

# ROMAN MILTON KEYNES

---

Excavations & Fieldwork  
1971 - 82

---

Editor: Dennis C. Mynard



BUCKINGHAMSHIRE ARCHAEOLOGICAL SOCIETY  
MONOGRAPH SERIES

No. 1 1987

ROMAN MILTON KEYNES



Plate 1: MK105 Bancroft Villa: Mosaic Pavement in Room 9, drawn by David S. Neal (Crown Copyright).

# ROMAN MILTON KEYNES

## Excavations and Fieldwork 1971-1982

by

R. J. ZEEPVAT  
R. J. WILLIAMS  
D. C. MYNARD

*With contributions by*

S. Fells, D. Field, M. W. C. Hassall, M. Henig, M. Jones, C. E. King,  
D. F. Mackreth, P. T. Marney, J. Price, R. Reece, D. J. Smith, J. H. Thornton,  
R. Tyrrell, B. Westley, C. Woodfield and C. T. P. Woodfield.

**Editor: Dennis C. Mynard**

BUCKINGHAMSHIRE ARCHAEOLOGICAL SOCIETY  
MONOGRAPH SERIES No. 1

Series Editors: J. Chenevix Trench and M. Farley

ROMAN  
MILTON KEYNES

Published by  
Buckinghamshire Archaeological Society,  
The Museum, Church Street, Aylesbury

ISBN 0 949003 01 8

© Buckinghamshire Archaeological Society 1987. All rights reserved.

Typeset by AMARANTHUS, 18A Silver Street, Warminster, Wilts.  
Printed by DOPPLER PRESS, 107 High Street, Brentwood, Essex.

## CONTENTS

<i>List of Figures</i>	vii
<i>List of Tables in the Text</i>	viii
<i>List of Plates</i>	ix
FOREWORD AND ACKNOWLEDGEMENTS	xi
INTRODUCTION	1
GEOLOGY AND TOPOGRAPHY	3
ROMANO-BRITISH SETTLEMENT IN THE UPPER OUSE AND OUZEL VALLEYS	6
GAZETTEER: SITES AND FINDSPOTS	19
REPORTS ON MINOR EXCAVATIONS AND WATCHING BRIEFS	30
MK36 Walton	30
MK45 Holne Chase	30
MK46 Shenley Road	32
MK63 Bradwell Abbey Barn	34
MK71 Cotton Valley Enclosure	35
MK82 Kiln Farm	36
MK90 Walton	37
MK96 Windmill Hill	37
MK100 Sherwood Drive	39
MK111 Shenley Road	40
MK127 Bradwell Middle School	41
MK137 Heelands	43
MK304 Standing Way	45
MK307 Loughton Valley	46
MK313 Saxon Street	46
MK343 Bancroft Waterlogged Deposit	47
MK345 Constantine Way	48
MK346 Hodge Lea	48
MK351 Simpson	49
MK354 Caldecotte Lake (South)	50
MK360 Bancroft 2	50
REPORTS ON EXCAVATIONS	52
MK64 Wood Corner	52
MK105 Bancroft Villa	60
MK109 Little Woolstone	79
MK211 Wymbush	82
MK297 Woughton	90
MK301 Stantonbury	97
REPORTS ON CONSTRUCTION MATERIALS	105
Introduction	105
Building Materials and Techniques	105
The Mosaic Pavements of the Bancroft Villa	107
Painted Wall Plaster	114
MK64 Wood Corner	114
MK105 Bancroft Villa	114
MK109 Little Woolstone	115
MK211 Wymbush	115

Architectural Masonry and Sculpture	115
Introduction	115
MK96 Windmill Hill	116
MK105 Bancroft Villa	117
Stone Roofing Materials (Bancroft Villa)	118
Tiles	118
Introduction	118
Fabric Types	119
Tile Types	120
An Inscribed Tile from MK211 Wymbush	125
<b>REPORTS ON OTHER FINDS</b>	126
Coins	126
Bronze Objects	128
Brooches	128
Other Bronze Objects	133
Worked Bone	141
Jet	145
Shale	145
Fired Clay	145
Worked Stone	145
Lead	146
Glass	147
Ironwork	157
Leather	170
Iron Slag	172
Concordance of Sites and Catalogue Numbers	175
<b>REPORTS ON ENVIRONMENTAL SAMPLES</b>	180
Animal Bones	180
Human Remains	191
Carbonized Grain	192
<i>Bibliography</i>	194
<i>Microfiche Contents</i>	198

## LIST OF FIGURES

Fig. 1. Location of Milton Keynes	xii
Fig. 2. Roman Sites in Milton Keynes	2
Fig. 3. Milton Keynes Surface Geology and Drainage	4
Fig. 4. Roman Sites in the Upper Ouse and Ouzel Valleys	7
Fig. 5. Roman Sites in relation to Soils	15
Fig. 6. Spatial Relationships of Roman Sites	17
Fig. 7. MK45 Holne Chase: Recorded Features	31
Fig. 8. MK71 Cotton Valley: Plan of Excavation and Recorded Features	35
Fig. 9. MK96 Windmill Hill: Recorded Features	40
Fig. 10. MK100 Sherwood Drive: Recorded Features	40
Fig. 11. MK46 and MK111, Shenley Road, Bletchley: Location Plan	41
Fig. 12. MK127 Bradwell Middle School: Location and sections of recorded feature	42
Fig. 13. MK137 Heelands: Plan and Section of Corn-Drier	44
Fig. 14. MK64 Wood Corner: Location Plan	53
Fig. 15. MK64 Wood Corner: Excavation Plan	54
Fig. 16. MK64 Wood Corner: Plan of Phases I and II	56
Fig. 17. MK64 Wood Corner: Plan of Phases III and IV	58
Fig. 18. MK105 Bancroft Villa and Related Sites: Location Plan	61
Fig. 19. MK105 Bancroft Villa, Building 1	63
Fig. 20. MK105 Bancroft Villa, Buildings 2, 3 and 4	64
Fig. 21. MK105 Bancroft Villa: Plan of Phases I and II	66
Fig. 22. MK105 Bancroft Villa: Plan of Phases III and IV	69
Fig. 23. MK105 Bancroft Villa: Reconstruction of the Phase IV Villa	73
Fig. 24. MK109 Little Woolstone: Location of Excavation and Resistivity Survey	80
Fig. 25. MK109 Little Woolstone: Plan of Excavated Features	81
Fig. 26. MK211 Wymbush: Location Plan	83
Fig. 27. MK211 Wymbush: Plan of Excavated Features	85
Fig. 28. MK211 Wymbush: Reconstruction of the Farmstead	89
Fig. 29. MK297 Woughton: Site Topography	91
Fig. 30. MK297 Woughton: Recorded Features	92
Fig. 31. MK297 Woughton: Plan of Phases I and II	94
Fig. 32. MK297 Woughton: Plan of Phase III	95
Fig. 33. MK301 Stantonbury: Location of Excavation and Resistivity Survey	99
Fig. 34. MK301 Stantonbury: Excavated Features	100
Fig. 35. MK105 Bancroft Villa: Mosaic Pavement in Room 1	108
Fig. 36. MK105 Bancroft Villa: Mosaic Pavement in Room 2	109
Fig. 37. MK105 Bancroft Villa: Mosaic Pavement in Room 12	112
Fig. 38. Architectural Masonry and Sculpture; Inscribed Tile	116
Fig. 39. Tile Types and Dimensions	121
Fig. 40. Bronze Brooches 1-8	130
Fig. 41. Bronze Brooches 9-18	131
Fig. 42. Bronze Objects 19-61	134
Fig. 43. Bronze Objects 62-92	136
Fig. 44. Bronze Objects 93-143	140
Fig. 45. Bronze Sheet 144, Bone Objects 145-178	142
Fig. 46. Bone Objects 179-184, Jet 185, Shale 186-189, Fired Clay 190-192, Worked Stone 195-198 and 201, Sculptural Fragments 193-194, Querns 199-200	144
Fig. 47. Lead Objects 202-211	146
Fig. 48. Glass Vessels 212-230	150
Fig. 49. Glass Vessels 231-252	153

Fig. 50. Miscellaneous Glass Objects 253–261, Iron Objects 262–270	156
Fig. 51. Iron Objects 271–276	158
Fig. 52. Iron Objects 277–287	159
Fig. 53. Iron Objects 288–298	160
Fig. 54. Iron Objects 299–305	162
Fig. 55. Iron Objects 306–315	164
Fig. 56. Iron Objects 316–319	165
Fig. 57. Iron Objects 320–327	166
Fig. 58. Reconstruction of Wooden Chest 328 from Bancroft Villa	167
Fig. 59. Iron Objects 329–336	168
Fig. 60. Iron Objects 337–350	169
Fig. 61. Iron Objects 351–357	171
Fig. 62. Leather Shoe 358	172

## LIST OF TABLES IN THE TEXT

### *Tile*

Table 1. Dimensions of Tegulae	120
Table 2. Dimensions of Imbrices	122
Table 3. Dimensions of Box Flue and Voussoir Tiles	123

### *Coins (MK105 Bancroft)*

Table 1. Chronological Distribution	127
Table 2. 4th cent. Chronological Distribution	127
Table 3. 4th cent. Mint Distribution (Genuine)	127
Table 4. 4th cent. Mint Distribution (Imitation)	128

### *Lead*

Table 1. Comparative Mass of Lead Weights	147
---	-----

### *Animal Bones*

Table 1. Percentages of Species found on each site	180
Table 2. MK64 Wood Corner: Measurements of Long Bones	181
Table 3. MK64 Wood Corner: Age Attainment	182
Table 4. MK64 Wood Corner: Minimum Numbers of Animals	183
Table 5. MK96 Windmill Hill: Percentages of Species	183
Table 6. MK105 Bancroft Villa: Percentages of Species	184
Table 7. MK105 Bancroft Villa: Minimum Numbers of Animals	185
Table 8. MK105 Bancroft Villa: Overall Lengths of Complete Bones	185
Table 9. MK109 Little Woolstone: Percentages of Species	187
Table 10. MK109 Little Woolstone: Minimum Numbers of Animals	187
Table 11. MK109 Little Woolstone: Overall Lengths of Complete Bones	187
Table 12. MK211 Wymbush: Minimum Number of Animals	188
Table 13. MK211 Wymbush: Overall Dimensions of Bones	188
Table 14. MK211 Wymbush: Age Attainment	189
Table 15. MK297 Woughton: Percentages of Species	189
Table 16. MK297 Woughton: Minimum Numbers of Animals	189
Table 17. MK301 Stantonbury: Percentages of Species	190
Table 18. MK301 Stantonbury: Overall Lengths of Complete Bones	190

### *Carbonized Grain*

Table 1. Botanical Evidence from Corn-Driers	193
--	-----

## LIST OF PLATES

*(Courtesy Milton Keynes Archaeology Unit unless otherwise attributed)*

- Plate 1. MK105 Bancroft Villa: Mosaic Pavement in Room 9 (colour) drawn by David S. Neal,  
Crown Copyright *Frontispiece*
- Plate 2. MK96 Windmill Hill: Corn-Drier 2 (photo: P. N. Jarvis)
- Plate 3. MK137 Heelands: The Corn-Drier
- Plate 4. MK105 Bancroft Villa (aerial photo: Ken Field)
- Plate 5. MK105 Bancroft Villa: General View of Building 1 from south-west
- Plate 6. MK105 Bancroft Villa: General View of Building 6 and sections of adjacent ditches
- Plate 7. MK105 Bancroft Villa: Detail of Herringbone Masonry in Wall 9, Room 3, from the east
- Plate 8. MK105 Bancroft Villa: Room 16, the Caldarium from the south-west
- Plate 9. MK109 Little Woolstone: View of Site from the north-east
- Plate 10. MK211 Wymbush: Building 1 from the east end
- Plate 11. MK211 Wymbush: Building 1, the corridor looking east
- Plate 12. MK211 Wymbush: Feature 42 at the east end of Building 1
- Plate 13. MK301 Stantonbury: Building 2 from the north end
- Plate 14. MK301 Stantonbury: Keyhole-shaped Oven in Building 1
- Plate 15. MK105 Bancroft Villa: Mosaic Pavement in Room 1 from the south
- Plate 16. MK105 Bancroft Villa. Mosaic Pavement in Room 8. Colour photograph of a drawing  
by David S. Neal
- Plate 17. MK105 Bancroft Villa: Mosaic Pavement in Room 2 from the south-west
- Plate 18. MK105 Bancroft Villa: Mosaic Pavement in Room 2, detail of panel with guilloche border
- Plate 19. MK105 Bancroft Villa: Mosaic Pavement in Room 8
- Plate 20. MK105 Bancroft Villa: Mosaic Pavement in Room 8, detail of panel with laurel-wreath  
decoration
- Plate 21. MK105 Bancroft Villa: Mosaic Pavement in Room 9, from the south
- Plate 22. MK105 Bancroft Villa: Mosaic Pavement in the corridor (Room 12), Panel A
- Plate 23. MK105 Bancroft Villa: Mosaic Pavement in the corridor (Room 12), Panel B
- Plate 24. MK105 Bancroft Villa: Mosaic Pavement in the corridor (Room 12), Panel C
- Plate 25. MK105 Bancroft Villa: Marble Cockerel
- Plate 26. MK45 Holne Chase: Sherds of polychrome mosaic glass vessel: left, underside view of  
base; right, inside view (photo: University of Leeds)

## FOREWORD AND ACKNOWLEDGEMENTS

D. C. MYNARD

This volume is the first in a series publishing the results of the archaeological research and excavation that have taken place during the development of the New City of Milton Keynes in the years 1971-1982.

The decision to build Milton Keynes created a threat to the archaeology and historic landscape of some 22,000 acres of North Buckinghamshire countryside. It was feared by many that the major priority would be the construction of the city and that all would be swept aside by the new development.

However, the establishment at the very outset of construction in 1971, by the Milton Keynes Development Corporation, of an archaeological unit within its own staff, with the specific objectives of recording and excavating sites that were threatened by development, allayed the fears expressed.

Over the years the excellent partnership between archaeologists and all other departments of the Development Corporation has led to the protection and conservation of important sites within the city, and the excavation, prior to development, of many others.

From the beginning we have attempted to pursue a policy of collective publication, i.e. instead of publishing the results of each excavation individually, we have aimed at producing a volume at least on each period; the advantage being that the combination of the results of several excavations of a given area might enable a better assessment of the evidence and a more definitive statement to be made.

Swayed by the dictates of current fashion, we have, over the years, considered various methods of publication: our own journal, a fascicule series, individual monographs, etc. Eventually we made the more sensible decision to publish as a series of special monograph issues of the Records of Buckinghamshire, an established and effective medium that has withstood the test of time. This Roman volume, the second in the proposed series is, owing to a variety of circumstances, the first to appear in print.

The volume covers all aspects of the Unit's work on Roman sites in the period 1971-1982, apart from

Caldecotte which will appear in a later volume. In addition, in order to present as complete a picture as possible, we have sought to summarise and publish the results of fieldwork and excavation undertaken by private individuals on Roman sites in the area before 1971.

Much of that work was undertaken without adequate resources and the records are often incomplete and occasionally confused. However, the evidence warranted publication and we have presented it here believing that half a record is better than none at all.

Work on this volume commenced in 1978, but with excavation continuing on all sides there was never time to divert staff away from the field for any great length of time and inevitably further sites and finds needed to be included. Eventually we decided on a 1982 deadline. Delays have been caused by various problems, not least the unfortunate illness of our pottery specialist which has meant that the pottery report is still incomplete and we are forced to go to print without it. It will appear as a separate volume.

Finally, at the time of writing, December 1983, we have completed excavation of Building 1 of the Bancroft Villa and the recently discovered adjacent Mausoleum and burial place. The detailed report on this work will obviously not be available for two to three years and will, with reports on current work on sites in Milton Keynes, be published in later volumes of this monograph series.

We are indebted to the staff of the Milton Keynes Archaeology Unit, both present and past, without whose work this volume could not have been written. Most excavation supervisors, fieldworkers and other staff are mentioned by name within the detailed reports on each site, but particular mention must be made of Sue Marshall our Conservator, June Burbidge who has drawn all of the finds illustrated in this volume, and Doreen Eley and Anne Mynard who have typed all the various drafts of it. We are also greatly indebted to the vast body of 'volunteers', people of all ages and from many walks of life, who have worked, often in very adverse conditions, on the excavation of these Roman sites in advance of the construction of Milton Keynes.



Fig. 1. Location of Milton Keynes.

Initially the responsibility for the Roman period fell with my former colleague, Dr H. S. Green, but after his departure from the unit in 1976 I assumed responsibility for total administration of the unit. Since that time, although employed as supervisor on Medieval sites, R. J. Zeepvat has gradually assumed the role of the unit's Romanist and has directed much of the major excavation work covered by this volume. He is also its principal author; all other contributors to this volume, whether unit staff or the authors of specialist reports, are acknowledged within the text.

Over the years we have received help in many forms from the contractors involved with the construction of Milton Keynes whom we have met on various sites. At no time have we ever met an obstructive or unhelpful contractor and we are particularly grateful for their co-operation.

On sites of all periods we often needed to remove the upper levels with a mechanical excavator, and since we obtained good service from F. J. Morris Plant Hire, some of whose drivers have become very experienced in mechanical archaeological excavation, we have regularly used them over the last ten years and would like to acknowledge their help and interest.

The Development Corporation has not been the owner of all of the sites on which we have worked and we are grateful for access to all the various

owners and tenant farmers who have allowed us to work on their land.

The Department of the Environment has totally funded all of our work, mainly through the New Towns Directorate, and to a much lesser degree through grants from the Inspectorate of Ancient Monuments. Over the years our excavation policy has been discussed with and approved by several successive Inspectors of Ancient Monuments, and they have visited sites, offering words of advice and encouragement for which we are grateful.

The major benefactor of the Milton Keynes Archaeological Project has been the Milton Keynes Development Corporation itself. It was only through the enlightened approach of its senior management that the Archaeology Unit was established and has continued in existence to the present day.

In addition, our many colleagues within the Corporation, planners, engineers, surveyors, clerks of work, architects, etc. have all been interested in our work and helped in many, many ways.

Finally, once again, it is to the staff of the Unit and those numerous unnamed volunteers that Milton Keynes will always be indebted. These people have given Britain's newest city a history to be proud of.

## INTRODUCTION

R. J. ZEEPVAT

The new city of Milton Keynes covers an area of some 82 square kilometres, straddling the narrowest part of north Buckinghamshire, with the counties of Northamptonshire and Bedfordshire to the north and south-east respectively, (Fig. 1). Part of the reasoning behind the choice of this location can be seen in its situation on the major natural 'corridor' from the south-east to the midlands and north, a route followed by all the major forms of surface transport, ancient and modern. Until the establishment of the new city the area was devoted almost entirely to agriculture. Settlement consisted mainly of small villages, isolated farms, and the market towns of Bletchley, Stony Stratford and Newport Pagnell. The more recent establishment of Wolverton and the large-scale expansion of Bletchley provided a more modern industrialised environment, the former being a 19th century railway creation and the latter a post-war development, sponsored in part by the GLC.

Despite its situation on a major communications corridor the Milton Keynes area remained largely ignored by antiquaries and archaeologists until recent years: a glance at the Ordnance Survey map of Roman Britain (1969 edition) will show north Bucks as virtually devoid of occupation, the only sites marked being the results of chance finds or antiquarian studies since the 18th century.

It was not until the 1950s that this situation was altered, by the growth of two local archaeological societies in the area; the Bletchley, and the Wolverton District Archaeological and Historical Societies. A large amount of serious archaeological fieldwork was undertaken by these societies in the Upper Ouse and Ouzel valleys, as well as a number of small excavations. This effort was sustained principally by a few individuals, notably Anthony Fleming, Charles Green, Robert Harris, Dennis Mynard and Percy Panter of the Wolverton society, and Richard Griffiths and Bernard Kettle from Bletchley. In addition, Ken Field of Olney carried out a series of useful aerial surveys of the area. This effort was spurred in the 1960s by the expansion of Bletchley and the proposals for the development of Milton Keynes. The result (Green, C. 1970) was a total change in the historical map of the area, showing that the Ouse valley and its hinterland had been densely settled since at least the Roman

period, reversing previous academic estimates of the number and importance of local sites. With the start of the development of Milton Keynes imminent, the Milton Keynes Research Committee was formed under the chairmanship of Professor W. F. Grimes to deal with all aspects of conservation in the new city, and from this resulted, in 1971, the appointment of Dennis Mynard and Stephen Green as archaeologists to the Milton Keynes Development Corporation. It is from these initial appointments that the present Archaeology Unit has grown, with its brief to deal with all aspects of archaeology within the designated area of the new city.

The scale of development within Milton Keynes, and the concentration of archaeological involvement within such a small area, have largely dictated the policies adopted by the Unit regarding excavation and survey, and this is especially so in dealing with the Roman period.

Fieldwork increased the considerable number of Roman sites already identified in the designated area prior to the Unit's formation (Fig. 2), and as it was obvious that neither the time nor the resources available would permit excavation of all of them, it was decided to concentrate on a group of sites in the north of the city, centred on the Bradwell and Stanton brooks and the modern parishes of Wolverton, Stantonbury, Loughton, Bradwell and Great Linford. It was felt that the area containing this group of sites, Bancroft, Stantonbury, Wood Corner and Wymbush, provided an ideal opportunity for an in-depth study to determine the character of the Roman landscape of the area, and by extrapolation, the Roman landscape of the Oxford Clay vale, of which this forms a part. The information from this selected area has been supplemented by excavations elsewhere in the city, all of which have been undertaken as individual projects in response to specific threats, but each of which has added in some way to the overall picture of Roman Milton Keynes. It must be stressed here that, even after twelve years, this picture is still far from complete. Large tracts of land in the south-east and south-west corners of the designated area remain untouched at the time of writing (1983), much being under pasture and thus not conducive to fieldwalking or the appearance of cropmarks.

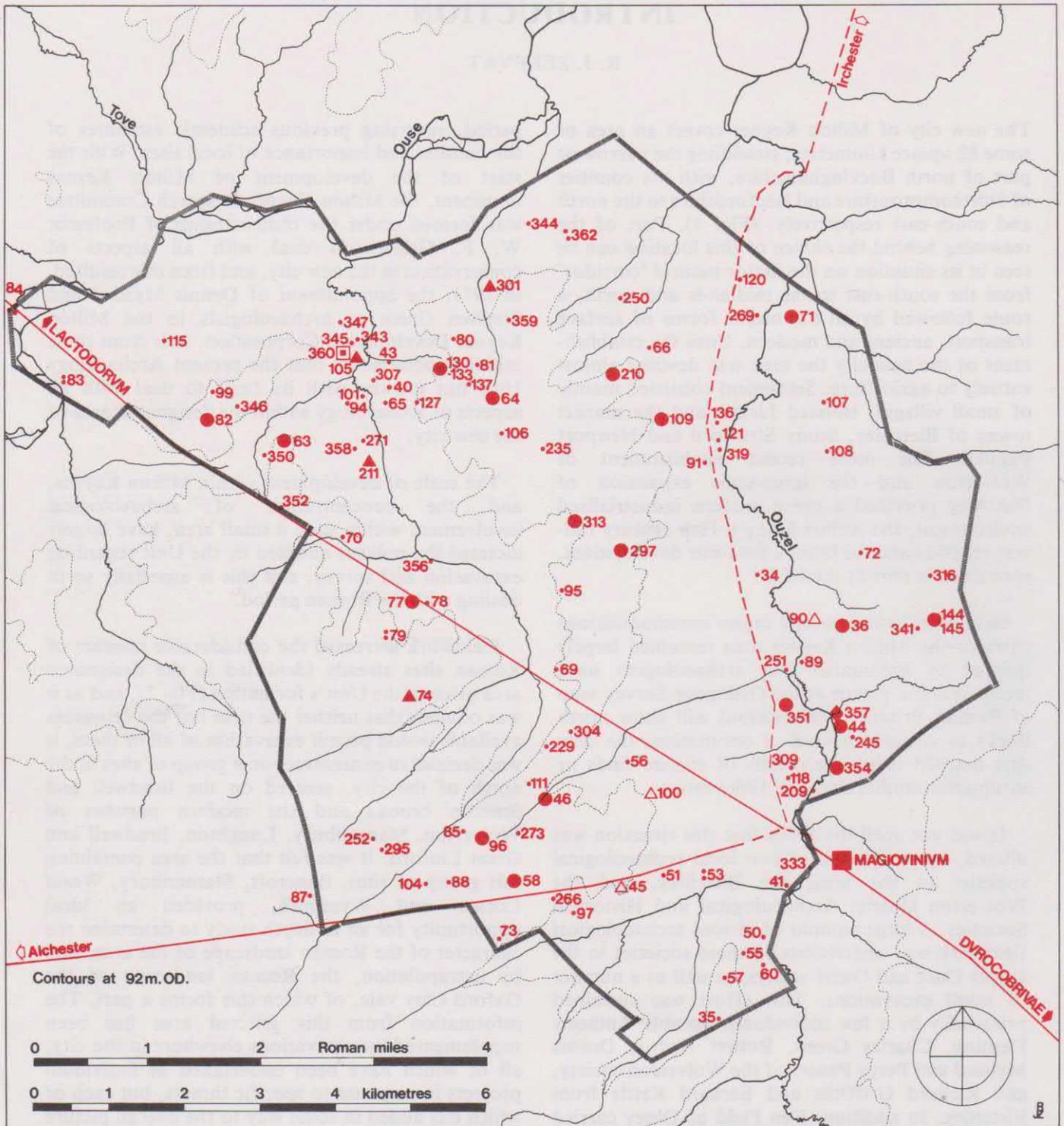


Fig. 2. Roman Sites in Milton Keynes.

## GEOLOGY AND TOPOGRAPHY

R. J. ZEEPVAT

Broadly speaking, the area now occupied by Milton Keynes, (Fig. 3), forms a part of the Oxford Clay vale of the East Midlands, wherein the strata dip south-south-eastwards towards the Lower Greensand escarpment. The processes of glacial erosion and deposition have much modified the topography and soils. What follows here is a brief, simplified description of the structural geology and topography of the area; all the relevant detailed information is contained in the report of a survey conducted by the Institute of Geological Sciences (Horton, Shepherd-Thorn and Thurrell, 1974).

Structurally, the geological sequence in the Milton Keynes area is represented primarily by rocks of the later Jurassic period, beginning with the mudstone and limestones of the Upper Lias, which outcrop on the edges of the Great Ouse floodplain. The slopes overlooking this flood plain also reveal the deposits overlying the Upper Lias, a succession of mudstone, silts and limestones which together form the Inferior and Great Oolite Series. Most notable among these in terms of the future human development of the landscape are the Blisworth and Cornbrash limestone beds.

Moving south-eastwards, much of the higher ground now occupied by Central Milton Keynes is underlain by beds of Oxford Clay, which outcrop extensively on the west side of the Ouzel floodplain, on the slopes overlooking Bradwell Brook, and in the Bletchley and Whaddon areas. Further outcrops of these beds occur east of Fenny Stratford, where the Oxford clays, capped by the Woburn Sands beds, help to form the Lower Greensand escarpment, which rises to a height of 154m OD at Little Brickhill.

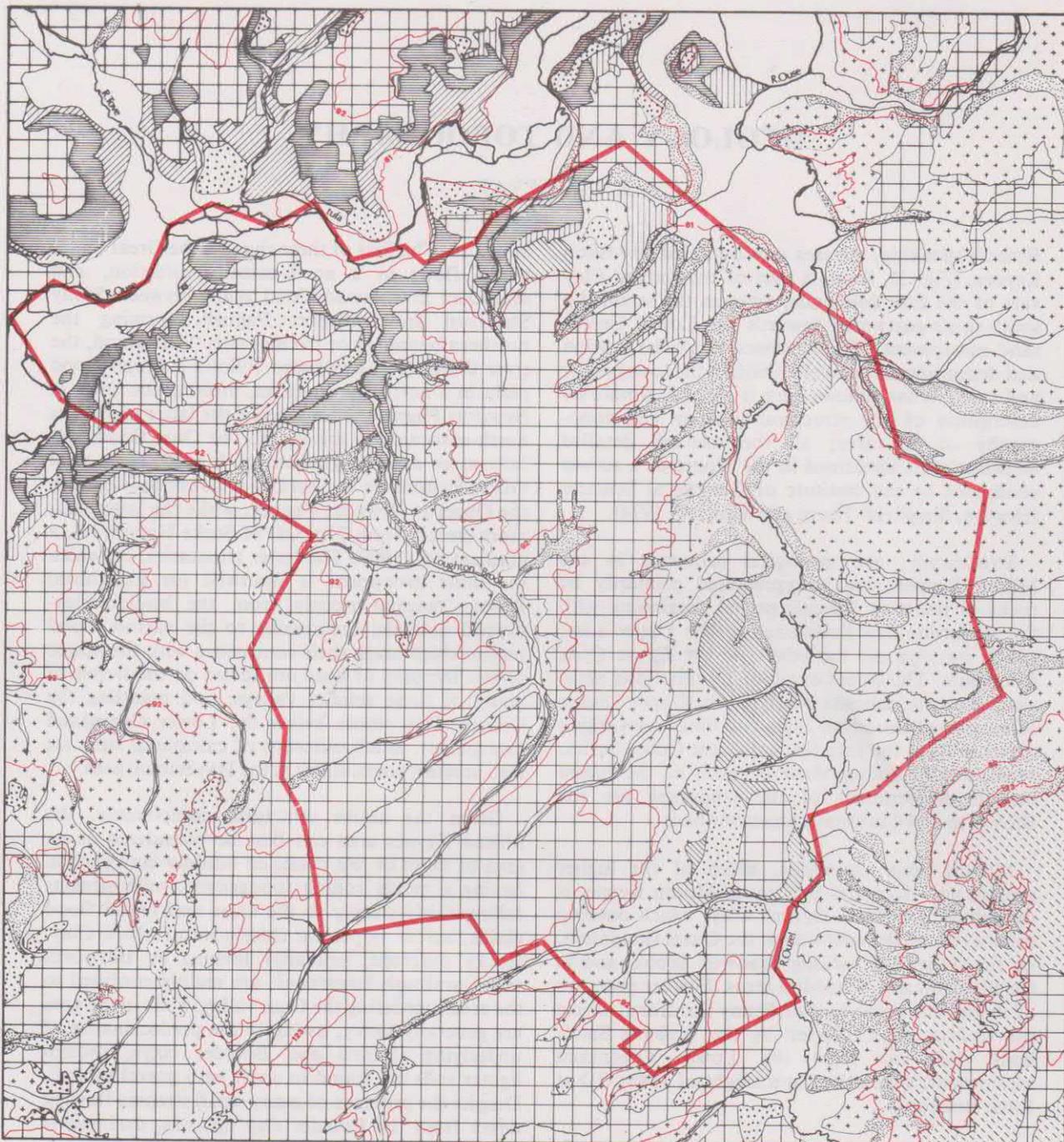
More than half of the Milton Keynes area is covered by Pleistocene and Recent deposits, primarily glacial in origin. The high ground separating the river Ouzel and Bradwell Brook consists of a sheet of Boulder Clay, rising to a height of about 90m OD, the erosional remnant of a sheet which once probably covered the whole area. Extensive glacial sand and gravel deposits can also be found along the Ouse valley between Stony Stratford and Great Linford, at Walton, and around Fenny Stratford.

Recent alluvial deposits have mainly developed along the valleys of the two major rivers and their tributaries, in the form of terrace gravels and

alluvium. The first of these rivers is the Great Ouse, which flows in a north-easterly direction, and meanders in a broad flood plain between Stony Stratford and Newport Pagnell, forming the northern boundary of the new city. The second, the river Ouzel (or Lovat) also follows a broad flood plain in a northerly direction, meeting the Ouse at Newport Pagnell, from whence the latter continues north-eastwards to the Wash. The Ouse floodplain falls at an average gradient of 1:1500, from 65m OD at Passenham to 53m OD at its confluence with the Ouzel at Newport Pagnell, while the latter falls more steeply from 71m OD at Stoke Hammond, a gradient of 1:900. The lesser tributaries, of which the most prominent is Bradwell (or Loughton) Brook, descend steeply from the boulder-clay-capped uplands, broadening to the narrow flood plains which mark their confluence with the major rivers. Deposits of head are found on the slopes of many of these smaller valleys, and mantling the Oxford Clay slopes below the Lower Greensand escarpment. Small outcrops of calcareous tufa are also present, particularly in the Haversham area.

Given the above structural components, the Milton Keynes area can best be considered as an area of more or less dissected boulder clay plateau having a gently rolling topography, with streams falling fairly steeply to the Ouse and Ouzel flood plains, across slopes cut chiefly into Oxford Clay. Rocky outcrops, primarily formed by Blisworth and Cornbrash limestones, are mainly confined to the areas bordering the Ouse valley. Soils in the area are generally heavy, owing to the predominance of underlying Oxford and Boulder clays, though lighter soils are found in areas with gravel subsoil. Despite the presence of many small streams flowing down from the Boulder clay uplands, drainage is generally poor, as the clay soils tend to retain water, and this is perhaps one of the major factors which led the Ministry of Agriculture to give a Grade III classification to over 80% of the area. (Ministry of Agriculture, Fisheries and Food, 1961.) Poor drainage is not limited to the upland areas alone, as both the Ouse and Ouzel valleys have been prone to serious flooding until comparatively recent times.

It is difficult at present to state with any accuracy the type of natural flora that might be expected on this landscape. Much work still remains to be done, particularly in the field of pedological studies and in the collecting and analysis of environmental evi-



8

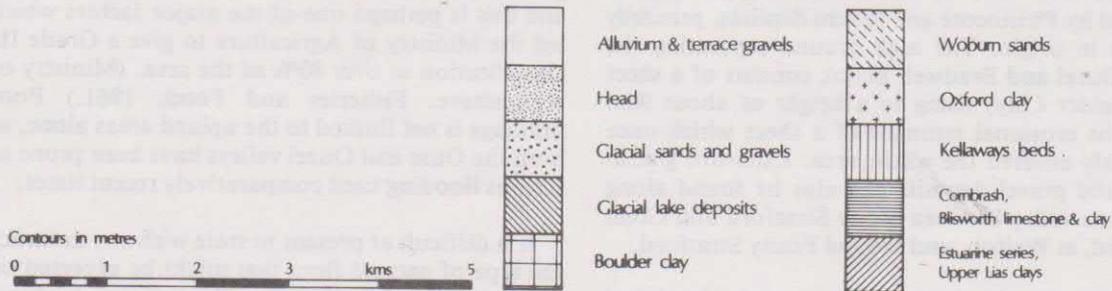


Fig. 3. Milton Keynes surface geology and drainage.

dence from archaeological excavations. Having said this, it is probably still reasonable to suggest that large areas of the clay uplands were wooded, perhaps until the Iron Age, and that Linford, Howe Park, Oakhill and Shenley Woods are the surviving remnants of this forest. In contrast, the Ouse and

Ouzel flood plains were probably open grassland. It must be remembered, however, that this is a very broad, generalised picture, based on similar Midland landscapes, and must be taken only as an interim statement.

# ROMANO-BRITISH SETTLEMENT IN THE UPPER OUSE AND OUZEL VALLEYS

R. J. ZEEPVAT

The aim of this study is to try and relate the evidence from fieldwork and excavation on Roman sites in Milton Keynes to that from sites in the surrounding area, and thus to put together a picture of life in the region during the Roman period. The area chosen for this study, (Fig. 4) consists of a 40km square roughly centred on the designated area of Milton Keynes, incorporating parts of the modern counties of Bedfordshire and Northamptonshire, as well as North Bucks. The distribution map is based on information from the Sites and Monuments Records of Bucks and Beds, whilst the Northants material has come from the recent Royal Commission survey (RCHM, 1980) of the county. This information has been supplemented where possible from relevant articles in the appropriate county journals and society newsletters. It must be stressed that the picture presented here is not a balanced one: here, as always, archaeological distribution maps tend to show the distribution of archaeologists, not of sites. The concentration of sites within Milton Keynes needs no explanation, and the higher density of sites to the north and north-east of the city is a result of fieldwork by members of the Wolverton & District Archaeological Society. Outside these areas, the relative scarcity of sites can probably be explained by their rural situation and consequent lack of detailed intensive archaeological fieldwork. In effect, the position of these areas now is similar to that of the Milton Keynes area in the mid 1950s. However, a word of warning is necessary with regard to those parts of Bedfordshire south-east and east of Milton Keynes which appear almost devoid of occupation. The former area, the Woburn Sands heights, is formed by a sandy ridge which, until cleared for forestry plantations in the 19th century, was covered by barren heathland, probably also in the Roman period. Both the extensive plantations and the adjacent area of Woburn Park have lessened the likelihood of chance finds and made fieldwork in this area difficult.

This, however, is not true of the latter area, the Oxford Clay vale in West Bedfordshire. This area in the last century has been the scene of intensive human activity, both in farming and the extraction of clay for brick-making, yet few Roman finds have been reported. It may be that this indicates a preference for boulder clay areas over other soils or

that the west Bedfordshire area was set aside for a specific use: perhaps as an imperial estate, specializing in breeding and training horses for the army (Dix, 1981).

In conclusion, it seems reasonable to suppose that much of the area under study was as densely populated as that part now occupied by Milton Keynes, but that the nature of occupation in the Woburn Heights and West Bedfordshire areas must remain an enigma, to be determined by future archaeologists.

## THE IRON AGE BACKGROUND

At the time of the Roman invasion, the Milton Keynes area lay in the north-western corner of the territory of the Catuvellauni, which is generally thought to have extended from the Thames in the south into Northants—possibly to the Nene in the north, and from the Cherwell in the west to Cambridge in the east (Rivet, 1968). The main tribal centre was the *oppidum* at Prae Wood, near St Albans, though at this time the Catuvellauni also held the territory of the Trinovantes which comprised most of Suffolk and Essex, with its capital at Colchester.

How rigid and formalised these tribal divisions in pre-Roman Britain were is at present difficult to determine, as little is known of Celtic law and customs. Classical authors such as Caesar and Tacitus suggest that Celtic tribes were made up of loose confederations, headed by *equites*, who each held an area of the tribal territory as 'client' landowners, the land belonging to the tribe and not to individuals. Below the *equites* on the social ladder were freemen and at the bottom, according to Strabo, were slaves, a commodity that pre-Roman Britain is reported to have exported and which probably resulted from either warfare or the tribal system of punishment for crime.

The bulk of the population during this period were engaged in agriculture, living in isolated farmsteads, consisting of groups of circular timber huts sometimes surrounded by ditches. In such sites in the Milton Keynes area, modern ploughing often removes all structural evidence, leaving only a

ROMAN MILTON KEYNES - ERRATA

FIG. 4.

Key to sites identified by numbers.

1	Abbey Barn (MK63)	23	Kiln Farm (MK82)
2	Amphill	24	Little Woolstone (MK109)
3	Ashfurlong	25	Mileoak
4	Ashton	26	Odell
5	Bancroft (MK105)	27	Piddington
6	Bromham	28	Quinton
7	Broughton	29	Ravenstone
8	Caldecotte (MK44)	30	Sherwood Drive (MK100)
9	Cosgrove	31	Stantonbury (MK301)
10	Cotton Valley (MK71)	32	Stanton Low
11	Danesborough	33	Stowe
12	Deanshanger	34	Thornborough
13	Dovecote Farm (MK74)	35	Thurleigh
14	Downs Barn (MK210)	36	Turvey
15	Emberton	37	Walton
16	Foscott	38	Warrington
17	Great Houghton	39	Whittlebury
18	Harrold	40	Windmill Hill (MK96)
19	Hill Farm	41	Wood Burcote
20	Holne Chase (MK45)	42	Wood Corner (MK64)
21	Hunsbury	43	Woughton (MK297)
22	Kempston	44	Wymbush (MK211)

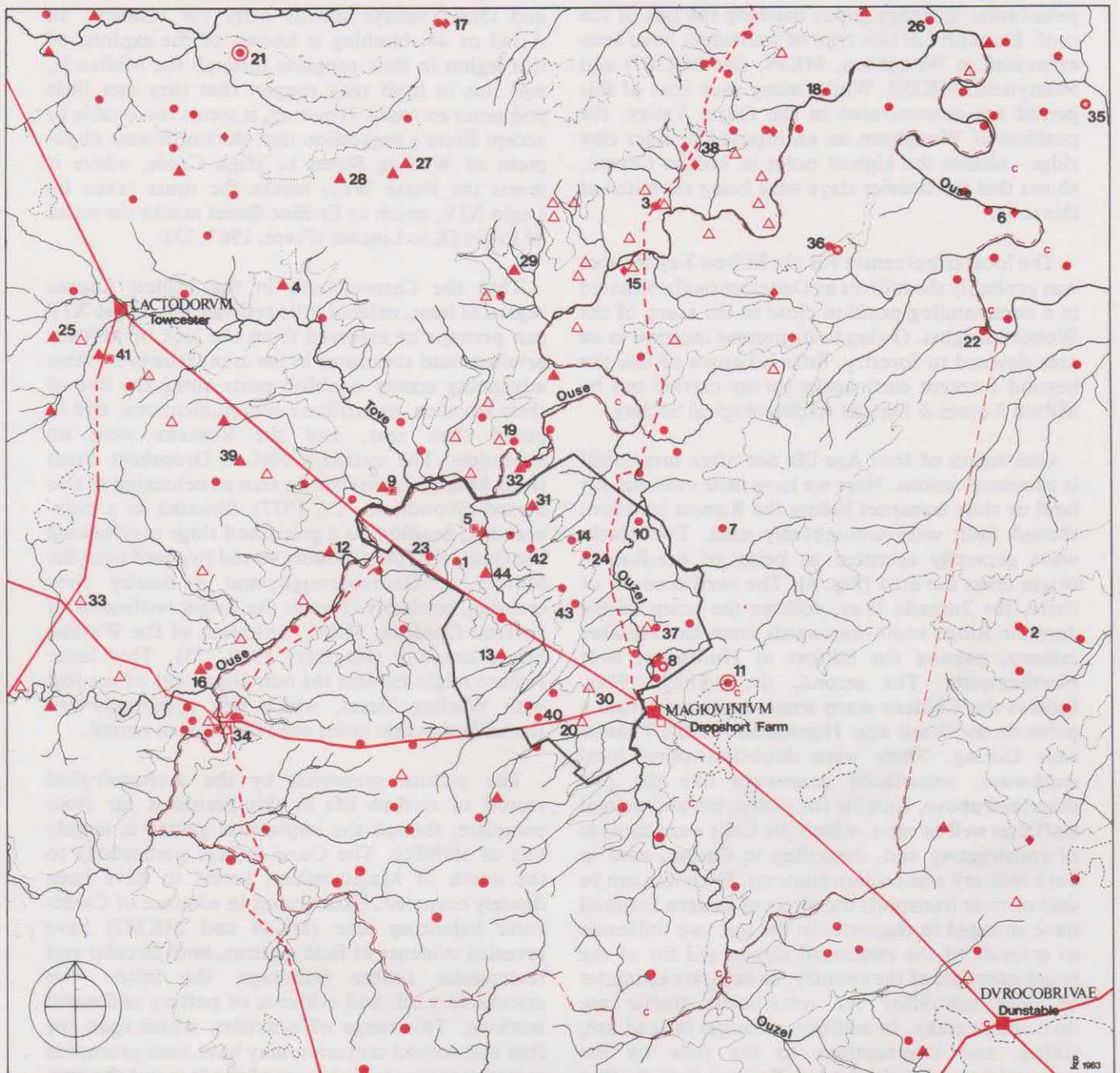
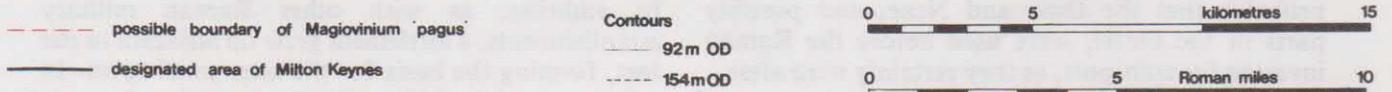


Fig. 4. Roman Sites in the Upper Ouse and Ouzel Valleys.



