

ROMAN AND MEDIEVAL CARLISLE: THE NORTHERN LANES, EXCAVATIONS 1978-82 VOLUME ONE: THE ROMAN PERIOD

John Zant and Christine Howard-Davis

Contributions by

Elizabeth Allnutt, Andrew Bates, Justine Bayley, Alex Bayliss, Christopher Bronk Ramsey, John Carrott, Brian Connell, Gordon Cook, Philip Cracknell, Simon Davis, Brenda Dickinson, Cathy Groves, Celia Harding, Kay Hartley, Martin Henig, Louise Hird, Jaqui Huntley, Harry Kenward, Frances Large, Louise Loe, Glenys Lloyd-Morgan, Tim Padley, Jenny Price, David Shotter, Christopher Tolan-Smith, Roger Tomlin, Ian Tyers, Stephen Wadeson, Helen Webb, Sue Winterbottom, and Sally Worrell

Illustrations by

Marie Rowland and Anne Stewardson

2019

25
LANCASTER
IMPRINTS

Published by
Oxford Archaeology North
Mill 3
Moor Lane Mills
Moor Lane
Lancaster
LA1 1QD
(Phone: 01524 541000)
(website: <http://thehumanjourney.net>)

Distributed by
Oxbow Books Ltd
10 Hythe Bridge Street
Oxford
OX1 2EW
(Phone: 01865 241249; Fax: 01865 794449)

The appendices are available on the Oxford Archaeology (OA) Library at:
<https://library.thehumanjourney.net/4716/>
And, in the future, on the ADS

Printed by
Print2Demand, 17 Burgess Road, Hastings, East Sussex, TN35 4NR

© Oxford Archaeology Limited 2019

ISBN 978-1-907686-29-0
ISSN 1345-5205

Series editor
Rachel Newman
Indexer
Marie Rowland
Design, layout, and formatting
Marie Rowland

Front cover: Aerial photograph of the Lanes area in the 1970s, prior to development; lead figurine of the goddess Diana; amber finger ring with the head of the goddess Minerva
Rear Cover: Excavation of a second-century AD Roman building at the Lanes; the Lanes shopping centre today; Roman barrel-lined well containing a water wheel

LANCASTER
IMPRINTS
Lancaster Imprints is the publication series of Oxford Archaeology North. The series covers work on major excavations and surveys of all periods undertaken by the organisation and associated bodies.

Contents

List of Illustrations	vi
Contributors	xvi
Acknowledgements.....	xviii
Summary	xx
 1 INTRODUCTION.....	 1
Carlisle and its Setting.....	1
Archaeological Background	2
The Lanes Project.....	8
 2 PRE-ROMAN AND EARLY ROMAN ACTIVITY (PERIODS 1-5)	 19
The Natural Subsoil	19
Early Prehistoric Activity	20
Pre-Roman Cultivation.....	21
Period 2 (Late Iron Age/Early Roman?)	22
Period 3 (Late First Century AD?).....	23
Period 4A (Early Second Century AD).....	28
Period 4B (Early Second Century AD)	40
Period 4C (Early Second Century AD).....	41
Period 4 Dating	42
Period 5A (Early/Mid-second Century AD)	43
Period 5B (Early/Mid-second Century AD).....	45
Period 5A-B (Early/Mid-second Century AD)	47
Period 5 Dating	47
Period 3-5 (Late First-Early/Mid-second Century AD).....	48
 3 THE EARLY DEVELOPMENT OF THE ROMAN TOWN (PERIODS 6-10)	 49
Period 6 (c Mid-second Century AD)	50
Period 7 (c Mid-second Century AD)	53
Period 7-9 (c Mid-Late Second Century AD).....	56
Period 7-8A (c Mid-Late Second Century AD).....	61
Period 8A (c Mid-Late Second Century AD).....	61
Period 8B (c Mid-Late Second Century AD).....	65
Period 8 Dating	66
Period 9 (Late Second Century AD).....	66
Period 10A (Late Second Century AD)	70
Period 10B (Late Second Century AD).....	79
Period 10C (Late Second Century AD).....	81
Period 10 Dating	86
 4 THE LATER ROMAN TOWN (PERIODS 11-12).....	 87
Period 11A (Late Second Century AD)	88
Period 11B (Early Third Century AD)	95
Period 11C (Early/Mid-third Century AD).....	103
Period 11D (Mid/Late Third- to Early Fourth Century AD)	119
Period 11E (Fourth Century AD)	123
Period 12 (Late Fourth Century AD)	126
Period 11D-12 (Third- to Fourth Century AD).....	127
 5 THE FINDS.....	 133
Life Before the Romans (Periods 1 and 2).....	133
Rome's First Footprint (Period 3).....	133
Settling In (Periods 4 and 5)	135

Living Amongst the Rubbish (Periods 6 and 7)	137
People of Property (Periods 8-10).....	139
A Building of Substance (Period 11).....	143
Abandonment (Period 11D-12).....	146
Residual Material in Medieval Contexts.....	147
A Physical Presence	148
Somewhere to Live.....	149
Daily Life	151
Work and Play	156
Public and Private Religion.....	158
Travel and Transport	159
Trade and Commerce	159
Conclusions	166
 6 THE ORIGINS OF SETTLEMENT AT THE NORTHERN LANES.....	 167
The Site in Prehistory (Periods 1-2).....	167
From Temporary Camp to Government Building: The Earliest Roman Activity (Periods 3-5).....	171
 7 THE DEVELOPMENT OF THE ROMAN CIVILIAN SETTLEMENT	 187
A Shift in Usage? (Period 6)	187
Settlement Expansion in the Second Century AD (Periods 7-10).....	192
The Site in the Late Roman Period (Periods 11-12)	203
The End of Romano-British Settlement at the Northern Lanes	213
 BIBLIOGRAPHY	 217
 INDEX.....	 247

ONLINE

APPENDIX 1: THE SAMIAN

APPENDIX 2: THE COARSE POTTERY

APPENDIX 3: THE COINS (A)

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

APPENDIX 5: THE IRON (D) AND LEAD (E)

APPENDIX 6: THE FIRED CLAY (F)

APPENDIX 7: THE STONE (G), JET, SHALE, AND AMBER (H)

APPENDIX 8: THE ROMAN GLASS (I) CATALOGUE

APPENDIX 9: THE BONE AND ANTLER (J)

APPENDIX 10: THE WOODEN OBJECTS (K)

APPENDIX 11: THE SHOES (L)

APPENDIX 12: THE SHEET LEATHER (M)

APPENDIX 13: HUMAN SKELETAL REMAINS

APPENDIX 14: THE ANIMAL BONES

APPENDIX 15: INSECT AND OTHER INVERTEBRATE REMAINS

APPENDIX 16: CHARRED AND WATERLOGGED PLANT REMAINS, AND NON-STRUCTURAL
WOOD FROM ROMAN CONTEXTS

APPENDIX 17: SCIENTIFIC DATING

Abbreviations

AE	Numismatic abbreviation for copper or bronze, from the Latin word <i>aes</i>
CIL	<i>Corpus Inscriptionum Latinarum</i>
ILS	<i>Inscriptiones Latinae Selectae</i>
MNI	Minimum Number of Individuals
MS	Mould Signature
NISP	Number of Individual Specimens

List of Illustrations

Figures

1	Site location.....	xxiv
2	Central Carlisle, showing the major sites mentioned in the text	2
3	The Lanes area prior to redevelopment, showing the 19 historic lanes.....	9
4	The positions of the northern Lanes investigations, the southern Lanes, and earlier investigations.....	11
5	The northern Lanes excavation trenches	12
6	Period 1 features.....	20
7	Period 2 buried soil and Period 3 features	23
8	Evidence for the Period 3 temporary camp at the northern Lanes	24
9	Sections through the Period 3 temporary-camp ditch	25
10	Period 3: features in LAL D.....	27
11	Period 4A: construction levels of Building 1560	29
12	Period 4A: occupation levels of Building 1560 , and associated buildings, features, and deposits	30
13	Period 4A: the northern excavated part of Buildings 1560 , 1571 , and 586 , and road 1476	32
14	The entire Period 4A 'complex' within the northern Lanes.....	38
15	Period 4B: destruction levels of Building 1560 in LAL D	40
16	Period 4C in LAL D.....	42
17	Period 5A Structure 1993 and Period 5A-B pits	43
18	Period 5B Structures 1994 , 1572 , Buildings 113 , 114 , and Period 5A-B pits.....	45
19	Period 3-5 features.....	48
20	Period 6, showing Buildings 1561 and 115 , and the soil accumulation over the rest of the site	50
21	Period 6 Buildings 1561 and 115	51
22	Period 7, with Period 7-9 Building 1308 and the Period 7-8A pit group	54
23	Period 7: Building 1995 and adjacent external areas.....	55
24	Period 7-9: Building 1308	57
25	Period 8A, with Period 7-9 Building 1308 and the Period 7-8A pit group.....	60
26	Period 8A: Buildings 587 , 588 , and 1996 , lanes 1836 , 1847 , and adjacent areas.....	62
27	Period 8B, with Period 7-9 Building 1308	64
28	Period 9, with Period 7-9 Building 1308	67
29	Period 9: Building 589 and the adjacent area	68
30	Period 9: Building 590 and adjacent areas	69
31	Period 10A features.....	71
32	Period 10A: Buildings 591 and 1998 , and adjacent external areas	72
33	Period 10B features	79
34	Period 10B: Buildings 591 , 1998 , and 1309 , and adjacent external areas	80
35	Period 10C features.....	82
36	Period 10C: Buildings 591 , 1998 , and 1310 , and adjacent external areas	83
37	Period 10C: Building 1564 and adjacent external areas	84
38	Development of the Periods 11A-E and 12 buildings	87
39	Period 11A features.....	89
40	Period 11A: Building 2000 and adjacent areas, including Building 1999	90
41	Period 11A: Buildings 1565 , 1566 , and adjacent areas.....	93
42	Period 11B features	94
43	Period 11B: Building 2000 and adjacent areas, including Structures 594 and 1106	96
44	Period 11B: Buildings 1567 , 1568 , and adjacent areas.....	100
45	Period 11C features.....	103
46	Period 11C: Building 2000 and adjacent areas to the east and south, including Structure 1106	104
47	Period 11C: external area west of Building 2000 , showing water channels, and Building 2001	110
48	Period 11C: the western part of the northern property, with Building 1570 , on the west side of the central property	115
49	Period 11C: later activity in the external area west of Building 2000	116
50	Period 11C: the western part of the northern property, showing Building 475 and adjacent areas ...	118
51	Periods 11D and 11D-12 features	119
52	Period 11D: the western part of the northern property, including Building 1569 and adjacent areas ...	120

