

# **The Roman Roadside settlement at Westhawk Farm, Ashford, Kent: excavations 1998-9**

*By Paul Booth, Anne-Marie Bingham and Steve Lawrence*

with contributions by

*Lindsay Allason-Jones, Steven Allen, R N E Barton, Joanna Bird, Kayt Brown, Dana Challinor, Bethan Charles,  
H E M Cool, Louise Harrison, Hugo Lamdin-Whymark, Malcolm Lyne, Quita Mould, Sarah Paynter,  
Ruth Pelling, Mark Robinson, Fiona Roe, Ian Scott, Penelope Walton Rogers, Patricia Wiltshire,  
Vicky Winton, Annsofie Witkin*

Illustrations by

*Luke Adams, Peter Lorimer, Sarah Lucas, Lucy Martin, Rosalind Smith*

Edited by

*Edward Biddulph and Ian Scott*

The Roman roadside settlement at Westhawk Farm, Ashford, Kent: excavations 1998-9

Published by Oxford Archaeology as part of the Oxford Archaeology Monograph series

*Edited by Edward Biddulph and Ian Scott*

For more information visit <http://thehumanjourney.net>

Figures 1.1, 1.2, 1.3, 1.5 are reproduced from the Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office, © Crown Copyright, AL 100005569

Figure 1.4 British Geological Society. © NERC. All rights reserved

Typeset by Manila Typesetting Company  
Printed by Alden Press

isbn 978-0904-220-483

© 2008 The Oxford Archaeological Unit Ltd

# Contents

List of Figures .....	xi
List of Plates.....	xv
List of Tables .....	xvi
Summary.....	xix
Acknowledgements .....	xx
CHAPTER 1: INTRODUCTION.....	1
LOCATION AND SITE CHARACTER .....	1
PROJECT BACKGROUND.....	1
PHYSICAL AND ARCHAEOLOGICAL BACKGROUND.....	5
Geology, Topography and Soils .....	5
Prehistoric.....	7
Roman .....	9
Post-Roman .....	9
GEOPHYSICAL SURVEY .....	10
KENT ARCHAEOLOGICAL RESCUE UNIT EVALUATION.....	12
METAL DETECTOR SURVEY .....	12
1998-1999 EXCAVATION .....	12
Site Methodology.....	12
Preservation.....	13
Site Sequence.....	13
Site Narrative .....	16
Terminology of spatial units.....	16
ARCHIVE .....	16
CHAPTER 2: PERIOD 1 - FROM PALAEOLITHIC TO THE BRONZE AGE.....	17
INTRODUCTION.....	17
PALAEOLITHIC FINDS <i>by Vicky Winton</i> .....	17
MESOLITHIC FLINT <i>by R N E Barton</i> .....	23
Context 8088 (fill of gully 8087) .....	23
Context 8090 (fill of ditch 8418) .....	23
Context 8093 (fill of ditch 8418) .....	23
Individual finds .....	24
NEOLITHIC AND BRONZE AGE FLINT <i>by H Lamdin-Whymark</i> .....	24
Methodology.....	24
Raw Material and Condition .....	24
Assemblage .....	24
Conclusions.....	24
POSSIBLE BRONZE AGE FIELD SYSTEM .....	25
CHAPTER 3: PERIOD 2 - LATE IRON AGE AND ROMAN .....	27
PHASE 1 UP TO c AD 43.....	27
Burial 9200 .....	27
Recovery .....	27
Description of the grave and contents as found.....	29
Interpretation of the layout of the burial and location of the finds .....	30
Copper Alloy artefacts from Burial 9200 <i>by H E M Cool</i> .....	31
PHASES 2-7, AD 43-400 .....	34
The Weald to Canterbury Road.....	34
North-west roadside ditches .....	35
Phase 2.....	35
South-east roadside ditches.....	39
Phase 2.....	39
Phase 3.....	39
Phase 4.....	41

Phase 5 .....	48
Pits .....	52
Road surfaces .....	52
North-west oblique ditch area .....	53
Phase 3 .....	53
North-west roadside plots .....	54
Plot NW 1 .....	54
Plot NW 2 .....	56
Structure U .....	57
Structure J (Phase 4) .....	58
Waterhole 796 .....	58
Plot NW 3 .....	62
Structure I .....	62
Possible Plot NW 4 .....	65
North-west undivided roadside area .....	65
Structure H (Phase 3) .....	65
Waterhole 7239 .....	65
Pit 8024 .....	68
Area of soil spreads .....	69
Phase 4 roadside boundary ditches .....	69
South-west roadside plots .....	69
Plot SW 1 .....	71
Plot SW 2 .....	73
Plot SW 3 .....	75
Structure E (?Phase 4) .....	76
Structure D (Phase 4-5) .....	77
Plot SW 4 .....	79
Structure C (Phase 4) .....	79
Grave 8160 .....	79
Other features .....	80
Plot SW 5 .....	81
Plot SW 6 .....	82
Structure A (Phase 2) .....	82
Structure B (Phase 2) .....	83
Pit 8914 .....	83
North-east Enclosure area .....	83
Ditch sequences .....	83
Cremation grave (Phase 2) .....	83
Ditches 1721 and 1750 (Phase 3) .....	84
Ditch 1765 (Phase 4) .....	87
Ditches 570 and 1755 (Phase 4) .....	87
Ditches 1740 and 1760 (Phase 4-5) .....	87
Metalworking installations .....	89
Structure R .....	89
Other features to the south-east .....	92
Cremation burials .....	93
Shrine Area .....	94
Pits .....	94
Rectilinear shrine enclosure .....	94
Ditch 970 and posthole group 1070 .....	97
Shrine structure .....	97
Walls of the shrine .....	97
Features within the shrine .....	97
Other features within the rectilinear enclosure .....	100
Waterhole 9179 .....	102
Southern Settlement Area .....	105
Plot SC1 .....	105
Phase 2 .....	105
Phase 3 .....	105
Phase 4 .....	107
Phase 5 .....	107
Plot SC2 .....	107

## Contents

Phase 2 .....	107
Phase 3 .....	109
Phase 4 .....	111
Phase 5 .....	111
<b>Plot SC3</b> .....	<b>112</b>
Phase 2 .....	112
Phase 3 .....	112
Phase 4-5 .....	112
<b>Plot SC4</b> .....	<b>112</b>
Phase 3 .....	112
Phase 4 .....	114
Phase 5 .....	114
<b>Plot SC 5</b> .....	<b>116</b>
Phase 3 .....	116
Phase 4 .....	117
Phase 5 .....	118
<b>Plot SC6 - south-eastern settlement area</b> .....	<b>119</b>
<b>Southern Peripheral Area</b> .....	<b>121</b>
<b>Plot SE1</b> .....	<b>121</b>
<b>Possible mortuary enclosure</b> .....	<b>123</b>
<b>Other features</b> .....	<b>123</b>
Cremation graves .....	123
Inhumation grave .....	124
<b>Area C</b> .....	<b>124</b>
<b>Cemetery</b> .....	<b>124</b>
Ditches .....	124
Graves .....	127
Other features .....	128
<b>CHAPTER 4: PERIODS 3-4 - MEDIEVAL AND POST-MEDIEVAL ACTIVITY</b> .....	<b>131</b>
<b>PERIOD 3: MEDIEVAL FEATURES</b> .....	<b>131</b>
<b>PERIOD 4: POST-MEDIEVAL FEATURES</b> .....	<b>131</b>
<b>CHAPTER 5: COINS AND NON-CERAMIC FINDS</b> .....	<b>135</b>
<b>COINS</b> <i>by Peter Guest</i> .....	<b>135</b>
<b>Introduction</b> .....	<b>135</b>
<b>Coins</b> .....	<b>135</b>
<b>Coins as site-finds</b> .....	<b>135</b>
<b>Coins and the context of deposition</b> .....	<b>139</b>
<b>OBJECTS AND VESSELS OF NON-FERROUS METAL, FIRED CLAY AND GLASS</b> <i>by H E M Cool</i> .....	<b>148</b>
<b>Introduction</b> .....	<b>148</b>
<b>Finds by function</b> .....	<b>148</b>
<b>Personal ornaments and jewellery</b> .....	<b>149</b>
<b>Toilet and medical equipment</b> .....	<b>151</b>
<b>Textile equipment</b> .....	<b>151</b>
<b>Household equipment</b> .....	<b>152</b>
Glass vessels .....	152
Other items .....	153
<b>Recreation</b> .....	<b>153</b>
<b>Weighing equipment</b> .....	<b>154</b>
<b>Structural finds</b> .....	<b>155</b>
<b>Fasteners and fittings</b> .....	<b>155</b>
<b>Religious items</b> .....	<b>155</b>
<b>Evidence of craft and industry</b> .....	<b>156</b>
<b>Miscellaneous</b> .....	<b>156</b>
<b>The Finds as an assemblage</b> .....	<b>156</b>
<b>Comparison of the stratified and non-stratified non-ferrous metal small finds</b> .....	<b>158</b>
<b>Catalogue</b> .....	<b>159</b>
<b>JET AND LIGNITE OBJECTS FROM GRAVE 5090</b> <i>by Lindsay Allason-Jones</i> .....	<b>171</b>
<b>Catalogue</b> .....	<b>171</b>

