were probably used to hold medicines or cosmetics. An unprovenanced box in the Museum of London (MOL 24489) had its contents analysed and shown to be lead carbonate and lead sulphide (C E E Jones, *in litt*). The Baratti find produced boxes containing spices such as cinnamon, vanilla and cumin, which were used in medicines in the Roman period (Spawforth 1990). The boxes are similar in shape to cosmetic boxes made of other materials, such as the one from Angel Court, Walbrook (Chapman 1977, 58-61), which can be paralleled by the silver boxes from Traprain Law and the Esquiline Treasure. Also similar is a glass cosmetic box, probably from Italy, now in the Corning Museum of Glass (Acc no 55.1.3 a, b; Harden *et al* 1987, 24, no 18).

Household utensils or furniture

K10 Furniture Fig 140
There is some damage to the spindle and to the top of the central knob.

There is a square-sectioned iron spike which is surmounted by a wooden 'head'. The wooden part was lathe-turned, but one side has been worn away, and the whole distorted during burial, so that it has a squashed D-shaped section. It terminates with a central knob at the top. This was originally circular but has been broken and is now therefore irregular. The knob has a flat top. Below the knob there is a slightly domed surface with two concentric grooves around the circumference. The outer edge of the top is curved and forms a flange around the top of a slightly waisted drum which forms the main body of the piece. There is a similar flange around the bottom. The detail below the lower flange is obscured by corrosion. Between each of the flanges and the drum are two narrow grooves. The upper ones are on the underside of the flange, while the lower ones are on the angle between the flange and the drum.
Quercus sp (oak).
L. 124mm W. (at upper flange) 42mm
Th. (at upper flange) 41mm
W. (of spike) 9mm Th. (of spike) 9mm
OGL A 959 WD 120 Period: 6

The iron shaft makes this item different from the furniture fragments from the Billingsgate Buildings (Chapman 1980, 130-1, no 670, fig 73), and those from Scole (Liversedge 1977, 204-6, fig 87).

K11 Barrel head Fig 141
Just over half survives.
A disc with a chamfer on one side of the perimeter. The separate chop marks of the different cuts used to make the chamfer are clearly visible. On the unchamfered side is a small central depression, which is probably from the compasses used to mark out the circle used as a guide when cutting out the disc. On the other side is a graffito. An area of the surface has been chopped away by the graffito. The chamfered surface is lighter in colour than the other.
Abies alba (silver fir).
Dia. (overall) 143mm Dia. (inside chamfer) 122mm
Th. 13mm
CAL A 71 WD 23 Period: 3B

K12 Barrel head: small Not illustrated
Less than half survives.
An originally circular disc, with its perimeter edge bevelled asymmetrically.
Quercus sp (oak).
Dia. (estimated original) 140-50mm Th. 7mm
OGL B 188 WD 97 Period: 5A

K13 Bung with brand Fig 142
One side is missing, and there is damage to the other.
The bung was originally circular, with a flat top and bottom. The bottom is smaller than the top, giving the whole a trapezoidal cross-section. At one side of the top surface there was originally a hole, but the surface is damaged, and this survives as a groove.
There are the remains of an inscription burnt into the top surface.
Dia. (max) 64mm Th. 19mm
OBL B 94 WD 45 Period: 6 or later

R S O Tomlin writes:

Just over half of a tapered softwood bung, probably silver fir, published as *RIB* ii 2442.4. A brand was impressed upon it after it had been driven into the barrel; only two letters and part of a third survive. They are capitals 19mm high.

[...]E B·[...]

Between *E* and *B* there seems to be a medial point less deeply impressed, suggesting that the brand is an abbreviated name of Roman type (*tria nomina*), presumably that of the shipper. Compare a branded stave from London (*J Roman Stud* **24** (1924), 221, no 9 = *RIB* ii 2442.12) which reads **L·E·FL**, *L(uci) E(...) Fl(...)*. The present brand may therefore have taken the form: *[praenomen] E(...) B(...)*. Of the letter after *B*, which would have identified the cognomen (eg *Ba(ssi)*), only the bottom of the first stroke survives. An apparent slight slope to the right and a possible rightward serif would favour *A* (*M* can be excluded), but *E*, *I*, *L* and *R* are also possibililities. Until another example is identified, the reading canot be restored.

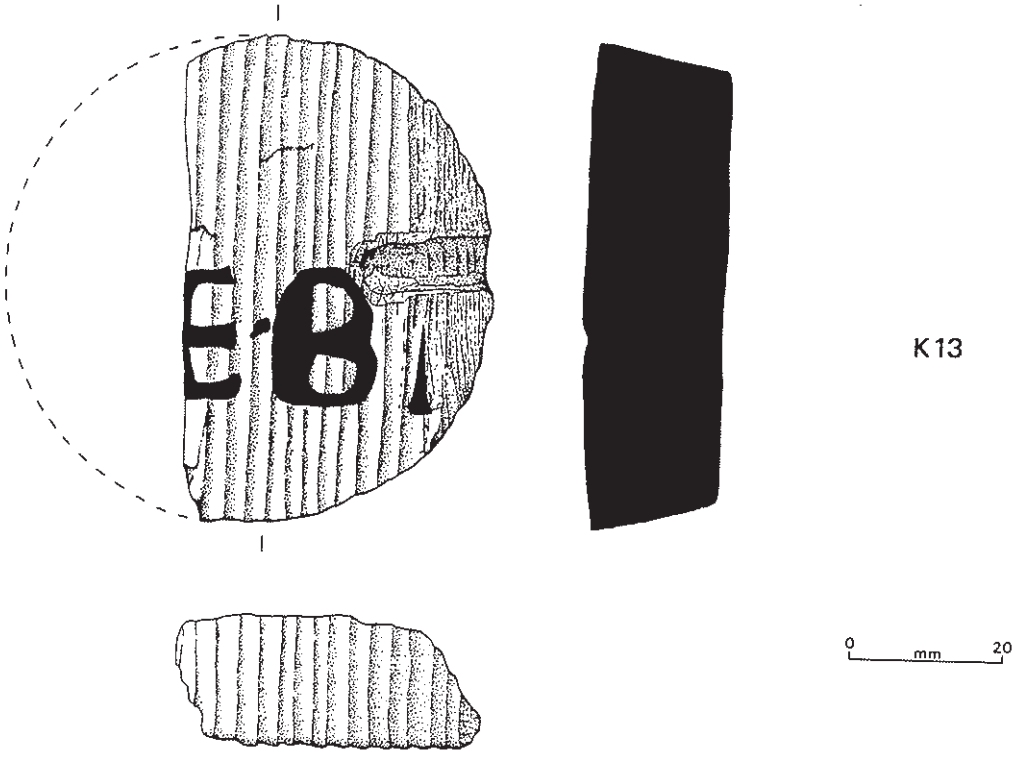

Fig 142 Wooden bung with brand (scale 1:1)

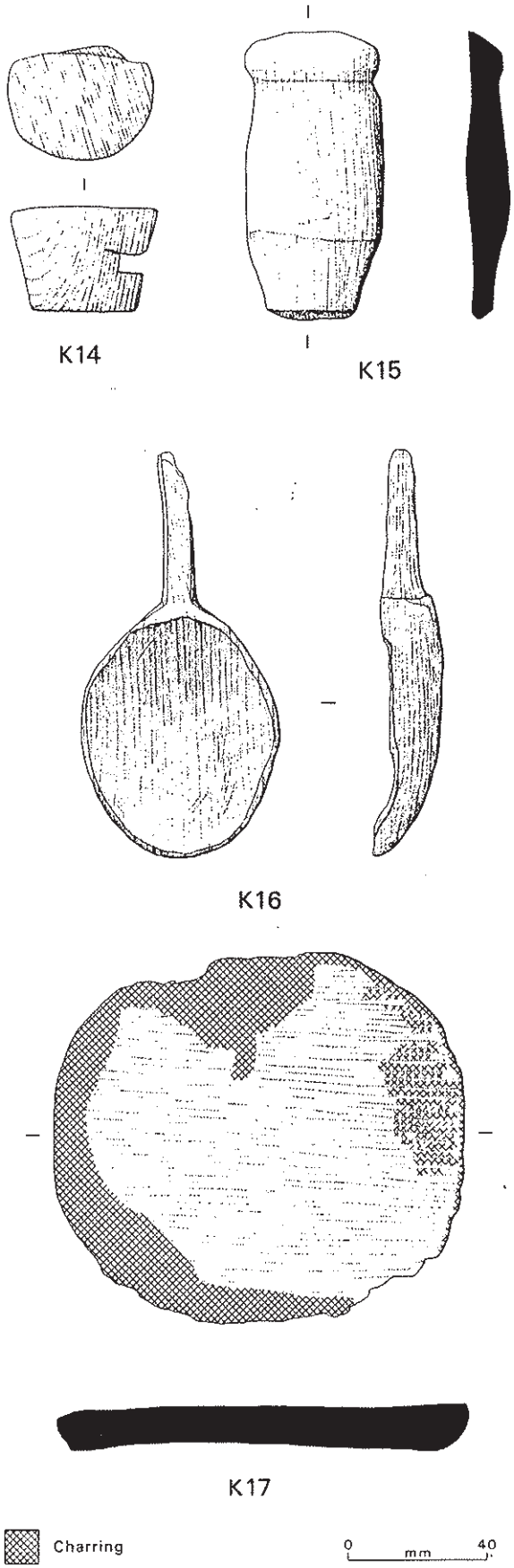

Fig 143 Wooden bungs (K14-5), spoon (K16) and disc (K17) (scale 1:2)

K14 Bung Fig 143
One side is missing, and there is damage to the top edge and to the side.

An originally circular bung which tapers from one end to the other. The outer edge is faceted, showing that it was carved to shape. There is a roughly made groove partway up one side which may be excavation damage.
Abies alba (silver fir).
Dia. (top) 43mm Dia. (bottom) 32mm Ht. 33mm
OGL A 850 WD 110 Period: Unphased

K15 Bung Fig 143
Only a fragment survives.

The bung was carefully made. The top is slightly domed and has a slightly curved outer edge which is wider than the main part of the bung. This main part slopes out as it goes away from the top. The bottom, 25mm from the end, is faceted. This faceting diminishes the diameter. Part has split away.
Malus sp (apple/pear/hawthorn).
L. 87mm W. (of fragment) 39mm Th. (of fragment) 14mm
OGL B 290 WD 90 Period: 3

An analysis of the bungs found at the Annetwell Street fort (Caruana and Allnutt forthcoming b) suggests that bungs were used in conjunction with pottery flagons, and perhaps also with glass and metal vessels. The size of the bungs recovered from this part of The Lanes would seem to agree with this.

K16 Spoon Fig 143
Much of the handle is missing, and there is some damage to the underside of the bowl.
The bowl is oval and dished. There is no ornament at the junction with the handle. The handle was probably rectangular in section originally, but the state of preservation makes this uncertain.
Alnus sp (alder).
L. (of bowl) 74mm W. (of bowl) 58mm
L. (overall, surviving) 121mm W. (of handle) 8mm
Th. (of handle) 9mm
CAL A 1 WD 21 Period: Modern

K17 Disc Fig 143
A sub-circular disc with a charred edge.
Quercus sp (oak).
L. 120mm W. 106mm Th. 12-14mm
OGL B 184.4 WD 38 Period: 5A

The object is a possible pot-lid because of the charring visible around the edge.

Written communication

The writing tablets
by R S O Tomlin

The typology of the stylus writing tablets is that devised by T G Padley for the Castle Street writing tablets (only those types represented by examples from this part of The Lanes are reproduced below; Padley 1991c, 210-11). The tablets are of a similar size to those from Castle Street.

Type 1 Single-sided. One side of the tablet is recessed to hold wax; the other side is plain.

Tablets are subdivided as follows:
i No writing visible on either side.
ii Writing visible on one side.
iii Writing visible on both sides.

K18 Writing tablet: type 1i Not illustrated
Fragment preserving part of one side edge; also a second small fragment. No visible trace of writing.
Fragment 1: W. 90mm L. 33mm
Fragment 2: W. 19mm L. 20mm

LEL A 578 WD 66 Period: 6A-E

K19 Writing tablet: type 1i Not illustrated
Fragment preserving one corner and the long edge as far as the notch, together with one of the holes for a hinge. No traces of writing visible on recessed face.
Abies alba (silver fir).
W. 134mm L. 26mm
LEL A 599 WD 81 Period: 5

K20 Writing tablet: type 1i Not illustrated
Fragment preserving the corner. No visible trace of writing.
Abies alba (silver fir).
W. 67mm L. 35mm
LEL A 607 WD 108 Period: 6A

K21 Writing tablet: type 1i Not illustrated
Fragment preserving part of one short edge. No visible trace of writing.
Abies alba (silver fir).
W. 150mm L. 35mm
LEL A 607 WD 111 Period: 6A

K22 Writing tablet: type 1ii Not illustrated
Fragment preserving the bottom of the tablet. There are traces of three lines of cursive writing, one text apparently inscribed on top of another, now illegible.
Abies alba (silver fir).
W. 139mm L. 32mm
OGL A 430.1 WD 109 Period: Unphased

K23 Writing tablet: type 1ii Not illustrated
Fragment preserving part of the two side edges and one long edge as far as the notch. There are traces of now illegible cursive writing on the recessed face.
Abies alba (silver fir).
W. 139mm L. 51mm
LEL A 599 WD 80 Period: 5

K24 Writing tablet: type 1ii Not illustrated
Fragment preserving the top edge as far as the notch and part of the left hand edge. On the recessed face there are traces of cursive writing, illegible, but suggesting that this was the top left hand corner.
W. 88mm L. 40mm
LEL A 607 WD 107 Period: 6A

K25 Writing tablet: type 1iii Fig 144
Four conjoining fragments which preserve the whole width of a tablet, but neither top nor bottom. On the recessed face are traces of a cursive text, now illegible. On the other face are traces of cursive writing.
Abies alba (silver fir).
W. 142mm L. 49mm
LEL A 539 WD 34 Period: 7B

On the non-recessed face are traces of elongated cursive letters incised with a metal nib or similar instrument, consisting of indentations in the horizontal lines of the grain, linked by discolouration due to bruising. These tend to be vertical strokes made across the grain; horizontal and diagonal strokes made less impression and tend to disappear into the grain. The letters read:

[...]

IVLIAN O

[...]*Iuliano*

'... to ... Iulianus'

This is the end of the 'address' to a letter, like those on tablets from Castle Street, Carlisle (Tomlin 1991c, 209-17, figs 187-9; Hassall and Tomlin 1988, nos 31-5, figs 6-9). It is not certain that *Iuliano* is the final word, but the uninscribed space after O, and comparison with number 813 from Castle

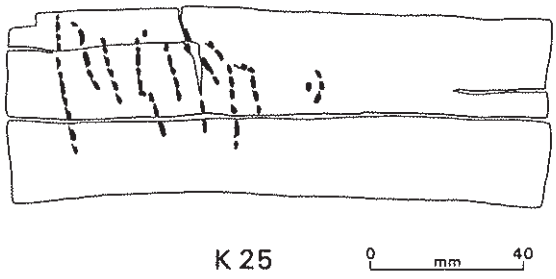

Fig 144 Wooden stylus writing tablet (scale 1:2)

Street (Tomlin 1991c, 216, fig 189), make this probable. *Iulianus* is the cognomen of the recipient.

This tablet has been published in *Britannia* (Tomlin 1991b, 300, fig 6; Tomlin 1992).

K26 Possible writing tablet Not illustrated
Fragment, not certainly part of a writing tablet. No visible trace of writing.
W. 110mm L. 12mm
OGL A 430.1 WD 108 Period: Unphased

K27 Possible writing tablet Not illustrated
Two fragments, each with one cut edge. Perhaps from a writing tablet, but with no visible trace of writing.
Fragment 1: W. 22mm L. 15mm
Fragment 2: W. 19mm L. 15mm
OGL A 787 WD 206 Period: 6

Transport

K28 Barrel Not illustrated
The barrel was used to line a pit and so only the bottom 260-440mm survives. There is no evidence for the hoops or the head. However, the photographs of the barrel *in situ* show no appreciable gaps between the staves, which suggests that it was inserted into the pit complete.

The barrel was made up of 17 staves originally. Each stave was made from a single plank at least 20mm thick (the thickest recovered is 30mm). In most cases the outer surface was curved. The edges of the staves were angled so that they were radial to the diameter of the complete barrel. There is a groove on the inside of the staves, 42-8mm from the bottom, which was used as a seat for the head. The variable preservation of the staves is such that the shape and dimensions of the groove are not certain. Above the groove, the inner surface has a zone up to 40mm wide of irregular facets. Below the groove, the inner faces of the staves have been curved. The end itself has been shaped with a curved outer corner and a chamfer 15mm wide on the inner surface. In one stave there is evidence of woodworm activity.
Dia. (of barrel, as found) 860-980mm
W. (of staves) 129-165mm Th. (of staves) 20-31mm
LEL A 365.3 WD 7 Period: 11

The barrel is of the type described by Boon (1975, 54) as being 850mm in diameter at the point of maximum girth, originally about 2m high and containing 900 litres, which would have weighed about 900 kg when full. One of the staves is recorded as having had a bung-hole, indicating that the barrel originally held liquid. This was probably wine, as oil was transported in amphorae and beer was made locally.

Buildings

K29 Peg Fig 145
There is some minor surface damage.

The peg has a rectangular cross-section with chamfered corners. On two sides only there is a slight expansion 38mm from the end

forming the head.
Quercus sp (oak).
L. 190mm W. (of head) 27mm W. (of stem) 20mm
Th. (of head) 20mm Th. (of stem) 20mm
OGL A 1237.7 WD 424 Period: 13

K30 Peg Fig 145
The head is broken and part of the stem is missing.
Originally this was a rectangular-sectioned tapering peg. The stem has chamfered corners.
Quercus sp (oak).
L. 150mm W. (of head) 29mm W. (of stem) 23mm
Th. (of head) 29mm Th. (of stem) 23mm
OGL A 1237.7 WD 475 Period: 13

K31 Peg Fig 145
The peg has some surface damage.
A square-sectioned peg. The peg is straight-sided and has chamfered corners. The head is slightly domed, and has a depth of 30mm.
Quercus sp (oak).
L. 153mm W. (of head) 28mm W. (of stem) 24mm
Th. (of head) 29mm Th. (of stem) 23mm
OGL A 1237.7 WD 418 Period: 13

These three pegs are possibly part of the structure of medieval well 1237, as they are all similar in size and shape. Pegs K32-3 are probably also medieval.

K32 Peg Not illustrated
The peg is broken at one end, and there is also slight damage to the head.
The head has a rectangular cross-section, while the stem has a sub-circular one. There is a gentle shoulder between the two.
Quercus sp (oak).
L. (surviving) 133mm W. 36mm Th. 33mm
Dia. (at broken end) 23mm
OGL A 1237.3 WD 262 Period: 13

K33 Peg? Not illustrated
Broken at one end.
The surviving original end has the remains of two facets visible, but all other details of shaping have been removed by the radial splitting of the piece.
L. 104mm Dia. 30mm
OGL A 1237.5 WD 372 Period: 13

K34 Peg Not illustrated
Only a fragment survives.
A roughly D-sectioned tapering piece of a peg.
Abies alba (silver fir).
L. (surviving) 66mm W. (max) 16mm W. (min) 8mm
Th. (max) 8mm Th. (min) 4mm
OGL B 203 WD 33 Period: 5B

K35 Peg Fig 145
One end is missing and there is some surface damage.
The cross-section is irregular. The stem merges into the head. There is a piece of bark remaining on one side of the head.
L. (surviving) 75mm W. (max) 26mm W. (min) 16mm
Th. (max) 21mm Th. (min) 14mm
OGL B 8 WD 7 Period: 9

K36 Peg Not illustrated
One end is broken and part of the surface is missing.
The head has an irregular pentagonal cross-section. The stem is separated from the head by an oblique shoulder on one side; the other side is damaged. The stem has a flattened lozenge-shaped cross-section.
L. (surviving) 74mm L. (of head) 50mm
W. (of head) 17mm W. (of stem) 17mm
Th. (of head) 25mm Th. (of stem) 6mm
OGL B 8 WD 6 Period: 9

K37 Unidentified object Not illustrated
It is not clear if the piece is complete.
A short length of triangular-sectioned rod. The two sloping sides are straight while the base is curved, as is the apex. The surface is well finished.
Quercus sp (oak).

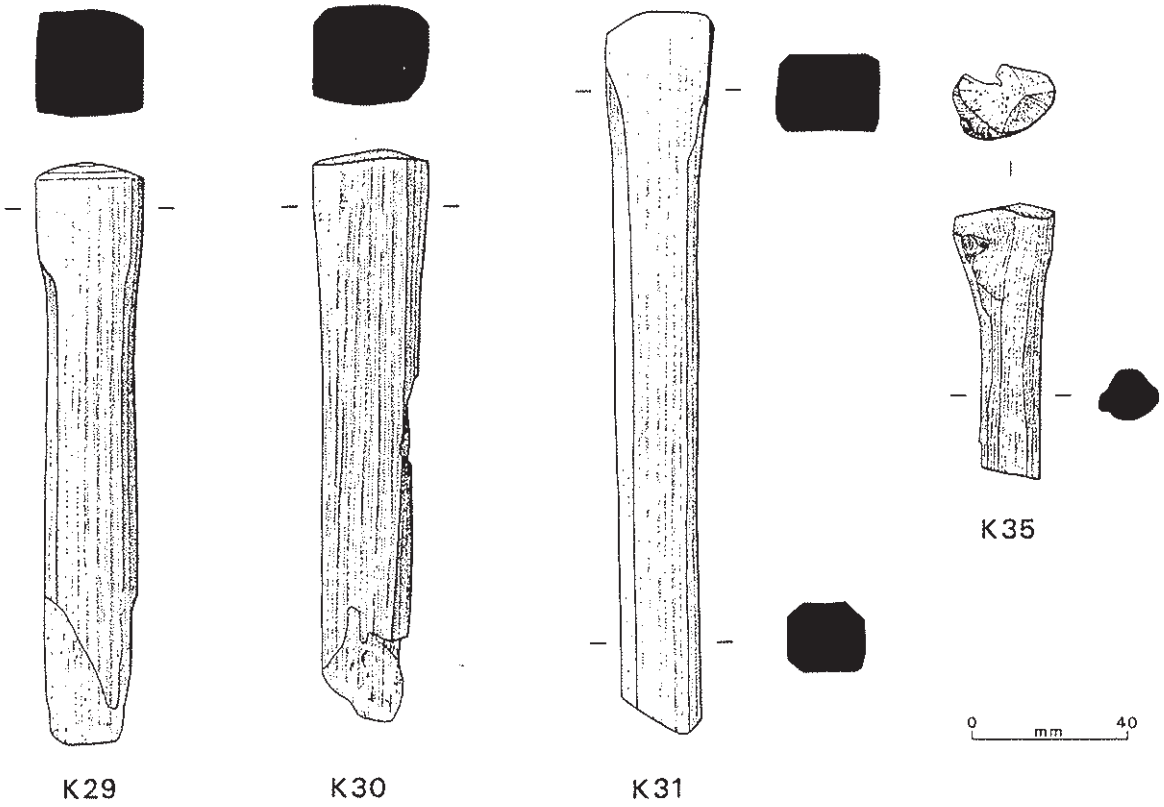

Fig 145 Wooden pegs (scale 1:2)

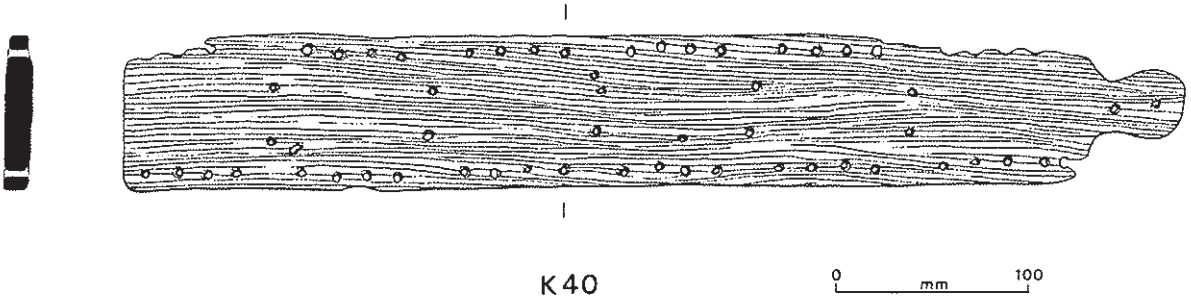

Fig 146 Unidentified wooden object (scale 1:4)

L. 42mm Dia. (of curvature of base) 40-4mm
OGL B 130 WD 23 Period: 6C

A short length of ornamental moulding which is probably an offcut from a longer piece used as part of a building.

Tools and industry

K38 Handle? Not illustrated
Damaged at one end and part of one side is missing.
A short length which has one end that has been sawn across. The outside edges have facets running along them.
L. 49mm W. 45mm
OGL B 166 WD 30 Period: 5C

Other wooden objects

K39 Disc Not illustrated
Part of one edge is missing, and there is damage to one surface.
An originally roughly circular disc. There is a rectangular notch in one edge which may be deliberate.
Abies alba (silver fir).
Dia. 51-7mm Th. 9mm
OGL A 759 WD 107 Period: 6

K40 Unidentified object Fig 146
There is some damage to the edges of this piece.
A rectangular-sectioned plank with a curved projection at one end. There is a row of holes, 5mm in diameter, along each edge. There are also holes in the middle of the plank which, with those along the edge, make up a pattern of an open-ended curved enclosure at each end and four oval ones between them. There are also two holes through the projection. All the holes have been made through the plank in the same direction, and there is a compression mark, 8mm in diameter, around some of them.
Quercus sp (oak).
L. (overall) 545mm W. (of main part) 80mm Th. 13mm
CAL A 1 WD 3 Period: Modern

The object would originally have had something inserted in the holes, perhaps the uprights for basketwork, making some kind of storage or sorting tool. However, no further information as to the function of the object has been found. The date of the object also is unknown, and as it was found in a modern context, this too gives no help.

K41 Unidentified object Fig 147
Broken at one end.
The object has a sub-rectangular head which is separated from the remains of a D-sectioned shaft by a distinct shoulder on one side. On the other side, the line of the edge of the shaft continues the line of the side of the head. The head has a roughly oval cross-section.
Alnus sp (alder).
L. 51mm W. (of head) 21mm W. (of shaft) 15mm
Th. 16mm
OGL A 787 WD 207 Period: 6

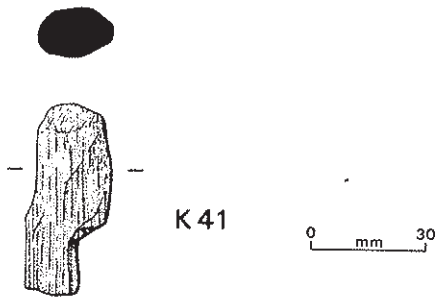

Fig 147 Unidentified wooden object (scale 1:2)

K42 Unidentified object Not illustrated
The wooden part of the object has fragmented. One end is further damaged.
A rectangular iron spike is embedded in a cylinder of wood. The exposed end of the spike is broken. There are no surviving features on the wooden part. This item is probably medieval in date.
L. 200mm
Alnus sp (alder)

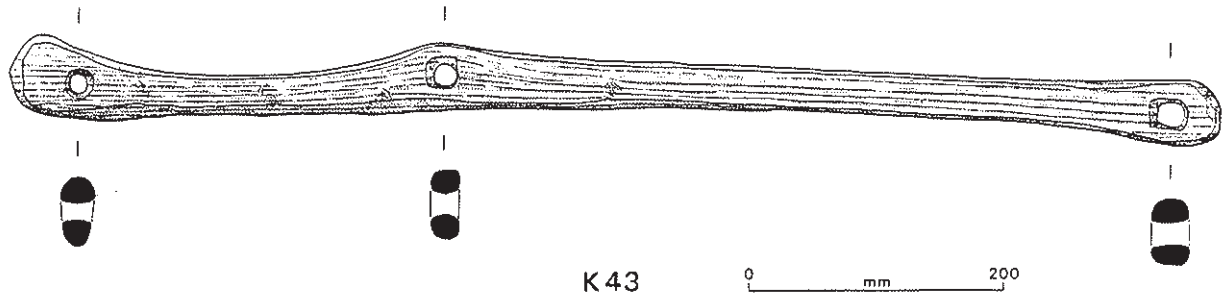

Fig 148 Unidentified wooden object (scale 1:6)

OGL A 1237.7 WD 407 Period: 13

K43 Unidentified object Fig 148
A long object carved from a complete stem. At the left hand end it expands in width but remains the same thickness, forming a curved terminal. This is pierced by a circular hole, 23mm in diameter. The body of the piece has an oval cross-section and becomes narrower as it goes away from the end before expanding again, 345mm from the left hand end. The expansion is D-shaped and only occurs on the top surface. It is pierced by a sub-rectangular hole 24mm square. The rod narrows before expanding again at the other end. The end is pierced by a circular hole, 24mm in diameter, which has a rectangular expansion on one side.
Corylus sp (hazel).
L. 951mm W. (of left end, max) 64mm
W. (of centre, max) 55mm Th. (at centre) 28mm
OGL A 659 WD 69 Period: 7A

K44 Unidentified object Fig 149
At least half is missing.
A solid piece which had a sub-circular cross-section originally. The top is flat and appears to have had an iron fitting at the centre which has decayed away completely. The top 20-3mm of the outside edge is vertical, but below this it slopes in towards a blunt point which is broken. There are facets visible around the point.
Corylus sp (hazel).
Dia. 32mm Ht. 40mm
OGL A 858 WD 112 Period: 6

K45 Unidentified object Fig 150
Only small amounts of damage.
A rod which is pointed at one end and has a worked 'blade' at the other. The rod has a sub-circular cross-section, and there are long facets visible running along it. The blade is asymmetrical. At one side there is a distinct right-angled shoulder, beyond which the edge runs straight to the tip. On the other side there is a slight sloping shoulder, beyond which the edge runs straight and then curves to the tip. The curve begins nearer to the shoulder than it does on the first side. The tip itself is rounded. The thickness decreases as it approaches the tip, giving it a wedge-shaped profile. One face is definitely charred, and the other may be.
Quercus sp (oak).
L. (overall) 820mm L. (of blade) 136mm
W. (of blade) 49mm W. (of rod) 30mm
Th. (of blade) 23-5mm Th. (of rod) 30mm
OGL B 244 WD 45 Period: 4C

K46 Unidentified object Fig 151
Only part of the piece survives, and there is also some surface damage.
The remains of a block with a curved end which was pierced with a circular hole.
Quercus sp (oak).
L. 185mm W. 55mm Th. 40mm
OGL B 186 WD 34 Period: 5A

K47 Unidentified object Fig 151
Part of the top is missing, and the stem is damaged.
The upper part of the piece is a knob with a random collection of V-sectioned grooves of assorted lengths going around it. The head is separated from the shaft by a single V-sectioned groove which goes completely round the object. Below the groove, the upper 9mm of the shaft has a multangular band going around it. The outer surface has been charred.
Pinus sylvestris (Scots pine).
L. 118mm Dia. (of top of shaft) 32mm
OGL C + WD 25 Period: Unstratified

K48 Unidentified object Fig 151
The object is broken at one end and there is some surface damage.

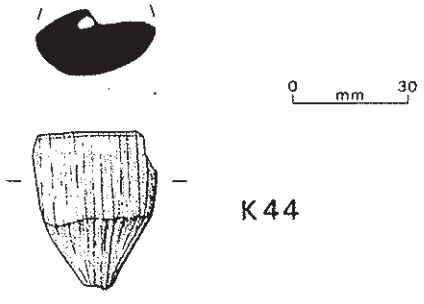

Fig 149 Unidentified wooden object (scale 1:2)

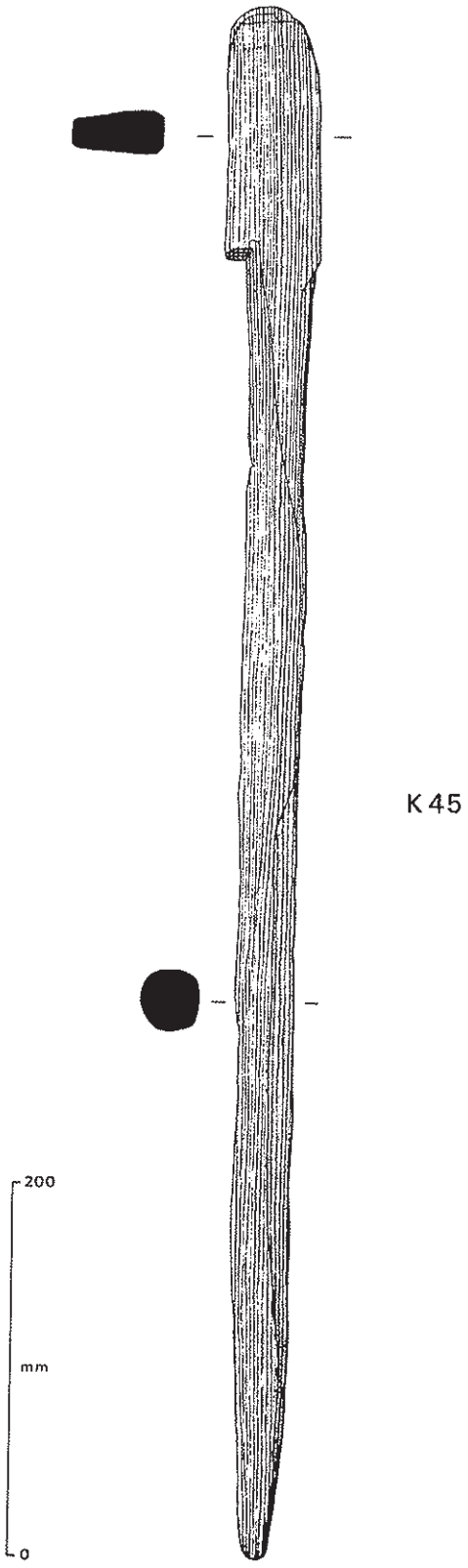

Fig 150 Unidentified wooden object (scale 1:4)

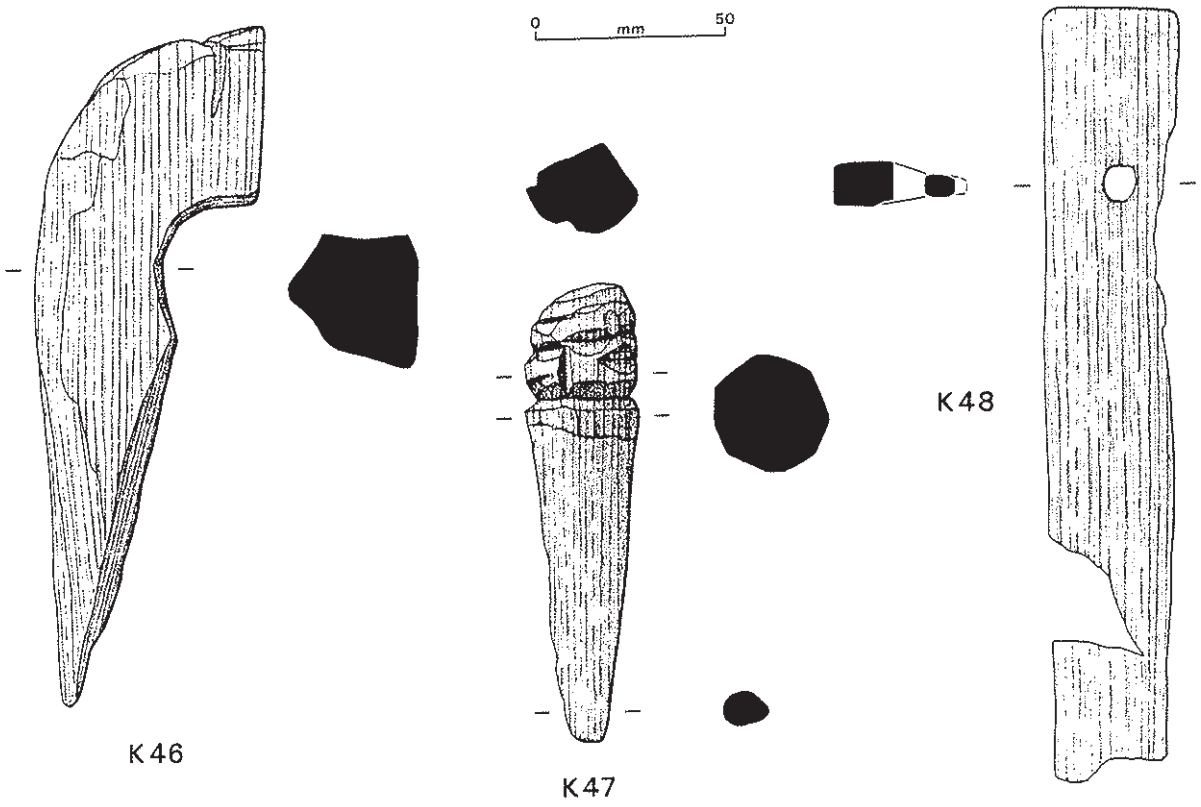

Fig 151 Unidentified wooden objects (scale 1:2)

A trapeze-sectioned, radially-split piece. It becomes narrower and thinner as it goes away from the surviving original end. At a point 41mm from this end it is pierced by a hole 13mm in diameter. *Quercus* sp (oak).