53	Period 11E: the western part of the northern property in the early part of Period 11E	123
54	Period 11E: the western part of the northern property in the later part of Period 11E	124
55	Periods 11E: the northern property in the later part of Period 11E	125
56	Period 12: the northern property, showing the extensive soil accumulation	126
57	Period 11D-12: Building 2000 and adjacent areas	128
58	Period 11D-12: the second phase of activity in the external area west of Building 2000	131
59	Late Iron-Age linchpin C66	134
60	Building 1560 , perhaps a <i>mansio</i>	135
61	Period 5B Buildings 113 , 114 , overlying earlier Structures 1572 , 1993 , and 1994	136
62	Periods 6 and 7 properties	137
63	Hairpin C39 , and a matching object from the fort	138
64	Leather appliqué M101 , which has some similarities to the much later <i>Porta Nigra</i> at Trier	138
65	Period 8A properties	139
66	Period 10A, 10B, and 10C properties	140
67	Period 10 buildings	141
68	The development of Building 2000	144
69	The Marica graffiti	145
70	The core range of vessel forms used by the Roman army for food preparation	151
71	<i>Tazza</i> , Gillam (1970) form 347	158
72	A North Gaulish rough-cast beaker	162
73	A Gillam (1970) type 329 Black-burnished-ware dish, typically dating to the third to mid-fourth century	165
74	Evidence for pre-Roman Carlisle	168
75	The evidence for the Period 3 temporary camp	174
76	Hypothetical reconstructions of the Period 3 temporary camp, based on the excavated evidence	175
77	The entire Period 4A complex, including Roman roads	178
78	Axiometric reconstruction of the construction techniques employed in the walls of Building 1560	179
79	Comparative plans of Building 1560 and the Inchtuthil ' <i>mansio</i> '	182
80	The Period 5A and 5B complexes superimposed	184
81	Putative Period 6 and Period 7 'properties' fronting onto Scotch Street	189
82	Evidence for early Roman Carlisle	191
83	Building 1308 , the ground plan reconstructed as far as is possible	193
84	<i>Mansiones</i> , with similar layouts to Building 1308	194
85	The development of 'properties' on Scotch Street in Periods 8A, 8B, and 9	197
86	The development of 'properties' on Scotch Street in Periods 10A, 10B, and 10C	199
87	The development of 'properties' on Scotch Street in Periods 11A, 11B, and 11C	202
88	Evidence for later Roman Carlisle	204
89	Strip buildings similar to the early phase of Building 2000	206
90	Winged-corridor houses similar to Building 2000	207
91	Buildings at Blackfriars Street and Castle Street built using sandstone post-pads	211
92	The average annual loss of closely datable decorated and stamped samian	Appx 1
93	Average annual loss of all vessels (maximum number) by years	Appx 1
94	Samian graffiti from Periods 10A-11B, and 11A	Appx 1
95	Samian graffiti from Periods 11A and 11B	Appx 1
96	Samian graffiti residual in post-Roman contexts and unstratified	Appx 1
97	Samian bowl 1	Appx 1
98	Samian 2-4	Appx 1
99	Samian 5-7	Appx 1
100	Samian 8-11	Appx 1
101	Samian 12	Appx 1
102	Samian 13-15	Appx 1
103	Samian 16-20	Appx 1
104	Samian 21-23	Appx 1
105	Samian 24-26	Appx 1
106	Samian 27-34	Appx 1
107	Samian 35-39	Appx 1
108	Samian 40-47	Appx 1
109	Samian 48-52	Appx 1
110	Samian 53-60	Appx 1

111	Samian 61-68	Appx 1
112	Samian 69-76	Appx 1
113	Mortarium from Period 6	Appx 2
114	Mortarium from Period 7	Appx 2
115	Coarsewares from Period 7-8A.....	Appx 2
116	'Eggshell'-ware cup/bowl from Period 8A	Appx 2
117	Coarsewares from Period 8B.....	Appx 2
118	Coarsewares from Period 9	Appx 2
119	Coarsewares from Period 10A	Appx 2
120	Coarsewares from Period 10B.....	Appx 2
121	Coarsewares from well 1016	Appx 2
122	Coarsewares from Period 10C	Appx 2
123	Coarsewares from Period 10A-11B	Appx 2
124	Coarsewares from Period 11A	Appx 2
125	Coarsewares from Period 11B.....	Appx 2
126	Coarsewares from Period 11C	Appx 2
127	Coarsewares from Period 11D	Appx 2
128	Coarsewares from Period 11D well 226	Appx 2
129	Colour-coated ware, amphora, and mortaria from Period 11D well 226	Appx 2
130	Coarsewares from Period 11E.....	Appx 2
131	Coarsewares and mortaria from Period 11E.....	Appx 2
132	Coarsewares from Period 12	Appx 2
133	Coarsewares from Period 11D-12.....	Appx 2
134	Coarsewares from poorly phased or post-Roman contexts	Appx 2
135	Coarsewares and mortaria from poorly phased or post-Roman contexts	Appx 2
136	Graffiti on stratified South Spanish amphorae, inscribed before firing	Appx 2
137	Graffiti on unstratified South Spanish amphorae, inscribed before firing.....	Appx 2
138	Graffiti on South Spanish amphorae from Periods 10A-11B, inscribed after firing	Appx 2
139	Graffiti on South Spanish amphorae from Period 11B and unstratified, inscribed after firing	Appx 2
140	Graffiti on coarseware, inscribed after firing.....	Appx 2
141	Sources of stamped mortaria	Appx 2
142	Stamped mortaria from KLA A, in the east of the site.....	Appx 2
143	Die C of Docilis 3	Appx 2
144	Stamped mortaria from KLA B, in the south-east of the site	Appx 2
145	Die Bii of Austinus.....	Appx 2
146	Stamped mortaria from KLA C, in the south of the site	Appx 2
147	Die B of Docilis 3.....	Appx 2
148	Die F of Austinus	Appx 2
149	Die D of Austinus	Appx 2
150	Stamped mortaria from KLA D, in the centre of the site.....	Appx 2
151	Die L of Docilis 3.....	Appx 2
152	Stamped mortaria from KLA G, in the south of the site.....	Appx 2
153	Stamped mortaria from LAL A, in the north-east of the site	Appx 2
154	Stamped mortaria from LAL C, in the north of the site.....	Appx 2
155	Die G of Docilis 3	Appx 2
156	Die E of Austinus	Appx 2
157	Die E of Docilis 3.....	Appx 2
158	Stamped mortaria from Period 10B, from LAL D, in the north-west of the site	Appx 2
159	Stamped mortaria from Periods 10C-11E, from LAL D, in the north-west of the site	Appx 2
160	Die E of Austinus	Appx 2
161	Stamped mortarium from a post-Roman context in LAL D, in the north-west of the site.....	Appx 2
162	Gold jewellery	Appx 4
163	Copper-alloy Hod Hill-derivative, trumpet, headstud, plate, and disc brooches	Appx 4
164	Copper-alloy knee, crossbow, bow, and penannular brooches.....	Appx 4
165	Copper-alloy <i>personalia</i>	Appx 4
166	Copper-alloy <i>personalia</i> , and toilet and surgical instruments	Appx 4
167	Copper-alloy mirrors	Appx 4
168	Copper-alloy household utensils	Appx 4

169	Copper-alloy utensils, seal boxes, linchpin, and tools	Appx 4
170	Copper-alloy tool, fasteners, and fittings.....	Appx 4
171	Copper-alloy studs.....	Appx 4
172	Copper-alloy knob, lock bolts and keys, hasp, and hinge.....	Appx 4
173	Copper-alloy fittings	Appx 4
174	Copper-alloy militaria	Appx 4
175	Copper-alloy 'religious' artefacts.....	Appx 4
176	Miscellaneous copper-alloy artefacts.....	Appx 4
177	Iron linchpins, hipposandal, and tools.....	Appx 5
178	Iron chain and padlock.....	Appx 5
179	Iron fittings	Appx 5
180	Lead objects	Appx 5
181	Counters made from different vessel types.....	Appx 6
182	Ceramic lamps and candlestick.....	Appx 6
183	Ceramic inkwell and crucible	Appx 6
184	Microliths: scalene triangle, backed bladelet, and bladelets	Appx 7
185	Prehistoric lithic implements	Appx 7
186	Fragment of polished-stone axe	Appx 7
187	<i>Intaglii</i>	Appx 7
188	Stone household utensils.....	Appx 7
189	Upper quernstones from Periods 9, 10C, and 11A	Appx 7
190	Upper quernstones from Periods 11A, 11E, 12, and post-Roman levels.....	Appx 7
191	Lower quernstones.....	Appx 7
192	Grinding stone	Appx 7
193	Upper quernstones in sandstone, with a narrow feed-pipe.....	Appx 7
194	Other sandstone querns, Periods 10B and 10C, and unstratified.....	Appx 7
195	Querns G113 and G115	Appx 7
196	Upper quernstones in sandstone, from Periods 11D-12, post-Roman levels, and unstratified ...	Appx 7
197	Millstone, lower quernstone in sandstone, and upper quernstone in granite	Appx 7
198	Stone counters.....	Appx 7
199	Hypocaust pilae	Appx 7
200	Pivot and architectural stone	Appx 7
201	Building stone	Appx 7
202	Whetstones	Appx 7
203	Sculptural fragments G151 and G152	Appx 7
204	Sculptural fragment G153	Appx 7
205	Amber, jet, and shale objects.....	Appx 7
206	Polychrome ribbed bowls.....	Appx 8
207	Blue-green ribbed bowls.....	Appx 8
208	Polychrome bowls and plates.....	Appx 8
209	Colourless ribbed bowls	Appx 8
210	Mould-blown glass.....	Appx 8
211	Polychrome enamelled vessel.....	Appx 8
212	Vessel with polychrome trails.....	Appx 8
213	Vessel with polychrome blobs	Appx 8
214	Very dark blown vessel.....	Appx 8
215	Yellow-brown blown vessels	Appx 8
216	Yellow-green jugs	Appx 8
217	Light green vessel.....	Appx 8
218	Colourless vessels with horizontal wheel-cut and abraded lines	Appx 8
219	Colourless cylindrical cups with fire-rounded rims	Appx 8
220	Colourless jug.....	Appx 8
221	Blue-green cup	Appx 8
222	Blue-green tubular-rimmed bowls.....	Appx 8
223	Blue-green jars	Appx 8
224	Blue-green convex and conical jugs.....	Appx 8
225	Blue-green spouted jugs	Appx 8
226	Blue-green unguent bottles	Appx 8