- TOWNS & MAJOR SETTLEMENTS
- ▲ VILLAS
- △ POSSIBLE VILLAS
- NATIVE-TYPE RURAL SETTLEMENTS
- ⊙ HILLFORTS
- ROMAN FORTS
- ◆ POTTERY/TILE KILNS
- ⊛ OTHER INDUSTRIAL SITES

- ▣ SHRINES AND TEMPLES
- ⤵ BARROWS
- c CEMETERIES
- ROMAN ROADS & TRACKWAYS—CERTAIN
- - - ROMAN ROADS & TRACKWAYS—UNCERTAIN
- FINDSPOTS OF ROMAN MATERIAL
- BOUNDARY OF DESIGNATED AREA

penannular drainage gully marking the line of the roof. Examples of this type of settlement have been excavated at Woughton, MK98, (see MK397) and Pennyland, MK250. Whilst many such sites of this period are concentrated in the Ouzel Valley, the position of Woughton on an exposed boulder clay ridge—almost the highest point in Milton Keynes, shows that the heavier clays were being exploited at this time.

The local tribal centre for the Milton Keynes area was probably the hillfort at Danesborough, situated in a commanding position close to the scarp of the Woburn heights. Owing to its present location in an area devoted to forestry, little is known of this site beyond a recent earthworks survey carried out by Milton Keynes & District Archaeological Society.

One aspect of Iron Age life not often mentioned is communications. Here we have little evidence for land or river transport before the Roman invasion, though both were undoubtedly used. Two trackways generally accepted as being of pre-Roman origin cross the area (Fig. 4). The northernmost of these, the Jurassic Way, follows the scarp of the Jurassic Ridge south-westwards from the Humber estuary, passing the hillfort at Hunsbury, near Northampton. The second, the Icknield Way, follows the Chiltern scarp south-westwards from a point on the Wash near Hunstanton to the Thames near Goring. There were doubtless other local trackways, unsurfaced greenways like the two described above, suitable for pedestrian and animal traffic as well as carts, which the Celts were capable of constructing and, according to Caesar, used in both military and civilian contexts. Even less can be said of river transport; the rivers of eastern England have changed in character in the last two millennia as a result of the continued downward tilt of the south-east part of the country, so accurate estimates of their suitability for waterborne traffic are difficult to make. In addition, changes in land use, silting, and interruptions to the flow by the construction of weirs and mills introduce further problems of interpretation. However, it seems probable that the Ouse and Nene, and possibly parts of the Ouzel, were used before the Roman invasion for transport, as they certainly were after.

The only evidence for the use of river transport in the pre-Roman period comes from Saffron Gardens, MK41, where a sequence of post holes and timber slots of Belgic date, interpreted by the excavator as a revetment on the bank of the Ouzel, may equally be seen as a quay (Waugh, Mynard and Cain, 1974).

### THE ROMAN OCCUPATION

It is probable that the Roman army, or more particularly the Legio XIV Gemina, reached the Ouse

and Ouzel valleys shortly after the invasion, in AD43 or 44. Nothing is known of the exploits of this legion in their progress through the Midlands, and this in itself may suggest that they met little resistance *en route*. However, it seems reasonable to accept Frere's suggestion that the north-west alignment of Watling Street to High Cross, where it meets the Fosse Way, marks the route taken by Legio XIV, much as Ermine Street marks the route of Legio IX to Lincoln (Frere, 1967, 73).

That the Catuvellauni, in the Milton Keynes region at least, offered little resistance to Legio XIV can perhaps be assumed from the lack of military artefacts and structures in the area. However, most advancing armies establish posts along the line of their advance, to facilitate communications, and to guard their rear, and the Romans were no exception. The auxiliary fort at Dropshort Farm (later Magiovinium) can be seen as belonging to this period (Woodfield, C., 1977). Situated in a commanding position on a greensand ridge overlooking the Ouse, the fort probably served to guard both the hillfort at Danesborough and a nearby river crossing, probably close to the Belgic settlement of Saffron Gardens, MK41, upstream of the Watling Street crossing (Hagerty, 1980, 25). This latter feature might explain the non-alignment of the fort with Watling Street, which was apparently not formalised at that point until the Flavian period.

The picture presented by the archaeological record of civilian life in this period is far from complete, though the impression gained is largely one of stability. The Ouzel valley, particularly to the north of Magiovinium, seems to have been densely occupied. Excavations in advance of Caldecotte balancing lake (MK44 and MK357) have revealed evidence of field systems, both circular and rectangular timber buildings, the latter with associated yard, and evidence of pottery and metal working. This range of activities, which span the first and second centuries, may have been promoted in part by the establishment of the fort and the consequent demand for goods and services it created. In addition, as with other Roman military establishments, a settlement grew up adjacent to the fort, forming the basis for the later small town. In other parts of the Milton Keynes area, the picture is much the same. At Little Woolstone, MK109, occupation debris from a series of pits and ditches, the latter probably part of a field system adjacent to an occupation site, has produced an unbroken sequence of pottery from Belgic to fourth-century forms. Similarly, the native occupation site at Woughton, MK297 and the villas at Bancroft, MK105 and Stantonbury, MK301, show evidence of continuous occupation through the Roman period.

However, this is not to say that there was no change at all in the pattern of rural occupation in Milton Keynes. As a result perhaps of the lure of

the new settlement at Magiovinium, or changes in land tenure, some of the pre-Conquest occupation sites did not outlast the first century. The settlement at Cotton Valley, MK71, though surrounded by a substantial enclosure ditch, was abandoned by the end of the first century, and at Walton, MK36, a small circular enclosure went out of use in the same period, perhaps to be replaced by a more substantial romanized dwelling nearby, MK90.

Perhaps the principal effect of the Roman Conquest on rural life in the area can be seen in locally made pottery. Prior to the Conquest, local wares, made with a grogged fabric, had typical Belgic characteristics such as the use of cordons. Following the Conquest there appears a gradual change, both in fabric and forms. The former becomes finer and sandy rather than grogged, whilst the latter are replaced by characteristic Roman forms. The change was obviously gradual, and accompanied by much experimentation, as Roman forms appear in traditional fabrics and vice versa. The material from the Caldecotte kilns is typical of this period.

Of the Boudiccan revolt, perhaps the best-known historical event in the first century, there is little evidence in the archaeological record in Milton Keynes. As the tribes involved, the Iceni and the Trinovantes, were both centred in East Anglia, and much of the action took place to the south, in London, Colchester and Verulamium, this is not surprising. However, Boudicca's final battle has been located by many authorities to the north-west, near Daventry or Mancetter, so it is probable that her forces followed the line of Watling Street northwards after sacking Verulamium. Similarly, reprisals taken by Suetonius Paulinus after the death of Boudicca would have been centred on the tribal areas involved, though Mrs Woodfield suggests that the continued occupation of the fort at Magiovinium into the Flavian period was connected with repressive measures taken after the revolt (Woodfield, C., 1977).

Whatever the involvement of the Catuvellauni of the Ouse Valley area in the Boudiccan rebellion, it is certain from the archaeological evidence that by the close of the first century the process of Romanisation was well under way in the area. Whilst some native sites, such as Woughton, Caldecotte and Little Woolstone, seem to have remained unchanged in character, others, like Kiln Farm and Walton were undergoing change—coupled in these two examples with a slight movement of location—from native to Roman-type structures, while presumably adopting more of the trappings of 'civilised' living. To the north of the Ouse, this process of transition from native to Romanised dwelling can also be seen at Mileoak (Green and Draper, 1978) and Quinton (Friendship-Taylor, 1979).

But this is not to say that there are no changes to the pattern of rural occupation. In addition to the native sites and those that adopt Roman building styles, a number of totally new occupation sites can be seen to appear throughout the second century. At Wood Corner, MK64, and Windmill Hill, MK96, occupation begins in the middle of the second century on sites which remain native in character to the late fourth century. At Stantonbury, MK301, the native-style farm set up in the early second is replaced by a romanised farmstead by the end of the century, while at Wymbush, MK211, occupation commences with the construction of a stone dwelling and barn in the late second century. It is not certain what this increase in rural occupation represents: possibly an increase in the amount of land under cultivation, although not all of these new sites are on poorer soils, or in less accessible situations than established sites. It seems more probable that this period marks the final change to the regularisation of land ownership according to Roman law and customs and the increasing affluence of a population settling down under Roman rule. This process can also be seen in many of the towns of Roman Britain at the same period.

However, the second century was not without its problems. At Mileoak, the elaborate Roman-style dwelling constructed in the late first century, and presumably associated with a villa establishment, was abandoned by the mid-second century. A similar picture is presented by occupation at Quinton, though the site was probably reoccupied in the third century after some fifty years of abandonment. At both Bancroft and Wood Corner, buildings were destroyed by fire in the late second century, and while at the former site this led to the construction of a more substantial house, at the latter an apparently well-constructed rectangular cob dwelling was replaced by a sequence of less substantial native-type circular huts. Possibly the demise of this establishment was linked with economic instability caused by the political upheavals which took place at this time: at Bancroft, the fire and subsequent rebuilding could be connected with retribution inflicted on the province by Severus following the rebellion of Clodius Albinus. Such evidence of change of ownership has been noted in other British villas at this time (Frere, 1967, 275). This explanation is probably less relevant to the native sites abandoned at this time: Caldecotte for instance may well have lost much of its importance as a source of supply of goods and services to Magiovinium owing to the growth of the civilian settlement there following the departure of the military. Others, such as Downs Barn, MK210, may have been victims of the reorganisation of land tenure.

In the Milton Keynes area, there are more sites occupied during the second century than at any

other time. Although the number declines at the end of the century, as discussed above, the sites that survive this decline continue in occupation for a further one hundred and fifty to two hundred years. Few new sites start up beyond this point. The end of the second century can therefore be seen as a clear watershed between an early period of expanding rural settlement, and a late period of settlement stasis. This change may have been brought about by the factors discussed above, though it is equally possible to attribute it to other factors, such as a stable rather than a fluctuating economy. Neither should local factors be ignored; it is possible that land in the area was being as fully exploited as possible by the late second century.

The stability of settlement established in the area in the second century seems to continue throughout the third century also. This is not to say that no change occurs: at Caldecotte, the settlement established in the first century seems to shift southwards to a new site, MK354, closer to Magiovinium, whilst pottery evidence from Wymbush suggests that the house there fell into ruin in the late third century. This rural decline can be paralleled elsewhere, outside the Ouse valley area, on other villa sites. At Latimer, Dr Branigan suggests a period of abandonment in the late third century, preceding a revival of the villa's fortunes in the fourth century (Branigan, 1971), whilst at Brixworth (Woods, 1973) the villa appears to have been abandoned from the mid-late third century. Unfortunately more evidence from this period is lacking for similar sites in the Milton Keynes area, so it is difficult to say how many sites suffered this reversal of fortunes. The reasons for it, however, are perhaps easier to see, in the economic uncertainty which was coupled with the political instability of the Empire in the second half of the third century. Whilst Britain was largely unaffected by the political conflict, her economy seems to have become more introverted, a feature reflected by the disappearance of many types of imported pottery and the growth of the native fine-ware industry, particularly in the Nene valley and at Oxford. Presumably this change altered the balance of trade in agricultural products, causing the demise of less profitable farming establishments. Certainly, the villas which survive beyond this period seem to make the most of the stability which was restored by the tetrarchy headed by Diocletian at the end of the third century.

It is generally accepted that the fourth century was a period of prosperity in Britain, and this seems to be true in the Ouse valley area, where it can be seen in improvements and additions to existing sites, rather than the growth of new ones. Perhaps the most spectacular example of this is at Bancroft, where an average-sized villa establishment with few pretensions to wealth is given mosaic pavements in nearly every room, and numerous alterations and

additions, including a second bath suite and front corridor and porch. At Stantonbury, the farmyard is regularised into a walled courtyard, and a small bath suite—apparently for estate workers' use—is constructed. It is unfortunate that on this site the area thought to contain the farmhouse was not available for excavations, as it would be interesting to see if the increase in wealth found at Bancroft could be paralleled elsewhere in the immediate area. Perhaps the one worrying factor in the Milton Keynes area is that, with the exception of Bancroft and probably Stantonbury, most sites do not exhibit the same symptoms of growth and prosperity. Furthermore, the area around Magiovinium does not seem to have attracted growth in the same way as the region around Towcester, where extensive courtyard villas such as Ashton, Piddington and Whittlebury grew up, and the Chilterns and the Verulamium area, with establishments like Latimer and Gorhambury. It may be that this variation in wealth corresponds with the fortunes of the towns on which these different areas were centred; certainly Magiovinium never reached the size of Lactodorum or Verulamium. As far as the disparity in wealth between Bancroft and the smaller sites in the area is concerned, it must be remembered that social reorganisation by Diocletian and the Constantinian emperors resulted in an increasingly feudal society, with a resultant increase in wealth for the wealthy alone.

From the mid fourth century onwards, the archaeological picture of occupation becomes less easy to interpret. At Wymbush, Wood Corner and Quinton, human activity ceases on site by about AD360; the same is also true of Windmill Hill and Odell (Dix, 1981). At Stantonbury, the coin sequence ends at about AD380, while Bancroft has produced coins of Arcadius, AD383–408, as has the *vicus* at Magiovinium. On the face of it, it would seem that economic decline began to affect the smaller rural establishments in the second half of the century, but that there was not a complete breakdown of the system until some time in the fifth or sixth century.

## POPULATION

It is perhaps relevant at this point to discuss briefly the size of population we are dealing with in our chosen study area.

Taking the urban centres of Lactodorum and Magiovinium first, a generally accepted population density for pre-industrial urban areas is 100-200 persons per hectare (Jones, M. E., 1979, 243). The walled area of the former town is 11.5 hectares, giving estimates of 1150-2300 people. To this must be added an additional figure for extra-mural occupation, perhaps another 300, though the extent of this settlement is uncertain. Magiovinium

presents more of a problem in estimating population, as the enclosed area of the settlement has not been fully established. However, from the available evidence, it seems that the walled area was about 7.5 hectares, giving an intra-mural population estimate of 750-1500 people. Here again the area of extra-mural settlement is unknown, though taking it to be in similar proportions to that at Lactodorum, a figure of about 200 could be allowed.

Estimating the rural population of the Ouse valley area presents a far greater problem owing to variations in the quality of the archaeological evidence, and the availability of comparative data. For this reason we must look at the area now occupied by Milton Keynes, an area covering some 90 square kilometres, known at the time of writing to contain some 25 occupation sites dating from the first to fourth centuries AD. A number of approaches are possible to the problem; these are compared below.

The first, and perhaps the easiest approach, is on the basis of generally accepted estimates of heads per square kilometre. The figure normally quoted for the Roman period is 10-15 persons per sq.km (Jones, M. E., 1979), giving a population of 900-1350 for the Milton Keynes area.

It is also possible to examine the question of population by looking at the settlement density of the area. The recent results of fieldwork in the Northants/Huntingdonshire area of the neighbouring Nene Valley indicated a settlement density of 1 per 2.3 sq.km (Taylor, C. C., 1975). In Milton Keynes, a similar settlement density would result in there being 39 settlements. At present, 25 different settlements have been recorded, with areas on the western and eastern flanks of the city awaiting detailed fieldwork prior to development. The difference between these figures—over 50%—suggests either that large numbers of sites remain to be discovered or that, more likely, several of the 'findspots' recorded represent occupation sites, particularly where finds are closely grouped.

Moving one stage further, it is interesting to compare the numbers of known settlements with the estimated population figures quoted above. With a population of 900-1350 the persons per settlement would range from 36 to 54, or 23 to 36 if the estimated total of 39 settlements is accepted. If much of the rural population lived as extended family groups, as is quite possible, then settlements like Wood Corner and Woughton, containing perhaps two family groups, make these figures more believable.

## COMMUNICATIONS

As has already been noted, the area now occupied by Milton Keynes straddles a natural communi-

cations 'corridor' linking south-eastern Britain to the Midlands and North, as well as the Ouse Valley, which provides a link between East Anglia and the Wash, and the south-west. Given this situation, both road and river transport would have linked this area with other parts of Britain in the Roman period.

Perhaps one of the major changes to the map of Britain brought about by the Roman invasion was the establishment of the south-east as the main social, economic and political centre of the island, a change which has affected us to this day. Whilst it is true that the more advanced Belgic tribes in pre-Roman Britain lived in the south-east, much of the country's trade with Europe and the Mediterranean passed through centres such as Hengistbury Head and the Wash—not the most direct routes to the Continent. Similarly, most of the known major pre-historic trackways ran across the country, following the Jurassic and Chiltern scarps, or the Sussex Downs. The network of major Roman roads, on the contrary, while being influenced initially by military requirements, principally radiated out from London—the province's commercial centre—and the ports in the south-east, supplementing the pre-historic trackways, some of which remained in use. River transport too was favoured by the Romans, though to what extent in Britain is still somewhat uncertain.

Before entering into a discussion on the Roman roads in and around Milton Keynes, it is necessary to point out that, like our modern roads, Roman roads can be divided into major and minor categories.

The major routes—such as those detailed in the *Antonine Itinerary*—were constructed primarily for military and administrative reasons, to provide a network over which official supplies, communications and troops could be moved swiftly and efficiently. The only road shown on Fig. 4 which definitely falls into this category is Watling Street, which passes through Milton Keynes on a north-west-south-east alignment connecting Magiovinium with the neighbouring settlements of Lactodorum (Towcester) and Durocbrivis (Dunstable). Little evidence has been forthcoming in Milton Keynes to show when Watling Street was first constructed, despite numerous sections cut across the road for the installation of sewers and other services in recent years. However excavations at Magiovinium have revealed that Watling Street cuts across a number of land boundaries associated with the Claudio-Neronian fort and an earlier road aiming for a river crossing at Saffron Gardens, upstream of the present A5 bridge (Waugh, Mynard and Cain, 1974). The Roman crossing of the Ouzel was probably on the line of the present road, although there are indications of a ford downstream of the bridge. Thus it would seem that Watling Street was

not properly laid out until the late first century AD, since when it has apparently remained in continuous use.

Of the other Roman roads in the Milton Keynes area little is known. Some routes, though not mentioned in the *Itinerary*, are known from earthworks or the survival of part of the route as a modern road or land boundary. One such is the road from Towcester to Alcester. Others are less certain: a study of possible routes in the south-east Midlands was published in 1964 (Viatores, 1964), showing a comprehensive network covering the area. However, recent fieldwork in Bedfordshire is beginning to cast doubts on many of the roads there, and despite the scale of development in Milton Keynes, none of the many suggested road alignments has been found. This is not to say that these minor roads did not exist at all; communications were necessary between the various rural settlements and farms and the market centres, and few of these will have been properly metalled roads. Many of the minor routes may have lain on the same alignment as modern country roads in the area, where the insubstantial nature of their construction makes their identification all the more difficult. Only four of the routes suggested by the Viatores are shown on Fig. 4; from Magiovinium through the temple complex at Thornborough, joining the Towcester-Alcester road near the villa at Stowe (166); the Alcester-Towcester road (160) Watling Street (1a); the Fleet Marston-Thornborough-Stony Stratford road (162/174) and the road from Magiovinium to Irchester (174) following the Ouzel and Ouse valleys, via the settlement site at Ashfurlong, near Olney. In addition to these routes, a length of metalled road was discovered in 1978 running northwards from Magiovinium on the east bank of the Ouzel (inf. D. S. Neal), suggesting an alternative route for the Magiovinium-Irchester road on the opposite bank of the Ouzel to the Viatores' route 175. It is interesting to note that the west Bedfordshire area, already noted as being devoid of occupation evidence, seems also to lack any trace of roads or trackways.

Of river communication, little more can be added to the picture painted for the pre-conquest period. Traces of a possible access road to a quay on the river at Thornborough (Johnson, A. E., 1975, 175), remains of a timber quay at Thornton and a possible stone quay near Hill Farm, Haversham (Green, C., 1970, 58) point to the movement of goods along the Ouse and some of its tributaries during the Roman period. The riverside situation of other sites, notably Stanton Low, Emberton, and the pottery kilns at Harrold and Bromham tend to reinforce this suggestion.

## AGRICULTURE

The gently rolling topography of the Ouse and

Ouzel valley region lends itself admirably to both cultivation and animal husbandry, with the sole exception of the Woburn heights which were, until the establishment of timber plantations by the Dukes of Bedford, open sandy heathland. In the past two centuries the proportions of land given over to different types of farming have varied enormously, usually as a result of market forces. As might be expected, it is therefore difficult to build up a picture of land utilisation for the Roman period.

Perhaps the key to this problem lies in determining the amount of land in agricultural use. An idea of this can be obtained from the density of rural settlement in the area, allowing of course for the variable state of present knowledge of Roman sites. Taking the designated area of Milton Keynes as the most consistently and thoroughly examined part of the Ouse Valley area, by the third century there is a fairly uniform spread of sites on all types of soils, at distances of no more than two kilometres apart, which suggests that by about AD200 most of the available land had been taken for agricultural use.

If we accept that much of the area under discussion was in agricultural use by the middle of the Roman period, what was it used for, and in what proportions? Here at least we can turn to the archaeological record, but this needs to be treated with caution. There is ample evidence of animal husbandry from all the excavated sites, and the picture they present varies little from site to site. Cattle/oxen were the most common animals, kept for haulage and hides as well as milk and meat. Sheep were similarly kept for wool, hides and meat (some of the bones may be goat—positive identification is difficult), and lesser numbers of pigs and horses also appear. With respect to the latter, it is interesting to note that one explanation offered for the lack of occupation in the claylands of west Bedfordshire is that the area was given over to an imperial estate specialising in horse breeding and training for the army (Dix, 1981). Domestic fowl were also commonly kept, though here again precise identification has not always been possible. Most sites have produced evidence of the presence of dogs, which were presumably kept as working animals rather than pets, examples varying from terrier to collie size. Small quantities of bone from various wild animals have also been recovered, principally from Bancroft, indicating that some land was still not under cultivation.

In contrast, the floral evidence for agriculture in the area is far more sparse, due in part to the unsuitability of the local clay soils for organic preservation, and the inadequate sampling programmes of some past excavations. That cereal crops were being grown in marketable quantities is shown by the discovery of probable granaries at

Bancroft and Stantonbury, and the frequent appearance of corn drying ovens as at Heelands, MK137 and Windmill Hill, though the exact function of this latter class of structure must remain open to further study (Reynolds, 1981). In addition to cereals, the presence of cattle and other animals several years old suggests that grass or other feed crops were being grown for winter feed, perhaps in rotation with cereals. Other indirect evidence for cultivation comes from Bancroft in the form of two small iron pruning hooks (see p. 161) suggesting that occupants of that site either had an orchard, or were engaged in viticulture; the former suggestion is perhaps more likely.

Given the lack of evidence for cereal cultivation, it is very easy to see the Ouse valley area as being largely given over to animal husbandry in the Roman period. This, however, may not necessarily be so. A study of the Domesday survey of the Newport Hundreds (roughly corresponding to the present area of Milton Keynes) suggests the following division of land: arable land (including fallow) 75.5%; permanent pasture 6.7%; woodland 17.8% (Tull, 1969). Assuming Roman farming methods to have been at least as efficient as those used in the Saxon period, this survey demonstrates how much of the available land could have been given over to cultivation.

Another factor often overlooked in the discussion of agriculture, yet a necessary part of the system, is the extent and use of wooded areas in the Ouse valley. That wooded areas must have existed is certain from the faunal evidence from some sites, particularly Bancroft, and from the use of timber as a structural material and also as a fuel, both for domestic heating and the firing of pottery kilns and other industrial processes. However, there seems to be no way of establishing the extent of woodlands in the area in the Roman period.

## INDUSTRY

Given the predominantly agricultural character of the Ouse valley, and the lack of any large-scale mineral deposits in the area, it is not surprising that few traces of industrial activity in the Roman period have come to light. Perhaps the major industry in the area is pottery and the manufacture of tile. In the Ouse valley, kilns have been noted at Emberton, Warrington, Harrold, Bozeat and Bromham. The kilns at Great Houghton are the only representatives of the Nene Valley kilns present in the area under discussion, while two small kilns have been noted on the Ouzel at Caldecotte, MK357. The products of these kilns, and their date and distribution within the region, will be discussed elsewhere (publication in preparation). Most of these kilns produced wares for purely local distribution, though tile from the Harrold kilns has been noted

on sites in London. Some sites, particularly Caldecotte, Bromham and Ampthill, commenced production shortly before the Roman conquest, and most of the sites mentioned above were in operation by the end of the first century. However, the very small scale of most of these sites seems to have made them vulnerable to the supply of cheap, good quality wares from the Oxfordshire and Nene Valley potteries, and most seem to have ceased operation by the end of the third century. The one exception to this is the Harrold kilns, which produced coarse shelly wares and, from the late second century onwards, most common types of roofing and hypocaust tile, until the end of the fourth century.

Harrold's success lay perhaps in its situation close to both the river Ouse and to the probable line of the Magiovinium-Irchester road. It is surprising that more kiln sites have not been found in the area, given the frequent outcrops of Oxford Clay south of the river Ouse, though it must be remembered that the production site for at least one of the common local pottery fabrics, 'soft pink grogged', has not yet been located.

The only other industrial activity that has been noted in the Ouse valley area is metalworking, probably mainly limited to agricultural smithing. Most occupation sites in the area produce small quantities of slag and comment on the possible local sources of iron ore is given in the report on the slag from MK127 see p. 173 below.

The south-eastern suburbs of Magiovinium have also produced evidence of metalworking, presumably catering for travellers on Watling Street as well as local demand. Outside the towns most smithing was probably carried out by travelling smiths, though at Turvey and Bradwell, MK127, sufficient quantities of slag and scrap iron have been found to suggest a permanent smithy or ironworking establishment, and a large anvil was discovered in excavations at Stanton Low (Jones, M. U., 1959). At Caldecotte, MK44, quantities of slag found in association with six closely spaced parallel ditches also suggest that ironworking was carried out nearby, while close to this was found a small keyhole-shaped hearth containing bronze slag and crucible fragments. These activities both date from the mid first/second century (Petchey, 1979, 65).

## TRADE

In the Milton Keynes area the only two defended towns, and the larger centres of population, are Lactodorum (Towcester) and Magiovinium (Dropshort Farm, near Fenny Stratford). These two centres are some 25km apart, on Watling Street, at the crossings of the rivers Tove and Ouzel respectively. It is interesting to note that there is no trace

of a similar site on the crossing of the much larger river Ouse, midway between Lactodorum and Magiovinium. Eighteen kilometres south-east of Magiovinium, at the crossing of Watling Street and the Icknield Way, was the settlement of Durocobrivis (Dunstable), an undefended and rather amorphous settlement which is geographically (and probably commercially) separated from the Ouse valley by the Chiltern scarp. A further undefended settlement site has additionally been postulated at Ashfurlong, near Olney, close to the crossing of the Ouse by the Magiovinium-Irchester road, midway between the two towns. For many years ploughing has produced quantities of Roman artefacts and building debris over several acres, and aerial photographs have revealed a pattern of enclosures and possible structures (Mynard, 1967, 4). A settlement at Ashfurlong would be ideally placed as a market for the northern part of the discussion area, having the advantage of both road and river transport, and can probably be considered therefore along with Lactodorum and Magiovinium as one of the major markets for farm produce and supplies of imported goods in the Ouse valley.

As has already been discussed, the principal products of the Ouse valley area were agricultural commodities which unfortunately leave little trace of their origins or ultimate destination. Taking into account the routes available, produce from farms in the area could have gone out by road to the north-west or south-east via Watling Street, or north-eastwards via Irchester by road, or by water along the Ouse. The frequently suggested links with the Car Dyke, and thus with Lincoln and York, must now be in doubt owing to recent surveys on the Dyke (Simmons, 1979).

As far as imports into the area are concerned, perhaps one of the most striking commodities in respect of changing trading patterns and sources of supply is pottery. As we have already seen, most of the basic needs of the inhabitants of the Ouse valley at the time of the conquest seem to have been taken care of by small local potteries, there being few examples of the imported continental wares more commonly found on sites to the south and east. After the conquest small quantities of mica-dusted vessels, possibly from Gaul and the Rhineland, began to appear, accompanied by the ubiquitous samian wares. Slightly later, products from the kilns at Brockley Hill and the area around Verulamium were also traded, undoubtedly being brought up the newly constructed Watling Street. In the first part of the second century, with increasing prosperity and romanization of the province, vessels from new potteries in Britain began to appear: whiteware mortaria from the Oxford kilns, beakers, bowls and flagons from the Upper Nene Valley workshops, brought in either down the Watling Street or possibly the Irchester road, and lead-glazed products from the kilns at Staines,

Middlesex. Despite this, imports continued to arrive from the continent. However, the picture changed in the latter part of the second/early third century, and from this point onwards British pottery became more insular. Large scale production of fine colour-coated tableware had begun in Britain and this, along with locally produced pottery, dominated the pottery trade in the third and fourth centuries. Most notable of these, especially in the fourth century, are the Nene Valley and Oxford region potteries, and to a lesser extent, centres such as Alice Holt near Farnham and Hadham, Hertfordshire. In general, excluding continental wares and Black Burnished Ware (B.B. 1), the bulk of the pottery found in the area during the Roman period had travelled no more than 60km from its place of manufacture.

#### ADMINISTRATION

That part of the Ouse valley under discussion is usually described as being in the *civitas Catuvelaunorum*, administered from the capital of Verulamium and there seems no reason to doubt this.

*Civitates* were divided into *vici* (urban districts) and *pagi* (rural districts) so it must be presumed that much of the area shown in figure 2 belonged to the *pagi* centred on either Lactodorum or Magiovinium. Assuming the boundaries of the *pagus* to be equidistant from Magiovinium and adjoining settlements, and to follow natural landscape features wherever possible, the boundary shown (Fig. 4) can be postulated. This follows the course of the Ouse from Kempston to Foxcott, thence the Twin and its tributaries, passing to the Ouzel and its tributaries near Leighton Buzzard, to cross Watling Street about midway between Magiovinium and Durocobrivis. In the absence of any suitable natural boundaries, the east side of the area is shown as a straight line, though this crosses that part of west Bedfordshire which, as has already been discussed, may have been subject to special influences in the Roman period. Beyond the area a similar *pagus* area can be defined for Lactodorum, using the Ouse and the Nene as boundaries. It is perhaps significant that the largest religious site in the area, at Thornborough, is at the meeting point of the postulated *pagi* of Magiovinium, Lactodorum, and Alcester, since tribal boundaries were preferred locations for religious establishments in the Celtic and Roman period.

The *pagus* centred on Magiovinium is probably based on a pre-Roman tribal division as the fort established there, and the town that followed it, were direct successors to the hill-fort at Danesborough, 3km to the east, which was presumably the pre-Roman political centre for the area. Magiovinium would thus have been the judicial, fiscal and commercial centre for the area under discussion (see Fig. 4 and pp. 8-12), covering some 880 sq. km.

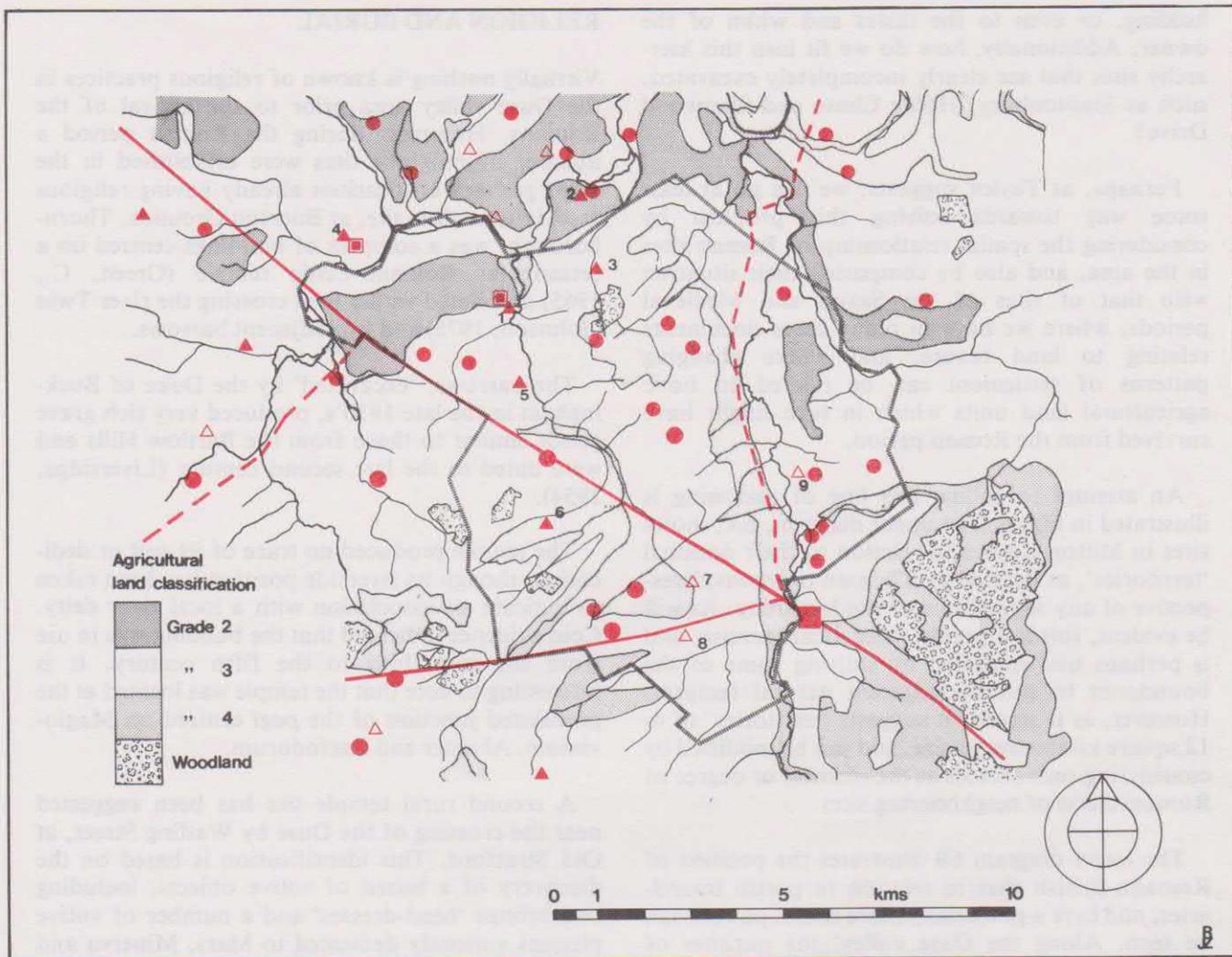


Fig. 5. Roman Sites in relation to soils (soil classification after Ministry of Agriculture, Fisheries and Food 1961).

It is tempting to move on from a discussion of larger administrative units of land to the problem of agricultural land units and estates. This is an area fraught with problems and riven with differences of opinion, perhaps discussed most usefully by C. C. Taylor (1982). In order to examine this question we must turn specifically to the designated area of Milton Keynes for our information, as it is the part of the Ouse valley area most completely researched from both an archaeological and an historical point of view.

One approach to the problem of estates has been to look at the distribution of sites in relation to the quality of agricultural land (Fig. 5) they occupy—'Geographical determinism', as Taylor terms it. However, when sites in Milton Keynes are related to various grades of agricultural land as defined by the Ministry of Agriculture, Fisheries and Food (1961) the distribution produces no recognisable pattern. While Bancroft, the centre of perhaps one of the richer estates in the area, is situated on Grade 2 land, with access to the largest area of this classification in the city, other similar establishments at Stantonbury and Shenley, MK74, are on Grade 3

and 4 land respectively. Most settlement in the area, irrespective of size, is on Grade 3 land. Our modern view of what constitutes 'good land' seems to have had little effect on the occupants of the area in the Roman period, although it is possible that environmental changes may have altered soil conditions in certain areas. Indeed, in the opinion of some specialists, the waterlogged nature of the north Buckinghamshire claylands may be the result of millenia of human exploitation.

Another approach to the problem of estates has been to establish a 'heirarchy' of sites, on the assumption that the richest sites represent estate centres, the poorest perhaps smallholdings or settlements of estate workers. However, as Taylor points out, the more we excavate the greater the variety of settlements we find. This is no less true in Milton Keynes. While we accept that Bancroft is probably an estate centre, must we assume that Wymbush is not, because it never reaches the same degree of opulence, and is abandoned earlier? A glance at farming establishments in the last century shows that the size and richness of each establishment varied according to the size and productivity of the

holding, or even to the tastes and whim of the owner. Additionally, how do we fit into this hierarchy sites that are clearly incompletely excavated, such as Stantonbury, Holne Chase and Sherwood Drive?

Perhaps, as Taylor suggests, we can go at least some way towards solving this problem by considering the spatial relationship of Roman sites in the area, and also by comparing their situation with that of sites of the Saxon and Medieval periods, where we have in many cases documents relating to land tenure, and where changing patterns of settlement can be related to basic agricultural land units which in turn might have survived from the Roman period.

An attempt to follow this line of reasoning is illustrated in Fig. 6. The upper diagram, 6A, shows sites in Milton Keynes in relation to their notional 'territories', as defined by Theissen polygons, irrespective of any suggestions of site hierarchy. As will be evident, this is a purely theoretical exercise, and is perhaps best modified by shifting some of the boundaries to suitable adjacent natural features. However, as it stands, it suggests 'territories' of 4-12 square kilometres in size, and can be modified by considering such factors as the richness or degree of Romanisation of neighbouring sites.

The lower diagram 6B illustrates the position of Romano-British sites in relation to parish boundaries, and here a potentially more useful pattern can be seen. Along the Ouse valley, the parishes of Cosgrove, Wolverton and Linford each contain one major Roman site. To this list, completing the sequence to the south of the river, can be added the combined parishes of Stantonbury and Bradwell, containing the site at Stanton Low (2). To the south of Wolverton, Loughton parish contains Wymbush (5) and Shenley Brook End the probable villa at Dovecote Farm (6). The parish of Bletchley, bisected by the Roman road to Thornborough, has one site in each half: to the north, Sherwood Drive (7) and to the south Holne Chase (8), both possible villa sites. The picture is less clear in the Ouzel valley; only one parish, Walton, is known to contain anything approaching a major stone-built Romanised dwelling, occupation evidence otherwise being rather sparse. Whilst it is not possible to establish the date of origin of these parish boundaries, many follow natural features, or the Watling Street.

A link between parish boundaries and those of Roman estates or agricultural land units is possible and similar studies in other areas, notably Northamptonshire (Bonney, 1979, Brown and Taylor, 1978), north Somerset (Fowler, 1970 and 1975) and Wiltshire (Haslam, 1980) have suggested continuity of agricultural land unit boundaries.

## RELIGION AND BURIAL

Virtually nothing is known of religious practices in the Ouse valley area prior to the arrival of the Romans. However, during the Roman period a number of religious sites were established in the area, perhaps at locations already having religious associations. One site, at Bourton Grounds, Thornborough, was a complex of buildings centred on a rectangular Romano-Celtic temple (Green, C., 1965) associated with a ford crossing the river Twin (Johnson, 1975) and two adjacent barrows.

The barrows, 'excavated' by the Duke of Buckingham in the late 1830's, produced very rich grave goods similar to those from the Bartlow Hills and were dated to the late second century (Liversidge, 1954).

The temple produced no trace of its cult or dedication, though its riverside position has been taken to indicate an association with a local river deity. Coin evidence indicated that the building was in use from the mid third to the fifth century. It is interesting to note that the temple was located at the postulated junction of the *pagi* centred on Magiovinium, Alcester and Lactodorum.