L. (surviving) 216mm W. 30-36mm Th. (max) 12mm Th. (min) 5mm
LEL A 527 WD 29 Period: 8D

CHAPTER 23 THE BASKETRY (L)

by E R T Allnutt

The excavations in this part of The Lanes produced only one item which can be considered as either textile or basketry, Number L1; it is not illustrated here but in McCarthy 1994, Plate 000. The species identification was done by J P Huntley, University of Durham. A glossary of the basket terms used is given in Wright (1983).

L1 Woven object Not illustrated

Folded mass in delicate condition. When unfolded the mass fell into three lengths, none of which had any original edges surviving. Two of the pieces were roughly aligned, lying on top of each other. The third lay above and across the other two at right angles to them. The third piece had been doubled over on itself and the other two pieces had then been folded over it, making a sandwich. It is probable that the two aligned pieces were originally one length that had been rolled around the third but which had broken at the folds when flattened in the ground.

Woven in neat, tight twining from warps and wefts of identical size with virtually no gaps between the wefts.

Monocot, probably a rush (*Juncus* sp), not wood or moss. Absence of pith precludes firm identification.

Folded mass: L. 297mm W. 200mm Th. 31mm

Largest piece when unfolded: L. (min) 340mm

W. (min) 104mm Th. 2mm.

Warp: W. 3mm Th. 1mm

Weft: W. 3mm Th. 1mm

OGL A 722 T 1 Period: 6

Twining, the method of manufacture of the object, is one of the five basic methods of constructing a basket. Twined basketry is characteristically flexible and soft, with both elements being made from such materials as grasses or thin/split roots which can be pulled tight, and is suitable for both matting and baskets. The basic technique is a twist of two weft elements around the warp (Fig 152), identical to pairing in other basketry traditions, although the terminology is that of weaving. The distance between the wefts decides the tightness and closeness of the weave and can be so close as to make the warp invisible. Twined baskets can be used for holding water (Wright 1983, 138), particularly if coated in resin or tar (Adovasio 1977, 50). Other variations include three instead of two wefts (*ibid*, 26, fig 20), the inclusion of tufts of fleece/fibre to give a pile (Vogt 1947, 1950-1 with illustrations; Crowfoot 1958, 416-7, fig 259), and different methods of executing the basic twist of weft around warp (*ibid*).

Although our modern understanding of twining is derived from a basket-making context, it should be stressed that twining, as a technique of twisting two elements around a third, need not be confined to basket making but can be readily adapted to making other objects. Such objects need not necessarily be in three dimensions; mats and supple sacks could be said to resemble fabric. It is difficult, therefore, to define Number L1 either as textile or basketry. The end products of weaving and basketry are very different. Basketry produces a rigid or semi-rigid, usually three-dimensional container, and weaving a flexible length which to all intents and purposes is two-dimensional. Matting and the bases of square work in basketry unfortunately fit neither of these two general categories. The method of construction is also important; a basket is made in the round and is complete when finished, whereas a length of fabric is made most satisfactorily on a loom, and still needs to be further fashioned when cut from it.

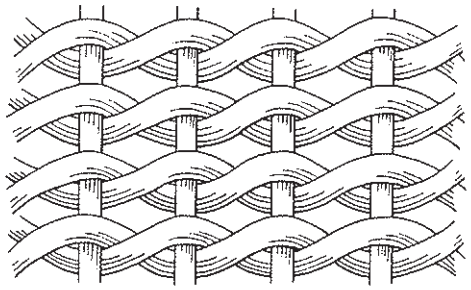

Fig 152 The technique of twining

In the case of Number L1 where there are no original edges or a possible slath, it is impossible to tell how it was made or what the finished product was intended to be. Although a twined basket has a certain rigidity consequent on its circular three-dimensional construction, if allowed to disintegrate, as under the conditions in archaeological deposits, the walls and base can become flexible and resemble fabric rather than a container.

The context of Number L1 sheds no light on its function. It was found in the upper fill (722) of a small timber-lined pit (698) within Building 674 (OGL A Period 6). The pit has been interpreted as a possible animal feed trough (Fasc 1, p 00) The woven object might have been the wrapping around something stored or hidden in the pit, although both a basket or a length of 'fabric' would have been appropriate for this. There was nothing in the folds of Number L1 or in the fill of the pit which would indicate that this was the case, however.

This problem of definition is not new. A number of examples of cloth/fine matting made by a 'cross-twisted' non-weaving technique have been described by Henshall (1950). ('Cross-twisted' in this context seems to be a textile specialist's way of describing twining.) These have three characteristics: the use of vegetable fibres (with one exception made in goat hair), the relative thickness of the longitudinal elements as opposed to the transverse ones, and the fact that the strands used in the elements have not been spun or only lightly spun. The longitudinal elements were set close together and gave substance to the fabric, while the transverse, cross-twisted ones were spaced at some distance apart. Objects identified include a hair moss garment covering a body, and fringe fragments of hair moss, sedge, and one example of goat hair from Carrick Bog, Ireland. Also included in this group is the stiff, conical hair moss object from the Roman fort at Newstead (Curle 1911, 108, pl 15). Continental examples are found from Vester Doense, Denmark, of Bronze Age date, and from the Swiss Lake dwellings, the latter worked in

lightly spun linen. This seems to be a very disparate group with little in common beyond their method of manufacture - the 'cross-twisted' non-weaving technique.

By contrast, undoubted examples of ancient basketry made by twining are also found. Semi-rigid baskets appear in the Neolithic period from Noyen-sur-Seine (Egloff 1983-4, 81-2, fig 1) and in the Roman period at the Cave of Letters (Yadin 1963, 149, pl 49), while supple, sack-like baskets of Neolithic date were found at Cueva de los Murciélagos, Spain (Vogt 1947, 1950) and of Iron Age date at Neuchâtel (Egloff 1983-4, 85). Conical hats of Neolithic and Bronze Age date were found at Bodensee (Coles and Coles 1989, 112, ill 77) and Fiavé on Lake Carera, Italy (*ibid*, 131-2, ill 94-6).

The difficulty of defining Number L1 as basketry or textile remains. The examples cited above and those illustrated by Henshall (1950) clearly show that not only is there a very grey area where basketry and textile overlap, but also that their relative functions are probably not as clear-cut as might be imagined.

CHAPTER 24 THE SHOES AND SHOEMAKING OFFCUTS (M)

BY T G Padley and S Winterbottom

The shoes
by T G Padley

Introduction

Some 104 shoes and shoe parts have been recovered from this part of The Lanes (Table 64). This is a much smaller number than that recovered from other sites in Carlisle. Although the numbers from Castle Street (172 items; Padley 1991d) and the fort at Annetwell Street (122 items; Padley forthcoming h) may appear to be similar, the paucity of material from this part of The Lanes becomes apparent when the areas of the different sites are compared. Old Grapes Lane Trench A is about the same size as the Castle Street site, for example, but produced only 37 items; a similar comparison could be made with Annetwell Street.

There are some differences between Lewthwaite's Lane

Table 64
The shoes and shoe parts by type

Site	*Nailed*		*Sandals*		*Stitched*		*One-piece T-seam*		*Uncertain*		*Medieval*		*No of shoes*
	No	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	
CAL A	13	72.2	3	16.7	1	5.6	1	5.6	-	-	-	-	18
OGL A	24	64.9	2	5.4	2	5.4	3	8.1	1	2.7	5	13.5	37
OGL B	9	60.0	1	6.7	1	6.7	-	-	-	-	4	26.7	15
OGL C	14	87.5	-	-	2	12.5	-	-	-	-	-	-	16
OGL J	-	-	-	-	-	-	1	100.0	-	-	-	-	1
LEL A	7	100.0	-	-	-	-	-	-	-	-	-	-	7
OBL B	4	40.0	-	-	-	-	4	40.0	2	20.0	-	-	10
All sites	71	68.3	6	5.8	6	5.8	9	8.7	3	2.9	9	8.7	104

Table 65
Shoes and shoe parts by site, expressed as percentages of each shoe type

	Nailed	*Sandals*	*Stitched*	*One-piece T-seam*	*Uncertain*	*Medieval*	*No of shoes*
CAL A	18.3	50.0	16.7	11.1	-	-	18
OGL A	33.8	33.3	33.3	33.3	33.3	55.6	37
OGL B	12.7	16.7	16.7	-	-	44.4	15
OGL C	19.7	-	33.3	-	-	-	16
OGL J	-	-	-	11.1	-	-	1
LEL A	9.9	-	-	-	-	-	7
OBL B	5.6	-	-	44.4	66.7	-	10

Trench A and the rest of the sites in this part of The Lanes. The number of nailed shoes from LEL A appears to be very small (Table 64). When this is seen as a percentage of the total (Table 65), however, it is not very different from the proportion recovered from Old Grapes Lane Trench B. The main difference is in the variety of material present. The totals of the Old Grapes Lane sites are increased by the presence of sandals, stitched shoes and one-piece T-seam shoes, as well as medieval shoes, all of which are lacking from LEL A. This suggests that the taphonomic processes involved in the deposition of shoes at LEL A differed from those at the other sites, but the reasons for the differences are unknown.

Presentation

The shoe types are similar to those from other sites in Carlisle, and there are no significant differences within types between the different trenches. The shoe types from the whole area are considered together, rather than on a trench-by-trench basis. They fall into the categories formulated by Rhodes in his study of the Billingsgate Buildings shoes (1980, 99-128), which have been used to categorize the material from the other sites in Carlisle (Padley 1991d, and forthcoming h and i). A description of the nailing patterns is followed by discussions of the shoe types (including the medieval shoes), each accompanied by a summary catalogue arranged by site and period. Only a sample of the shoes is illustrated, and not all surviving parts of each of the illustrated shoes are shown.

The definitions of the terms used can be found in the glossary prepared by the late John Thornton (1973).

The nailing patterns

The nailing pattern classification was originally worked out for the Castle Street site (Padley 1991d), and has since been expanded to cover new variants which have been discovered in other collections from Carlisle. Only those which occur in this part of The Lanes are included.

Type A — In all examples of this type there is a single row of nails around the edge of the sole, with clusters under the tread and seat. Often there is also an isolated nail at the waist. The basic type A pattern is the simplest, with the clusters arranged in straight lines. Variations in the shapes of the clusters form the basis of the divisions into the different sub-types listed below.

Variants of type A include:

A2 — A single row of nails down the centre of the shoe.

A3 — Similar to A2, but with some elaboration on either side of the central line.

A4 — The cluster under the tread is arranged in a diamond.

A6 — The cluster under the tread is arranged in an X.

A11 — The cluster under the tread is arranged in a circle.

A13 — The cluster under the tread is arranged in a , there is an isolated nail at the waist, and the cluster under the seat is arranged in a .

A14 — A second row of nails at the seat follows the outer curve of the perimeter row.

Type B — In this type there is a single row of nails along the inside edge of the sole, and a double one along the outside. The basic type B pattern has the clusters under the tread and seat arranged in straight lines, and one or more nails at the waist. No variants of this type were found here.

Type B/C — It is not clear if the shoe should be classified as a type B nailing pattern or as type C, which has a double row of nails around the whole of the edge of the sole.

As can be seen, only types A and B are represented here (Table 67). Most of the shoes where the nailing type can be identified are type A (73%), which is a larger proportion than on any other site in Carlisle, although the total number of shoes and shoe parts recovered is very small.

Type A represents shoes with the minimum amount of nailing required from a functional point of view, that is a row around the edge and some extra ones for support at the seat and the tread. The heavier type B-nailed shoes could therefore have been made in response to specific needs, such as for heavy-duty wear by adult males. There are two pieces of evidence in support of this, but the sample is very small and thus the conclusions lack statistical significance. The first is that the majority of the type A nailed shoes are in the smaller sizes, particularly smaller than adult size 5 (see Table 67), and could have belonged to women/youths (Rhodes 1980, 102). The converse is also true in that the type B nailing in this sample is mainly confined to the larger sizes, although two

Table 66
Comparison of the different nailing patterns at Carlisle sites, expressed in percentages

Nailing pattern	*Castle Street*	*Annetwell Street*	*Tullie House*	*The Lanes Volume 1*
Type A	57	19	45	73
Type B	30	48	48	25
Type C	10	26	8	-
Type B/C	-	3	-	2
Type D	3	3	-	-

Numbers of shoes with recognizable nailing patterns:

Castle Street (Padley 1991d)	67	(50% of the total)
Annetwell Street (Padley forthcoming h)	31	(28% of the total)
Tullie House (Padley forthcoming i)	40	(38% of the total)
The Lanes Volume 1	40	(52% of the total)

Table 67
Type A and B nailing patterns recovered from complete shoes from Carlisle sites, arranged in order of shoe size

Shoe size	*Castle Street*		*Annetwell Street*		*Tullie House*		*The Lanes Volume 1*	
	Type A	*Type B*	*Type A*	*Type B*	*Type A*	*Type B*	*Type A*	*Type B*
C9	1	-	-	-	-	-	2	-
C12	-	-	-	1	-	-	-	-
C13	1	-	-	1	-	-	-	-
A1	1	-	-	-	-	-	1	-
A2	2	-	2	-	1	-	1	-
A3	-	-	-	-	-	-	1	-
A4	2	-	-	-	1	-	6	-
A5	2	1	-	-	-	-	-	-
A6	1	-	1	1	-	-	3	-
A7	-	-	-	1	1	-	-	1
A8	1	-	-	-	-	-	1	-
A9	1	1	1	-	-	-	1	2
Totals	12	2	4	4	3	-	16	3
% < A5	75	50	50	50	34	-	69	0

shoes in children's sizes do occur at the Annetwell Street fort (Padley forthcoming h, nos C480, C483). Also, with one exception, another example from the Roman fort (*ibid*, no C571), type B nailing is not found on sandals, a category of footwear which is not associated with men during the first two centuries AD (van Driel-Murray 1987, 34).

The lack of other types of nailing pattern from The Lanes may not be significant. Type D (Padley 1991d, 229) is only present at a 3% level at two of the other sites, and so if the low numbers are representative of type D in Carlisle, the small sample size could account for its non-appearance. Type C (*ibid*), which is a very heavy form of nailing, is only found in significant quantities at the Annetwell Street fort (Table 66), but again the small size of the sample must be borne in mind.

The proportion of shoes which have recognizable nailing patterns varies from site to site (Table 66). This variation may not be significant as there is no evidence to suggest that one type decays more rapidly than another, and so the surviving sample is only affected by the overall survival conditions of the site. The preponderance of type A nailing might therefore suggest that the shoe assemblage in this part of The Lanes is more civilian in character than those from the Castle Street and Annetwell Street sites.

Abbreviations used in the summary catalogues

S	sole
M	midsole
I	insole
W	wedge
BU	bottom unit
HS	heel-stiffener
U	upper
L	left
R	right
Y	present
frag	fragment
imp	impression
*	illustrated

Shoe sizes

A5, etc	English adult size 5, etc
C13, etc	English child's size 13, etc

Nailed shoes

Nailed shoes form the largest part of the Roman shoe assemblage from this part of The Lanes (Table 64). These shoes have a bottom unit made up of two or more layers, the outer one being hob-nailed. The upper is made from a single piece of leather which is held in position by lasting margins inserted just above the sole, and has a centre-front vamp seam. This type of shoe dates from the early part of the Roman period, before AD 200.

There are 71 items represented, but the number of individual shoes is probably less than this as some items are very

fragmentary. A fair estimate of the minimum number of nailed shoes represented would be 64.

About 62% of the bottom units were made up of three layers. There are 26 examples which have an extant midsole, as well as some where it may be inferred. For example, shoe Number M65 from LEL A may have had a midsole as there are type 2 (see below) thonging slots visible in the insole which appear to have been used, but have no relationship with the upper, which was held in place by lasting margins. Again, Number M25 from OGL A probably had a midsole, as there are type 1 (see below) thonging slots visible in the surviving insole. This is less certain than the previous case, as there are no details of the upper surviving to show that the thonging slots did not form part of its attachment. However, a consideration of the evidence for the types of upper present at this site (see below) suggests that they were held in position by lasting margins, which would only cover the edge of the bottom unit, and so it is reasonable to suggest the presence of a midsole here. Assuming this to be the case for all of the insoles which have thonging slots but no midsoles surviving, the estimated number of shoes which were made up of three layers can be increased to 40.

The insole and midsole were often held together by thonging before the sole was nailed into position. The commonest form of thonging holding the insole to the midsole(s) consists of pairs of thonging slots running up the centre of the shoe; this is called type 1 in the catalogue. There are 18 examples of this type.

Type 2 thonging differs from type 1 in that there are additional pairs of slots at the tread, one at the approximate position of each joint. There are 12 examples of this type of thonging. It is possible that there is an apparent over-representation of type 1 thonging, as incomplete shoes where the forepart is missing with type 2 thonging would be recorded as type 1. Rhodes (1991, 196) suggests that type 2 thonging is common in the north of Britain and can be seen as a regional characteristic. He states that it must have emerged by AD 80-92, as it is found in a shoe from Castle Street, Carlisle, from a context dated to Period 3 (Padley 1991d, 232, no 956). The dating of this period has been revised by the excavator to the late 70s/mid 80s to AD 92-3 (McCarthy 1991, 5, table 1). Rhodes has also suggested (1991, 195) that type 2 thonging was used to hold the lasting margin of the upper to the sole before nailing. This may be true in some cases, but it is not the case on Numbers M41 and M42, where the lasting margin was braced in position before nailing. On Number M41 there are through stitch holes clearly visible along the inside edge of the lasting margin. Similar stitch holes can be seen on Number M42 (Fig 154).

There are also seven examples where the thonging slots are found running down the edge of the shoe. This thonging has a similar spacing to types 1 and 2 and is not to be confused with the closely set edge thonging of sandals; it is referred to as type 3 in the catalogue. This type of thonging is only found on shoes from OGL A and OGL B. Type 3 thonging was used to attach a midsole, as can be seen on the more complete shoes such as Numbers M17, M19, M22, M35, M38 and M43.

In the majority of cases where the thong survives it is made of tanned leather, about 5-6mm wide, and used grain side up, although on Number M35 it is used flesh side up in two places. In one case, Number M70 from OGL B, the thong is 7mm-9mm wide and is fitted to correspondingly wider thonging slots.

In a number of the shoes, the upper is attached to the sole by a series of through stitches in the lasting margin and tunnel stitches around the edge of the sole. The presence of tunnel stitches around the edge of the sole is indicated by a figure '1' in the stitching column of the catalogue. Number M58 (Fig 155) from OGL C provides a good example of the use of this technique. The nailing has been omitted from the drawing to make it clearer. The lasting margin of the upper has two sets of through stitch holes in it. One set was used to brace the upper in position before the sole was attached, while the other attached it to the tunnel stitches on the sole. In some places it appears that one stitch hole was part of both sets. The insole and the midsole were attached to each other by type 1 thonging, which did not penetrate the lasting margins.

In other shoes the lasting margin was attached to the midsole by stitching. This could take the form of tunnel stitching on the flesh surface of the insole or midsole. Sometimes, as on Number M7 (Fig 153), from CAL A, or M14 (Fig 153), from OGL A, there are tunnel stitches present around the edge of the sole as well. In this case the lasting margin was attached to each section of the bottom unit independently, in a similar way to the manufacture of stitched shoes (see below). The insole and midsole were usually thonged together, as on Number M41 (Fig 154), from OGL B, where the original end of the thong can be seen. In some examples, such as Number M27 (Fig 154), from OGL A, the tunnel stitches in the midsole are replaced by through stitches.

Traces of upper survive on 34 examples. These include the four cases where the only surviving part is a heel-stiffener (Nos M28, M62, M66 and M71). Heel-stiffeners form the commonest surviving part of the upper. They are all of the standard type in that they are crescentic, sometimes with squared-off ends, and used with the grain side towards the foot. They were usually inserted just above the sole and were braced into position before the sole was attached and nailed.

The other feature of the uppers represented is that they were held in position by lasting margins. These were inserted between the sole and the insole/midsole. There is evidence from a number of shoes that the lasting margins were braced into position before the shoe was nailed. This can be seen, for example, in the stitch holes present on Number M58 (Fig 155), and the marks left by the bracing can be seen on the flesh surface of the sole of Number M48 (but not shown in Fig 154).

Details of upper construction and re-use can be seen on some of the shoes. On two of the shoes from Period 6 at OGL A, Numbers M16 (Fig 153) and M18, the upper appears to have been cut away from the rest of the shoe before the bottom unit was discarded. This is clearly visible on Number M16, but it can only be seen on the heel-stiffener on Number M18. On Number M57 (Fig 155), from OGL C, the upper was also cut away before the bottom unit was discarded. A narrow strip with a cut outer edge has been left around the sole, rising to a point at the rear where it follows the outline of the heel-stiffener. There is a second feature of interest on Number M16, which has a possible lining present, as two layers can be seen in the lasting margin.

Two shoes from OGL B Period 5B, Numbers M42 (Fig

154) and M43, display possible re-use of one-piece T-seam shoe material in their uppers. The inner end of the lasting margin of Number M42 has a cut-and-expanded loop in a non-functional position. The seat of Number M43 appears at first sight to have three heel-stiffeners present. The outer one is probably the remains of the upper, while the central one is the actual stiffener and is of the normal type. The innermost one is much decayed, but appears to have the stumps of integrally-cut straps present. Whether this is any more than a packing piece is uncertain.

There are six shoes where some idea of the appearance of the upper can be obtained. Three of these come from OGL A, Numbers M17, M22 (Fig 154) and M23. These had a centre-front vamp seam. In the case of M17, not much more can be said. Number M22 cannot give much more detail about the vamp seam as it has torn away, but some details of the pattern of the rest of the upper survive. The foot opening had oval cut-outs and was fastened at the ankle with a latchet. The base of the latchet has an openwork wheel pattern with a central slot and 16 radiating spokes. At the outer edge, in the gap between each spoke position, is a circular projection. The top edge of the shoe is scalloped. There is rouletting around the foot opening. The third example is a fragment from a very similar upper (No M23), which was found in the same context and could possibly have come from the pair to this shoe.

A fourth shoe, from OGL B (No M46), has a tag at the centre back from which the top edge slopes down towards the front; this is edged by a line of rouletting. About halfway down there is a decorative projection, and at the front there is a latchet which is joined to the main part of the shoe by a large number of narrow strips. The slot of the latchet has a mark on it caused by a lace. At the base of the latchet is a lozenge-shaped area of impressions similar to those used to make up the rouletting. The appearance is similar to the type C uppers from Bar Hill (Robertson *et al* 1975, 72, no 25, fig 23).

Two shoes from OGL C (Nos M56, M58, Fig 155) also provide some details of the appearance of the upper. Number M56 (Fig 155) was whole-cut with a centre-front vamp seam, the front being ornamented with oval cut-outs. Rouletting is present around the front opening and along the top edge of the back part. In addition there are three rosettes, each made up of six impressed wedges, at the base of a possible latchet at the backpart, and there is a similar rosette at the base of the leather strip which divides the first and second oval cut-outs. The appearance, rouletting and rosettes are similar to two of the Hadrianic-Antonine shoes from Hardknott, Cumbria (Charlesworth and Thornton 1973, nos 2 and 4, figs 2, 4). Enough survives of the other shoe (No M58, Fig 155) to suggest that it was a boot with a latchet at the base of the ankle, and that there were again oval cut-outs going down the front.

There are only 16 shoes which survive to their full length. These range from children's size 9 (Continental size 27) to adult size 9 (Continental size 43). There are too few to be statistically significant. It appears that the whole range of the population is represented, from children through to adult males. The five shoes with type B nailing are larger than adult size 5 and therefore probably belonged to adult males (Rhodes 1980, 102). There are three shoes with type A nailing which also fall into this category, however.

Summary catalogue of nailed shoes (Figs 153-5)

Cat no	*Foot*	*Parts*	*Nail*	*Thong*	*Stitch*	*Upper details*	*Length*	*Tread*	*Size*	*Context*	*SF no*	*Period*
M1	?	S			I		115mm+			CAL A 71	L 27	3B
M2	L	I	I				261mm+	93mm		CAL A 71	L 30	3B
M3	?	S?					77mm+			CAL A 71	L 34	3B
M4	?	I;HS		I		HS braced in position	176mm+			CAL A 71	L 35	3B
M5	?	I					49mm+			CAL A 71	L 40	3B
M6*	L	I;W	A2		Y		225mm	65mm	A1	CAL A 71	L 49	3B
M7*	R	S;I	A6		I		230mm+	71mm+		CAL A 57	L 31	3C
M8	?	I					197mm+			CAL A 52	L 11	4
M9	L	S;M;I;HS	B		I	HS only	290mm	95mm	A9	CAL A 52	L 22	4
M10	L	S;I;W	B	2	Y		263mm	63mm	A6	CAL A 52	L 7	4
M11	?	S					108mm+			CAL A 66.2	L 48	5
M12	?	BU frag				90mm+				CAL A 66.2	L 53	5
M13	?	BU frag				135mm+				CAL A 66.2	L 56	5
M14*	L	S;I;W;HS	A		I	HS braced & nailed	246mm+	77mm	A4/5	OGL A 685	L 15	6
M15*	R	S;I	A3	I	I		236mm	88mm	A3	OGL A 737	L 22	6
M16*	?	S;M;I;HS;U?	A?			Lasting margins?	149mm+			OGL A 737	L 26	6
M17	?	S;M;I;W;U		3		Lasting margins & frag	158mm+			OGL A 749	L 31	6
M18	L	S;M;I;HS;U	A3		I	Lasting margins	175mm	63mm	C9	OGL A 750	L 28	6
M19	L	S;2M;I		3	Y	Lasting margin imp	154mm+	71mm+		OGL A 765	L 60	6
M20	L	M;I;HS	A13	2		Lasting margin imp	248mm	86mm	A4	OGL A 785	L 59	6
M21	?	S;U			I	Lasting margins, lining	104mm+			OGL A 825	L 49	6
M22*	R	S;2M;I;HS;U	A	3		Centre front vamp seam	247mm	85mm	A4	OGL A 1022	L 58	6
M23	?	U				Frag	97mm+			OGL A 1022	L 80	6
M24*	?	W			Y		82mm			OGL A 497	L 77	7A-B
M25	?	I		I			102mm+			OGL A 705	L 36	7B-8C
M26	L	I;M		I			203mm+	63mm+		OGL A 629	L 11	8A
M27*	R	S;M;I	A6?	2	Y		237mm+	65mm		OGL A 631	L 10	8A
M28	?	HS				HS braced & nailed				OGL A 454	L 33	8A-9E
M29	?	I?	B?				249mm+			OGL A 474	L 13	8C

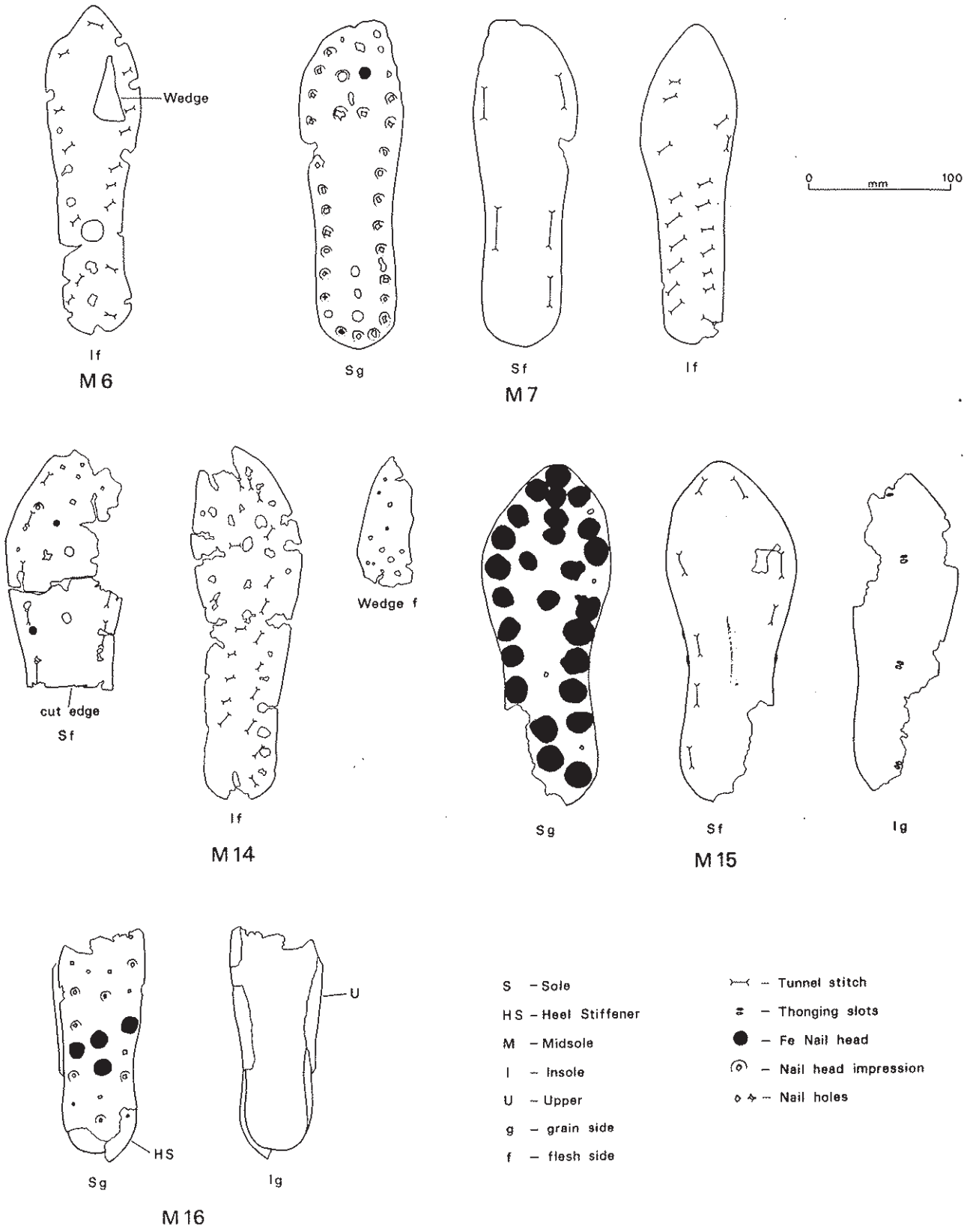

Fig 153 Nailed shoes (scale 1:4)