227	Colourless bottles	Appx 8
228	Blue-green necks and handles of bottles	Appx 8
229	Blue/green rectangular bottles	Appx 8
230	Blue/green bottles	Appx 8
231	Lower body and base fragments of bottles	Appx 8
232	Possible funnel fragment	Appx 8
233	Glass bangles	Appx 8
234	Glass and faience beads	Appx 8
235	Plano-convex glass counters	Appx 8
236	Bone pins, inlay, and counters	Appx 9
237	Bone needles and possible handles	Appx 9
238	Antler rake	Appx 9
239	Bone toggles, amulet, and other objects	Appx 9
241	Wooden combs	Appx 10
242	Fragment of furniture	Appx 10
243	Stave from a barrel lining well 1016	Appx 10
244	Elements of wooden barrels	Appx 10
245	Stave-built vessel K11	Appx 10
246	Wooden stave from a vessel, and bungs	Appx 10
247	Wooden scoop	Appx 10
248	Lathe-turned bowls	Appx 10
249	Writing tablets	Appx 10
250	The wheel from well 1016	Appx 10
251	Wooden bobbins and sawn off-cut	Appx 10
252	Wooden pegs and unidentified object	Appx 10
253	Y-shaped wooden object	Appx 10
254	Unidentified wooden objects	Appx 10
255	Early nailed shoe bottom, with type 2 thonging	Appx 11
256	Child's one-piece T-seam shoe	Appx 11
257	Nailed shoe, with lozenge pattern under the tread	Appx 11
258	Elaborate 'fish-shaped' nailing pattern	Appx 11
259	Shoe preserving a possible lining strip	Appx 11
260	Fishnet decoration on a shoe upper	Appx 11
261	Decorated insole of a sandal	Appx 11
262	Insole of a shoe with a defined big toe	Appx 11
263	Shoe with type 3 nailing from well 226	Appx 11
264	Bottom unit of a sandal with a double slit to attach the thong	Appx 11
265	Unusual 'trident' nailing patterns	Appx 11
266	Tunnel stitching up the centre of a mid-sole, presumably to attach the upper	Appx 11
267	Nailed shoes, Periods 4C-6	Appx 11
268	Nailed shoes, Periods 7-8B	Appx 11
269	Nailed shoes, Periods 9-11D	Appx 11
270	Nailed shoes, Period 11D	Appx 11
271	Nailed shoes from Roman contexts not closely phased	Appx 11
272	Latchet boots	Appx 11
273	Sandals	Appx 11
274	Stitched shoes	Appx 11
275	Cork-soled mule	Appx 11
276	One-piece T-seam shoes, Periods 3-5 to 9	Appx 11
277	One-piece T-seam shoes, and others of uncertain type	Appx 11
278	Shoes of uncertain type	Appx 11
279	Roman seam types	Appx 12
280	Roman hem types	Appx 12
281	Possible reconstructions of Roman tents	Appx 12
282	Square appliqué from a tent	Appx 12
283	Fragments of tent leather	Appx 12
284	Associated leather fragments from a free-hanging panel corner of a tent	Appx 12
285	Elements of a tent panel from Period 11D well 226	Appx 12

286	Seam II and Seam III stitching	Appx 12
287	Examples of Seam III stitching	Appx 12
288	Group of panels and associated reinforcing strips from the south-west of the site	Appx 12
289	Examples of narrow reinforced-seam and beaded-seam stitching	Appx 12
290	Hemmed pieces	Appx 12
291	Appliqués, whip-stitched repairs, and unidentifiable stitching	Appx 12
292	Shield cover and appliqué of a gate	Appx 12
293	Stitched pieces	Appx 12
294	State of preservation of articulated skeletons	Appx 13
295	Measurements of cats, compared to standard domestic and wild animals	Appx 14
296	Period 11: cattle body parts, with the MNI as a percentage of the most frequently occurring element	Appx 14
297	Cattle lower third molar length and width of the anterior pillar, in tenths of a millimetre	Appx 14
298	Cattle long-bone measurements	Appx 14
299	The greatest length of the astragalus from Annetwell Street, the Millennium Project, and the northern Lanes	Appx 14
300	Cattle metatarsal distal breadth compared to cattle from Roman sites in England	Appx 14
301	The northern Lanes cattle compared to medieval cattle from Launceston	Appx 14
302	Sheep measurements compared with the mean of a sample of 26 modern Shetland ewes	Appx 14
303	Measurements of the pigs compared with the mean values of Neolithic pigs from Durrington Walls	Appx 14
304	Wounds on Skull 1	Appx 14
305	Wounds on Skull 2	Appx 14
306	Wounds on Skull 3	Appx 14
307	Proportion of 'outdoor' individuals of adult beetles and bugs plotted against the minimum number of individuals of these groups	Appx 15
308	Proportion of individuals of adult aquatic beetles and bugs plotted against the minimum number of individuals of these groups	Appx 15
309	The scientific dating positions of the five dated Roman wood samples	Appx 17
310	The relative positions of the dated ring sequences	Appx 17
311	The possible method of conversion of dated planks from Period 6	Appx 17
312	The start dates of the ring sequences from the northern and southern Lanes, Castle Street, and Annetwell Street	Appx 17
313	The total ring-sequence length from the northern and southern Lanes, Castle Street, and Annetwell Street	Appx 17
314	Calibration of the radiocarbon results using the probability method	Appx 17
315	Probability distributions of dates from Period 11 and 12 deposits	Appx 17

Plates

1	Aerial photograph of Carlisle in the mid-1970s, looking south	3
2	Third-century stone barrack blocks and cobbled road in the Roman fort, looking east	4
3	Stanwix: pre-Roman ploughmarks and buried soil beneath Roman deposits, looking south-east	5
4	Roman strip-type buildings at Blackfriars Street, looking west	6
5	Hypocaust <i>pilae</i> within a possible third-century public bath-house beneath the present Market Hall	7
6	Aerial view of the Lanes area in the 1970s, prior to redevelopment, looking west	8
7	Looking north down Scotch Street in 2012, with the Lanes shopping centre on the right	10
8	Longcake's Lane in 2012, looking west to Scotch Street, a surviving fragment of the ancient vennels	10
9	Boulder clay, cut by archaeological features, beneath a post-medieval cellar floor on Old Bush Lane	13
10	KLA B at an early stage of the excavation, showing the proximity of standing buildings	14
11	KLA C during machine clearance of modern overburden	14
12	Period 1: traces of pre-Roman cultivation, with ploughmarks scoring the natural boulder clay	21
13	Period 1: the cobbled surface of a pre-Roman trackway in KLA C (1344)	21
14	Period 2: pre-Roman buried soil horizon in KLA B, looking north-east	22
15	Period 3: the eastern arm of the putative temporary-camp ditch, looking south	24
16	Period 3: the eastern arm of the putative temporary-camp ditch in LAL C (461), looking south	25
17	Period 3: the eastern arm of the putative temporary camp-ditch in KLA C (1245), looking south-east	25
18	Period 3: brushwood deposit in ditch 1967	26
19	Period 3: the southern arm of the putative temporary-camp ditch in GLL A (4)	26
20	Period 3: the probable north-east corner of the putative temporary-camp ditch in LOL B	26