Analysis .....	171
IRONWORK by Ian Scott .....	174
Introduction .....	174
Composition of the assemblage .....	174
Methodology .....	174
Report structure .....	174
Assemblage as a whole .....	175
Range of finds present .....	175
Overall spatial distribution .....	177
Evidence for religion and ritual .....	178
Evidence for ironworking .....	182
Phased assemblages .....	184
Phase 2 (AD 43-70) .....	184
Phase 3 (AD 70-150) .....	185
Phase 4 (AD 150-200) .....	185
Phase 5 (AD 200-250) .....	185
Phase 6 (AD 250-300) .....	186
Unphased material and material of uncertain phase .....	186
Distribution of different types of material across the phases .....	186
Catalogue of identified and illustrated objects .....	186
WORKED STONE by Fiona Roe .....	188
Introduction .....	188
Querns and millstones .....	188
Niedermendig lava .....	188
Millstone Grit .....	191
Lower Greensand, Lodsworth stone .....	191
Lower Greensand, Copt Point, Folkestone .....	191
Other Stone Objects .....	191
Discussion .....	192
Conclusion .....	193
Catalogue of worked stone (including illustrated examples) .....	193
WOODEN FINDS by S J Allen .....	195
Introduction .....	195
Methodology .....	196
Catalogue and summary of assemblages .....	196
Discussion .....	200
LEATHER by Quita Mould .....	202
Methodology .....	202
Discussion .....	202
Catalogue of illustrated items .....	205
CHAPTER 6: CERAMIC FINDS .....	207
ROMAN AND MEDIEVAL POTTERY by Malcolm Lyne .....	207
Introduction .....	207
Methodology and report format .....	207
Fabrics .....	207
‘Belgic’ / Romanised Native wares .....	207
Early Gallo-Belgic and Central Gaulish fine ware imports .....	208
Early Roman wares .....	208
Late Roman wares .....	210
Salt container briquetage .....	210
Medieval wares .....	210
Quantification .....	210
Assemblages from Area C .....	217
Assemblages from Area B .....	217
Period 1: Prehistoric .....	217
Period 2, Phase 2 (AD 43-70) .....	217
Period 2, Phase 3 (AD 70-150) .....	220
Period 2, Phase 4 (AD 150-200) .....	225
Period 2, Phase 5 (AD 200-250) .....	237
Period 2, Phase 6 (AD 250-350) .....	244

## Contents

<i>Period 2, Phase 7 (AD 350-400+)</i> .....	249
<i>Period 3: Medieval (AD 1200-1350)</i> .....	249
<i>Miscellaneous vessels from Roman contexts</i> .....	249
Ceramic evidence for site status and specialised activities .....	251
Decorated Samian <i>by Joanna Bird</i> .....	252
Summary .....	252
Catalogue .....	252
The changing pattern of pottery supply .....	256
Introduction .....	256
<i>Period 2, Phase 2 (AD 43-70)</i> .....	256
<i>Period 2, Phase 3 (AD 70-150)</i> .....	257
<i>Period 2, Phase 4 (AD 150-200)</i> .....	257
<i>Period 2, Phase 5 (AD 200-250)</i> .....	258
<i>Period 2, Phase 6 (AD 250-350)</i> .....	258
ROMAN BRICK AND TILE <i>by Louise Harrison</i> .....	259
Introduction .....	259
Quantification .....	259
Fabrics .....	259
Brick .....	260
Flue tile .....	261
Voussoir tile .....	261
Roofing tile .....	263
<i>Imbrices</i> .....	263
<i>Tegulae</i> .....	263
Signature Marks .....	263
Phasing .....	263
Discussion .....	263
Catalogue of illustrated pieces .....	266
BURNT CLAY <i>by Kayt Brown</i> .....	266
CHAPTER 7: METALWORKING REMAINS <i>by Sarah Paynter</i> .....	267
SUMMARY .....	267
INTRODUCTION .....	267
IRONWORKING PROCESSES AND THE WASTE PRODUCTS .....	267
Ironworking processes .....	267
<i>Smelting</i> .....	267
<i>Smithing</i> .....	268
<i>Primary and secondary ironworking</i> .....	268
Ironworking waste .....	268
<i>Categories of ironworking waste</i> .....	268
<i>Disposal and reuse of ironworking waste in the past</i> .....	269
<i>Identification of ironworking waste</i> .....	270
STRUCTURAL EVIDENCE FOR IRONWORKING ACTIVITY .....	270
Location of ironworking activity .....	270
<i>Structure I</i> .....	271
<i>Structure R</i> .....	271
<i>Structure P</i> .....	271
Duration of ironworking activity .....	271
Features associated with ironworking activity .....	272
<i>Structure I</i> .....	272
<i>Structure R</i> .....	276
<i>Parallels between Structures I and R</i> .....	278
MATERIALS AND THEIR ANALYSIS .....	279
Raw materials .....	279
Clay .....	279
Furnace and hearth construction .....	280
Charcoal .....	281
Ore .....	282
Smelting slags .....	284
Tap slag .....	284
Furnace bottom slag .....	285

Products .....	286
Unrefined blooms .....	286
Refined billet .....	287
Smelting summary .....	288
Smithing slags .....	288
Hammerscale .....	288
Smithing hearth bottom slags .....	290
Smithing slag summary .....	292
Secondary Smithing .....	293
Other workshops .....	293
DISCUSSION .....	295
Scale of ironworking .....	295
Impact of ironworking activity on the settlement .....	296
Ironworking in the Weald .....	297
CONCLUSIONS .....	297
FUTURE WORK .....	298
TABLES OF RESULTS OF ANALYSES .....	299
CHAPTER 8: GRAVE CATALOGUE AND HUMAN REMAINS .....	303
GRAVE CATALOGUE .....	303
Late Iron Age Grave group 9200 .....	303
Copper alloy catalogue by H E M Cool .....	303
Textiles by Penelope Walton Rogers .....	305
Bucket .....	306
Pottery .....	306
Human bone .....	306
Animal bone .....	306
Cemetery in Area C .....	306
Cremation graves .....	306
Inhumation graves .....	313
Burials in Area B .....	320
Cremation graves .....	320
Inhumation graves .....	325
Uncertain .....	328
HUMAN REMAINS by Annesofie Witkin .....	329
Introduction .....	329
Methods .....	329
Recovery .....	329
Osteological procedures .....	329
Condition of the bone and disturbance .....	329
Quantification .....	330
Age and sex .....	330
Pathology .....	330
Pyre technology and ritual .....	331
Efficiency of cremation .....	331
Weight of bone .....	331
Fragmentation .....	331
Skeletal elements within the burials .....	332
Deposition of bone .....	332
Animal bone and grave goods .....	334
Cremated remains from non-burial contexts .....	334
CHAPTER 9: ENVIRONMENTAL EVIDENCE .....	335
ANIMAL BONES by Bethan Charles .....	335
Introduction .....	335
Condition .....	335
Methodology .....	335
Results .....	335
Animal bone from burials .....	336
Discussion and summary .....	337