A second rural temple site has been suggested near the crossing of the Ouse by Watling Street, at Old Stratford. This identification is based on the discovery of a hoard of votive objects, including two bronze 'head-dresses' and a number of votive plaques variously dedicated to Mars, Minerva and Apollo (Toynbee, 1964, 326-30; RCHM, 1982, 108-9).

Several other rural sites have also proved to have religious associations, each in connection with a villa. At Wood Burcote, identification of a temple in the region of the free-standing bath suite to the north of the villa rests on the discovery of three carved stone heads, one of which is in the British Museum, which are probably part of a funerary monument (RCHM, 1982, 157). More positive identification of a temple was made by the excavations of Cosgrove villa (Anon, 1970, 7-8), whilst at Bancroft the small octagonal structure to the south-east of the house may be a shrine. In addition, a marble cockerel—part of a statue of Mercury—was recovered during excavation of the house, see p. 145 below. Furthermore, recent work on the adjoining hilltop site to the north (MK360) has produced evidence of a stone structure with a tessellated floor, and a collection of model iron spearheads, suggesting it to be a temple or mausoleum.

Several finds of a religious nature have also come to light elsewhere in the Ouse valley. From a Roman well at Emberton was recovered a relief of Mercury, identified by Toynbee (1964, 156) as native work.

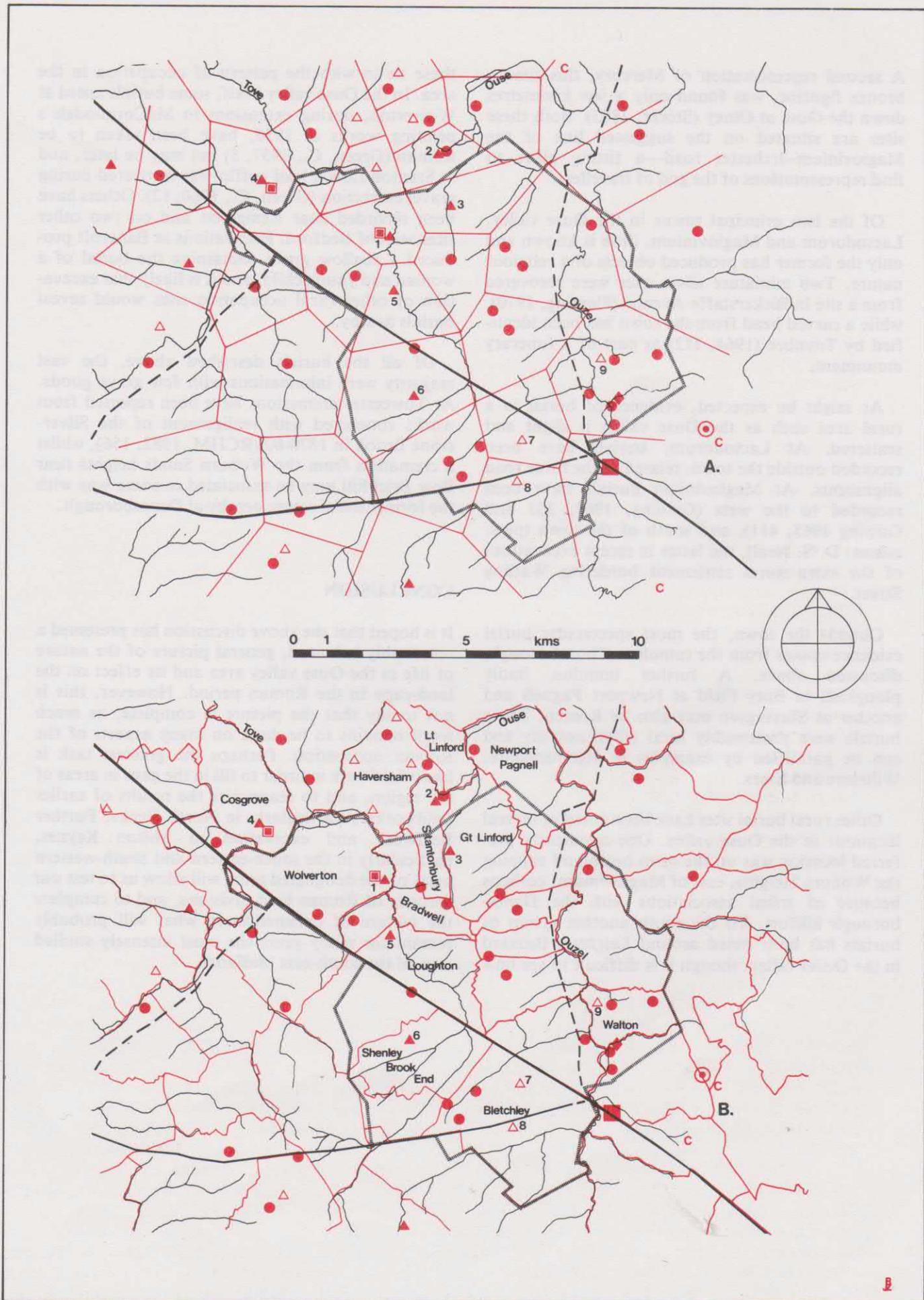


Fig. 6. A: Sites in relation to their notional 'territories', as defined by Thiessen polygons. B: Sites in relation to parish boundaries.

A second representation of Mercury, this time a bronze figurine, was found only a few kilometres down the Ouse at Olney (Storer, 1863). Both these sites are situated on the suggested line of the Magiovinium-Irchester road—a fitting place to find representations of the god of travellers.

Of the two principal towns in the Ouse valley, Lactodorum and Magiovinium, little is known and only the former has produced objects of a religious nature. Two miniature silver axes were recovered from a site in Bickerstaffe Avenue (Fleming, 1970), while a carved head from the town has been identified by Toynbee (1964, 112) as part of a funerary monument.

As might be expected, evidence of burial in a rural area such as the Ouse valley is slight and scattered. At Lactodorum, burials have been recorded outside the town, related to the three road alignments. At Magiovinium burials have been recorded to the west (Gowing, 1964, 303 and Gowing 1965, 411), and south of the town (pers. comm. D. S. Neal), the latter in recent excavations of the extra-mural settlement bordering Watling Street.

Outside the town, the most spectacular burial evidence comes from the tumuli at Thornborough, discussed above. A further tumulus, badly ploughed, in Bury Field at Newport Pagnell and another at Sherington may also be Roman. These burials were presumably local tribal nobility and can be paralleled by examples in Hertfordshire, Wiltshire and Essex.

Other rural burial sites have been noted at several locations in the Ouse valley. One apparently preferred location was on the open heathland capping the Woburn Heights, east of Magiovinium, perhaps because of tribal associations with the Danesborough hillfort. To the south another group of burials has been noted around Leighton Buzzard in the Ouzel valley, though it is difficult to see how

these tie in with the pattern of occupation in the area. In the Ouse valley itself, some burials noted at Wolverton, during extensions to McCorquodale's printing works in 1956, have been taken to be Roman (Green, C., 1957, 5) but may be later, and at Stanton Low a lead coffin was recovered during gravel extraction (Green, C., 1960, 12). Others have been recorded near Kempston and on two other sites west of Bedford. Excavations at Bancroft produced a shallow grave containing the burial of a woman and young child, and it is likely that excavation of other rural occupation sites would reveal burials nearby.

Of all the burials described above, the vast majority were inhumations with few grave goods. At Towcester cremations have been reported from works connected with realignment of the Silverstone Brook in 1870-80 (RCHM, 1982, 156), whilst a cremation from the Woburn Sands heights near Bow Brickhill may be associated in some way with the former tribal centre nearby at Danesborough.

## CONCLUSION

It is hoped that the above discussion has presented a reasonably balanced, general picture of the nature of life in the Ouse valley area and its effect on the landscape in the Roman period. However, this is not to say that the picture is complete, as much work remains to be done on many aspects of the Roman occupation. Perhaps the greatest task is basic fieldwork in order to fill in the gaps in areas of the region, and to reappraise the results of earlier fieldworkers particularly in North Bucks. Further fieldwork and excavation in Milton Keynes, particularly in the south-eastern and south-western parts of the designated area, will allow us to test our theories of Roman land divisions, and to complete the picture of occupation in what will probably remain for many years the most intensely studied area of the south-east Midlands.

## GAZETTEER: SITES AND FINDSPOTS

D. C. MYNARD & R. J. WILLIAMS

The gazetteer combined with the distribution maps (Figs. 2 and 4) represents the minimum information on all known Romano-British occupation evidence and finds within the designated boundary of Milton Keynes New City to February 1981.

A number of points relating to the lists require extra discussion and clarification. The gazetteer has been divided into three sections as objectively as possible although with certain find spots some element of subjectivity must remain.

Part 1 includes a brief summary of all the major excavations, and sites where either limited excavation, trial excavation or a watching brief has taken place, usually in advance of development.

Part 2 represents features and finds of a nature indicating some degree of domestic occupation or industrial activity, mainly through fieldwork on undeveloped land where the site's status must remain in question.

Part 3 includes all the casual finds which do not fit into either of the above categories. Those finds range from single sherds and coins to complete vessels found in the 19th century, about which unfortunately little is known and which originate from a wide range of contexts.

Clearly the quality of information concerning many of the sites and finds in Parts 2 and 3 is of limited value, although it is felt that it is important to present a comprehensive account when considering an over-view of the development of the Roman landscape.

Sites and finds in Milton Keynes have, since 1974, been recorded using the Sites and Monuments numerical card index, compatible to the County system by adding the prefix 3,000, linked to period and area distribution maps at a scale of 1:2,500 and combined with a rapid retrieval Optical Coincidence Card system. Numbers 1-500 were initially assigned to prehistoric and Roman finds, the prehistoric sites representing the gaps in the sequence.

Where possible, sites have been plotted to the nearest 10 metres, an 8-figure National Grid Reference. Where a six-figure reference is given, this

either indicates an extensive area or that insufficient data is available for more accurate plotting. All National Grid References are prefixed by the letters SP. In several cases the locations of finds are unknown and only a reference to the parish can be given.

It has been decided not to refer to site locations in relation to parish boundaries and New City grid squares as this may lead to future confusion. Site names have been included where relevant in Part 1 for quick and easy reference, particularly for those who have been involved with the sites in question, and in a number of cases the names have had widespread usage in the available published literature. The names themselves originate from a number of sources including geographical/topographic features, field names, villages and city grid squares.

The site/find descriptions have wherever possible been checked against published sources and, in the case of unpublished sites, from level III information (DoE 1975) or alternatively taken from the Sites and Monuments cards; they give only the minimum quantity of information. The descriptions have necessarily been limited by space to a concise, objective summary of the character and finds from the site.

The date range of the sites and finds, if not based on numismatic evidence, is almost entirely from detailed analysis of the ceramic evidence by Pauline Marney.

A policy of re-examination of all pottery finds was adopted in conjunction with the formation of a local Roman pottery type-series. Occasionally the range given in the gazetteer will conflict with that of previously published sources, although this is only to be expected in such a rapidly developing field of research. It was not considered practicable to re-examine finds in private ownership and originally quote dates must stand.

Circumstances of discovery have again been made as succinct as possible and are mostly self-explanatory, although in several cases information is of too limited nature to allow a correct assessment. The dates of discovery have been included as a guide to the development of archaeological work and fieldwork in the area over the last two decades.

The date and nature of archaeological work that has taken place as a result of discoveries have been included in parentheses, and vary from watching briefs in the case of sites found during construction work to extensive area excavations over a number of seasons.

For reasons of clarity it has been decided not to include the names of the numerous individuals who found the sites and finds. It does, however, seem appropriate to mention the amateur archaeologist, Richard Griffiths, whose assiduous and unflinching work during the 1960's and early 1970's led to the discovery of numerous sites in the Bletchley area.

All available published sources have been checked, although reference has not been made to

every minor mention, particularly in the annual notes of *Records of Bucks*, or CBA Group 9 *Newsletters*, which add little more than is to be found in the descriptive column of the gazetteer. Reference to aerial photograph sources have been included.

The location of the finds is essentially self-explanatory, although the reasons for the two major repositories requires some explanation. Prior to the inception of the Milton Keynes Development Corporation Archaeology Unit in 1971, local material, if not retained by the finders, was loaned or donated to Buckinghamshire County Museum at Aylesbury. All of the finds from the unit's excavations and fieldwork are now preserved in the Buckinghamshire County Museum's store for the Milton Keynes area at Bradwell Abbey.

*Abbreviations used in the Gazetteer*

BAS	Buckinghamshire Archaeological Soc.	RCHM, AP	Royal Commission on Historic Monuments, Air Photographs
BCM	Buckinghamshire County Museum Accession no.	VCH	Victoria County History, <i>Buckinghamshire</i>
MKDC	Milton Keynes Development Corporation Archaeology Unit	WDASJ	<i>Wolverton and District Archaeological Society Journal</i>
MKJ	<i>Milton Keynes Journal</i>	WDASNL	<i>Wolverton and District Archaeological Society Newsletter</i>
NIA	No Information Available		
PC	Private Collection		
RB	<i>Records of Buckinghamshire</i>		

ROMAN GAZETTEER PART I

Summary of Excavated Sites and Watching Briefs (see separate reports and plans)

Site No.	N.G.R.	Site Name and Description	Date Range	Circumstances and Date of Discovery	Published Sources	Location of Finds
35	875 315	A complete storage jar and fragments of several others (found during housing construction)	1st cent.	Building work (watching brief) 1972		MKDC
36	8915 3677	(WALTON) Small circular enclosure c.17m diam., several gullies and pits and possible timber slots of rectangular buildings	Early-mid 1st cent.	Road-scraping (watching brief) 1972	MKJ2, 1973, 10 RB 19, Pt 4, 1974, 414, 367-7	MKDC
44	890 354	(CALDECOTTE) Circular timber buildings of post-built construction and rectangular buildings with associated yard, industrial activity (pottery and metal working), field system, includes droveway	1st-2nd cent.	Fieldwalking 1960s (extensive excavation 1978-80)	Forthcoming report	MKDC

45	863 332	(HOLNE CHASE) Two stone-built rectangular buildings, 4.5 × 8m and 12 × 14m, the larger of which had a corridor	1st-4th cent.	Building work (limited excavation) 1967	<i>WDASJ1</i> , BCM 1968, 31-5
46	853 343	(SHENLEY ROAD) Complex of early ditches including a large V-shaped ditch, 3m wide and 2m deep, probably an enclosure ditch. Corn drying/malting oven associated with paved area	Early 2nd-late 3rd cent.	Building work (limited excavation) 1971	<i>WDASJ1</i> , BCM 1968, 33-5 422.67 <i>RB</i> 19, Pt 4, 1974, 414
63	8172 3914	(ABBEY BARN) Palisaded gully enclosing an area at least 45 × 60m associated with several pits and ditches. Probably represents livestock enclosure, no firm domestic evidence	2nd-4th cent.	Fieldwalking 1958 (excavation 1958 and 1971)	<i>WDASNL</i> BCM 5, 1960 250.71 <i>RB</i> 19, Pt 4, 1974, 483-500
64	8450 3974	(WOOD CORNER) Ditched enclosure later overlain by yard surface with three circular timber buildings on the NW side and large clay borrow pits	Mid 2nd-4th cent.	Fieldwalking 1961 (extensive excavation 1977)	MKDC
71	885 408	(COTTON VALLEY) Large three-sided enclosure with ditch up to 3m wide and 2m deep, two narrow ditches, two pits and ten post holes found inside, although no structure was visible	Mid-late 1st cent.	Aerial photography (limited excavation 1971)	RCHM, MKDC AP SP8040/1/102.3 <i>RB</i> 19, Pt 1, 1971, 92-3; Pt 14, 1974, 376-7
74	834 358	(DOVECOTE FARM) Fragments of a tessellated pavement, bricks and other indications of a villa reported to have been found at Dovecote Farm in 1901. Coin of Valentinian I and pottery found more recently in garden nearby	Coin 367-75	NIA	<i>The Anti-quary</i> 37, 1901, 342
82	8072 3944	(KILN FARM) Ditches and possible circular house gulleys found after removal of topsoil. (Rescue excavation only)	Late 1st-mid 2nd cent.	Construction work (excavation) 1972	<i>RB</i> 19, Pt 4, 1974, 411
90	8877 3671	(WALTON) Occupation levels and finds suggest the existence of a nearby building	Early 2nd-mid 4th cent.	Ditching (trial excavation) 1972	<i>RB</i> 20, Pt 3, 1977, 351-81

96	844 339	(WINDMILL HILL) Complex of ditches, possible enclosures. Three corn drying/malting ovens and timber slots of possible rectangular buildings	Lte 2nd-4th cent.	Construction work (excavation) 1974 1970-1	MKJ 2, 1973, 7	MKDC
100	866 345	(SHERWOOD DRIVE) Ditches, yard surfaces and two small stone buildings, cremation. Finds suggest proximity to larger stone building with hypocaust	Mid 1st-late 4th cent.	Fieldwalking 1966 Construction work (limited excavation) 1972	MKJ 3, 1974, 7, 14-22, 97-105	MKDC
105	8273 4033	(BANCROFT) Stone-built winged-corridor villa with tessellated floors, mosaics and hypocausts, two bath suites and at least three agricultural outbuildings	1st-5th cent.	Fieldwalking 1971 (extensive excavation 1973-8)	Occas. Papers on Arch., 1, 1975, MKDC	MKDC
109	8665 3945	(LITTLE WOOLSTONE) Rectilinear network of ditches and several pits. Much domestic refuse, no evidence for buildings	1st-4th cent.	Fieldwalking 1967-80 (excavation 1981)		MKDC
111	8498 3460	Early ditch and several amorphous features noted in underpass cutting	1st cent.	Road construction (watching brief) 1978		MKDC
127	8361 3967	Large ditch associated with iron-smelting activity	Late 2nd-early 3rd cent.	Road construction (watching brief) 1978-9		MKDC
137	8429 3990	(HEELANDS) Stone-built T-shaped corn drying/malting oven, not associated with any other features	Late 2nd cent.	Building construction (excavation) 1979		MKDC
210	860 400	(DOWNS BARN) Features and occupation levels seen in cutting	Late 1st-2nd cent.	Building construction (watching brief) 1978		MKDC
211	8285 3893	(WYMBUSH) Stone-built five-roomed building with later corridor. Open-fronted outbuilding	Late 2nd-4th cent.	Fieldwalking 1973 (excavation 1979)		MKDC
269	8809 4085	A Roman ditch was found cut into an old ground surface within a medieval moat	Late 2nd-mid 3rd cent.	Excavation of Willen Medieval Moat 1972	RB 19, Pt 3, 1973, 350	MKDC
297	8615 3774	(WOUGHTON) Ditches, hut circles and possible timber slots for rectangular buildings	1st-4th cent.	Fieldwalking 1969 Road construction 1974 (excavation 1974, 1975, 1977)		MKDC

304	8550 3527	Ditches and gullies	2nd-3rd cent.	Fieldwalking (trial excavation) 1975	MKDC	
301	8444 4123	(STANTONBURY) Stone-built building with evidence of hypocaust and bath house, also circular stone building, and associated agricultural features	1st-4th cent.	Building construction (limited excavation) 1975, 1980-82	MKDC	
307	8291 4001	Ditches/pits seen in section of road cutting	Late 1st-mid 2nd cent.	Road construction (watching brief) 1975	MKDC	
309	8833 3490	(SIMPSON SEWAGE WORKS) Extensive scatter of sherds found from fieldwalking—excavation revealed only a number of field ditches	1st-2nd cent.	Fieldwalking Aerial photography (trial excavation) 1975	MKDC	
313	8561 3816	Ditches, pits and gullies sealed by later cobbled yard possibly associated with post-built structure	1st-2nd cent.	Road construction (limited excavation) 1975	MKDC	
341	8847 3325	(SAFFRON GARDENS) Ditches, gullies, pits and post holes adjacent to a former silted-up river bed with possible revetment of the former river bank.	1st cent.	Excavation for rubbish tip. (Limited excavation 1964)	<i>WDASJ</i> 2, 1967, 17-18 <i>RB</i> 19, pt. 4, 1974, 373-414	BCM 393.79
343	8278 4058	Waterlogged deposit approx. 1m deep containing Roman finds including organic remains	1st-4th cent.	Ditching operation (Limited excavation 1980)	MKDC	
345	8263 4058	Shallow ditch containing large quantity of pottery	Late 1st-early 2nd cent.	Road construction (Limited excavation 1980)	MKDC	
346	8116 3969	(HODGE LEA) Group of pits and ditches	Mid 1st-2nd cent.	Road construction (Watching brief) 1978	MKDC	
351	8843 3569	Rectilinear ditches containing 1st and 2nd cent. pottery. No structural evidence. Residual 3rd-4th cent. material	1st-2nd cent. with residual 3rd-4th cent. material	Lake construction 1981	MKDC	
354	8905 3489	Features concentrated over an area 30m across. Some stone present—impossible to define if building material or yard surface. Site destroyed without excavation.	3rd-4th cent.	Lake construction 1982	MKDC	

357	8909 3558	Pottery kiln and associated ditches destroyed by earth-scrappers. Ditch contained large quantity of kiln waste. Part of MK44	Late 1st-early 2nd cent.	Lake construction 1982	MKDC
360	8253 4058	Stone, tile and tesserae scatter on field surface associated with group of model iron weapons. Religious site	1st-4th cent.	Fieldwalking 1982	MKDC

## ROMAN GAZETTEER PART II

Finds scatter suggesting occupation sites

<i>Site No.</i>	<i>N.G.R.</i>	<i>Site Name and Description</i>	<i>Date Range</i>	<i>Circumstances and Date of Discovery</i>	<i>Published Sources</i>	<i>Location of Finds</i>
53	873 335	1 small flagon found associated with 2 skeletons at approx. 0.45m deep in gravel. The remains of 4 individuals were found nearby in 1928, one of which had sword wounds to the skull. Coin of Hadrian	2nd cent.	Unknown 1921	<i>RB</i> 12, pt. 2, 1928, 57-9	BCM 115.21
58	8487 3337	Ditches, pits, sherds and building stone were found in the foundation trenches of houses		Building work 1973	<i>RB</i> 19, pt. 1, 1973, 93	Unknown
72	8940 3768	Extensive fieldwork has located a light scatter of abraded sherds on a north-facing slope. No building materials or tile have been found, although several fragments of German lava querns were located	3rd-4th cent.	Fieldwalking of ploughsoil over several years 1968-80		MKDC
77	834 371	Fragments of 2 coarse grey-ware vessels were found c.3-4 ft. deep. Workmen reported them in association with walls and also some coins were possibly found	2nd cent.	Construction of Loughton by-pass 1955		BCM 81.55
87	820 333	Approx. 50 sherds found in ploughsoil with a piece of tegula and part of the upper stone of a conglomerate rotary quern	1st-4th cent.	Fieldwalking ploughsoil		BCM 410.67
95	854 372	Fieldwork revealed a slight scatter of sherds, and a possible scatter of stone	2nd-3rd cent.	Fieldwalking ploughsoil 1977, 1969		MKDC

106	845 392	Several fieldwork visits have distinguished a light scatter of sherds covering a number of fields, as well as occasional burnt pebbles and a fragment of stone	2nd-3rd cent.	Fieldwalking ploughsoil 1972, 1973, 1977	MKDC
132 & 133	8382 4017	Shallow gully/pit with a compact brown/khaki clay fill containing parts of 7 vessels, all badly damaged by earth scrapers	1st-4th cent.	Construction site. Topsoil stripping 1978	MKDC
144	9032 3679	Scatter of sherds and three fragments of tile covering approx. 1200m <sup>2</sup>	Mid 1st-early 2nd cent.	Fieldwalking ploughsoil 1980	MKDC
145	9042 3687	Light scatter of sherds	Mid 1st-2nd cent.	Fieldwalking ploughsoil 1980	MKDC
209	8875 3452	A section across the former river channel of the Ouzel revealed a number of finds in the silted-up river bed, possibly representing the eroded remains of a nearby occupation site	1st-4th cent. mainly early	Excavation for trunk foul sewer 1973	MKDC
252	829 339	Scatter of sherds and a fragment of tegula found on surface of ploughed field	2nd-4th cent.	Fieldwalking ploughsoil 1965, 1976	MKDC
271	827 391	Fieldwalking has revealed a dispersed scatter of sherds over several fields	2nd-4th cent.	Fieldwalking ploughsoil 1973, 1977, 1978	MKDC
273	8490 3399	Sherds were found associated with a ditch and gulleys	1st cent.	Construction work, 1972	RB 19, PC pt. 2 1972, 218, 219
295	830 337	Light scatter of sherds found over surface of ploughed field	1st-4th cent.	Fieldwalking ploughsoil 1976	MKDC
333	8870 3375 to 8878 3368	Quantity of roof tile and sherds from dredging adjacent to Magiovinium	1st-early 2nd and some 3rd and 4th cent.	Dredging of river Ouzel 1979	MKDC
341	9013 3672	Scatter of sherds and fragments of querns over an area of approx. 900m <sup>2</sup> . Ploughing has also brought up several patches of dark soil and gravel. Building stone and roof tile absent	Late 1st-2nd cent.	Fieldwalking ploughsoil 1980	MKDC

ROMAN GAZETTEER PART III

Casual Find Spots

<i>Site No.</i>	<i>N.G.R.</i>	<i>Description</i>	<i>Date Range</i>	<i>Circumstances and Date of Discovery</i>	<i>Published Sources</i>	<i>Location of Finds</i>
34	8801 3740	Bronze coin	1st-3rd cent.	Found on playing fields, 1972		MKDC
40	8313 3998	Upper stone of rotary quern. ?Roman		Fieldwalking ploughsoil 1962		BCM 66.62
43	831 402	Base sherd	NIA	Fieldwalking 1964	BCM	67.64
50	8816 3266	2 sherds	1st-4th cent.	Dredging of canal 1966		BCM 420.67
51	8679 3342	Bronze coin Claudius Gothicus	268-70	NIA		PC
55	879 325	Sherds and 2 bronze coins of Trajan	103-17	Building work 1969		BCM 210.69 & 303.67
56	863 349	7 sherds	1st-4th cent.	Topsoil stripping 1966		BCM 428.67
57	876 320	1 sherd and fragment of tegula	NIA	NIA		PC
60	880 323 881 322	50 sherds	Late 1st- early 2nd cent.	From spoil of sewage trench		MKDC
65	8305 3968	Bronze sestertius of Faustina	138-61	NIA 1960		PC
66	8660 4035	2 abraded sherds	4th cent.	Fieldwalking ploughsoil 1968		BCM 243.68
69	853 361	1 sherd	2nd cent.	Fieldwalking ploughsoil 1977		MKDC
70	825 379	2 sherds	NIA	Ploughsoil 1962		BCM 204.62
73	846 325	4 sherds	1st-2nd cent.	Fieldwalking ploughsoil 1967		BCM 444.67
78	836 370	1 sherd	Late 1st-mid 2nd cent.	Construction of Loughton by-pass 1956		BCM 53.56
79/1	8236 3560	3 bronze coins. Claudius and Constantine III and an intaglio	1st-4th cent.	Ploughsoil		Unknown

79/2	831 366	1 sherd	NIA	Construction of private driveway 1973	BCM 261.73
80	843 402	1 sherd	Undiagnostic	Fieldwalking ploughsoil 1971	MKDC
81	843 402	1 sherd	Undiagnostic	Fieldwalking ploughsoil 1971	MKDC
83/1	7889 3987	Bronze denarius of Hadrian	117-38	NIA 1961	PC
83/2	7882 4001	Sherds	2nd-3rd cent.	Foundation trenches for building 1966	PC
84/1	7812 4096	1 pot	2nd-4rd cent.	Found during construction of bridge 1835	<i>VCH</i> 2, 11-12 BCM 85.1918
84/2	781 410	Two hipposandals		Found under foundations of bridge in 1840	BCM 320.1. 1885
84/3	783 410	3 sherds	1st-4th cent.	From dredging of river Ouse 1973	MKDC
85	841 340	Base sherd of colour-coated Nene Valley beaker	2nd-4th cent.	Allotments 1978	PC
88	839 333	Sherds	NIA	Ploughsoil (field-walking 1966)	PC
89	8854 3628	6 sherds; glazing bar	1st-4th cent.	Fieldwalking ploughsoil 1967	BCM 438.67
91	8730 3895	2 sherds	Undiagnostic	Fieldwalking ploughsoil 1977	MKDC
94	828 397	Tile fragments		Streamworks excavation 1971	MKDC
97	856 329	8 sherds	2nd-4th cent.	Spoil from water-main trench 1965	BCM 424.67
99	808 399	Tile		Fieldwalking ploughsoil 1978	MKDC
101	828 397	Sherds and tile	4th cent.	NIA 1971	MKDC
104	836 333	Sherds	1st-2nd cent.	Fieldwalking ploughsoil 1971	PC
107	889 397	Sherds	NIA	Found during stripping for gravel extraction	NA

115	801 405	1 sherd	Undiagnostic	Fieldwalking ploughsoil 1974	Unknown
118	8841 3470	9 sherds	4th cent.	Fieldwalking ploughsoil 1976	MKDC
120	8782 4133	7 sherds	Undiagnostic	Fieldwalking ploughsoil 1976	MKDC
121	8750 3917	5 sherds	1st cent.	Fieldwalking ploughsoil 1976 & 1978	MKDC
130	8385 4018	18 sherds and tile	2nd-3rd cent.	Construction work (topsoil stripping 1978)	MKDC
136	8748 3946	Sherd	2nd cent.	Construction work (topsoil stripping 1978)	MKDC
229	8514 3510	2 sherds	Undiagnostic	Fieldwalking ploughsoil 1977	MKDC
235	8514 3905	Sherd	2nd cent.	Fieldwalking ploughsoil 1973	MKDC
245	8928 3525	8 sherds	Late 2nd-4th cent.	Fieldwalking ploughsoil 1977	MKDC
250	862 411	Field boundary ditch and sherds found in fills of excavated Saxon <i>grubenhäuser</i>		Excavation 1979-81	MKDC
251	884 361	3 sherds	2nd-4th cent.	Roadside ditching 1967	BCM 434.67
253	Bletchley	4 sherds	1st-2nd cent.	Grave digging 1959	BCM 453.67
266	8520 3300	Sherds	NIA	Digging of garden 1965	PC
316	903 374	1 tegula	NIA	Construction work (topsoil stripping 1973)	PC
319	8755 3901	Sherd	Late 3rd-4th cent.	Fieldwalking ploughsoil 1976	MKDC
344	850 421	Coin of Licinius I, London mint	308-13	House extension 1980	PC
350	815 390	Sestertius of Faustina I; Commemorative issue	141-60	Metal detector 1981	PC

352	817 383	Bronze bracelet	Late 3rd-4th cent.	House construction 1981	MKDC
356	8374 3759	Sestertius of Antoninus Pius	138-61	Metal detector 1981	PC
358	8273 3910	Coin of Constantine II (337-61) Contemporary forgery c.350	c.350	Metal detector 1981	MKDC
359	8470 4083	9 Roman sherds	2nd cent.	Clearing out hedge ditch 1982	MKDC

## REPORTS ON MINOR EXCAVATIONS AND WATCHING BRIEFS

### INTRODUCTION

This section attempts to summarise the results of work undertaken on Roman sites within the designated area of Milton Keynes, some of which was carried out before the establishment of the Unit in 1971.

Several rescue excavations (Holne Chase M45, Shenley Road MK46, Windmill Hill MK96) were undertaken by Richard Griffiths with extremely limited resources and only volunteer labour, in the Bletchley area of the city during development in the 1960s. Mr Griffiths has kindly made his site records available and where possible we have summarised the results to enable his work to be published. After the establishment of the Unit Mr Griffiths continued his fieldwork in the Bletchley area and undertook small rescue excavations at Sherwood Drive MK100 and Woughton MK297 on behalf of the Unit.

The Milton Keynes Research Committee (MKRC) instigated some excavation in the area immediately prior to the establishment of the Unit, being responsible for work at Walton MK36, Abbey Barn, Bradwell MK63, Cotton Valley MK71 and Windmill Hill MK96.

Description of these excavations is necessarily brief; further information is preserved in the Unit's Level III archive. Interpretation and discussion is generally restricted by the limited nature of the work that was possible on each site.

### MK36 WALTON

R. J. Williams

During topsoil stripping in advance of the construction of the V9-H9 road intersection in 1973, Richard Griffiths discovered several features containing Roman pottery. No excavation was possible although several of the more noticeable features were sketch-planned by Stephen Green and finds removed from them.

The site was located on boulder clay at SP 8915 3677, 600m east of the River Ouzel at 80m above O.D.

The main feature was part of a small sub-square ditched enclosure with an estimated diameter of

17m and an entrance on the south side. The ditch was 1.50m wide with a fill of grey loamy clay containing much charcoal, but only 300mm deep, although this may have resulted from overstripping by the earthscrapers.

A pit 2m across, with a similar fill to the ditch but containing more pottery and several fragments of fired clay, was found within the large ditch.

A number of shallow gulleys and ditches were also noted in the general area although owing to a shortage of time no permanent record was made.

The pottery was mainly of the early to mid first century AD, and included a small sherd of samian and sherds of Caldecotte type wares, as well as several handmade sherds. The pit and 'enclosure' ditch contained quantities of burnt clay which could be interpreted as evidence for a building but could also be debris from a pottery kiln. It should be noted that the latter interpretation becomes more acceptable when one considers that the pottery from the site was almost entirely of Caldecotte ware fabric 46.

### MK45 HOLNE CHASE

R. J. Williams

### INTRODUCTION

Residential development of the Holne Chase area of Bletchley in 1965 revealed an extensive scatter of Roman material between Chaucer Road and Browning Crescent centred at SP863 332. Throughout the summer of that year Richard Griffiths recorded the visible features over 2.5 hectares of building development. A number of small trenches were excavated where possible to investigate the larger features and to secure the plans of two stone-founded buildings, see Fig. 7.

It should be stated at the outset that interpretation of the buildings, and indeed of the features, is severely hampered by the very limited and incomplete nature of the recorded evidence.

Gravel extraction in the area during the nineteenth century had also further destroyed much of the evidence, although an elderly resident of the area remembered stone, pottery and possibly tesserae having been found during quarrying.

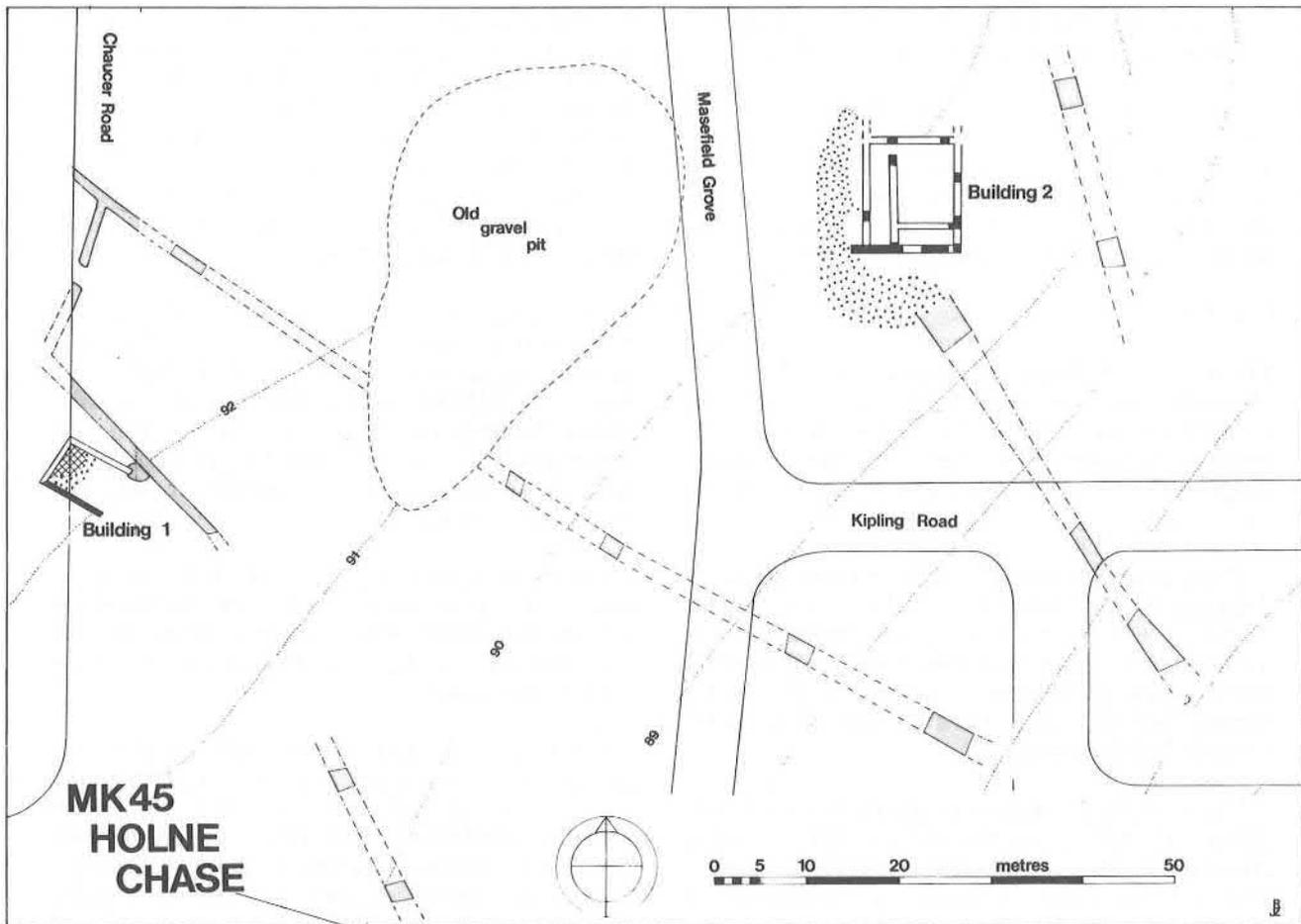


Fig. 7. MK45 Holne Chase: Recorded Features

The site is located on Boulder and Oxford clays at 88mm above OD on a slight SE-facing slope 2.5km west of Magiovinium.

#### DESCRIPTION

##### *Building 1*

A rectangular structure 4.50m x 7.60m was located on the western edge of the development area. No walls had survived and only the robbed out trenches c.600mm wide, filled with clay and rubble, could be traced. The building lies on a north-west to south-east alignment down the hill slope. No trace of a wall or footing trench was located at the south-east end which, at the time of recording, was considered to have been open-ended.

Traces of a well-laid cobble floor was found inside the building, covered by a thick layer of ash containing 4th century pottery.

The eastern terminal of the north-eastern side wall had been constructed over a silted-up circular pit, 1.68m in diameter and 1.22m deep, which contained a lot of burnt daub and early to mid first century pottery.

##### *Building 2*

A second building approximately 100m north-east of Building 1 was located using a resistivity meter. Excavation was limited to a number of narrow trenches in an attempt to locate the main structural components.

The building at the time of excavation was recorded as almost square, 12.20m x 13.70m, lying roughly on a north-south alignment at a 45° angle to the hillslope. Two internal walls c.600mm thick on the south and west sides formed an 'L' shaped corridor 1.10m wide flanking a single large room 6.10m x 9.14m across. The outer walls, 760mm wide, were constructed of flint nodules and limestone blocks bonded with tile and were reported to have been terraced into the hill slope.

The floors were recorded as packed gravel with fragments of floor tile embedded in them. The area around the building to the south and west sides had been roughly cobbled to produce a yard surface.

##### *The Ditches*

A number of Roman ditches were excavated and recorded as they were revealed during building

work, but the very limited nature of their recording would make detailed description unrewarding.

Most of the ditches ran down the hill slope and had a 'U'-shaped section ranging from 1.20m to 4.80m wide and averaged about 1m deep. The relationship of the ditches could not be ascertained and only one section of ditch contained a visible entrance, approximately 2m wide.

#### DATING

The date of Building 1 was mentioned in the above discussion and was dated by the presence of 4th century material on the internal floor surface. Since no excavation of the floor itself took place it may be dangerous to assume the building to be of 4th century date.

The dating of Building 2 is a little more secure. A denarius of Hadrian, 117-138, (Coin No. 1) was found in the floor make-up accompanied by a quantity of mid second century pottery. The rubble above the floor contained third- and fourth-century pottery but this may have resulted from later robbing and disturbance.

The primary silt of most of the ditches contained pottery of mainly second-century date including Antonine samian and several fragments of early to mid second-century mortaria. A sestertius of Antoninus Pius, 140-44, (Coin No. 2) from one ditch adds further weight to the dating evidence. The upper levels of the ditches contained material of third- to fourth-century date including two fourth-century minims. The ditches also produced quantities of both roof tile and, to a lesser extent, fragments of keyed box-flue tile.

#### INTERPRETATION

The perforce hasty and often incomplete recording of archaeological features is not conducive to useful interpretation of sites, and this is particularly well illustrated at Holne Chase.

Both the dimensions and simplicity of Building 1 could be compatible with an interpretation as an agricultural outbuilding, although the apparently open south-eastern end is a little unusual. The type of rough floor would further support the view of it as an outbuilding, but the layer of ash is difficult to interpret.

Building 2 is altogether more of a problem. Both its recorded shape and internal arrangements do not accord with other excavated domestic buildings either locally or elsewhere. A large single room with an 'L' shaped corridor on two sides seems most implausible. An explanation of this apparent problem is not difficult to find. Re-examination of the excavated trench layout suggests that both the

internal arrangement and indeed the full extent of the plan of the building may not have been revealed. Taking the above statement into account it is quite likely that the building may have extended further north than was actually recorded. Such an interpretation would produce a simple corridor building with a small range of rooms on the eastern side, perhaps of similar dimensions and layout to Building 1 at Wymbush MK211.

From the quality and quantity of building material and other finds on the site, a substantial domestic building must have existed. Building 2 may have fulfilled such a function but equally, another building could have been destroyed during earlier gravel extraction, and the distance of the agricultural outbuilding from Building 2 may add weight to this theory.