21	Period 3: plank base (1504) of pit 1505	27
22	Period 3: clay infill of the putative temporary-camp ditch, Globe Lane	29
23	Period 4A, Building 1560: the excavations within LAL D, looking north-east.....	30
24	Period 4A, Building 1560: construction trench for the partition wall between R2 and R3, looking west ...	31
25	Period 4A, Building 1560: wall plate 78.....	32
26	Period 4A, Building 1560: wall plate 17.....	32
27	Period 4A, Building 1560: dovetail scarf joint on wall plate 78	33
28	Period 4A, Building 1560: <i>in situ</i> wall post on wall plate 17	33
29	Period 4A, Building 1560: sawn-off tenon on wall plate 78.....	33
30	Period 4A, Building 1560: L-shaped slots on wall post articulating with wall plate 17.....	33
31	Period 4A, Building 1560: <i>in situ</i> plaster rendering on the inner face of the east wall.....	34
32	Period 4A, Building 1560: collapsed wall plaster (1301) in Period 4B destruction debris	34
33	Period 4A, Building 1560: chevron pattern on wall plaster 1301 in Period 4B destruction debris	35
34	Period 4A, Building 1560: slots for wooden floor joists in R3.....	35
35	Period 4A, Building 1560: position of clay feature 1360 within R3.....	36
36	Period 4A, Building 1560: clay 1360, with the rotary quern on it.....	36
37	Period 4A: fence 1354 on the eastern edge of road 1476	37
38	Period 4B, Building 1560: burnt destruction debris 1346.....	41
39	Period 5A, Structure 1993: slot 426 fully excavated, cutting across unexcavated Period 3-5 gully 419	44
40	Period 5A, Structure 1993: the dark silty fills of slots 294, 296, and 297	44
41	Period 5B, Structure 1994: slot 1265 cutting Period 4A clay/levelling layer 1198.....	45
42	Period 5B, Structure 1994: east/west slot 1901, containing driven oak stakes	46
43	Period 5B: south wall of Structure 1572 (4)	46
44	Period 5B, Structure 1572: construction slot for the south wall (4), with <i>in situ</i> oak stakes	47
45	Period 6, Building 115: cobble-packed posthole in the north wall	52
46	Period 6, Building 1561: post-pit 1184, in the south wall, showing the substantial post-pipe.....	52
47	Period 7: section through gully 387, showing fill 375	56
48	Period 7: gully 387, with a human cranium in fill 375	56
49	Period 7-9, Building 1308: stumps of oak wall posts at the north-west corner	58
50	Period 7-9, Building 1308: stumps of oak wall posts in unexcavated construction trenches.....	58
51	Period 7-9, Building 1308: post-pit 203 in the entrance portico	59
52	Period 8A, Building 587: wall post 509, at the south-east corner of the building, showing stone packing	63
53	Period 8A, Building 587: wall post 509, showing redundant peg holes at the base of the post.....	63
54	Period 8B: northern excavated end of gully 114	65
55	Period 9: Building 589; large sandstone <i>pila</i> (472) reused as a post-pad in its east wall.....	68
56	Period 10A, Building 591 in KLA D, looking west to Scotch Street.....	71
57	Period 10A, Building 591: construction trench 389, looking south, showing sandstone post-pads.....	73
58	Period 10A, Building 591 in KLA D, looking north-west, showing clay floors in all the rooms	74
59	Period 10A, Building 591: cobble sub-floor 418 in R4, looking south.....	74
60	Period pre-10C: well 1016, showing the well-shaft lined with a reused barrel.....	76
61	Period pre-10C: well 1016, showing the timber framework at the base of the construction pit	76
62	Period pre-10C: well 1016, showing the lap-jointing of planks in the timber framework	77
63	Period pre-10C: wooden wheel <i>in situ</i> in the primary fill of the well-shaft	77
64	Period 10A-11B: articulated dog skeleton in deposit 1073 in the southern property	78
65	Period 10B, Building 1309: post-pad 1071 in the east wall	81
66	Period 11A, Building 2000: poorly preserved fragment of the south wall (834)	89
67	Period 11A, Building 2000: fragment of the east wall (677)	91
68	Period 11A: stump of an oak post (190) in the fenceline between the central and northern properties	92
69	Period 11B, Building 2000: south wall (752) of the new west range (R10).....	95
70	Period 11B, Building 2000: south wall (752) of the west range	96
71	Period 11B, Building 2000: R8, room on the east side of the building, looking south-east	97
72	Period 11B, Building 2000: northern end of R9, on the west side of the building, looking south	98
73	Period 11B, Building 2000: quernstone 121 in R6, looking east, possibly reused as a post-pad	98
74	Period 11B, Structure 594: internal feature 73	99
75	Period 11B, Building 1567: porticoed entrance on the east side of the building, looking west	102
76	Period 11C, Building 2000: the internal face of 1358, the west wall of R11	105
77	Period 11C, Building 2000: the internal face of the south wall of R11	105
78	Period 11C, Building 2000: rubble levelling deposit (1615) in R11, looking south-east	106

79	Period 11C, Building 2000 : clay and cobble levelling (1393) in R11, looking south-east	106
80	Period 11C, Building 2000 : hypocaust piers, at the south-west corner of R11, looking south	107
81	Period 11C, Building 2000 : the south-west corner of R11, looking south	107
82	Period 11C, Building 2000 : void 1414 on the inner face of the south wall of R11, probably a flue	108
83	Period 11C, Building 2000 : the stokehole in the south-west corner of R11, with a hypocaust pier adjacent.....	108
84	Period 11C, Building 2000 : stokehole of the hypocaust system in R11, fired from R12.....	109
85	Period 11C, Building 2000 : reused sandstone slab used to floor the base of the stokehole.....	109
86	Period 11C, Building 2000 : pit 1404 in R12, looking north-west	109
87	Period 11C, Building 2000 : feature 1461 outside the south-west corner of R11	110
88	Period 11C, Building 2000 : feature 1461, looking east, with fragments of a flagged sandstone surface....	111
89	Period 11C: channel 1056, defining the northern edge of yard 1125, west of Building 2000	112
90	Period 11C: stone channel 92/96, aligned north/south in the external area west of Building 2000	113
91	Period 11C: the external area west of Building 2000 , looking north.....	113
92	Period 11C: well 678, in the external area west of Building 2000	114
93	Period 11C: stone-lined channel 165, in the external area west of Building 2000 , looking south-west.....	114
94	Period 11D: well 226 in the northern property.....	120
95	Period 11D: the south-east corner of Building 1569 in the northern property	121
96	Period 11D, Building 1569 : post-pads 481 and 482 in the east wall	121
97	Period 11E: cobbled surface 475 in the northern property	123
98	Period 11E: articulated dog skeleton in fill 574 of pit 579.....	124
99	Period 11D-12, Building 2000 : demolition rubble 24 within R9	129
100	Dr 29 samian-ware bowl, in production <i>c</i> AD 40-85	134
101	Sherds of a single South Spanish amphora (Peacock and Williams (1986) Class 25) from path 893	142
102	Fragment of a dark-blue opaque glass bangle	143
103	Amber finger-ring in the form of the head of Minerva.....	145
104	Modern accumulation of rubbish in a derelict property (in India).....	147
105	Reconstruction of the head of the murdered man hidden in well 226	148
106	Stone <i>pila</i> (472) reused in Building 589	150
107	A modern sugar-boiling pan in use	152
108	Moroccan jars used to cook and serve food.....	153
109	A still-life painting from the House of Julia Felix, Pompeii	154
110	A Celtic short-horn bull.....	155
111	Leather off-cuts from modern shoemaking.....	157
112	Cow skull from well 226, most likely used for target practice	157
113	Late rubble spread, seemingly forming a crude surface, containing demolition debris	158
114	The wooden wheel from well 1016	159
115	Fineware from the Nene Valley	164
116	South Spanish amphora.....	165
117	Pre-Roman ploughmarks at the Millennium site, beneath the remains of the early Roman fort	169
118	A possible temporary-camp ditch discovered on the north side of Botchergate.....	172
119	The putative Period 3 temporary camp ditch at the northern Lanes, looking south-east	173
120	<i>In situ</i> oak wall-plate in Building 1560	179
121	Roller-impressed chevron pattern on collapsed wall plaster in Building 1560	180
122	<i>In situ</i> oak wall-posts in the construction trenches of Period 7-9 Building 1308	193
123	Figurine of Diana.....	Appx 5
124	Dark blue glass vessel	Appx 8
125	Perforated cattle scapulae from the fort	Appx 14
126	Square, lozenge-shaped, and linear incisions on Skull 2.....	Appx 14
127	Parallel U-shaped micro-striations perpendicular to a cut mark on Skull 2	Appx 14

Tables

1	Quantification of samian by percentage of weight, sherd count, and vessel count, by phase.....	Appx 1
2	Relative quantities of samian ware from South, Central, and East Gaul by site.....	Appx 1
3	Quantification of sources of samian vessel by period.....	Appx 1
4	Quantification of samian vessels types by fabric.....	Appx 1
5	Numbers of Central and East Gaulish vessels with moulded decoration attributable to specific potters.....	Appx 1