<b>PALYNOLOGICAL ANALYSIS OF SEDIMENTS FROM ROMAN WATERHOLES</b>	
<i>by Patricia E J Wiltshire</i> .....	337
<b>Introduction</b> .....	337
<b>Methods</b> .....	337
<i>Processing</i> .....	337
<i>Counting and expression of data</i> .....	337
<i>Nomenclature</i> .....	337
<i>Pollen diagrams</i> .....	337
<b>Results</b> .....	337
<i>Waterhole 796</i> .....	337
<i>Summary</i> .....	342
<b>The wider picture</b> .....	342
<b>Discussion</b> .....	342
<b>Conclusions</b> .....	343
<b>WOOD CHARCOAL</b> <i>by Dana Challinor</i> .....	343
<b>Introduction</b> .....	343
<b>Methodology</b> .....	343
<b>Results</b> .....	344
<b>Discussion</b> .....	344
<i>Woodland resources</i> .....	344
<i>Selection of species</i> .....	347
<i>Industrial activities</i> .....	348
<i>Domestic activities</i> .....	349
<i>Ritual activities</i> .....	349
<b>Conclusions</b> .....	349
<b>CHARRED AND WATERLOGGED PLANT REMAINS</b> <i>by Ruth Pelling</i> .....	349
<b>Introduction</b> .....	349
<b>Methodology</b> .....	350
<b>Results</b> .....	350
<i>Charred plant remains</i> .....	350
<i>Waterlogged plant remains</i> .....	354
<b>Discussion</b> .....	354
<i>Sample composition and cereal processing activities</i> .....	354
<i>Sample distribution</i> .....	356
<i>Species cultivated</i> .....	356
<b>Conclusions</b> .....	357
<b>INSECT REMAINS FROM ROMAN WATERHOLES</b> <i>by Mark Robinson</i> .....	357
<b>Introduction</b> .....	357
<b>Methods and results</b> .....	358
<b>Interpretation</b> .....	358
<i>Waterhole 9179</i> .....	358
<i>Waterhole 796</i> .....	358
<b>Discussion</b> .....	361
 <b>CHAPTER 10: SYNTHESIS AND DISCUSSION</b> .....	 365
<b>TOPOGRAPHICAL AND ENVIRONMENTAL SETTING</b> .....	365
<b>MORPHOLOGICAL ASPECTS</b> .....	365
Pre-road features .....	365
Road network .....	366
Junction zone .....	366
Major boundaries north-west of the Canterbury Road .....	367
Major boundaries south-east of the Canterbury Road .....	367
Plot divisions .....	367
Shrine/Temple area .....	369
Cemeteries and other burial areas .....	370
<i>Layout of cemetery enclosure</i> .....	371
<i>Orientation and spatial organisation of burials</i> .....	371
<i>Chronology</i> .....	371
Marginal areas .....	372
<b>STRUCTURAL ASPECTS</b> .....	373
‘Circular’ structures (A, C, E, H, K, L, N, O, P and T) .....	373

Rectangular Structures .....	375
<i>Small four- and six-post structures</i> .....	375
<i>Larger post-built structures</i> .....	376
<i>Sill-beam structures</i> .....	378
Shrine .....	379
Relative sequence, chronology and function of structural types .....	379
ECONOMY .....	381
Agriculture .....	381
Other activities .....	382
Iron industry .....	382
BURIAL RITES .....	384
Burial 9200 .....	384
Area B and C Cemeteries .....	386
<i>Pottery in cremation burials</i> .....	386
<i>Personal possessions within cremation burials</i> .....	387
<i>Distribution of burials</i> .....	387
<i>Chronology</i> .....	388
GENERAL DISCUSSION .....	388
Chronological summary of development .....	388
Settlement character, size and morphology .....	389
Political/military connections .....	390
Socio-economic status .....	391
Other social aspects .....	393
The place of the site in the regional settlement pattern .....	393
The end of the settlement and its implications for the region .....	394
BIBLIOGRAPHY .....	397
INDEX .....	411

# List of Figures

Figure 1.1	Site location .....	2
Figure 1.2	Principal Roman roads and settlements in Kent .....	3
Figure 1.3	Site plan showing extent of detailed geophysical survey and location of evaluation trenches, main excavations and other archaeological observations.....	4
Figure 1.4	Simplified geology map of the Ashford area, centred on Westhawk Farm.....	6
Figure 1.5	Location of Westhawk Farm in relation to principal topographic units and Iron Age, Roman and Anglo-Saxon features in the Ashford area.....	8
Figure 1.6	Plan of geophysical survey.....	11
Figure 1.7	Overall plan of excavation in Area B showing all periods/phases.....	14–15
Figure 2.1	Period 1: Plan showing distribution of Palaeolithic flint and possible Bronze Age features .....	18–19
Figure 2.2	Palaeolithic flints.....	21
Figure 3.1	Period 2: Phase 1. Location of Burial 9200 .....	27
Figure 3.2	Burial 9200: Detailed plan of grave and drawings of grave goods .....	28
Figure 3.3	Burial 9200: Hypothetical reconstruction of principal identified grave goods .....	29
Figure 3.4	Period 2: Phase 2, c AD 43-70. General plan, plus road surface 9011 .....	36–37
Figure 3.5	Sections of ditches 860, 40 and 8700.....	38
Figure 3.6	Sections of ditch 8950 .....	38
Figure 3.7	Sections of ditch 8950 .....	40
Figure 3.8	Sections of ditch 8620 .....	40
Figure 3.9	Sections of ditch 9060 .....	41
Figure 3.10	Period 2: Phase 3, c AD 70-150. General plan .....	42–43
Figure 3.11	Sections of ditch 7850 .....	44
Figure 3.12	Sections of ditch 8670 .....	45
Figure 3.13	Sections of ditches 9490, 7790 and 8140.....	45
Figure 3.14	Period 2: Phase 4, c AD 150-200. General plan .....	46–47
Figure 3.15	Sections of ditch 8680 .....	48
Figure 3.16	Sections of ditches 7780, 10479, 7800, 7750, 7760, 8980 and 9350.....	49
Figure 3.17	Period 2: Phase 5, c AD 200-250. General plan .....	50–51
Figure 3.18	Sections of ditches 9340, 8940, 7018, 7730, 8770/8920, and 43/595 .....	52
Figure 3.19	Sections of ditch 840 .....	53
Figure 3.20	Plan of north-west roadside plots NW1, 2 and 3 .....	55
Figure 3.21	Plot NW1: Sections of ditch 870.....	56
Figure 3.22	Plot NW2: Sections of gullies 880, 20 and 770; beam slot 430, and posthole 479 .....	57
Figure 3.23	Plot NW2: Plan of Structure J and sections of postholes .....	58
Figure 3.24	Plots NW2/NW3: Section and location of waterhole 796.....	59
Figure 3.25	Plot NW3: Plan and sections of Structure I and associated features, including sections of beam slots 1620, 1610 and 360; and gullies 110, 200, 300, 1400 and 1410 .....	63
Figure 3.26	Plot NW3: Sections of pits 7306, 7944 and 7269 .....	65
Figure 3.27	Plan of undivided north-west roadside area; section of pit 8024.....	66
Figure 3.28	Undivided north-west area: Plan of Structure H and associated ditches 8970 and 8780, and sections of curvilinear ditches:.....	67
Figure 3.29	Plan of South-west roadside plots SW1, 2, 3, 4, 5 and 6.....	70
Figure 3.30	Sections of ditch 10420 .....	71
Figure 3.31	Plot SW1: Plan including Structure G and sections of gullies 9380/9910, 9390/9890 and, 9900 .....	72
Figure 3.32	Plot SW2: Plan including Structure F, and sections of ditches 10060, 10050; gullies 9440, 9450, 10240 and 10040.....	74
Figure 3.33	Plot SW3: Sections of gullies 9570, 9580, 10410 and 9580 .....	76
Figure 3.34	Plot SW3: Plan of Structure E and sections of gullies 10250 and 10260.....	77
Figure 3.35	Plot SW3: Plan of Structure D and sections of Drainage gully 10180/8510, and gullies 10170, 10190 and 10230/10270 .....	78
Figure 3.36	Plot SW4: Plan of Structure C and sections of gullies 9280, 9310, and Grave 8160.....	80
Figure 3.37	Plot SW5: Plan and sections of gullies 9370 and 10430; and location of truncated cremation pit 10337 .....	81