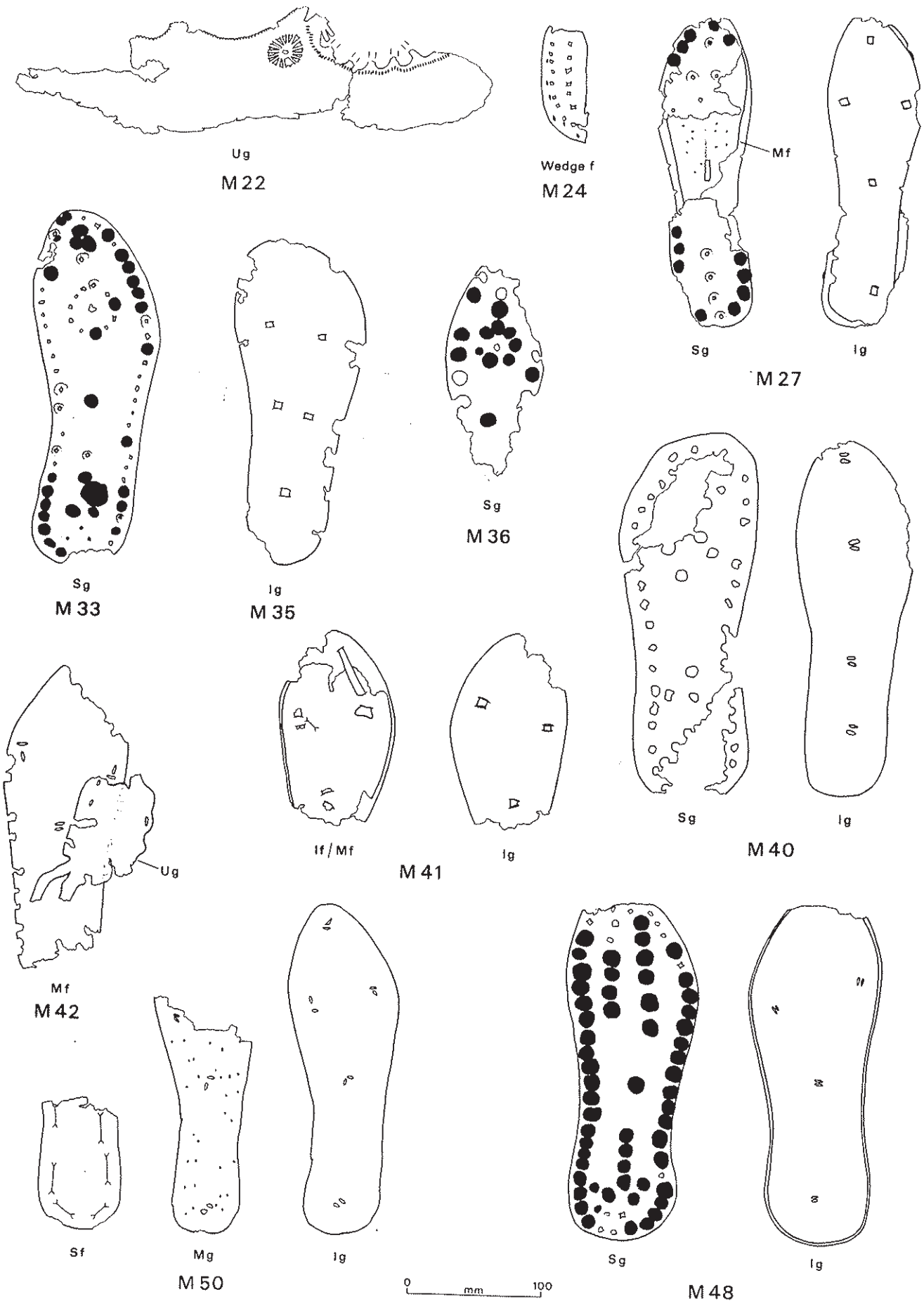

Fig 154 Nailed shoes (scale 1:4)

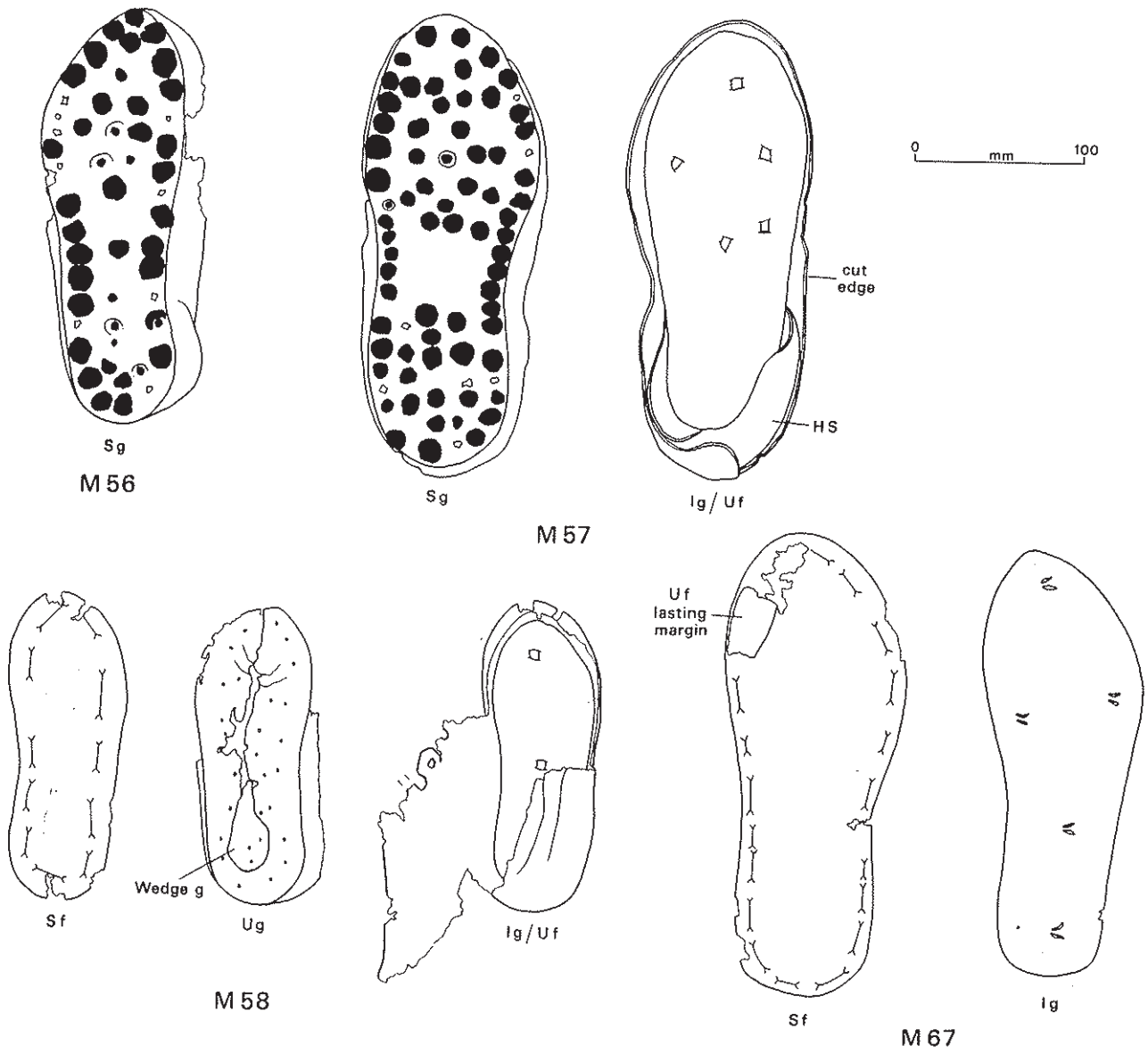

Fig 155 Nailed shoes (scale 1:4)

Cat no	*Foot*	*Parts*	*Nail*	*Thong*	*Stitch*	*Upper details*	*Length*	*Tread*	*Size*	*Context*	*SF no*	*Period*
M30	?	S	A		1		122mm+			OGL A 474	L 16	8C
M31	?	I					367mm+			OGL A 487	L 18	8C
M32	?	S					76mm+			OGL A 487	L 63	8C
M33*	L	S;I	A11				261mm	92mm	A6	OGL A 485	L 6	9D
M34	?	2M;I		2	Y		124mm+			OGL A 465	L 55	9E
M35*	R	S;2M;1;HS	B	3		HS braced & nailed	240mm+	97mm		OGL A 430	L 67	Unphased
M36*	L	S	A11				145mm+	70mm		OGL A 430.2	L 4	Unphased
M37	?	I					50mm+			OGL A 717	L 21	7A-8C
M38	L	S;M	A4	3	1	Lasting margin imp	235mm+	83mm		OGL B 184.3	L 15	5A
M39	R	S;M;I	A13?	1			194mm+			OGL B 184.3	L 17	5A
M40*	R	2M;I;W;HS;U	A6	1	1	Lasting margin frags	275mm	91mm	A8	OGL B 184.4	L 16	5A
M41*	L	S;M;I;2W;U	A11?	2	Y	Lasting margin frag	164mm+	84mm		OGL B 188	L 12	5A
M42*	R	S;M;I;HS;U	B?	2		Frags	230mm+	92mm		OGL B 173	L 13	5B
M43	?	S;2M;I;3HS;U	3			Lasting margin frag	133mm+			OGL B 173	L 24	5B
M44	L	I;M		1	Y	Lasting margin imp	119mm+			OGL B 181	L 9	5B
M45	?	S;I;U				Frag	99mm+			OGL B 185	L 10	5B
M46	?	M;I;U		1		Whole-cut, front seam?	69mm+			OGL B 166	L 32	5C
M50*	R	S;M;I;HS	A	2	1	HS braced & nailed	246mm	80mm	A4	OGL C 53	L 26	2
M51	R	S;M;I					190mm+	80mm+		OGL C 3	L 8	2?

Cat no	Foot	Parts	Nail	Thong	Stitch	Upper details	Length	Tread	Size	Context	SF no	Period
M52	?	S;HS				HS braced & nailed	165mm+			OGL C 6	L 11	2 or 3
M53	R	S;I;HS	B	1		HS braced & nailed	175mm+			OGL C 6	L 12	2 or 3
M54	?	S;2M;I;U	B?		1	Frags	210mm+	89mm+		OGL C 6	L 14	2 or 3
M55	L	S;I;U;HS	B	1		Lasting margin & frags	273mm+	96mm		OGL C 5	L 9	3?
M56*	R	S;I;U;HS	A	1		Whole-cut, front seam	235mm	80mm	A2	OGL C 5	L 10	3?
M57*	L	S;I;U;HS;W	A	2		Whole-cut, front seam?	262mm	100mm	A6	OGL C 20	L 16	3?
M58*	R	S;M;I;U;HS;W	A2	1	1	Whole-cut, front seam	175mm	67mm	C9	OGL C +	L 18	Unstratified
M59	?	Uncertain					82mm+			OGL C +	L 29	Unstratified
M60	L	I		1			147mm+			OGL C +	L 35	Unstratified
M61	?	S					80mm+			LEL A 580	L 35	6A
M62	?	HS				Braced & nailed				LEL A 570	L 44	6C
M63	R	I;HS	A	1			154mm+	76mm		LEL A 576	L 37	6C
M64	?	S					271mm+	58mm+		LEL A 550	L 29	7A
M65	L	S;M;I	A6	1	Y	Lasting margin imp	227mm+	95mm		LEL A 539	L 27	7B
M66	?	HS				Braced & nailed				LEL A 530	L 41	8C
M67*	R	S;I;U?	B	2	1	Lasting margin only	270mm	105mm	A7	LEL A +	L 38	Unstratified
M68	R	I;M;HS;U	A?			Frags	222mm+	84mm		OBL B 108	L 2	6
M69	?	I;M;U			Y	Frags	105mm+			OBL B 108	L 12	6
M70	R	S;M;I;HS	B/C	2			300mm+			OBL B 108	L 15	6
M71	?	HS								OBL B 108	L 22	6

Sandals

There are six shoes which can be said to be sandals, from CAL A, and OGL A and B (Table 64). Three of these are reasonably complete, and three are fragmentary. The more complete ones come from CAL A Period 3B and OGL B Period 5C-6B. Enough survives to say that they consist of a hob-nailed bottom unit which, because of its construction and shape, probably had an upper made from an arrangement of straps attatched at the waist and the point at which the great and second toe junction would be expected.

Two of the more complete sandals (Nos M72 and M73, Fig 156) come from a single context in CAL A (soil layer 71, Period 3B). In each case the toe shapes can be said to fall into the 'fairly naturalistic' style (van Driel-Murray 1987, 34), with an indication of the shapes of the toes at the front. They are each made of three layers which have been thonged together. There is an extra pair of thonging slots, or a hole, at the junction of the position of the great and second toe. In one case (No M73) there is also damage at the waist, which may have been caused by the breakage or removal of the upper. The grain surface of the insole of Number M73 has been decorated with three elements. Around the edge of the insole, at 10mm from the edge there is a single narrow line which defines the zone of thonging slots around the edge. Each pair of thonging slots is surrounded by an impressed circle 7mm in diameter. There are the remains of two larger circles, 14mm in diameter, in the centre of the shoe. The preservation of the other shoe is not good enough to see whether a stamped pattern was present, although there are the possible remains of a circle around one pair of thonging slots.

The question as to whether these two sandals are a pair must be considered. In favour of this hypothesis is the fact that they are of a very similar size and construction, and were found in the same context. This is amplified by the fact that one of them is for a left foot and the other for a right. However, there are slight differences in the shape and the nailing pattern. This last may be emphasized by the state of preservation, which is also responsible for the fact that the stamped pattern mentioned above cannot be matched between the two shoes. As the burden of proof must be to say that they are a pair, it is probably best to say that the case is not proven and therefore remains only a possibility.

The third of the more complete sandals (No M77, Fig 156) has some features which are similar to those of the first two. It is of 'fairly naturalistic' shape, is of similar size and has stamped double concentric circles around the individual thonging slots on the grain surface of the insole, as well as a single line delineating the inside edge of the zone of thonging slots. There are also some differences in that it is made of five rather than three layers, and has vases stamped on the interior of the insole (see below). The sandal was kept together with Rhodes' type a thonging (1980, fig 66). The upper was anchored at the front by an extra thong slot between the great and second toe. As part of the thong survives *in situ*, it can be seen to exit between the first and second midsole. Further evidence for the upper can be seen in the remains of two strap ends diagonally opposite one another at the tread. They are inserted between the first and second midsole, and the one on the inside is narrower than that on the outside. A fragment of strap was found with the shoe which is of similar thickness to the end found at the inside edge. Additionally, there is an impression of a backpart/heel-stiffener under the insole, as well as the remains of some very thin material. The only other constructional detail of note is that the second midsole is made by the cut-and-expanded method at the forepart, while the rest of it is solid.

The three more complete sandals are thus all similar. They all have a 'fairly naturalistic' shape, which dates them to the first to second century (van Driel-Murray 1987, 34). The two decorated ones each have a line delineating the zone of thonging around the edge, double circle stamps surrounding the individual thonging slots, and a different stamp on the interior of the upper surface of the insole. This distribution

has already been noted on the sandals from the Tullie House development site in Carlisle (Padley forthcoming i). The vase used on Number M77 can be paralleled from London, where it is found on a sandal insole from the Billingsgate Buildings (Rhodes 1980, fig 66, no 623). It is not an uncommon device (van Driel-Murray, pers comm), although the London example has only a single impression rather than the multiple ones found in Carlisle. This confirms the first- to second-century date range, as that is the date offered for the Billingsgate collection.

The other three sandals are fragmentary. They can be seen to be sandals by the paired thonging slots around the edge. One is made by the cut-and-expanded method (No M75), but there is no further information to be gained from them.

Summary catalogue of sandals (Fig 156)

Cat no	*Foot*	*Parts*	*Nailing*	*Length*	*Tread*	*Size*	*Decoration*	*Context*	*SF no*	*Period*
M72*	L	S;M;I	A3?	250mm	85mm	A4	2 stamps at edge	CAL A 71	L 36	3B
M73*	R	S;M;I	A	245mm	80mm	A4	Line + 2 sets stamps	CAL A 71	L 37	3B
M74*	?	S;M	A	85mm+	81mm			CAL A 66	L 44	5
M75	?	M		152mm+				OGL A 1021	L 62	6
M76	L	I		183mm+				OGL A 629	L 61	8A
M77*	L	S;3M;I;U?	A11	246mm	87mm	A4	3 types of stamp	OGL B 184.3	L 33	5A

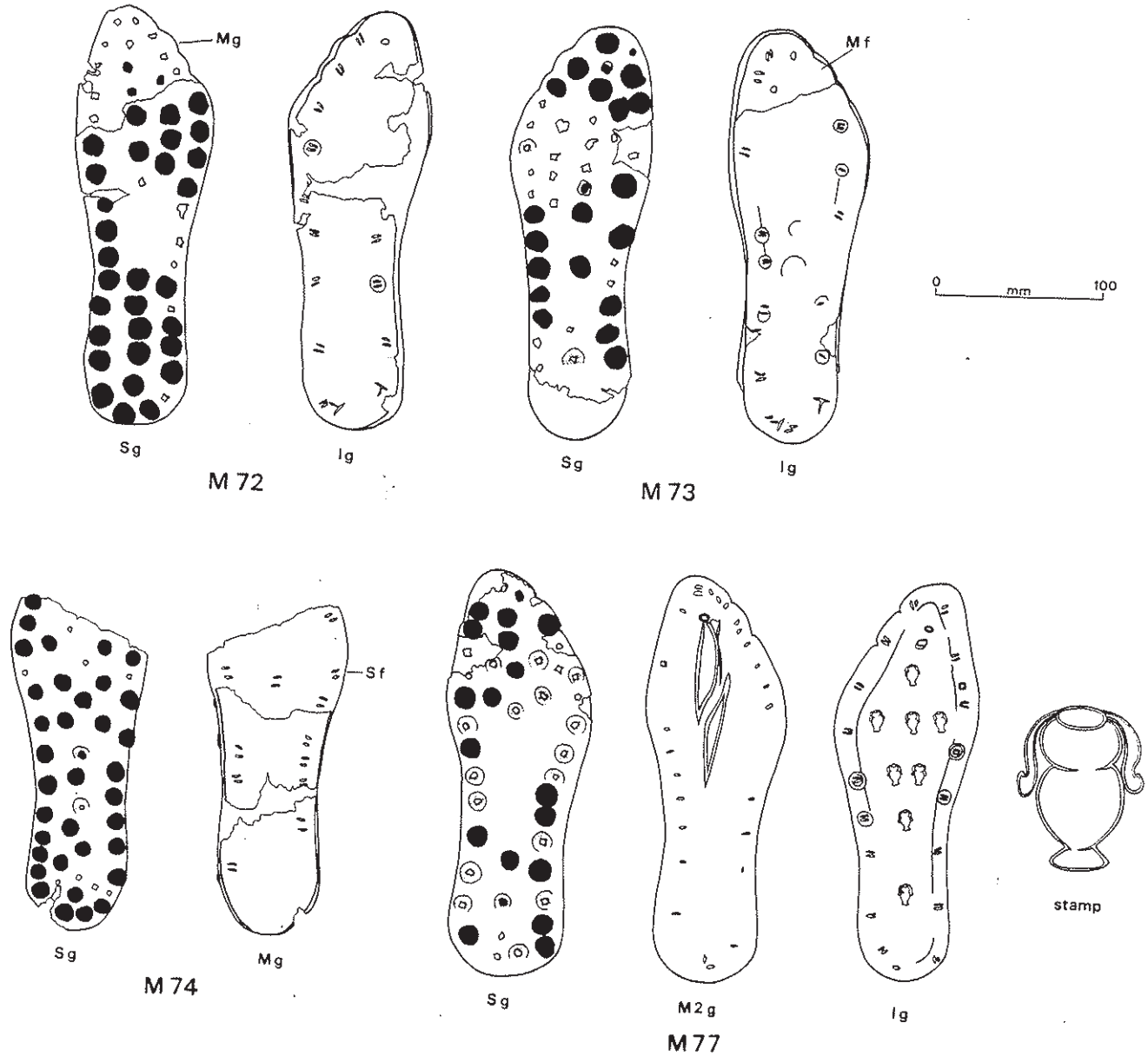

Fig 156 Sandals (scale 1:4)

Stitched shoes

There are six shoes which have no evidence for nails being used in their construction (Table 64). Four of these survive as soles, and it is therefore certain that they did not have hobnails. The other two survive only as insoles, but there is no damage of the type caused by iron nails, and so these can safely be considered stitched shoes. Three of the soles have tunnel stitches around the edge of the flesh surface, parallel to the edge (Nos M78, M81, M83, Fig 157). This type of construction is also found with nailed shoes (see above), and evidence from the Tullie House development site suggests that shoes with identical methods of construction, and similar types of upper both with and without hobnails, were known (Padley forthcoming i). There are tunnel stitches set obliquely to the edge on the flesh side of the insoles of two of the shoes (Nos M81, M83), which are also similar to those found on nailed shoes. It seems likely that the soles and insoles were attached to the uppers, which kept the shoes together. The uppers, unfortunately, are missing in all cases, but there are lasting margin impressions on two of them to suggest that they were closed uppers (Nos M81 and M83), similar to the nailed shoes and to the stitched boot found from Tullie House (*ibid*).

The fifth stitched shoe (No M79, Fig 157) is slightly different. It has a pointed toe, tunnel stitches around the edge of the flesh surface of the sole, and a set of tunnel stitches set obliquely to the edge of the insole. In addition, however, there is a second set of tunnel stitches, parallel to the edge, at the forepart of the flesh surface of the insole. It is possible that these held the upper in position, while the others held the insole to the sole. If this is the case, the upper is likely to have existed only at the front of the shoe, and this could therefore have been a slip-on mule similar to the type discussed by MacConnoran when considering the shoes from St Magnus House, London (1986, 223-5), albeit of an earlier date, and probably without a padded bottom unit. This must remain a hypothesis, however, as no fragments of the upper of Number M79 were recovered.

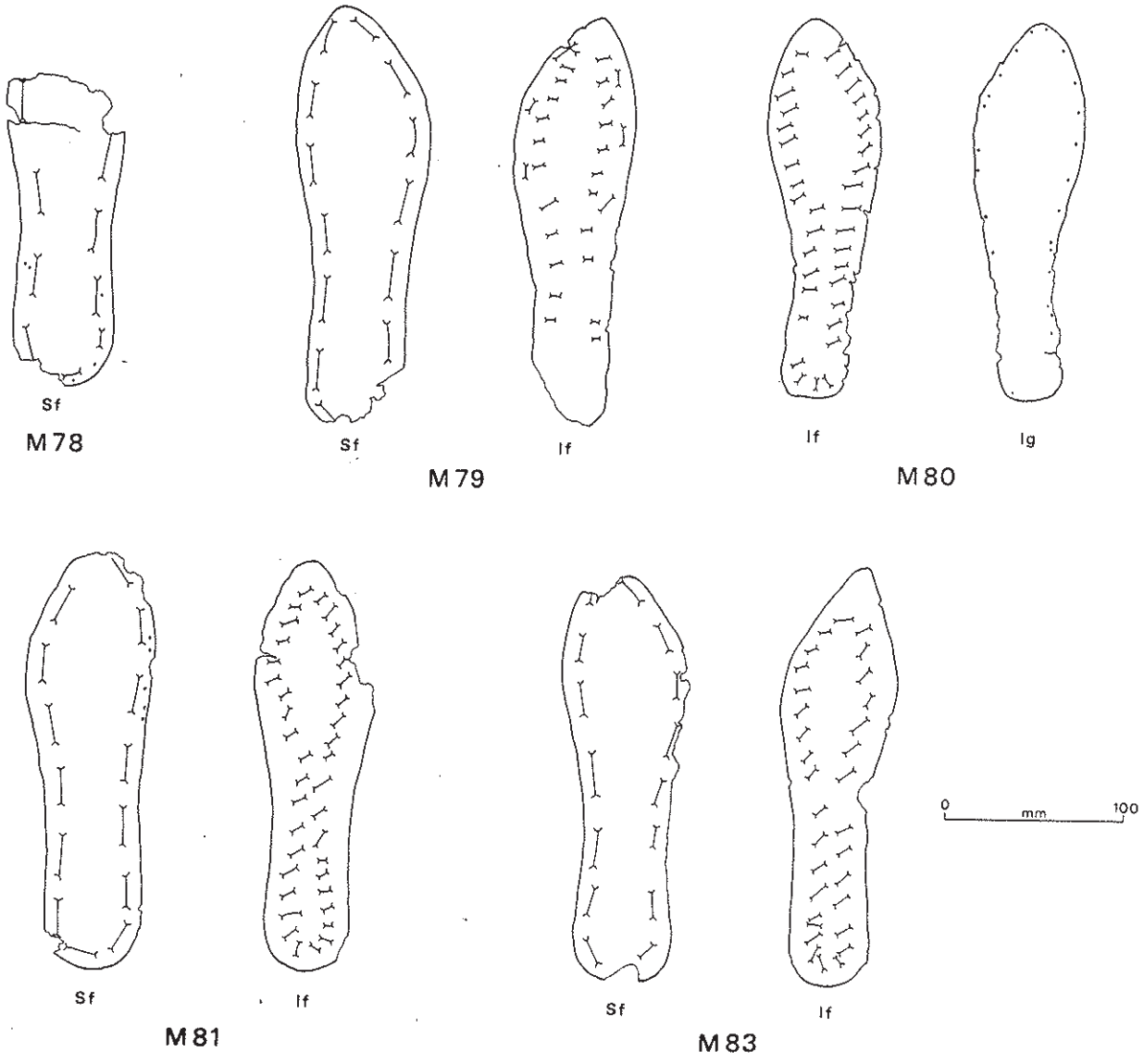

Fig 157 Stitched shoes (scale 1:4)

Summary catalogue of stitched shoes (Fig 157)

Cat no	*Foot*	*Parts*	*Stitch*	*Upper details*	*Length*	*Tread*	*Size*	*Context*	*SF no*	*Period*
M78*	R	S	I		76mm+			CAL A 80	L 38	3A
M79*	R	S;I	1		235mm+	77mm		OGL A 1021	L 57	6
M80*	L	I	Y		213mm	63mm	C13	OGL A 777	L 50	6
M81*	L	S;I	I	Lasting margin imp	236mm+	70mm		OGL B 294	L 28	2B
M82	L	I	1	Lasting margin imp	211mm	58mm	C12	OGL C +	L 20	Unstratified
M83*	R	S;I	1	Lasting margin imp	241mm	71mm+	A3	OGL C +	L 21	Unstratified

One-piece T-seam shoes

One-piece T-seam shoes are made from a single piece of leather folded round the foot with a T-shaped seam at the centre back. There are nine shoes or fragments of shoes of this type (Table 64). On seven of them remains of the seams survive. The vertical seam has some variation in the type of stitching used. The commonest type is through stitching, which has four examples (Nos M87, M89, M90, Fig 158, and M86) with 10 stitches per 50mm, and one example with 7 stitches per 50mm (No M92, Fig 158). One has edge/flesh stitching with 5 stitches per 50mm (No M84). Another has a double seam (No M91, Fig 158) with edge/grain stitches spaced at 14 stitches per 50mm, and also edge/flesh stitches with 7 stitches per 50mm. There is also a 'locking off' stitch visible at the top of the seam. The same feature is found on

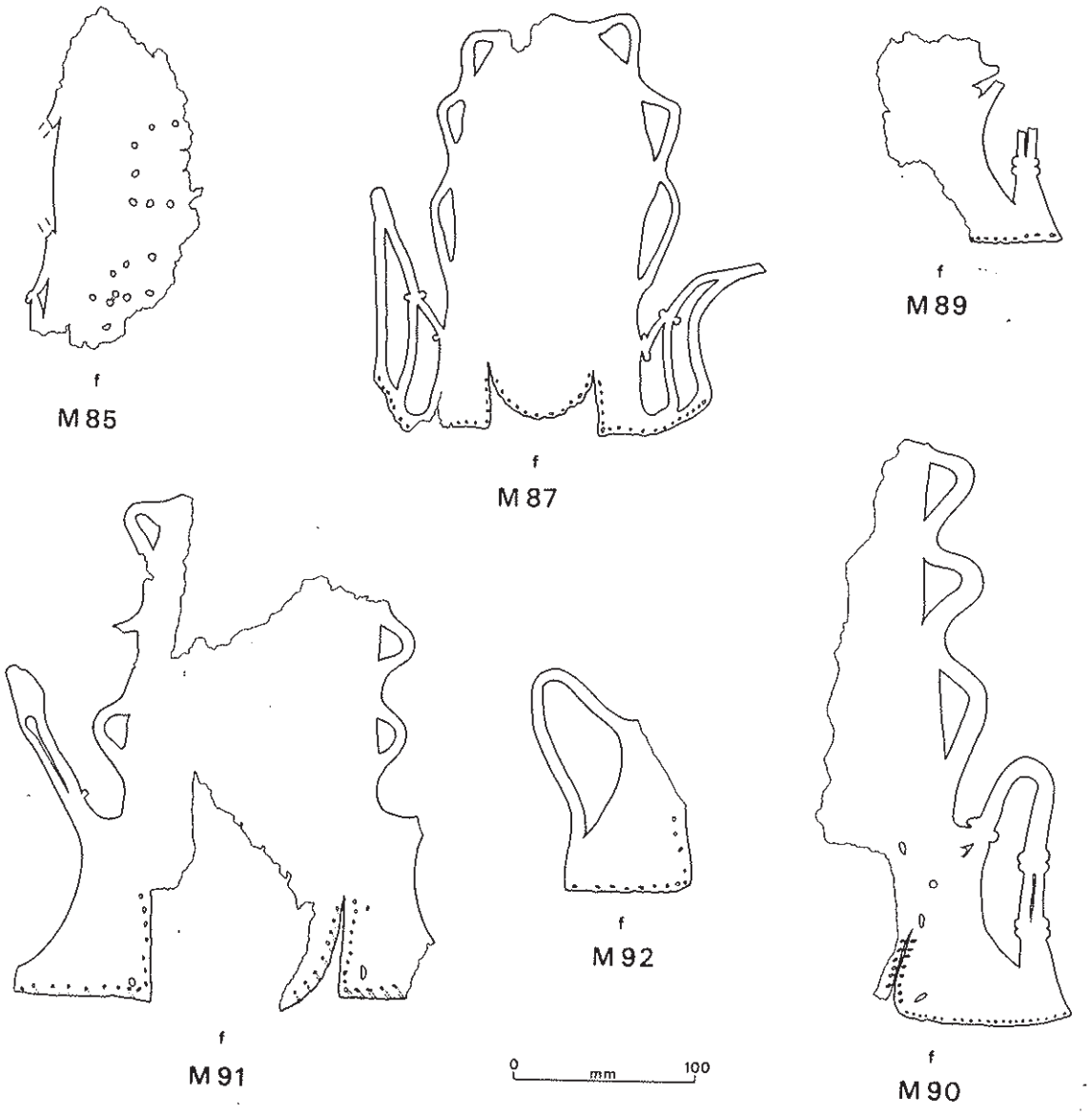

Fig 158 One-piece T-seam shoes (scale 1:4)

the through-stitched seam of Number M90.

There is also variation in the surviving horizontal seams. The commonest type, with three examples (Nos M87, M92, Fig 158, and M86), has edge/flesh stitching ranging from four stitches in the 32mm surviving, through 10 per 50mm, to 12 per 50mm. Another has 10 through stitches per 50mm (No M90, Fig 158), the stitches being bigger than those making up the vertical seam of the shoe. Number M91 (Fig 158) has the same double seam arrangement that is found on its vertical seam.

The decoration of the 'uppers' which survive is different on each example. Number M84 has only a fragmentary strap junction with four straps meeting. Number M85 (Fig 158) has the remains of widely spaced straps and a decorative triangular cut-out with an ornamental semi-circular knob. The backpart of Number M86 appears to have been plain with no decoration.

Number M87 (Fig 158) is almost complete. It has a backpart which has a teardrop-shaped cut-out in the side and straps ornamented with circular tabs. It was fastened at the ankle with a single pair of latchets which had square-cut ends. The loops along the forepart are longer along the outside than the inside, and are made by the cut-and-expanded method.

Number M90 (Fig 158) is again fairly plain in that it has a long loop coming from the centre-back enclosing an oval opening. At the junction with the body, the ankle-strap divides into two parallel straps with two semi-circular projections at each end on both sides of the strap. Where it joins the body of the shoe the strap has a triangular cut-out with a basal circular projection. Number M89 (Fig 158) is very similar, but only a fragment survives. It is possible that these two are a pair. Number M91 (Fig 158) has no openwork decoration on the low-cut backpart. At the front of it is a single strap with a teardrop-shaped opening. At the pointed end the strap originally had a semicircular projection on each side. At the rounded end there is a large tab. The loops along the sides of the forepart are made by the cut-out method. Finally, Number M92 (Fig 158) has a backpart which is undecorated except for a large loop cut out of the top edge.

There are two examples which have been repaired (Nos M85 and M90, Fig 158). In each case a clump was sewn on to the sole of the shoe.

Summary catalogue of one-piece T-seam shoes (Fig 158)

Cat No	*Foot*	*Parts*	*Upper details*	*Length*	*Size*	*Context*	*SF No*	*Period*
M84	?	Frags	Backseam & openwork	52mm+		CAL A 71	L 62	3B
M85*			Base only	183mm+		OGL A 750	L 29	6
M86	?		Backseam frags	180mm+		OGL A 783	L 47	6
M87*	R		Almost complete	210mm	C13	OGL A 487	L 17	8C
M88	?	U	Forepart frags	45mm+		OGL J 33	L 1	2
M89*	?	U	Backpart & part of sides	114mm+		OBL B 108	L 3	6
M90*	L	U	The majority survives	312mm+		OBL B 108	L 5	6
M91*	?	U	Backpart & part of front	235mm+		OBL B 108	L 6	6
M92*	?		Backpart	94mm+		OBL B 108	L 16	6

Roman shoes of uncertain type

There are three shoe parts which came from Roman shoe bottom units, but it is not possible to say more about them.

Summary catalogue of Roman shoe parts of uncertain type

Cat no	*Foot*	*Parts*	*Upper details*	*Length*	*Context*	*SF no*	*Period*
M93	?	W		115mm	OGL A 132	L 19	12A-B
M94	?	Frag	Strip	45mm+	OBL B 108	L 7	6
M95	?	U?	Frag	50mm+	OBL B 108	L 21	6

Medieval shoes

There are nine items which come from medieval shoes, all made by the turnshoe method (Table 64). Three of these are fragments of rand. They consist of narrow strips of leather, with through stitches ranging from 6 stitches per 50mm (No M98) to 11 per 50mm (No M104). There are three soles represented. One (No M96, Fig 159) survives at the forepart, with a torn edge to the rear of the seat, and so probably came from a single-piece sole. The other two are both worn. One sole fragment begins at the rear of the waist and extends to the rear of the seat (No M103), while the other is nearly complete (No M101, Fig 159). This has a rounded toe, a narrowing at the waist and an expansion at the seat. The edge/flesh stitching around the edge of the soles ranges from 6 to 8 stitches per 50mm. The fragmentary uppers have much finer stitching, ranging from 11 to 15 stitches per 50mm, and so were probably connected to other pieces of upper rather than to the soles. Two of the soles show evidence of repair, and there is one separate clump (No M102, Fig 159). The first sole (No M96,

Fig 159) had a separate clump stitched on to the grain side of the sole and held in place with tunnel stitches. The other sole and clump (No M103) were connected with through stitches. There is also a thread impression on the flesh surface of the clump, which suggests that it was attached inside the shoe. However, no matching holes were found on the sole, except for the edge/flesh ones used to make the shoe, so this may have been a re-soling or, more likely, the clump was attached to the upper which is now missing.

The fragmentary nature of the collection does not allow close dating to be made. The presence of rands, however, suggests that it is not earlier than the end of the twelfth century and not later than the fifteenth, assuming that the dates for the use of rands are not significantly different from those in London (Grew and de Neergard 1988, 47).