6	Quantification of East Gaulish samian by production site.....	Appx 1
7	Repaired samian vessels.....	Appx 1
8	Reused samian ware (counters and spindle whorls)	Appx 1
9	Wear and abrasion on mortaria from KLA A-G and LAL A-D	Appx 2
10	Distribution (DIS/LDB) plus minor potters working at Wilderspool, Walton-le-Dale, and Carlisle	Appx 2
11	Stamped mortaria of Docilis 3 from all sites, listed according to die	Appx 2
12	Stamped mortaria of Austinus from all sites, listed according to die.....	Appx 2
13	Stamped mortaria of Docilis 3 in the northern Lanes, according to die.....	Appx 2
14	Stamped mortaria of Austinus in the northern Lanes, according to die	Appx 2
15	The Roman coin list.....	Appx 3
16	Keay's Lane: chronological distribution of the coins	Appx 3
17	Law's Lane: chronological distribution of the coins	Appx 3
18	Keay's Lane, Law's Lane, and Union Court: chronological distribution of the coins.....	Appx 3
19	Distribution of coins by coin period	Appx 3
20	Distribution of period XIII radiates by trench.....	Appx 3
21	Distribution of early and middle Constantinian issues by trench	Appx 3
22	Keay's Lane: coin periods I-XII by denomination	Appx 3
23	Law's Lane: coin periods I-XII by denomination	Appx 3
24	The southern Lanes sites: coin periods I-XII by denomination	Appx 3
25	Values per coin lost	Appx 3
26	Coin denominations as a percentage of the site totals for coin periods I-XII.....	Appx 3
27	Keay's Lane: the mints of origin of the fourth-century coins	Appx 3
28	Law's Lane: the mints of origin of the fourth-century coins.....	Appx 3
29	Distribution of copper-alloy studs	Appx 4
30	Distribution of the lithics by trench	Appx 7
31	Categories of lithic raw material	Appx 7
32	Reduction categories of lithics	Appx 7
33	Utilisation categories of lithics	Appx 7
34	Late Roman green glass.....	Appx 8
35	Chronological distribution of undiagnostic colourless cup and beaker fragments with horizontal wheel-cut and abraded lines.....	Appx 8
36	Chronological distribution of undiagnostic body fragments	Appx 8
37	Chronological distribution of undiagnostic blue-green jug/flask fragments	Appx 8
38	Chronological distribution of undiagnostic blue-green flask and unguent bottle fragments	Appx 8
39	Chronological distribution of undiagnostic blue-green vessel fragments.....	Appx 8
40	Chronological distribution of colourless and colourless-greenish bottle fragments.....	Appx 8
41	Chronological distribution of blue-green bottle fragments	Appx 8
42	Chronological distribution of cylindrical bottle fragments.....	Appx 8
43	Chronological distribution of hexagonal bottle fragments	Appx 8
44	Chronological distribution of undiagnostic blue-green storage-vessel fragments.....	Appx 8
45	Chronological distribution of cast window glass, by colour	Appx 8
46	Species used in the manufacture of wooden artefacts	Appx 10
47	Shoes by period.....	Appx 11
48	Nailing types on shoes from second-century levels.....	Appx 11
49	Shoes from later second-century levels, arranged by left and right	Appx 11
50	Leather shoe types from well 226.....	Appx 11
51	Leather shoes from well 226, arranged by left and right feet	Appx 11
52	Leather shoes from well 226: nailing types, according to van Driel-Murray's classification (1995).....	Appx 11
53	Leather shoes from well 226: nailing patterns, classified by design	Appx 11
54	Sheet leather by period	Appx 12
55	Summary catalogue of associated leather from posthole 1350.....	Appx 12
56	Age divisions of human skeletons	Appx 13
57	Levels of preservation of human skeletons	Appx 13
58	Count of skeletal elements	Appx 13
59	Age at death of the skeletal material	Appx 13
60	The sex of individuals by age	Appx 13
61	The redefinition of late Roman animal bone	Appx 14
62	Number of Individual Specimens (NISP) by species, phase, and excavated area.....	Appx 14

63	Minimum Numbers of Individuals (MNI) of the three main taxa.....	Appx 14
64	Preservation of bones from different types of contexts across the site.....	Appx 14
65	Comparison of the frequencies of the main food animals at various Roman sites in Carlisle....	Appx 14
66	Distribution of bones of the more important animals by feature type.....	Appx 14
67	Cattle NISP and MNI of each anatomical part for Period 11-12 by deposit type	Appx 14
68	Comparison of different parts of cattle at the northern Lanes, with the Southern Lanes, Annetwell Street, and Lincoln	Appx 14
69	Cattle wear stages of individual teeth	Appx 14
70	The numbers of fused (adult) and unfused (juvenile) bones of the three main taxa	Appx 14
71	Caprine wear stages of individual teeth	Appx 14
72	Sheep/goat kill-off pattern.....	Appx 14
73	Pig wear stages of individual teeth.....	Appx 14
74	'Soup Kitchen' deposits of cattle bones.....	Appx 14
75	Frequencies of anomalous cattle M ₃ s.....	Appx 14
76	Frequencies of anomalous cattle P ₂ s	Appx 14
77	Summary data of cattle-tooth measurements in tenths of a millimetre	Appx 14
78	Summary data of cattle-bone measurements in tenths of a millimetre of selected dimensions.	Appx 14
79	Univariate statistics of cattle astragali from Annetwell Street, the Millennium Project, and the northern Lanes	Appx 14
80	Summary data of all Roman caprine measurements in tenths of a millimetre	Appx 14
81	Summary data of Roman pig measurements in tenths of a millimetre.....	Appx 14
82	Complete list of invertebrate taxa, with the ecological codes assigned to them.....	Appx 15
83	Abbreviations for ecological codes and statistics used for interpretation of insect remains	Appx 15
84	Main statistics for assemblages of adult beetles and bugs (excluding aphids and scale insects)	Appx 15
85	Measurements (in microns) of <i>Trichuris</i> eggs.....	Appx 15
86	Context type by site period and number of palaeoenvironmental samples analysed.....	Appx 16
87	Matrix components	Appx 16
88	Charred plant remains present.....	Appx 16
89	Waterlogged plant remains present.....	Appx 16
90	Summary of the dendrochronological samples submitted from each trench	Appx 17
91	Details of the eight extra samples	Appx 17
92	Comparisons with reference chronologies for the Roman master sequence and selected individual timbers	Appx 17
93	The provisional dating prior to dendrochronological analysis, and the felling dates obtained	Appx 17
94	Matrix of t values obtained between the dated samples from timber framework 1027	Appx 17
95	Matrix of t values obtained between the dated samples from KLA A, KLA B, KLA C, and KLA D....	Appx 17
96	Radiocarbon dates and stable isotope measurements	Appx 17

Contributors

Elizabeth Allnut
formerly of the Carlisle Archaeological Unit

Andrew Bates
Senior Archaeologist and GIS Technician, Archaeology and Heritage, SLR Consulting Ltd, 50 Stirling
Business Centre, Wellgreen, Stirling, FK8 2DZ

Justine Bayley
formerly English Heritage, Fort Cumberland, Fort Cumberland Road, Eastney, Portsmouth PO4 9LD

Alex Bayliss
Historic England c/o Scientific Dating Team, 4th Floor, Cannon Bridge House, 25 Dowgate Hill, London EC4R 2YA

Christopher Bronk Ramsey
Research Laboratory for Archaeology and the History of Art, Dyson Perrins Building, South Parks Road, Oxford
OX1 3QY

John Carrott
Palaeoecology Research Services, Unit 4, National Industrial Estate, Bontoft Avenue, Kingston upon Hull HU5 4HF

Brian Connell
formerly of Museum of London Archaeology Service (MoLAS)

Gordon Cook
Scottish Universities Environmental Research Centre, Rankine Avenue, Scottish Enterprise Technology Park,
East Kilbride G75 0QF

Philip Cracknell
3 Cherry Tree Hill, Greysouthern, Cockermouth, Cumbria CA13 0UN

Simon Davis
formerly English Heritage, Fort Cumberland, Fort Cumberland Road, Eastney, Portsmouth PO4 9LD

Brenda Dickinson
28-30 Main Street, Woodnewton, Peterborough PE8 5EB

Cathy Groves
Historic England c/o Scientific Dating Team, 4th Floor, Cannon Bridge House, 25 Dowgate Hill, London EC4R 2YA

Christine Howard-Davis
formerly OA North, Mill 3, Moor Lane Mills, Moor Lane, Lancaster LA1 1QD

Celia Harding
93 Trafford Road, Norwich NR1 2QS

Kay Hartley
Flat 2, 27 Hanover Square, Leeds LS3 1AW

Martin Henig
Institute of Archaeology, 36 Beaumont Street, Oxford OX1 2PG

Louise Hird
255 Warwick Road, Carlisle CA1 1LJ

Jacqui Huntley
formerly Historic England, Bessie Surtees' House, 41-44 Sandhill, Newcastle upon Tyne NE1 3JF

Harry Kenward
formerly of the Environmental Archaeology Unit, University of York, The King's Manor, York YO1 7EP

Frances Large
formerly of the Environmental Archaeology Unit, University of York, The King's Manor, York YO1 7EP

Louise Loe
OA South, Janus House, Osney Mead, Oxford OX2 0ES

†Glenys Lloyd-Morgan

Tim Padley
formerly Tullie House Museum and Art Gallery Trust, Castle Street, Carlisle CA3 8TP

Jenny Price
Garth End, Well Garth, Main Street, Heslington, York YO10 5JT

David Shotter
10 Thornton Crescent, Morecambe, Lancashire LA4 5PY

Christopher Tolan-Smith
formerly of University of Newcastle upon Tyne, Department of Archaeology

Roger Tomlin
Wolfson College, University of Oxford, Linton Road, Oxford OX2 6UD

Ian Tyers
Dendrochronological Consultancy Ltd, 65 Crimicar Drive, Sheffield S10 4EF

Stephen Wadeson
formerly of OA East

Helen Webb
OA South, Janus House, Osney Mead, Oxford OX2 0ES

Sue Winterbottom
14 Cornes Street, Hanley, Stoke-on-Trent ST1 3JA

Sally Worrell
Institute of Archaeology, 31-34 Gordon Square, London WC1H 0PY

John Zant
OA North, Mill 3, Moor Lane Mills, Moor Lane, Lancaster LA1 1QD

Acknowledgements

A period of 40 years has elapsed between the commencement, in 1978, of archaeological excavations at the northern Lanes and the publication of the present volume. From the early stages of planning, through the various, and often protracted, phases of fieldwork and post-excavation analysis, large numbers of people have contributed to the project. Inevitably, and regrettably, the work of some individuals will have passed unrecorded, and their input will therefore remain unacknowledged. In mitigation, sincere thanks are offered to all those who were involved in the project, and who contributed, in one way or another, to the production of this report.

Strategic planning and direction of the excavations was undertaken by Mike McCarthy, formerly Principal Archaeologist with Carlisle City Council and Director of the Carlisle Archaeological Unit (CAU; Carlisle Archaeology Ltd (CAL) from August 1999), who was also responsible for managing the initial phases of the post-excavation programme in the 1980s and 1990s. Too many field staff worked on the site for all to be named individually, but the site supervisors included Edgar Bolton, Ian Caruana, Andrew Dacre, Jan Sewter, and John Timperley. Also for CAU/CAL, Philip Cracknell, formerly Senior Draughtsman, prepared most of the original site and finds drawings, upon which the majority of the illustrations that appear in the present volume were based. Much of the initial work on the finds recovered from the site was undertaken or supervised by Tim Padley, then Finds Researcher with CAU, who also compiled many of the original finds reports and catalogues, whilst the large assemblages of Romano-British pottery and stitched (non-shoe) leather were analysed and reported on by Louise Hird and Sue Winterbottom respectively.