Figure 3.38	Plot SW4/SW5: Plan and sections of posthole group 9470 .....	82
Figure 3.39	Plot SW6: Plan of ditches and gullies 9480, 9210 and 8390, and pit 8914, and sections of gully 9210, and pit 8914.....	83
Figure 3.40	Plot SW6: Plan and sections of Structures A and B and associated ditches 8390 and 9210 .....	84
Figure 3.41	NE enclosure area: Plan of multiple enclosure ditches and location of graves 210, 220 and cremation 1261.....	85
Figure 3.42	NE enclosure area: Sections through multiple enclosure ditches .....	86
Figure 3.43	NE enclosure area: Sections through multiple enclosure ditches .....	88
Figure 3.44	Plan of Structure R with sections of ditch 1220, and gully 1230.....	90
Figure 3.45	Plan of Structure R with sections of internal features including furnaces and hearths.....	92
Figure 3.46	Shrine: Plan with sections of primary enclosure ditch 70 polygonal shrine.....	95
Figure 3.47	Shrine: Plan with sections of secondary ditch 970, pit 529 and posthole group 1070 .....	98
Figure 3.48	Shrine structure: Plan with sections of outer posts of polygonal shrine and external features.....	99
Figure 3.49	Shrine structure: Plan with sections of internal features of polygonal shrine.....	101
Figure 3.50	Plan of waterhole 9179 .....	102
Figure 3.51	Plot SC1: Plan and sections of Structure K, waterhole 7587 and ditches 8620, 9090 and 9100 .....	106
Figure 3.52	Plot SC2: Plan of Phase 2 and possible Phase 2 features, including enclosure ditch 9270 and waterhole 10460, with sections .....	108
Figure 3.53	Plot SC2: Plan of Phase 3 and possible Phase 3 features, including Structure L, and waterhole 7023, pits 7473 and 7733, and associated gullies, with sections .....	110
Figure 3.54	Plot SC3/SC4: Plan of boundary ditches .....	113
Figure 3.55	Plot SC4: Plan of Structures O and P with plans and sections of associated features.....	115
Figure 3.56	Plot SC5: Plan and sections of Structures M and N.....	117
Figure 3.57	Plot SC5: Plan of Structure T with associated enclosure ditches 7850, 9960, and 10495, and trackway ditches 10450 and 10440.....	118
Figure 3.58	Plot SC6: Plan showing trackway ditch 10440/1000, enclosure ditches 1040 and 1020, and gullies 1030, 1290, 1280 and 1320, with cremation grave 1007, with selected ditch and gully sections.....	120
Figure 3.59	Plot SE1: Plan showing ditches 9150, 9160 and 9170 and associated features.....	122
Figure 3.60	Plan of mortuary enclosure 8730.....	123
Figure 3.61	Location of graves 8520 and 9940, and cremation 9940 .....	124
Figure 3.62	Area C: Plan of cemetery enclosed within ditches 5250, 5174, 5171, 5172, 5173 and 5168.....	125
Figure 3.63	Area C: Sections of cemetery ditches 5250, 5171, 5172, 5173, 5174, ditch 5270, gully 5290, waterhole 5118, and pit 5176.....	126
Figure 4.1	Periods 3 and 4, General plan of medieval and post-medieval features .....	132–133
Figure 5.1	Coins: Graph plotting the deviation of the Westhawk Farm Roman coin assemblage from the British mean. Based on figures in Table 5.3 .....	138
Figure 5.2	Coins: Graph plotting the deviation of the Westhawk Farm coin assemblage from the British mean, together with plots for selected sites showing a similar pattern.....	139
Figure 5.3	Copper alloy objects (nos 3-9, 15-16) .....	162
Figure 5.4	Copper alloy objects (nos 17, 21, 27-29, 31-32, 34); Glass objects (nos 18-19, 22-24, 30, 37-38) .....	164
Figure 5.5	Glass objects (nos 40, 44, 51-53, 55-56, 58-59, 65); Copper alloy objects (nos 75-77); Lead alloy object (no. 78).....	166
Figure 5.6	Copper alloy objects (nos 80-81, 95-96); Lead objects (nos 84, 86-88, 90) .....	168
Figure 5.7	Copper alloy objects (nos 97-98, 100, 108); Copper alloy and iron object (no. 99); Lead objects (nos 109-112, 126).....	170
Figure 5.8	Jet cylinder beads (nos 1-5); Jet and lignite ridged-back beads (nos 6-8) and flat elliptical beads for an armlet (9-31) from Burial 5090.....	172
Figure 5.9	Reconstruction of jet and lignite armlet from burial 5090 .....	173
Figure 5.10	Iron objects (nos 1-2, 4-6) .....	187
Figure 5.11	Iron objects (nos 8-12, 14-15).....	189
Figure 5.12	Iron objects (nos 16, 18, 20-25) .....	190
Figure 5.13	Stone objects (nos 15-16, 48-49).....	194
Figure 5.14	Wooden objects (nos 1-4).....	197
Figure 5.15	Wooden ladder (nos 10, 12-13) .....	198
Figure 5.16	Wooden objects (nos 14, 18) .....	200
Figure 5.17	Leather shoe (no. 1) .....	202
Figure 5.18	Leather shoes (nos 2-3).....	203