Summary catalogue of medieval turnshoes (Fig 159)

Cat no	*Foot*	*Parts*	*Upper details*	*Length*	*Tread*	*Context*	*SF no*	*Period*
M96*	L	S		177mm+	79mm+	OGL A 1237.6	L 70	13
M97	?	U				OGL A 1237.7	L 71	13
M98	?	Rand		40mm+		OGL A 1237.7	L 78	13
M99	?	Rand frag		90mm+		OGL A 5.2	L 2	13
M100	?	U	Frags only	76mm+		OGL A 181	L 3	13
M101*	R	S		267mm+		OGL B 56	L 8	6F-9
M102*	L	Clump		120mm	80mm	OGL B 5	L 2	9
M103	?	S;clump		119mm+		OGL B 6	L 3	9
M104	?	Rand		87mm+		OGL B +	L 5	Unstratified

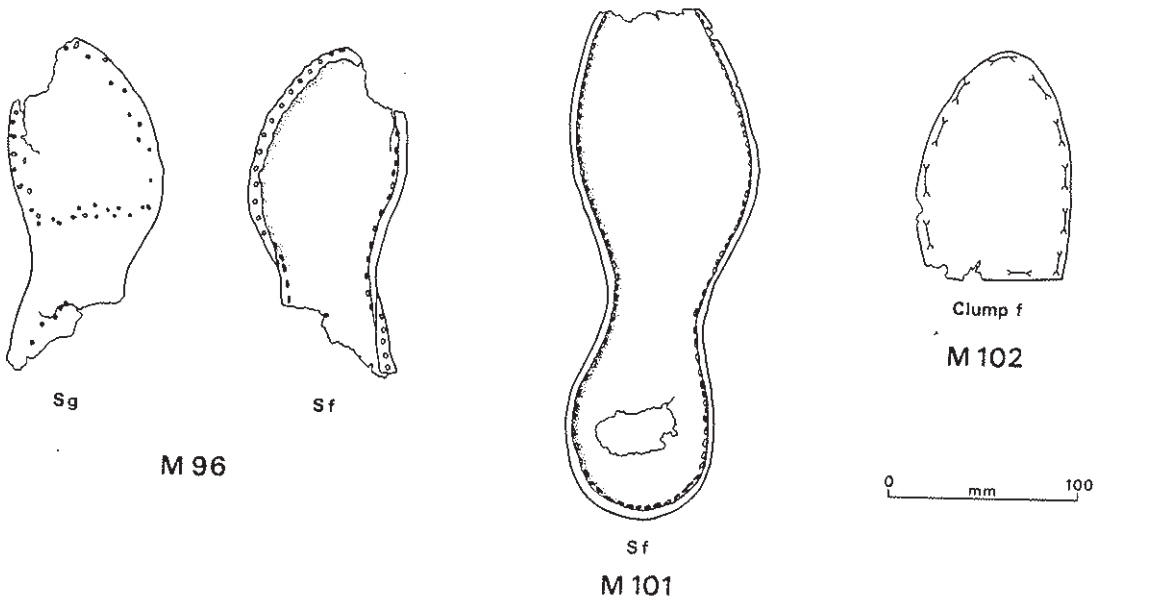

Fig 159 Medieval shoes (scale 1:4)

Offcuts from shoemaking by S Winterbottom

Introduction

Each of the seven sites which yielded shoes produced some offcut material, 343 pieces in all, of which only 160 (the Class 1 material) are illustrated and catalogued here (Figs 160-3). Features characteristic of Roman offcut assemblages from other sites in the town were present. Some 29 pieces had marking-out lines scored on them, for example, while at least 38 had an original hide edge on one or more sides and nine had nail(?) holes probably resulting from the securing of during cutting out. Study of the finds was orientated towards clarifying, where possible, what activities had produced them and in what proportions, as well as towards establishing their distribution between the different sites and periods and comparing it with that for the other leather finds. Table 68 shows which contexts produced shoe offcut material and in what quantities.

Shoemaking offcuts from Castle Street and Annetwell Street studied by the author (Winterbottom 1991a and forthcoming a) appear to derive from four main sources:

Group 1 Cutting around and between 'foot' shapes, in the preparation of soles and insoles for nailed shoes.

Group 2 Cutting around and between 'frog-shaped'

pieces, to be turned into one-piece shoes (cf No M87, Fig 158).

Group 3 Removing pieces to produce the openwork decoration on one-piece shoes.

Group 4 Trimming of shoes, both nailed and one-piece, during or after assembly.

Some offcuts are easily attributable to one of these four groups. Those belonging to groups 3 and 4 in particular are fairly distinctive, although the line between a 'trimming' sliver and a narrow offcut from original cutting out is not always easy to draw. Cutting-out pieces can be attributed to group 1 with certainty only if large enough to preserve sufficient of the outline of heel, toe or side of the sole/insole so that it cannot be confused with anything else. The only pieces so far definitely ascribable to group 2 are the M-shaped pieces removed to allow for the heel seam of one-piece shoes (eg No M176), and any pieces with a sinuous, scalloped or punched edge, characteristic of the sides of this type of shoe (eg Nos M172 and M155).

The majority of offcuts from these sites were not large and it will be appreciated that this makes it difficult to assign them to groups 1 or 2 with certainty. Triangular pieces, which are common among Roman shoemaking assemblages, may come either from the interstices between sole or insole cut-outs or from the backs of one-piece shoes, where the 'M' need not be a single piece but can be cut out as two triangles.

Evidence specifically for the construction of uppers for nailed shoes has not yet been found at any of the Carlisle sites, and it is not clear how it *can* be distinguished from that for the making of one-piece shoes, except possibly by the use of thinner grades of leather. Openwork decoration is a feature of both articles, and pieces ascribed to group 3 could derive from

Table 68
Distribution of shoe offcuts by type and period

Site	*Period*	*Context*	*No of pieces*	*Type group(s)*
CAL A	2C	85	1	1
	3A	80	1	5
	3B	71	1	6
	4	52	21	1,3,4,5
	5	50	1	2
		66	61	1,2,3,4,5
	5B	17	8	1,4,5
	Unstrat		5	1,4,5
CAL B	Unstrat		2	1
OGL A	6	677	1	5
		737	4	1,5
		748	1	5
		755	26	1,2,3,5,6
		759	14	4,5
		765	4	3,5
		822	4	4,5
	13	5	1	5
		30	1	4
		1237	1	6
	Unstrat		1	5
OGL B	4C-6B	257	1	1
	4E	229	11	2,5
	5A	184	12	1,2,5
		188	3	1,5
	9	8	1	4
		10	1	1
OGL C	2	4	31	2,3,4,5
OGL C	2?	3	1	1
	3?	20	1	2
		22	2	1,5
	4 or later	61	2	4
	Unstrat		1	1
LEL A	6A-B	602	1	5
	6C	570	12	1,4,5
	6D	564	12	1,2,5
	7A	550	2	5
	7B	539	1	1
	8A	544	1	1
	8B-C	515	1	5
	8C	530	11	2,4,5
	8D	514	4	5
		527	26	1,4,5
		540	1	6
	8E	500	1	5
		502	3	1
		503	2	1
	8E-F	501	7	1,4,5
	9	498	11	5
		499	2	5
	10	468	1	5
	11	378	1	2
	Unstrat		2	5
OBL B	5	99	1	2
	6	108	13	1,2,4,5,6
	6 or later	94	1	5
Total			343	

Table 69
Concentrations of stratified Roman shoe, offcut and sheet leather finds, expressed as percentages of the totals from all sites and all periods

Date range	*Site and period*	*Shoes* *No of finds*	*% of total*	Offcuts No of finds	% of total	*Sheet leather* *No of finds*	*% of total*
Late first century to *c* AD 160	OGL A 6	13	15.1	54	16.3	11	10.1
Late first to late second century	CAL A 3	11	12.8	2	0.6	9	8.3
	4	3	3.5	21	6.3	6	5.5
	OGL C 2	4	4.7	31	9.3	14	12.8
	LEL A 8	1	1.2	57	17.2	14	12.8
Late second century	CAL A 5	4	4.7	61	18.4	12	11.0
	OGL A 8	8	9.3			1	0.9
	OGL B 5	10	11.6	15	4.5	8	7.3
Undated	OBL B 6	10	11.6	13	3.9		
Totals from all sites and periods		86		332		109	

either. If nailed shoe bottom units were being manufactured locally, rather than simply repaired, then it is likely that uppers were being cut out also. For the present the designation of any piece as possibly coming from the manufacture of a one-piece shoe may be taken to mean a one-piece shoe *or* a nailed shoe upper.

Proportion of offcuts of different types

A broad division of the material into six groups was made; groups 1 to 4 are those defined above, group 5 contained those pieces indeterminate between groups 1 and 2, and group 6 contained those indeterminate between groups 1, 2 or 4. Assigning many of the pieces to a given group involves a degree of subjective judgement and guesswork. None of the group 1 pieces was large enough to preserve a complete, or even nearly complete, sole outline, but their size and shape were consistent with their being a product of the interleaving of sole shapes as illustrated in van Driel-Murray 1985, fig 2 and Winterbottom 1991a, figs 280 and 282). Conversely a number of pieces were assigned to group 2 essentially on the grounds that their shape is not easily accounted for by the interleaved sole model. Even accepting that many of the classifications would be uncertain, none could be attempted for 59% of the pieces, of which 57% were placed in group 5 and 2% in group 6. Of the remainder, group 1 accounted for 14%, group 2 for 8%, group 3 for 2% and group 4 for 17%.

Distribution of the finds

All 343 offcuts are accounted for in Table 68. The greatest concentrations occur in CAL A (Period 5), OGL A (Period 6), OGL C (Period 2) and LEL A (Period 8). These four sequences between them account for some 65% of the stratified offcuts and span the late first to late second centuries, with the CAL A group indicating significant activity in the latter part of that date range.

Somewhat different concentrations characterize the distribution of shoes and sheet leather. OGL A Period 6 was the most productive of all three classes of leather finds but concentrations of shoes in other periods (CAL A Period 3, OGL A Period 8 and OBL B Period 6) were not accompanied by equivalent proportions of offcuts or sheet leather (Table 69). LEL A Period 8, on the other hand, is notable for the presence of both offcuts and sheet leather together with only a single shoe fragment.

One conclusion to which the figures in Table 69 seem to point is that the presence of shoemaking offcuts may sometimes correlate better with that of stitched leather waste than with that of discarded shoes. Where this is the case it might be argued that the offcut/sheet leather assemblages provide evidence of general leatherworking activity while the shoe finds are merely evidence of domestic rubbish disposal. Such arguments cannot be pushed too far, however. Discrete deposits such as pit 100 (fill 108) from OBL B, Period 6 (undated), which contained ten shoe parts, 13 offcuts and no stitched leather, tend rather to reinforce the idea of a logical association between a cobbler's workshop and abandoned, worn-out shoes.

The distribution of offcuts specifically from one-piece shoe manufacture (groups 2 and 3) broadly follows that for offcuts in general. Table 68 shows that these offcuts were recovered from CAL A (Periods 4 and 5), OGL A (Period 6), OGL B (Periods 4E and 5A) and OGL C (Period 3?). The classification of the group 2 offcuts from LEL A and OBL B

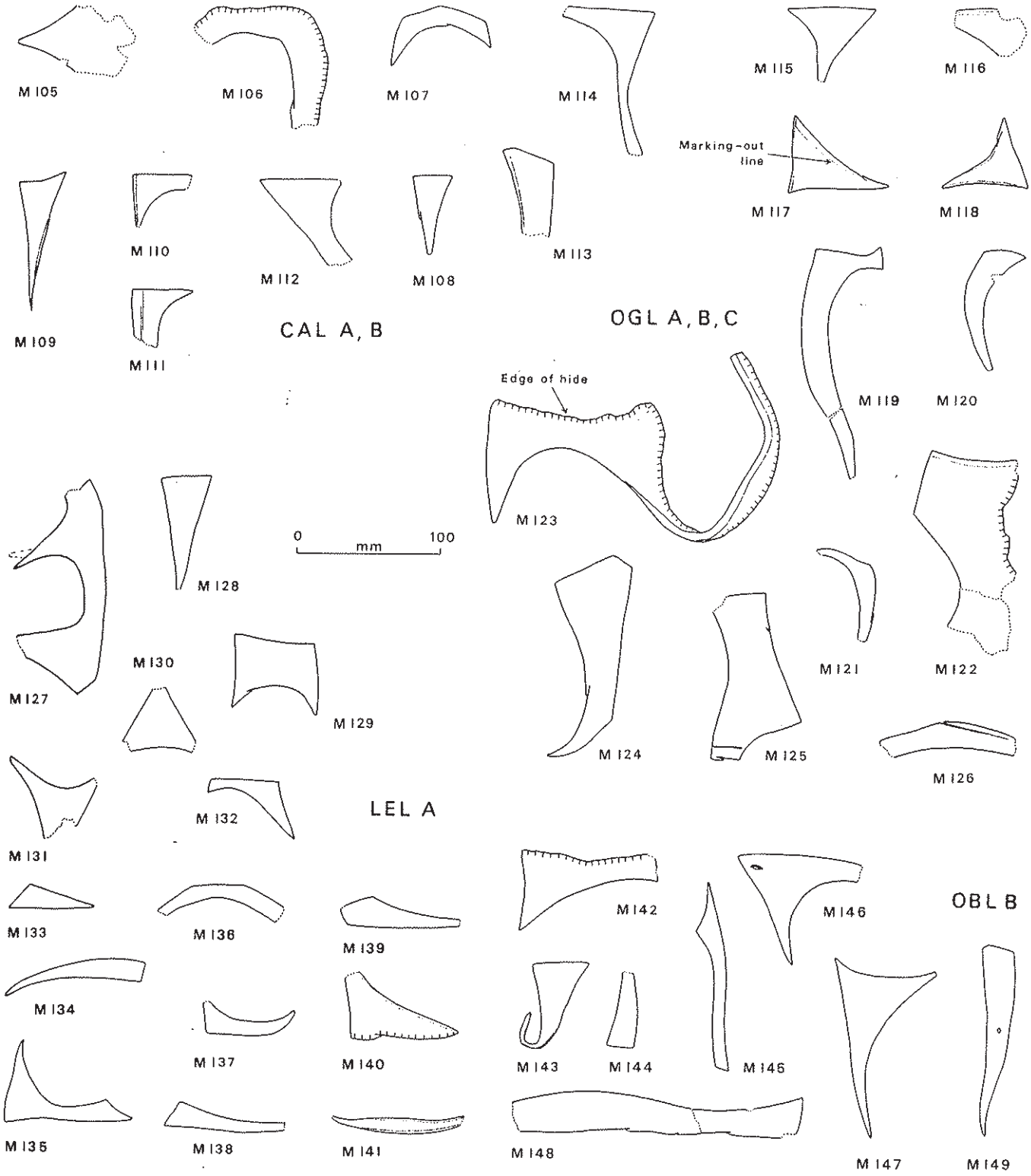

Fig 160 Group I offcuts (from nailed shoe manufacture)

is rather less certain.

Finds recovered from the military sites at Annetwell Street, Castle Street and Tullie House have suggested that the production of one-piece shoes accounted for a significant proportion of local shoemaking activity, wherever evidence for the latter is found. This impression is reinforced by the distribution of this class of offcuts at The Lanes. On the face of it one-piece shoe manufacture appears not to have been a specialist activity; evidence for it occurs in the same deposits which produce the more numerous offcuts from nailed shoe manufacture. However, the classification of offcut types is as yet nowhere near sufficiently watertight for it to be possible

to identify, were they to exist, assemblages resulting exclusively from the production of one or another type of shoe.

The catalogue

Only those pieces which are illustrated are catalogued here (Class 1 material). Records of the remaining finds (Class 2) are in the site archives. Thickness measurements followed by (D) or (D?) indicate that the piece has, or may have, delaminated and would originally have been thicker.

Notes on the figures

Fig 161 The sketch alongside Number M164 shows how pieces of this shape were probably removed from around the lacing loops on one-piece shoes like those in Figure 158. Pieces like Numbers M168, M157 and M150 would be removed to make the loops themselves. Number M183 has a cut or punched half-circle at one end and could come from a shoe whose rear part resembled Number M89.

Fig 162 Many of the trimmings found are mere slivers of leather (Nos M198, M217, etc) with edges cut obliquely from the grain through to the flesh side. These could be produced in neatening up a finished shoe, though some may also result from paring down the edges of soles and insoles prior to assembly. Paring, or skiving, around the underside edges is noticeable on many well preserved insoles.

Fig 163 Many edge of hide pieces fall into the indeterminate category. Most have at least one curving edge, however, and show that shoes were cut from the leather with the hide edge still present. It was not removed in a prior operation. Some interesting questions are raised about the processes of marking and cutting out by pieces such as Numbers M233-M235, M253 and M262. Normally marking-out lines roughly follow the line of subsequent cutting (as on Nos M117 and M118). Here, though, lines have been scored on the leather which have no obvious connection with the shapes which were cut out.

Summary catalogue of group 1 offcuts (Fig 160)

Cat no	*Length*	*Width*	*Thickness*	*Context*	*SF no*	*Period*
M105	83mm	47mm	2mm	CAL A 85	L 42	2C
M106	90mm	85mm	3mm	CAL A 52	L 18	4
M107	67mm	36mm	2.5mm	CAL A 66	L 58	5
M108	54mm	27mm	2-3mm	CAL A 66	L 45	5
M109	97mm	32mm	3mm	CAL A 17	L 3C	5B
M110	40mm	37mm	2mm	CAL A 17	L 3E	5B
M111	40mm	40mm	1.5mm (D?)	CAL A 17	L 3B	5B
M112	60mm	55mm	2mm	CAL A 17	L 3A	5B
M113	62mm	30mm	1.25mm (D?)	CAL B +	L 1B	Unstratified
M114	101mm	62mm	3mm	CAL B +	L 1A	Unstratified
M115	61mm	41mm	3mm	OGL A 737	L 30A	6
M116	48mm	30mm	2mm (D?)	OGL A 737	L 30B	6
M117	68mm	51mm	2mm	OGL A 755	L 43E	6
M118	60mm	51mm	3.5mm	OGL B 257	L 37	4C-6B
M119	160mm	46mm	2.5mm	OGL B 184	L 34	5A
M120	80mm	27mm	3mm	OGL B 188	L 25	5A
M121	55mm	14mm	2.5mm	OGL B 184	L 11A	5A
M122	130mm	63mm	3-3.5mm	OGL B 184	L 11B	5A
M123	250mm	120mm	5-6mm	OGL B 10	L 7	9
M124	135mm	52mm	2mm	OGL C 3	L 7	2?
M125	110mm	60mm	2-3mm	OGL C 22	L 19	3?
M126	90mm	18mm	3mm	OGL C 2	L 1	Unstratified
M127	150mm	62mm	2.5mm	LEL A 570	L 45B	6C
M128	80mm	34mm	4mm	LEL A 570	L 45J	6C
M129	59mm	50mm	2.5-4mm	LEL A 570	L 45L	6C
M130	47mm	41mm	3mm	LEL A 564	L 33B	6D
M131	60mm	45mm	1mm (D)	LEL A 564	L 33D	6D
M132	50mm	42mm	1mm (D)	LEL A 564	L 33C	6D
M133	59mm	16mm	1mm (D)	LEL A 564	L 33E	6D
M134	100mm	13mm	2mm	LEL A 539	L 26	7B
M135	90mm	56mm	2mm	LEL A 544	L 25	8A
M136	85mm	12mm	2-2.5mm	LEL A 527	L 16A	8D
M137	83mm	21mm	2-2.5mm	LEL A 527	L 16B	8D
M138	85mm	19mm	2.5mm	LEL A 527	L 14A	8D
M139	85mm	20mm	3-4mm	LEL A 527	L 14K	8D
M140	76mm	44mm	4-5mm	LEL A 527	L 14H	8D
M141	91mm	9mm	3mm	LEL A 527	L 14E	8D
M142	100mm	57mm	2.5mm	LEL A 527	L 14G	8D
M143	92mm	40mm	3mm	LEL A 503	L 12A	8E
M144	52mm	18mm	1.25mm (D)	LEL A 503	L 12B	8E
M145	130mm	17mm	2.5-4mm	LEL A 502	L 43C	8E
M146	86mm	76mm	4-5mm	LEL A 502	L 43A	8E
M147	114mm	70mm	3-5mm	LEL A 502	L 43B	8E
M148	200mm	27mm	2.5-3mm	LEL A 501	L 7	8E-F
M149	130mm	20mm	2-2.5mm	OBL B 108	L 9M	6

Summary catalogue of group 2 and 3 offcuts (Fig 161)

Cat no	*Length*	*Width*	*Thickness*	*Context*	*SF no*	*Period*
M150	53mm	21mm	2-3mm	CAL A 52	L 6C	4
M151	61mm	10mm	5mm	CAL A 52	L 6N	4
M152	86mm	5mm	1mm	CAL A 52	L 6O	4
M153	45mm	37mm	3mm	CAL A 66	L 20B	5
M154	95mm	85mm	2mm	CAL A 66	L 25I	5
M155	85mm	40mm	1.5mm	CAL A 66	L 25K	5
M156	116mm	52mm	2-3mm	CAL A 66	L 19B	5
M157	96mm	24mm	2.5-3mm	CAL A 66	L 25G	5
M158	158mm	42mm	2-2.5mm	CAL A 66	L 25O	5
M159	160mm	53mm	3-4mm	CAL A 50	L 5	5
M160	70mm	32mm	2-2.25mm	CAL A 66	L 16B	5
M161	90mm	21mm	2.5-3.5mm	CAL A 66	L 16A	5
M162	115mm	56mm	1.5-2mm	CAL A 66	L 16C	5
M163	86mm	31mm	2.5mm	CAL A 66	L 8A	5
M164	73mm	42mm	2.5mm	OGL A 755	L 48	6
M165	66mm	57mm	2-2.5mm	OGL A 755	L 43D	6
M166	22mm	14mm	1mm (D)	OGL A 765	L 53A	6
M167	71mm	45mm	2mm	OGL A 765	L 53B	6
M168	48mm	23mm	3mm	OGL A 755	L 45A	6
M169	52mm	24mm	3mm	OGL A 755	L 45B	6
M170	93mm	48mm	2.5mm	OGL A 755	L 45C	6
M171	53mm	11mm	1mm (D)	OGL A 755	L 45E	6
M172	56mm	30mm	2mm	OGL B 229	L 20B	4E
M173	45mm	37mm	1.25mm (D)	OGL B 229	L 20C	4E

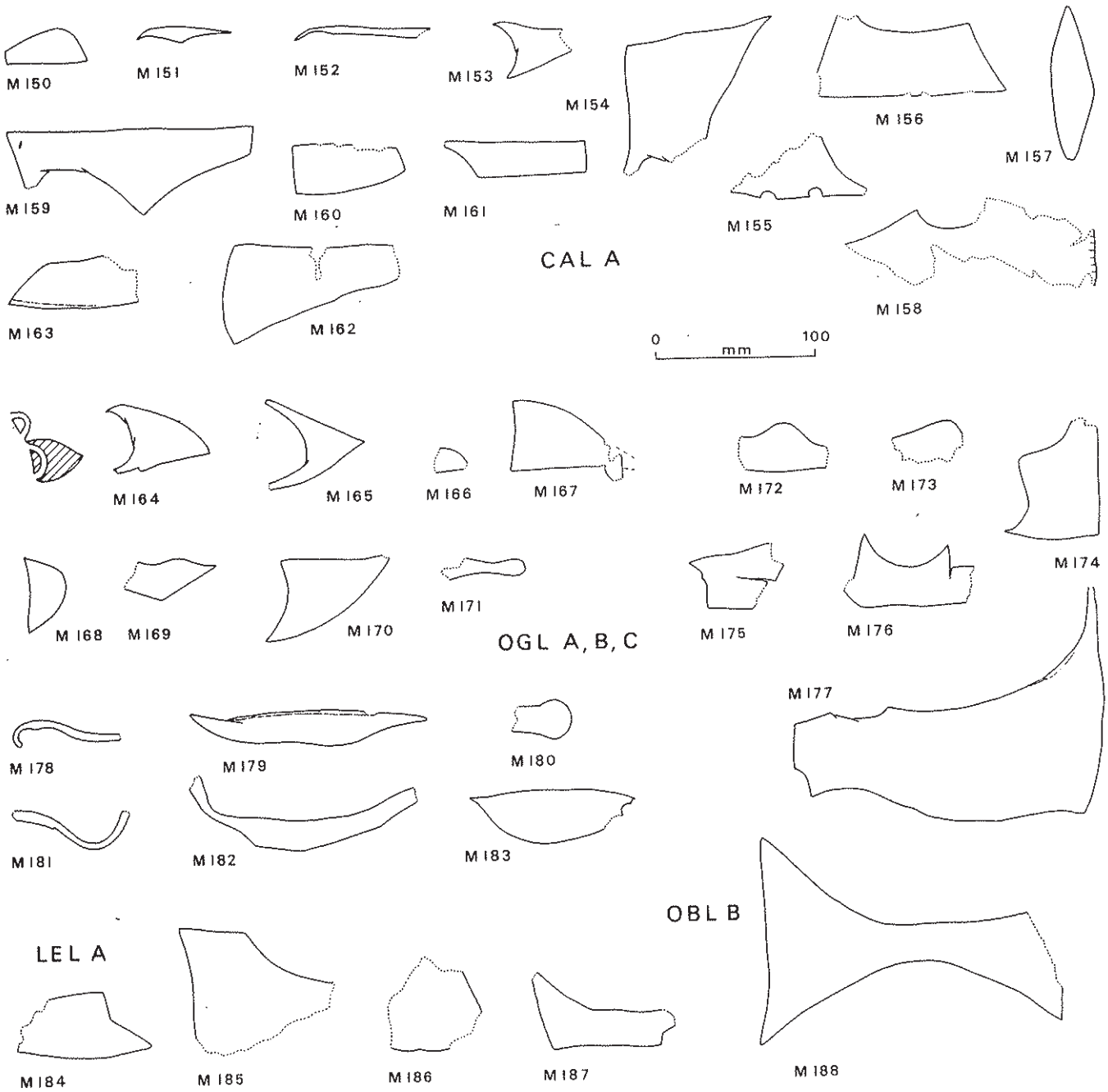

Fig 161 Group 2 and 3 offcuts (from one-piece T-seam shoe manufacture)

Cat no	*Length*	*Width*	*Thickness*	*Context*	*SF no*	*Period*
M174	77mm	50mm	3-3.5mm	OGL B 229	L 20H	4E
M175	57mm	36mm	3-4mm	OGL B 229	L 20J	4E
M176	82mm	46mm	1mm (D)	OGL B 184	L 36C	5A
M177	195mm	145mm	3-4.5mm	OGL B 184	L 11E	5A
M178	75mm	5mm	2mm	OGL C 4	L 5O	2
M179	151mm	23mm	2.5-3mm	OGL C 4	L 5R	2
M180	38mm	25mm	1mm	OGL C 4	L 5A	2
M181	90mm	7mm	1.5mm (D?)	OGL C 4	L 5M	2
M182	145mm	19mm	2.5-3.5mm	OGL C 4	L 5I	2
M183	106mm	34mm	2mm	OGL C 20	L 15	3?
M184	87mm	39mm	2-2.5mm	LEL A 564	L 33A	6D
M185	90mm	85mm	1.5mm	LEL A 530	L 17B	8C
M186	61mm	57mm	1.5-1.75mm	LEL A 530	L 17C	8C
M187	83mm	50mm	2-3.5mm	LEL A 378	L 1	11
M188	186mm	133mm	3.5-4.5mm	OBL B 99	L 4	5

Summary catalogue of group 4 offcuts (Fig 162)

Cat no	*Length*	*Width*	*Thickness*	*Context*	*SF no*	*Period*
M189	42mm	5mm	1.25mm	CAL A 52	L 6J	4
M190	80mm	6mm	1.5mm	CAL A 52	L 6K	4
M191	105mm	6mm	2-2.5mm	CAL A 52	L 6L	4
M192	70mm	11mm	2.5-3mm	CAL A 52	L 6M	4
M193	102mm	8mm	2.5mm	CAL A 66	L 8J	5

Cat no	Length	Width	Thickness	Context	SF no	Period
M194	60mm	4mm	1.5mm	CAL A 66	L 8L	5
M195	66mm	7mm	1.5mm	CAL A 66	L 16J	5
M196	30mm	5mm	4mm	CAL A 66	L 16K	5
M197	51mm	6mm	4.5mm	CAL A 66	L 20C	5
M198	62mm	40mm	1.5mm	CAL A 66	L 21D	5
M199	20mm	4mm	<1mm	CAL A 66	L 21C	5
M200	67mm	4mm	2mm	CAL A 17	L 3F	5B
M201	70mm	4mm	1.25mm	CAL A +	L 2B	Unstratified
M202	100mm	7mm	1mm (D)	CAL A +	L 2D	Unstratified
M203	45mm	4mm	1.25mm	CAL A +	L 2C	Unstratified
M204	57mm	10mm	1mm (D?)	CAL A +	L 2A	Unstratified
M205	180mm	6mm	1.5mm (D)	OGL A 822	L 51C	6
M206	120mm	6mm	1mm (D)	OGL A 822	L 51A	6
M207	35mm	3mm	1mm (D)	OGL A 822	L 51B	6
M208	48mm	3mm	2mm	OGL A 759	L 34H	6
M209	30mm	3mm	2mm	OGL A 759	L 34I	6
M210	80mm	5mm	1.5mm	OGL A 30	L 1	13
M211	50mm	5mm	1.5mm	OGL B 8	L 31	9
M212	98mm	5mm	3mm	OGL C 4	L 5N	2
M213	117mm	12mm	2.5mm	OGL C 4	L 5K	2
M214	70mm	5mm	1.25mm	OGL C 4	L 5Q	2
M215	100mm	5mm	3.5-4mm	OGL C 4	L 5L	2
M216	46mm	4mm	1.5mm	OGL C 4	L 5P	2
M217	95mm	5mm	3.5-4mm	LEL A 570	L 45F	6C
M218	49mm	3mm	2mm	LEL A 570	L 45E	6C
M219	46mm	3mm	2.5mm	LEL A 570	L 45D	6C
M220	59mm	4mm	4mm	LEL A 570	L 45G	6C
M221	30mm	8mm	4mm	LEL A 570	L 45H	6C
M222	28mm	5mm	2mm	LEL A 530	L 39B	8C
M223	47mm	5mm	1.5mm	LEL A 530	L 39C	8C
M224	60mm	7mm	2mm	LEL A 527	L 14O	8D
M225	51mm	2mm	1.5mm	LEL A 527	L 10B	8D
M226	43mm	3mm	2.5mm	LEL A 527	L 10C	8D
M227	43mm	7mm	2.5mm	LEL A 501	L 11	8E-F

Summary catalogue of group 5 offcuts (Fig 163)

Cat no	Length	Width	Thickness	Context	SF no	Period
M228	107mm	52mm	2-3mm	CAL A 80	L 39	3A
M229	102mm	65mm	3mm	CAL A 52	L 6H	4
M230	145mm	75mm	4.5-6.5mm	CAL A 52	L 15	4
M231	125mm	46mm	3-4mm	CAL A 52	L 13	4
M232	103mm	88mm	2-3mm	CAL A 66	L 19A	5
M233	82mm	75mm	2.5mm	CAL A 66	L 25A	5
M234	50mm	15mm	2.5-3mm	CAL A 66	L 25J	5
M235	90mm	27mm	4.5mm	CAL A 66	L 25F	5
M236	210mm	40mm	3mm	CAL A 66	L 25M	5
M237	94mm	27mm	2.5mm	CAL A 66	L 25E	5
M238	140mm	80mm	2.5mm	CAL A 66	L 25C	5
M239	95mm	28mm	2mm	CAL A 66	L 25B	5
M240	95mm	55mm	2.5-3mm	CAL A 66	L 25D	5
M241	110mm	67mm	2.5mm	CAL A 66	L 25P	5
M242	58mm	37mm	3-3.5mm	OGL A 759	L 34N	6
M243	110mm	38mm	3-4mm	OGL A 755	L 43B	6
M244	108mm	22mm	2-2.5mm	OGL A 748	L 23	6
M245	175mm	17mm	1.5mm	OGL A 5	L 79	13
M246	76mm	48mm	2.5mm	OGL A 2	L 75	Modern
M247	63mm	34mm	1mm (D)	OGL B 229	L 20E	4E
M248	120mm	40mm	3.5mm	OGL B 229	L 20I	4E
M249	95mm	38mm	3.5mm	OGL B 184	L 11C	5A
M250	125mm	67mm	2.5mm	OGL B 184	L 36A	5A
M251	170mm	35mm	2.5mm	OGL B 3	L 35	9

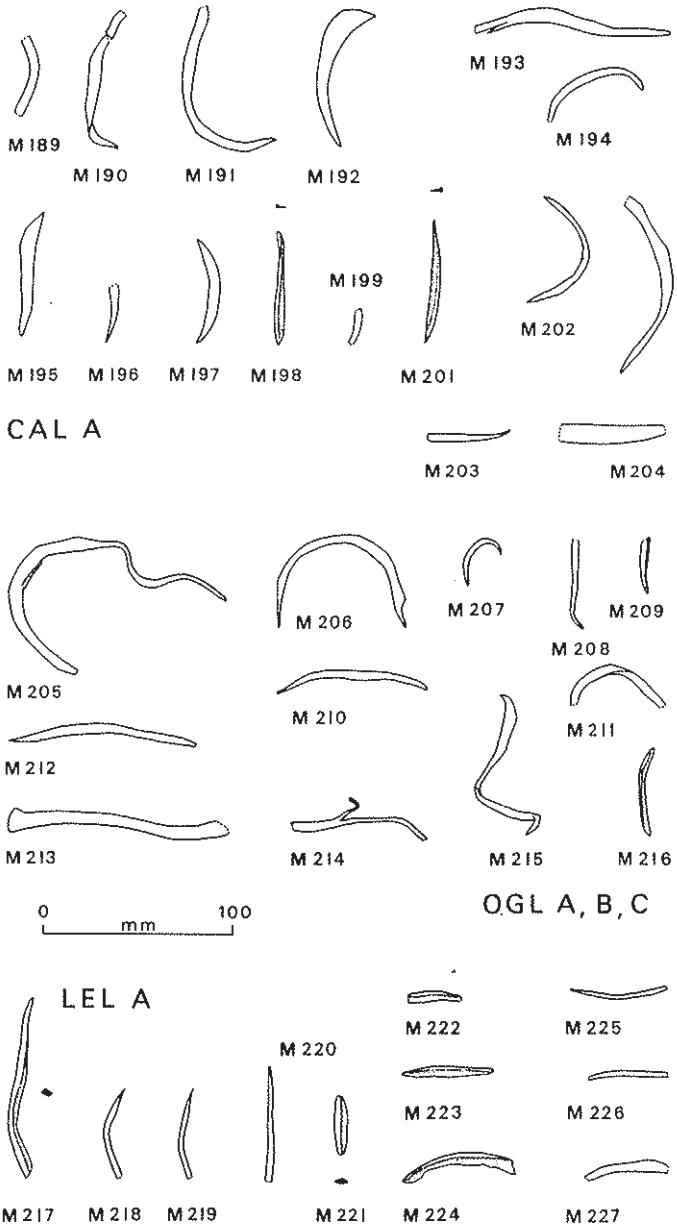

Fig 162 Group 4 offcuts (trimmings)