Officers of Carlisle City Council who were involved with either the initial planning of the Lanes excavations, or the subsequent post-excavation programme, included Colin Cuthbert, former Director of Planning, John Egan, former Carlisle City Solicitor, and Euan Cartwright, formerly Director of Leisure and Community Development. The late Dorothy Charlesworth, Inspector of Ancient Monuments with the then Department of the Environment (DoE), was instrumental in providing financial support from the DoE for the excavations, and for much other support and advice besides. Additional funding was also forthcoming from Carlisle City Council, the Manpower Services Commission, the Marc Fitch Fund, and the Society of Antiquaries of London.

Most of the funding for the post-excavation and publication programme was provided by English Heritage (now Historic England), the staff of which have been generous with their support and advice. In particular, Dorothy Charlesworth's successors as Inspectors, Bill Startin, David Fraser, and Andrew Davison, are thanked for their continuing support and assistance, together with Mark Bowden, Helen Keeley, Barney Sloane, Tim Williams, and Tony Wilmott, who all, at one time or another, provided advice and quality assurance. Alex Bayliss, of Historic England's Scientific Dating Team, is also thanked for providing assistance in kind by undertaking a programme of AMS dating on a series of animal-bone samples from the site. The present report was read in draft by Patrick Ottaway, who made many valuable comments and suggestions. In the later stages of the post-excavation and publication programme, much valuable advice and assistance was provided by Tim Padley, by then Keeper of Archaeology with the Tullie House Museum and Art Gallery Trust, who also facilitated access to the Lanes project archive, and Mark Brennand, Manager-Lead Officer Historic Environment and Commons with Cumbria County Council.

For OA North, preparation and revision of a Project Design covering the later stages of the post-excavation programme, including publication, was managed by Rachel Newman and Murray Cook, and Rachel was also responsible for editing the present volume. The original site and finds drawings prepared by CAU were later digitised and (where necessary) revised by Adam Parsons and Marie Rowland. Marie also typeset the volume and compiled the index. Chris Howard-Davis, formerly OA North Finds Manager, undertook the formidable task of compiling, ordering, and editing the many specialist reports that are presented in the appendices, and was also responsible for updating and revising some of the original reports.

Harry Kenward, Frances Large, and John Carrott would like to thank Michael Issitt, Barrie McKenna, Tom Shaw, and Darren Worthy for processing the soil samples that were analysed for insect remains, and Jacqui Huntley is grateful to Shaun Doran for processing the samples earmarked for palaeobotanical analysis. Cathy Tyers (née Groves) thanks Jennifer Hillam and Ian Tyers for invaluable discussions, and Ian also for

providing unpublished tree-ring software, and is grateful to Dave Brown, Mike Baillie, and Anne Crone for providing unpublished tree-ring data. Simon Davis and Brian Connell would like to thank Nellie Phoca-Cosmetatou for assistance with identifying and recording the animal bones from the site, and Simon Mays for help with the x-radiography of some pathological animal bones.

Carlisle City Council is thanked for permission to reproduce many photographs from a number of CAU/CAL excavations. Thanks are also due to the following people and organisations for permission to reproduce photographs and other images from their collections: the estate of the late Barri Jones (Pl 1), Tullie House Museum Trust (Pl 105), and Chris Howard-Davis (Pls 34, 104, 107-11).

Summary

In the mid-1970s, Carlisle City Council drew up proposals for the redevelopment of the Lanes, a densely built-up area of approximately 2.8 ha situated in the north-east corner of the city's historic core (NY 4015 5606). At the time, the area was crossed, east to west, by 19 narrow lanes or vennels, the origins of which were obscure. Previous archaeological work in the area, though extremely limited, had confirmed the presence of complex Roman and medieval deposits in this part of the city. Consequently, a programme of archaeological and historical investigation, funded in part by the then Department of the Environment (DoE), was undertaken by the Carlisle Archaeological Unit between 1978 and 1982.

To this day, the Lanes retains its position as one of the largest and most significant urban archaeological investigations ever undertaken in northern England. The project as a whole comprised a phased programme of excavation and standing-building recording, undertaken over a period of several years, together with a survey of the surviving documentary evidence. Although the fieldwork was undertaken as a single project, for post-excavation and publication purposes they were split into two parts, the northern and southern Lanes. The former principally comprised a large, open-area excavation, consisting of seven separately excavated but contiguous trenches, whilst the latter was characterised by a series of smaller trenches. Additionally, on the northern Lanes, large areas north and south of the main excavation were subjected to salvage excavation and/or watching brief, and several smaller trenches were also excavated in the vicinity. The results of the southern Lanes investigations have been published, and the present volume presents the evidence for pre-Roman and Roman occupation within the northern Lanes.

As elsewhere in the city centre, evidence for pre-Roman activity was largely restricted to cultivation marks and a buried soil, the remains of a field system of possible Iron Age date. However, a stratigraphically contemporary metallated trackway was also found, and a large assemblage of late neolithic/early Bronze Age lithics (and a few probable late mesolithic specimens) was recovered, though almost all of these were residual in later contexts. The arrival of the Roman army in the late first century AD saw the construction of a probable temporary camp in a strategic position on the south bank of the River Eden, overlooking the likely river crossing. This installation was probably constructed in the AD 70s-80s, and may have been a campaign camp for a relatively small (auxiliary unit-sized) military formation. However, the possibility that it was a construction camp, associated with the establishment (in the autumn/winter of AD 72-3) of the first auxiliary fort at Carlisle, which lay c 300 m west of the Lanes, cannot be ruled out.

Probably during the first quarter of the second century (possibly as late as the Hadrianic period), a massive timber building, probably a *mansio*, was erected on the western edge of the northern Lanes, parallel to the Roman road beneath modern Scotch Street, a major thoroughfare leading north to the crossing of the River Eden. Following the destruction of this building by fire, an extensive complex of large timber buildings, of two distinct structural phases, was erected over the site. Though poorly preserved, it is possible that these also served as *mansiones*. From around the middle of the second century AD, the area was largely absorbed into the expanding civilian settlement, and the second half of the century saw the development of distinct 'properties' on the site, though a large, elaborate timber building, perhaps another *mansio*, was also constructed, set well back from the main street frontage. The putative properties comprised relatively narrow plots extending back from the Roman precursor to Scotch Street, within which timber buildings, yards, pits, and other features were constructed. Parts of three such landholdings seemingly lay within the northern Lanes site, though their boundaries proved difficult to define in some phases, suggesting a considerable degree of fluidity in land use and (perhaps) land ownership. Most excavated structures of this period were small and timber-built; few yielded evidence for anything other than a residential function, though it is likely that many were multi-functional. Good preservation of waterlogged organic materials was a feature of the earlier Roman levels, though it was limited mainly to the fills of cut features, such as pits and wall-foundation trenches.

The building plots established in the second century continued to develop during the third century and, on some parts of the site at least, into the second half of the fourth century, although other areas seem to have decayed. To the north, a third-century stone-lined well contained the skeleton of a probable murder victim, together with an assemblage of animal bones and other artefacts suggestive of some form of 'ritual' or structured deposition. Further south, a stone, or stone-footed, house was constructed during the late second century. Initially a simple rectangular structure, this developed, during the first half of the third century, into a small, winged corridor house. Latterly, one room was provided with underfloor heating, but in all other respects the residence seems

to have been simply appointed. The house, together with the rest of the property in which it was located, and the area immediately to the south, appears to have been largely abandoned by the mid-third century, though slight evidence for continued activity well into the fourth century was recorded. By contrast, the property to the north saw intensive activity into the late fourth century, marked by the laying of an extensive cobbled surface; this was associated with a notable increase in coin deposition. Ultimately, the site was abandoned, and dark soils accumulated over most Roman levels, though some of the walls of the stone house were clearly visible as late as the twelfth or early thirteenth century, when they were robbed of their stone. Indeed, upstanding elements of this structure appear to have influenced the positioning, during the twelfth/thirteenth century, of some tenement boundaries on the east side of Scotch Street, which in turn determined the location and alignment of the lanes themselves. These were seemingly laid out during the early fourteenth century and remained in use into the 1970s, but most were obliterated by construction of the present Lanes shopping centre.

Résumé

Au milieu des années 1970, la municipalité de Carlisle élaborait des propositions pour le réaménagement de « The Lanes », un quartier densément construit d'environ 2,8 hectares située dans la partie nord-est du centre historique de la ville (NY 4015 5606). À l'époque, la zone était traversée d'est en ouest par dix-neuf ruelles étroites ou vernelles dont l'origine reste incertaine. Les travaux archéologiques menés antérieurement dans ladite zone, bien que extrêmement limités, avaient confirmé la présence d'occupations romaines et médiévales complexes dans cette partie de la ville. Conséquemment, un programme de fouilles archéologiques et de recherche historique, financé en partie par le « Department of the Environment (DoE) » de l'époque – c'est-à-dire le Département de l'Environnement –, a été entrepris par la « Carlisle Archaeological Unit » – c'est-à-dire l'Unité Archéologique de Carlisle – de 1978 à 1982.

À ce jour, « The Lanes » reste le site le plus important d'archéologie urbaine jamais entrepris dans le nord de l'Angleterre. Le projet dans son ensemble comprenait un programme échelonné de fouilles archéologiques et de relevé des bâtiments, entrepris sur une période de plusieurs années, ainsi qu'une étude des données récoltées. Bien que le travail sur le terrain ait été entrepris en tant que projet unique, il a été divisé en deux zones pour les besoins de la post-fouille et de la publication: la partie nord et la partie sud des Lanes. La première consistait principalement en une vaste fouille à ciel ouvert, constituée de sept tranchées creusées séparément mais contiguës, tandis que la dernière se caractérisait par une série de tranchées plus petites. En outre, au nord des Lanes, de larges zones situées au nord et au sud de l'aire de fouilles principale ont fait l'objet de fouilles de sauvetage et/ou d'observation sommaire, et plusieurs tranchées plus petites ont également été creusées et fouillées à proximité. Suite à la publication des résultats des recherches de la partie sud des Lanes, le présent volume présente donc ici les preuves de l'occupation pré-romaine et romaine dans la partie nord des Lanes.