*List of Figures*

Figure 5.19	Reconstruction drawing of one-piece shoe.....	204
Figure 5.20	Leather shoe (no. 4).....	204
Figure 6.1	Roman pottery (Assemblage 1: nos 1-4; Assemblage 2: no. 5; Assemblage 3: nos 6-9; Assemblage 4: nos 10-17; Assemblage 5: nos 18-20).....	218
Figure 6.2	Roman pottery (Assemblage 7: nos 21-25; Assemblage 8: no. 26; Assemblage 9: nos 27-35; Assemblage 10: nos 36-40 continues).....	221
Figure 6.3	Roman pottery (Assemblage 10 (cont.): nos 41-44; Assemblage 11: nos 45-47; Assemblage 13: no. 48; Assemblage 15: no. 49; Assemblage 16: nos 50-51; Assemblage 17: nos 52-60 continues).....	223
Figure 6.4	Roman pottery (Assemblage 17 (cont.): nos 61-64; Assemblage 18: nos 65-6; Assemblage 19: nos 69-72; Assemblage 20A: nos 73-75; Assemblage 20B: nos 76-80 continues).....	226
Figure 6.5	Roman pottery (Assemblage 20B (cont.): no. 81; Assemblage 21: nos 82-86; Assemblages 22B: nos 87-88; Assemblage 22C: no. 89; Assemblage 23: nos 90-100 continues).....	228
Figure 6.6	Roman pottery (Assemblage 23 (cont.): nos 101-103; Assemblage 24: nos 104-105; Assemblage 25: nos 106-120 continues).....	231
Figure 6.7	Roman pottery (Assemblage 25 (cont.): nos 121-137; Assemblages 27: nos 138-140).....	234
Figure 6.8	Roman pottery (Assemblage 30: no. 141; Assemblage 31: nos 142-154; Assemblage 32: nos 155-160 continues).....	236
Figure 6.9	Roman pottery (Assemblage 32 (cont.): nos 161-172; Assemblage 34: nos 173-176; Assemblage 35: nos 177-180 continues).....	238
Figure 6.10	Roman pottery (Assemblage 35 (cont.): nos 181-192; Assemblage 36: nos 192-200 continues).....	242
Figure 6.11	Roman pottery (Assemblage 36 (cont.): nos 201-202; Assemblage 37: nos 203 205; Assemblage 38: nos 206-211; Assemblage 39: 212-220 continues).....	243
Figure 6.12	Roman pottery (Assemblage 39 (cont.): nos 221-240 continues).....	245
Figure 6.13	Roman pottery (Assemblage 39 (cont.): nos 241-245; Assemblage 40: nos 246-253; Assemblage 41: nos 254-257); and Medieval pottery (Assemblage 42: nos 258-261).....	248
Figure 6.14	Medieval pottery (Assemblage 43: no. 262); and Miscellaneous Roman pottery (nos 263-276).....	250
Figure 6.15	Decorated Samian ware (nos 2, 4-5, 7, 10).....	253
Figure 6.16	Decorated samian ware (nos 11, 13, 16, 18, 21-22).....	254
Figure 6.17	Roman tile (nos 1-5).....	262
Figure 6.18	Roman tile (nos 6-9).....	264
Figure 7.1	Summary of the stages involved in primary and secondary iron-working.....	268
Figure 7.2	Pie chart showing the relative proportions of different types of iron-working debris for the contexts listed in Table 7.2.....	271
Figure 7.3	Location of contexts with more than 5 kg of iron-working waste recovered.....	272
Figure 7.4	Pie chart showing relative proportions of different types of iron-working debris from contexts in the vicinity of Structure I (total 350 kg).....	273
Figure 7.5	Pie chart showing relative proportions of different types of iron-working debris from contexts in the vicinity of Structure R (total 490 kg).....	273
Figure 7.6	Pie chart showing relative proportions of different types of iron-working debris from contexts in the vicinity of Structure P (total 34 kg).....	274
Figure 7.7	Plan of Structure I.....	275
Figure 7.8	Plan of Structure R.....	277
Figure 7.9	Plot of hammerscale distribution in Structure R, in relation to other features, including the furnaces and potential hearth. (Darkest tone shows highest concentration).....	278
Figure 7.10	SEM back-scattered electron image of the cross section of a piece of furnace lining from context 480.....	280
Figure 7.11	SEM back-scattered electron image of unrefined bloom, showing areas of ferritic iron (white), ore (mid-grey) and central voids (black) surrounded by nucleating crystals (white) and slag comprised of wustite (light grey) and fayalite (mid-grey laths) in a glass matrix (dark grey).....	287
Figure 7.12	SEM back-scattered electron image of a hammerscale sample, which includes lumps of slag, spheres of hammerscale and hammerscale flakes with quartz-rich material adhering.....	289
Figure 7.13	SEM back-scattered electron images of a hammerscale sphere, with the magnetite dendrites shown at high magnification on the left.....	289
Figure 7.14	SEM back-scattered electron image of the top layer of a small smithing hearth slag from context 1257, consisting of an iron-rich matrix with fuel fragments surrounding angular quartz grains and hammerscale flakes and spheres (no spheres in this image).....	291

Figure 7.15	SEM back-scattered electron image of the microstructural boundary in a large smithing slag, with a coarser fayalitic microstructure below the boundary .....	291
Figure 7.16	Geophysical survey areas where strong readings were detected, from the report by Geophysical Surveys of Bradford .....	294
Figure 8.1	Cremation burial group 9200, plan and grave goods.....	304
Figure 8.2	Cremation burial group 5050 (cut 5010).....	307
Figure 8.3	Cremation burial groups 5060 (cut 5016) and 5070 (cut 5061) .....	308
Figure 8.4	Cremation burial group 5080 (cut 5021).....	309
Figure 8.5	Cremation burial group 5090 (cut 5028).....	310
Figure 8.6	Cremation burial group 5110 (cut 5036).....	311
Figure 8.7	Cremation burial group 5120 (cut 5036).....	312
Figure 8.8	Cremation burial group 5210 (cut 5128).....	313
Figure 8.9	Cremation burial group 5220 (cut 5131).....	314
Figure 8.10	Cremation burial group 5230 (cut 5146).....	315
Figure 8.11	Cremation burial group 5240 (cut 5166).....	315
Figure 8.12	Inhumation burial group 5100 (cut 5032).....	316
Figure 8.13	Inhumation burial group 5130 (cut 5047).....	317
Figure 8.14	Inhumation burial group 5140 (cut 5052).....	318
Figure 8.15	Inhumation burial group 5150 (cut 5054).....	318
Figure 8.16	Inhumation burial group 5160 (cut 5072).....	319
Figure 8.17	Inhumation burial group 5170 (cut 5023).....	319
Figure 8.18	Inhumation burial group 5180 (cut 5099).....	320
Figure 8.19	Inhumation burial group 5190 (cut 5085).....	321
Figure 8.20	Cremation burial group 210 (cut 232).....	322
Figure 8.21	Cremation burial group 220 (cut 251).....	323
Figure 8.22	Cremation burial groups 1007 (cut 1007) and 1261 (cut 1261) .....	324
Figure 8.23	Cremation burial group 8956 (cut 8956).....	325
Figure 8.24	Cremation burial group 9860 (cut 9840).....	326
Figure 8.25	Cremation burial group 9940 (cut 9468).....	327
Figure 8.26	Cremation burial group 10337 (cut 10335).....	327
Figure 8.27	Inhumation burial group 8520 (cut 8002).....	328
Figure 8.28	Samian Drag. 18/31 platter, unstratified find, probably derived from a grave .....	328
Figure 8.29	Quantities of bone fragments within each spit, cremations 5025, 5034 and 220 .....	333
Figure 9.1	Waterhole 796: summary pollen diagram.....	338
Figure 9.2	Waterhole 796: detailed pollen diagram, trees etc .....	339
Figure 9.3	Waterhole 796: detailed pollen diagram, herbs.....	340
Figure 9.4	Charcoal: taxa presence by number of samples .....	347
Figure 9.5	Charcoal: Age and diameter of charcoal roundwood fragments .....	347
Figure 9.6	Charcoal: Composition of the assemblage.....	348
Figure 9.7	Charred plant remains: Ratio of grain, chaff and weed seeds in analysed samples (sample <21> excluded).....	353
Figure 9.8	Coleoptera: Habitat/species groups expressed as a percentage of the total terrestrial Coleoptera. (Not all the terrestrial Coleoptera have been classified into groups).....	362
Figure 10.1	Chronological range of structures by structural type .....	380

## List of Plates

Plate 1.1.	General view of the site looking south-west .....	7
Plate 3.1	Burial 9200 as revealed by contractors' excavation.....	27
Plate 3.2	Block C1 from Burial 9200.....	31
Plate 3.3	Examination of north-west roadside ditch sequence .....	35
Plate 3.4	Excavation of waterhole 796 .....	59
Plate 3.5	View of Structure R before excavation .....	91
Plate 3.6	Furnaces after excavation .....	93
Plate 3.7	Cremation group 220 .....	94
Plate 3.8	Shrine enclosure ditch during excavation and view of site beyond .....	96
Plate 3.9	View of shrine enclosure from south-east.....	96
Plate 3.10	View of shrine structure from east.....	100
Plate 3.11	Upper portion of waterhole 9179 .....	103
Plate 3.12	Waterhole 9179 after machine excavation.....	103
Plate 3.13	Timbers 9958 and 9959 from waterhole 9179 .....	104
Plate 3.14	Cremation group 9860 .....	124
Plate 3.15	Grave group 5090 showing grave goods <i>in situ</i> .....	129
Plate 3.16	Well 5118 .....	129
Plate 5.1	Late Iron Age gold quarter-stater of Eppillus, showing (a) obverse and (b) reverse .....	137
Plate 5.2	Bronze <i>as</i> of Elagabalus, showing (a) obverse and (b) reverse .....	137
Plate 7.1	Wedge-shaped fragment of slag-coated clay, with a flat edge at the bottom of the picture, a reasonably flat edge at the top of the picture and the point of the wedge in the foreground.....	282
Plate 7.2	Roasted ferruginous sandstone nodules and pieces, one (top centre) with associated flint (the white areas) .....	283
Plate 7.3	Furnace bottom slag from the side (circular in plan) .....	285
Plate 7.4	Cross section of large smithing hearth slag.....	292