Cat no	Length	Width	Thickness	Context	SF no	Period
M252	120mm	100mm	4mm	OGL C 22	L 22	3?
M253	157mm	81mm	3.5-4mm	LEL A 570	L 45A	6C
M254	38mm	28mm	1.25mm	LEL A 570	L 45C	6C
M255	75mm	60mm	3.5mm	LEL A 550	L 32A	7A
M256	150mm	80mm	3.5mm	LEL A 530	L 17A	8C
M257	56mm	42mm	2-3mm	LEL A 530	L 39G	8C
M258	68mm	46mm	3.5mm	LEL A 498	L 5A	9
M259	115mm	38mm	2-3mm	LEL A 498	L 5B	9
M260	100mm	60mm	1mm	OBL B 108	L 9C	6
M261	43mm	35mm	1mm	OBL B 108	L 9H	6
M262	59mm	46mm	3mm	OBL B 108	L 9B	6
M263	49mm	12mm	25mm	OBL B 108	L 9E	6
M264	85mm	46mm	3.5-4mm	OBL B 108	L 9A	6

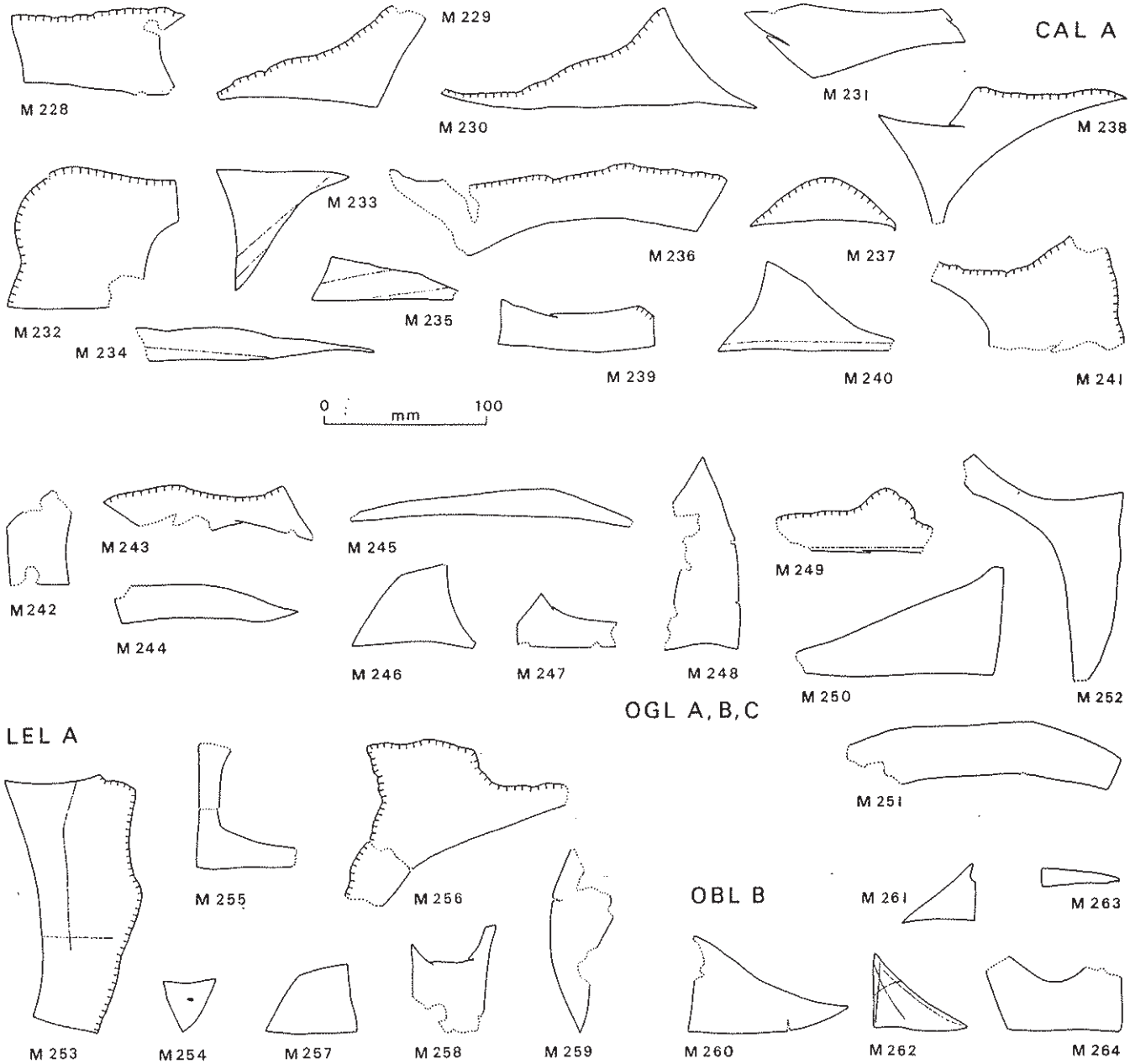

Fig 163 Group 5 offcuts (of indeterminate origin)

CHAPTER 25 THE SHEET LEATHER (N) OBJECTS

by S Winterbottom

Introduction

Parts of Roman stitched leather objects were recovered from the following sites: Crown and Anchor Lane Trenches A and B, Old Grapes Lane Trenches A, B and C, Lewthwaite's Lane Trench A and Old Bush Lane Trench B (Table 70). Their date range, based on external evidence, is from the late first century to the mid or late second century. The total number of 63 stitched pieces (Class 1 material) is small in comparison with those recovered from other sites in the town where waterlogged material survived (Castle Street, 270 pieces: Winterbottom 1991b; Annetwell Street, 460 pieces: Winterbottom forthcoming a). A further 70 fragments of sheet leather without stitching (Class 2 material; included in Table 70) are not catalogued here but tabulated in the archive report.

In contrast with Castle Street and Annetwell Street, the south end of The Lanes produced no concentrations of discarded tent leather and none of the diagnostic tent pieces (gable sections, side wall sections with guy rope fastenings, etc) which enable tent remains to be distinguished from those of other constructions using the same stitching methods. Since tent leather appears to account for upwards of 70% of the material at the other sites, the absence of significant amounts here goes a long way towards explaining the small overall number of finds.

The origins of most of the material are difficult to determine. Numbers N9 and N19 resemble tent components found elsewhere, and the stitching on Numbers N4, N7, N11-14, N18, N43, N46-7, N51, N53-4, N56, N59 and N63 is certainly consistent with their being fragments of tent panels. However, the incompleteness of these pieces and the lack of any strongly diagnostic features makes it impossible to be categorical about their origins. The largest rectangular panel employing 'tent' seam and hem stitching (No N28) has its seam end decorated in a manner so far unparalleled on tent panels from Carlisle and elsewhere.

Number N23 appears to be a fragment of a shield cover and Number N27 part of a sling, although a Roman date for this latter piece is not certain. Other pieces of individual interest are Numbers N15, N22 and N44. Number N15 may belong to a class of rectangular panel pierced by narrow slots, each surrounded by a reinforcing piece in the shape of a *tabella ansata*. These are known from Newstead (Curle 1911, pl 19), Carlisle and Vindolanda, but the use to which they were put remains a mystery. Numbers N22 and N44 have no close parallels. The former, though badly damaged, has distinctive internal stitching probably associated with a badge of some kind. Number N44, while having the curved edge found on shield covers, is not stitched in the characteristic manner of these.

The initial impression gained from the stitched leather from these Lanes sites was that it formed an assemblage rather different in character from those at Castle Street and Annetwell Street. Factors such as the absence of clearly diagnostic tent pieces and the high proportion of finds whose stitching was in some way unusual were key contributors to such an impression. It was felt that significantly more of the objects remained unrecognizable as to their origins than was the case elsewhere.

Given the location of The Lanes sites, away from the immediate environs of the Roman fort, the possibility exists

Table 70
Distribution of the sheet leather (stitched and unstitched) by site and period

Site	*Period*	*No of pieces*	*% of total*
CAL A	2	1	
	3	9	
	4	6	
	5	12	
	Post-Roman	1	
		29	21.8
OGL A	4	1	
	5	1	
	6	11	
	7 and 7-8	2	
	8	1	
	13	1	
		17	12.8
OGL B	2B	1	
	3	2	
	5	8	
	9	1	
		12	9.0
OGL C	2 and 2?	18	
	3?	2	
		20	15.0
LEL A	6	7	
	7	5	
	8	14	
	10	1	
		27	20.3
OBL B	4	2	
	6 or later	3	
		5	3.8
Unstratified (all sites)		23	
		23	17.3
Total		133	

that some of these objects are the product of a less specifically military lifestyle; at the very least they may represent cast-off military equipment which has been modified for use in other contexts. In order to pursue any such hypothesis, however, it needs to be demonstrated to what extent the impression that the assemblage is different in character has any validity. This can be done by identifying a number of criteria by which material from The Lanes can be compared with that from sites either within or immediately adjacent to the fort (that is, Castle Street and Annetwell Street). Among such criteria are:

1 The range of stitching types used.
2 The proportion of pieces with unclassifiable, unusual, or otherwise unexplained stitching.
3 The size of the pieces recovered.
4 The proportion of joining pieces (as a measure of the degree to which objects were not fully dismantled when discarded).
5 The amount of evidence for the cutting up of articles for re-use, prior to deposition.
6 The proportion of the finds *likely* to derive from army tents.

Range of stitching types used

The seam and hem types used in Roman leatherworking are illustrated in Figures 164-5. The presence or absence of examples of the main types at the sites in question is indicated in Table 71.

Given the small number of finds from The Lanes it is perhaps not surprising that good examples of some stitching types are lacking. It would be difficult to argue that the range of types present is significantly different from that found at the other sites.

Proportion of pieces with unclassifiable or unusual stitching

A fairly rapid comparison can be made with material from Castle Street and Annetwell Street by counting the number of such pieces appearing among the items illustrated in the reports on these sites (Winterbottom 1991b and forthcoming a) and comparing the proportions with that for The Lanes. Sixteen of the sixty finds illustrated here (27%) fall into this category. For Annetwell Street the figure is 20% and for Castle Street 18%.

Size of the pieces

The mean area of a piece of stitched leather from these Lanes sites (averaging the maximum dimensions of the pieces) is about 200 sq cm. The same figure was arrived at for Annetwell Street, while for Castle Street it proved to be around 400 sq cm.

Proportion of joining pieces

Some 37% of The Lanes pieces were found together with others to which they had once been stitched. For Castle Street the figure was 53% and for Annetwell Street 60%. It is possible to infer from this that the objects which supplied the stitched leather remains had suffered rather more dismantling and dispersal than was the case at the other sites, thus reinforcing an original impression of the finds as a heterogeneous collection with little internal coherence. That they should appear as such is, in any case, not surprising, given the small total number and the fact that it comprises material from seven different excavation sites.

More surprisingly, perhaps, the high degree of dismantling of objects here cannot be assumed necessarily to be linked to the comparatively small size of the pieces. At Annetwell Street, although the pieces were considerably smaller on average than at Castle Street, more of them were still stitched together when deposited.

Cutting up subsequent to use

Secondary cutting, the result of deliberately dismantling objects before discarding them, is a common feature on Roman stitched leatherwork. The most obvious explanation for it is that some of the leather was considered suitable for re-use. Some 11% of The Lanes finds show clear evidence of having been cut up. This contrasts with around 20% for both Annetwell Street and Castle Street.

Table 71
Range of stitching types used at different sites in Carlisle

	Seams					*Hems*				
	II	*II/III*	*III*	*NR*	*Beaded*	*IVa*	*IVb*	*IVb (variant)*	*V*	*VI*
Castle Street	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Annetwell Street	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
The Lanes Volume 1	Y	Y?	Y	Y	Y	Y	?	Y	Y	?

Y = present, N = absent, ? = possibly present

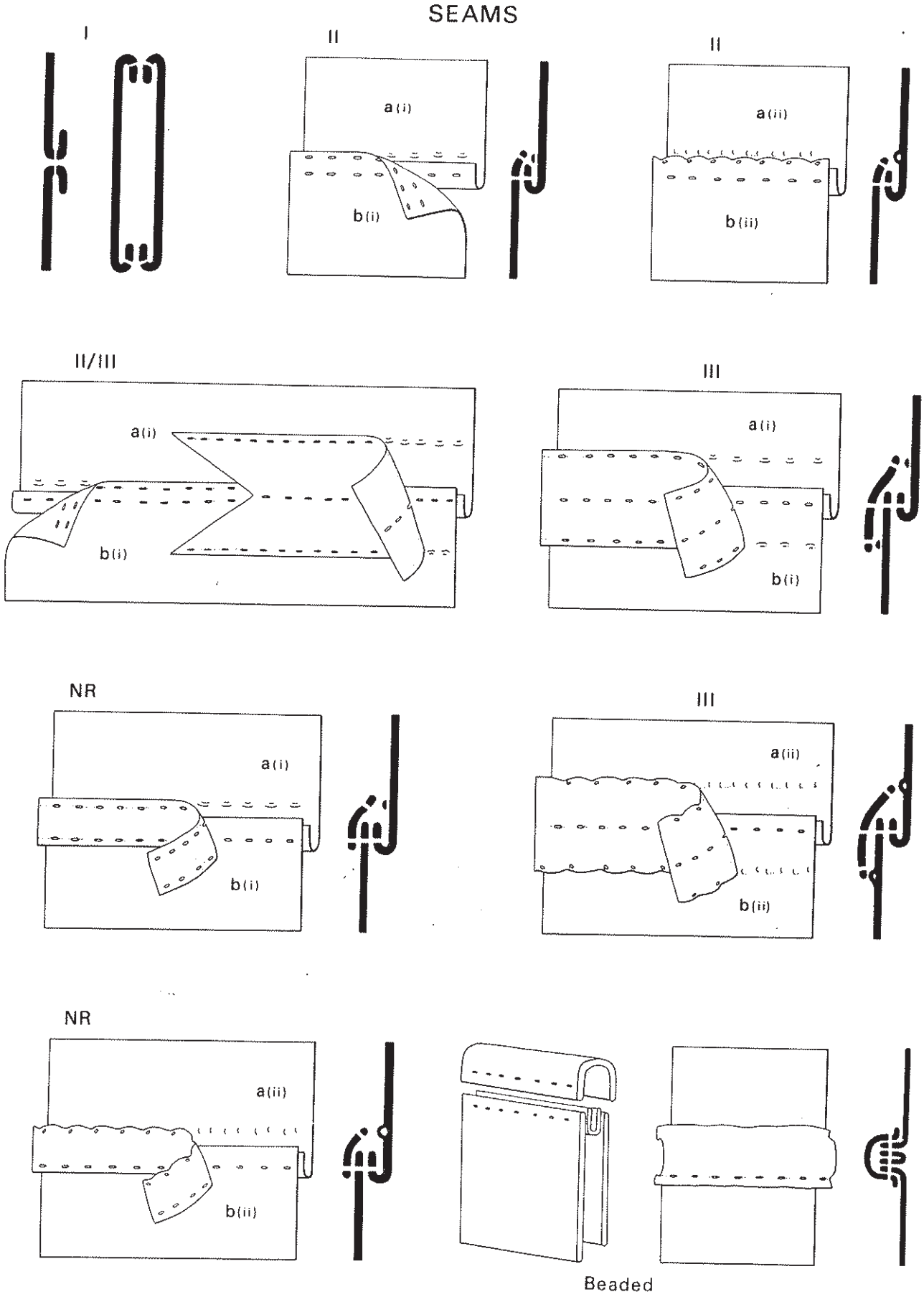

Fig 164 Roman leather seam types

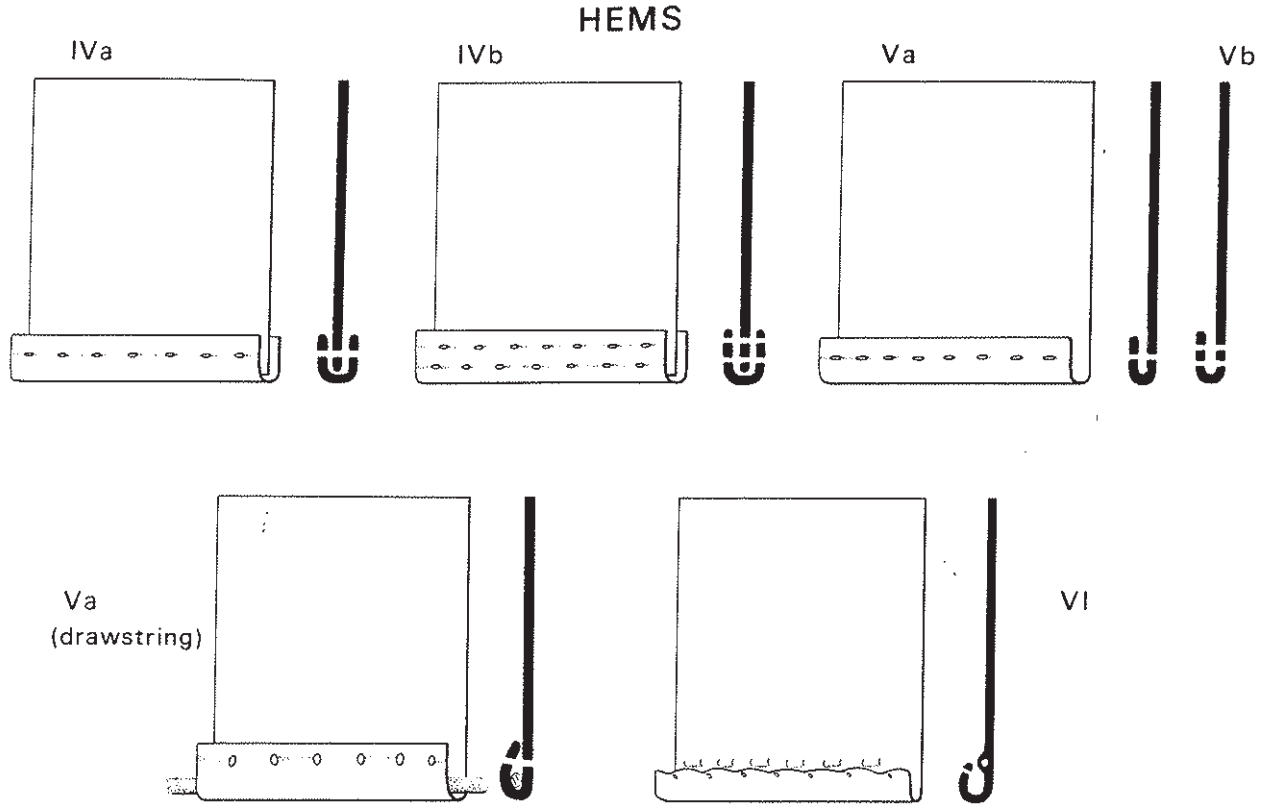

Fig 165 Roman leather hem types

Proportion of tent leather

No exact figure can be given for any site. It is impossible to be certain that all rectangular panels, or all pieces with characteristic tent seam and hem stitching, do in fact derive from tents. It seems increasingly likely, on the contrary, that other constructions in leather, so far unidentified as to function, were being produced using similar methods (and in the same workshops?) to those used for army tents. An example of this has already been cited in the form of the large rectangular panels with regularly placed slots and *tabella ansata* reinforcements. Material of this sort currently being studied from Vindolanda has components associated with it which suggest links with horse bardings rather than with tents (C van Driel-Murray, pers comm).

It is possible only to distinguish pieces which could easily derive from tents from those which seem unlikely to have done so. Even here, panels such as Number N28 and its associated pieces (Nos N29-N38) pose a problem. In most respects they resemble tent components, yet they are a decorated in a manner so far unknown on tents. Unfortunately these enigmatic pieces between them account for some 17% of The Lanes finds. If they are included among the 'likely' tent leather, the proportion of this is some 40-60% of the total, depending upon where one places the line dividing 'likely to be' from 'almost certainly not'.

Distinctions are equally difficult to make at the other sites, but whatever criteria are employed, calculations for Castle Street and Annetwell Street repeatedly produce figures of around 80% for the former and 70% for the latter.

Discussion

The stitched leather recovered from the south end of The Lanes may be said, then, to differ from that found at the two military sites in a number of significant respects. Rather more of the pieces had odd or unclassifiable stitching, and they were more often found as isolated fragments than as collections of joining pieces. There was less evidence of systematic re-use, and the proportion which could be presumed to derive from army tents was less than at the other sites.

It is possible to explain the low level of re-use, as well as the frequency of non-standard stitching, by suggesting that many of the articles were themselves already the product of recycling leather objects discarded or relinquished by the military. Repairs and modifications to discarded equipment, and its perhaps being put to new uses, could explain some of the oddities shown by these pieces. Articles once made or adapted from re-used leather would themselves offer less possibilities for subsequent re-use. The lack of much obvious tent leather is not, in this context, surprising. Tent panels were ideal recycling material, but if they were being made into other objects it is precisely the diagnostic shapes and features (acute angles, stretched and torn fastenings) which one would expect to be rejected early in the process.

The hypothesis that much of the leather comprised already-recycled items of military origin may provide useful lines of future enquiry but is far from demonstrable on the present evidence. There is no single piece among the collection, however 'odd', which could not equally have been found among the assemblages from Castle Street or Annetwell

Street. The latter in particular contains upwards of 60 items whose function cannot at present even be guessed at (Winterbottom forthcoming a, in particular nos C391-C460), yet the leatherwork from these sites cannot be classed as other than part of the accoutrements of Roman military life. In this respect the general similarity of The Lanes material in terms of the range of known stitching types represented (Table 1) is crucial. This was the repertoire of the military workshops (or at least of workshops supplying the military), and there is no reason at present to suppose that the leatherwork found at any of the Roman sites in Carlisle, whether overtly military in nature or not, had any but the same ultimate origin.

On the most obvious difference between the Lanes assemblage and others, its small size, little light can be thrown by an internal study of the material. If most stitched leatherwork is ultimately deemed to be a product of the military presence, then greater concentrations might be expected in and around the fort than at a distance from it. The picture cannot, however, be quite so simple. At the recently excavated BBC site, within the fort, buildings contemporary to those at the Annetwell Street site and with identical preservation conditions produced scarcely any leatherwork at all (Winterbottom forthcoming b). The reasons why this material is found concentrated in some areas and not in others are not so far well understood, and little can be inferred about the nature of occupation at a site from the relative scarcity of leatherwork.

The catalogue

The majority of pieces are of unknown or uncertain origin. Although many may derive ultimately from tents, their incomplete nature makes it impossible to demonstrate this. No attempt has therefore been made to group the material by origin or function. It is divided first into finds with and without stitching, and thereafter grouped according to site, phase and context, thus preserving any depositional association between the stitched pieces.

The stitching types used in Roman leatherworking are illustrated in Figures 164-5. Type names and numbers in the catalogue refer to this classification system which was originated by W Groenman-van Waateringe and has subsequently been expanded through the work of C van Driel-Murray and the present author. A full discussion of the classification of stitching types as it applies to Roman leather found at Carlisle appears in Winterbottom 1991b, 245-251.

In the figures, objects are normally illustrated from the side on which most stitching detail, in particular thread impressions, appears. For panels and infill pieces this is normally the grain side, while for binding and reinforcing strips, patches and appliqués it is the grain side. Only where exceptions are made to this rule, or to avoid uncertainty, is the illustrated side labelled.

Abbreviations

fl. side	flesh side
gr. side	grain side
LH/RH	left hand/right hand
st/h.(s)	stitch hole(s)
t/st.(s)	tunnel stitch(es) (alternatively, 'felling stitches'), which pierce only one side of the leather without going right through
thr. imp.	thread impression
outer/inner	nearer/further from the edge

Crown and Anchor Lane Trench A

N1 Seam binding strip Fig 166
Fragment of a tightly folded strip with stitching through both thicknesses. Absence of thr. imps. and lack of wear along folded edge suggest it comes from a Beaded Seam.
L. 54mm+ W. 26mm Th. 0.75mm
CAL A 80 L 41 Period: 3A

N2 Repair patch Fig 166

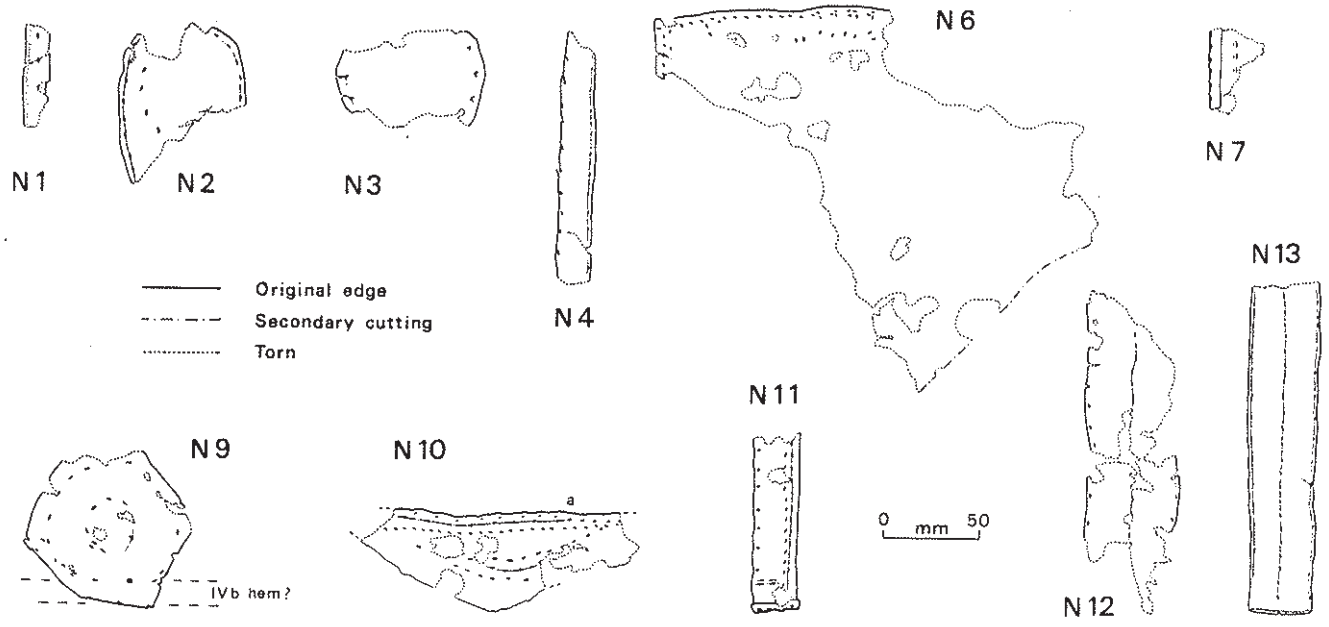

Fig 166 Stitched leather (scale 1:4)

Top and bottom torn. Continuous thr. imp. (gr. side) on surviving edge stitching. Four additional st/hs. on the LH side have no thr. imps. and could derive from a subsequent patch sewn over this one.
L. 85mm+ W. 67mm Th. 1mm
CAL A 71 L 61 Period: 3B

N3 Repair patch? Fig 166
Top and bottom missing. Faint traces of a thr. imp. on LH side only (gr. side). Two st/hs. on the opposite side have an unusual 'U' shape.
L. 77mm W. 46mm+ Th. 1mm
CAL A 52 L 57 Period: 4

N4 Seam reinforcing strip Fig 166
Type NR(ii). Both ends torn.
L. 132mm+ W. 18mm Th. 1mm
CAL A 52 L 17 Period: 4

N5 Seam binding strip Not illustrated
Fragment of binding from a Beaded Seam. Both ends torn. St/hs. 15-16mm apart (centre to centre).
L. 95mm+ W. 35mm Th. 1-1.5mm
CAL A 66 L 24 Period: 5

N6 Panel fragment Fig 166
Right-angled corner piece. Both edges have a single row of oblique st/hs. without thr. imps. There are scattered additional holes including, on the upper edge, four pairs of vertical slits which may once have been tunnel stitches. Both edges are difficult to categorize as to stitching type. Both may have been NRb seams, subsequently modified or repaired. Possible secondary cutting on lower RH edge.
L. 230mm+ W. 200mm+ Th. 1.5mm
CAL A 66.2 L 51A Period: 5

N7 Panel fragment Fig 166
Small torn edge fragment with neat seam stitching: NRa(i)?
L. 45mm+ W. 28mm+ Th. 1mm
CAL A 66.2 L 51C Period: 5

N8 Panel fragment Not illustrated
Small torn fragment with 30mm of a folded and stitched edge. This resembles Hem VI but cannot be identified as such with certainty.
L. 58mm+ W. 47mm+ Th. 1mm
CAL A 66.2 L 51D Period: 5

N9 Hexagonal appliqué Fig 166
Two concentric 'circles' of stitching, 25-30mm and 65-70mm in diameter. The st/hs are irregularly spaced and some have additional holes beside them. A line of three further holes just clips the lower edge. This could indicate that the appliqué was used adjacent to a IVb hem, whose binding strip was then sewn over it. Examples of this were found among tent leather from the Annetwell Street excavations (Winterbottom forthcoming a, nos C134, C160).
L. 83mm W. 78mm Th. 1.5mm
CAL A 66.2 L 51B Period: 5

N10 Edge infill piece? Fig 166
The roughly symmetrical shape, with arcs of stitching following the contour of the lower edge, suggests this is an infill (cf Winterbottom 1991b, 269, no 1032 etc). Of the three arcs, only the middle one has the expected continuous thr. imp. on the fl. side. It may represent the latest in a series of re-stitchings. The upper edge has Seam II/IIIb(i) stitching and includes the transition point from II to III (labelled 'a' in Fig 166). The infill must thus have been used close to a panel corner. Running parallel to the upper edge is an extra row of stitching (closely spaced holes) whose presence cannot be explained as part of a Type II/III seam. The holes carry no thr. imp. and are identically spaced to those appearing on Number N11. This may argue some connection between the pieces, although since N11 derives from a NR seam they cannot have been sewn together.
L. 147mm+ W. 50mm+ Th. 1mm
CAL A 66.2 L 55 Period: 5

N11 Seam reinforcing strip Fig 166
Type NR(ii). Upper end torn. The lower end has been folded on to the gr. side and incorporated into another seam crossing at right angles. The t/sts. crossing this end open at 90° rather than parallel to it, so that the 'horizontal' seam must have been of a different construction to the 'vertical' one (either NR(i) or III(i)). A change in tunnel stitching type on adjacent edges of the same panel has been observed on various pieces coming from the junction of a tent's roof and side walls (Winterbottom 1991b, nos 1127, 1131, 1132; 1992, fig 15, no 1). Running just inside the RH edge stitching is a line of closely spaced st/hs. without thr. imps. The function of this stitching is unclear, but it is possible that the edge of another piece of leather overlapped the strip and was attached here. That might explain why there are only t/sts. on the LH side of the strip at its lower end; those further right would have been carried by the overlapping piece.
L. 93mm+ W. 24mm Th. 1.25mm
CAL A 66.3 L 54 Period: 5

N12 Seam reinforcing strip Fig 166
Wide strip, probably Type II/III(i). Both ends torn.
L. 170mm+ W. 45mm Th. 1mm
CAL A 66.2 L 52 Period: 5

Crown and Anchor Lane Trench B

N13 Seam reinforcing strip Fig 166
Type III(i). Upper end torn. Lower end skived on gr. side and overlapped by another strip.
L. 175mm+ W. 37mm Th. 1mm
CAL B 5 L 2 Period: Unstratified

Old Grapes Lane Trench A

N14 Panel fragment Fig 167
Right-angled corner piece with secondary cutting on LH side.
Lower edge (unfolded): Seam NRa(ii).
RH edge: the central portion is folded on to the fl. side; elsewhere the edge is flat. Large st/hs. at the top and bottom show signs of stretching at their edges. Spacing of these holes varies and there are extra holes at the top with a differing orientation. Where the edge is folded, a line of rather more closely spaced holes runs along the apex of the fold, while two further holes lie between it and the edge of the leather. An absence of thr. imps., together with localized folding of the edge and signs of considerable tension on the stitching, suggests this may be a Beaded Seam. If so, the piece could come from a tent's gable edge.
Two lines of internal stitching running oblique to the panel's edges have faint continuous thr. imps. on the fl. side. These suggest one corner of a rectangular repair patch sewn to the panel's gr. side, placed so as to cross the junction of horizontal and vertical seams.
L. 260mm+ W. 110mm+ Th. 0.75-1.0mm
OGL A 785 L 46 Period: 6

N15 Panel fragment Fig 167
Right-angled corner piece with fine seam stitching, probably NRa(i). A line of largish (4mm x 2mm) oblique oval thong- or lacing-holes runs parallel to the lower edge, with traces of an alternating (?) impression on the fl. side. At its RH end the line of holes turns upwards to run parallel to the RH seam. It may, however, have turned again since the remains of another oval hole lie some 15mm further right, immediately adjacent to the seam. Along the torn upper edge are the remains of another line of oblique, but more slit-like, holes running parallel to the first. On the LH side a slot 15mm wide, with a rounded end, has been cut out. Its full length does not survive, but it was at least 40mm.
L. 136mm+ W. 55mm+ Th. 0.75mm
OGL A 737 L 27 Period: 6

It is possible that the parallel lines of thonging on Number N15 were associated with a *tabella ansata* appliqué of the kind seen on a number of leather panels from Annetwell Street (Winterbottom forthcoming a, nos C291, C300, C309). The kink at the RH edge of the lower line would be consistent with an ansate end and the positioning of the stitching with respect to the two seams on N15 is exactly as found on the examples quoted. The Annetwell Street appliqués were sewn around narrow slots in the leather and further stitching around each slot attached a small flat pouch to the outside of the panel. The function of both slots and pouches is unknown at present, as is the nature of the construction from which the pieces come. Parts of similar objects found at Vindolanda also have narrow

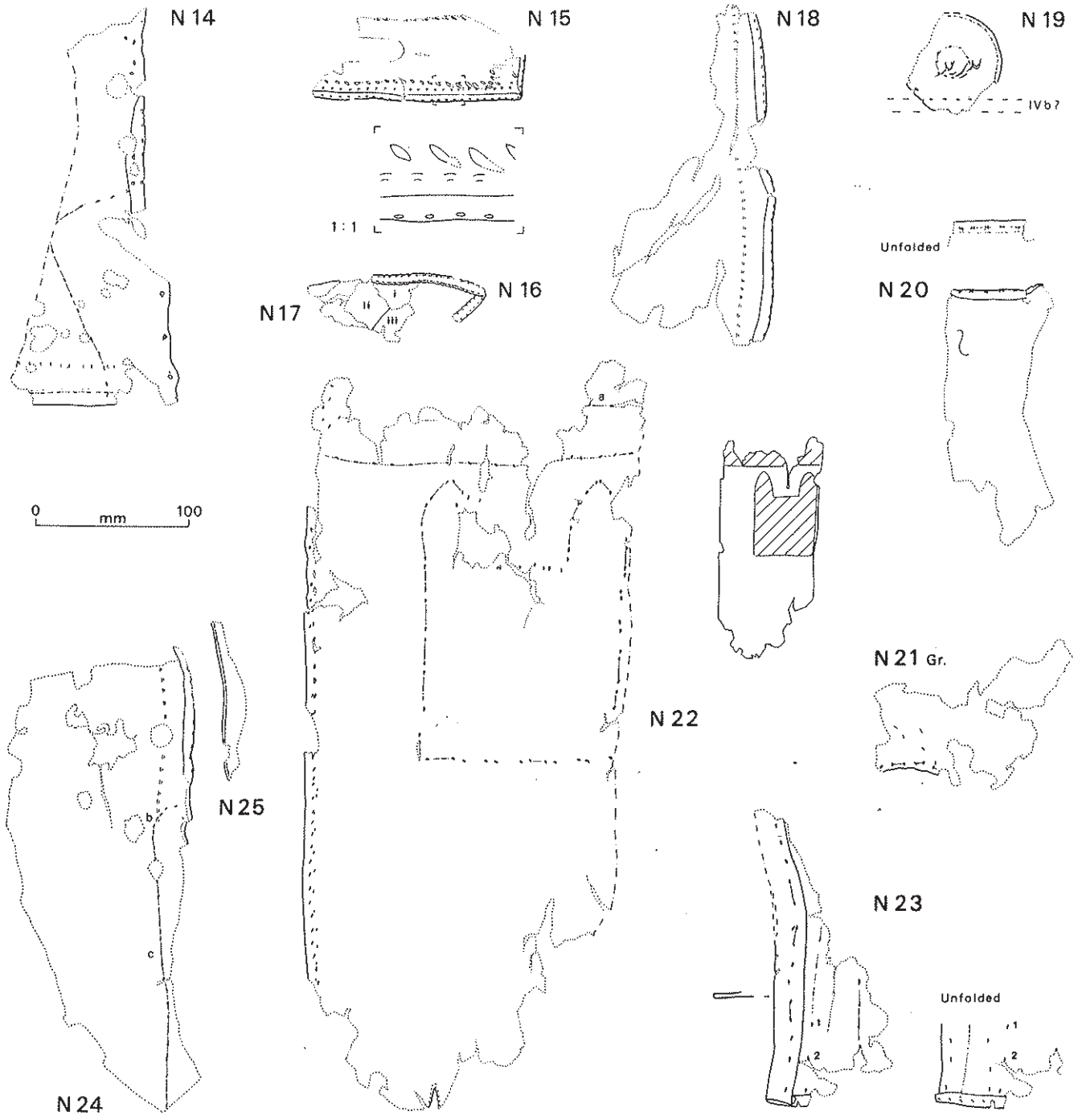

Fig 167 Stitched leather (scale 1:4)

slots within ansate appliqués but, significantly, there is no stitching around the edges of the slots themselves, making them more closely comparable to Number N15 (C van Driel-Murray, pers comm).