Comme ailleurs dans le centre-ville, les preuves de l'activité pré-romaine se limitaient en grande partie à des traces de culture et à un sol enfoui, vestiges d'un système de champs appartenant probablement à l'âge du fer. Cependant, un chemin empierré stratigraphiquement contemporain a également été trouvé, et un vaste assemblage de mobilier lithique correspondant à une période comprise entre le néolithique tardif et l'âge du bronze ancien (et quelques spécimens appartenant probablement au mésolithique tardif) a été retrouvé, bien que leur quasi-totalité soit résiduelle dans des contextes plus tardifs. L'arrivée de l'armée romaine à la fin du premier siècle après J.-C. a entraîné la construction d'un probable campement temporaire dans un lieu stratégique situé sur la rive sud de la rivière Eden, donnant sur le passage permettant vraisemblablement de traverser la rivière. Cette installation a probablement été construite dans les années 70-80 après J.-C. et pourrait avoir été un camp de campagne pour une formation militaire relativement petite (de la taille d'une unité auxiliaire). Cependant, l'hypothèse qu'il s'agisse d'un camp de construction, liée à la création (durant l'automne et l'hiver 72-73 après J.-C.) du premier fort auxiliaire de Carlisle, situé à trois-cent mètres à l'ouest des Lanes, ne peut être exclue.

Probablement au cours du premier quart du deuxième siècle après J.-C. (peut-être aussi tard que la période hadrianique), un bâtiment en bois d'oeuvre massif, probablement une *mansio*, fut érigé à l'extrémité ouest au nord des Lanes, parallèlement à la voie romaine se trouvant sous l'actuelle Scotch Street, artère principale vers le nord après la traversée de la rivière Eden. Suite à la destruction de ce bâtiment par un incendie, un vaste complexe de grands bâtiments en bois d'oeuvre massifs, comportant deux phases structurelles distinctes, a été érigé sur le site. Bien que mal conservés, il est possible que ceux-ci aient également servi de *mansiones*. À partir du milieu du deuxième siècle après J.-C. environ, cette aire a été largement absorbée dans l'expansion de l'installation des populations civiles, et la seconde moitié du siècle a vu le développement de « propriétés » distinctes sur le site, et ce, bien qu'un grand

bâtiment en bois, élaboré – peut-être une autre *mansio* –, ait également été construit, à l'écart de la rue principale. Les propriétés putatives comprenaient des parcelles relativement étroites s'étendant du précurseur romain jusqu'à Scotch Street. Parcelles sur lesquelles des bâtiments en bois, des cours, des fosses et d'autres éléments fonctionnels ont été construits. Trois de ces propriétés se situent vraisemblablement partiellement dans la partie septentrionale du site des Lanes, bien que leurs limites se soient révélées difficiles à définir selon les phases, suggérant un degré important de fluidité dans l'utilisation des terres et – peut-être – la propriété des terres. La plupart des structures fouillées appartenant à cette période étaient petites et construites en bois. Peu de ces structures ont donné des preuves d'une autre fonction que celle résidentielle, même s'il est probable que beaucoup d'entre elles étaient multifonctionnelles. La bonne préservation des matériaux organiques détrempés était une caractéristique des niveaux romains antérieurs, bien qu'elle se limitât principalement aux remplissages de certaines composantes archéologiques telles les fosses et les tranchées de fondation des murs.

Les terrains bâtis établis au deuxième siècle ont continué à se développer au cours du troisième siècle après J.-C. et, pour certaines parties du site, jusque dans la deuxième moitié du quatrième siècle après J.-C., alors que d'autres zones semblent être tombées en ruines. Au nord, un puits de pierre du troisième siècle après J.-C. contenait le squelette d'une victime présumée de meurtre, ainsi qu'un assemblage d'ossements d'animaux et d'autres objets suggérant une forme quelconque de dépôt «rituel» ou structuré. Plus au sud, une maison en pierre ou à fondation en pierre a été construite à la fin du deuxième siècle après J.-C.. À l'origine il s'agit d'une structure rectangulaire simple, puis celle-ci s'est développée en une petite maison à galerie de façade au cours de la première moitié du troisième siècle après J.-C.. plus tard, une des pièces fut équipée d'un système de chauffage par le sol, mais à tous autres égards, la résidence semble avoir été simplement arrangée. La maison, ainsi que le reste de la propriété dans laquelle elle se trouvait, et la zone immédiatement au sud, ont été probablement abandonnées en grande partie au milieu du troisième siècle après J.-C.. Mais quelques signes montrant une activité continue jusqu'au quatrième siècle après J.-C. ont été enregistrés. En revanche, la propriété située au nord a connu une activité intense jusqu'à la fin du quatrième siècle après J.-C., marquée par la pose d'une vaste surface pavée. À cela était associée une augmentation notable des dépôts monétaires. Finalement, le site a été abandonné et des sols de couleur sombre se sont accumulés sur la plupart des niveaux romains. Cependant, certains des murs de la maison en pierre sont clairement visibles jusqu'au douzième ou au début du treizième siècle après J.-C., lorsqu'ils ont été dépouillés de leurs pierres. En effet, des éléments en saillie de cette structure semblent avoir influencé le positionnement, au cours des douzième-treizième siècles, de certaines limites de lotissements sur le côté est de Scotch Street, ce qui a déterminé l'emplacement et l'alignement des voies elles-mêmes. Celles-ci avaient apparemment été aménagées au début du quatorzième siècle et étaient restées en usage dans les années 1970, mais la plupart ont été détruites par la construction du centre commercial actuel de Lanes.

Zusammenfassung

Mitte der 1970er Jahre stellte Carlisle City Council einen Sanierungsantrag für die sogenannten ‚Lanes‘, ein dicht bebautes, ca. 2.8ha großes Gebiet welches im Nordosten des historischen Stadtzentrums Carlises liegt (NGR NY 4015 5606). In den 70er Jahren verliefen durch dieses Gebiet noch neunzehn sehr schmale Sträßchen oder Gassen (die ‚Lanes‘), deren Ursprung jedoch bis dato leider im Dunkeln gelegen hatte. Vorangegangene archäologische Arbeiten in den ‚Lanes‘ waren sehr beschränkt gewesen, hatten aber das Vorhandensein von komplexen römischen und mittelalterlichen Befunden stark vermuten lassen. Aus diesem Grunde wurde ein Arbeitsprogramm für archäologische und kultur-historische Untersuchungen zusammengestellt, welches vom Umweltministerium teilfinanziert und dem damaligen Carlisle Archaeological Unit zwischen den Jahren 1978-1982 durchgeführt wurde.

Bis zum heutigen Tage sind die ‚Lanes‘ in Carlisle eine der größten und wichtigsten archäologischen Stadtkernuntersuchungen im Norden Englands. Das gesamte Projekt beinhaltete ein abgestuftes Programm bestehend aus Ausgrabungen und Gebäudebestandsaufnahmen. Diese Arbeiten wurden über mehrere Jahre hinweg durchgeführt, zeitgleich mit einer Untersuchung der noch erhaltenen Urkunden. Obwohl die Ausgrabungen der ‚Lanes‘ insgesamt als ein Großprojekt unternommen wurden, wurden sowohl der Befund- als auch der Fundbericht und die sich anschließende Publikation in zwei Teile gespalten: die ‚Northern Lanes‘ und die ‚Southern Lanes‘. Während sich der erste Band hauptsächlich mit einer großflächig angelegten Grabung von sieben separaten aber aneinandergrenzenden Schnitten befaßt, beschreibt der zweite Band eine Anzahl von mehreren kleineren Schnitten. Außerdem wurden in den ‚Northern Lanes‘ große Flächen nördlich und südlich der Hauptgrabungsfläche als Rettungsgrabungen und/oder mit kurzzeitiger Baubegleitung untersucht; es wurden aber auch mehrere schmale Schnitte in der direkten Umgebung angelegt. Die Ergebnisse der Untersuchungen in den ‚Southern Lanes‘ sind bereits publiziert und der hier vorliegende Band enthält nun die Ergebnisse für die vorrömische und römische Nutzung der ‚Northern Lanes‘.

Die Grabungen lassen vermuten, daß, wie auch in anderen Teilen des Stadtzentrums, die vorrömische Aktivität hier auf die landwirtschaftliche Nutzung des Gebietes beschränkt gewesen war; auf dem Gebiet der ‚Lanes‘ deuten eine wahrscheinlich eisenzeitliche Feldeinteilung und Ackerfurchen darauf hin. Es wurde allerdings auch ein zeitgleicher Kopfsteinpflasterweg und eine große Anzahl spätneolithischer und frühbronzezeitlicher Silexartefakte geborgen (darunter auch einige vermutlich mittelsteinzeitliche Funde). Es muß allerdings darauf hingewiesen werden, daß es sich bei all diesen prähistorischen Funden um Streufunde aus späteren Befunden handelte. Mit der Ankunft der römischen Armee im späten 1. Jh. n. Chr. wurde mit dem Bau eines wahrscheinlich nur kurzzeitig besetzten Lagers begonnen. Dieses wurde in strategischer Lage am südlichen Ufer des Edens errichtet; es hatte einen direkten Blick auf und Kontrolle über die zu jener Zeit wahrscheinlichste Furt/Flußübergang. Das Lager wurde zwischen 70-80 n. Chr. erbaut und war wahrscheinlich ein Feldlager für eine relativ kleine Militäreinheit. Es kann jedoch aber nicht ganz ausgeschlossen werden, daß es sich bei diesem Lager um ein Baulager handelte, in dem Truppen lebten, die am Bau von Carlisle's größerem Auxiliarlagers (72-73 n. Chr.) beteiligt gewesen waren. Dieses größere Lager lag ca. 300m westlich der Lanes.