# List of Tables

Table 2.1	Catalogue of Palaeolithic flint finds. Pieces marked with an asterisk are illustrated in Fig. 2.2 .....	20
Table 2.2	Summary of the Mesolithic flint assemblage.....	24
Table 2.3	Summary of the Neolithic and Bronze Age flint assemblage .....	25
Table 3.1	Waterhole 796: Summary of contexts, finds and dating evidence, from the earliest (1628) to the latest fill (302/255/675/707) .....	60
Table 3.2	Waterhole 7239: Summary of contexts, finds and dating evidence, from the earliest (9398) to the latest fill (7240).....	68
Table 3.3	Waterhole 9179: Summary of contexts, finds and dating evidence, from the earliest (10159) to the latest fill (7128).....	104
Table 3.4	Area C cemetery: Summary of burials .....	128
Table 5.1	Coins: Summary list of coins from excavated contexts (for detailed list see Table 5.5) .....	136
Table 5.2	Coins: Summary listing of coins recovered by pre-excavation metal-detector survey (for detailed list see Table 5.6).....	137
Table 5.3	Coins: Chronological distribution of excavated Roman coins from Westhawk Farm by Issue Period .....	138
Table 5.4	Coins: Summary of coin numbers from stratified contexts producing two or more coins .....	139
Table 5.5	Coins: Detailed list of coins from excavated contexts .....	140–145
Table 5.6	Coins: Detailed list of coins from pre-excavation metal-detector survey .....	146–147
Table 5.7	Objects and vessels of non-ferrous metal, fired clay and glass: Summary quantification (fragment count) by Phase and material .....	147
Table 5.8	Objects and vessels of non-ferrous metal, fired clay and glass: Percentages of small finds and vessel fragments by material in the phased and unphased contexts. (Quantification by fragment count, see Table 5.7).....	147
Table 5.9	Objects and vessels of non-ferrous metal, fired clay and glass: Summary quantification (fragment count) by functional category and material .....	149
Table 5.10	Roman vessel glass: Summary quantification (fragment count) by Phase and glass colour.....	152
Table 5.11	Roman vessel glass: Summary of the 1st- to 2nd-century assemblage by functional type. Quantification by estimated vessel equivalents (EVE) .....	153
Table 5.12	Objects and vessels of non-ferrous metal, fired clay and glass: Presence of different functional categories amongst the phased finds .....	157
Table 5.13	Objects and vessels of non-ferrous metal, fired clay and glass: Comparison of numbers of brooches and items of weighing equipment from selected sites, with the number of items of weighing equipment expressed as a percentage of the number of brooches from each site .....	157
Table 5.14	Roman non-ferrous metalwork: Summary of the numbers of pieces, and comparison of the ranges of weights, and mean weights of objects recovered by excavation and by metal detecting .....	159
Table 5.15	Roman non-ferrous metalwork: Comparison of numbers of stratified and unstratified finds characterised by shape and size .....	159
Table 5.16	Jet and lignite from Grave 5090: Summary of results of analysis of samples from beads using reflected light microscopy. (10 samples selected) .....	174
Table 5.17	Jet and lignite from Grave 5090: Comparison of reflectance measurements for local sources of lignite.....	174
Table 5.18	Ironwork: Summary quantification (fragment count) by functional category and Phase, showing percentage of each functional category in each Phase .....	175
Table 5.19	Ironwork: Summary quantification (fragment count) by functional category and Phase, showing each functional category as a percentage of each Phase assemblage.....	175
Table 5.20	Ironwork: Summary of identified objects by Phase, Structure, and group/feature.....	176
Table 5.21	Ironwork: Quantification (fragment count) of nails and nail fragments by Phase, Structure and group/context comparing finds from Structures and stratigraphic groups or features to finds from contexts not assigned to a stratigraphic group or feature .....	177
Table 5.22	Ironwork: Summary and quantification (fragment count) of hobnails by Phase, Structure and group/context.....	178

*List of Tables*

Table 5.23	Ironwork: Summary and quantification (fragment count) of miscellaneous fragments by Phase, Structure and group/context.....	179–180
Table 5.24	Ironwork: Summary and quantification (fragment count) of fragments of uncertain identification by Phase, Structure, and group/context.....	181
Table 5.25	Ironwork: Summary and quantification (fragment count) of unidentifiable fragments by Phase, Structure and group .....	182
Table 5.26	Ironwork: Waterhole 796: Summary quantification (fragment count) of iron finds by Phase and functional category .....	182
Table 5.27	Ironwork: Structure Q: Summary of iron objects from features and contexts belonging to the temple and its enclosure .....	183
Table 5.28	Ironwork: Structure I: Summary of iron finds from features and contexts belonging to the iron producing workshop.....	183
Table 5.29	Ironwork: Structure R: Summary of iron finds from features and contexts belonging to the iron producing workshop.....	184
Table 5.30	Worked stone: Quantification (weight and fragment count) of quern and mill stone by stone type.....	190
Table 5.31	Worked stone: Occurrence of stone types (number of contexts) by phase .....	191
Table 6.1	Pottery: Fabrics by phase: Percentage of period or phase sherd count for each fabric (Roman fabrics only) (+ = less than 0.1%) .....	211–213
Table 6.2	Pottery: Fabrics by phase: Percentage of period or phase weight total for each fabric (Roman fabrics only) (+ = less than 0.1%) .....	214–216
Table 6.3	Pottery assemblage 3: Fabric quantification by sherd count and weight.....	219
Table 6.4	Pottery assemblage 4: Fabric quantification by sherd count and weight.....	219
Table 6.5	Pottery assemblage 9: Fabric and form quantification by EVEs (+ = present, though lacking rim) .....	222
Table 6.6	Pottery assemblage 17: Fabric and form quantification by EVEs (+ = present, though lacking rim) .....	225
Table 6.7	Pottery assemblage 24: Fabric quantification by sherd count and weight.....	232
Table 6.8	Pottery assemblage 25: Fabric and form quantification by EVEs .....	233
Table 6.9	Pottery assemblage 31: Fabric and form quantification by EVEs .....	235
Table 6.10	Pottery assemblage 32: Fabric and form quantification by EVEs .....	239
Table 6.11	Pottery assemblage 35: Fabric and form quantification by EVEs .....	240
Table 6.12	Pottery assemblage 39: Fabric and form quantification by EVEs .....	244
Table 6.13	Pottery assemblage 40: Fabric and form quantification by EVEs .....	247
Table 6.14	Pottery: Percentage of vessel classes (quantified by EVEs) in selected assemblages.....	251
Table 6.15	Pottery: Fabric representation in selected assemblages (% of EVEs) (+ = present, but lacking rim) .....	256
Table 6.16	Roman brick and tile: Quantification (fragment count) of tile types present.....	259
Table 6.17	Roman brick and tile: Quantification (fragment count and weight) by fabric type .....	260
Table 6.18	Roman brick and tile: Quantification (fragment count) by tile types and fabric .....	260
Table 6.19	Roman brick and tile: Brick dimensions .....	261
Table 6.20	Roman brick and tile: <i>Tegula</i> flange and cutaway types by fabric.....	265
Table 6.21	Roman brick and tile: Signature marks on tile by form and fabric .....	265
Table 6.22	Roman brick and tile: Quantification (% weight) by fabric type and phase.....	265
Table 7.1	Metalworking remains: Summary of types of waste produced by primary and secondary iron-working. (✓ = present, X = absent) .....	269
Table 7.2	Metalworking remains: Iron-working debris from contexts containing more than 5 kg of slag categorised by type (weights in kg) (Phase 3 = AD 70-150, Phase 4 = AD 150-200 and Phase 5 = AD 200-250) .....	270
Table 7.3	Metalworking remains: Composition of quartz-rich, slag-coated clay used for furnace construction, analysed by EDS, average of 3 analyses, normalised (see Table 7.15) .....	280
Table 7.4	Metalworking remains: Composition of different regions of the vitrified surface of slag-coated clay from context 480, analysed by EDS, normalised .....	281
Table 7.5	Metalworking remains: Composition of ashed oak, from Wolff (1871) .....	282
Table 7.6	Metalworking remains: Composition of ironstone samples measured by XRF, the number of analyses is given in brackets (see Table 7.16) .....	284
Table 7.7	Metalworking remains: Composition of tap slags, measured by EDS, average of s analyses for each sample, normalised (see Table 7.17).....	284
Table 7.8	Metalworking remains: Composition of phosphorus-rich tap slag from Ashwicken and West Runton, Norfolk and Baysdale and Ouse Gill, Yorkshire, compared with the composition of low-phosphorus Roman tap slag from selected other sites.....	285