N16 Seam reinforcing strip Fig 167
Extremely fine Type NR(i) strip with both ends torn. Both edges are wavy as a result of the close spacing of the stitch holes. At its LH end the lower edge of the strip is still in contact with st/hs. along the edge of panel fragment N17, i.
L. 100mm+ W. 6mm Th. 1mm
OGL A 755 L 38B Period: 6

N17 Panel fragments Fig 167
Three torn and superimposed pieces can be distinguished. Originally part of the same panel edge, they have become displaced so that, for example, the gr. sides of i and iii now face in opposite directions. The pieces had adhered to each other on drying out and were not separated, to avoid further damage. Both i and ii have fine NRb stitching and i still keeps its original relationship to the reinforcing strip Number N16.
L. 70mm+ W. 42mm+ Th. 0.75-1.0mm
OGL A 755 L 38A Period: 6

N18 Panel fragment Fig 167
Torn piece with a single stitched edge: Seam IIIa(i).
L. 223mm+ W. 103mm+ Th. 0.75mm
OGL A 803 L 54 Period: 6

N19 Circular appliqué Fig 167
Two concentric circles of stitching with continuous thr. imps. on the gr. side. Four st/hs. cross the lower edge in a straight line. These have

no thr. imps. and are accompanied by the impression of an overlapping edge (just above the stitching). As with Number N9 it appears that the appliqué was used adjacent to a bound hem, the binding being sewn across its edge. In this case too there are remains of st/hs. forming a second row of hem stitching below the first, indicating a Type IVb hem.

The centre is occupied by two stamped or incised U-shaped slits with three or four oblique incisions between them. These are extended in places by tearing.

L. 65mm+ W. 54mm+ Th. 1mm
OGL A 749 L 25 Period: 6

Markings of this sort, incorporating letter forms, are attested on Roman leather from several sites and are thought to have been placed on the hides during skinning or tanning (van Driel-Murray 1977, 159). Although they are often found on discarded offcuts, they also occur, as here, on utilized leather. Three more appliqués, similarly made from marked or inscribed leather, have been found at Carlisle (Winterbottom 1992, fig 16, no 11, and forthcoming a, nos C171, C173), and letter forms also occur on shoe components (Padley 1991d, nos 1013, 1015, and forthcoming i, no L353).

N20 Panel fragment Fig 167

Torn piece with 62mm of a folded and stitched edge. The st/hs. lie just below the apex of the fold and have continuous thr. imps. between them on the underside of the folded portion (cf Seam I). When this is opened out the holes have an unusual 'H' shape. The central bar does not appear to be the result of tearing between two vertical slits but to be an integral part of the stitch hole. It is possible that these holes were made using a small punch originally designed for another purpose (cf No N3). When viewed from the gr. side there is an elongated, sharply incised 'S' whose top lies 25mm below the panel edge. This seems unlikely to be the result of accidental damage.

L. 166mm+ W. 70mm+ Th. 1.25mm
OGL A 749 L 35B Period: 6

N21 Panel fragment Fig 167

Torn fragment with 40mm of a wavy edge with tacking stitch (alternating thr. imp. on gr. side). The stitching could indicate the site of a repair patch rather than an original panel edge. It is uncertain if four small slits scattered nearby are really stitching holes.

L. 132mm+ W. 56mm+ Th. 1.25mm
OGL A 749 L 35A Period: 6

N22 Decorated panel Fig 167

Roughly rectangular piece cut from a larger panel. The RH edge appears to be secondary cutting on a line parallel to the seamed LH edge. Top and bottom edges torn. The LH edge has two intercutting rows of st/hs. without thr. imps. The appearance is that of a Beaded or NR Seam which has been repaired. Two sets of internal stitching indicate the presence of applied pieces sewn to the gr. side:

i) a rectangle, 180mm x 130mm, with 'crenellated' top. This may have been a badge or insignia though no parallels for motifs of exactly this shape have so far been traced;

ii) a line of stitching with continuous thr. imp. on the fl. side runs across the piece at 60mm from its present top. Traces of two further holes and a connecting impression at 'a' (Fig 167) may suggest a second line, some 32mm above the first. The stitching seems to indicate an applied piece in the form of a horizontal band, either for reinforcement or decoration, with its lower edge lying just above the 'crenellated' motif. The small diagram ito the right of N22 in Figure 25.4 indicates the position of the presumed applied pieces (shaded).

L. 490mm+ W. 213mm+ Th. 1mm
OGL A 470.2 L 7 Period: 8C

N23 Shield cover edge fragment? Fig 167

Right-angled corner piece with two features indicative of a shield cover:

i) a folded and tacked hem (LH side). The alternating thr. imps. here are very faint, only those appearing on the outside of the fold (not shown) being really convincing;

ii) two rows of internal stitching running parallel to the hemmed edge, each with a faint continuous thr. imp. on the fl. side.

On other shield covers from Carlisle and elsewhere the tacked hem has a characteristic bulge between fold and stitching, supporting the interpretation that it was used as the channel for a drawstring which kept the cover in place (van Driel-Murray 1988, 52-53). This is illustrated in Figure 25.2 (Va drawstring hem). On Number N23 the profile of the hem is completely flat, although this could result from the cord's having been removed before deposition. There are many parallels for lines of internal stitching set in from the edge of shield covers. It is clear that they are the result of attaching additional pieces of leather (or possibly fabric) to the front of the cover.

The lower edge of N23 is folded on to the fl. side and has a single line of stitching through the folded portion with a continuous thr. imp. on its underside. This is a seamed edge, probably marking the junction between two sections of a cover. Such seams normally run horizontally across a cover and are often of Type II (Groenman-van Waateringe 1967, 52-72, nos 6, 18, etc; Winterbottom forthcoming a, no C344). The stitching on N23 is difficult to classify; with no t/sts. visible it cannot be classed as IIa. If, however, it were a simple Seam I, the st/hs. should coincide with, or at least be closer to, the apex of the fold.

L. 193mm+ W. 78mm+ Th. 1.25mm
OGL A 626 L 8 Period: Unphased

N24 Panel fragment Fig 167

Single stitched edge torn away at lower end. For 130mm from the present top the edge stitching is Seam IIIa(i), with the folded portion torn away over the final 45mm. At point 'b', where the t/st. on this seam ends, it intersects with another line of stitching ('c') curving round here to meet the seamed edge but lower down running parallel to the presumed line of the missing edge. This stitching has a continuous thr. imp. on the fl. side which, however, does not continue beyond its junction with the tunnel stitching. On the gr. side of the panel, the uppermost four st/hs., in a curving line, are accompanied by a curving overlay impression indicating the presence of a superimposed piece of leather on that side. Stitching 'c' appears to have secured one side of this piece, whose full extent is not known. Although the reason for an applied piece here is unclear, two conclusions can be drawn from the relationship between stitching 'c' and the Seam III tunnel stitching:

i) stitching 'c' was done subsequently to the seam; its uppermost st/hs have no thr. imps. and a seam reinforcing strip must already have covered the fl. side of the panel here;

ii) it is unlikely that the applied piece attached by stitching 'c' was simply a long repair patch. In that case traces of t/st. would be expected below point 'b', showing that the seam was continuing. There are no such traces, and a transition here from Seam III to another form of edge stitching is indicated.

L. 304mm+ W. 120mm+ Th. 1-1.25mm
OGL A 1105.2 L 65A Period: Unphased

N25 Seam reinforcing strip Fig 167

Fragment apparently torn from one side of a Type III(i) strip. The curve and spacing of its st/hs. are consistent with its belonging on the upper part of Number N24's edge, immediately to the right of the tunnel stitching.

L. 103mm+ W. 15mm+ Th. 1mm
OGL A 1105.2 L 65B Period: Unphased

Old Grapes Lane Trench B

N26 Panel fragment Not illustrated

Torn piece with no original edges. There are remains of two whip-stitched repairs: one has both edges surviving and was at least 25mm long. Of the other, only 11mm of one edge survives.

L. 137mm+ W. 77mm+ Th. 1mm
OGL B 196 L 14 Period: 5B

N27 Sling? Fig 168

A pointed oval of leather with five parallel slits along the centre. Another slit has not penetrated to the gr. side for its full length but continues as a scored line on the fl. side (dotted in Fig 168). At each end is a group of six st/hs. by which leather thongs or straps could be attached.

L. 105mm W. 50mm Th. 1.5mm
OGL B + L 30 Period: Unstratified

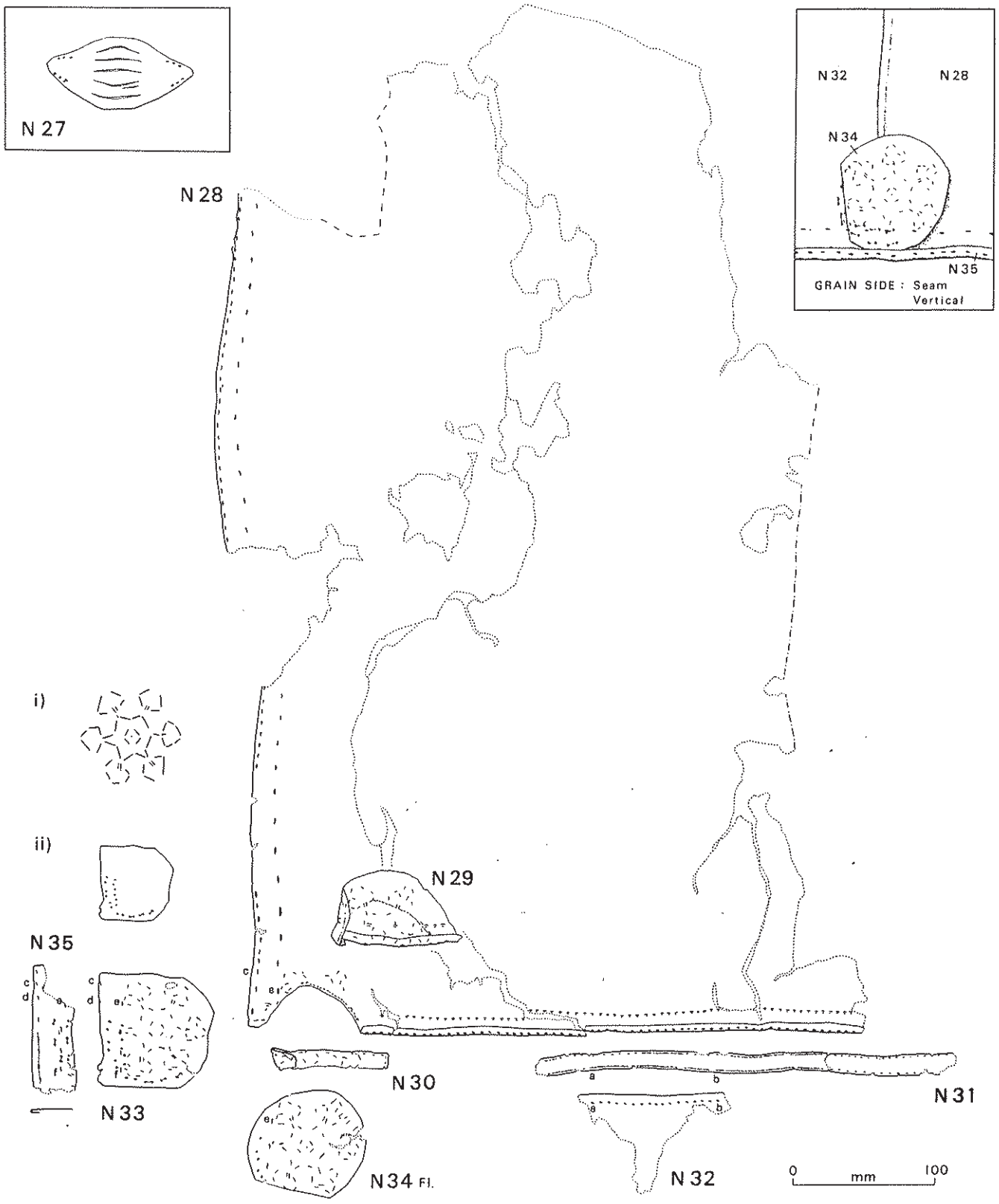

Fig 168 Stitched leather (scale 1:4)

The date of this piece is unknown. A very similar, though slightly larger, example from Law's Lane Trench C comes from a medieval context (McCarthy forthcoming b). The suggestion that these are the stone-gripping portions of composite, hand-held slings or catapults comes from C van Driel-Murray who has found similarly shaped pieces of leather, also with attachment holes at the ends, among finds from the Roman fort at Vindolanda (pers comm). There, instead of parallel slits, a lattice of square holes was cut to allow the leather to conform to the shape of a missile.

Old Grapes Lane Trench C

N28 Large rectangular panel Fig 168
LH and lower stitched edges original; secondary cutting on RH side and in upper LH corner. Edges elsewhere torn.

LH edge: Hem IVb (variant). There are two rows of stitching, at 3mm and 15mm from the edge, with approximately twice as many holes in the outer row. Neither row carries any thr. imps. A fragment of hem binding, Number N35, belongs at the base of this edge, and is of a type identified elsewhere as coming from a variant of the IVb hem in which, on the gr. side of the panel, only the outer row of stitching was covered by the binding (Winterbottom forthcoming a).

Bottom edge: Seam NRa(i). Two pieces of a seam reinforcing strip, Numbers N30 and N31, come from this edge, and a fragment of the adjacent panel, Number N32, also survives. The semicircular gap at the LH end was occupied by Number N29, the infilling preceding the seam stitching. A group of oblique st/hs. above the infilled area is part of a decorative design best seen on appliqué N33, which reinforced the end of the seam on the fl. side of the panels.
L. 720mm+ W. 436mm+ Th. 1mm
OGL C 62 L 27A Period: 2 or 3

N29 Edge infill piece Fig 168
Attached to Number N28 by an arc of closely spaced stitching whose holes are, however, much further apart at the LH end. Tunnel stitches from the attachment of reinforcing strip Number N30 are also more widely spaced on the left. The centre is occupied by a pattern of oblique st/hs. forming part of the decorative design described below (see No N33).
L. 93mm W. 52mm Th. 1mm
OGL C 62 L 27H Period: 2 or 3

N30 Seam reinforcing strip Fig 168
Type NR(i). Both ends are original, the LH end being folded back (as illustrated) before use. The RH end has three transverse st/hs. and would have been sewn to a continuation strip. No st/hs. appear on the lower edge, and part of this edge may have been cut away.
L. 98mm W. 11mm Th. 0.75mm
OGL C 62 L 27F Period: 2 or 3

N31 Seam reinforcing strip Fig 168
Type NR(i). Still adhering to panel fragment N32 when recovered, with st/hs. 'a' to 'b' corresponding. Its exact position along the edge of panel N28 is uncertain.
L. 298mm+ W. 14mm Th. 1mm
OGL C 62 L 27E Period: 2 or 3

N32 Panel fragment Fig 168
Small fragment with NRb seam stitching. Thought to be part of the adjacent panel to Number N28.
L. 110mm+ W. 72mm+ Th. 1mm
OGL C 62 L 27D Period: 2 or 3

N33 Roughly square appliqué Fig 168
Sewn across the end of the seam between Numbers N28 and N32 on the panels' fl. sides. It was sewn on *after* N29 and N30 but before the hem binding strip N35. Three distinct sets of stitching can be made out:

i) a decorative motif incorporating a six-pointed 'star' with branched 'satellites'. The main elements of the design are extracted in Figure 25.5, i). It is formed by narrow, slit-like st/hs., mostly 2-4mm long but with some more elongated. No thr. imps. are associated with the stitching;

ii) confined to the LH and lower edges respectively are a double and single row of tacking stitches. For clarity, the outline of N33 with only this stitching indicated is shown in Figure 25.5, ii);

iii) two st/hs. ('c' and 'd') impinging on the LH edge, and four in a line from 'e' to 'f', show the position of the two lines of stitching by which the hem binding, Number N35, was attached.
L. 81mm W. 80mm Th. 1.25mm
OGL C 62 L 27B Period: 2 or 3

N34 Circular appliqué Fig 168
Sewn to the gr. sides (outsides) of panels N28 and N32. It is consequently more regular in its appearance than Number N33. The straight cut lower edge could be secondary. As on N33, the decorative stitching carries no thr. imps. On the gr. side some areas enclosed by the stitching appear darker and glossier (eg the central star), as though protected by further applied pieces. It is difficult, however, to detect any abrupt changes in the surface condition which would confirm the presence and position of these.
L. 85mm W. 75mm Th. 0.75-1mm
OGL C 62 L 27C Period: 2 or 3

N35 Hem binding strip Fig 168
Type IVb (variant). Upper end original; lower end torn. Folded for 6mm on LH side. Only the folded portion would be visible from the gr. side of Number N28 when the strip was in place, its wider side being sewn to the back of the panel, over appliqué N33. The same two rows of tacking stitches seen on N33 appear on this piece, with clear impressions between some of the paired holes on the gr. side.
L. 91mm+ W. 36mm Th. 0.75mm
OGL C 62 L 27G Period: 2 or 3

Reasons of space have made it necessary to illustrate panel N28 with its hemmed edge running vertically. A horizontal hem is equally possible, however, as is shown in the reconstruction in Figure 168, top right. Seam ends reinforced in this way, with appliqués sewn to both the inside and outside, are a common feature of Roman army tents (Winterbottom 1991b, nos 1171-1173, 1181; see also Nos N9 and N19 above). The applied pieces were not normally decorated, however. Number N28 falls within the size range of rectangular tent panels identified at Carlisle and its seam and hem types are also among those used in tent-making. If it is part of a tent, then it provides only the second piece of evidence from any site that these were decorated (Groenman-van Waateringe 1967, 111, no 7, a panel with stitched scrolls, which is now identified by C van Driel-Murray as coming from the top of a tent gable). Small fragments with decorative stitching like that on appliqué N33 were, however, found at the Castle Street site in Carlisle, which produced large quantities of tent leather (Winterbottom 1991b, no 1280). Numbers N36-N38 and N60 below provide further examples of this type of decoration.

Close examination has not so far established how the decorative effect was achieved. Embroidery, using different coloured threads, ought to have left thread impressions on the outermost pieces (N34 on the outside and N33 on the inside), yet none occur. It is possible that the motif was formed from a mosaic of further small pieces, perhaps of coloured cloth, which have not survived. Since the stitching passes through all the intervening thicknesses to N33 at the back, a further missing piece, or pieces, needs to be postulated in order to explain the lack of thread impressions there.

The design outlined in Figure 168, i) is rather a curious one, being neither strictly geometric nor, as it stands, convincingly 'floral'. If it is allowed, however, that applied pieces may have occupied not only the positions of the six satellite 'petals' but also the spaces between them, then one can see the possibility of a more convincing flower head being built up, formed from concentric rings of triangular petals. Flower heads of similar type do occur on Romano-British mosaics of the second and third centuries (Neal 1981, pls 37, 39, 65, 71). The central field of a fourth-century mosaic at Brantingham, N Humberside, also provides a parallel for the 'hub and spokes' element which is the most characteristic feature of the design as represented simply by its stitch holes (*ibid*, pl 12).

One further problem concerns the function of the L-shaped arrangement of tacking stitches to one side of appliqué N33 (Fig 168, ii)). This too passes through all the thicknesses and at first sight appears to indicate that something else was attached here. On both the inside and outside (gr. side of N34;

gr. sides of N33 and N35), however, thread impressions are visible on the tacking. This rather suggests that nothing further was attached. The stitching is more likely to be an *ad hoc* repair, needed because the binding strip and one side of an appliqué had become detached.

N36 Panel fragment Fig 169
Right-angled corner piece.
RH edge: Seam NRb, joins Numbers N37 and N38. Across the junction between N36 and N37 is a stitched 'star' motif, similar in size to that on Number N33 but of a simpler design. Again, the stitching suggests appliqués sewn to both sides of the panels, reinforcing the junction of seam and hem, although in this case none has survived.
Lower edge: Hem IVb.
L. 175mm+ W. 95mm+ Th. 1-1.5mm
OGL C 56 L 30B Period: 2

N37 Edge infill piece Fig 169
RH edge: Seam NRa(i). Attached by an arc of closely spaced stitching to a panel (now missing) adjacent to Number N36. The centre of the decorative motif appears on this piece and consists of a circle of six stitch holes. It is likely that a six-pointed star figured here, as on Number N33 (see Fig25.5).
L. 147mm W. 70mm Th. 1mm
OGL C 56 L 30A Period: 2

N38 Seam reinforcing strip Fig 169
Type NR(i). Both ends torn. Two slanting st/hs. at the lower end are part of the star pattern and fix the position of this piece relative to Numbers N36 and N37.
L. 127mm+ W. 9mm Th. 0.75mm
OGL C 56 L 30C Period: 2

Numbers N36-N38 may well be contemporary with N28-N35. There is no way of knowing if they come from the same object; if so, the decoration of its seam ends in different ways would give an interesting insight into leatherworking practice.

N39 Panel fragments Fig 169
Two torn fragments with Hem IVa stitching. Still enclosed within binding strip N40 when excavated.
L. 40mm+ W. 14mm+ Th. 1.5mm
OGL C 35 L 28A Period: 2

N40 Hem binding strip Fig 169
Diminutive IVa binding with closely spaced stitching. Ends torn.
L. 61mm+ W. 16mm Th. ≤1mm
OGL C 35 L 28B Period: 2

N41 Panel fragment Fig 169
Very badly preserved piece with fragile edges which tended to break when drawing. Part of one original edge survives, with small oval st/hs. at 2-3mm from it. The holes appear to be paired and to be set obliquely to the edge, or at right angles to it. No thr. imps. are visible and the stitching type could not be determined. A scatter of short, slit-like holes in the interior may represent further stitching, but no pattern could be discerned.
L. 276mm+ W. 257mm+ Th. 1-1.5mm
OGL C 60 L 25A Period: 2

N42 Panel fragment Not illustrated
Torn fragment with 30mm of an original edge. Three st/hs. at 2-3mm from it have a faint thr. imp. connecting them on the fl. side. The edge is bending on to the fl. side along the line of stitching.
L. 135mm+ W. 65mm+ Th. 1mm
OGL C + L 4A Period: Unstratified

Lewthwaite's Lane Trench A

N43 Hem binding strip Fig 170
Type IVa. RH end original, skived on gr. side. LH end torn.
L. 96mm+ W. 33mm Th. 1mm
LEL A 560 L 30 Period: 6A-E

N44 Panel fragment Fig 170
A curving original edge has two lines of stitching at 3mm and 25mm from it. The outer, which ends at point 'a', has no thr. imps. The inner line has a faint continuous thr. imp. on the fl. side. Two further st/hs. appear at 'b'. Two parallel lines of internal stitching ('c') may also have thr. imps. on the fl. side; it is not possible to be certain of this as the leather here is very fragile and worn. The two lines appear to be linked on the right by transverse stitching (two holes). Stretch lines on the gr. side of the panel run parallel to stitching 'c', and it is likely that the stitching represents either a horizontal or a vertical axis of the object. At 'd', a short portion of cut edge with a curving end may have been part of an aperture in the panel. Elsewhere the lower and RH edges are all torn.
The origin of N44 is not known. Despite its curving edge and the presence of parallel lines of internal stitching, it is difficult to see how it could be part of a shield cover. The edge was not folded, nor does it show any signs of puckering or gathering.
L. 380mm+ W. 155mm+ Th. 1mm
LEL A 570 L 20A Period: 6C

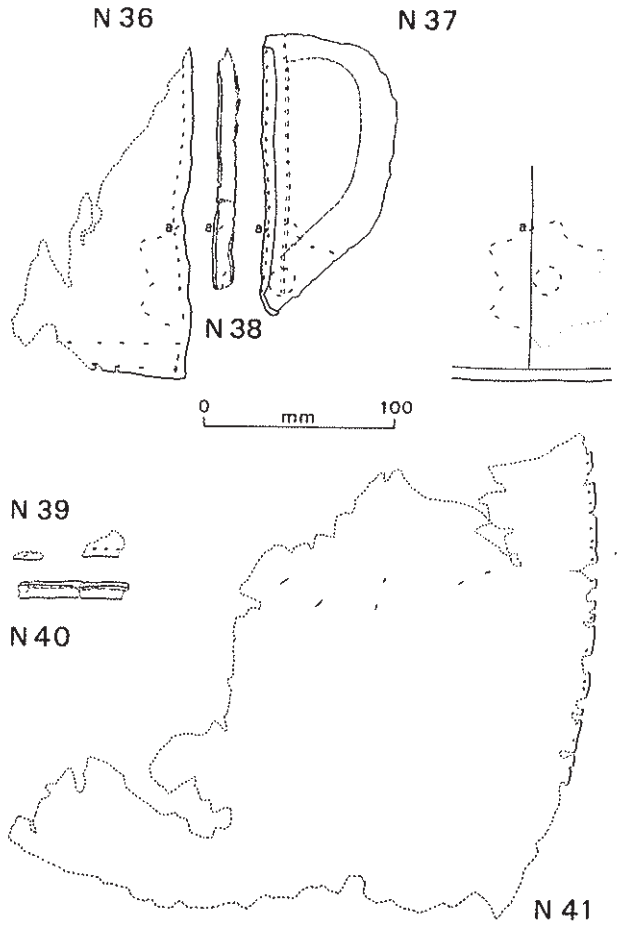

Fig 169 Stitched leather (scale 1:4)

N45 Panel fragment Fig 170
Single original edge with lines of stitching at 4mm and 19mm from it. Neither row carries any thr. imps. and there are approximately twice as many holes in the outer row. The stitching strongly resembles that on Number N28 and this may be another example of the IVb variant hem. A repair patch has been sewn to the gr. side at 'e' and further repairs, possibly involving restitching of a binding strip, are indicated by extra st/hs. at 'f' and 'g'.
L. 545mm+ W. 170mm+ Th. 0.75mm
LEL A 570 L 20B Period: 6C

N46 Panel fragment Fig 170
Single stitched edge: Seam NRa(i)? The opposite edge appears to be secondary cutting, while the ends are torn. At the LH end an extra line of through stitching coincides with, or runs just above, the tunnel stitching. It converges with the folded edge at point 'h'. Most of the extra holes are open ovals but four towards the RH end have the form

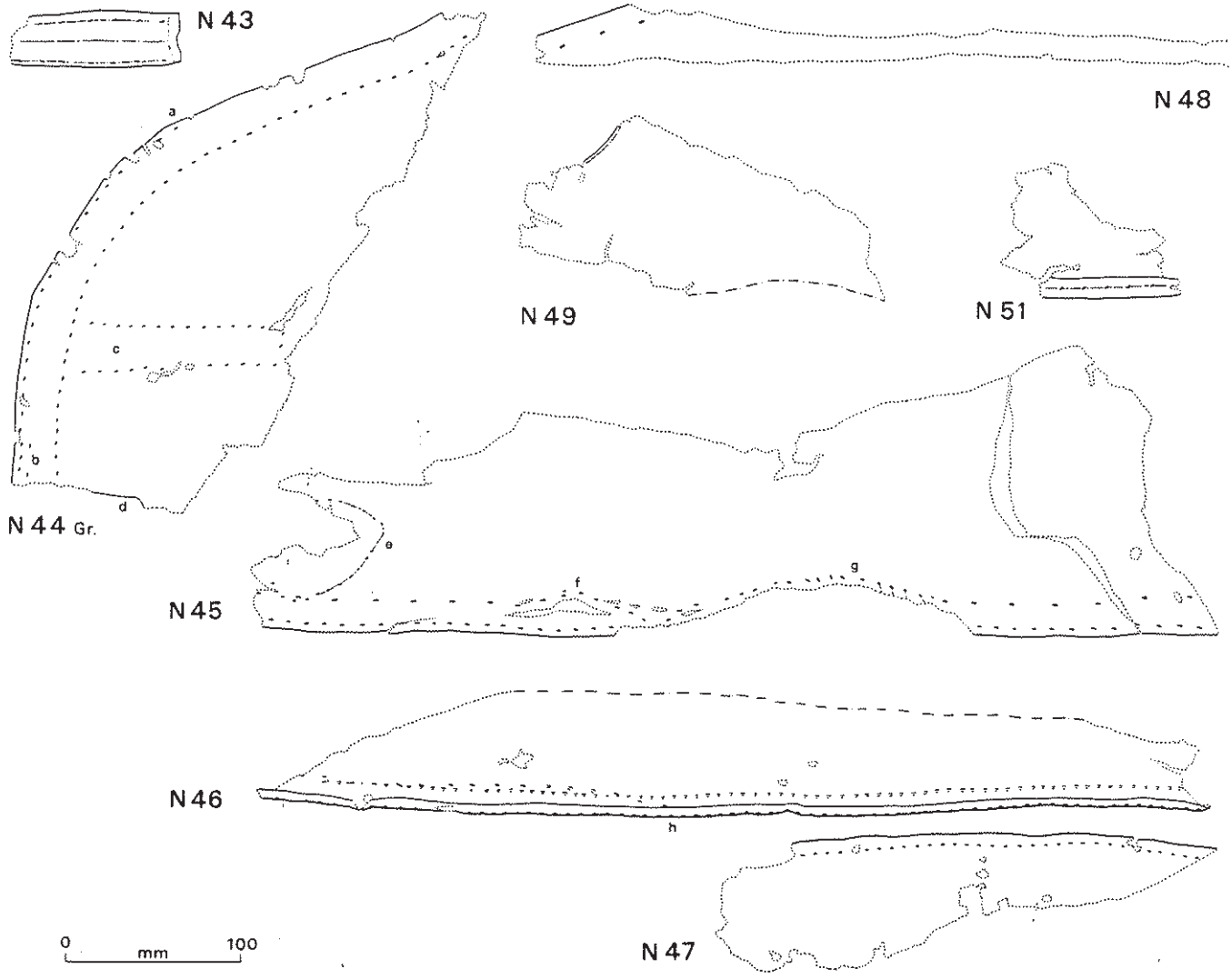

Fig 170 Stitched leather (scale 1:4)

of paired narrow slits, resembling tunnel stitches which have passed right through the leather.
L. 540mm+ W. 71mm+ Th. 0.75-1mm
LEL A 570 L 20D Period: 6C

N47 Panel fragment Fig 170
Single stitched edge: Seam NRb. The st/hs. are identically spaced to those on Number N46, and this piece may have joined N46 at its RH end.
L. 290mm+ W. 75mm+ Th. 0.75mm
LEL A 570 L 20C Period: 6C

Although they were found together, there is no obvious reason to connect Numbers N46 and N47 with N45. However, the hem on panel N45 is very similar to that on panel N28, where it was combined with a NR seam as found on N46/N47. The three panels could thus have formed part of a similar construction to that which produced N28. No basis for a connection between this group and panel N44 can be perceived at present.