Die Grabungsergebnisse lassen darauf schließen, daß auf einem Teil der Fläche im ersten Viertel des 2. Jh. n. Chr. (wahrscheinlich in der hadrianischen Zeit) ein großes Holzgebäude errichtet wurde, vermutlich eine *mansio*. Diese befand sich am westlichen Rand der ‚Northern Lanes‘, parallel zur römischen Straße, die sich heute unter der modernen Scotch Street befindet. Entlang dieser Straße befand sich seit jeher eine wichtige Verbindungsstrecke in Richtung Norden, die direkt zum Flußübergang über den Eden führte. Untersuchungen ergaben, daß diese große *mansio* durch ein Feuer zerstört wurde. Daraufhin folgte der Bau eines großen Gebäudekomplexes aus mehreren Holzgebäuden, von dem wir ohne Zweifel zwei Bauphasen nachweisen können. Obwohl dieser Gebäudekomplex schlecht erhalten ist, kann doch vermutet werden, daß es sich auch hierbei ebenfalls um *mansiones* handelte. Ab Mitte des 2. Jh. n. Chr. wurde dieser Bereich vollständig in die immer größer werdende Randsiedlung miteinbezogen und in der zweiten Hälfte des 2. Jh. n. Chr. kristallisierten sich hier deutlich voneinander abgegrenzte Hausgrundstücke heraus. Ein weiteres großes, sehr aufwendig gebautes Holzgebäude, das vielleicht eine weitere *mansio* war, wurde auf einem Grundstück errichtet, welches deutlich von der Hauptstraßenfront zurückgesetzt lag. Diese vermeintlichen Grundstücke bestanden aus relativ engen Liegenschaften, die sich von der heutigen Scotch Street nach hinten heraus erstreckten, und in denen Holzgebäude, Höfe und Gruben nachgewiesen werden konnten. Drei dieser Liegenschaften schienen in den ‚Northern Lanes‘ zu sein, aber es war schwierig, die Grenzen der einzelnen Grundstücke in ihren verschiedenen Bauphasen festzulegen. Dies wiederum läßt eine gewisse Fluidität in der Nutzung der Ländereien vermuten und vielleicht damit auch auf einen steten Wechsel der Besitzverhältnisse schließen. Die meisten gegrabenen Strukturen dieses Zeitabschnitts waren kleine Holzgebäude und kaum eines ließ auf eine andere Nutzung als die eines Wohnhauses schließen – obwohl viele dieser Gebäude höchstwahrscheinlich vielseitiger genutzt wurden als nur als Wohnsitz. Durch den hohen Feuchtigkeitsgehalt des Bodens gab es an der Grabungsstelle eine sehr gute Erhaltung organischer Funde, besonders aus frühromischen Befunden, die sich allerdings auf Gruben und Mauerfundamente und ähnliche Befunde beschränkten.

Die Baugrundstücke, die sich im 2. Jh. n. Chr. hier etabliert hatten, bestanden auch im 3. Jh. n. Chr. fort und entwickelten sich in einigen Abschnitten des Gebietes weiter bis hin zur zweiten Hälfte des 4. Jh. n. Chr. Dafür wurden andere Grundstücke dem Verfall überlassen. Im Norden der Grabungsfläche wurde in einem mit Steinen eingefassten Brunnen ein menschliches Skelett geborgen. Bei dem Toten handelte es sich vermutlich um ein Mordopfer. Am Boden des Brunnens wurden außerdem Tierknochen und andere Gegenstände gefunden, die auf eine Art der rituellen Deponierung hindeuten. Im Süden der Grabungsfläche befand sich ein Steingebäude (oder ein Gebäude mit Steinfundamenten), das in das 2. Jh. n. Chr. datiert. Anfangs war es nur eine einfache rechteckige Struktur, die sich dann aber in der ersten Hälfte des 3. Jh. n. Chr. in ein kleines Haus mit Korridoren und Seitenflügeln weiterentwickelte. Eines seiner Räume war mit einer Fußbodenheizung ausgestattet, während die anderen überraschend einfach eingerichtet waren. Das Haus und der Rest seines Grundstückes waren zur Mitte des 3. Jh. n. Chr. im Großen und Ganzen jedoch verlassen, ebenso wie das Gebiet das sich direkt südlich an das Grundstück anschloß. An einigen anderen Stellen belegten Befunde aus dem 4. Jh. n. Chr. jedoch eine gewisse Kontinuität. Im Gegensatz dazu wurden die Grundstücke im Norden allerdings bis in das späte 4. Jh. n. Chr. genutzt. Dies läßt sich aus einer geflasterten Fläche schließen, welche auch mit einer auffallenden Zunahme von Münzniederlegungen verbunden ist. Am Ende jedoch wurde auch dieser Standort verlassen und eine dunkle Erdschicht deckte fast den gesamten römischen Horizont ab. Einige Mauern der römischen Steingebäude mußten aber noch bis in das 12. oder frühe 13. Jh. n. Chr. deutlich sichtbar gewesen sein, da sie zu jener Zeit von den mittelalterlichen Anwohnern Carlisle's (die nach Rohmaterial für ihre eingetragenen Bauvorhaben suchten) geplündert worden waren. Es scheint sogar, daß einige der noch aufrecht stehenden spätrömischen Mauern den Standort und die Abgrenzungen von Mietshäusern des 12. und 13. Jh. auf der Ostseite der Scotch Street beeinflussen. Diese wiederum bestimmten dann die Lage und Ausrichtung der ‚Lanes‘ selbst. Die ‚Lanes‘ wurden demnach während des frühen 14. Jahrhunderts angelegt und waren bis in die 1970er Jahre im Gebrauch. Die meisten wurden jedoch für den Bau des ‚Lanes‘ Einkaufszentrums dem Erdboden gleichgemacht.

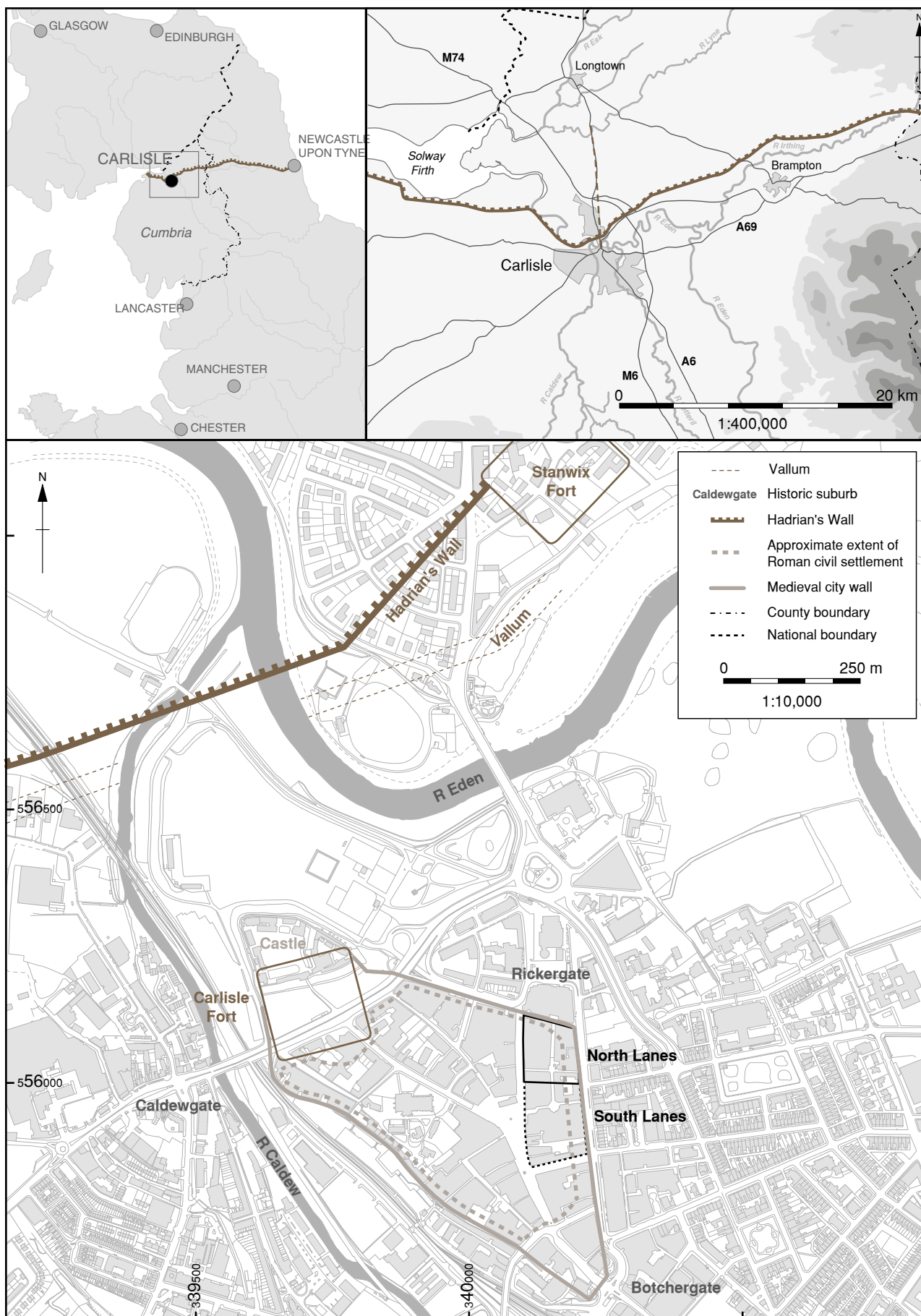


Figure 1: Site location