Table 7.9	Metalworking remains: Composition of furnace bottom slags, measured by EDS, average of 7 (1510) and 5 (1225) analyses, normalised (see Table 7.18).....	286
Table 7.10	Metalworking remains: Composition of slag within a partially refined bloom from context 1333, measured by EDS, average of 6 analyses, normalised (see Table 7.19) .....	286
Table 7.11	Metalworking remains: Compositions of different regions within the heterogeneous discarded bloom fragment, measured by EDS and normalised.....	287
Table 7.12	Metalworking remains: Composition of slag inclusions sampled from billet (SF905, context 7009), measured by EDS and normalised (see Table 7.20) .....	288
Table 7.13	Metalworking remains: Average compositions (and standard deviations) of smithing hearth bottom slags (SHB) (see Tables 7.22-7.26).....	290
Table 7.14	Metalworking remains: Summary of iron-working waste from contexts containing a large proportion of smithing hearth bottom slags.....	293
Table 7.15	Composition of furnace linings, measured by EDS, normalised (see also Fig. 7.3 above).....	299
Table 7.16	Composition of ore samples, measured by XRF, normalised (see also Fig. 7.6 above).....	299
Table 7.17	Composition of tap slags, measured by EDS, normalised (see also Fig. 7.7 above) .....	299
Table 7.18	Composition of furnace bottom slags, measured by EDS, normalised (see also Fig. 7.9 above).....	300
Table 7.19	Composition of slags within the bloom fragment from context 1333, measured by EDS, normalised (see also Fig. 7.10 above) .....	300
Table 7.20	Composition of slag inclusions sampled from billet (SF905, context 7009), measured by EDS and normalised (see also Fig. 7.12 above) .....	300
Table 7.21	Composition of various components of the hammerscale deposit from structure R, measured by EDS, normalised.....	300
Table 7.22	Composition of various areas of the small smithing hearth slag from context 1257, measured by EDS, normalised (see also Fig. 7.13 above) .....	301
Table 7.23	Composition of different regions of the thicker end of the large smithing hearth bottom slag from context 1332, measured by EDS, normalised (see also Fig. 7.13 above).....	301
Table 7.24	Composition of different regions of the thinner end of the large smithing hearth bottom slag from context 1332, measured by EDS, normalised (see also Fig. 7.13 above).....	301
Table 7.25	Composition of different regions of medium-sized smithing hearth bottom slag from context 1225, analysed by EDS, normalised (see also Fig. 7.13 above) .....	301
Table 7.26	Composition of different regions of medium-sized smithing hearth bottom slag from context 1332, analysed by EDS, normalised (see also Fig. 7.13 above) .....	301
Table 8.1	Burial 9200: The wooden bucket stave measurements .....	306
Table 8.2	Human remains: Summary of cremated bones (Contexts that produced too little bone for analysis are marked with an asterisk *) .....	330
Table 8.3	Human remains: Comparison of fragmentation data from Westhawk Farm and Westhampnett Bypass Late Iron Age and Romano-British periods.....	332
Table 8.4	Human remains: Weights of cremated bone within anatomical groups and size ranges .....	332
Table 8.5	Human remains: Small groups of cremated bone from non-burial deposits .....	334
Table 9.1	Animal bones: Total number of hand collected bone fragments by species and phase (all Period 2) .....	336
Table 9.2	Animal bones: Total number of bones from sieved environmental samples by species and phase (all Period 2) .....	336
Table 9.3	Wood charcoal: Results of the analysis by fragment count.....	345
Table 9.4	Wood charcoal: Results of the roundwood analysis. (ARW = average ring width) .....	346
Table 9.5	Charred plant remains: Data from fully-analyses samples.....	351–352
Table 9.6	Charred plant remains: Data from assessed samples not subject to detailed analysis .....	353
Table 9.7	Waterlogged plant remains from waterhole 796.....	355
Table 9.8	Insect remains from waterholes: Samples examined .....	358
Table 9.9	Insect remains from waterholes: <i>Coleoptera</i> .....	359–360
Table 9.10	Insect remains from waterholes: Other insects (+ = present).....	361
Table 10.1	'Circular' structures: Summary information .....	374
Table 10.2	Post-built structures: Examples from Kent with intermediate posts in short axis wall lines .....	377
Table 10.3	Summary of finds assemblages from graves. (Excludes graves with no finds or with small assemblages of miscellaneous potsherds).....	387

## Summary

An area of *c* 6 hectares was excavated at Westhawk Farm, Ashford prior to a housing development. Flint artefacts included Lower Palaeolithic as well as Mesolithic and later pieces. The earliest features formed part of a field system probably of middle to late Bronze Age date. Its principal alignment (NE-SW) was followed by that of the Roman road from Canterbury to the Weald, probably established soon after the mid 1st century AD. A second road, from Lympne, formed a junction with the first, around which developed a previously unknown major settlement perhaps 15 hectares in extent. The plan of the focal (junction) area of the settlement was revealed by geophysical survey while the excavation concentrated on its south-west end (Area B).

The settlement was established within a generation of the Roman conquest. A rich cremation burial probably of pre-Conquest date suggests a pre-existing local focus of high status settlement. In Phase 2, the earliest Roman occupation of pre-Flavian date, the Canterbury road was partly defined by roadside ditches, but a feature diverging from this alignment formed an early boundary on the north-west side of the settlement in the vicinity of the road junction. At the south-west margin of the settlement area on the north-west side of the Canterbury road two structures were used in this phase, while south-east of the road at least one settlement unit, probably of agricultural character, was also of pre-Flavian date. A small cemetery was established outside the main north-west settlement boundary very early in the life of the site (Area C).

Phase 3, dated *c* AD 70-150, saw most of the main features of the settlement in place. These included a shrine structure, set in a rectilinear enclosure within a larger open space on the south-east side of the Canterbury road. The north-east side of the open space was defined by a double-ditched enclosure that fronted onto the road. Trackways led from outside the settlement up to the shrine area and domestic/agricultural activity continued in the complex on the south side of this area. On the opposite side of the road from the shrine, overlying the early settlement boundary, an iron-producing workshop housed both smelting and related smithing activities.