The incomplete arrangement of ditches is impossible to put into context. Although contemporary with the main period of occupation and presumably used as both boundary and drainage ditches, little further can be said.

From the coin and pottery evidence it would appear that the main period of occupation began in the second century. The presence of earlier material, particularly that from the pit beneath Building 1, which contained a quantity of burnt daub, attests an earlier domestic presence. Equally the quantity of third- and fourth-century material indicates that the site lasted throughout the Roman period. The quality of the metal and glass finds, and the reported presence of painted wall plaster and tesserae from several of the ditches, would indicate some degree of wealth for the site's inhabitants. Magiovinium must also have played an important part in the life of the occupants of the Holne Chase site, owing to their close proximity.

#### MK46 SHENLEY ROAD

R. J. Williams

#### INTRODUCTION

The residential expansion of Bletchley in 1965 revealed evidence of extensive Romano-British occupation (see Fig. 11), along the south-west side of Shenley Road at SP 853 343.

Features and finds of Roman date including building stone, pottery, bronze and bone objects and a coin of L. Verus, 161-169, were found in the footing trenches of houses numbers 165-175 by Richard Griffiths, who later in the year excavated a series of small trenches to the rear of the houses revealing more evidence of the site.

In 1967 the area to the south-west of the above houses was also developed and a combination of trial excavations and watching briefs by Richard

Griffiths produced yet more Roman features and finds. In 1971, during the construction of Roman Field school, approximately 150m to the north of the earlier excavations, Mr Griffiths recorded a 'T'-shaped corn drying oven and associated features.

The site is located on a slight ridge in an otherwise gently undulating landscape at 94.5m OD on the southern junction of the alluvium of a former stream course and Boulder clay and only 400m south-east of the finds made in 1978 and recorded as site no. MK111, see below.

## DESCRIPTION

The 1965 excavation in the rear gardens of the houses revealed an area of cobbles and a possible beam slot.

In 1967 a narrow trench 6m long and 1m wide, to the south-west of the earlier trenches, was excavated and revealed a layer of yellow clay, 460mm thick, sealing a third-century occupation layer, the removal of which showed up the top of a large ditch.

This ditch, running in an approximate east-west direction, was sectioned and found to be 3.05m wide and 2.13m deep, cut through Boulder clay with a small 'gully' along its base. The primary silt contained late second-century pottery and the upper layers showed signs of a destruction level containing large fragments of tile and building stone and dated to the third century.

The ditch was traced westwards in the footing trenches of the new houses for a distance of 64m at which point it showed signs of turning to the north. Although the west end was not totally excavated it contained first-century pottery which at the time was thought to be intrusive. The eastward extension was never located; the position of the earlier trenches makes it unlikely to have continued far without turning in either direction and most probably to the north, giving a maximum enclosed width of approximately 70m.

The northern edge of the ditch was examined for signs of timber uprights, but none were found, the narrowness of the section possibly accounting for this.

The building work uncovered a number of other short lengths of ditches and gulleys as well as several pits, all containing the usual occupation debris ranging in date from second to third century. The only meaningful features were a rubbish pit nearly 2m across of unknown depth containing 2nd century pottery and an abundance of animal bone, and three sections of a small ditch approximately 1m across. The position of these sections formed part of the arc of a circle of 11m projected

diameter, just within and to the north of the large 'V'-shaped ditch. The form of the arc suggests a circular/penannular drip gully for a timber round-house of unknown date.

An area of stones including parts of two walls associated with second century pottery was noted some 15m to the north-west of the 'house gully'.

In 1971 when the area 100m to the north of the large 'V' shaped ditch was scraped in preparation for the construction of the new school, five more features were located and partially uncovered by Mr Griffiths. The largest was a 'T' shaped, stone-built 'corndrier' aligned approximately SW-NE with the stoke hole at the SW end, and 4.27m in total length.

The 'corndrier' had been constructed in a shallow depression, principally of large pebbles and some limestone, with a large fragment of a millstone grit rotary quernstone, and survived to a maximum height of two courses. The stoke hole had been cut into the Boulder clay and was unlined, being roughly circular in shape with a diameter of 1.06m. The main stone-lined channel averaged 450mm wide and 2.90m long to the junction with the cross flue, which averaged 270mm wide and 2.65m in length.

At the junction of the main and cross flues, a group of stones may have acted as a flue 'splitter' and helped support the floor above. The ash and charcoal was thickest toward the stoke hole end of the channel.

Approximately 6m to the north-west was a roughly flagged rectangular area 4.10 x 2.30m across, several of the stones at the side having been laid on edge. Between this and the corn dryer was a small area of burnt clay. The other two features were a solitary post hole near the flagged area and a narrow gully some 5m to the east of the corn dryer running in a north-south direction, no details of which have been recorded.

## DATING

The individual dates of many of the features have been mentioned in the description and do not merit further discussion.

The primary silt of and the construction of the large 'V' shaped ditch is dated to the mid to late second century by pottery evidence, including the base of a Dr 33 samian vessel with a stamp of the potter APRILIS who is known to have been active in the Antonine period.

The first-century pottery, thought to be intrusive in the ditch, showed later Iron Age influences and was very similar to that found at Saffron Gardens (Waugh, Mynard and Cain, 1974).

The material from the 'corndrier' was dated at the time to the mid fourth century.

Other finds, apart from pottery from the immediate area of the excavations, include a fragment of rotary quern, tile and other building materials, glass, bronze and iron objects, as well as several fragments of red-painted wall plaster and *dupondii* of Hadrian and Lucius Verus.

## INTERPRETATION

The limited nature of the excavations, spread over several years, and the size of the area make detailed interpretation impossible.

Occupation in the area excavated in 1965-67 seems to date from the early second to late third centuries with some evidence of first-century material, centred around a large defensive 'enclosure' at least 70m across. Interpretation of the large ditch as a defensive structure seems sound in the light of its 'V' shape (with an 'ankle breaker' at its base) and its depth. The material from its primary silt suggests a construction date around the middle of the second century, at a time of large-scale upheaval. Domestic occupation within the 'enclosure' is implied not only by the quantity of domestic and building refuse, but by the possible gully of the circular building and the two stone walls. The other ditches and the pits, including a possible rubbish pit containing many animal bones, are further evidence of intensive domestic usage of the surrounding area.

The general accumulation of building materials, tile and even wall plaster in the area points to the presence of an unlocated, more substantial, building in the vicinity of the 'defensive' enclosure.

The 1971 excavated area was not directly associated with the earliest work and the 'Corndrier' at least seems to be of fourth century date, again indicative of intensive agricultural usage. The nearby burnt clay area and flagged area suggests the presence of a timber structure.

## MK63 BRADWELL ABBEY BARN ENCLOSURE

R. J. Williams

## INTRODUCTION

The excavation was directed by B. R. K. Niblett, for MKRC, with the aid of a grant from the Department of the Environment and Buckinghamshire County Council, for three weeks in April 1971. The published results of this work (Niblett, 1974) are summarized below.

The site had been discovered in 1958 by Robert Harris during fieldwalking, and trial trenched in

1959 by Charles Green and members of the Wolverton and District Archaeological Society. With the development of Milton Keynes the site was threatened, and has since been destroyed by the H3, Monks Way, grid road and the Abbey Hill golf course.

The 1971 excavation was intended to ascertain the character and extent of the occupation in preparation for future, more extensive, work, but other priorities took precedence in subsequent years, and no further excavation was undertaken.

The site, at SP 8172 3914, occupied an exposed gravel hill-top, 97m OD surrounded by heavy Boulder clay on all sides. The nearest water supply was a small stream at the base of the hill, 600m to the north-west.

## DESCRIPTION

The excavation method was initial trial trenching with area excavation where substantial evidence was found. The main feature was found to be a small ditch traced for over 125m enclosing a sub-rectangular area of at least 45m x 60m on the hill top, the west side of which was not found. An entrance 10m wide was located in the south-east corner.

By the late second to early third century, when the ditch had almost totally silted up, a timber pallsade had been erected along its length, with postholes 400-560m in diameter and 1.35m apart, having been dug into the soft fill along its inner edge and packed with large stones. At the same time as the erection of the pallsade, the old entrance was blocked by a narrow trench, also filled with stones which may also have contained timber uprights. The erection of the pallsade was considered to occur before the middle of the third century. In the final phase of occupation the timber pallsade was demolished, with most of the packing stones having been robbed out, and the area covered with a layer of gravel into which were trampled pieces of tile and stone and ultimately covered by a black occupation level containing late third- to fourth-century finds.

Several small pits, a stoke hole and a possible beam slot were found in the gravel surface.

A small flat-bottomed 'V' shaped ditch 750mm deep was followed for over 70m running parallel to the north side of the enclosure at a distance of 20m.

## INTERPRETATION

The area of occupation appeared to be limited to the immediate area of the enclosure on the crest of the hill. The ditch and later pallsade fence could have acted initially as drainage for, and subsequently enclosure of, a livestock pen rather than for defensive purposes.

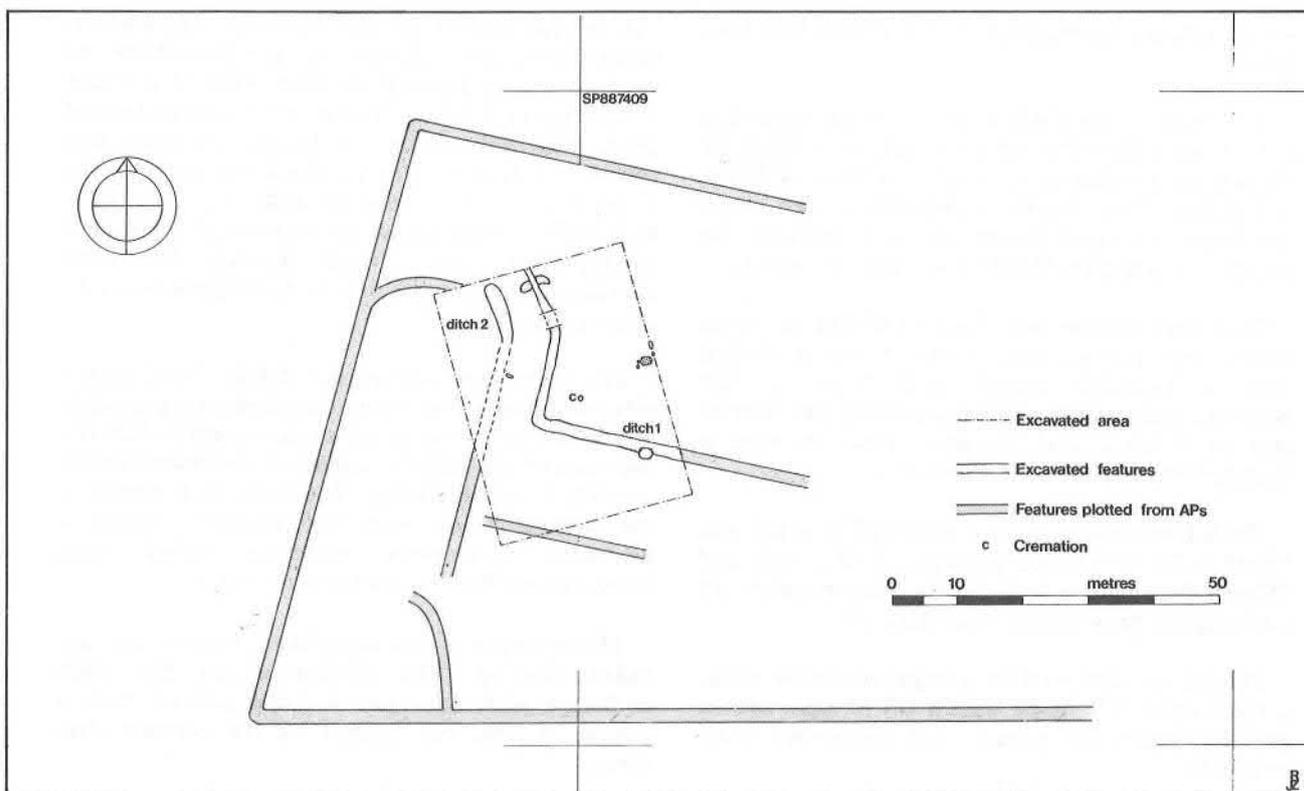


Fig. 8. MK71 Cotton Valley: Plan of Excavation and recorded features.

The quality and quantity of the finds indicates a domestic presence, although extensive plough damage has clearly destroyed any evidence of the actual structure.

The faunal evidence from the site is limited to a relatively small number of bone fragments, the largest proportion of which is cattle, followed by sheep.

#### MK71 COTTON VALLEY ENCLOSURE

R. J. Williams

#### INTRODUCTION

The excavation was directed by Anne Sandford for MKRC, with the aid of a grant from the Department of the Environment in the summer of 1971.

The site, discovered by aerial photography (RCHM AP SP8840/1/102-3 and Air Ministry AP 3235, 3236) was threatened by (and has since been destroyed by) the construction of the Cotton Valley sewage disposal plant.

The site, which lies 61m above OD, at SP 885 408, is situated within the Ouzel River valley on a First-terrace non-calcareous flint gravel (Sandford, 1974, 118) approximately 2km north of Milton Keynes village, and 350m east of the present course of the River Ouzel. A layer of topsoil averaging 0.45m

thick, of Grade 2 in the Agricultural Land Service Classification of 1968, was found sealing the features.

#### THE EXCAVATION

Owing to the limitations of finance and time it was not possible totally to excavate the enclosure and a policy of locating and recording the main features was adopted.

The enclosure was located by a number of machine-cut trial trenches. Within the enclosure a central area 40m x 40m was stripped mechanically and the underlying features examined by hand; the plan, Fig. 8, is reconstructed from the interpretation of the air photograph of the site and the excavation results.

A large three-sided ditched 'enclosure' was found but trial trenching in the appropriate area failed to reveal a fourth side. The excavated sections revealed a ditch varying between 1.5m and 3m wide and 1m-2m deep dug entirely through a gravel subsoil. The fill of the ditch was composed of a light brown gravelly loam.

The relative positions of the sections through the 'enclosure' were marked on a plan which has since been lost and the dimensions can only be interpolated from the individual trial trench plans,

which indicate the enclosure to have been 50m-60m across.

The bulk of the finds from the ditch suggest a date in the mid to late first century, with much of the pottery continuing the Belgic tradition of forms and fabric. Two brushed handmade sherds stand out from the main group and may indicate the presence of a nearby Middle Iron Age settlement.

Two inner ditches were located within the more extensively stripped area. Ditch 1 was L-shaped with a rounded corner and Ditch 2 ran approximately north-south parallel to the shorter arm of Ditch 1 and 5m away from it, with a rounded terminal at its northern end.

Ditch 1 was followed for a length of 28m and was found to be 'V' shaped averaging 1.60m wide and 750mm deep with a dark brown loam primary silt and a lighter brown loam secondary fill.

Ditch 2 was followed for a length of 60m and was a more open 'U' shape with a fill of light brown gravelly loam; the primary silt containing more sandy silt.

Two pits were found cut into Ditch 1. The exact dimensions of Pit 1 were unrecorded although it was at least 1.70m across with an open 'V' shaped profile and 800mm deep. The fill was a light brown silty loam similar to the ditches but containing more burnt material including charcoal and burnt daub as well as a greater volume of pottery.

Pit 2 was 500mm across and 800mm deep and contained a fragment of colander.

Ten post holes were found fairly close together and partially surrounded by Ditch 1. Their positions did not indicate any obvious plan of a structure.

Within the angle of Ditch 1 a child's cremation in a fragmentary vessel was found in a shallow pit.

## DATE

Finds from the features were quite numerous, including quantities of pottery, burnt daub, bone and a fragment of sandstone quern. The ceramic material forms a compact group of mid to late first-century date, made up mainly of Late Iron Age type fabrics but with some finer grey and light buff wares. Forms include hollow-cordoned beakers, platters, bowls, large storage jars and channel rim jars, a small proportion of which are decorated, again in the later Iron Age tradition.

## INTERPRETATION

Interpretation of the site is made particularly diffi-

cult by the quality of the recorded information. Open-sided ditched features are not uncommon on lowland gravel contexts and for want of a better nomenclature the term 'enclosure' has been applied throughout this report. Although no trace was found of a fourth side, this does not discount the usage of a barrier such as a hurdle, fence or thorn hedge which would leave no permanent trace. It is equally clear that plough damage has been considerable across the site, destroying the less substantial features.

The amount of occupation debris found in the pits and ditches illustrates some domestic presence, although there is no direct evidence other than the presence of the child's cremation and burnt daub, possibly from structures. The form and nature of the enclosure and associated features suggest a primarily agricultural function rather than defensive; perhaps it acted as a stockpen.

The evidence is not sufficient to allow any detailed phasing. The ditches within the main enclosure with later pits indicate activity over a period of time but limited by the ceramic date range.

The end of the site in the latter part of the first century AD may reflect a changing agricultural pattern under the Roman system, reflecting more intensive exploitation of the landscape, perhaps in conjunction with the rapid expansion of the town of Magiovinium on the Watling Street 7km to the south.

## MK82 KILN FARM

R. J. Williams

Topsoil stripping in advance of the construction of factory units at Kiln Farm revealed evidence of first century occupation. The site was discovered by Richard Griffiths, and subsequent rescue excavation by Stephen Green in early February 1972 revealed an extensive Iron Age and early Romano-British settlement.

The site, SP 8072 3944, was located on heavy Boulder clay at 97m OD, 459m north-east of the Watling Street and 1km north-west of the Abbey Barn MK63 enclosure, in a similar position overlooking the Watling Street.

Information concerning the site is very scant, the plan having been lost soon after the excavation. Roman rectangular timber buildings and the common Iron Age roundhouses were reported at the time (Waugh, Mynard and Cain, 1974, 411).

Approximately one third of the pottery was handmade of middle to late Iron Age date. The remainder was late first to late second century in date, with an apparent break in occupation in the

immediate pre-Roman Iron Age and early Roman period. An interesting find was a sherd of Hunsbury-type decorated Iron Age pottery found by Mr Anthony Fleming after the excavation whilst sorting through material from one of the circular hut gulleys.

As with many of the minor sites, little can be inferred from the limited evidence available although a small rural occupation site of unknown extent can be assumed. The small quantity of faunal remains is difficult to interpret although, as with the Abbey Barn site, cattle seem to have been the predominant animal.

The site's location and relationship to its nearest neighbour at Abbey Barn MK63, is of interest. The exact status of both is unclear although in purely geographical temporal terms it is perhaps not going too far to suggest that the latter may have represented a replacement of an earlier settlement possibly for reasons of unsuitability within the developing Roman landscape.

## **MK90 WALTON**

R. J. Williams

### **INTRODUCTION**

Ditching work in 1954 in the field to the south of Walton Rectory, and a visit in 1961 by D. C. Mynard, produced Roman pottery and a large quantity of roofing materials, suggesting the site of a Roman building.

In 1970 a one-day trial excavation consisting of three mechanically cut trenches was carried out on behalf of MKRC by Dr John Evans of Bucks County Council. Following this in 1972 during rescue survey and excavation by D. C. Mynard of the adjacent Walton medieval village in advance of the H9 Groveway road, another area 20m x 8m was excavated.

The site, SP 8877 3671, lying 250m to the east of the River Ouzel, at 72m OD, on an area of Boulder clay, is 3km north of Magiovinium and 2.5km north-east of the Watling Street.

### **DESCRIPTION**

The 1970 trial excavation revealed a Roman cobbled/paved surface cut by several gulleys. In 1972 the surface was located at a depth of 1m below present ground level, and consisted of a thin stony layer containing tile and pottery, mainly of the third century, with an area of cobbles indicating a laid surface.

A small pit 350mm deep was excavated in the north-west corner of the trench and dated by the pottery to the late Antonine period.

Work was terminated after a short time as a result of increased pressure from the developers on the medieval excavation and the realisation that only excavation of a much larger area would reveal sufficient Roman features to allow worthwhile interpretation.

Finds from the site consisted of the usual small, domestic objects of bronze, bone, etc. The small group of faunal remains, though contaminated by medieval material, showed a marked preponderance of ox.

### **INTERPRETATION**

The absence of evidence for structures is clearly the result of the limited nature of the excavation, their existence being suggested by the quantity of domestic refuse and building materials. In the excavator's opinion the main site is located just to the north of the excavated area in the Rectory Field.

The proximity of this site to MK36, p. 30 above, may suggest a shift of settlement location in the second century.

## **MK96 WINDMILL HILL**

D. C. Mynard

### **INTRODUCTION**

Topsoil stripping in advance of the construction of the Windmill Hill Golf clubhouse and car park in August 1970 revealed a series of Roman linear features at SP 844 339, 106m OD. The features were first observed by rescue excavation to assess the nature and extent of the site. Since the site was extensive, further excavations were undertaken in November 1970 and May 1972 by Hedley Pengelly on behalf of the MKRC.

This note is written in advance of Hedley Pengelly's final report, and is based on information provided by him and Richard Griffiths.

The excavations revealed part of a series of enclosure and field-system ditches, a possible drove-way, a circular hut gully, three corn-drying ovens, and evidence of timber structures.

The plan, Fig. 9, shows the excavation results and the tentative phases are based on examination of the pottery recovered from those features that were sectioned, which are the only ones identified on the plan.

### **DATING**

Topsoil stripping to the east of Structure 1 uncovered part of a pot of fabric 46, a bronze brooch of first-century type (see p. 129 and Fig. 40, 4) and several fragmentary cremated bones. This burial,

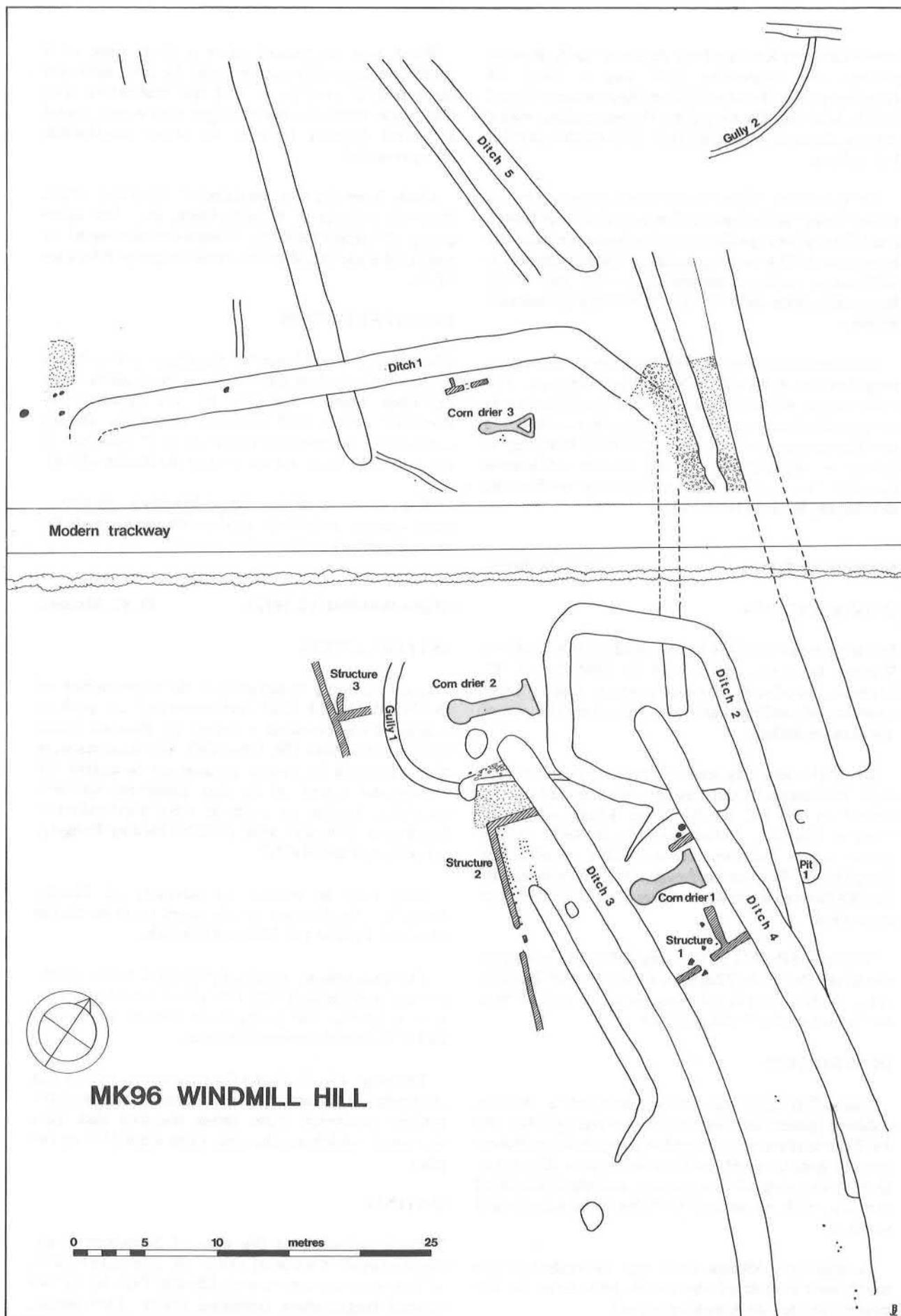


Fig. 9. MK96 Windmill Hill: Recorded Features.

found by Richard Griffiths, perhaps suggests first-century occupation nearby. Near the cremation was found a large fragment of worked stone, depicting part of the torso of a lion or sphinx (see p. 116 and Fig. 38, 1 below). Richard Griffiths doubted that this was *in situ* and believed it was probably dragged from its original position by the bulldozer.

The main activity on the site itself appears to commence with the erection of three timber structures, numbers 1-3; the only other features of this date are Ditch 5 and Gully 2 at the north end of the site and Pit 1 to the north of Structure 1.

All other features from which finds were recovered were clearly open and in use during the fourth century. However, they all contained some second- and third-century sherds which either represent primary silts or residual material.

## INTERPRETATION

The nature of the finds and the presence of the corndrying ovens confirms that the site had an agricultural bias.

The groups of features interpreted as timber slots have been numbered as structures 1-3 on the plan and detailed interpretation must await the final report.

The ditches represent several phases of enclosures or field boundaries. Ditch 1 appears to be the north and east sides of a large enclosure. Ditch 2 represents a small, almost square, enclosure 9.77m x 10.68m with an entrance at the south-east corner and a continuation of the east ditch for some 36.6m to the south.

Ditches 3 and 4 may represent a driveway some 6.1m wide and they terminate as if they were to channel stock into the enclosure formed by Ditch 1.

Gully 1 is a typical hut gully, and was stratigraphically earlier than Corn-drier 2, which it partly encircles. Its fill contained several iron tools including the punch, Fig. 50, 270, the shear blade, Fig. 54, 299, the knife blade, Fig. 55, 308 and the 'T' staple, Fig. 60, 338.

## THE CORN-DRIERS

R. J. Zeepvat

The three corn-driers were each aligned on a north-east/south-west axis, with the stokehole to the south-west.

Corn-drier 1 was 4.8m long and consisted of four elements: a roughly circular stoking pit about 900mm in diameter and 460mm deep widening and splitting to pass round a triangular stone built plinth measuring about 600mm a side, a flue 1.5m in length and 230mm wide and 300mm deep behind

which was a cross flue 2.35m long and 300mm wide. The main flues were all lined with limestone rubble walling, and were heavily burnt, containing a mix of ash and burnt grain. The cross flue, in contrast, showed little evidence of burning, and was less well lined, smaller pieces of rubble being used for this than in the rest of the drier.

Situated 14m to the west, corn-drier 2 was similar to corn-drier 1, being also 'T' shaped, and lined with stone. The stoke pit in this instance was oval, measuring 1.2m-1.8m and 450mm in depth. The main flue, 3.3m long x 460mm wide x 300mm deep, was heavily burnt along the first 1.5m of its length from the stokehole. The north-east end of the flue widened to join the cross-flue, which was 2.5m in length and 230mm wide. This corn-drier, of similar shape and construction to that found at MK351, is perhaps the most common type of drier to be found in lowland Britain (Morris 1979, 5-22).

Corn-drier 3 was situated 18m to the north-west of drier 2. Like drier 1, it had a triangular pillar dividing the flue. In this instance the entire feature was apparently unlined, the flues being cut straight into the clay subsoil. However Mr Pengelly considers that it is possible that it had a stone lining which was later removed. The main flue here was on average 340mm deep, 460mm wide and only 1.8m in length, leading to two smaller flues passing either side of a triangular plinth. The cross flue here was only 1.8m in length, with a possible vent at its north-west end. In this instance all the flues contained burnt material, suggesting extensive use. This drier was very similar in its proportions to one found at Kettering (Jackson and Ambrose, 1978, 434), except for the absence of a stone lining.

Samples of grain from corn-drier 1 and 3 were submitted to Martin Jones at Oxford for analysis; see the report on carbonized grain, pp. 191-2 below.

## MK100 SHERWOOD DRIVE

D. C. Mynard

The construction of Sherwood House in 1973 confirmed the existence of a Roman building at SP 886 345 and 91.5m above OD, which had been suspected since the discovery there, in 1966 and later, of Roman pottery and tile.

Prior to the construction of Sherwood House, Richard Griffiths undertook trial excavation of the site with volunteer help from members of the Bletchley Archaeological Society.

Mr Griffiths' team was supplemented for two days with labour from the Archaeology Unit in order to accelerate the work and produce the site plan, Fig. 10.

The excavation results were published in 1973

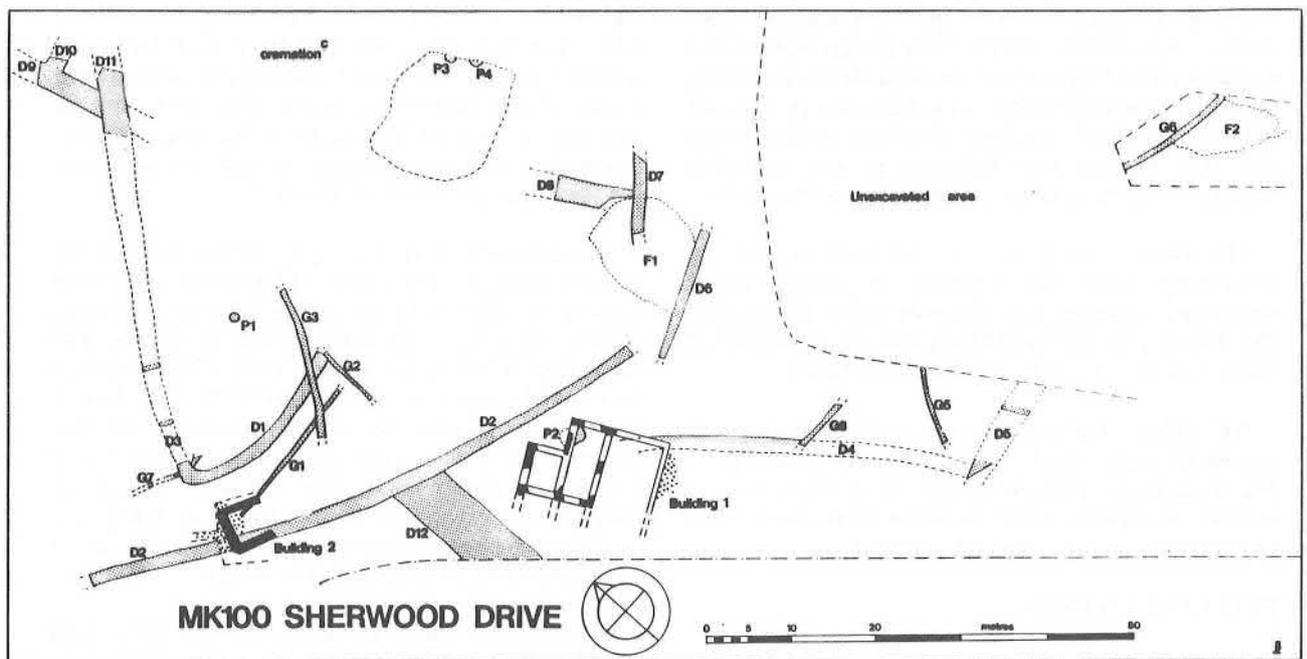


Fig. 10. MK100 Sherwood Drive: Recorded Features.

and a more recent assessment of the pottery has suggested the following revision of the dating of the site.

Occupation during the first half of the first century is evidenced by pottery from several pits and the surface-find of a coin of Tasciovanus.

The published report suggested continuity through to the late fourth century but the available evidence does not support this. There appears to be a gap from the middle of the first century through to the latter part of the second century when many of the ditches on the site were dug.

Presumably the site was a minor agricultural settlement which like several others in the area, expanded during the third and fourth centuries.

There is no evidence for any structures on the site prior to the construction of the two stone buildings, which are now dated to the early fourth century. Both buildings were constructed over ditches which had silted up by the late third to early fourth century. In addition, Pit 2, sealed by Building 1, contained pottery of the late third to early fourth century.

The complete plan of Building 1 was not recovered since the western end lies within the area of the spinney behind Sherwood House. It may be of corridor type but this is uncertain.

Building 2 was, apparently, a square structure 5m x 5m and was open on the south-east side. It

may have been no more than a shelter for a cart or other equipment.

#### MK111 SHENLEY ROAD

R. J. Williams

Following a report from Mr J. Miller, site manager for Shanks & McEwan, of the discovery of pottery sherds at SP 8498 3460 on the line of the construction of the H8 Standing Way road just to the north-east of the Shenley Road, at 97m above OD, the site was recorded by Roy Adkins in September 1978.

An extensive area had been stripped of its topsoil in preparation for construction and subsequently badly damaged by machine tracks, making detailed recording impossible.

A small quantity of first- to early second-century pottery was found in association with an amorphous black charcoal and clay area approximately 25 x 10m across and a smaller linear dark area.

A collection of mainly second-century pottery was reported three weeks later from an adjacent spoil heap; the exact provenance of the material must, however, remain in doubt.

A further visit by R. J. Williams in November 1978 located a ditch 1.50m wide and 1.00m deep with an open 'U'-shaped section and a fill of stoneless grey clay which probably equates to the smaller linear feature previously recorded. The ditch (see

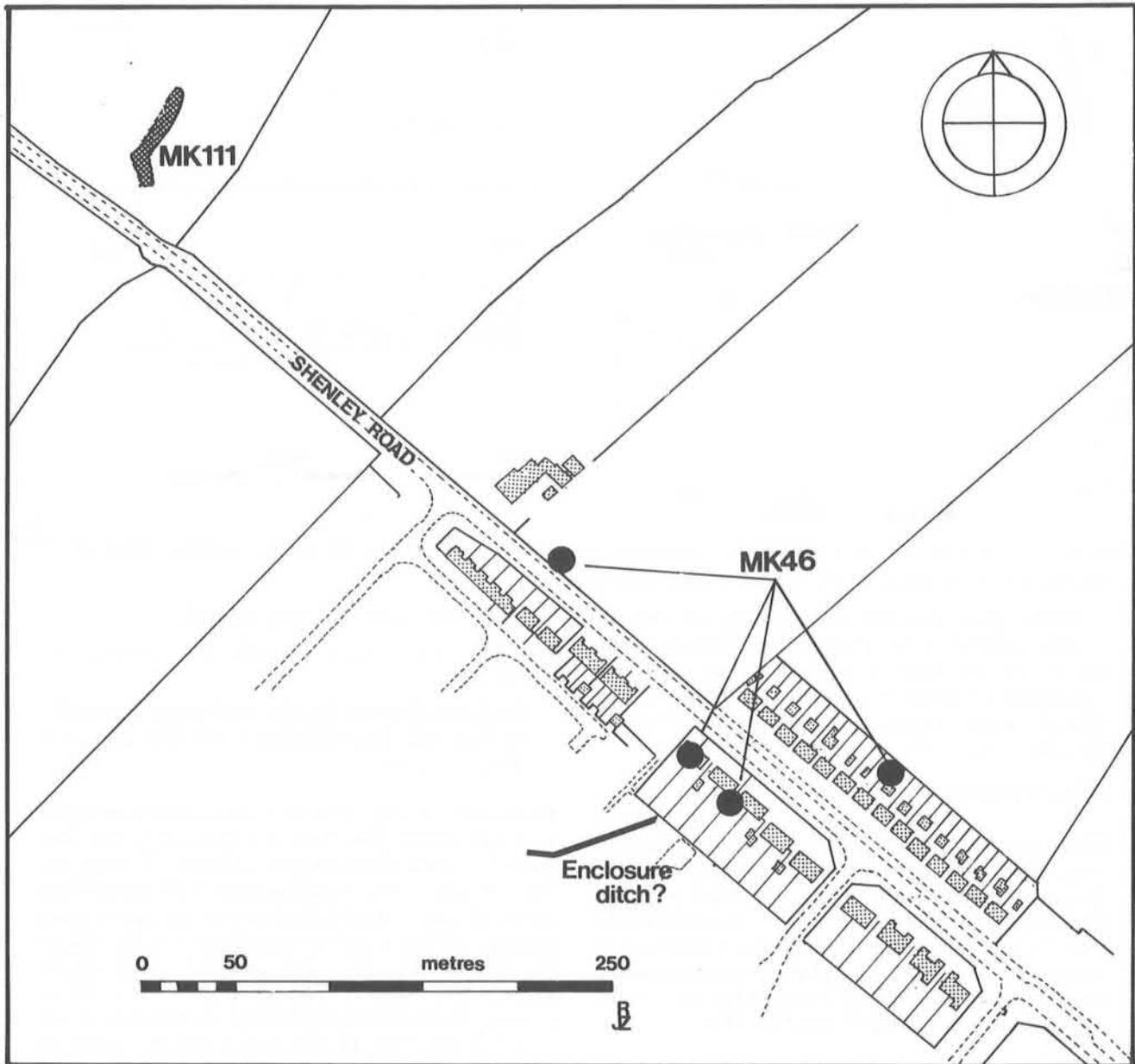


Fig. 11. MK46 and MK111, Shenley Road, Bletchley: Location plan.

Fig. 11) was traced for 25m running in a south-west-north-east direction across a pedestrian underpass cutting. The sections were completely inaccessible. Finds were removed from the surface of the ditch and dated to the first century. Construction was too far advanced for any excavation to take place and it would have been unprofitable to do so.

Detailed interpretation of such limited evidence is clearly undesirable. The site, however, does lie only 400m north-west of the extensive occupation site on Shenley Road, MK46, and could be part of an early phase of the same site.

**MK127 BRADWELL MIDDLE SCHOOL** R. J. Williams

**INTRODUCTION**

Fieldwork by R. J. Williams in November 1978 led to the discovery of a short length of Romano-British ditch at SP 3861 3967. Two sections of the ditch had been revealed in the corner of a new car park for the Bradwell Middle School, the general level having been reduced by an average of 1m. The ditch had been cut through the Boulder clay subsoil and ran obliquely across the south-east corner of the car park (see Fig. 12).

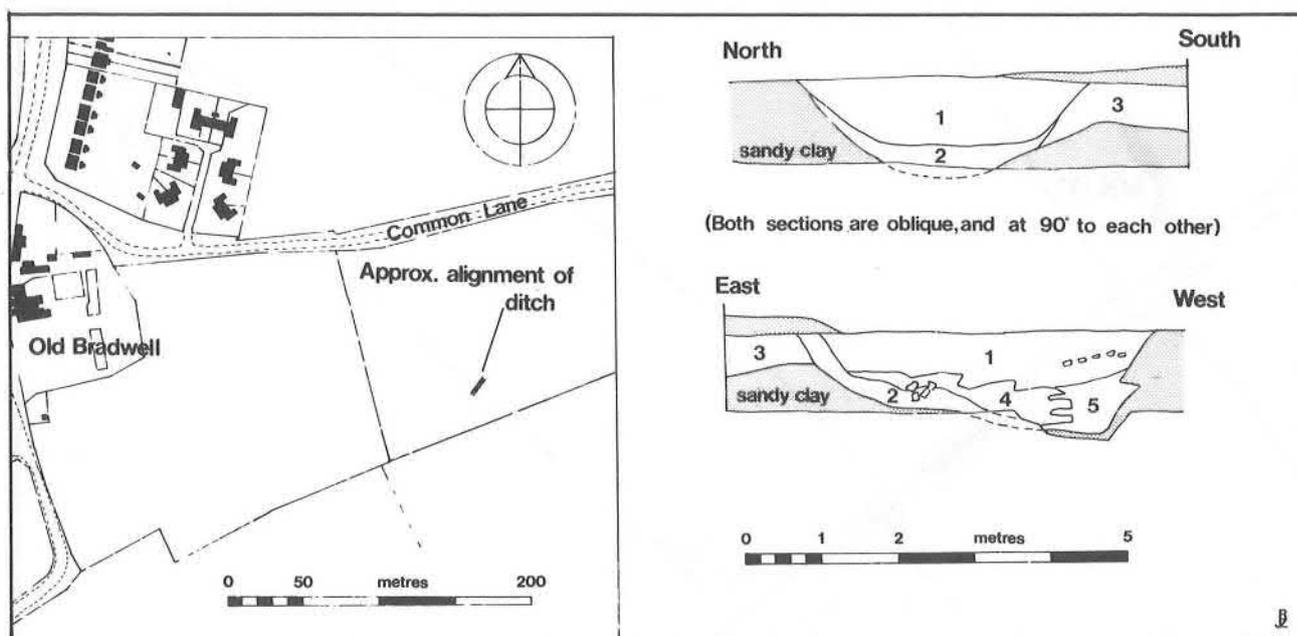


Fig. 12. MK127 Bradwell Middle School: Location and sections of recorded feature.

In the time available it was only possible to record the position of the ditch and clean and draw the section. The base of the ditch had already been obscured by a layer of hard core, although it was possible rapidly to excavate a narrow trench along the edge of one section to complete the profile.