N48 Panel fragment Fig 170
Narrow torn strip with 50mm of an original stitched edge at one end. Three st/hs. run at 10mm from the edge. The holes are 22-4mm apart and have no thr. imps. Possible Beaded Seam or IVa hem?
L. 446mm+ W. 35mm+ Th. 1-1.25mm
LEL A 570 L 20E Period: 6C

N49 Panel fragment Fig 170
A short curving section with small st/hs. and a continuous thr. imp. on the gr. side may be the site of a repair patch rather than an original panel edge, which it does not much resemble. The lower edge (slightly curving) appears to be secondary cutting; elsewhere the edges are torn.
L. 216mm+ W. 88mm+ Th. 1mm
LEL A 570 L 34 Period: 6C

N50 Panel fragment Not illustrated
Small torn fragment with seam stitching: possibly NRa(i).
L. 62mm+ W. 52mm+ Th. 0.75mm
LEL A 539 L 31 Period: 7B

N51 Panel fragment Fig 170
Torn fragment with 80mm of Hem Va stitching.
L. 93mm+ W. 77mm+ Th. 1mm
LEL A 534 L 22 Period: 7C-8D

N52 Panel fragment Fig 171
Secondary cutting along upper edge. Two rows of st/hs. at 4mm and 22mm from the edge, neither with thr. imps. The holes in the inner row are more widely spaced; possibly a IVb hem, cf Numbers N45 and N28.
L. 188mm+ W. 89mm+ Th. 1-1.25mm
LEL A 530 L 40B Period: 8C

N53 Panel fragment Fig 171
Two stitched edges at right angles, with secondary cutting parallel to the longer edge. Torn t/sts. are visible just below the cut edge, and

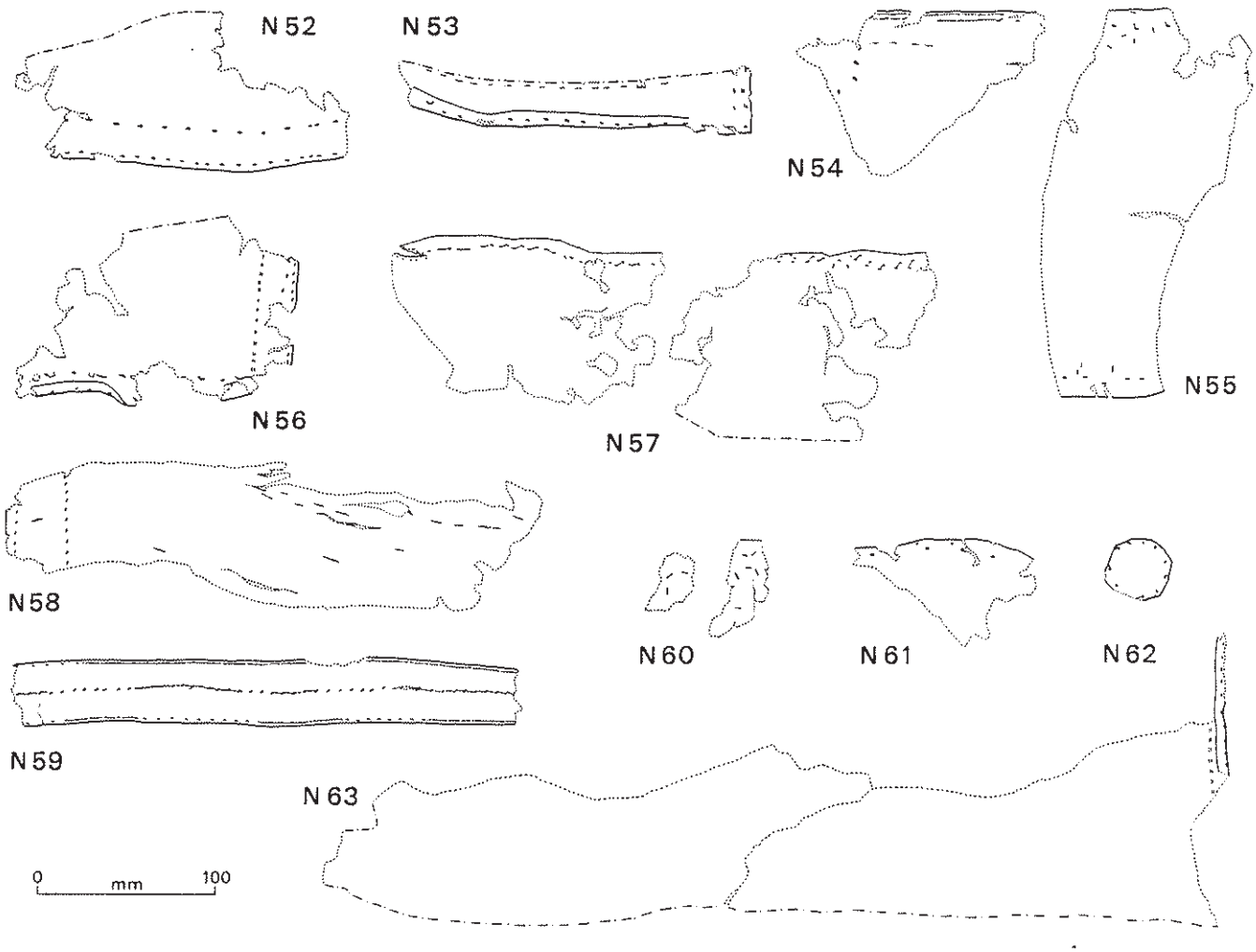

Fig 171 Stitched leather (scale 1:4)

the lower edge stitching was probably Seam NRa(ii) or IIIa(ii). This may be an example of the deliberate removal of the stitched edge(s) of a panel in order to re-use the interior. The shorter edge has two rows of stitching, both with faint thr. imps. on the gr. side. The row closest to the edge consists of paired narrow slits. It is unclear if this was a seam or a hem.
L. 195mm+ W. 26mm+ Th. 1.25-1.5mm
LEL A 530 L 40A Period: 8C

N54 Panel fragment Fig 171
Seam IIb(i). On the LH side two oval st/hs. appear to be part of a line running at 90° to the edge. A third hole, suggesting that this line curved round to the left, is suspect; the leather is delaminated and splitting here.
L. 136mm+ W. 93mm+ Th. 1mm
LEL A 530 L 42 Period: 8C

N55 Panel fragment Fig 171
Two parallel original edges, each with a line of irregularly spaced st/hs. at about 10mm from it. Neither has any thr. imps. Each edge also has a series of longer (2-4mm) narrow slits, either at right angles or slightly oblique to it. These do not resemble stitch holes. A further short portion of a cut (original?) edge occurs on the RH side, running at an angle of about 125° to the upper edge.
L. 218mm W. 99mm+ Th. 1.25mm
LEL A 530 L 23 Period: 8C

N56 Panel fragment Fig 25..8
Corner piece with two badly damaged stitched edges approximately at right angles. The lower edge resembles IIa(ii) or NRa(ii) seam stitching, while the RH edge appears to be Seam IIIb(i). Both are irregular, either in the spacing of their st/hs. or through the presence of extra holes, and both may have been modified by repair. Some 60mm of secondary cutting survives on the upper edge.
L. 155mm+ W. 102mm+ Th. 1.5mm
LEL A 502 L 15 Period: 8E

N57 Panel fragments Fig 171
Two torn pieces with similar stitching, possibly parts of a single stitched edge. On both pieces the edge of the leather is neither straight nor cleanly cut, suggesting that either the stitching is a repair, or the object was made from a re-used piece of leather. Both pieces have obliquely set pairs of st/hs., each pair being connected by a thr. imp. on the fl. side. This is a tacking stitch and implies that the edge would have been sewn to another piece of leather, overlapping it on the gr. side. On the RH piece there is secondary cutting along the lower edge, and the LH one has a small whip-stitched repair in its upper corner.
L. 300mm+ W. 105mm+ Th. 0.75-1mm
LEL A 519 L 13 Period: 8E

N58 Panel fragment Fig 171
Some 55mm of an original stitched edge survives; the other edges are torn. Two rows of stitching, at 6mm and 35mm from the edge, are both without thr. imps. It is unclear if the edge is a seam or a hem. The panel has a scatter of short straight incisions suggesting repeated damage from a sharp tool. These appear originally to be 6-8mm long, although many are extended by tearing.
L. 300mm+ W. 80mm+ Th. 1.75mm
LEL A 476 L 2 Period: 10

N59 Seam reinforcing strip Fig 171
Type III(i) strip with torn ends.
L. 285mm+ W. 36mm Th. 1mm
LEL A + L 46 Period: Unstratified

Old Bush Lane Trench B

N60 Appliqué or panel fragments Fig 171
Two small fragments with slit-like st/hs., possibly from a decorative motif as found on Numbers N33 and N36-N38. An arc of three st/hs. on the smaller piece could well belong to a central circle like that on Number N37. The larger piece has one cut end which may be part of an original edge.
L. 55mm+ W. 24mm+ Th. 0.5mm
OBL B 94 L 13 Period: 6 or later

N61 Panel fragment Fig 171
Two rows of stitching: i) very small holes, 1-2mm from the edge; ii) larger holes, 5-8mm from the edge. Both are without thr. imps. and the st/hs. in both cases are about 20mm apart. A possible interpretation is that this piece comes from a Beaded Seam with preliminary tacking (represented by the outer holes).
L. 102mm+ W. 60mm+ Th. 1mm
OBL B 94 L 14 Period: 6 or later

N62 Repair patch Fig 171
Roughly circular with edges cut in short straight sections. Whip-stitched around the edge (oblique thr. imps. running over the edge on the gr. side).
L. 35mm W. 34mm Th. ≤1mm
OBL B 108 L 11 Period: 6 or later

N63 Panel fragment Fig 171
Secondary cutting along the bottom and at LH end.
RH edge: Seam NRa(i) or IIa(i).
L. 510mm+ W. 115mm+ Th. 1.5mm
OBL B 115 L 8 Period: Unphased

CONCORDANCE OF CLASS 1 SMALL FINDS

Within each period the finds are arranged by phase and numerical order of context, and then in catalogue order.

Cat no	*Fig no*	*Simple name*	*Detail*	*Context no*	*SF no*	*Period*
Crown and Anchor Lane Trench A						
Period 2						
M105	160	Offcut	Group 1	CAL A 85	L42	2C
Period 3A						
C68		Binding		CAL A 80	Ae 3	3A
I95	131	Vessel	Square bottle	CAL A 80	G 70	3A
J10	136	Spoon		CAL A 80	B 1	3A
M78	157	Shoe	Stitched	CAL A 80	L 38	3A
M228	163	Offcut	Group 5	CAL A 80	L 39	3A
N1	166	Seam binding strip		CAL A 80	L 41	3A
Periods 3B and 3C						
I124	134	Bangle	Type 3a	CAL A 71	G 4	3B
K7	139	Box		CAL A 71	WD 22	3B
K11	141	Barrel head		CAL A 71	WD 23	3B
M1		Shoe	Nailed	CAL A 71	L 27	3B
M2		Shoe	Nailed	CAL A 71	L 30	3B
M3		Shoe	Nailed	CAL A 71	L 34	3B
M4		Shoe	Nailed	CAL A 71	L 35	3B
M5		Shoe	Nailed	CAL A 71	L 40	3B
M6	153	Shoe	Nailed	CAL A 71	L 49	3B
M72	156	Shoe	Sandal	CAL A 71	L 36	3B
M73	156	Shoe	Sandal	CAL A 71	L 37	3B
M84		Shoe	1-piece T-seam	CAL A 71	L 62	3B
N2	166	Repair patch		CAL A 71	L 61	3B
C40	102	Needle	Type 2a	CAL A 57	Ae 1	3C
M7	153	Shoe	Nailed	CAL A 57	L 31	3C
Period 4						
A5		Coin	*Dupondius*	CAL A 52	N 1	4A
M8		Shoe	Nailed	CAL A 52	L 11	4A
M9		Shoe	Nailed	CAL A 52	L 22	4A
M10		Shoe	Nailed	CAL A 52	L 7	4A
M106	160	Offcut	Group 1	CAL A 52	L 18	4A
M150	161	Offcut	Group 2/3	CAL A 52	L 6C	4A
M151	161	Offcut	Group 2/3	CAL A 52	L 6N	4A
M152	161	Offcut	Group 2/3	CAL A 52	L 6O	4A
M189	162	Offcut	Group 4	CAL A 52	L 6J	4A
M190	162	Offcut	Group 4	CAL A 52	L 6K	4A
M191	162	Offcut	Group 4	CAL A 52	L 6L	4A
M192	162	Offcut	Group 4	CAL A 52	L 6M	4A
M229	163	Offcut	Group 5	CAL A 52	L 6H	4A
M230	163	Offcut	Group 5	CAL A 52	L 15	4A
M231	163	Offcut	Group 5	CAL A 52	L 13	4A
N3	166	Repair patch		CAL A 52	L 57	4A
N4	166	Seam reinforcing strip		CAL A 52	L 17	4A
Period 5						
M159	161	Offcut	Group 2/3	CAL A 50	L 5	5
G54	120	Sharpening stone		CAL A 66	St 1	5
M74	156	Shoe	Sandal	CAL A 66	L 44	5
M107	160	Offcut	Group 1	CAL A 66	L 58	5
M108	160	Offcut	Group 1	CAL A 66	L 455	5
M153	161	Offcut	Group 2/3	CAL A 66	L 20B	5
M154	161	Offcut	Group 2/3	CAL A 66	L 25I	5
M155	161	Offcut	Group 2/3	CAL A 66	L 25K	5
M156	161	Offcut	Group 2/3	CAL A 66	L 19B	5
M157	161	Offcut	Group 2/3	CAL A 66	L 25G	5
M158	161	Offcut	Group 2/3	CAL A 66	L 25O	5
M160	161	Offcut	Group 2/3	CAL A 66	L 16B	5
M161	161	Offcut	Group 2/3	CAL A 66	L 16A	5
M162	161	Offcut	Group 2/3	CAL A 66	L 16C	5
M163	161	Offcut	Group 2/3	CAL A 66	L 8A	5
M193	162	Offcut	Group 4	CAL A 66	L 8J	5
M194	162	Offcut	Group 4	CAL A 66	L 8L	5
M195	162	Offcut	Group 4	CAL A 66	L 16J	5
M196	162	Offcut	Group 4	CAL A 66	L 16K	5
M197	162	Offcut	Group 4	CAL A 66	L 20C	5
M198	162	Offcut	Group 4	CAL A 66	L 21D	5
M199	162	Offcut	Group 4	CAL A 66	L 21C	5
M232	163	Offcut	Group 5	CAL A 66	L 19A	5
M233	163	Offcut	Group 5	CAL A 66	L 25A	5
M234	163	Offcut	Group 5	CAL A 66	L 25J	5
M235	163	Offcut	Group 5	CAL A 66	L 25F	5
M236	163	Offcut	Group 5	CAL A 66	L 25M	5
M237	163	Offcut	Group 5	CAL A 66	L 25E	5
M238	163	Offcut	Group 5	CAL A 66	L 25C	5
M239	163	Offcut	Group 5	CAL A 66	L 25B	5
M240	163	Offcut	Group 5	CAL A 66	L 25D	5
M241	163	Offcut	Group 5	CAL A 66	L 25P	5
N5	166	Seam binding strip		CAL A 66	L 24	5
M11		Shoe	Nailed	CAL A 66.2	L 48	5
M12		Shoe	Nailed	CAL A 66.2	L 53	5
M13		Shoe	Nailed	CAL A 66.2	L 56	5
N6	166	Panel frag		CAL A 66.2	L 51A	5
N7	166	Panel frag		CAL A 66.2	L 51C	5
N8		Panel frag		CAL A 66.2	L 51D	5
N9	166	Appliqué	Hexagonal	CAL A 66.2	L 51B	5
N10	166	Edge infill piece?		CAL A 66.2	L 55	5
N12	166	Seam reinforcing strip		CAL A 66.2	L 52	5
N11	166	Seam reinforcing strip		CAL A 66.3	L 54	5
M109	160	Offcut	Group 1	CAL A 17	L 3C	5B
M110	160	Offcut	Group 1	CAL A 17	L 3E	5B
M111	160	Offcut	Group 1	CAL A 17	L 3B	5B
M112	160	Offcut	Group 1	CAL A 17	L 3A	5B
M200	162	Offcut	Group 4	CAL A 17	L 3F	5B
Post-Roman						
F15	113	Mould	Strap-end	CAL A 64	CO 1	P-R
Unstratified						
K16	143	Spoon		CAL A 1	WD 21	Mod
K40	146	Unident obj		CAL A 1	WD 3	Mod
M201	162	Offcut	Group 4	CAL A +	L 2B	Uns
M202	162	Offcut	Group 4	CAL A +	L 2D	Uns
M203	162	Offcut	Group 4	CAL A +	L 2C	Uns
M204	162	Offcut	Group 4	CAL A +	L 2A	Uns
Crown and Anchor Lane Trench B						
Period 1B						
G7		Lithic	Blade frag	CAL B 6	St 1	1B

Cat no	Fig no	Simple name	Detail	Context no	SF no	Period
Unstratified						
N13	166	Seam reinforcing strip		CAL B 5	L 2	Uns
M113	160	Offcut	Group 1	CAL B +	L 1B	Uns
M114	160	Offcut	Group 1	CAL B +	L 1A	Uns
Crown and Anchor Lane Trench E						
Medieval						
G49	119	Building stone	Pilaster frag	CAL E 2	St 1	Med
A3		Coin	*Denarius*	CAL E 3	N 2	Med
A41		Coin	Radiate copy	CAL E 4	N 3	Med
A59		Coin	Constantinian	CAL E 4	N 1	Med
F12	110	Tile stamp	IMP	CAL E 4	-	Med
I119	133	Bead	Blue, biconical	CAL E 4	G 1	Med
C51		Stud	Domed	CAL E 6	Ae 2	Med
Old Grapes Lane Trench A						
Period 1						
G28		Lithic	Chip	OGL A 1173	St 27	1C
G14		Lithic	Flake	OGL A 1223	St 28	1C
Periods 3 and 4						
G4		Lithic	Core	OGL A 1117	St 34	3
G5		Lithic	Core	OGL A 1117	St 35	3
J21	137	Anvil		OGL A 990	B 18	4
G15		Lithic	Flake	OGL A 1149	St 37	4
K1		Comb		OGL A 1149	WD 357	4
Period 5						
F13	111	Antefix		OGL A 1022	CO 3	1-5
I90		Vessel	Cylind bottle	OGL A 1022	G 169	1-5
M22	154	Shoe	Nailed	OGL A 1022	L 58	1-5
M23		Shoe	Nailed	OGL A 1022	L 80	1-5
G16		Lithic	Flake	OGL A 1006	St 24	5
G26		Lithic	Chip	OGL A 1006	St 30	5
G29		Lithic	Lump	OGL A 1006	St 25	5
I45	129	Vessel	Jar/jug	OGL A 1006	G 170	5
J27	138	Point		OGL A 1006	B 17	5
J20	136	Modified metatarsus		OGL A 1099	B 16	5
Period 6						
M118	160	Offcut	Group 1	OGL A 257	L 37	4C-6B
E11	107	Offcut		OGL A 658	Pb 7	6
I140		Lump	Blue	OGL A 658	G 138	6
K9	139	Box		OGL A 658	WD 129	6
M14	153	Shoe	Nailed	OGL A 685	L 15	6
A7		Coin	*As*	OGL A 707	N 22	6
G23	114	Lithic	Flake	OGL A 718	St 17	6
L1		Woven object		OGL A 722	T 1	6
D2	105	Stylus		OGL A 732	Fe 22	6
C55		Stud	Dome-headed	OGL A 737	Ae 63	6
M15	153	Shoe	Nailed	OGL A 737	L 22	6
M16	153	Shoe	Nailed	OGL A 737	L 26	6
M115	160	Offcut	Group 1	OGL A 737	L 30A	6
M116	160	Offcut	Group 1	OGL A 737	L 30B	6
N15	167	Panel frag		OGL A 737	L 27	6
C74		Ring		OGL A 745	Ae 60	6
M244	163	Offcut	Group 5	OGL A 748	L 23	6
I71	130	Vessel	Bottle	OGL A 749	G 151	6
M17		Shoe	Nailed	OGL A 749	L 31	6
N19	167	Appliqué	Circular	OGL A 749	L 25	6
N20	167	Panel frag		OGL A 749	L 35B	6
N21	167	Panel frag		OGL A 749	L 35A	6
M18		Shoe	Nailed	OGL A 750	L 28	6
M85	158	Shoe	1-piece T-seam	OGL A 750	L 29	6
M117	160	Offcut	Group 1	OGL A 755	L 43E	6
M164	161	Offcut	Group 2/3	OGL A 755	L 48	6
M165	161	Offcut	Group 2/3	OGL A 755	L 43D	6
M168	161	Offcut	Group 2/3	OGL A 755	L 45A	6
M169	161	Offcut	Group 2/3	OGL A 755	L 45B	6
M170	161	Offcut	Group 2/3	OGL A 755	L 45C	6
M171	161	Offcut	Group 2/3	OGL A 755	L 45E	6
M243	163	Offcut	Group 5	OGL A 755	L 43B	6
N16	167	Seam reinforcing strip		OGL A 755	L 38B	6
N17	167	Panel frags		OGL A 755	L 38A	6
K39		Disc		OGL A 759	WD 107	6
M208	162	Offcut	Group 4	OGL A 759	L 34H	6
M209	162	Offcut	Group 4	OGL A 759	L 34I	6
M242	163	Offcut	Group 5	OGL A 759	L 34N	6
G55	120	Whetstone		OGL A 765	St 22	6
M19		Shoe	Nailed	OGL A 765	L 60	6
M166	161	Offcut	Group 2/3	OGL A 765	L 53A	6
M167	161	Offcut	Group 2/3	OGL A 765	L 53B	6
I60		Vessel	Base	OGL A 776	G 20	6
M80	157	Shoe	Stitched	OGL A 777	L 50	6
M86		Shoe	1-piece T-seam	OGL A 783	L 47	6
M20		Shoe	Nailed	OGL A 785	L 59	6
N14	167	Panel frag		OGL A 785	L 46	6
C56		Stud	Dome-headed	OGL A 787	Ae 69	6
J17	136	Knife	Handle only	OGL A 787	B 19	6
K27		Writing tablet?		OGL A 787	WD 206	6
K41	147	Unident obj		OGL A 787	WD 207	6
E8		Strip		OGL A 800	Pb 8	6
G17		Lithic	Flake	OGL A 803	St 26	6
N18	167	Panel frag		OGL A 803	L 54	6
D3	105	Stylus		OGL A 805	Fe 23	6
G1	114	Lithic	Knife	OGL A 812	St 18	6
C4		Brooch	Wire headloop	OGL A 817	Ae 64	6
M205	162	Offcut	Group 4	OGL A 822	L 51C	6
M206	162	Offcut	Group 4	OGL A 822	L 51A	6
M207	162	Offcut	Group 4	OGL A 822	L 51B	6
M21		Shoe	Nailed	OGL A 825	L 49	6
I74		Vessel	Bottle	OGL A 844	G 157	6
K44	149	Unident obj		OGL A 858	WD 112	6
K10	140	Furniture		OGL A 959	WD 120	6
I42		Vessel	Jar	OGL A 968	G 159	6
C35		Spoon	Round bowl	OGL A 1002	Ae 67	6
G8		Lithic	Blade	OGL A 1014	St 23	6
M75		Shoe	Sandal	OGL A 1021	L 62	6
M79	157	Shoe	Stitched	OGL A 1021	L 57	6
F9		Inkwell	Samian	OGL A 666	-	6?
Periods 7 and 7-8						
K2		Comb		OGL A 651	WD 106	7A
K43	148	Unident obj		OGL A 659	WD 69	7A
G9		Lithic	Blade frag	OGL A 672	St 13	7A
G27		Lithic	Chip	OGL A 672	St 12	7A
M24	154	Shoe	Nailed	OGL A 497	L 77	7A-B
F1		Lamp		OGL A 717	CO 5	7A-8C
I130		Counter	White & orange	OGL A 717	G 9	7A-8C
K3		Comb		OGL A 717	WD 128	7A-8C
M37		Shoe	Nailed	OGL A 717	L 21	7A-8C
A16		Coin	*Sestertius*	OGL A 633	N 21	7B
I33	129	Vessel	Cup	OGL A 705	G 148	7B-8C
M25		Shoe	Nailed	OGL A 705	L 36	7B-8C
J4		Pin	Type 2	OGL A 706	B 12	7B-8C
Periods 8, 8-9 and 9						
M26		Shoe	Nailed	OGL A 629	L 11	8A
M76		Shoe	Sandal	OGL A 629	L 61	8A
M27	154	Shoe	Nailed	OGL A 631	L 10	8A
M28		Shoe	Nailed	OGL A 454	L 33	8A-9E

Cat no	Fig no	Simple name	Detail	Context no	SF no	Period
G18	114	Lithic	Flake	OGL A 627	St 10	8B
I9	127	Vessel	Jug/jar	OGL A 498	G 160	8B-C
J18		Needle		OGL A 470	B 22	8C
N22	167	Panel	Decorated	OGL A 470.2	L 7	8C
M29		Shoe	Nailed	OGL A 474	L 13	8C
M30		Shoe	Nailed	OGL A 474	L 16	8C
C82	104	Harness	Pendant: type 5c	OGL A 487	Ae 61	8C
I13		Vessel	Jug/jar?	OGL A 487	G 121	8C
I120	133	Bead	Annular	OGL A 487	G 8	8C
M31		Shoe	Nailed	OGL A 487	L 18	8C
M32		Shoe	Nailed	OGL A 487	L 63	8C
M87	158	Shoe	1-piece T-seam	OGL A 487	L 17	8C
C25	100	Toilet implement		OGL A 487.3	Ae 62	8C
I125	134	Bangle	Type 3a	OGL A 452	G 7	9A-B
I97		Vessel	Square bottle	OGL A 463	G 118	9A-D
C11	98	Brooch	Umbonate	OGL A 469	Ae 57	9A-D
M33	154	Shoe	Nailed	OGL A 485	L 6	9D
C6	98	Brooch	Penann: type A2	OGL A 429	Ae 54	9E
I109		Vessel	Prismatic bottle	OGL A 429	G 109	9E
C2	98	Brooch	Thealby-type	OGL A 436	Ae 53	9E
C23		Toilet spoon		OGL A 445	Ae 56	9E
I48		Vessel	Jug	OGL A 445	G 114	9E
I72	130	Vessel	Bottle	OGL A 445	G 113	9E
J11		Counter	Type 1	OGL A 446	B 10	9E
M34		Shoe	Nailed	OGL A 465	L 55	9E
I32	129	Vessel	Cup/bowl?	OGL A 194	G 98	9E or earlier
J1		Pin	Type 1	OGL A 379	B 8	9G

Period 10

C20	100	Chatelaine		OGL A 343	Ae 43	10A
I99	131	Vessel	Square bottle	OGL A 367	G 205	10A
C69		Binding		OGL A 380. 2	Ae 70	10A
D12	106	T-clamp		OGL A 332	Fe 17	10B
J23	138	Stamp		OGL A 206	B 5	10D-E
I1	127	Vessel	Bowl	OGL A 315	G 3	10E
I1	127	Vessel	Bowl	OGL A 314	G 4	10F

Periods 10-11 and 11

I1	127	Vessel	Bowl	OGL A 158	G 2	10F-11
C16		Pin	Group 1	OGL A 205	Ae 19	10F-11
I1	127	Vessel	Bowl	OGL A 205	G 1	10F-11
B1	98	Pin	Head only	OGL A 64	Au 1	11
C9	98	Brooch	Penann: type D	OGL A 64	Ae 16	11
C30	101	Vessel	Flagon lid	OGL A 64	Ae 9	11
G19		Lithic	Unworked flake	OGL A 64	St 5	11

Period 12

E1	107	Lead tag		OGL A 122	Pb 2	12A
E4	107	Sheathing		OGL A 122	Pb 3	12A
F2		Lamp		OGL A 122	CO 4	12A
F10		Inkwell	Samian	OGL A 122	-	12A
I75		Vessel	Bottle	OGL A 122	G 79	12A
I70		Vessel	Bottle	OGL A 38	G 65	12A-B
F3	108	Lamp		OGL A 114	CO 1	12A-B
I46	129	Vessel	Jug	OGL A 114	G 73	12A-B
J5		Pin	Type 2	OGL A 114	B 3	12A-B
J19		Needle		OGL A 114	B 4	12A-B
M93		Shoe	Uncertain	OGL A 132	L 19	12A-B
G35	116	Quern	Lower stone	OGL A 165	St 3	12B

Period 13

M245	163	Offcut	Group 5	OGL A 5	L 79	13
M99		Shoe	Turnshoe	OGL A 5.2	L	13
A28		Coin	*Dupondius*	OGL A 9	N 3	13
M210	162	Offcut	Group 4	OGL A 30	L 1	13
C21	100	Nail cleaner		OGL A 32	Ae 7	13
G3	114	Lithic	End scraper	OGL A 32	St 4	13
C26		Tweezers		OGL A 33	Ae 14	13
A26		Coin	*Sestertius*	OGL A 36	N 4	13
C75		Ring		OGL A 36	Ae 11	13
I5	127	Vessel	Body frag	OGL A 36	G 26	13
I12	127	Vessel	Base	OGL A 36	G 63	13
J2		Pin	Type 1	OGL A 36	B 2	13
M100		Shoe	Turnshoe	OGL A 181	L 3	13
J30		Utilized antler		OGL A 181.1	B 7	13
C66	103	Lock	Lockbar	OGL A 183	Ae 52	13
A17		Coin	*Sestertius*	OGL A 185	N 20	13
I96	131	Vessel	Square bottle	OGL A 190	G 162	13
F14	112	Crucible		OGL A 1237	-	13
I15	128	Vessel	Body	OGL A 308	G 104	13
J24	138	Spindle whorl		OGL A 1237.3	B 21	13
K32		Peg		OGL A 1237.3	WD 262	13
K33		Peg		OGL A 1237.5	WD 372	13
M96	159	Shoe	Turnshoe	OGL A 1237.6	L 70	13
K29	145	Peg		OGL A 1237.7	WD 424	13
K30	145	Peg		OGL A 1237.7	WD 475	13
K31	145	Peg		OGL A 1237.7	WD 418	13
K42		Unident obj		OGL A 1237.7	WD 407	13
M97		Shoe	Turnshoe	OGL A 1237.7	L 71	13
M98		Shoe	Turnshoe	OGL A 1237.7	L 78	13

Unstratified

I108		Vessel	Prismatic bottle	OGL A 1195	G 15	6 or later
I73		Vessel	Bottle	OGL A 191	G 92	9G or later
A30		Coin	*Dupondius*	OGL A 2	N 1	Modern
A56		Coin	Crispus	OGL A 2	N 16	Modern
A68		Coin	Illegible	OGL A 2	N 15	Modern
A71		Coin	Charles I	OGL A 2	N 2	Modern
C32	101	Vessel handle attachment		OGL A 2	Ae 3	Modern
E9		Strip		OGL A 2	Pb 1	Modern
F6		Counter	Samian	OGL A 2	-	Modern
F11		Inkwell	Samian	OGL A 2	-	Modern
G34	116	Quern	Upper stone	OGL A 2	St 1	Modern
I1	127	Vessel	Bowl	OGL A 2	G 218	Modern
I29	129	Vessel	Cup	OGL A 2	G 44	Modern
I30	129	Vessel	Cup	OGL A 2	G 42	Modern
I62	129	Vessel	Cup	OGL A 2	G 40	Modern
I67	130	Vessel	Flask?	OGL A 2	G 50	Modern
I98	131	Vessel	Square bottle	OGL A 2	G 53	Modern
I100	131	Vessel	Square bottle	OGL A 2	G 52	Modern
J31		Utilized antler		OGL A 2	B 1	Modern
M246	163	Offcut	Group 5	OGL A 2	L 75	Modern
J28	138	Unident obj		OGL A 153	B 23	Modern
C57		Stud	Dome-headed	OGL A 430	Ae 59	Unphased
I6	127	Vessel	Bowl	OGL A 430	G 10	Unphased
M35	154	Shoe	Nailed	OGL A 430	L 67	Unphased
K22		Writing tablet	Type 1ii	OGL A 430.1	WD 109	Unphased
K26		Writing tablet?		OGL A 430.	WD 108	Unphased
M36	154	Shoe	Nailed	OGL A 430.2	L 4	Unphased
C38	102	Stylus		OGL A 515	Ae 33	Unphased
D10		Fitting		OGL A 559	Fe 18	Unphased
-		Counter	Samian	OGL A 564	-	Unphased
N23	167	Shield cover edge frag?		OGL A 626	L 8	Unphased
K14	143	Bung		OGL A 850	WD 110	Unphased
G20	114	Lithic	Flake	OGL A 1105.2	St 31	Unphased
N24	167	Panel frag		OGL A 1105.2	L 65A	Unphased
N25	167	Seam reinforcing strip		OGL A 1105.2	L 65B	Unphased
G47	118	Building stone	Pillar base?	OGL A 1240	St 38	Unphased
G46	118	Building stone	Pillar base	OGL A 1244	St 36	Unphased
A40		Coin	Radiate copy	OGL A +	N 25	Uns
A69		Coin	Illegible	OGL A +	N 17	Uns
A80		Coin	New penny	OGL A +	N 23	Uns
C44	102	Thimble		OGL A +	Ae 58	Uns
C89	104	Unident obj		OGL A +	Ae 36	Uns
F4	108	Lamp		OGL A +	CO 2	Uns
G13	114	Lithic	Arrowhead	OGL A +	St 19	Uns
G21		Lithic	Flake	OGL A +	St 29	Uns
G48	118	Building stone	Pilaster frag	OGL A +	St 33	Uns

Cat no	Fig no	Simple name	Detail	Context no	SF no	Period
I1	127	Vessel	Bowl	OGL A +	G 5	Uns
I39	129	Vessel	Body and base	OGL A +	G 171	Uns
I47		Vessel	Jug	OGL A +	G 173	Uns

Old Grapes Lane Trench A West

Periods West 1 and West 2

I69	130	Vessel	Bottle	OGL A 558	G 133	West 1
I107		Vessel	Prismatic bottle	OGL A 558	G 131	West 1
J3		Pin	Type 1 (variant)	OGL A 558	B 9	West 1
A34		Coin	Radiate copy	OGL A 532	N 24	West 2
A42		Coin	Radiate copy	OGL A 532	N 18	West 2
A43		Coin	Radiate copy	OGL A 532	N 19	West 2
C39	102	Bridle-bit	2-link snaffle	OGL A 532	Ae 44	West 2
C60	103	Stud		OGL A 532	Ae 42	West 2
I129	135	Counter	White	OGL A 532	G 6	West 2
C59		Stud		OGL A 537	Ae 47	West 2

Period West 3

C76		Ring		OGL A 514	Ae 31	West 3
G36	116	Quern	Lower stone	OGL A 528	St 16	West 3
C63		Rivet		OGL A 543	Ae 34	West 3
C85		Sheet		OGL A 543	Ae 39	West 3
I31		Vessel	Bowl/plate	OGL A 543	G 128	West 3
I38	129	Vessel	Bowl	OGL A 543	G 224	West 3
I106	132	Vessel	Prismatic bottle	OGL A 543	G 127	West 3