This workshop was abandoned early in Phase 4 (AD 150-200), the surrounding area being incorporated within a series of plots set out approximately at right-angles to the line of the Canterbury road. Further south-west another block of five or six recti-

linear plots was laid out. These contained a variety of timber structures. South-east of the road, occupation continued in the area south of the shrine complex and two sides of the shrine enclosure were redefined.

The last phase of widespread occupation in the south-west part of the settlement is dated *c* AD 200-250 (Phase 5). Intensive activity continued in some of the south-west roadside plots and a plot on the opposite side of the road also remained in use. South of the shrine area the latest building, still of circular plan, may have been linked with a new iron-working structure north of the shrine. Like the earlier iron working establishment, this structure accommodated both smelting and smithing activities.

Early 4th century deposits in Area B were concentrated in a waterhole beside the Canterbury road. These contained large numbers of redeposited 2nd century coins perhaps from the shrine opposite. The only late 4th century activity in Area B was the apparent removal of a large post which had been a central feature within the shrine complex. Elsewhere, metal-detected finds of early-mid 4th century coins suggest continuing activity within the focal (unexcavated) part of the settlement, but even there such material was scarce. The latest burials in the Area C cemetery were probably of early 4th century date.

Limited activity of 13th century date, possibly indicating adjacent settlement, was located at the extreme southern end of Area B.

The Roman settlement contained areas of contrasting plan - groups of carefully laid out plots interspersed with zones of more 'organic' form. The 20 or so excavated structures were of timber and circular and rectilinear building forms were found side by side throughout the period. The economic emphasis of the settlement was presumably on agriculture and local market functions. Iron production was important, but its scale is such as to suggest that it had only local significance. It is possible, however, that one function of the settlement may have related to the administration of iron production. The finds, amongst which the large pottery assemblage is particularly important, suggest for the most part only modest prosperity.

A striking aspect of the site is the effective cessation of occupation by the mid 3rd century. This pattern is reflected in a considerable number of other rural settlements and a number of the Wealden iron working sites in the region. Its significance remains uncertain.

# Acknowledgements

The Oxford Archaeology fieldwork team was led by Steve Lawrence and Anne-Marie Bingham, to whom principally is owed the credit for making the excavation a success. Key team members included Rachel Barton, Dan Bashford, Anthony Beck, Bethan Charles, Phil Chavasse, Peter Crawley, Guy Cockin, Simon Greenslade, Jon Hart, Mark Lacey, Darko Maricevic, Penny Middleton, Stuart Milby, Kirstin Miller, Chris Richardson, Gavin Robinson, Kathelen Sayer, Mike Simms, Mark Steinmetzer, Rosemary Wheeler and Michael Wood. The part played by all the other team members, too numerous to name individually, is also gratefully acknowledged. The project was managed for OA by Paul Booth under the oversight of Bob Williams (head of fieldwork) and Anne Dodd (head of post-excavation). Edward Biddulph and Ian Scott helped bring the report to completion and Paul Backhouse expedited its production.

Ashford Borough Council ensured through the planning process that part of the site was preserved *in situ* with part being excavated in advance of development. Special mention should be made of Michael Hayley, Lois Jarrett and Anthony Slack. Funding for both fieldwork and post-excavation phases of the project was provided very largely by Wilcon Homes, whose role in enabling a large part of the site to remain unaffected by development should also be remembered. Particular thanks are owed to Peter Armfield of Wilcon Homes for much assistance both before and during the fieldwork programme and, once construction was underway, to successive site managers Steve Bray and Bill Shelvey for their co-operation whilst building and archaeological work proceeded in tandem. Steve Bray's prompt action in alerting OA staff to the discovery of burial 9200 merits particular mention.

The role of Kent County Council (KCC) Heritage Section was very important throughout the project, from initiation onwards. Dr John Williams, the county archaeologist, played a lead role in securing the project funding and the case officers once the project was established were Wendy Rogers and Simon Mason. Paul Cuming and Stuart Cakebread kindly provided Sites and Monuments Record data. Richard Hobbs organised the 1998 metal detector survey while attached to KCC as Finds Liaison Officer and his successor Catherine Read co-ordinated the input of metal-detector groups in the subsequent excavation. KCC also provided financial support with regard to the 1999 training excavation. The undergraduate student contributions to the excavation were arranged through the good offices of Professor Rick Jones (Bradford) and Dr Neil Christie (Leicester).

Staff of Ashford Borough Council are thanked for their help in relation to the training programme and also to open days. Dana Goodburn-Brown also helped in this regard. Staff of Ashford Library, particularly

Shirley Sheridan, were very supportive of the outreach aspects of the project. The training programme was also generously supported by the Kent Archaeological Society, to whom, with their then President Paul Cannon, thanks are owed. KAS members also provided a register of volunteer excavators (as well as participants in the more formal training programme) and Ted Connell, in particular, did an immense amount of work here, in addition to providing very helpful seminars on the pottery of the region. Further financial support for the training programme came from English Heritage, and Peter Kendal, the regional Inspector of Ancient Monuments, both helped to secure this and gave active encouragement throughout the project. English Heritage also made a very significant contribution to the post-excavation programme by committing staff and facilities to undertake investigative conservation of cremation burial 9200, carried out by Karla Graham, and most particularly to the recording and analysis of the substantial collection of iron slag, in relation to which thanks are owed to David Starley, Justine Bayley and particularly Sarah Paynter. Rob Vernon, then a research student at Sheffield University, carried out a fine-scale magnetometer survey of one of the ironworking areas and kindly made the results of this available.

Other help and information was generously given by a range of individuals and organisations. These include Neil Aldridge, Jeremy Hodgkinson of the Wealden Iron Research Group and Dr Bernard Worssam, who discussed geological matters with a number of members of the project team. Mr Arthur Ruderma kindly provided information of the Westhawk place-name. Ian Greig and Casper Johnson, both then of Archaeology South-East, are thanked for information on Brisley Farm, and Paul Bennett and particularly Keith Parfitt of Canterbury Archaeological Trust (CAT) discussed several aspects of Roman Kent. Jon Rady provided information on CAT sites in south Ashford. Tim Champion gave helpful advice on late Iron Age burials and Martin Millett offered a number of thought provoking suggestions and kindly gave access to a draft of a chapter on Roman Kent. None of those named here or below, however, is responsible for the defects of this report.

The contribution of all the specialists and technical support team, both in-house OA staff and externally based, is gratefully acknowledged. The contributions of the principal specialists were of value well beyond the scope of their individual reports. Hilary Cool would like to thank Nina Crummy for discussing aspects of the Stanway finds in relation to Burial 9200, Vanessa Fell for investigative conservation and the analysis of the metals that are included in the catalogue entries and John Cherry of the British Museum for identifying the 14th century seal. Joanna Bird would like to thank Brenda Dickinson for her

### *Acknowledgements*

comments on a particular samian bowl (no. 10 in the catalogue of decorated samian (see Chapter 6)). Dana Challinor would like to thank Rowena Gale for much help and constructive criticism of a draft of the charcoal report. Sarah Paynter is indebted to Roger Wilkes, at the Centre for Archaeology, who jointly sorted the slag and to Justine Bayley, who jointly undertook the initial slag assessment, as well as to the members of the Wealden Iron Group, in particular Dr Bernard Worssam who shared his expertise on the geology of the Weald and local ores, Dr Tim Smith who provided useful information on ore and slag compositions and Brian Herbert who provided slag samples from other Wealden sites. Penelope Walton Rogers

wishes to thank Dr Allan R. Hall, English Heritage Research Fellow, Environmental Archaeology Unit, University of York, for information on botanical evidence from prehistoric Britain.

Last but by no means least it is a pleasure to acknowledge the interest and practical support and participation in the project of many other local people. These include members of the Mid Kent, Romney Marsh, Swale and West Kent metal detector clubs who gave up their time to assist in the 1999 excavations, and the tenant farmer, Mr Reeves. Amongst the local volunteers David Baldwin, David Dixon, Bill Dryland and Adam Stone were particularly regular helpers.