#### DESCRIPTION

Having plotted the alignment of the ditch it became clear that both sections were oblique. Its true dimensions would have been in the order of 3.5m-3.0m wide and 1.20m-1.40m deep. The ditch could only be traced for 8m running in a north-east/south-west direction although an adjacent manhole dug several months later produced a few more finds and extended the traceable length to 15m.

The north-south section (Fig. 12) showed a simple layering with a light grey/brown clay primary silt mottled with small rusty brown inclusions and charcoal flecks, below a secondary silt of blacker, more silty, clay containing quantities of charcoal and several burnt stones.

The east-west section (Fig. 12), was altogether more complex and requires more detailed discussion.

Four principal layers were recorded:

1. Black sandy clay loam with many charcoal fragments and several burnt fragments of limestone.
2. Medium grey/brown silty clay mottled with rusty brown inclusions, several fragments of limestone and many charcoal flecks.

3. Light brown clay, possibly natural.
4. Clean orange brown sandy clay (similar to subsoil).
5. Dark grey/brown silty clay with many fragments of charcoal, fire reddened sandy clay and iron slag; no stones.

The small quantity of pottery all derived from layer 1 of the southern section and is dated to the late second to early third century. Other finds from the ditch include two minute fragments of bone, a piece of tile of unidentifiable type and fragments of iron slag up to 150mm across with fired clay adhering to the surface. The fired clay and slag came almost entirely from layer 5. The dated material is not in primary association with the slag and the date of the actual deposition of the slag must be open to question. The manhole section produced a fragment of millstone grit rotary quern and a sherd of samian.

#### INTERPRETATION

This limited evidence precludes any definitive interpretation. The southern section of the ditch, fig. 12, is clearly different from that running north-south, being more asymmetric in profile with a steeper side to the west.

Layer 1 is clearly the secondary silting and layer 2 may either be the primary silt or an earlier cut. The denticulated relationship of layers 4 and 5 is unusual and made more difficult by the section's obliqueness to the line of the ditch. It may either represent the layering of humanly redeposited material in the ditch or form an integral part of some iron-working process, although no comparison is possible with other local furnace

types, (Jackson and Ambrose, 1978, 151-166 and Jackson, 1979, 31-37). Clearly insufficient data is available for more definite explanation.

The most significant point is the presence of relatively large quantities of iron slag, charcoal and fragments of fire-reddened clay. The combined evidence suggests iron smithing within the immediate vicinity, as waste is unlikely to have been transported far.

The original function of the ditch probably bore no relationship to the iron-working activity and simply acted as a repository for rubbish after it went out of use.

Apart from quarry pits the only other features known to have been directly associated with iron furnaces are channel hearths (Jackson 1979) and this ditch seems far too large to have functioned as such.

The iron-working activity cannot be independently dated although from the overlying ceramic evidence it is unlikely to be later than the third century. Other building work in the area failed to produce any associated features, although several areas around the car park remain unstripped.

The nearest known settlement site is just under 1km to the east at Wood Corner MK64. The siting of furnaces away from actual settlements is common (Jackson 1979), proximity to raw material being more important. The iron slag from this site is reported below, see p. 173.

### **MK137 HEELANDS CORN DRIER**

R. J. Williams

#### **INTRODUCTION**

Fieldwalking of an extensive stripped area on the Heelands grid square by R. J. Williams in January 1979, resulted in the discovery of what was recognised to be a Roman stone-built corn drier at SP 8429 3990. The topsoil had been removed to a depth of 0.35m by a box scraper revealing the underlying Boulder clay subsoil.

The oven, fig. 13, was situated on a relatively flat area at 104m above OD, and oriented north-east-south-west.

After a rapid cleaning up operation the site became totally waterlogged and remained so until April, by which time it had dried out sufficiently for excavation and recording. This was carried out over a period of three days under mounting pressure from the contractors who wished to level the site in preparation for a school sports field.

The oven was sectioned and recorded in quadrants and a profile of the north-west side of the main channel drawn. Soil samples for flotation were taken from the carbonised primary layer of the channel and from the secondary silt.

An earthenware land drain on a shingle bed had cut through the north-east end and had destroyed the north-west arm of the 'T'. This was emptied first to prevent any contamination of finds.

Although it was impossible to investigate the surrounding area adequately, a layer of burnt earth and charcoal was found approximately 15m to the south-east of the oven. The layer was about 1.50m across, but only a few centimetres thick and may have represented the remains of an ash dump for the waste from periodic cleaning out of the corn drier.

#### **DESCRIPTION**

Four layers were clearly distinguishable within the fill of the corndrying oven.

1. The main fill of the stoking hollow consisted of a partially-burnt orange sandy clay containing numerous fragments of charcoal and angular fragments of limestone.
2. This formed the principal secondary fill of the south-west end of the main channel at the stoke-hole end, and consisted of an olive-brown plastic clay containing many small pieces of charcoal and fragments of layer 1 as well as angular pieces of burnt and unburnt limestone.
3. The secondary fill of the north-east end of the main channel and cross flue was very similar in colour and consistency to layer 2, but contained less burnt material.
4. This layer formed the primary silt over the entire base of the stoking hollow and main channel and to a lesser degree the cross channel. It consisted of a dark grey/black ashy carbonized material containing small fragments of red fired clay. This clearly represents deposition of soot and other waste during the oven's working life. The layer was thickest just within the mouth of the main channel averaging about 60mm thick and petering out to a very thin spread toward the cross flue.

Samples from layers 2 and 4 were retained for analysis of the carbonized material.

The oven had been constructed in a purpose-dug hollow in the subsoil and, although only surviving flush with the top of the natural clay, remained to a maximum height of four courses, 250mm in places. It had been constructed entirely of thin slabs of limestone averaging 30mm-40mm thick and up to

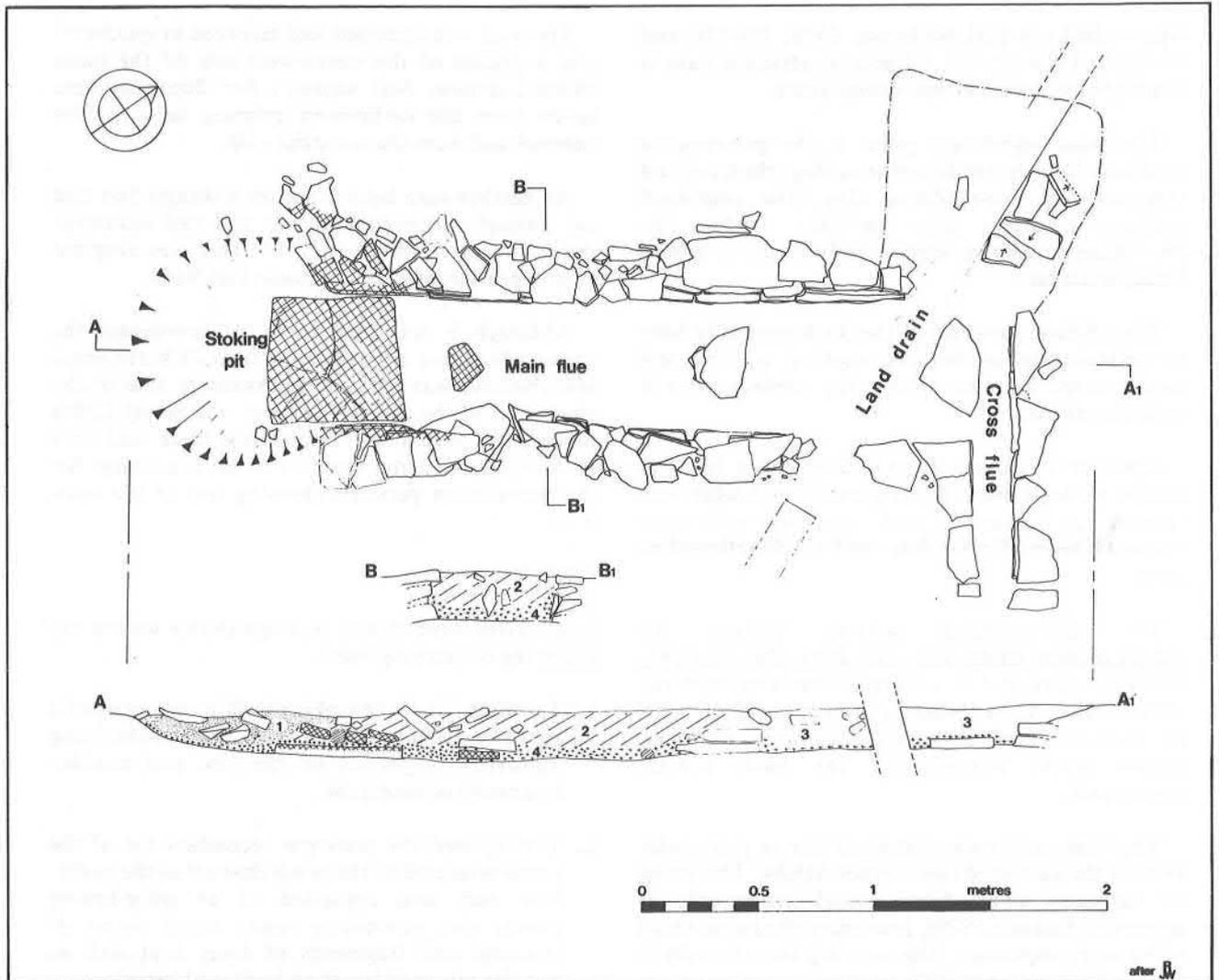


Fig. 13. MK137 Heelands: Plan and Section of Corn-Drier.

450mm long. The structure had not been mortared, although a matrix of orange sandy clay had been used to hold the stones in position. Signs of the narrow construction trench along the outer edges of the stone lining were visible.

The oven conformed to the common 'T' pointing in a south-west direction.

The roughly circular stoking pit 1.00m across and a maximum of 160mm deep was unlined and showed surprisingly little sign of burning. It retained a relatively thin deposit of ash, indicating frequent cleaning out.

The main horizontal channel, 2.80m long, was slightly funnel-shaped, widening from 550mm at the cheek of the stoke hole to 650mm wide at the cross flue. The clay base of the channel was relatively flat both along its axis and across its width, and contained a thick layer of the ashy deposit towards the stoke hole end. The sides of the stone-lined channel were quite irregular in places due to later plough disturbance, although in places they retained a batter.

Burning of the structure was confined mainly to the stones at the cheeks of the channel to a distance of 600mm from the stokehole.

A very large slab 560mm x 530mm square, on which the fire had been concentrated at the flue entrance, was very heavily fire-reddened and showed signs of wear from repeated cleaning. On lifting it was found that the underside of the slab was also burnt and had been laid on a thin layer of black ash.

The cross flue was very narrow, only 150mm wide, with the base gently sloping upwards away from the main channel and petering out 700mm away from the internal edge.

At the junction of the main channel and cross flue a large triangular stone had been set firmly into the clay subsoil.

Almost halfway down the main channel two roughly triangular flat stones, 'cemented' with an orange sandy clay, were found resting on the clean natural clay, along the central axis of the channel.

Similarly, just to the north-east of the firing slab, a smaller stone was also found along the central axis, but this time heavily burnt and resting on a layer of ash 100mm thick.

No evidence for large spanning stones or other methods of flooring was found within the fill of the corn drier.

## FINDS AND DATING

Accurate dating of the construction and usage of the oven is impossible, as is so often the case with these structures, and a date can only be conjectured for the period that it actually went out of use.

The only finds came from layers 2 and 3 in the upper fill and were dated to the late second century, suggesting usage then and certainly no later than the early third century.

## INTERPRETATION

The workings and function of these structures have been discussed in detail elsewhere (Morris, 1979; Reynolds and Langley 1979).

The absence of any indications of the above-ground structure clearly precludes any meaningful discussion of this aspect and is best left to the better-preserved examples.

The structure of the oven is very similar to other excavated 'T'-shaped examples. The more unusual features are the large firing slab, presumably an aid to cleaning out the ash and to prevent excessive erosion and lowering of the base at the entrance to the main channel which would have upset the draught. The layer of ash beneath the slab suggests that its use may have been an afterthought to improve the functioning of the oven.

The triangular stone at the junction of the main channel and the cross flue is most unusual and may have acted as a baffle to deflect the heat either side and as extra support for the floor (Morris, 1979). The central stone 'pilae' may have functioned similarly, being perhaps necessitated by a shortage of adequate flooring materials. The smaller stone just inside the entrance to the main channel is more problematical and may only represent the fortuitous collapse of part of the burnt side-walling before silting took place.

## DISCUSSION

The relatively early date of these ovens is consistent with the idea that the simple 'T'-shaped form appeared in the second century (Morris, 1979).

An extensive area around the oven was stripped of its topsoil, and apart from the layer of ash

previously noted, no other associated features were found. The quality of stripping was such that had even a timber or hurdle building existed it would certainly have been noticed. The oven is, however, only 250m north-west of the Wood Corner MK64 Roman settlement and presumably stood in its fields.

Only four other corn driers have been excavated in Milton Keynes, three at Windmill Hill MK96 and one at Shenley Road MK46. All these are discussed in this volume, and it will be seen that, allowing for the variation of building materials, they are very similar in size and form, and therefore presumably in capacity.

## MK304 STANDING WAY

R. J. Williams

### INTRODUCTION

A Saxon spearhead was discovered during the construction of city grid road H8, Standing Way, in May 1975 by the driver of a mechanical excavator. A subsequent visit to the site by D. C. Mynard located a scatter of Roman sherds in the spoil of the northern roadside ditch.

The site is located on a Boulder clay ridge 98m above OD at SP 8550 3527, 4km north-west of Magiovinium and only 400m south-west of Watling Street. Further south-west on this same ridge are the Shenley Road MK46 and Windmill Hill MK96 sites.

Prior to further road construction in October of the same year a series of trial trenches were excavated by J. Barnbrook using a JCB with a 3-foot toothless bucket.

### DESCRIPTION

Six trenches of varying sizes were excavated with approximately 400mm of topsoil being removed to reveal the underlying orange/yellow clay subsoil. Trenches I-IV were excavated just beyond the then end of the H8 road; only one ditch and one gully were located.

Ditch 1 was 1.80m wide and 600mm deep with an open 'V'-shaped profile and was exposed at intervals over 31m running in an approximate north-west to south-east direction. The two sections were excavated across the ditch in trenches II and III. The fill of the ditch consisted entirely of grey loamy clay with small orange flecks. Finds from the ditch comprised animal bones, including the skull of a cow, two iron nails, the head and part of the shaft of a bronze pin, and pottery which ranged from first century to Saxon but was predominantly of second century date.

In trench 1, ditch 1 had been cut along its north

edge by a narrow gully 350mm wide and at least 6m long containing a mixed fill of redeposited yellow clay subsoil. Four irregular possible post holes ranging from 150mm to 280mm across and up to 260mm deep were spaced at intervals along its length. Post holes 3 and 4 produced three Roman sherds. The fill of all the holes consisted of a loose dark brown loam.

Trench V was abandoned because poor weather prevented further excavation, although during the initial cleaning a number of possible dark features were noticed.

A single 3ft wide machine trench was excavated for a length of c.100m in an approximate north-east to south-west direction along the north-west side of the H8 grid road, a distance of 250-300mm from the kerb edge. Thirteen possible ditches and gulleys were located along its length of which only ditch 8 was actually sectioned.

Ditch 8 was found to be aligned approximately north-west-south-east and was 1.65m wide and 570mm deep with a recut 'V'-shaped profile. The primary silt consisted of a light grey loamy clay with some orange flecks below a darker grey secondary silt. Pottery from the ditch was of predominantly second-century date and other finds included several fragments of bone and two iron nails.

The finds from the site indicate a presence in the area from the first to fourth centuries with perhaps domestic occupation during the second century extending into the third.

The ditches sectioned were compatible with Roman field ditches excavated elsewhere. The most interesting feature is gully 2 which, with the possible post holes, might be interpreted as a short length of pallsade trench.

### **MK307 LOUGHTON VALLEY** R. J. Williams

Construction of the Loughton Valley Trunk Foul Sewer required the construction of a small access road leading northwards off the H3 Monks Way road just to the north of Bradwell Abbey in September 1975.

Inspection of the drainage ditches either side of the temporary road by Valerie Shelton Bunn revealed sections through the ridge and furrow and two sections across Roman features.

The Roman features located at SP 8290 4001 had been cut through a frost shattered limestone bedrock and sealed by a reddish brown hill wash. Feature 1 appeared as an open 'U'-shaped profile 2.5m wide and 450mm deep. Feature 2 had a more

open 'V'-shaped profile 2.00m wide and 500mm deep. Both fills were of a reddish brown loam containing numerous fragments of limestone.

The pottery from both sections dated to the late first to the mid second century. Other finds from the sections include small fragments of bronze and lead, oyster shells, iron nails and fragments of tegulae.

Although the ditch profiles are slightly different, it seems at least plausible from the date and alignment that features 1 and 2 are part of the same ditch, approximately 24m apart running in an approximate east-west direction.

The ditch is located approximately 0.5km south-east of Bancroft Roman Villa.

### **MK313 SAXON STREET** R. J. Williams

#### **INTRODUCTION**

Fieldwalking by Paul Smith and Julie Bradley in October 1975, along the stripped line of the V7 Saxon Street grid road, located an area of pebbles containing Roman pottery immediately south of the H6 Childs Way intersection at SP 8561 3816.

The site is on a clayey head deposit at 93m OD in a shallow valley which runs from a low ridge in the north-east to the Watling Street valley in the south-west.

John Barnbrook carried out a small rescue excavation of the exposed area during November 1975, during which an area 15m x 5m across was initially cleared and subsequently extended to 15m x 8m.

#### **DESCRIPTION**

The main feature of the site was an irregular area of stone cobbles, approximately 3m x 11m across, contained in and partially overlain by a matrix of dark grey clay. The cobbles had been destroyed on the east side by a shallow plough furrow and the more irregular west edge had also suffered plough damage; the more pronounced irregularity probably resulting from more recent cross ploughing. The cobbles were almost certainly part of a larger area, having survived on the crest of a plough ridge in a similar manner to that at Wym-bush MK211.

The cobbles were mainly rounded quartzite pebbles ranging from several centimetres across up to 200mm with a few larger fragments of limestone, all of which are to be found in the surrounding Boulder clay.

On removal of the cobbled surface a slightly lighter grey clay level was found, several centimetres thick, which masked a number of earlier features. Many of these features appeared as amorphous darker clay patches in the yellow clay subsoil and may have been pits or ditches, but they remained unexcavated and very little can be said about them. A large shallow pit 150mm deep at the extreme southern end of the excavated area was sectioned and found to contain a fragment of amphora. At least three definite ditches were noted. Ditches 22 and 23 were unexcavated and no finds were recovered.

Several sections were cut across ditch 6, which had an open 'U' shaped profile 800mm wide and 350mm deep with a dark grey clayey loam fill and was traced for a maximum of 5m running in an east-west direction.

A number of small post holes or pits were planned but not excavated.

#### DATING

The pottery from the clay matrix of and above the cobbled surface was of the late second to the very early third century, with no evidence of later occupation. A small quantity of bone and a number of iron nails were also recovered.

The layer of clay sealed beneath the cobbles contained pottery of mid to late second-century date. Only ditch 6 of the underlying features was examined in sufficient detail to produce any finds; these dated from the late first to early or mid second century.

#### INTERPRETATION

The finds recovered from the site suggested a termination of usage soon after 200AD.

The dates for all of the ditches, pits and post holes (with the exception of ditch 6) are unknown, although stratigraphically earlier than the mid to late second century, and it may be suggested that they were contemporary with ditch 6.

It is clearly impossible from such a limited area to suggest any function for the features, although they were out of use by the mid second century, at which time the area was levelled and a cobbled yard surface laid.

The possible post holes or pits may indicate a timber structure although no significant pattern was identifiable. The presence of the yard surface suggests the attempted consolidation and replacement, with a more durable surface, of the area around an agricultural outbuilding during the second century.

#### DISCUSSION

The site is only 800m north-west of the extensive Late Iron Age and Roman settlement at Woughton MK297. Such a settlement, farming the surrounding clay soils, would have required simple barns and byres within the fields for a multiplicity of purposes and this site may have been one such structure on a relatively sheltered part of the clay ridge.

#### MK343 BANCROFT WATERLOGGED DEPOSIT

R. J. Williams

A road drainage ditch excavated in October 1980 alongside the southern edge of the newly constructed H2 grid road revealed a section through a waterlogged marsh deposit adjacent to the west bank of the Bradwell Brook on the Bancroft Grid Square at SP 8278 4058. Mr Jack Stephenson reported to R. J. Williams the discovery of a quantity of Roman sherds and bone, and the sole of a leather shoe in the deposit.

On examination of the section, which had been dug by an excavator using a ditching bucket, and consequently had sloping sides, the marsh deposit was found to be approximately 25m wide. On the surface, however, the visible area of marsh vegetation stretched over a much wider area, and consequently the alignment of the visible deposit could not be determined. The deposit was 1.30m deep in the centre, sloping upwards and petering out at both sides below the marsh topsoil. The drainage ditch had cut through a yellow clayey alluvium deposit, although the base was a more loamy sand containing a high proportion of stones.

Three sections were excavated to the base of the deposit, which was found to be well stratified and contained seven major layers and one smaller lens. Sections one and two were very similar in character. Section three could not be completed due to rapid water seepage.

Layers 1 to 4 were entirely aceramic and were found to be of post-Roman date. Layers 5 and 8 contained Roman pottery but 'sandwiched' layer 6 which was also found to be aceramic, although the very limited nature of the excavation and recording may account for this.

Layer 8, the lowest recorded layer, a very dark brown organic silt loam, contained pottery mainly of first-century date and to a lesser extent of second-century date. The molluscan analysis (publication forthcoming) suggested that this area of the site was probably wet meadowland, tending towards marsh, with little evidence for open water.

Layer 7 was only noted in Section 1 and was a narrow lens of dark greyish brown coarse sandy loam.

Layer 6, which varied in thickness from 110mm to 270mm thick, contained a few fragments of limestone but no datable finds or pottery. The layer was a very peaty organic dark brown silty loam with patches of coarse loamy sand. The molluscs were too few to provide accurate assessment of the environmental habitat, but from the relative positions of the datable finds the deposit must have formed in a relatively short period of time, probably in the second century AD.

Layer 5a, black organic silt loam with some coarse sand, contained insufficient mollusca for environmental analysis. This layer did, however, contain the bulk of the Roman finds, which were stratified within the layer. The earliest pottery, of the second century, was near the base of the layer and the fourth century pottery in the upper part. It was apparent that some mixing of finds had occurred, probably resulting from animal disturbance and the massive root-penetration of the deposit.

In section 3, layer 5 had slumped into a hollow or gully in layer 6. This must have resulted from ground disturbance, as part of a fourth-century Oxford-ware beaker was found in the base.

The layer also contained a relatively high proportion of limestone fragments, charcoal flecks, fragments of wood and other plant debris. A fragment of leather shoe sole which fitted that found earlier was retrieved from the lower part of the section. The sole is part of an undatable type of sandal which was very common in the Roman period, although rather on the large size (see report on pp. 170-72 below).

The only non-Roman material was a few sherds of handmade Saxon pottery from section 3 just above the junction of layers 4 and 5. Layers 1 to 4 contained no other datable finds. A series of limestone rubble drains lined with brushwood were found cut into level 4 but it could not be determined from which level they had been dug. They presumably represent a medieval or post-medieval attempt to drain the marshy area. Indeed they still worked to varying degrees, since the present area of marsh now contains more terrestrial species.

From the limited environmental analysis consisting of molluscan and soil reports (publication forthcoming) it is quite clear that from the early Roman period the area has been an uncultivated marsh deposit forming in a hollow in the alluvial subsoil. It must remain open to question whether the hollow is a former stream channel or not. The marsh has fluctuated in dampness, but there never appears to have been any major period when there was standing water. The small gully in section 3 may represent a Roman attempt at land drainage similar to that attempted later.

The volume of Roman finds from such a small excavated area is interesting as the deposit is 250m north of the Bancroft Roman building and 250m east from the MK360 site. No rubbish pits have been found so far associated with the villa and the material downstream from the buildings and out-buildings may represent refuse disposal in an otherwise unusable area of wet marsh. The presence of four badly corroded bronze coins from the deposit is more unexpected. Although only one, a coin of Valentinian I (364-375), is identifiable, they all seem to be small low denomination fourth-century coins, easily lost and very common in rubbish deposits. This may also account for the several fragments of corroded iron and lead droplets found in the deposit.

Only future work in the area will clarify the nature of refuse disposal in the area.

#### **MK345 CONSTANTINE WAY** R. J. Williams

Topsoil scraping for the H2 Constantine Way grid road to the north of the Bancroft Roman villa MK105, at SP 8263 4058, revealed a length of Roman ditch which was recorded for a maximum distance of 60m running east-west directly down the east-facing slope and almost parallel with a nearby hedge line. Its extension at either end is in doubt as conditions were unsuitable for recording.

The subsoil varied from a light-yellow sandy clay to weathered limestone. A section across the ditch showed that it averaged 1.20m wide and 280mm deep with a very open U-shaped profile, and a fill varying from a light to medium grey stoney clay. The comparative shallowness of the ditch may be accounted for by some overstripping by the contractors.

A ditch such as this, 240m N.N.W. of the main villa building, is only to be expected. Its significance lies in the quality of pottery recovered from it. Jack Stephenson, a local amateur, excavated some 15m of its length, producing pottery dated to the late first to early second century, which has proved to be a most useful group for the Roman type series.

Three bronze coins were found unassociated nearby, two of which are illegible, the third being of Valentinian I (364-375).

A small quantity of bones from the ditch was retained. A perforated bronze nail cleaner with incised lines was also found in the fill of the ditch by Mr Stephenson.

#### **MK346 HODGE LEA** R. J. Williams

Fieldwalking by R. A. Croft and M. R. Petchey on

the line of the freshly stripped A5D road adjacent the new housing site of Grangers Croft, Hodge Lea, revealed a scatter of Roman pottery in association with a number of features at SP 8116 3969.

R. Adkins, assisted by Miss L. Smith, sectioned one ditch and planned the recognizable features. The Boulder clay surface had been badly damaged by the action of the box scrapers and subsequently compacted by heavy plant during use as an access road.

A rough section across feature 1 showed it to be a ditch approximately 2m wide and at least 750mm deep with a fill of medium grey clay. The ditch was traced for a maximum distance of 23m in a north-west to south-east direction. An adjacent pit, F2, approximately 4m wide with a similar fill was not excavated.

Four further features, some 65m to the east, were planned, although again excavation was not possible. Features 3, 4 and 5 were short sections of ditch, 4m long and 1-1.50m wide. Feature 6 was a ditch, traced for approximately 25m in a north-south direction, similar to F1 in profile but similar in fill to F3-4, with a darker grey to black clayey loam.

The apparent difference in fills may be accounted for by differential scraping revealing different layers within the features.

The group of finds recovered from ditch 1 date from the first to fourth century although it may be suggested that later finds were from the tertiary silting.

Finds were not recovered from any of the other features although several bags of finds from the general stripped area show a preponderance of first to second-century material.

#### MK351 SIMPSON

R. J. Williams

Topsoil stripping by earthscrapers for the Caldecotte balancing lake in September 1981 revealed a number of early Roman soil features at the north-western end of the lake basin, adjacent to Simpson village, at SP 8843 3569.

The site is located 200m west of the River Ouzel on flat glacial gravel at 67m above OD.

Initially conditions were unfavourable for defining and recording the visible features of the site. A mechanical excavator was used to clear a small area on the eastern edge of the site and four narrow trenches were excavated westwards in an attempt to define the limit of the site, which was for the most part covered by a thick layer of residual

topsoil. Little excavation took place other than defining the features prior to planning and removing finds from the surface of the features.

The majority of the recorded features were a series of silted up ditches and gullies ranging from 0.50-2.50m wide. Most were either parallel or perpendicular to each other and presumably represent more than one phase of a rectilinear field system and enclosures. Only one ditch was found to be curved at one end. Feature 4 was a shallow rectangular slot 1.75 × 500mm and 100mm deep, containing a heavy concentration of charcoal. No *in situ* burning of the subsoil was noted. The north-eastern terminal of ditch F22 had been cut by a later circular pit, F47, 1.30m across and 750mm deep. A group of post holes were located on the eastern side of the site, but on excavation they were found to contain handmade Saxon pottery, and a bronze short-long brooch was later found nearby. No evidence for contemporary Roman structures was found, although the volume of pottery, coins and other domestic objects suggests that the settlement could not have been far away. Indeed the destruction of the upper subsoil levels by both ploughing and machine scraping was such that ephemeral timber buildings would not have left any trace.

Most of the features contained pottery of early to mid-first-century date although several, including pit F47, contained quantities of later first and early second-century material. Much of the pottery was very similar in form and fabric to that produced in Kiln 1 at Caldecotte MK44. Ditch F16 did however contain several fragments of fired clay 'plates', one of which had been pierced. These may tentatively be interpreted as fragments of kiln furniture although no corroborative evidence for a kiln was found. Much of the unstratified material from the topsoil was of second to fourth-century date. Since no later features were present on the site, the later material must be presumed to have originated from the upper ploughed-out silts of the earlier ditches.

Realising that the site would ultimately be destroyed, a group of metal detector users was invited to carry out a gridded survey of the area—particularly where topsoil obscured features. All the finds were three-dimensionally plotted and the heaviest concentration was found to correspond to the area of visible features, suggesting that no peripheral domestic settlement had been missed.

Fourteen bronze coins were found in the topsoil ranging from Trajan (98-117) to Valentinian II (375-392). The spread of coins, four second-century and five each from the third and fourth centuries, does not correspond with the pottery evidence, and may suggest that some form of domestic activity must have continued on the site well into the fourth century. Several small domestic bronze objects were

also found including a small plain fibula (see Fig. 41, 11, and report below), part of a strap-end and part of a small broken toilet implement of uncertain type.

Most of the iron objects recovered from the topsoil were in poor condition and their date could not be established. The only object of note was a small iron spearhead with a broken tip. Over 1.40kg of lead was found on the site, most of which was in the form of droplets or waste. The only identifiable objects were a lead spindle whorl and a biconical lead weight with a trace of a corroded iron loop fastening at the top. The weight, at 314.09g, equates to fractionally under one Roman libra or fractionally over one Celtic libra. Fourteen small rolls of lead ranging from 10g to 80g do not equate to any known Roman weights (see report on lead finds, p. 146 below).

#### **MK354 CALDECOTTE LAKE** R. J. Williams

Topsoil stripping during the construction of Caldecotte Lake uncovered a previously unrecorded Roman site in Bow Brickhill parish at SP 8905 3489 in June 1984. The site lies 110m east of the River Ouzel at the junction of the first gravel terraces and Oxford clay, on level ground at 66m OD.

The topsoil stripping was almost immediately followed by the excavation of the subsoil to a depth of several metres below the existing ground level to form the lake bed. Both operations were so destructive and rapid that no form of investigation or excavation was possible. Only the presence of Roman soil features and stone was rapidly recorded by R. J. Williams.

#### **DESCRIPTION**

The visible soil features were concentrated over an area approximately 30m across. No features were excavated and it was impossible to define any with accuracy as a result of extreme machine rutting up to 1m deep in places.

A patch of large quartzite pebbles and ironstone blocks was noted to the northern side of the main concentration. The pebbles are almost certainly derived from local river-washed deposits and the ironstone is the only locally available building stone, obtainable from the Woburn Sands beds, 2km to the east. Again destruction was so great that it proved impossible to define the character of the stones, although a slight linear arrangement could be seen at one point. It was felt that the alignment, which was noted to be only one stone's depth, may have represented a simple sill wall rather than a yard or floor surface.

A small group of finds was recovered from the surface of the site, including a fragment of rotary quern and several fragments of tile including a piece of tegula. The only metal objects apart from three coins were several lead discs, a 1-libra lead weight, a heavily corroded bronze disc brooch and two unidentifiable bronze objects.

The small assemblage of pottery is important to the dating of the site. Apart from a number of handmade Saxon sherds the pottery is almost entirely of fourth-century date and the more diagnostic forms suggest a date later rather than earlier in the fourth century.

#### **DISCUSSION**

In the light of the limited evidence available from the site it is difficult to formulate an objective view of the nature of the site. Good quality building stone is rare in the southern part of Milton Keynes and is sparsely used. Most of the existing medieval and post-medieval secular buildings are of timber and brick construction. The absence of easily obtained quality building stone must also have been acute in the Roman period and the more substantial houses may have been of timber and cob construction either on a timber or simple stone sill. Such structures invariably leave little trace in the ground and can only be located under ideal circumstances. The conjectured presence of such a building does not detract from its importance and its occupants may have been of similar social standing to those who occupied the more typical local type of stone founded buildings.

The site's importance at a local level lies in its period of occupation. With the exception of one sherd there is nothing to suggest that the site was occupied before the middle of the fourth century.

The other major excavated site in the immediate vicinity, MK44, lies less than 0.5km north and settlement seems to have ceased around the end of the second century, although the fields continued to be farmed and later residual pottery is often found above their primary silts. Magiovinium lies only approximately 1km south and the site may even be considered to be just on the outskirts of this small Roman town. The Caldecotte settlement may have moved over a period of time closer to the expanding town for reasons now impossible to define.

#### **MK360 BANCROFT 2** R. J. Williams

The area of land surrounding the Bancroft Villa has, since its initial discovery in 1971, been the object of several fieldwalking exercises. In 1981 a local amateur archaeologist, Mr Jack Stephenson, reported the discovery of a few Roman sherds and coarse tesserae on a field approximately 400m north

of the main villa building at SP 8253 4058. At the time of reporting, the advanced state of the crop made further investigation impossible. After ploughing in the autumn of 1982 R. J. Williams visited the site and realising its potential, carried out an intensive fieldwalking survey in the area of the main visible concentration.

The late date of the discovery of the site, which had been walked on previous occasions, may be accounted for by increasingly deep ploughing.

The site was walked and finds recorded from the area in five-metre squares. The equivalent of nearly two square metres of tessellated pavement was picked up from the surface of the field, mainly in an area 25 × 40m across. The scatter had been disturbed by ridge and furrow ploughing which runs approximately east-west across the field, and had moved with plough drift resulting from the ground sloping down towards the east with a gradient of 1:25.

The concentration of flooring material consisting of both coarse and fine tesserae and ploughed-up building material including painted wall plaster, mortar and broken masonry is heaviest at the upslope western end of the tesserae concentration in an area approximately 15m across.

From the surface evidence it may safely be assumed that a mortared stone building with tessellated or mosaic floors and possibly painted plaster walls existed on the site.

30m due east of the main stone and tesserae concentration is a lighter scatter of smaller limestone fragments without any evidence of mortar or flooring.

A metal detector survey was subsequently organised with the Newport Pagnell Metal Detector

Club. Such methods are somewhat unusual but in the circumstances it was felt to be a useful exercise, with the proviso that objects would not be removed from deeper than 200mm from the top of the ploughed surface.

The exercise proved most fruitful. With the exception of numerous iron nails and three unidentifiable small iron objects, the finds represent an interesting assemblage. The fragments of seven small iron projectile points and eight bronze coins were found concentrated over the area of the secondary stone scatter. The coins range in date from mid to late fourth century, but more significantly the projectile points appear to be small non-functional models, crudely made with unsharpened edges.

The fieldwalking exercise produced a very small proportion of pottery sherds and animal bone in relation to the area surveyed.

The type of finds raises interesting questions concerning the site's function. The relative absence of domestic objects speaks for itself and the presence of the group of model spearheads is particularly significant. These are uncommon finds but are invariably associated with temple sites, e.g., Brigstock, Northants; Woodeaton, Oxon; and Harlow, Essex. They usually occur in rural rather than urban contexts (Green, M. J., 1975b).

The location and topography of the site must also be taken into consideration. The site lies only 400m north of the Bancroft Roman villa but, at 83m above OD, is some 12m above the villa on a prominent high spot. Temples and shrines are frequently situated on hilltop sites or other very prominent features. The association of what are believed to be 'votive' objects with what on the face of it seems to be a non-domestic structure suggests the site of a temple or shrine.

## REPORTS ON EXCAVATIONS

### **MK64 WOOD CORNER** Charmian Woodfield

This report is an edited and reduced version by R. J. Zeevat of the fuller report by C. Woodfield, which was in turn based on the level III archive prepared by R. Adkins, the excavator of the site.

#### INTRODUCTION

This site (see fig. 14), situated close to the south-west end of Stanton Wood, at SP 8540 3974 in Bradwell parish, was first discovered by D. C. Mynard in 1961, appearing as an extensive scatter of Roman pottery, tile and stone after ploughing.

In 1975 the site was trial-trenched by R. A. Adkins, but no further work was done until October 1976 when excavation, prompted by the proposed construction of Danstead Way, H4, across the site, was also supervised by Mr Adkins. However, due to worsening weather conditions the excavation was temporarily halted and resumed in February 1977 to continue in frequently adverse conditions until May of the same year. Finally, in August 1977, during construction of the road, small-scale salvage excavations were supervised by J. Barnbrook.

Geologically the area in which Wood Corner is situated forms part of the Boulder clay plateau on which much of central Milton Keynes now stands. The site lies close to the headwaters of Stanton Brook, which runs northwards to join the Ouse north of Great Linford. The area is one of the highest points in Milton Keynes, 110m OD, and, with a west-facing aspect, is very much at the mercy of the weather.

Of the site's more recent history little is known. The site name (Wood Corner) is that of the field, a name which is first recorded on the Bradwell Tithe Map of 1839 (Bucks R.O. PR22/27/1.R), and which betrays no knowledge of the Roman settlement. The name refers to the proximity of Linford Wood, of which the part closest to the site is a later plantation than the rest of the woodland as it overlies ridge and furrow. The Bradwell parish boundary runs around the north and north-east side of the field, while the south-western side of the field is bounded by Common Lane, which has been identified as a Roman road (Viatores, 1964, 325). Immediately to the east of the site the parishes of Bradwell, Great Linford and Stantonbury meet.

The presence of the ridge and furrow, aligned NE-SW across the excavated area, indicates that the site has been under cultivation since at least the medieval period. The area is fairly flat, and this and the impervious subsoil mean that the site is badly drained. Because of this, at least two separate systems of land drains had been laid across the site in the late nineteenth or early twentieth centuries, and these drains, coupled with the deprecations of both medieval and modern ploughing, had caused considerable damage to the Roman levels.

#### THE EXCAVATIONS

The initial trial-trenching undertaken on the site was carried out using a Massey-Ferguson MF50B with a one-metre toothless bucket to cut two long trenches which bisected the centre of the finds scatter. These were then cleaned and features recorded and sampled where possible before back-filling. The following year a similar machine was used in conjunction with two 2-tonne dumpers to strip an area of about 1500 sq. m. The following spring this area was enlarged with some difficulty, owing to the waterlogged state of the site, to about 2300 sq. m.

Examination of this area revealed the presence of a number of ditches, post holes, hut gulleys and an extensive cobbled yard surface, indicating a sequence of occupation spanning the period from the mid or late second century to the fourth century (fig. 15). Whilst medieval and modern agricultural activity had extensively damaged many of the above features, sufficient remained for the following sequence of phases of occupation to be suggested:

##### *Phase I, mid to late second century*

Building 1, a rectangular structure, timber framed, with wattle-and-daub infill.

##### *Phase II, late second to early third century*

A sequence of circular timber-framed structures, Buildings 2-8, and associated features.

##### *Phase III, mid to late third century*

A substantial enclosure ditch, encompassing a rectilinear area containing a rectangular timber-framed structure, Building 9, of sill-beam construction.

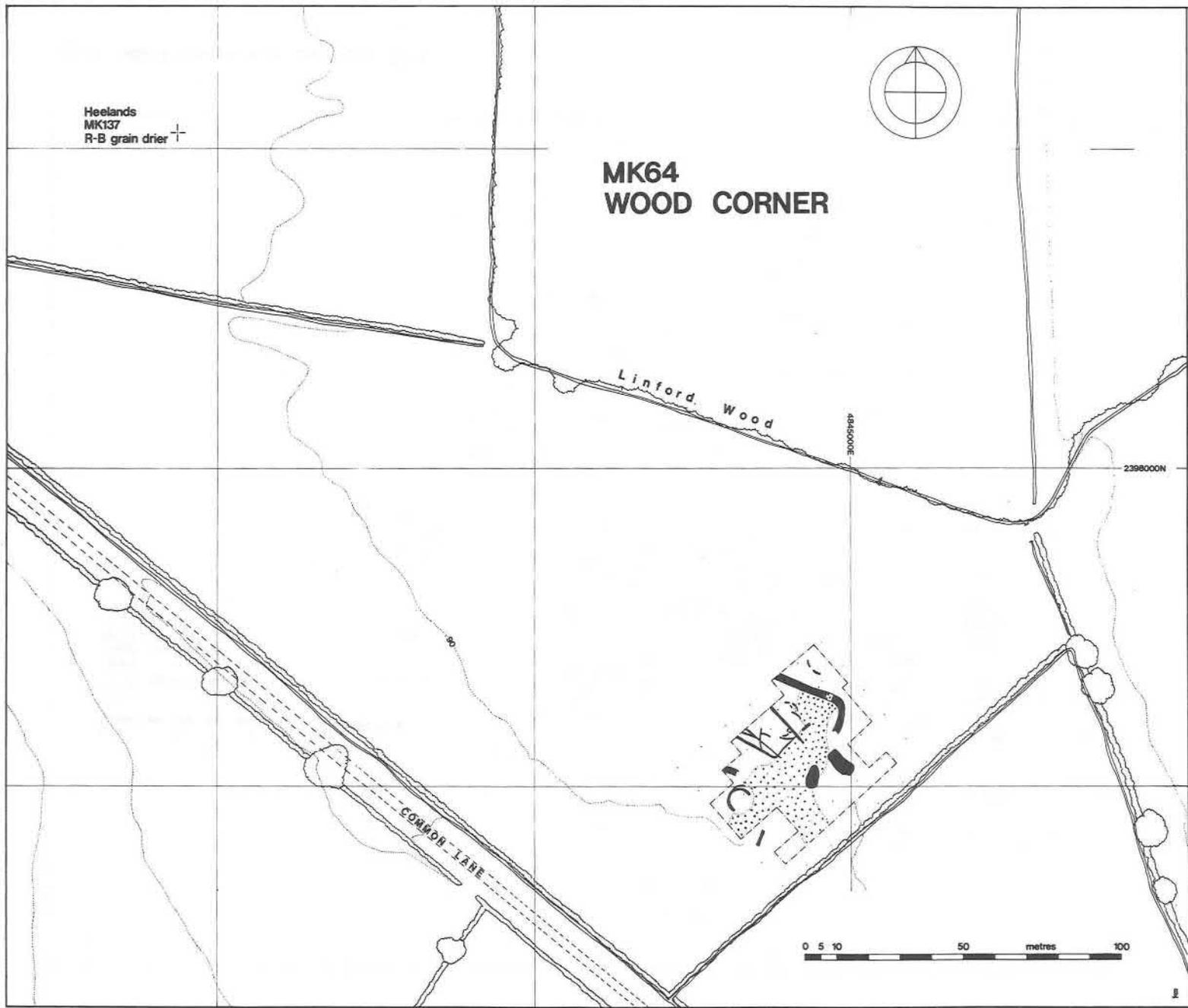


Fig. 14. MK64 Wood Corner: Location Plan.