Periods West 4 and West 5

C12	99	Brooch	Disc, enamelled	OGL A 542	Ae 41	West 4
A39		Coin	Radiate copy	OGL A 513	N 11	West 5
A60		Coin	Constantinian	OGL A 513	N 13	West 5
A61		Coin	Constantinian	OGL A 513	N 14	West 5
A67		Coin	Illegible	OGL A 513	N 12	West 5
C61		Stud		OGL A 513	Ae 29	West 5
I37	129	Vessel	Jug	OGL A 513	G 14	West 5
I101	131	Vessel	Square bottle	OGL A 513	G 13	West 5

Period West 7

A27		Coin	*Sestertius*	OGL A 199	N 7	West 7
A33		Coin	*Antoninianus*	OGL A 199	N 5	West 7
A44		Coin	Radiate copy	OGL A 199	N 9	West 7
A57		Coin	Crispus	OGL A 199	N 10	West 7
A63		Coin	Constantinian	OGL A 199	N 6	West 7
A64		Coin	Constantinian	OGL A 199	N 8	West 7
C14		Buckle	Fragments	OGL A 199	Ae23	West 7
C64		Tag		OGL A 199	Ae20	West 7
E2	107	Spindle whorl		OGL A 199	Pb 5	West 7
G6		Lithic	Core	OGL A 199	St 7	West 7
G56	120	Whetstone		OGL A 199	St 6	West 7
J29		Utilized antler		OGL A 199	B 6	West 7

Old Grapes Lane Trench B

Period 1

G10		Lithic	Blade	OGL B 335	St 5	1B
G11		Lithic	Blade	OGL B 335	St 7	1B
G24		Lithic	Flake	OGL B 335	St 6	1B

Period 2

M81	157	Shoe	Stitched	OGL B 294.1	L 28	2B

Period 3

C36		Spoon	Round bowl?	OGL B 289	Ae 14	3
C58		Stud	Domed	OGL B 290	Ae 13	3
G25		Lithic	Flake	OGL B 290	St 9	3
G30		Lithic	Fragment	OGL B 290	St 8	3
J12	136	Counter	Type 1	OGL B 290	B 7	3
K15	143	Bung		OGL B 290	WD 90	3

Period 4

I114		Vessel	Prismatic bottle	OGL B 233	G 56	4A
K45	150	Unident obj		OGL B 244	WD 45	4C
M172	161	Offcut	Group 2/3	OGL B 229	L 20B	4E
M173	161	Offcut	Group 2/3	OGL B 229	L 20C	4E
M174	161	Offcut	Group 2/3	OGL B 229	L 20H	4E
M175	161	Offcut	Group 2/3	OGL B 229	L 20J	4E
M247	163	Offcut	Group 5	OGL B 229	L 20E	4E
M248	163	Offcut	Group 5	OGL B 229	L 20I	4E
J22	138	Double-point		OGL B 222	B 6	4E-F

Period 5A

C73		Pierced sheet		OGL B 184	Ae 16	5A
I51		Vessel	Jug	OGL B 184	G 45	5A
I91		Vessel	Cylind bottle	OGL B 184	G 46	5A
M119	160	Offcut	Group 1	OGL B 184	L 34	5A
M121	160	Offcut	Group 1	OGL B 184	L 11A	5A
M122	160	Offcut	Group 1	OGL B 184	L 11B	5A
M176	161	Offcut	Group 2/3	OGL B 184	L 36C	5A
M177	161	Offcut	Group 2/3	OGL B 184	L 11E	5A
M249	163	Offcut	Group 5	OGL B 184	L 11C	5A
M250	163	Offcut	Group 5	OGL B 184	L 36A	5A
M38		Shoe	Nailed	OGL B 184.3	L 15	5A
M39		Shoe	Nailed	OGL B 184.3	L 17	5A
M77	156	Shoe	Sandal	OGL B 184.3	L 33	5A
K17	143	Disc		OGL B 184.4	WD 38	5A
M40	154	Shoe	Nailed	OGL B 184.4	L 16	5A
H1	123	Bead	Barrel-shaped	OGL B 186	JS 1	5A
I11		Vessel	Jug/jar	OGL B 186	G 57	5A
I49	129	Vessel	Jug	OGL B 186	G 50	5A
K46	151	Unident obj		OGL B 186	WD 34	5A
G2	114	Lithic	Knife	OGL B 188	St 3	5A
I83		Vessel	Bottle	OGL B 188	G 53	5A
I113		Vessel	Prismatic bottle	OGL B 188	G 52	5A
I121		Bead	Frit melon bead	OGL B 188	G 3	5A
I131		Counter	White	OGL B 188	G 4	5A
K4		Comb		OGL B 188	WD 40	5A
K12		Barrel head	Small	OGL B 188	WD 97	5A
M41	154	Shoe	Nailed	OGL B 188	L 12	5A
M120	160	Offcut	Group 1	OGL B 188	L 25	5A
C65	103	Terminal		OGL B 197	Ae 12	5A

Period 5B

H2	123	Bead	Trapezoidal	OGL B 173	JS 2	5B
I10	127	Vessel	Jug/jar	OGL B 173	G 79	5B
M42	154	Shoe	Nailed	OGL B 173	L 13	5B
M43		Shoe	Nailed	OGL B 173	L 24	5B
C13	100	Finger-ring	Spiral	OGL B 175	Ae 10	5B
A20		Coin	*Dupondius*	OGL B 181	N 5	5B
M44		Shoe	Nailed	OGL B 181	L 9	5B
M45		Shoe	Nailed	OGL B 185	L 10	5B
C72	104	Ornamental mount		OGL B 189	Ae 11	5B
N26		Panel frag		OGL B 196	L 14	5B
K34		Peg		OGL B 203	WD 33	5B

Period 5C

K5		Comb		OGL B 166	WD 29	5C
K38		Handle?		OGL B 166	WD 30	5C

Cat no	Fig no	Simple name	Detail	Context no	SF no	Period
M46		Shoe	Nailed	OGL B 166	L 32	5C

Periods 6A to 6E

G37		Quern	Lower stone	OGL B 142	St 4	6B
I19		Vessel	Body	OGL B 62	G 65	6C
J6	136	Pin	Type 2	OGL B 98	B 5	6C
I50		Vessel	Jug	OGL B 130	G 106	6C
I77	130	Vessel	Bottle	OGL B 130	G 38	6C
I81		Vessel	Bottle	OGL B 130	G 68	6C
K37		Unident obj		OGL B 130	WD 23	6C
C52	103	Stud		OGL B 97	Ae 19	6D
C8	98	Brooch	Penann: type B1	OGL B 32	Ae 9	6E
A1		Coin	*Denarius*	OGL B 79	N 3	6E

Period 6F

C48	103	Stud	Bun-headed	OGL B 36	Ae 66	6F
I2		Vessel	Bowl	OGL B 36	G 2	6F
I34		Vessel	Body and base	OGL B 76	G 33	6F

Period 7A

I61		Vessel	Base	OGL B 51	G 63	7A

Period 7B

A24		Coin	*Dupondius*	OGL B 15	N 2	7B
C7	98	Brooch	Penann: type A2	OGL B 15	Ae 4	7B
C88		Strip		OGL B 15	Ae 2	7B
I7	127	Vessel	Jug/flask	OGL B 15	G 103	7B
I66	130	Vessel	Flask	OGL B 15	G 9	7B
I82		Vessel	Bottle	OGL B 15	G 10	7B
I112		Vessel	Prismatic bottle	OGL B 15	G 89	7B
I132		Counter	Blue/green	OGL B 15	G 1	7B
G58	120	Whetstone		OGL B 20	St 2	7B
I79	130	Vessel	Bottle	OGL B 20	G 95	7B
J14	136	Counter	Type 2	OGL B 20	B 4	7B

Period 8A

-		Counter	Samian	OGL B 25	-	8A
I110	132	Vessel	Prismatic bottle	OGL B 25	G 16	8A
I111		Vessel	Prismatic bottle	OGL B 27	G 78	8A
D11	105	Nail		OGL B 28	Fe 1	8A

Period 8B

I80		Vessel	Bottle	OGL B 23	G 81	8B

Period 9

M101	159	Shoe	Turnshoe	OGL B 56	L 8	6F-9
I8	127	Vessel	Jug	OGL B 1	G 6	9
J32		Utilized antler		OGL B 1	B 8	9
M251	163	Offcut	Group 5	OGL B 3	L 35	9
M102	159	Shoe	Turnshoe	OGL B 5	L 2	9
M103		Shoe	Turnshoe	OGL B 6	L 3	9
G31		Lithic	Piece	OGL B 8	St 1	9
K35	145	Peg		OGL B 8	WD 7	9
K36		Peg		OGL B 8	WD 6	9
M211	162	Offcut	Group 4	OGL B 8	L 31	9
M123	160	Offcut	Group 1	OGL B 10	L 7	9

Unstratified

A45		Coin	Radiate copy	OGL B +	N 1	Uns
D14	106	Unident obj		OGL B +	Fe 2	Uns
I18		Vessel	Body	OGL B +	G 82	Uns
I76	130	Vessel	Bottle	OGL B +	G 59	Uns
I78	130	Vessel	Bottle	OGL B +	G 74	Uns
J25	138	Toggle		OGL B +	B 3	Uns
M104		Shoe	Turnshoe	OGL B +	L 5	Uns
N27	168	Sling?		OGL B +	L 30	Uns

Old Grapes Lane Trench C

Periods 2 and 2?

I84		Vessel	Bottle	OGL C 4	G 8	2
M47		Shoe	Nailed	OGL C 4	L 6	2
M178	161	Offcut	Group 2/3	OGL C 4	L 5O	2
M179	161	Offcut	Group 2/3	OGL C 4	L 5R	2
M180	161	Offcut	Group 2/3	OGL C 4	L 5A	2
M181	161	Offcut	Group 2/3	OGL C 4	L 5M	2
M182	161	Offcut	Group 2/3	OGL C 4	L 5I	2
M212	162	Offcut	Group 4	OGL C 4	L 5N	2
M213	162	Offcut	Group 4	OGL C 4	L 5K	2
M214	162	Offcut	Group 4	OGL C 4	L 5Q	2
M215	162	Offcut	Group 4	OGL C 4	L 5L	2
M216	162	Offcut	Group 4	OGL C 4	L 5P	2
N39	169	Panel frags		OGL C 35	L 28A	2
N40	169	Hem binding strip		OGL C 35	L 28B	2
I64	130	Vessel	Unguent bottle	OGL C 51	G 10	2
M48	154	Shoe	Nailed	OGL C 51	L 24	2
M49		Shoe	Nailed	OGL C 51	L 33	2
M50	154	Shoe	Nailed	OGL C 53	L 26	2
N36	169	Panel frag		OGL C 56	L 30B	2
N37	169	Edge infill piece		OGL C 56	L 30A	2
N38	169	Seam reinforcing strip		OGL C 56	L 30C	2
N41	169	Panel frag		OGL C 60	L 25A	2
M52		Shoe	Nailed	OGL C 6	L 11	2 or 2?
M53		Shoe	Nailed	OGL C 6	L 12	2 or 2?
M54		Shoe	Nailed	OGL C 6	L 14	2 or 2?
M51		Shoe	Nailed	OGL C 3	L 8	2?
M124	160	Offcut	Group 1	OGL C 3	L 7	2?
N28	168	Large panel	Rectangular	OGL C 62	L 27A	2?
N29	168	Edge infill piece		OGL C 62	L 27H	2?
N30	168	Seam reinforcing strip		OGL C 62	L 27F	2?
N31	168	Seam reinforcing strip		OGL C 62	L 27E	2?
N32	168	Panel frag		OGL C 62	L 27D	2?
N33	168	Appliqué	Roughly square	OGL C 62	L 27B	2?
N34	168	Appliqué	Circular	OGL C 62	L 27C	2?
N35	168	Hem binding strip		OGL C 62	L 27G	2?

Period 3?

A21		Coin	*Dupondius*	OGL C 5	N 3	3?
A25		Coin	*As*	OGL C 5	N 4	3?
M55		Shoe	Nailed	OGL C 5	L 9	3?
M56	155	Shoe	Nailed	OGL C 5	L 10	3?
M57	155	Shoe	Nailed	OGL C 20	L 16	3?
M183	161	Offcut	Group 2/3	OGL C 20	L 15	3?
M125	160	Offcut	Group 1	OGL C 22	L 19	3?
M252	163	Offcut	Group 5	OGL C 22	L 22	3?

Period Post-3

I20	128	Vessel	Cup/bowl	OGL C 65	G 11	Post-3

Unstratified

A77		Coin	Penny	OGL C +	N 1	Uns
A78		Coin	Halfpenny	OGL C +	N 2	Uns
C37	102	Weight		OGL C +	Ae 4	Uns
C81	104	Strap end/apron mount		OGL C +	Ae 1	Uns
C86		Sheet		OGL C +	Ae 5	Uns
D15		Unident obj		OGL C +	Fe 3	Uns
J13		Counter	Type 1	OGL C +	B 1	Uns
K47	151	Unident obj		OGL C +	WD 25	Uns
M58	155	Shoe	Nailed	OGL C +	L 18	Uns

Cat no	Fig no	Simple name	Detail	Context no	SF no	Period
M59		Shoe	Nailed	OGL C +	L 29	Uns
M60		Shoe	Nailed	OGL C +	L 35	Uns
M82		Shoe	Stitched	OGL C +	L 20	Uns
M83	157	Shoe	Stitched	OGL C +	L 21	Uns
N42		Panel frag		OGL C +	L 4A	Uns
C70		Binding		OGL C 1	Ae 3	Uns
M126	160	Offcut	Group 1	OGL C 2	L 1	Uns

Old Grapes Lane Trench D

Unstratified

C1		Brooch	Trumpet	OGL D +	Ae 1	Uns

Old Grapes Lane Trench J

Period 2

M88		Shoe	1-piece T-seam	OGL J 33	L 1	2

Period Post-2

A2		Coin	*Sestertius*	OGL J 11	N 1	Post-2
I102	132	Vessel	Square bottle	OGL J 11	G 6	Post-2

Period Medieval

C15	100	Buckle		OGL J 1	Ae 1	Med

Clack Trench 1

Period 3

C90		Unident obj		Clack 1 66	Ae 9	3

Period 4

I115	122	Vessel	Bottle	Clack 1 68	G 38	4

Period 7

A53		Coin	Constantine 1	Clack 1 65	N 3	7

Period 10

D9	105	Fitting	Collar	Clack 1 42	Fe 1	10A
C34	101	Vessel	Leg	Clack 1 33	Ae 2	10B
C77		Ring		Clack 1 33	Ae 11	10B

Period 11

A72		Coin	Halfpenny	Clack 1 2	N 2	11
A79		Coin	Sixpence	Clack 1 2	N 1	11

Unstratified

A8		Coin	*As*	Clack 1 +	N6	Uns

Clack Trench 2

Period 10

A46		Coin	Radiate	Clack 2 20	N1	10A
C91		Unident obj		Clack 2 37	Ae 1	10A
G52		Building stone		Clack 2 22	St 1	10A
I52		Vessel	Jug	Clack 2 30	G 12	10B

Cat no	Fig no	Simple name	Detail	Context no	SF no	Period

Period 11

A73		Coin	Halfpenny	Clack 2 2	N 2	11
A74		Coin	Halfpenny	Clack 2 2	N 3	11
A76		Coin	Penny	Clack 2 2	N 4	11

Lewthwaite's Lane Trench A

Period 1

G12		Lithic	Blade frag	LEL A 642	St 21	1

Periods 2 to 5

D16	106	Unident obj		LEL A 600	Fe 22	2C
I16	128	Vessel	Beaker	LEL A 606	G 11	2C
I17	128	Vessel	Beaker	LEL A 606	G 12	2C
I127	134	Bangle	Type 3i	LEL A 604	G 14	4
C62	103	Stud	Lion-headed	LEL A 599	Ae 71	5
I68	130	Vessel	Flask	LEL A 599	G 85	5
I89		Vessel	Bottle	LEL A 599	G 159	5
K19		Writing tablet	Type 1i	LEL A 599	WD 81	5
K23		Writing tablet	Type 1ii	LEL A 599	WD 80	5
I126	134	Bangle	Type 3a	LEL A 603	G 9	5

Period 6

C42	102	Needle		LEL A 591	Ae 69	3-6A
M61		Shoe	Nailed	LEL A 580	L 35	6A
C71	104	Binding		LEL A 607	Ae 73	6A
I137		Counter	Black	LEL A 607	G 13	6A
K20		Writing tablet	Type 1ii	LEL A 607	WD 108	6A
K21		Writing tablet	Type 1i	LEL A 607	WD 111	6A
K24		Writing tablet	Type 1ii	LEL A 607	WD 107	6A
D8	105	Needle	Type 3	LEL A 612	Fe 23	6A
I65		Vessel	Unguent bottle	LEL A 602	G 86	6A-B
N43	170	Hem binding strip		LEL A 560	L 30	6A-E
I92	131	Vessel	Cylind bottle	LEL A 578	G 10	6B-E
I93		Vessel	Cylind bottle	LEL A 578	G 80	6B-E
J33		Utilized antler		LEL A 578	B 9	6B-E
K18		Writing table	Type 1i	LEL A 578	WD 66	6B-E
C46	102	Handle		LEL A 588	Ae 74	6B-E
H4	123	Bead	Discoidal	LEL A 588	JS 3	6B-E
M62		Shoe	Nailed	LEL A 570	L 44	6C
M127	160	Offcut	Group 1	LEL A 570	L 45B	6C
M128	160	Offcut	Group 1	LEL A 570	L 45J	6C
M129	160	Offcut	Group 1	LEL A 570	L 45L	6C
M217	162	Offcut	Group 4	LEL A 570	L 45F	6C
M218	162	Offcut	Group 4	LEL A 570	L 45E	6C
M219	162	Offcut	Group 4	LEL A 570	L 45D	6C
M220	162	Offcut	Group 4	LEL A 570	L 45G	6C
M221	162	Offcut	Group 4	LEL A 570	L 45H	6C
M253	163	Offcut	Group 5	LEL A 570	L 45A	6C
M254	163	Offcut	Group 5	LEL A 570	L 45C	6C
N44	170	Panel frag		LEL A 570	L 20A	6C
N45	170	Panel frag		LEL A 570	L 20B	6C
N46	170	Panel frag		LEL A 570	L 20D	6C
N47	170	Panel frag		LEL A 570	L 20C	6C
N48	170	Panel frag		LEL A 570	L 20E	6C
N49	170	Panel frag		LEL A 570	L 34	6C
D4		Knife		LEL A 576	Fe 26	6C
M63		Shoe	Nailed	LEL A 576	L 37	6C
I56	129	Vessel	Jug	LEL A 569	G 215	6C-E
I85	130	Vessel	Bottle	LEL A 569	G 79	6C-E
I104		Vessel	Square bottle	LEL A 569	G 151	6C-E
M130	160	Offcut	Group 1	LEL A 564	L 33B	6D
M131	160	Offcut	Group 1	LEL A 564	L 33D	6D
M132	160	Offcut	Group 1	LEL A 564	L 33C	6D
M133	160	Offcut	Group 1	LEL A 564	L 33E	6D
M184	161	Offcut	Group 2/3	LEL A 564	L 33A	6D
C49		Stud	Bun-headed	LEL A 566	Ae 70	6D

Cat no	Fig no	Simple name	Detail	Context no	SF no	Period
Period 7						
A6		Coin	***Dupondius***	LEL A 550	N 33	7A
A9		Coin	***As***	LEL A 550	N 35	7A
A13		Coin	***As***	LEL A 550	N 34	7A
C41	102	Needle	Type 2a	LEL A 550	Ae 67	7A
H5		Bead	Rectangular	LEL A 550	JS 4	7A
I55		Vessel	Jug	LEL A 550	G 208	7A
I57		Vessel	Jug?	LEL A 550	G 144	7A
I88	130	Vessel	Bottle	LEL A 550	G 77	7A
I89		Vessel	Bottle	LEL A 550	G 214	7A
I94		Vessel	Cylind bottle	LEL A 550	G 206	7A
M64		Shoe	Nailed	LEL A 550	L 29	7A
M255	163	Offcut	Group 5	LEL A 550	L 32A	7A
C43		Needle		LEL A 553	Ae 68	7A
D1	105	Finger-ring	Type 2	LEL A 553	Fe 20	7A
C17		Pin		LEL A 539	Ae 64	7B
K25	144	Writing tablet	Type 1iii	LEL A 539	WD 34	7B
M65		Shoe	Nailed	LEL A 539	L 27	7B
M134	160	Offcut	Group 1	LEL A 539	L 26	7B
N50		Panel frag		LEL A 539	L 31	7B
C27	100	Tweezers		LEL A 547	Ae 66	7B
H3	123	Bead	Oval	LEL A 547	JS 2	7B
C24		Toilet spoon		LEL A 548	Ae 65	7B
Period 8						
N51	170	Panel frag		LEL A 534	L 22	7C-8D
M135	160	Offcut	Group 1	LEL A 544	L 25	8A
I41	129	Vessel	Bowl?	LEL A 531	G 131	8A-D
I122	133	Bead	Blue/green	LEL A 531	G 8	8A-D
C10	98	Brooch	Penann: type D4	LEL A 530	Ae 75	8C
G32		Lithic	Unworked	LEL A 530	St 23	8C
M66		Shoe	Nailed	LEL A 530	L 41	8C
M185	161	Offcut	Group 2/3	LEL A 530	L 17B	8C
M186	161	Offcut	Group 2/3	LEL A 530	L 17C	8C
M222	162	Offcut	Group 4	LEL A 530	L 39B	8C
M223	162	Offcut	Group 4	LEL A 530	L 39C	8C
M256	163	Offcut	Group 5	LEL A 530	L 17A	8C
M257	163	Offcut	Group 5	LEL A 530	L 39G	8C
N52	171	Panel frag		LEL A 530	L 40B	8C
N53	171	Panel frag		LEL A 530	L 40A	8C
N54	171	Panel frag		LEL A 530	L 42	8C
N55	171	Panel frag		LEL A 530	L 23	8C
I44		Vessel	Jar?	LEL A 527	G 128	8D
K48	151	Unident obj		LEL A 527	WD 29	8D
M136	160	Offcut	Group 1	LEL A 527	L 16A	8D
M137	160	Offcut	Group 1	LEL A 527	L 16B	8D
M138	160	Offcut	Group 1	LEL A 527	L 14A	8D
M139	160	Offcut	Group 1	LEL A 527	L 14K	8D
M140	160	Offcut	Group 1	LEL A 527	L 14H	8D
M141	160	Offcut	Group 1	LEL A 527	L 14E	8D
M142	160	Offcut	Group 1	LEL A 527	L 14G	8D
M224	162	Offcut	Group 4	LEL A 527	L 14O	8D
M225	162	Offcut	Group 4	LEL A 527	L 10B	8D
M226	162	Offcut	Group 4	LEL A 527	L 10C	8D
J7		Pin	Type 2	LEL A 500	B 7	8E
M145	160	Offcut	Group 1	LEL A 502	L 43C	8E
M146	160	Offcut	Group 1	LEL A 502	L 43A	8E
M147	160	Offcut	Group 1	LEL A 502	L 43B	8E
N56	171	Panel frag		LEL A 502	L 15	8E
M143	160	Offcut	Group 1	LEL A 503	L 12A	8E
M144	160	Offcut	Group 1	LEL A 503	L 12B	8E
N57	171	Panel frag		LEL A 519	L 13	8E
M148	160	Offcut	Group 1	LEL A 501	L 7	8E-F
M227	162	Offcut	Group 4	LEL A 501	L 11	8E-F
C80		Armour	Armour fastener	LEL A 505	Ae 60	8E-F
J26		Toggle		LEL A 504	B 8	8F
Period 9						
M258	163	Offcut	Group 5	LEL A 498	L 5A	9
M259	163	Offcut	Group 5	LEL A 498	L 5B	9
C29	100	Mirror	Rectangular	LEL A 499	Ae 62	9
Period 10						
C18		Pin	Group 1	LEL A 384	Ae 77	10
C19		Pin	Group 1	LEL A 384	Ae 54	10
I3	127	Vessel	Bowl	LEL A 386	G 70	10
C22	100	Toilet spoon		LEL A 428	Ae 57	10
C31	101	Vessel	Flagon lid	LEL A 432	Ae 58	10
C95		Tube		LEL A 432	Ae 56	10
I86	130	Vessel	Bottle	LEL A 440	G 123	10
I116		Vessel	Prismatic bottle	LEL A 440	G 197	10
C28	100	Tweezers		LEL A 450	Ae 55	10
N58	171	Panel frag		LEL A 476	L 2	10
Period 11						
I24	128	Vessel	Cup	LEL A 359	G 120	11
I21	128	Vessel	Cup	LEL A 365	G 121	11
I35	129	Vessel	Cup?	LEL A 365	G 59	11
K28		Barrel		LEL A 365.3	WD 7	11
I105	132	Vessel	Square bottle	LEL A 367	G 60	11
I4		Vessel	Bowl/plate	LEL A 372	G 63	11
I103	132	Vessel	Square bottle	LEL A 372	G 62	11
M187	161	Offcut	Group 2/3	LEL A 378	L 1	11
Period 12A						
A22		Coin	***Dupondius***	LEL A 335	N 31	12A
G59	120	Whetstone		LEL A 335	St 19	12A
I53		Vessel	Jug?	LEL A 338	G 119	12A
Periods 12B and 12C						
C84		Disc		LEL A 309	Ae 78	12B
I54	129	Vessel	Jug	LEL A 260	G 551	2C
I135	135	Counter	Black	LEL A 260	G 5	12C
C96		Tube		LEL A 280	Ae 52	12C?
G33	115	Vessel	Platter	LEL A 280	St 17	12C?
I134		Counter	Black	LEL A 280	G 6	12C?
J8		Pin	Type 2	LEL A 280	B 5	12C?
Period 13						
I14	127	Vessel	Base	LEL A 181	G 3	13
I28	128	Vessel	Bowl/flask	LEL A 181	G 112	13
E5		Disc		LEL A 246	Pb 6	13
A18		Coin	***Sestertius***	LEL A 250	N 27	13
C5		Brooch	Pin only	LEL A 251	Ae 49	13
I136		Counter	Black	LEL A 253	G 7	13
A15		Coin	***Denarius***	LEL A 258	N 28	13
A10		Coin	*As*	LEL A 270	N 29	13
D17	106	Unident obj		LEL A 277	Fe 17	13
G57	120	Whetstone		LEL A 373	St 20	13
Periods 14 to 17						
A14		Coin	*As*	LEL A 204	N 26	14
C50	103	Stud	Bun-headed	LEL A 204	Ae 47	14
F5		Lamp		LEL A 204	CO 1	14
E6	107	Tube		LEL A 206	Pb 5	15
I22	128	Vessel	Cup	LEL A 118	G 188	17
I23	128	Vessel	Cup	LEL A 118	G 111	17
I26		Vessel	Cup	LEL A 118	G 49	17
E12	107	Unident obj		LEL A 120	Pb 4	17
J15		Counter	Type 2	LEL A 120	B 4	17
G50	119	Building stone	Gutter	LEL A 142	St 18	17
I133	135	Counter	Black, streaky	LEL A 183	G 4	17
Period 18						
A4		Coin	***Sestertius***	LEL A 84	N 23	18
A11		Coin	*As*	LEL A 84	N 24	18

Cat no	Fig no	Simple name	Detail	Context no	SF no	Period
C45		Knife	Hilt-plate	LEL A 84	Ae 45	18
C92	104	Unident obj		LEL A 84	Ae 42	18
D18		Unident obj		LEL A 84	Fe 10	18
F7		Counter	Samian	LEL A 84	-	18
G42	117	Quern	Lower stone	LEL A 84	St 9	18
I58	129	Vessel	Jug/flask?	LEL A 84	G 182	18
I59		Vessel	Jug?	LEL A 84	G 39	18
I117		Vessel	Prismatic bottle	LEL A 84	G 38	18
C33	101	Vessel handle attachment		LEL A 110	Ae 43	18
D19		Unident obj		LEL A 110	Fe 15	18
E7	107	Sheet		LEL A 110	Pb 3	18
D7	105	Cobbler's last		LEL A 114	Fe 14	18
I43	129	Vessel	Jar?	LEL A 114	G 47	18

Period 19B

A35		Coin	Radiate copy	LEL A 80	N 15	19B
A54		Coin	Constantinian	LEL A 80	N 14	19B
D6	105	Axe		LEL A 80	Fe 5	19B
I123	133	Bead	Cylindrical	LEL A 80	G 1	19B
G43	117	Millstone	Lower stone	LEL A 81	St 7	19B
A51		Coin	Constantius I	LEL A 82	N 19	19B
A58		Coin	Fragment	LEL A 82	N 18	19B
G53		Building stone	Roofing tile	LEL A 82	St 26	19B
D13	106	Hook		LEL A 85	Fe 8	19B
I87		Vessel	Bottle	LEL A 85	G 106	19B
C47	103	Stud	Bell stud	LEL A 86	Ae 34	19B
C87	104	Strip		LEL A 86	Ae 35	19B
J9	136	Pin	Type 3B?	LEL A 87	B 2	19B
F8		Counter	Samian	LEL A 88	-	19B
G44		Quern	Lower stone	LEL A 88	St 12	19B
I36		Vessel	Base	LEL A 88	G 41	19B
A32		Coin	*Denarius*	LEL A 93	N 22	19B
A36		Coin	Radiate copy	LEL A 93	N 25	19B
J16		Counter	Type 2	LEL A 93	B 3	19B
A23		Coin	*Sestertius*	LEL A 94	N 20	19B
I138		Counter	Black	LEL A 96	G 2	19B
A12		Coin	*As*	LEL A 98	N 21	19B
G22		Lithic	Unworked flake	LEL A 100	St 8	19B
G38	116	Quern	Upper stone	LEL A 100	St 11	19B
G42	117	Quern	Lower stone	LEL A 100	St 24	19B
G45	117	Quern	Lower stone	LEL A 100	St 25	19B
C93		Unident obj		LEL A 105	Ae 40	19B

Period 20

-		Counter	Samian	LEL A 69	-	20
I27		Vessel	Cup	LEL A 69	G 103	20
A65		Coin	Constantius II	LEL A 73	N 13	20
C94	104	Unident obj		LEL A 73	Ae 20	20
I63	129	Vessel	Cup	LEL A 73	G 34	20
A47		Coin	Radiate copy	LEL A 74	N 16	20
A48		Coin	Radiate copy	LEL A 74	N 17	20
C3	98	Brooch	Knee	LEL A 74	Ae 15	20
C79		Chain		LEL A 74	Ae 32	20
G60	120	Whetstone		LEL A 74	St 4	20
I40	129	Vessel	Cup/bowl	LEL A 74	G 105	20

Period 21A

-		Counter	Samian	LEL A 28	-	21A
A29		Coin	*Dupondius*	LEL A 28	N 10	21A
A38		Coin	Radiate copy	LEL A 28	N 9	21A
A52		Coin	Fragment	LEL A 28	N 36	21A
G39	116	Quern	Upper stone	LEL A 28	St 3	21A
I118		Vessel	Prismatic bottle	LEL A 28	G 102	21A

Period 21B

C53		Stud		LEL A 31	Ae 16	21B
C54		Stud		LEL A 31	Ae 18	21B
D5	105	Knife		LEL A 38	Fe 3	21B
E10		Strip		LEL A 38	Pb 2	21B
A31		Coin	*Sestertius*	LEL A 60	N 8	21B
A49		Coin	Radiate copy	LEL A 64	N 11	21B
A70		Coin	Styca	LEL A 64	N 12	21B
C3	98	Brooch	Knee	LEL A 65	Ae 13	21B
G62	121	Mould		LEL A 76	St 2	21B

Period 22

A50		Coin	Radiate copy	LEL A 5	N 7	22
C83	104	Hook		LEL A 5	Ae 9	22
C78		Ring		LEL A 7	Ae 6	22

Unstratified

A19		Coin	*Sestertius*	LEL A +	N 1	Uns
A37		Coin	Radiate copy	LEL A +	N 6	Uns
A55		Coin	Constantinian	LEL A +	N 2	Uns
A62		Coin	Constantinian	LEL A +	N 5	Uns
A66		Coin	Constantius II	LEL A +	N 3	Uns
A75		Coin	Halfpenny	LEL A +	N 4	Uns
C67	103	Lock	Barrel padlock?	LEL A +	Ae 3	Uns
E3	107	Split-pin fastener		LEL A +	Pb 9	Uns
G40	117	Quern	Upper stone	LEL A +	St 16	Uns
G41	117	Quern	Upper stone	LEL A +	St 10	Uns
G51	119	Building stone	Hypocaust pillar	LEL A +	St 22	Uns
I25	128	Vessel	Cup	LEL A +	G 24	Uns
I139		Counter	White	LEL A +	G 15	Uns
M67	155	Shoe	Nailed	LEL A +	L 38	Uns
N59	171	Seam reinforcing strip		LEL A +	L 46	Uns

Old Bush Lane Trench B

Period 5

G61	120	Sling stone		OBL B 1	St 1	5
M188	161	Offcut	Group 2/3	OBL B 99	L 4	5

Period 6

I128	134	Bangle	Type 2	OBL B 108	G 1	6
K8		Box		OBL B 108	WD 44	6
M68		Shoe	Nailed	OBL B 108	L 2	6
M69		Shoe	Nailed	OBL B 108	L 12	6
M70		Shoe	Nailed	OBL B 108	L 15	6
M71		Shoe	Nailed	OBL B 108	L 22	6
M89	158	Shoe	1-piece T-seam	OBL B 108	L 3	6
M90	158	Shoe	1-piece T-seam	OBL B 108	L 5	6
M91	158	Shoe	1-piece T-seam	OBL B 108	L 6	6
M92	158	Shoe	1-piece T-seam	OBL B 108	L 16	6
M94		Shoe	Uncertain	OBL B 108	L 7	6
M95		Shoe	Uncertain	OBL B 108	L 21	6
M149	160	Offcut	Group 1	OBL B 108	L 9M	6
M260	163	Offcut	Group 5	OBL B 108	L 9C	6
M261	163	Offcut	Group 5	OBL B 108	L 9H	6
M262	163	Offcut	Group 5	OBL B 108	L 9B	6
M263	163	Offcut	Group 5	OBL B 108	L 9E	6
M264	163	Offcut	Group 5	OBL B 108	L 9A	6
N62	171	Repair patch		OBL B 108	L 11	6

Period 6 or later

K6	139	Comb		OBL B 94	WD 39	6 or later
K13	142	Bung	With brand	OBL B 94	WD 45	6 or later
N60	171	Appliqué or panel frags		OBL B 94	L 13	6 or later
N61	171	Panel frag		OBL B 94	L 14	6 or later

Unstratified

N63	171	Panel frag		OBL B 115	L 8	Unphased
G63	122	Sculpture		OBL B +	St 8	Uns

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