Fig. 15. MK64 Wood Corner: Excavation Plan.

#### *Phase IV, fourth century*

An extensive cobbled yard area, with possible traces of associated rectangular timber-framed structures. This phase had been almost totally destroyed by later ploughing.

### DESCRIPTIONS

#### *Phase I (fig. 16)*

Building 1 was represented by F2, which consisted of a trench upwards of 4.5m in length, 700mm wide and 250mm deep, aligned east-west. The profile was not recorded. This feature contained two large post-pads each 500-600mm in diameter, filled with rubble packing and spaced some 2.5m apart, and thus appears to represent a building of post-and-timber construction. The fill of F2 was a clayey soil containing burnt pottery and daub, apparently from the clearing of the site after destruction of the building. Some of the daub contained stick impressions, indicating a wattle infill between large posts.

F1, to the west of Building 1, was a gully 700mm wide and 150mm deep, aligned north-south, and traced for a distance of 15m. This feature was of W-profile, a form sometimes associated with wattle construction, involving a double line of wattle with clay infilling and covering on both faces. The fill of this feature was of conspicuously light clay. What appears to be a large post hole is recorded on site photographs at the southern end of this feature. Whilst no pottery was recovered from F1, a sherd of Central Gallic samian of Hadrianic or early Antonine date recorded from below hearth F11 is probably from this feature.

It seems likely that these two features are part of a substantial rectilinear clay walled building.

The presence of samian in quantity and other fine wares of mid to late second century date, including flagon and amphora sherds, indicates some prosperity in this period. Much of the ceramic material is burnt, and the evidence from the burnt samian, including a late Antonine East Gallic sherd, points to a date in the last quarter of the second century for the destruction of this building by fire. No floor is recorded for the structure, though clay was presumably the medium used.

#### *Phase II (fig. 16)*

This phase shows, perhaps surprisingly, a reversion to native-type round houses. These structures fall into three groups, indicating rebuilding on the same site of a group of three houses with only a brief structural life.

#### *Buildings 2 and 3*

These two roundhouses form the western group of structures. Both were only partially excavated, being marked by gulleys F3-5, which indicate

buildings with diameters of about 13.5m. The section of F3 showed a clear recut, and its irregularity and width is due to that, and does not suggest that it was a drip gully. Furthermore, its outer edge contained pitched stone packing, indicating it to be a construction slot for a wattle-and-daub structure. Again, no floors were noted for Buildings 2 and 3, but these were presumably of clay. The roofs were likewise presumably of thatch.

#### *Buildings 4-7*

Only one of these structures produced dating material, the others being either sterile or unexcavated. All are represented by sections of shallow circular gulleys which, like F3-5, were probably construction trenches rather than drip gulleys.

Building 4 was represented by two shallow gulleys, F6 and F7, giving a diameter of about 9m. No datable material was recovered from either feature.

Building 5 was also a structure of about 9m diameter, overlapping the south side of Building 4. It appeared as two gulleys, F8 and F9, of which the latter had a right-angled inturn at its north-western end, containing a post-hole, and suggesting an enclosure facing west-south-west. F9 measured 250mm wide and 200mm deep; its stepped, flat-bottomed section was that of a building slot rather than a drainage gully. A slot for wattle could be seen in some sections of this feature, and pitched stone packing similar to that in F3 was also found. F8 was rather wider, measuring 300mm, and gave the impression of having been recut.

At least one of the hearths (F10 and F11) probably belongs with this building. Both of these features were single scoops in the ground, 150mm at the deepest, filled with layers of clay and burnt material (daub and charcoal). F11 was partly, if not wholly, lined by a stone kerb.

The presence of Building 6, a larger structure measuring approximately 12.5m in diameter, was marked by F12 and F13. The former gully was inturned shortly at its eastern end, suggesting a south-facing entrance.

Building 7 was situated slightly to the west of the structures described above. It was represented by F15 and F16, which formed part of a circle some 9.5m in diameter, much disturbed by the later ditches F21 and F26 (see Phase III and IV below). The date of F16 is unknown in that the finds were put with those from F26, with which F16 was first thought to be connected, but its relationship with other features suggests a second-century date. The fact that it continues beyond the later drainage gulleys, and does not feed into them, makes it unlikely to be contemporary with them. F15, by contrast, was rather enigmatic, exhibiting a recut in

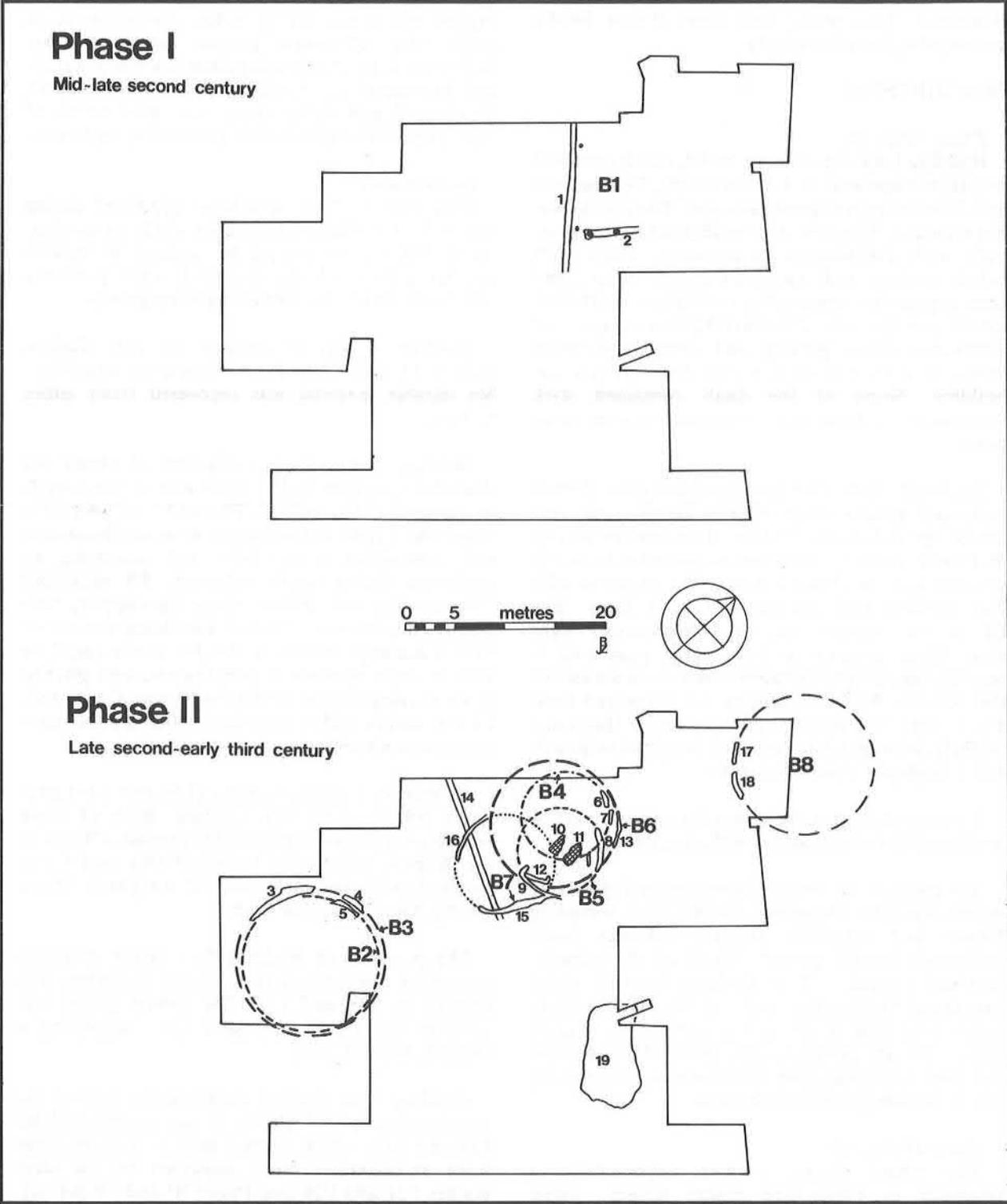


Fig. 16. MK64 Wood Corner: Plan of Phases I and II.

its western end. Its initial section measured 700mm in width and 250mm in depth, being straight-sided and flat-bottomed. The irregularity of its north side is due to recutting, perhaps as a drain carrying water away from Building 5, though in essence it is a Phase II feature, connected with Building 7.

#### Building 8

This structure, situated to the east of those already described, was represented by F17 and F18 and measured about 14m in diameter. F18 preserved a group of three stake holes, each 5 cm in diameter, spaced at 30cm intervals along its outer perimeter. There were also two pieces of timber, each 200 × 50mm just inside the centre line of the slot. Although fragments of painted wall plaster were recovered from this feature, they are considered to have been brought onto the site with other waste building material as hardcore.

#### Other Features

F.14. This was a boundary or drainage ditch, aligned NNW-SSE, crossing the area occupied by Building 7. It was traced for a distance of 14m and measured 1m in width and 300mm deep. Its southern half is likely to have been recut by F21 (Phase III).

F.22. Although a later (Phase III) feature, this appeared to have recut an earlier ditch at its north-east end and may, with F14, have formed part of a ditched boundary system separating the three house plots. This raises the question as to the nature of the land tenure, though it may equally be that the function of both ditches was solely drainage.

F19. This very large rectangular pit, 10 × 5m, 1.2m deep, was apparently dug during this phase. It had 45° sides and a flat bottom. It may have been a source of clay for building the roundhouses, or possibly initially the earlier Building 1.

#### Phase III (Fig. 17)

During this period a broad ditch, F22, was cut, possibly accompanied by a bank. It measured 2.5m in width with a depth of 600mm. Its alignment has been established in the north-east part of the site, where it recut an earlier ditch. Reaching the limits of the excavation, it turned south-westwards, but was not certainly traced in this direction, although a section cut through pit F25 (see below) shows that pit cut by a ditch with the same dimensions as F22. The western side of this possible enclosure may be represented by F24, though no finds were recovered from the latter. The area thus enclosed measured 32m east-west, and at least 26m north-south; the northern side of the enclosure was never pursued. This enclosed area may represent a contraction of the occupied area in the third century.

Traces of only one structure, Building 9, were noted within this enclosure. An L-shaped sill-beam

slot, F20, 400-500mm wide and 150mm deep, was found in the centre of this area, on the same alignment as F22. This slot was flat and straight-sided, with a massive stone-packed post pad about 700mm in diameter projecting beyond the sides of F20, 2.5m from the probable west corner of Building 9, which measured at least 4.5m north-south and 3.2m west-east. No floor was recorded within this structure, though clay may again have been the flooring material used.

Parallel with the west side of Building 9, at a distance of 2m, was gully F21, a late third/early fourth-century recut of boundary ditch F14. This followed the same line as F14, only diverging to the west near the north boundary of the site.

Near the south corner of the enclosure was a large pit, F25. This measured 6-7m in diameter, with a depth of 600mm, and lay on the line of the south-east side of the enclosure, being cut by the probable continuation of F22. The function of this feature seems to have been as a source of clay, similar to F19, presumably for building.

#### Phase IV (fig. 17)

Unfortunately nearly all the structural features were found to have been destroyed by medieval or modern ploughing, though it is clear from what remains that there was a major reorganisation of the site. The major evidence of this can be seen in the appearance of an extensive cobbled yard surface, F30, covering an area of at least 50 × 50m and obliterating most of the earlier features, including boundary ditches and structures.

#### Structural Evidence

F27. This feature, apparently a timber slot 500mm wide and 200mm deep, was found cut over the site of Buildings 2 and 3, aligned NNW-SSE. Both ends are lost in furrows, so its extent is unknown, and the dating evidence remains slight.

F.28. Parallel with and 1m to the west of F27, this feature was also a beam slot with similar dimensions to the latter, with a stone fill and an apparent post hole. It dates from the fourth century and its extent was again hidden by plough furrows.

The area of the central roundhouses produced a quantity of constructional nails and fourth-century pottery and many post holes, one of which produced dating evidence placing it in the fourth century. The indications are that there was a fourth-century post-built building or buildings in this area.

In addition, there are tenuous hints of a late fourth-century timber structure on the east side of the site. F32 cuts the yard build-up and is therefore presumably later fourth-century. It appeared to have a post hole at its southern end. The adjacent area of pitched limestone surface, F31, seems likely

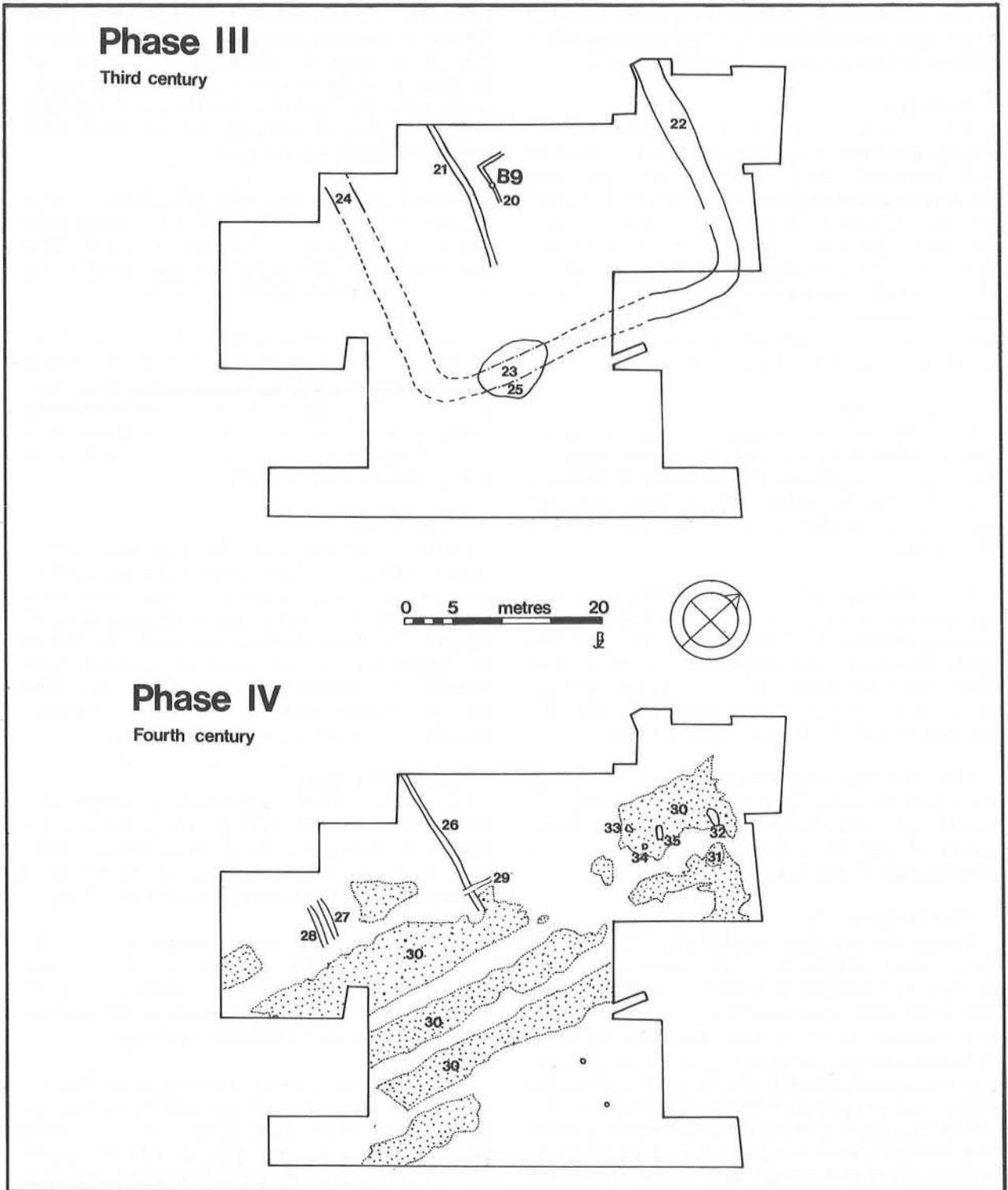


Fig. 17. MK64 Wood Corner: Plan of Phases III and IV.

to have been an entrance and this was also the area of a considerable concentration of constructional nails. F33 and F34 were thought to have been shallow post holes and will both be late fourth-century in date, as they cut the yard surface. F35 may be the remains of another timber slot, though it was not excavated. All these features may represent traces of a building.

To the south a combination of late post holes and a stratified concentration of nails suggests another post-built structure overlying the filled-in pit F19, perhaps constructed in the early fourth century. This, like the possible structure associated with F26 and F27, may pre-date the yard.

No floors were recorded by the excavators for any of the Phase IV buildings. This again suggests that the main flooring material was clay, reinforced where necessary with stone, e.g., F31.

The evidence for roofing is also inconclusive. Though excavation produced a quantity of tile, most of this appears to have been brought to the site as hardcore and includes box flue tile. Roofing was therefore presumably of thatch, or possibly wooden shingles.

There is also less evidence for the methods of wall construction used in the Phase IV buildings. Quantities of clenched nails, especially in the central area of the site, suggest the use of weatherboarding.

The yard area, laid with limestone rubble and Bunter pebbles, covered an area of  $c.50 \times 50$ m. During the fourth century it was gradually overlain with a very black organic deposit some 200mm thick, which suggests a stock yard. The large amount of Oxford fine wares recovered from this context indicates some prosperity at this period. The unstratified finds of jewellery, a gilt bronze earring, and the foot of a bronze vessel, may date from this period, but this remains uncertain.

## DISCUSSION

The Wood Corner settlement is unusual in that, unlike other similar rural occupation sites in the Milton Keynes area, it appears to be a mid second-century foundation, with no Belgic predecessors. This suggests that it was linked to a larger estate—centred perhaps on the probable villa at Stantonbury which was being expanded and improved in the Antonine period. Although only traces survive of this first phase, it seems reasonable to suggest that the site was started as a tenant farm—similar to Wymbush, 2km to the west—or as accommodation for farm workers on a larger estate. The fire that destroyed the first phase of this settlement in the late second century, although it does coincide with

the rebellion of Clodius Albinus, may be seen rather as accidental than the result of political events.

Following the fire, the reversion to native-type circular huts is interesting and unusual. Perhaps it represents an interim arrangement on the part of the occupants of the site to continue living and farming on the same plot of land whilst acquiring sufficient resources to construct their home. This is reflected in the duration of this settlement—about fifty years—and the apparently temporary nature of the circular buildings; three distinct structures are noted on the site, one of which was rebuilt once and another three times during this period. In addition, it should be emphasised once again that only a part of the site was excavated and that there were clear indications of occupied areas to the north and west of which time, finances and weather conditions prevented detailed examination, so that more evidence of this and other occupation phases may exist.

The Phase III reconstruction of the site, of about the mid third century, is a further interesting point about Wood Corner. Accepting that Britain and the Western Empire were moving into a period of recession at this time, sufficient effort was put into Wood Corner to clear the site, erect a rectangular timber-framed structure and excavate a rectilinear enclosure ditch around it, at a time when other sites in lowland Britain were showing signs of neglect and the adjacent farmstead at Wymbush was perhaps abandoned. This is an indication that we must be careful not to generalise too freely when using national trends to interpret local situations, and that then, as in the recent recession, not everybody suffered equal hardship.

The form taken by the Phase III settlement at Wood Corner, a building or buildings situated within an enclosure ditch, is common to many rural sites in the Roman and pre-conquest periods, and can be seen particularly on many first-century 'proto-villa' sites, such as Gorhambury (information from David Neal) and perhaps Bancroft. The ditch is there not as a defensive feature, but rather to define the area of the farmstead and its yards and as a means of stock control.

Our picture of the final phase of the site's existence in the fourth century, though devoid of any understandable structural evidence, is reminiscent of the Northamptonshire sites at Overstone (Williams, 1976) and Thorplands (Hunter and Mynard, 1977). These were characterised at this period by undefined stone yard-spreads; both sites also acquired circular stone-based structures, a feature that was not noted at Wood Corner. This is surprising, as buildings of this type would have been more durable on the damp water-retaining clay soil underlying the site. The connection between Wood Corner and a nearby villa site

reappears in this final phase with the use of quantities of wall-plaster and hypocaust tile as hard core on the site. Despite the lack of structural evidence at Wood Corner, the large amount of Oxford fine wares recovered indicate some prosperity at this period. That much agricultural activity was taking place in the immediate area at this time is evidenced by the presence of a T-shaped corn drying oven at Heelands MK137, 250m north-west of Wood Corner.

Because of the damage done by ploughing to much of the evidence of this final phase it has been difficult to determine the date of abandonment of Wood Corner. The latest identifiable coins from the site date from the middle years of the fourth century, suggesting that occupation had ceased by about AD370-380.

#### *Economy*

The picture presented by the faunal remains from Wood Corner is similar to that already noted on contemporary sites in the neighbourhood. Ox and sheep predominated throughout the occupation of the site, whereas remains of pig are meagre, and horse appears only in fourth-century contexts. Cattle bones came mainly from 2 to 3-year-old animals, and sheep remains from 1 to 2-year-olds, suggesting the ability to grow sufficient winter feed—an interesting point in view of the lack of floral evidence from the site. Cattle were kept as draught animals as well as for hides and milk, and sheep for wool as well as meat. Other species present on the site were chicken, cat and dog—the latter being represented by a collie-sized animal, and a smaller dog of terrier size.

Despite the imbalance of floral and faunal evidence, the surrounding environment of Wood Corner can be seen to be one of largely open countryside, given over to both grazing and arable farming, with small areas of woodland. This picture is similar to that noted at Quinton, Northants (Friendship-Taylor, 1979), and perhaps could be taken to indicate the type of landscape predominating on clay areas of the south-east Midlands in the Roman period.

Finally, the one problem regarding Wood Corner which the archaeological evidence does not resolve is the site's relationship to others in the vicinity. Should any links exist between Wood Corner and other sites, the villa at Stantonbury is the likeliest candidate. Wood Corner stands at the head of Stanton Brook which flows past Stantonbury, only 1.5km to the north, and the nearest villa to Wood Corner. The type of decorated wall plaster found at Wood Corner also suggests links with a villa other than Bancroft.

Wood Corner may equally have been linked to local markets at Magiovinium by a trackway

following the line of Common Lane—believed by some to be Roman in origin—to join Watling Street at Loughton (Viatores, 1964, 325).

## **MK105 BANCROFT VILLA**

R. J. Zeepvat

### **INTRODUCTION**

Bancroft villa is situated in Wolverton parish at SP 8273 4033, 0.75km north of Bradwell village and 1km south-east of Wolverton. The site was first located and identified as a major Roman building in 1971 by D. C. Mynard, who noted it as an extensive plough scatter of Roman tile, though finds of Roman pottery had previously been made by R. G. Bellchambers in the bank of Loughton Brook adjacent to the site in 1967. The site was originally called Bradwell villa, the name being changed in 1978 to conform with its location within the Bancroft grid square of the City. Excavations were undertaken between 1973-78, directed by H. S. Green in 1973-76 and later by J. Barnbrook in 1977-78. M. J. Green co-directed in 1974.

The site (fig. 18) lies on the west slope of the valley of the Loughton Brook, a tributary of the Great Ouse, at a height of 69m OD approximately 100m from the brook. The site is sheltered from the prevailing winds and is well drained, with supplies of water available from the brook and a spring 100m south-west of the villa. Geologically, the area of the site is very complex; outcrops varying from Blisworth clay and limestone to cornbrash and, nearer the stream, alluvial terrace gravels, the whole being covered with clayey hillwash upwards of 20cm in depth.

Of the history of the area of the site following its abandonment, little is known. The presence of ridge and furrow which has caused considerable disturbance of the Roman structures confirms cultivation from the medieval period onwards. The area of the site is shown as 'Brook Field' on a map of Wolverton dated to 1742 (Hyde, 1943). A long-standing public right-of-way crosses the site, running from Old Bradwell to Wolverton. The only disturbance in more recent years has been the acquisition of the spring adjacent to the site by the London and North Western Railway c.1895, and the installation of a valve house and piping.

The villa was put forward to the Department of the Environment in 1976 for scheduling as an Ancient Monument. Later, in 1978, with DoE approval, the site was partially excavated, stripping large areas to ascertain its extent, in order to facilitate scheduling and proposed adjacent development.

In the event the site was not scheduled and the Development Corporation, seeing the potential of

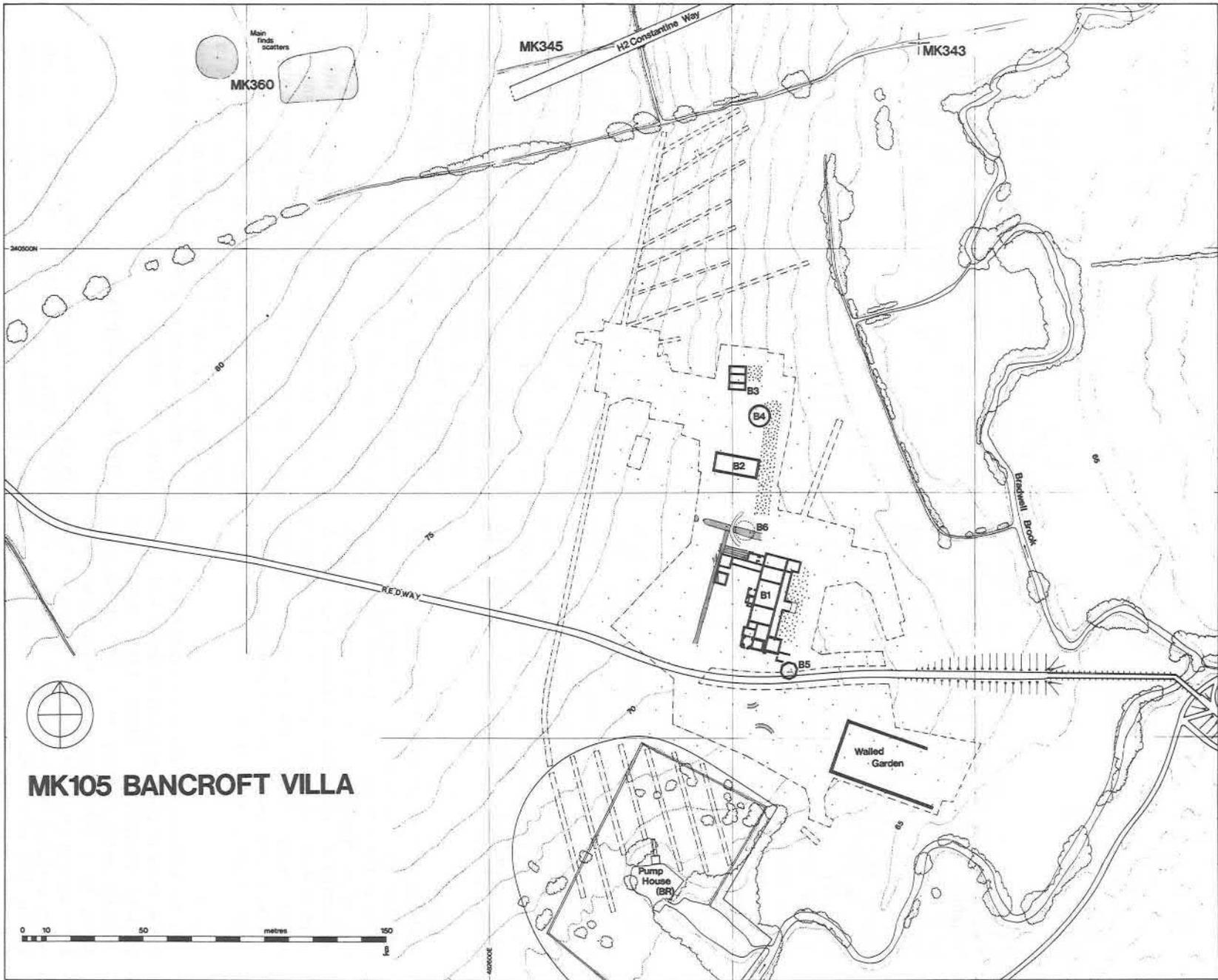


Fig. 18. MK105 Bancroft Villa and related sites, location plan.

the site as an ancient monument and an educational resource within the city, have considered methods of presentation of the site to the public.

This has led to the total excavation of the main villa building within the present season, 1983, and the distinct possibility that the villa will now be preserved for public presentation.

## SUMMARY OF EXCAVATIONS

### 1973

Excavations began in response to threatened disturbance of the site by construction of the Loughton Valley Trunk Foul Sewer. An area  $60 \times 40\text{m}$  and several smaller trenches, A-G, were back-bladed using a Drott B100 with 4-in-1 bucket, and a site grid set out. Finds were recorded to the nearest 2m square and rubble layers planned in detail at 1:20 after removal of each 50mm level. Temporary baulks recorded sections of potential importance and depth of excavation did not exceed 150mm. As these excavations revealed a stone-built, tiled Roman structure with tessellated floors, the proposed sewer workings were moved away from the site, nearer Loughton Brook. The site was then covered with black polythene and backfilled.

### 1974

An area  $14 \times 29\text{m}$ , later extended southwards by  $4.5 \times 12\text{m}$ , was stripped by hand, half of it corresponding to the eastern corner of the 1974 area, which contained the tessellated floors. The site grid was realigned to correspond with the main axis of the villa. At the end of the season floors and walls were covered with straw and earth and the whole area backfilled.

### 1975

Major excavations of the villa were postponed owing to the need to examine threatened sites elsewhere in the new city. Attention at the villa was focused on an area 30m south of the main building, following the proposed re-routing of a sewer by the Anglian Water Authority. The subsequent removal of this threat rendered excavations at the villa comparatively small-scale. The trenches were back-filled at the end of the season.

### 1976

Initially two  $10 \times 10\text{m}$  areas, separated by a 1m baulk, were stripped by machine north-west of the 1973-74 excavations. These areas were later extended north by about  $55 \times 35\text{m}$  and west by about  $21 \times 17\text{m}$ . Progress of excavation varied from area to area, and to a large extent the final results reflected the initial trench pattern of that season. The area containing the tessellated floors, backfilled after the 1974 season, was not disturbed.

A resistivity survey of the site was undertaken by P. Howard of Bradford University as part of his

MA course, assisted by J. Barnbrook. The project was intended to ascertain the extent of the main building and locate any other masonry structures, but was frustrated by the polythene sheeting put down when backfilling the 1973 excavations. This produced areas of high resistivity which rendered meaningless both manual and computer analysis of the survey.

### 1977

Only one month was spent on the site, with a small experienced team working to answer specific questions posed by preliminary post-excavation work undertaken during the previous winter and to prepare the site for a public open weekend. This latter exercise was a great success, the site being seen by over 4,000 visitors, after which it was again backfilled.

### 1978

Accidental disturbance during construction of a footpath close to the main building, revealing part of the octagonal building, showed the necessity of determining the extent of the site and the plan of the main building before construction work began in the grid square.

Accordingly areas of approximately  $7,000\text{m}^2$  to the north of the footpath and  $4,000\text{m}^2$  to the south were stripped using a JCB807 and two 3-tonne dumpers, revealing the whole of the main building and subsidiary structures. Detailed archaeological investigation was limited by availability of labour to exposing the main building in its final, most extensive, phase and to a certain amount of work on the large walled enclosure south of the villa, adjacent to the stream. At the end of the excavation the site was covered with polythene sheeting and backfilled. Prior to this, earth-filled plastic sacks were laid around exposed walls and other delicate features, and the mosaics were covered with concrete paving slabs.

It should be emphasised at this point that much remains to be done at Bancroft in terms of excavation before a complete picture of the site's development can be obtained. The phases detailed below are based on available evidence, much of which relates to the final period of occupation of the villa, and are intended to serve as an interim statement, which may be modified in the light of future excavations.

## THE EXCAVATION

In all, seven structures of Roman date were identified at Bancroft. Building 1 (fig. 19) was a substantial stone-built house of the winged corridor type, containing fifteen rooms and two bath suites. About 30m to the north of this was a group of stone-built outbuildings, two rectangular and one circular (fig. 20). Immediately to the south-east of

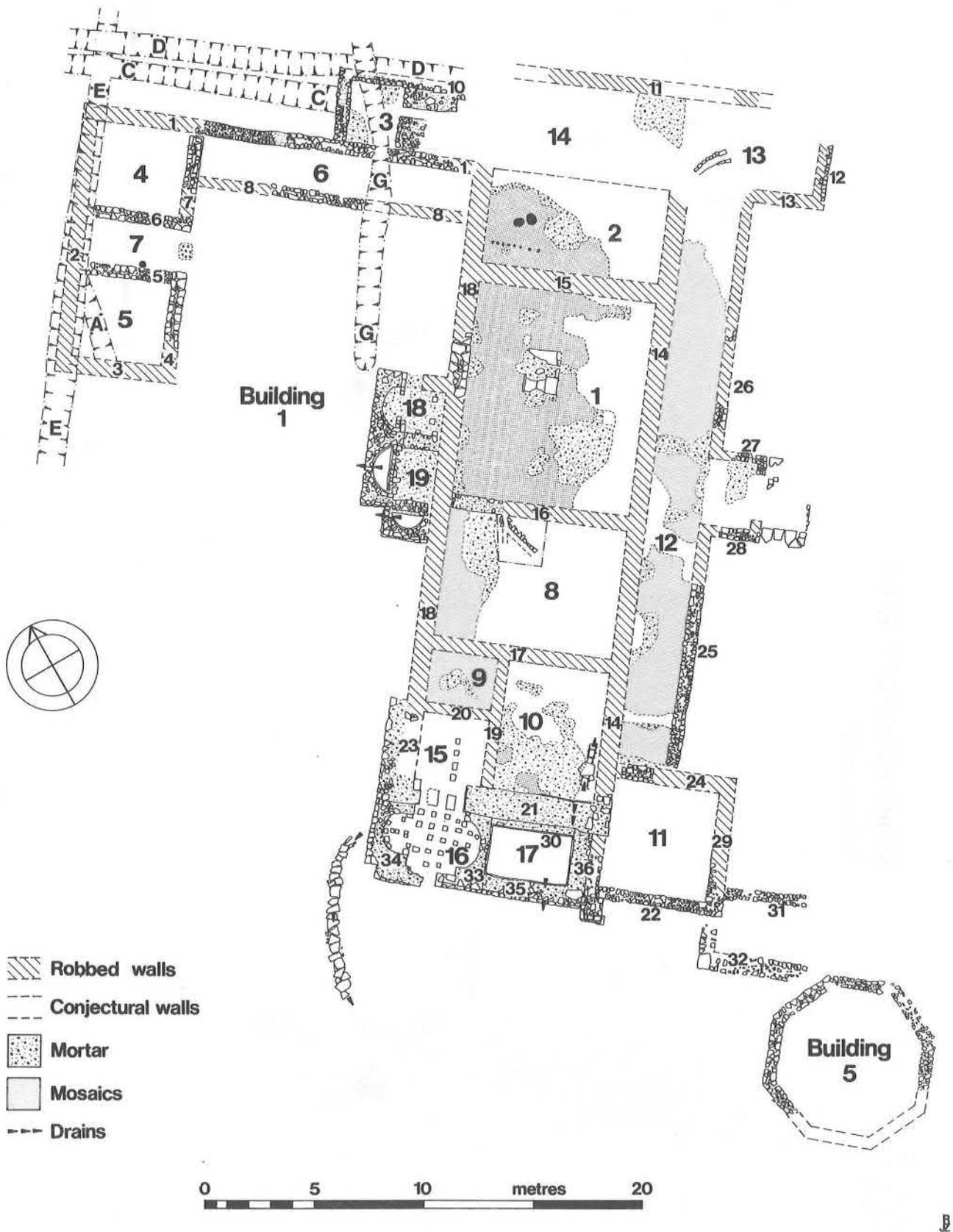


Fig. 19. MK105 Bancroft Villa, Building 1.

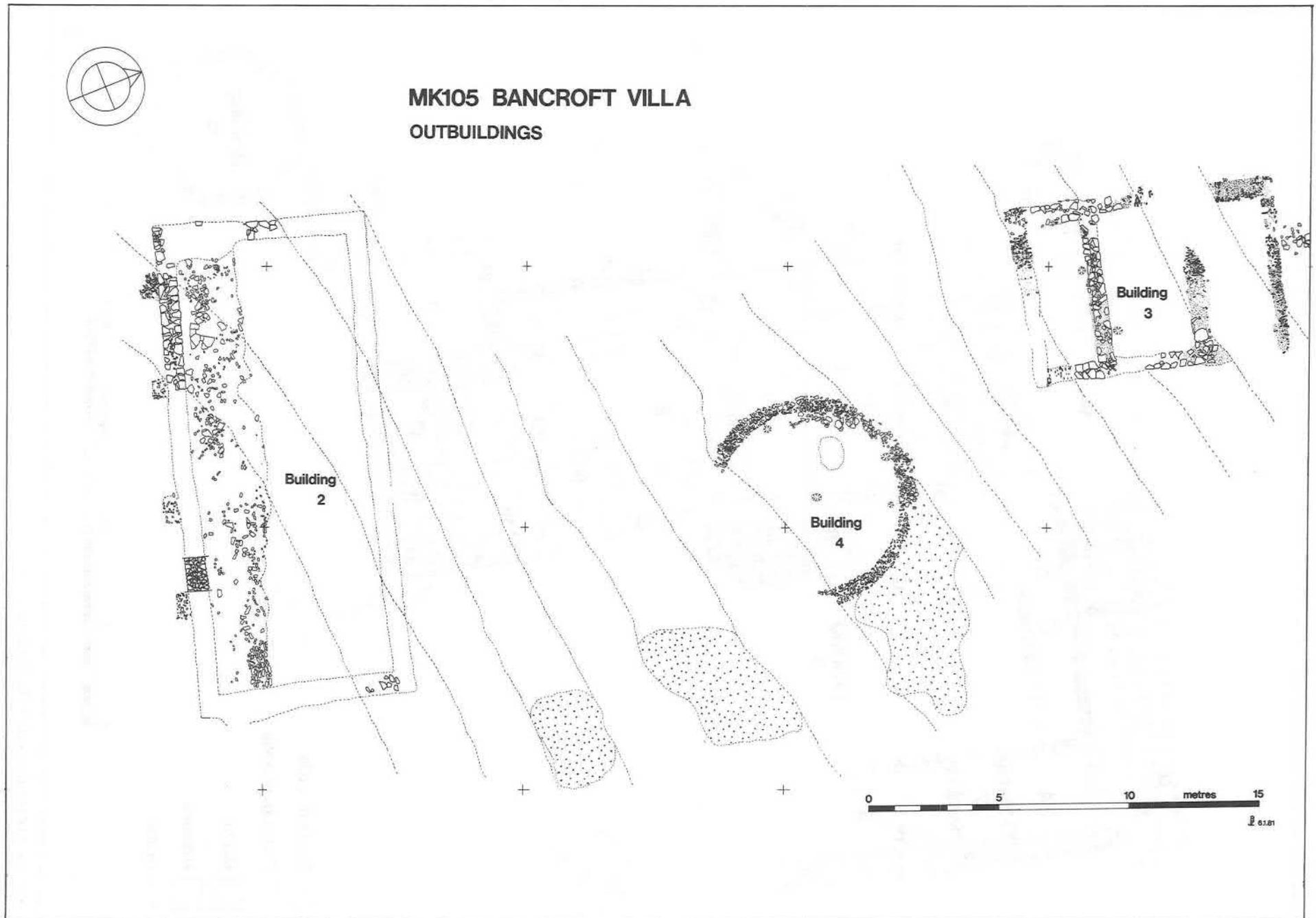


Fig. 20. MK105 Bancroft Villa, Buildings 2, 3 and 4.

Building 1 was found Building 5, an octagonal stone-built structure, probably either a dovecote or a shrine.

Building 6, a less substantial circular structure, probably constructed of timber, was situated adjacent to the north end of Building 1.

The seventh structure, a rectangular stone-walled enclosure, probably a garden, was situated 40m south-east of Building 5, running down the hill-slope to the edge of Loughton Brook. Excavation of these structures was in the main superficial, being confined to later surviving phases, as a result of which there were few securely stratified contents. It is therefore from these and from surviving architectural evidence that the following phases of occupation are suggested.

*Phase I: mid to late first century (fig. 21)*

The earliest datable features on the site (ditches A-C, E and J), situated immediately north of Building 1, fall into this period.

*Phase II: late first to late second century (fig. 21)*

This period covers the construction and occupation of the first stone-built structure at Bancroft. The only structural evidence so far obtained for this phase consists of rooms 4-7, as well as a number of clay floor levels noted beneath rooms 1 and 8, suggesting that much of the earlier house is sealed beneath the later villa. The end of this period, c.170AD, is marked by a fire which destroyed rooms 4, 5 and 7, and the west end of room 6. Outside the house, ditch D probably replaced ditch C during this period.

*Phase III: late second to early fourth cent. (fig. 22)*

This period probably commences with the construction of much of the winged corridor house, including rooms 1-3, 8, 9 and 11-15. In addition, traces of a plunge bath beneath room 10 suggest the presence of an early bath suite at the south end of the villa. Rooms 4-7 appear to have been demolished by this time, although part of the north wall of room 6 was used to construct room 3, at which time ditch D was filled. The small western bath suite, rooms 18-20, is an addition to the Phase III building, though its precise date is as yet unknown.

Phase III also covers the construction of building 2-4, either replacing earlier timber outbuildings or representing an expansion in the farming activities of the owners. The walls of Buildings 2 and 3 contain fragments of burnt limestone, suggesting that material from rooms 4-7 may have been used in their construction, following the late second century fire.

*Phase IV: mid to late fourth century (fig. 22)*

This period marks a time of prosperity at Bancroft and consists principally of improvements

and alterations to the house, mosaics being laid in most rooms. The southern bath suite was remodelled at this time, creating rooms 10, 15, 16 and 17 in their final form. From the small amount of pottery evidence recovered, the walled garden and Building 5 appear to have been constructed during the fourth century. The outbuildings to the north of the house evidently remained in use throughout this period. Building 6, an apparently temporary structure connected with the improvements to the villa, was erected at this time adjacent to Building 1; in addition, stone was removed from the long-defunct rooms 4, 5 and 7.

*Phase V: late fourth century onwards*

There was no definite dating evidence recovered relating to the end of occupation at Bancroft. By this time the stoke-hole in room 3 had fallen into disuse, being cut by ditch G. The walled garden had similarly fallen into ruin, the line of its wall being cut by ditch M. A layer of windblown soil overlying the mosaic in Room 1 suggested that the house had remained standing but unoccupied for some time. Cut into this layer were a number of shallow charcoal-filled pits, one containing the skull of an adult female. A series of undated post-holes and stake-holes cut through the mosaics in room 1 and room 2 indicated the presence of a rough timber structure built on the site of Building 1, perhaps after its partial collapse. This may be linked with a scatter of Saxon pottery which covered most of the site, but was not assignable to any definite features.

The shallow burial of a pregnant female and two young children to the south-west of the main house contains no dating evidence but may perhaps belong to this phase.

The final human activity connected with the site was that of robbing for building materials. Much of this may have been carried out by the monks constructing the priory at Bradwell, less than 1km to the south, on the west bank of Loughton Brook.

Following the removal of quantities of stone and tile, the site would have become covered by growths of vegetation and soil washed down the hill. Eventually cultivation began to take place, disturbing principally the outbuildings, but also parts of the villa.

## DETAILED DESCRIPTION

*Phase I: mid to late first century*

Ditch A ran on a line due north-south, and was traced for a length of approximately 10m on either side of ditch E, by which it was cut. It was a sloping-sided flat-bottomed ditch cut about 1m deep into the clay subsoil, and some 2m wide. The fill was mainly of brown-orange clay, with some charcoal and small amounts of limestone rubble and mortar.

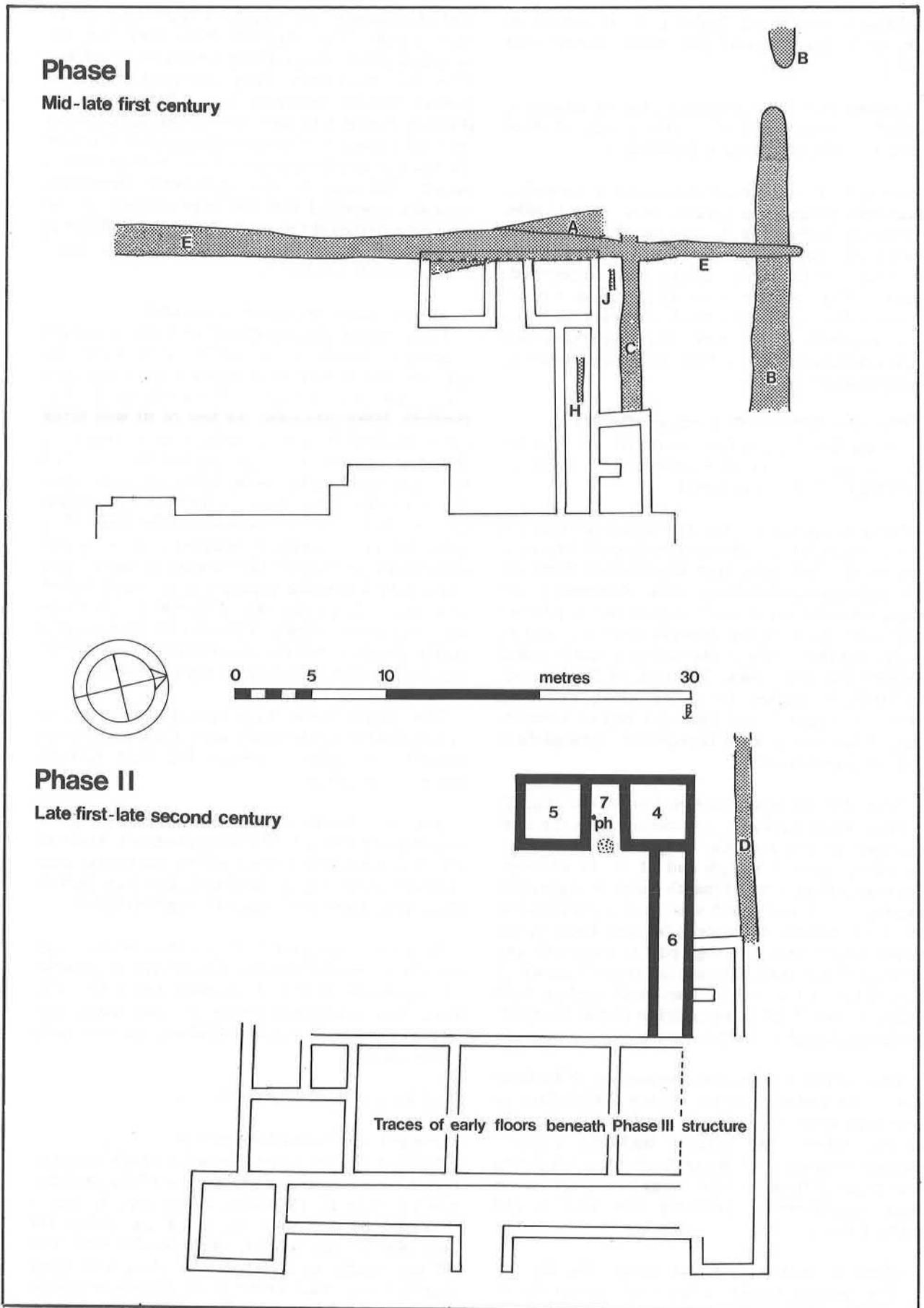


Fig. 21. MK105 Bancroft Villa: Plan of Phases I and II.

The coarse pottery from the ditch comprised a late first-century assemblage, with Belgic forms showing evidence of some Romanization. A sherd of Hadrianic/Antonine samian ware provided a *terminus post quem* for the infilling of the ditch of, at the earliest, 125AD.

Ditch B ran from north-west to south-east, parallel with the north-eastern side of the main villa building and 9.5m away from it. The excavated length was in two sections of 2.3m and 20m respectively, separated by a gap of 2.6m at the north-western end. The ditch averaged some 2m wide, with a maximum depth of 700mm from the surface of the natural. Its upper fill contained equal parts of very dark grey humic soil and large limestone rubble, with a few flecks of charcoal. The lower fill, for most of its length, consisted of light brown and green/yellow clay-textured soil with some limestone rubble and odd specks of slag.

Coarse pottery from the lower fill was broadly datable to the late first or early second century with some earlier (Belgic) elements. The upper fill contained several coins of the first quarter of the fourth century. An iron-bound wooden chest measuring 440 × 340 × 340mm, of which the complete ironwork survived *in situ*, was found in the bottom of the ditch at its south-eastern end, where it was sealed by the rough floor of Building 6, see Phase IV. The chest was lifted whole by a conservation team from the Ancient Monuments Laboratory and taken to London for excavation, conservation and reconstruction (Keepax and Robson, 1978). It was found to be empty, and is now on display in an environment-controlled showcase at Bradwell Abbey Field Centre.

Ditch C was approximately 1m wide and 500mm deep, with a V-section. Its upper fill was a mixture of medium to dark brown soil and limestone rubble and mortar. Beneath this was a layer of light brown clay with a small amount of rubble. This ditch ran parallel with ditch B and the north side of room 6, Building 1, being about 1m away from the latter. It was cut by wall 9, room 3. The small amount of pottery recovered from this feature was consistently of mid to late first-century date.

Ditch E, aligned south-west/north-east, was traced from a point beneath the west side of room 4, for a distance of 45m to the south-west. For most of its length the ditch was about 2m wide and up to 1.15m deep, and its fill included much limestone rubble and mortar. The full extent of this feature to the north-east was not discovered, though it probably made a junction with ditch C. The northern part of ditch E was evidently filled in at the end of this period for the construction of the west wall of rooms 4, 5 and 7.

Ditch H was 1.4m wide and excavated along 1.5m

of its length. Its average depth was 500mm. It was flat-bottomed, and only 400mm wide at its base. Its fill, of orange-brown clay with some small stones, was probably redeposited natural. It ran north-west to south-east along the axis of the main building, but within room 6 of Phase II which it predated. It was sealed by the burnt layers of Phase II. There were no finds and its function, though possibly related to earlier phases of the main building, is unknown.

Ditch J was excavated for a length of 1m near the north-western end of the main building. It was 500mm wide and 330mm deep, U-shaped with a flat bottom. It was discovered again 5m to the south-east, partly cut by ditch C, and traces of its bottom appeared in the natural floor of room 3. Its fill was of light brown clay with some limestone, over a thin silt layer. It produced Belgic sherds and a bronze dolphin brooch of the early to mid first century (fig. 42, no. 10).

#### *Phase II: late first to late second century*

This period marks the construction and occupation of the first masonry building on the site. It is apparent from the excavated evidence that part of this structure lies beneath or was incorporated into the later building. The only part of this phase examined in detail consisted of rooms 4-7, which lay to the west of the winged corridor house. The walls of these rooms were constructed of mortared limestone coursing, with an average width of 550mm. Footings, when excavated, consisted of packed pitched limestone.

Room 4 measured 4.1m square, and was situated in the north-western corner of the building. Of the walls forming this room, walls 1 and 2 had been completely robbed away, whilst of walls 6 and 7 sufficient remained to show that they were of one build. On the inside face of walls 6 and 7 traces survived of a double offset, reducing the wall width from 600mm to 510mm to 450mm over three courses of stonework. The type of floor used in room 4 was not certain; beneath the rubble layers overlying the room was a layer of silty hillwash material, interspersed with areas of burning. This in turn overlaid clay subsoil. There was not sufficient charcoal present to suggest a timber floor, nor were any traces of mortar or similar floors found.

To the south of room 4, separated from it by room 7, was room 5. This measured 3.9 × 4m. As with room 4, most of the walls forming this room had been extensively robbed, with only walls 4 and 5 surviving. The bonded joint between these walls showed them to be contemporary. The inside face of wall 5 had a double offset, spaced over three courses, with wall widths of 600mm, 530mm and 450mm respectively. As with room 4, there was no evidence for the type of flooring used in room 5,

and most of the comments regarding the former are also applicable here.

Between rooms 4 and 5 was a short corridor, room 7. This measured  $2 \times 4.6\text{m}$ , being bounded by walls 6 and 5 to the north and south respectively, and the robbed-out wall 2 at its western end. As with rooms 4 and 5, room 7 was covered by a destruction layer composed of limestone rubble and mortar, which sealed a layer of hillwash containing much burnt material. Beneath this was the natural clay subsoil. Cut into the clay was a post hole, PH1, adjacent to wall 5, nearly 2m from the east end of the room. This feature was 250mm in diameter and 150mm deep, and its fill comprised equal parts of limestone rubble fragments and mortar. It contained no finds, and may therefore be related either to the construction of this phase of building 1 or to an earlier timber structure. At the east end of room 7, sealed beneath the layer of burnt material and hillwash, was found a roughly circular patch of packed limestone rubble fragments, set in the clay subsoil. This appears to have been reinforcement for the entrance to the corridor.

The only other excavated structural evidence that can be assigned to Phase II is that comprising room 6. This room, a corridor measuring  $12.2 \times 1.8\text{m}$ , ran eastwards from the west side of room 4, its north wall being a continuation of wall 1, also the north wall of room 4. The east end of the corridor was formed by wall 18, the west wall of the Phase III house. This junction had been heavily robbed and was not excavated, despite its importance to our understanding of the development of building 1, so the relationship of room 6 to the later house remains unclear. From the little surviving structural evidence, it would seem that the corridor belongs to a different phase of construction to the main house.

Both the north and the south walls of room 6, walls 1 and 8, were of similar construction to those walls in rooms 4, 5 and 7. Neither was offset: wall 8, with a width of 500mm was slightly narrower than wall 1, which measured 600mm and may have supported an open colonnade of either stone or timber construction. Wall 8 was butted to wall 7, and had been extensively robbed at this point.

As with the rooms described above, there was no trace of a floor in room 6. The clay subsoil at the western end of the corridor was covered by a layer of burnt material similar to that in the adjacent room 4.

Beyond rooms 4-7, there is little evidence as yet available for this period. Small-scale removal of rubble from the extensive robbing pits in rooms 1 and 8 revealed a number of early floor levels, principally of clay, that bore no apparent relationship to the adjacent walls and upper floor levels. Some of these were associated with evidence of

burning, and it is tempting to link this with the quantity of burnt material found in rooms 4-7.

The evidence for the end of Phase II is provided by the presence of these extensive areas of burning within the structure, coupled with fire discoloration of many of the walls, especially in rooms 4, 5 and 7, which suggests that the earliest stone structure on the site was destroyed by fire. Dating evidence for this event was provided by quantities of burnt samian of c.170AD.

Little evidence for features outside this stone structure during this period was recovered. Of the Phase I features, ditches A and E must have been filled prior to the construction of rooms 4, 5 and 7. Similarly, ditch H was covered by room 6. Ditch C was certainly filled by this time, as it contained no finds later than the first century AD, and ditch B, though containing a few sherds of the early second century, was probably silted up by that time.

Ditch D, parallel to and immediately north of ditch C, was traced for a distance of 18m during excavation. It measured 2m wide and 700mm deep, with sloping sides and a flat bottom. Much of its fill consisted of limestone rubble and mortar, principally in the upper layers. Its relationship with ditch E was not determined. Pottery from this feature has been dated within the period from late first to mid second century. Much of its rubble fill probably came from the demolition of Rooms 4-7 following the late second century fire, as the north walls of rooms 3, 13 and 14 were subsequently built over the line of it.

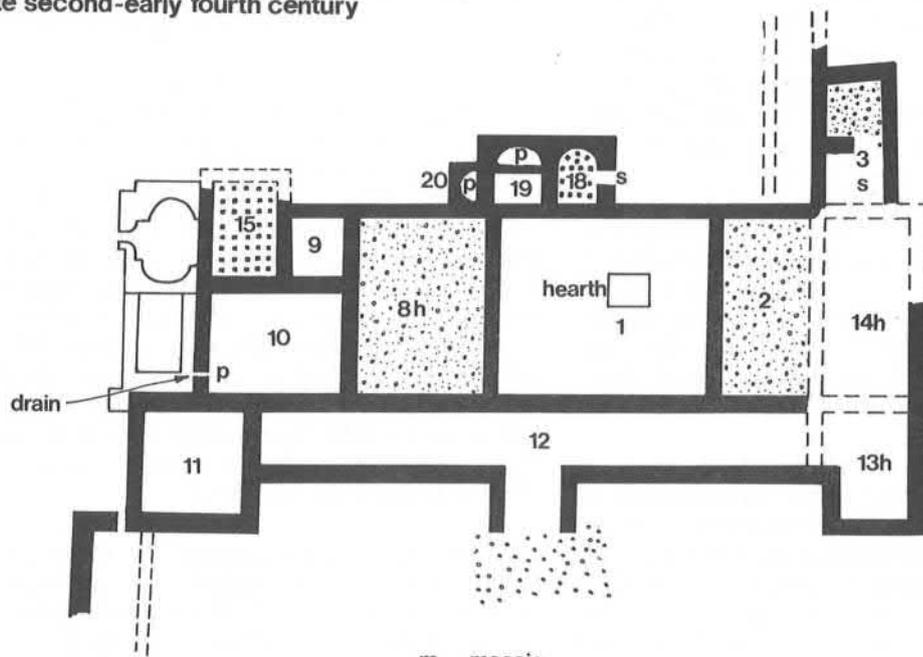
#### *Phase III: late second to early fourth century*

Following the conflagration described above, the remains of the early stone structure were almost completely demolished, except for parts of room 6 (see below). A substantial stone house was then erected on the site. This consisted of rooms 1-3, 8, 9, 11-14 and 18-20, as well as a second bath suite beneath the later room 10, and measured about  $38 \times 15\text{m}$ . As has been stated above, excavation on this structure was limited to obtaining the overall plan, so most of the walls, which had all suffered greatly from stone robbing, were not examined in detail. There may therefore be some subdivision of this phase with respect to the addition or partitioning of rooms, evidence for which could only be obtained from constructional features such as wall junctions.

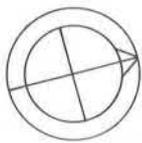
Room 1, the largest room in the Phase III house, measured  $8.2 \times 10\text{m}$ . It was formed by walls 14, 15, 16 and 18, all of which were robbed below the later floor level, except for short lengths of 16 and 18. Both were much more massive than those encountered in the earlier house; wall 16 was

### Phase III

Late second-early fourth century



m mosaic  
p plunge bath  
h hypocaust



### Phase IV

Mid-late fourth century

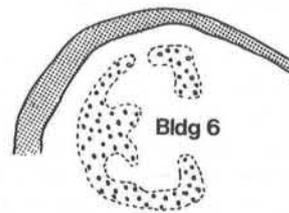
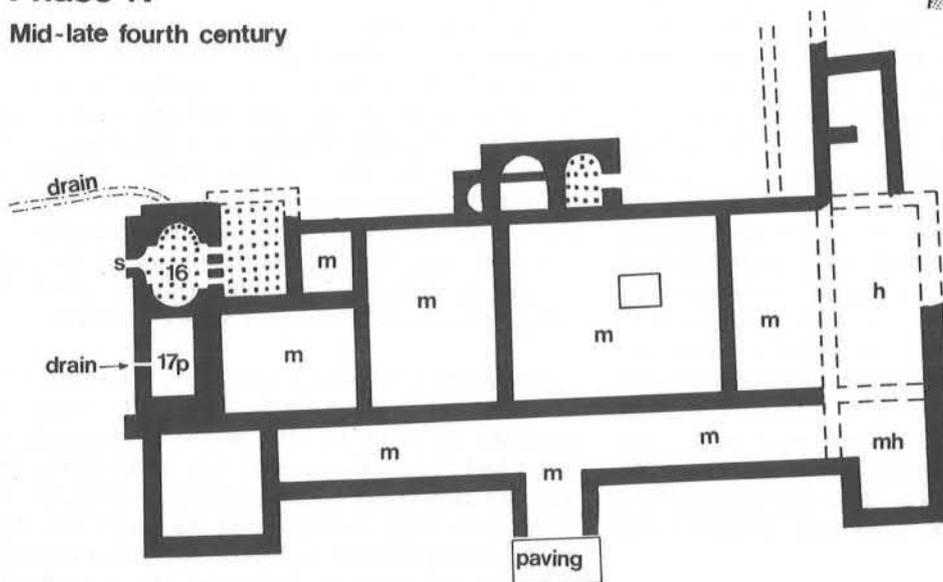


Fig. 22. MK105 Bancroft Villa: Plan of Phases III and IV.

600mm wide, and wall 18 measured 800mm. Both walls incorporated very large pieces of masonry, and could be seen as the basis of a very substantial structure. No trace of the Phase III floor survived within room 1, having been presumably removed when the fourth-century mosaic was laid. However, it is reasonable to suppose that the original floor of a room such as this would have been of *opus signinum* or tesserae. No evidence for a hypocaust system was found beneath this room, heating being supplied by a brazier on a large limestone hearth slab, measuring 2 × 1.5m, set just north of the centre of the room. Although there is no positive dating evidence, it may be that this slab was originally laid when the house was built, as the later mosaic appeared to be fitted around the slab.

Room 2, situated to the north of room 1, measured 8 × 4m. The latter measurement is, however, approximate; the north wall of the room was not located, so the width of the room has been estimated from the fourth-century mosaic floor inserted into it. The other three sides of the room were bounded by walls 14, 15 and 18, all of which were marked by robber trenches. In a section along the north side of room 2, the original Phase III mortar floor was visible c.150mm below the later mosaic. No other internal features remained from this period, and there was no evidence of a hypocaust beneath the floor.

Room 3, which measured 3 × 6m, was attached to the east side of the north-east corner of the Phase II house. It was bounded by walls 9 and 10. For its construction an 8.5m length of wall 1 had been retained to serve as the south wall of room 3. Walls 9 and 10 were of particular interest owing to their methods of construction. The point at which these walls met was conventionally constructed with bonded horizontal courses; however, the bulk of both walls consisted of a mixture of horizontal and pitched coursing. On wall 9 the two courses of pitching, in alternate directions, were separated by one horizontal course; on wall 10, by two horizontal courses. The reason for this type of construction is not yet clear, though it may have been intended to give both walls a degree of flexibility, given that they were constructed over the filled-in ditch D. The floor of room 3, at a lower level than that in room 2, covered 3 × 3m and was laid with mortar, of which two very worn patches remained. From the surface of one of these areas came two coins, dating from 335-48 (coin no. 114) and 341-48 (coin no. 128).

The southern part of room 3 consisted of the stokehole structure. This was 1.1m wide, and was traced for a length of 2.3m in an easterly direction leading to a hypocaust system beneath room 14, and perhaps extending to room 13. The walls of the stokehole consisted of limestone, partly lined with tile, probably *pilae*. From the heavily burnt con-

dition of the walls, and the amount of burnt material in the stokehole, this feature would seem to have been heavily used over a long period.

Room 8, adjacent to the south side of room 1, measured 8.4 × 6m, and was bounded by walls 14, 16, 17 and 18. All these walls appeared only as robbing trenches, except for wall 16 which has been mentioned above (room 1). Still *in situ* in this wall, in the north-west corner of room 8, was a box-flue tile, presumably fed from a channelled hypocaust system beneath the floor. Parts of this system were found in a trial area cut through the robbed area covering the eastern half of the room. From its depth below the fourth century mosaic, about 1m, it was probably associated with an earlier floor, and traces of a mortar layer, either a floor or bedding for a pavement, could be seen in section about 300mm beneath the later floor.

Room 9, situated adjacent to the south-west corner of room 8, measured 2.5 × 2.9m and was bounded by walls 17-20, all of which had suffered heavily from stone robbing. Nothing is known of any floor surfaces in this room beyond the surviving fourth-century mosaic. From the size of this room and its relationship to the two successive bath suites to the south, room 9 was probably a changing room attached to the baths. A similar room was excavated by the writer at Cirencester (McWhirr, 1978, 204) and others could be suggested at Kings Weston, Glos. (Boon, 1950), and Cox Green, Berks. (Bennett, 1962, 62-91).

As with room 9, little is known of the late second century bath suite, though it appears to have occupied the southern half of room 10 and the area of room 15. In the former area, beneath the floor of the later room in its south-eastern corner, was found the filled-in remains of a rectangular cold plunge bath, its *opus signinum* lining still surviving on wall 21. A tile drain, constructed with imbrices laid to form a cylinder, led off southwards through this wall. It is possible that the floor of the frigidarium extended beneath the rest of room 10, though this has yet to be proved by excavation.

Room 15, to the south of room 9, measured 3.1m in width and about 4.3m in length. The room was bounded by walls 19, 20, 21 and 23, though the latter had been almost completely robbed away and was not accurately located during excavation. No floor levels were visible within the room, the floor having collapsed into a pillared hypocaust beneath. This was connected to the fourth-century bath suite to the south (room 16) by three channels, each about 30cm wide, passing through wall 21, and therefore formed part of that system, though as wall 21 was the original south wall of the winged corridor house, room 15 was probably also part of the earlier bath suite, perhaps the caldarium. This hypothesis is reinforced by the fact that the *pila*

tiles in room 15 were exclusively fabric 2, a second-century type (see tile report below).

At the south-eastern corner of the winged corridor house was room 11. This measured  $5 \times 5$  m and was bounded by walls 14, 22, 24 and 29. Enough survived of walls 14, 22 and 29 to show that they were contemporary, though wall 24 was much more fragmentary and could not be related to the others. Wall 22 was constructed of a mixture of pitched and horizontal limestone coursing, and may represent only the foundations of that structure. The interior of the room, which was only partly excavated, contained much building debris and burnt material. No trace of a floor level was found.

The corridor, room 12, measured  $2.4 \times 26$  m, and ran along the eastern side of the house from room 11 northwards to room 13. In the centre of its eastern side was a porch, 3 m square. Walls 14, 25 and 26 formed the sides of the corridor, and walls 27 and 28 the porch. Room 12 evidently provided access to all the rooms adjoining it, apart from any internal connections between them. The precise dating of the corridor is uncertain; as with other parts of the house, little structural evidence survived apart from short sections of walls 27 and 28 and most of wall 25. It would seem logical, however, for a house of this size to have had a corridor from the outset. The nature of any early internal floor is as yet unknown, as much of room 12 was covered by later mosaics, though *opus signinum* was most probably used. To the north and east of the porch, areas of fine pebble cobbling indicate the type of external surface used initially around the entrance to the house and probably as a metallised surface leading up to it. Further traces of this surface were noted around room 13.

Rooms 13 and 14 were situated at the north end of the house, abutting room 2 and the end of room 12. Very little evidence remained, as this area of the house had been almost totally destroyed by robbing; thus the area of these rooms, which measured about  $14 \times 5$  m, was defined by the known limits of rooms 2, 3 and 12 to the south and west, and walls 11-13 to the north and east. Few internal features survived in these rooms. In room 14, an area of *opus signinum* covering about 3 m square survived of the earliest floor level, and from its straight eastern edge it was possible to see that the division between rooms 13 and 14 was provided by a northward continuation of wall 14. In room 13 were found traces of a channelled hypocaust, though it was not possible to date this feature.

The small bath suite to the west of the house, consisting of rooms 18-20, must also be assigned to Phase III, though its relationship to the southern bath suite is as yet unclear. However, as with room 15, the tile used in these three rooms is principally

of fabric 2, suggesting a late second to early third century construction date.

Room 18, the caldarium, measured  $2 \times 2.8$  m, with an apsidal west end 2 m in diameter. It was bounded by walls 37, 38 and 39. The floor of this room had been completely destroyed by robbing, but beneath it survived several of the supporting *pilae*. Heat was supplied from a stoking area north of the suite, via a stokehole 800 mm in width passing through wall 37. The apsidal end of this room was lined with box-flue tiles, though these started at the floor level and therefore did not carry hot air directly from the hypocaust, acting rather as a form of cavity wall insulation. The arrangement of the *pilae*, and the floor-supporting ledge in the apse, point to an all-over floor with no hot plunge bath.

To the south of room 18 was room 19, which measured  $2.5 \times 2.8$  m, and was bounded by walls 38, 39 and 40. It also included room 20, a small semi-circular plunge bath 1.3 m in diameter, attached to wall 40, on its southern side. This room apparently served as both tepidarium and frigidarium, being open to room 18 and therefore being heated from it, as well as having the bath described above and a second semi-circular plunge bath 2.5 m in diameter at the west end of room 19. Both these plunge baths had floors of fabric 2 tile, with walls of *opus signinum* meeting the floor at a quarter-round mortar moulding. The floor of room 19, measuring  $2.5 \times 1.8$  m, was constructed of *opus signinum* on a rubble base.

Owing to the lack of secure dating evidence recovered from this bath suite, it is difficult to say how long it continued in use, and whether it was superseded by the enlargement of the southern bath suite in the fourth century. From its size it seems reasonable to suggest that it was intended solely for use by the owner of the house, being quick and easy to prepare and heat.

Adjacent to the south-east corner of room 11 were found two walls, numbers 31 and 32, which were not associated with a specific room or external structure. Wall 31, only 50 cm in width, was butted onto wall 29 and was traced from there for a distance of 6 m in an easterly direction. Wall 32 began in line with the south end of wall 29, separated from it by a gap of 60 cm, and ran south for 2 m before turning eastwards. It was followed in this direction for 4 m, at which point it was cut by the wall of building 5. No dates were obtained for either of these structures, though wall 32 at least appears to belong in Phase III.

#### *Phase III, the outbuildings*

In addition to the winged corridor house, the three outbuildings (nos. 2-4, fig. 20) were also constructed during Phase III, perhaps replacing earlier timber outbuildings associated with the

Phase II house. The large amount of burnt limestone used in their walls was probably recovered from the Phase II house after demolition. These three structures were somewhat less well constructed than the house, consisting of horizontal coursed dry limestone walling set on pitched or packed rubble footings. The small amounts of rubble and tile fragments associated with them suggests that the stone walls served as footings for timber-framed structures with roofs of thatch or shingles. None of the structures was fully excavated internally, so it is not possible at present to assign to them any definite function; however, they produced little occupation evidence, and therefore probably served as agricultural outbuildings.

#### Building 2

Building 2, situated some 30m north of Building 1, was the largest of the three structures, measuring 17 × 7m internally, and aligned roughly east-west. Of the walls, only the south and east survived to any extent, the building having suffered much from robbing, and ridge and furrow disturbance. The foundations of the south wall proved to be 700mm in depth below original ground level, and were constructed of packed limestone rubble; a similar depth was also recorded on the east wall. The wall was also reinforced by four buttresses, the foundations of which were noted at approximately 4m centres along its south face. Between the two central buttresses an area of rubble may indicate an entrance. The average width of the walls was 800mm.

The interior of the building consisted of two separate areas. The first, on the south side, about 2m wide and running the full length of the building, consisted of fragmentary limestone paving. The rest of the floor area was devoid of rubble or other features. Because of this division, the building has been interpreted as housing for livestock. Pottery from within was mainly of late third- to early fourth-century date.

#### Building 3

This structure, 25m north of Building 2, measured 10 × 7m overall, aligned north-south. Internally it was divided by stone walls into three unequal bays measuring 2m, 3m and 2.6m in width from south to north, and all 5.4m in length. The southern bay contained one post hole set against the partition wall 2m from its west end. The central bay also contained one post hole, 1m from the eastern end of the wall, while the north bay had been almost removed by a medieval plough furrow. The division of the building in this way has been interpreted as the base for a raised floor, such as would be used for a granary.

#### Building 4

This building, situated almost midway between Buildings 2 and 3, was a circular structure with an

internal diameter of 7m, set on pitched limestone footings. Four post holes were noted inside the building, one near the centre, the other three ranged along the inside face of the wall. A small pit was also noted in the north-west quadrant, but not excavated. Outside, to the east of Building 4 and extending southwards towards Buildings 1 and 2, was a rough limestone surface, which presumably represents a metalled yard or access roadway.

#### *Phase IV: mid to late fourth century*

The beginning of this phase marks an improvement in the fortunes of the owners of Bancroft Villa, and is marked principally by a major refurbishment of the house and the construction of the walled garden and Building 5. An artist's reconstruction of the villa at this time is given in fig. 23.

The major changes to the house are seen in the appearance of the mosaics, which have all been dated by Dr D. J. Smith to c.350AD, with the exception of that in room 9, which has been dated stylistically to c.320AD. As the mosaics are fully reported later in this volume, only brief descriptions are given below.

Room 1: A white background with a pattern of intersecting circles and edging in red, arranged irregularly around the hearth slab inserted in Phase III.

Room 2: A central panel, now destroyed, edged with a three-strand guilloche in red, white and blue. This was set in a red background with white edging. Across the east end of the room was a Greek key pattern in white, and this and a 'step' in the white border suggest a doorway in the east end of wall 15, leading to room 1.

Room 8: A series of octagonal panels, probably fifteen in all, containing various designs, interspersed with red/white and blue/white squares, all contained within a net of two-strand guilloche. This was surrounded by bands of blue waves on white, a three-strand guilloche, within a border of red-on-white Greek key pattern with central chequered panels. A very high quality mosaic.

Room 9: Another high quality mosaic, consisting of a geometric pattern in red, white, grey, blue and orange tesserae, enclosed within a red/blue two-strand guilloche band, within a blue border on coarse white edging.

Room 10: All that remains is a white central background with red edging.

Room 12: The corridor contained three distinct mosaics. The southern one consisted of a central panel of three intersecting circles, with rectangles of running pelta to the north and south, the whole

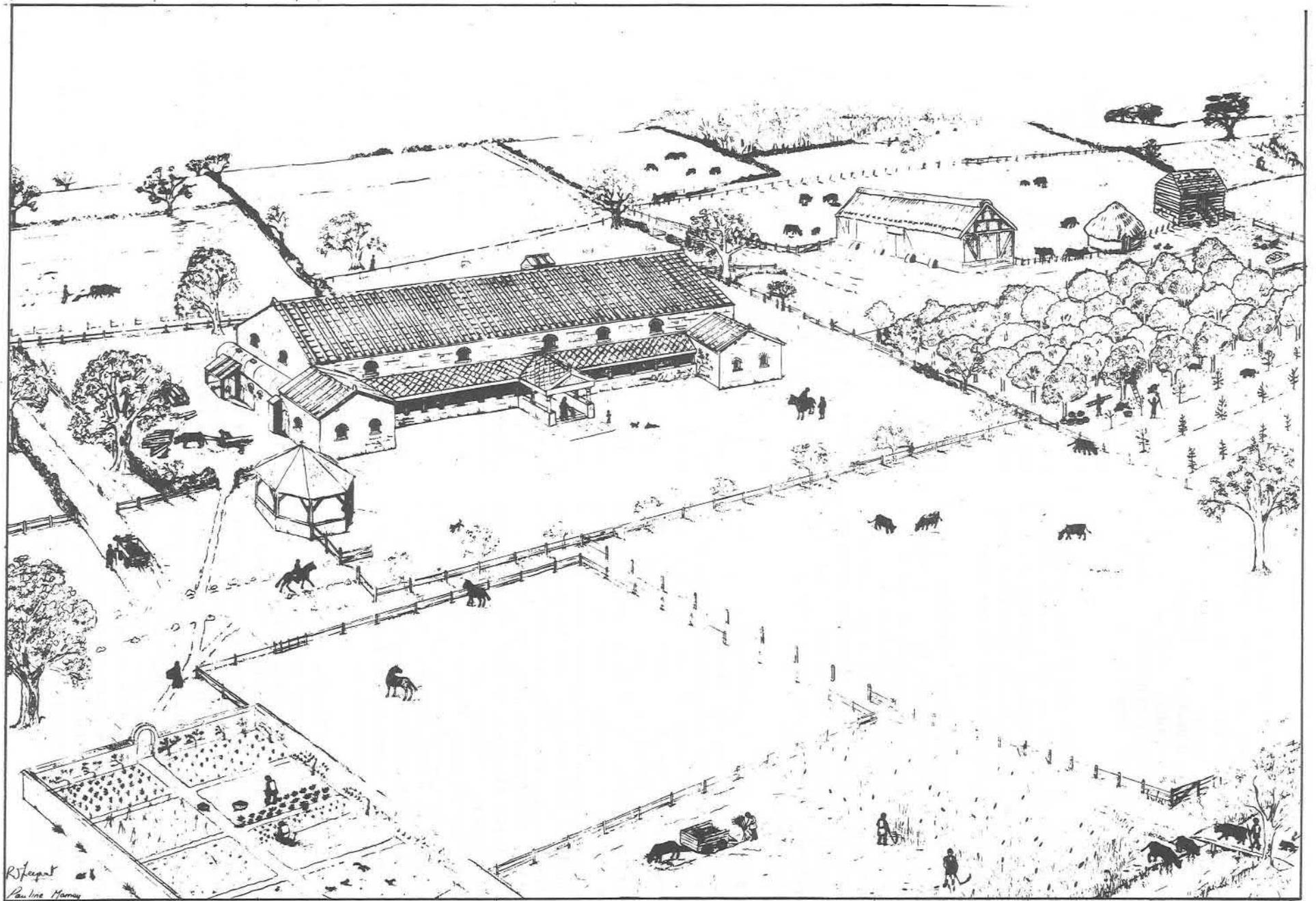


Fig. 23. MK105 Bancroft Villa: Reconstruction of the Phase IV Villa.

executed in red and white. The northern panel, also in red and white, consisted of a rectangle of Greek key pattern. The central panel, inside the porch, consisted of four squares each containing blue and red triangles, set in a background of red Greek key pattern with a red border. The porch was laid in red, with a white border. Outside the porch, an area 4 × 2m was laid with large limestone slabs during this period.

Room 13: A large number of fine tesserae were recovered from this room, suggesting the presence of a mosaic though none of this survived in a more complete state. The hypocaust described in Phase III was probably associated with this pavement.

The other major alteration to Building 1 during this period was the restructuring of the southern bath suite by the addition of rooms 16 and 17, and the filling in of the plunge bath in room 10. This room now measured 6.2 × 4.8m, and contained a mosaic (see above) over a channelled hypocaust, heated from room 15, which now served as the tepidarium, receiving heat from room 16 via the three channels in wall 21.

Room 16, constructed on the south side of room 15, measured 3.2 × 4.3m with apses of 2.5 × 2.8m diameter at the north and south ends respectively. It was bounded by walls 33 and 34, which were constructed of limestone facing with a massive concrete core, butted against wall 21. None of the floor of this room survived, having been destroyed by robbing and collapse into the chambered hypocaust beneath. This hypocaust was constructed similarly to that found in room 15, although the *pilae* tiles used were mainly ones with shelly fabric, Fabric 1, which has been dated to the third century onwards (see tile report, p. 118). The *pilae* were placed in rows at 650mm centres, showing the size of sub-floor tile used. Heat was supplied from a stoke hole 500mm wide in the south wall. From the arrangement of *pilae*, neither of the apses held a hot plunge bath, the room having an all-over floor, and presumably a domed or barrel-vaulted roof. It will have served as the *caldarium*.

To the east of room 16, adjacent to room 10, was room 17, also constructed at this period. This consisted of a large cold plunge bath, 2.4 × 3.8m, bounded by walls 33, 30, 35 and 36. These last three were of one build, butted onto the adjacent walls, nos. 14, 21 and 33. A substantial buttress 1 × 1m was also constructed at the south-east corner of room 17, to reinforce its junction with the south-west corner of room 11. Walls 35 and 36 were exceptionally thick, measuring 900mm in width. The floor of the plunge bath was constructed of tile, impressions of which could be seen on the *opus signinum* bedding, while the walls were lined with *opus signinum*, a quarter-round mortar moulding sealing the wall/floor junction. A lead drainpipe

60mm in diameter ran through wall 17, on the same level as the bath floor. Access to this bath must have been provided by steps down through walls 21/31 from room 10, which would have served as the *frigidarium*.

One other feature found adjacent to the bath suite was a stone-lined drain with an internal section some 200mm square. This ran from a point immediately to the west of room 16, in a general southerly direction, being traced for a distance of 8m. The drain appears to be cut by wall 34, and may therefore belong either to the western bath or to the earlier phase of the southern complex.

The large size of this bath suite, which at this phase occupied 17% of the total floor area of the winged corridor building, poses a number of questions regarding the interpretation of this structure. Excluding the five rooms forming the baths, and the corridor, only six rooms remain to fulfil all other domestic functions. On this basis it seems reasonable to suggest that the house had an upper storey. This hypothesis is further supported by the surviving structural evidence, as most of the walls, being about 900mm thick and constructed of mortared limestone, would support an upper storey. The only problem arising from this theory is the location of the staircase, which has not yet been proved by excavation.

#### Building 5

This structure was situated 5m south-east of room 11, apparently cutting the east end of wall 32. The building was octagonal in shape, each side being 3m in length, with maximum internal widths of 6.5m. The stone foundations were 600mm in width, constructed of a mixture of pitched and coursed limestone, laid without mortar. About two-thirds of the building was available for excavation, the southern part being covered by a modern cycleway and footpath.

Excavation of the interior showed the floor to have been of beaten clay, and the nature of the walls and the absence of quantities of rubble indicated that the building was timber framed, with a thatched roof, on stone footing walls. The small amount of pottery recovered from inside the building was almost entirely of fourth-century date.

The function of Building 5 is as yet unclear. A similar example has been noted at a villa at Stroud, Hants (Williams, 1909, 33-52), and the possible alternative functions are a family shrine, a dovecote, or a summerhouse.

#### The Walled Garden

This feature was situated some 40m south-east of Building 1, adjacent to the stream, and consisted of an area some 20 × 43m, on a south-east to north-west alignment, surrounded by stone-footed walls

on three sides; the stream, now a disused channel cut off from the present course, forming the fourth side.

The footings of the garden walls were constructed of pitched limestone, measuring 1m wide, which probably supported cob walls. Limited excavation in the enclosed area failed to show any paths or formal garden arrangements. A section cut through the wall footings on the west side produced fourth-century pottery.

#### Building 6

This structure lay immediately to the north of Building 1, over part of the filled-in ditch B. It consisted of a length of ditch, ditch I, partly enclosing an area some 10m in diameter, the ditch being 500mm deep and a maximum width of 1.5m. The ditch fill consisted primarily of limestone rubble and mortar, with dark grey earth and some charcoal. Pottery from the ditch dated from the late third to the early fourth century, though there was much earlier residual material, doubtless from ditch B.

In the centre of the enclosed area were the remains of a circular floor with a diameter of about 8m. This was composed of packed lightly-baked clay, small pebbles, gravel, mortar, and tile chips. A quantity of tesserae were also found incorporated into and lying on the floor surface. Several coins were found on the floor, covering a date range from 310 to 402AD, though mostly falling within the period 320-337AD (coin nos. 24, 26, 30-32, 34-36, 40, 42, 45, 60, 83, 85, 149, 168).

The temporary nature of this structure, coupled with the dating evidence and the presence of tesserae and other building materials in its floor, suggest it to have been a workshop set up by the mosaic craftsmen responsible for the Phase IV mosaics in Building 1. Such a workshop would doubtless have been necessary, given the scale of the operation and the possibility that the house was still occupied while the work was in progress.

#### *Phase V: late fourth century onwards*

This period marks the decline and end of occupation on the site. The date at which occupation of Building 1 finished is not known, though following the departure of its owners and the presumed running-down or curtailment of farming activities on its associated estate, the house provided temporary accommodation for itinerants, first in its rooms, and later as a partial ruin. Evidence from individual rooms is detailed below.

Room 1: A layer of light humic soil about 1cm thick beneath the rubble collapse and overlying the mosaics suggests that the house may have been left open following the departure of its owners. Cut down from this layer into the mosaic pavement

was a series of shallow charcoal-filled pits. In the top of one of these had been deposited an adult female human skull, its lower jaw missing, surrounded by a scatter of other human bones, including some from an adult male, lying directly on top of the thin soil layer. Injuries found on the skull suggested the possibility of a violent death (Green, M. J., 1975a, 4). A number of post holes were also found, cut into the mosaic and underlying mortar bedding, around and to the north of the central hearth slab, suggesting the use of the building when partly derelict, to support a rough timber-framed shelter.

Room 2: The central mosaic panel was destroyed by being used as a hearth, the burning from this feature discolouring the surrounding tesserae and the surviving mortar bedding for the panel. A row of stake holes, eight in all, aligned east-west in the north-west corner of the room, again suggest alternative use of the site in a semi-derelict state.

Room 3: This room, after falling into disuse, was cut by ditch G (not on plan), which passed through walls 1 and 10 in a north-south alignment. This feature was 1.1m wide and 180mm deep, with a flat bottom and sloping sides, and contained fourth-century pottery; it was traced for a length of 8m.

Ditch F (not on plan), parallel with and to the west of ditch E, also belongs to this period. It was traced for a distance of 4.5m and measured 1.2m wide and 800mm deep.

By the fifth century the garden area appears to have fallen into disuse. Ditch M (not on plan) was found to cut the wall of the garden and contained various fourth-century sherds, including a Romano-Saxon sherd dated to the late fourth century onwards. Presumably Buildings 2-5 also fell into decay during this period, though there is no definite dating evidence for this.

A general scatter of Saxon material found all over the site points to an intermittent human presence at Bancroft from the fifth century onwards, but no features can be positively attributed to this final period.

## DISCUSSION

Before attempting to examine Bancroft villa in either a local or a national context, it is worth stressing once again that our picture of the site is as yet far from complete, especially with reference to the development of the house itself. Similarly, beyond the main building, large-scale excavation has produced mainly negative evidence, emphasising the limits of possible farmyard areas; a large area fronting the house, for example, needs to be examined. What follows is not intended as a

definitive interpretation, but as an interim statement based on the available information.

### *Chronology*

Generally speaking, the development of the villa at Bancroft is similar to that of many other small villa sites in south-east Britain. The earliest signs of occupation, the ditches to the north and west of the Building 1, as well as the coin of Tasciovanus, point to a presence on the site at the time of the Roman conquest. The form taken by this presence is as yet unknown, though circular Belgic timber huts, similar to those found at Park Street (O'Neil, 1945, 21-100), Lockleys (Ward-Perkins, 1938, 339-76), or Shakenoak B, (Brodribb *et al.*, 1968-73), may await discovery beneath Building 1.

The arrangement suggested by ditches A-E was that of a native farmstead within a ditched enclosure on the site of the later house. This was replaced in the late first to early second century by a larger rectilinear building, Roman in character, and probably constructed of timber on stone footings. Again, much of this apparently lies beneath the later winged corridor house and only its western extension, rooms 4-7, has been examined. The plan of this early house can be inferred from the later structure, and by analogy with similar sites, to have consisted of a simple rectangular block of three or four rooms, nos. 1, 2, 8 and 14, measuring 27 × 10m overall. This is similar in size, 26 × 8m, and plan to the earliest phase of the villa at Cox Green (Bennett, 1962, 62-91), though about half a century earlier, and is paralleled by many other lowland villas. The neighbouring site at Wymbush also commenced with a similar, though smaller, 'cottage' house. The unusual feature at Bancroft is the arrangement of rooms 4-7, which suggests a simple courtyard arrangement. The separation of rooms 4, 7 and 5 from the rest of the house by a corridor may have been necessitated by the use of room 4 as a kitchen, a suggestion based on the large amount of shelly cooking and storage vessel sherds found therein (74%). The cause of the fire which destroyed this wing in the late second century may also be found here, rather than in any external political events. Certainly, there seems to be no abandonment of the site following the fire, as one might expect from the latter explanation; rather an immediate rebuilding of the structure in virtually its final form, with the probable addition of a bath suite and hypocausts. The remains of rooms 4, 5 and 7 apparently served as a source of material for the outbuildings, which were constructed at the same time, since the footings of these buildings contained burnt stone.

In this form Bancroft continued in occupation throughout the third century, apparently unaffected by political and economic uncertainty. Apart from two Belgic coins, the earliest found on the site so far is an *antoninianus* of Philip II (244-49), and the

series continues to Arcadius (395-408), the only gap being between c.280-320. It is possible that this may indicate a period of abandonment prior to the extensive reconstruction undertaken in the fourth century—a similar gap occurs in the coin sequence at Wymbush, though there a gap also occurs in the pottery evidence. An alternative view, one towards which the writer is inclined, given the available evidence, is that during the late third century the establishment at Bancroft was suffering from the effects of the economic recession affecting the Empire at that time, but not so badly as to cause financial insolvency and abandonment.

The first quarter of the fourth century marked a resurgence in the fortunes of Bancroft villa, probably in line with the economic measures taken by Diocletian and Constantine the Great. This is the period from which most of our archaeological evidence comes at present, so it can be commented on in greater detail than the earlier phases. The resurgence of the villa is marked principally by the appearance of the mosaics, the enlargement of the southern bath suite, and the construction of Building 5 and the walled garden. That extensive refurbishment of the house took place is further evidenced by Building 6, which evidently served as a mosaicists' and builders' workshop. From the coin evidence and the stylistic dating offered for the mosaics in rooms 8, 9, and the porch, it seems that this phase began in 320-330. The remaining mosaics in rooms 1, 2 and the corridor have been dated to post-350, implying either a further phase of refurbishment at that time, or a continuing period of prosperity through the mid fourth century to perhaps the 380s.

Establishing the point at which occupation of the site at Bancroft ceased has been a difficult task, as on many other villa sites, because of the lack of securely datable material beyond the end of the fourth century. The coin sequence at Bancroft, as mentioned above, ceases in the reign of Arcadius (395-408). Evidence of post holes in room 1 and stake holes and a hearth on the room 2 mosaic suggest some later use of the building in a partially collapsed state. Unlike other villas that have been shown to survive into the fifth century, such as Great Casterton (Corder, 1961) and Shakenoak (Brodribb *et al.*, 1968), Bancroft does not appear to have suffered any final conflagration, the buildings instead decaying slowly. Perhaps the final recognition of the site's existence by the local population can be seen in the human skeletal remains found overlying the mosaic in room 1, though it has not been possible to establish the circumstances or date of their deposition.

### *Structures*

At present little can be said of the house at Bancroft with regard to its earliest structural phases, though one can speculate that its develop-

ment was similar to other houses of the same size and final plan, such as Cox Green, Mansfield Woodhouse (Oswald, 1949), or Hambledon (Cocks, 1921, 141-98), where the final plan, with fronting corridor and wings, developed from a 'cottage' house with a simple rectangular block of interconnected rooms. If this is the case, the one notable oddity at Bancroft is the presence of rooms 4-7, forming virtually a separate building connected to the house by a corridor, a feature not, to my knowledge, noted elsewhere in this country in villas of the Antonine period. One possible explanation for this is that the Phase II villa was aligned east-west, with rooms 4 and 5 forming its western end, and corridor 6 on its north side. Such a building would be similar in size, general plan and outlook to the Wymbush villa, and despite the change in alignment would still retain a pleasant view down the Loughton Brook valley. It remains for further excavation to test this hypothesis, particularly in the area east of room 5, but it seems to answer many of the queries regarding the Phase II structure.

After the late Antonine fire, the house at Bancroft was reconstructed in stone. How much of the total plan available to us formed the initial phase of this reconstruction is uncertain, as the necessary structural evidence was not obtained, though the wing rooms and corridor can perhaps be seen as later additions, in line with similar villas. The Phase III house was probably better appointed than its predecessor, with a bath suite at the southern end and two heated rooms (fig. 20). With its large central room, room 1, it can probably be identified as a 'hall' villa, of the type recognised by J. T. Smith (1978, 349-57). This interpretation of the building has interesting implications for our understanding of the management and social structure of the villa estate. The hall, with its large, almost central hearth, would have served as the social and administrative centre of the estate. This suggestion is, I think, reinforced by the difference in style, and presumably price, of the different mosaics and their locations; that in room 1 is a simple, robust design contrasting with those in rooms 8 and 9, which were probably private apartments. If we accept that room 1 was the major 'public' room in the house, it seems possible that the western bath suite was also accessible to other than members of the owner's family, unlike the more elaborate baths at the south end of Building 1.

One other feature of interest in room 1 is the hearth. Free-standing hearths are not a common feature in Roman buildings anywhere in Europe, being more reminiscent of the medieval manorial hall. The only examples I have so far been able to locate are at Stroud, Hants. (Williams, 1909, 33-52) and Kingsweston, Glos. (Boon, 1950, 5-58), the latter also identified as a hall villa by J. T. Smith, and possibly at Mayen, near Coblenz, although the plan shown by Percival (1976, 36-38), does not

make this clear. The presence of this hearth has interesting structural implications for the Bancroft house, principally with regard to the type of flue, if any, used, and its relationship to a possible upper storey.

Building 1 in its final phase appears, at a superficial level, typical of that class of medium-sized winged corridor buildings found frequently in lowland Roman Britain. Taking a closer view, however, one feature stands out: the mosaics. In its first, most opulent phase, all the living rooms, with the exception of rooms 11 and 14, as well as rooms 9 and 10 which probably formed part of the southern bath suite, are floored with tessellated or mosaic pavements. Of these, two are rated by D. S. Neal as Grade 1—a category only applied by him to four other mosaics (Neal, 1981, 34-35). D. J. Smith, in his report on the Bancroft mosaics below, also stresses their number and quality, and its implications for the 'prosperity, or at least investment in property, in a villa of this size.' Only further excavation will tell us if this is borne out by other structures and features in the farm complex. It is possible that this sudden investment in the estate may be the result of a change of ownership.

Buildings, 2, 3 and 4 to the north of the house are at present the only structures located on the site that can be assigned an agricultural function. On the evidence presently available, all three date from c.200, including in their structures fragments of burnt stone apparently obtained from the burnt Phase II house. The amount of stone present, and the lack of tile in the vicinity of these structures suggests them to have been timber-framed, with low stone footing walls and roofs of thatch or shingles.

The main problem with these three buildings at present is in defining their functions, as detailed evidence is lacking—Building 2, from the partly cobbled internal floor, has been tentatively identified as a cattle byre, with an entrance placed centrally on the south side and stalls along the north wall. The presence of cattle at Bancroft is attested in the bone assemblage as a major element in the domesticated animals present: beyond this, little can be said of Building 2 at present.

Building 3, the circular structure, presents even more of an enigma. It appears to be a more sophisticated form of the traditional circular Belgic hut in that it has a pitched limestone footing, though it appears here with Romanised structures, in a much later context. A similar roughly contemporary building has been found at Stantonbury, with the addition of a central hearth, though neither has produced evidence of function. Circular buildings of this date with stone footings seem to be a local feature: apart from the two examples in Milton Keynes, similar structures have been noted in Northamptonshire at Overstone (Williams, 1976,

100-34), Thorplands (Hunter and Mynard, 1977, 97-154) and Collyweston (Knocker, 1965, 52-72), as well as a number of other sites. On the evidence of the group as a whole, one can only conclude that this type of structure was not generally intended for any specific function.

The final member of this group, Building 4, has been perhaps the easiest to identify, owing to its internal arrangement of parallel dividing walls, as a granary. Similar examples have been noted by Morris (1979) at Eccles, Ditchley and Shakenoak. It is interesting to note that, despite the presence of this type of structure, Bancroft seems to lack evidence of the corn-drying kilns so common on other villa sites, or features such as threshing floors. Here again, further excavation may provide more clues.

Building 5, immediately to the south of building 1, was identified by the excavator as a shrine, though various other suggestions have been made as to its function. Once again, the archaeological evidence has not been very forthcoming in terms of internal features or even dating material, though only about 60% of the structure was available for excavation in 1978, so we must look to similar contemporary structures to aid in its interpretation.

Taking as a group any small buildings which are neither circular nor rectangular (and therefore non-utilitarian), a pattern seems to emerge in Britain and Gaul. Villas at Stroud (Williams, 1909) and Maidstone (Roach Smith, 1876, 163-72) have similar, though smaller, octagonal structures in close association with them. That at Stroud, measuring 6.6m in diameter, is joined to the house by a single garden wall, whilst that at Maidstone, 6.1m in diameter, is linked to the house by a corridor. It is also much more opulent, having a tessellated floor over a hypocaust. A further example has been found at Witcombe (Clifford, 1954, 5-69), though there attached to the house, and a recent reconstruction drawing shows it as a two-storey addition. In Gaul, the villa at Montmaurin (Percival, 1976, fig. 41, 127) has a similar, though still smaller (5m diameter) structure in its ornamental garden.

A clue to the function of these structures is given by the second group of polygonal structures. Two of the buildings at Collyweston, a hexagon measuring 5.5m in diameter and an octagon 6.6m in diameter, have been identified as shrines. Two much larger octagonal buildings are known at Weycock, Berks. and Pagan's Hill, Somerset (Collingwood and Richmond, 1969, 159-60 and fig. 53), measuring 19.4m and 16.9m in diameter respectively, whilst a smaller example 9.8m in diameter has been excavated in the basilica at Trier (Knocker, 1965). This group of structures has been identified as Romano-Celtic temples, in common

with other circular and rectangular buildings throughout Britain and Gaul, and it is to this group that the octagonal structure at Bancroft probably belongs. The presence of the shrine raises interesting questions as to the status of the fourth-century owner of the estate. Applebaum (1972) suggests that such a shrine perhaps indicates the presence of a chief within a given area.

The walled garden area, at the southern extremity of the site, poses several interesting problems of interpretation. Its vast size—big enough to encompass building 1—and its situation on a fairly steep slope precludes it from being interpreted as a building, as does the lack of any internal structural evidence. Taking it therefore to be a walled enclosure, what function does it serve? The garden suggestion seems the most acceptable: presumably the walls were constructed with cob on pitched limestone footings, as little stone was found in the area, though the picture this presents is rather more medieval than Roman in character. Most of the available evidence for gardens in the Roman period is limited to formal gardens fronting villas, as at Fishbourne and Montmaurin; therefore the suggested reconstruction of Bancroft shows the enclosure as a kitchen garden rather than an ornamental one (fig. 23). It could also have been an orchard or a vineyard.

#### *Economy*

Taking the environmental evidence from Bancroft as a whole, the estate seems to have been run on a basis of mixed farming. Of the faunal remains (see p. 183) cattle and sheep were the predominant domesticated species, the former doubtless serving as draught animals as well as a source of meat and dairy products. This is also suggested by the discovery of an ox goad (fig. 51, 272). Of the other common types of domesticated farm animals, pig and horse appear in small numbers, the latter being fairly small, perhaps about fourteen hands. Domestic fowl were quite common, though Mrs Westley does not commit herself as to their species. Dogs also appear, mainly of about terrier size, and one cat. Various wild animals are also noted, though in very small numbers. The picture seems to be one of an open environment, with some remaining wooded areas, supporting a variety of both wild and domesticated animals.

The botanical evidence for Bancroft is, in contrast, very slight at present, and much has to be assumed from other archaeological evidence. Firstly, the presence of a probable granary, building 4, points to the commercial cultivation of cereals, though of what varieties is not known. Secondly, pruning hooks and knives in the ironwork (fig. 52, 284-85 and fig. 53, 288-89) suggest either viticulture or an orchard, the latter perhaps being more likely given the presence of pigs.

The situation of the Bancroft villa estate was potentially very advantageous for the marketing of farm produce. The site is almost equidistant from the Roman towns of Lactodorum (15km) and Magiovinium (12km), and close to Watling Street, which links them. The actual choice of market may have been influenced by the local political and administrative boundaries.

The one problem which neither history nor archaeology in its present state can resolve is the question of the size of the Bancroft villa estate and its influence on the neighbouring Roman sites. We can at least suggest that the owner of the estate in the fourth century was fairly wealthy—sufficiently so to afford the mosaics and extensive additions to the house and outbuildings—and perhaps influential in the local native society. How this might affect the history of, for example, Wymbush is difficult to say, though it is interesting to note that the chronologies of the two sites have some similarities, and the Wymbush farmstead at least may have been a satellite of the Bancroft estate, being situated only 1.5km to the south with no intervening natural boundaries.

## MK109 LITTLE WOOLSTONE R. J. Zeepvat

### INTRODUCTION

This site, situated in fields to the north of Childs Way H6, overlooking the Grand Union Canal at SP 8665 3945, was first trenched by machine in June 1981, excavations proper taking place in August. It was first identified in 1967 by Richard Griffiths as an extensive scatter of RB pottery and tile. More recent fieldwalking by R. J. Williams has helped to define the extent of the scatter. The site is at present partly under plough, partly pasture, the latter having existed for only a few years. The site has been under plough since the medieval period and traces of ridge and furrow can still be seen running down the slope on a north-west to south-east alignment.

In 1980 a geophysical survey of the site was undertaken by Ian McIntyre, a postgraduate student from Bradford University, using both magnetometer and resistivity techniques. Analysis of the survey results (see fig. 24) suggested a number of pronounced linear features running north-west to south-east, plus a few features aligned north-east to south-west, and some possible pits or similar feature. There was also some suggestion of a rubble scatter such as one might expect from a plough-damaged stone structure. Indications from the survey and results of fieldwalking were such that it was thought that excavation might reveal the remains of a stone structure with associated field boundaries and perhaps outbuildings, as well as

providing Bradford with data to assist them in the development of geophysical survey techniques.

Because of the extent of the site, machine trial trenching was initially undertaken in the surveyed areas in order to locate any structures before topsoil stripping took place. Using an MF50B excavator with a toothless bucket, a series of trenches were cut at 4 to 5m intervals, aligned north-north-east to west-south-west across the two geophysically surveyed areas, covering a total area of some 60 × 80m, split equally between pasture and ploughed areas. In the former areas, the only features noted, except in the southernmost trench, proved to be medieval plough furrows. Finds were also very sparse in this area.

In contrast, trenches cut in the ploughed area produced quantities of pottery spanning the full extent of the Roman period, as well as tile and a coin of Constantine, 317-24 (coin no. 1). A number of features were noted, concentrated in an area close to the boundary between grass and ploughed fields, as well as continuations of the medieval furrows mentioned above.

Accordingly, an area of about 20 × 30m was stripped to reveal the group of features which evidently lay at the centre of the finds scatter. Excavation of this area was almost total, and a number of features in adjacent trenches were also excavated. On completion of the excavations, the site was backfilled to allow cultivation to be resumed.

### DESCRIPTION

The plan (fig. 25) gives a clear indication of the location and relationship of the various features as well as their respective dates. A brief description is given below of each feature.

#### *F3, 4, 6*

Medieval plough furrows. Shallow, sloping-sided, filled with brown clay loam.

#### *F7*

Roughly circular pit, 1.25-1.5m diameter, 550mm deep. Steeply sloping sides, rounded bottom. Belgic.

#### *F8*

Circular pit, 1.25m diameter, 500mm deep. Shallow sloping sides, rounded bottom. Belgic.

#### *F10*

Ditch, curving from W-E to N-S alignment. 1-2m wide, 200-400mm deep. Sloping sides, flattish bottom. Fourth century.

#### *F11*

Large amorphous pit cut into sandy lens in



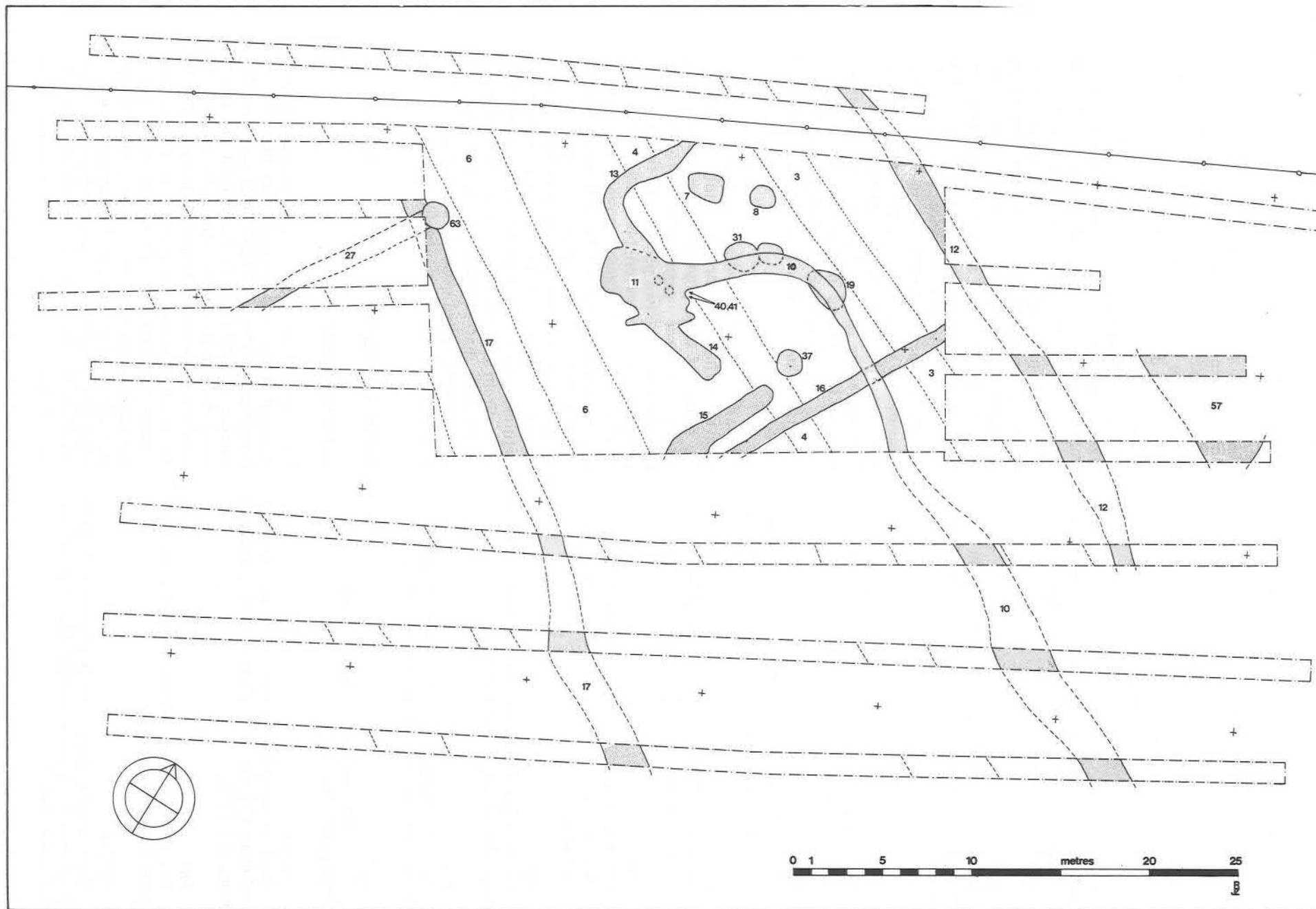


Fig. 25. MK109 Little Woolstone: Plan of Excavated Features.

Boulder clay subsoil. 3 × 5m, 600mm deep. Persistent 100mm of water in bottom after excavation. Steep sides, flattish bottom. Fourth century.

*F12*

Ditch, aligned NE-SE. 1.3m wide, 300mm deep. Ridge in bottom suggested recut, though no difference visible in fill. Belgic, to late second cent.

*F13*

Ditch, curving N-NE. 900mm wide, 200mm deep. Contained many fragments of wall plaster. Belgic, to late second century.

*F14*

Ditch, aligned NW-SE. 1.5m wide, 500mm deep. Sloping sides, flattish bottom. Belgic, to late second century.

*F15*

Ditch, aligned NE-SW curving S. 1.4m wide, 400mm deep. Sloping sides, rounded bottom. Belgic to late second century.

*F16*

Ditch, aligned NE-SW. 900mm wide, 300mm deep. Shallow U-section. Belgic to late second cent.

*F17/18*

Ditch aligned NW-SE. 1.3m wide, 200mm deep. Shallow, uneven bottom. Belgic.

*F19*

Pit, oval, 1.8 × 2.5m wide, 400mm deep. Steep sides, much of fill removed by F10. Late first to late second century.

*F27*

Ditch, aligned NE-SW. 900mm wide, 200mm deep. Shallow sloping sides. Belgic.

*F31*

Pit, 1.8m diameter, c.350mm deep. Steep sides, flat bottom. Much of fill removed by F10. Belgic.

*F37*

Pit, 1.4m diameter, 200mm deep. Shallow sloping sides. Belgic.

*F57/58*

Dark spread of black organic soil containing pot and bone, c.0.15m deep. Finds in shallow gully at E end of TT VII.

*F63*

Pit, 1.4m diameter, 400mm deep. Sloping sides. Rounded bottom. Belgic.

*F40/41*

Small circular depressions in floor of F11. Both about 400mm diameter, vertical sides, flat bottom. Post holes? Belgic.

## CONCLUSIONS

Taking into account the excavated features and those shown on the geophysical survey, the pattern which presents itself is one of a series of ditches aligned down the hill-slope in a NW-SE direction, with a more disjointed sequence at right-angles to it. Interspersed with these ditches are a number of small pits, containing much occupation refuse in an organic fill. Most of these features seem to date from the early first to late second centuries, though the presence of a large amount of later material in F10 and F11 points to use of the site continuing into the fourth century. The layout of the ditches seems to indicate the presence of an extensive field system covering the hill-slope. Despite an abundance of occupation refuse found within both pits and ditches, no structural evidence was recovered, though the concentration of finds in the area of the excavation suggests a continued presence throughout the Belgic and Roman periods nearby. It is interesting to note the close correspondence between Roman and medieval field alignments, though this could be accounted for by the topography and not by any continued use of land boundaries.

Finally, one of the most interesting aspects of the excavations has been the opportunity to correlate the results of a geophysical survey with a more detailed physical examination of the site. Comparison of the two plans shows the close congruity of the features on both (figs. 24-5). The presence of areas of negative anomaly can perhaps now be accounted for by the very stony boulder clay which formed much of the site's subsoil, though the presence of large areas of high positive anomaly in the grass field was never resolved, no features appearing in trenches cut through these areas. From our experience at Little Woolstone, it would seem that extensive geophysical surveying coupled with limited excavation could be of value on similar sites on similar subsoils.

## MK211 WYMBUSH

R. J. Zeepvat

## INTRODUCTION

The site at Wymbush (fig. 26) situated between Bradwell Abbey and Loughton, in the north of Loughton parish at SP 8285 3893, was first discovered in 1973 when D. C. Mynard and others noted an extensive scatter of limestone and roof tile after ploughing had taken place (Mynard, 1974, 5). Aerial photographs taken early in 1975 clearly showed the extent of this scatter, suggesting a substantial stone structure, perhaps a villa, though no walls could be seen and the damage caused by ridge and furrow was quite pronounced. Trial trenching by machine took place on the site, confirming the presence of a stone structure dating

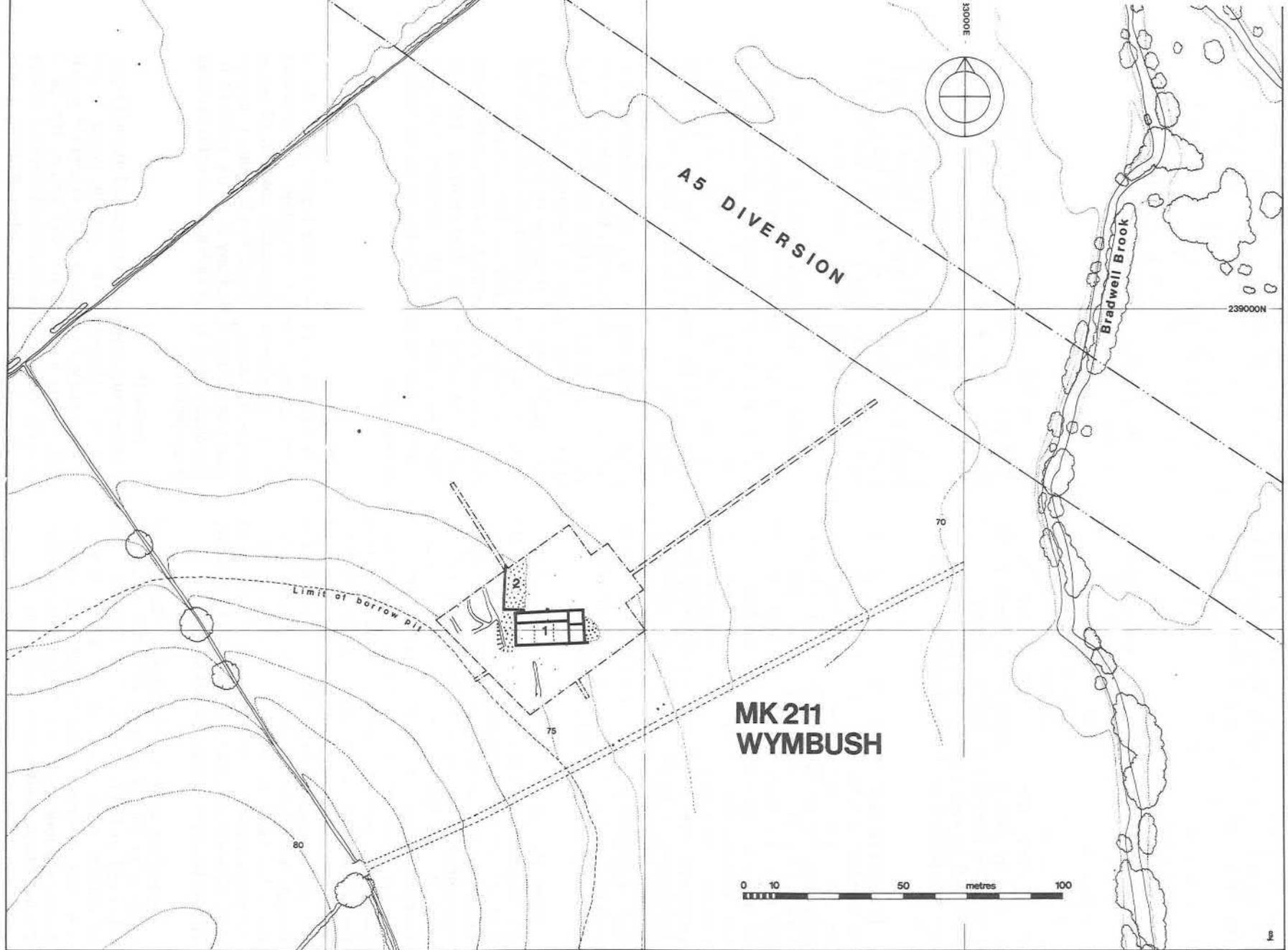


Fig. 26. MK211 Wymbush: Location Plan.

from the third century. Further fieldwork during the excavation of a borrow pit to the west of the site and, more recently, the construction of the A5 Diversion to the east produced no finds or features of Roman date, thus indicating the eastern and western limits of the site.

Wymbush is situated on a gentle east-facing slope in the Loughton Valley, about 150m west of Loughton Brook at 74m OD. Geologically the site and the area to the west consists of Oxford clay, whilst immediately to the east the sands and gravels of the earlier Kellaways Beds outcrop, partly overlaid by alluvial deposits in the region of the brook. The topsoil was shallow, varying between 200 to 300mm deep, and very clayey, though the site was well drained because of the slope on which it stood.

The area in which Wymbush lies forms part of the parish of Loughton. In the medieval period this was split into two manors, Little and Great Loughton, the site being in the former. The field name for the site, 'Furlong under the Furzen(es)' on the Loughton Enclosure Award Map of 1769 (Bucks. R.O., IR/143.R), conveys no hint of any local knowledge of it, referring only to Furzen Hill Common which lay on higher ground to the west. The name 'Wymbush' bears no relationship to the site's history, being the name given to the area of Milton Keynes in which the site lies, and is derived from Michael de Wymbis, a thirteenth-century bell-founder from London who cast two of the bells in Bradwell church, some 700m north of the site.

From the field name, and the evidence of pronounced ridge and furrow running down the slope of the field containing the site, Wymbush appears to have been under cultivation almost continuously since the medieval period, and the effect this has had on the survival of the site is described below, p. 86. Far more damaging, however, have been the cultivation methods used over the last ten to fifteen years. Land drains were first laid down the centre of every furrow, following which heavy cross-ploughing was used to level out the ridges and facilitate the use of modern farming machinery. The only other modern disturbance has been the erection of two pole routes carrying electricity cables across the field, though these have not damaged the site and were removed during the course of the excavation.

Excavation at Wymbush began in May 1979 in response to the threat of development which was scheduled to begin in August of that year. The excavation team consisted of Peter Lennox, Lawrence Manley, Johann Holt and Andrew Howe, who looked after much of the site recording; Pauline Marney looked after finds on the site.

Initial clearance was undertaken with a Massey

Ferguson MF50B with a 1m toothless bucket, two 2-tonne dumpers being used to remove the spoil. Some trial trenches were cut first to determine the limits of the site, after which an area about 45m square was cleared of topsoil. Great care had to be exercised with this operation, as the field on three sides of the site was still under cultivation. Spoil from the excavation was therefore dumped uphill of the site, on the borrow pit.

## THE EXCAVATION

Two stone-built structures were uncovered on the site (fig. 27); the larger, southernmost structure, Building 1, was a house of five rooms, with a corridor along its north side. To the north, Building 2, a much less substantial structure, appeared to be a barn or similar agricultural structure. East of Building 2 and north and east of Building 1 were found yard surfaces. West of the buildings were a number of gulleys, mostly aligned north-south, these being contemporary with both structures.

Damage by ploughing, as mentioned above, has had a great effect on the survival of archaeological evidence at Wymbush. The site was deeply cut by a series of medieval plough furrows aligned west-south-west to east-north-east, their centre lines being about 8m apart. More recently, down the centre of each furrow had been dug a land drain, the combination of furrows and land drains all cutting deeply through any archaeological levels into the natural clay beneath. Many wall junctions seen as crucial for determining the phasing of the buildings were damaged or lost completely in this way. In addition, several seasons of deep ploughing on the site had removed almost all traces of internal floors in building 1 and cut the surviving walls down to or below floor level. As a result there were only a few securely stratified contexts, and it is from these and from the surviving structural evidence that the following phases of occupation are suggested.

### *Phase I*

Occupation appears to have begun on the site in the late second to early third century. This consisted of a simple though substantially constructed house comprising rooms 1, 2 and 3 of Building 1, and an open-fronted barn, Building 2, to the north of it. The ditches west of the buildings were also first dug in this period.

### *Phase II*

During this period the site reached its final form, with the addition of the corridor, room 4, and rooms 5 and 6, to Building 1. Unfortunately there is little dating material for this phase, though it probably terminated with a period of abandonment in the late third century, when Building 1 was demolished or fell into ruin.

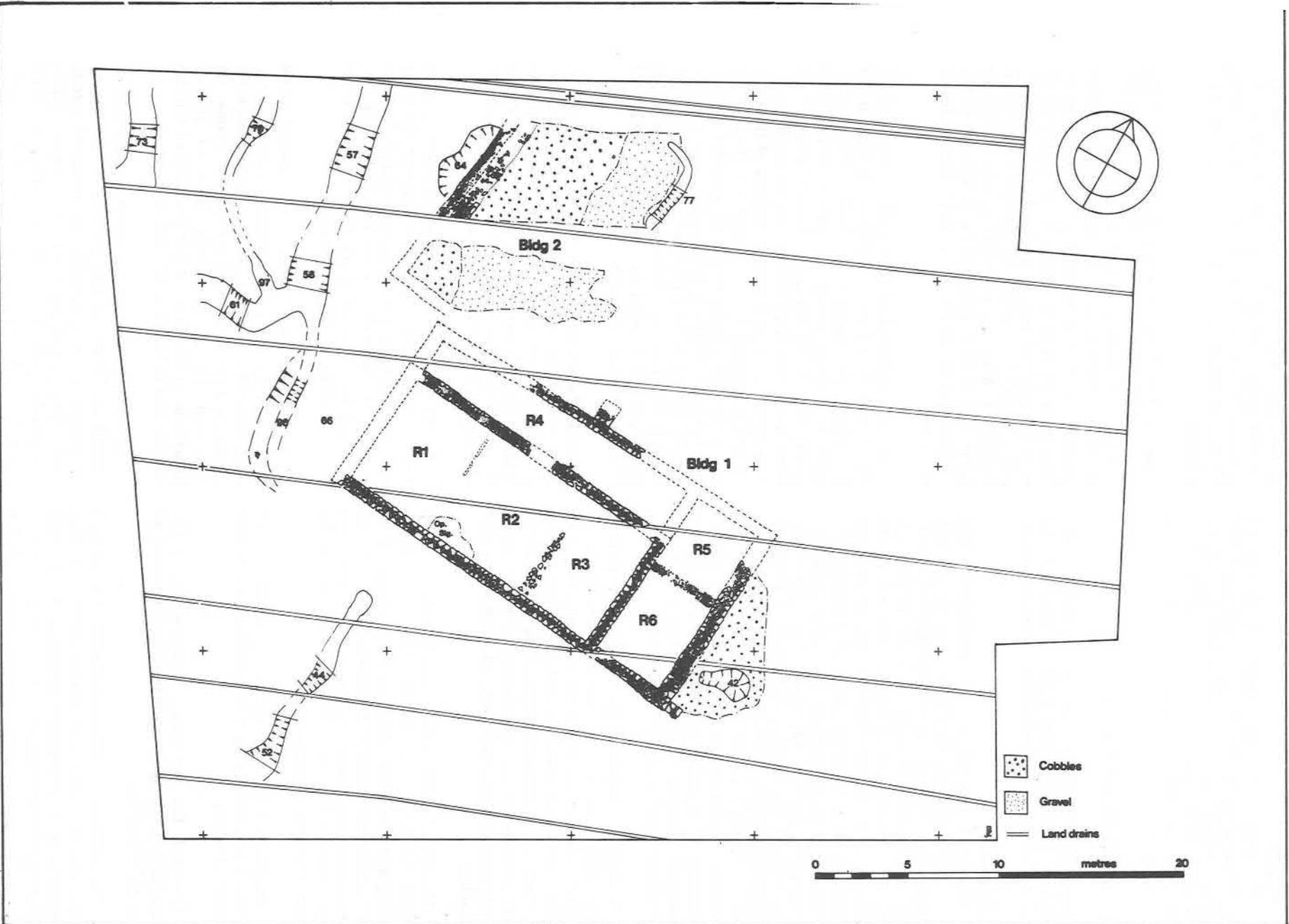


Fig. 27. MK211 Wymbush: Plan of Excavated Features.

### Phase III

This covers the final period of activity at Wymbush, and is marked by the excavation of F42 and a hoard of twenty-two coins from the reign of Constans, 345-48 (coin nos. 5, 10, 24 and 26). There are no definite signs of occupation during the mid fourth century.

### DETAILED DESCRIPTION

To avoid repetition, all structural dimensions are given in the order north-south  $\times$  east-west. All measurements are external unless otherwise stated.

#### Building 1

This was a very substantial structure measuring 11  $\times$  22m narrowing to 10.3m at its western end, aligned east-west, constructed on a levelled area cut slightly back into the slope of the hill to the west, and on built-up ground at the east end of the building. There appeared to have been three major structural elements comprising the building. The first of these was a rectangle 7.8  $\times$  17m apparently forming the 'core' of the house. The walls of this part were 0.75m thick, constructed of limestone facing blocks with a rubble core, set in lime mortar. The four corners were of bonded construction. The foundations, at a depth of c.0.8m below floor level, consisted of a layer of tightly packed pitched limestone, levelled with a thin layer of clay on which rested the base of the wall proper.

Internally, this part of the building was divided into three rooms. The westernmost of these, room 1, measured 6.2  $\times$  4.8m internally. No floor levels survived in this room, and the wall separating it from room 2 was marked by a line of plaster set into the natural clay, suggesting a timber-framed partition based on a sill-beam, with lath and plaster cladding.

The central room, room 2, was the largest of the three, measuring 6.2  $\times$  6m internally. Here again, ploughing had removed most of the floor, though in the south-west corner of the room about 2.5m<sup>2</sup> of *opus signinum*, badly plough-damaged, indicated the nature of the floor. This had been apparently laid directly on the clay subsoil.

On the east side of room 2, the partition with room 3 was marked by a line of limestone rubble c.0.4m in width.

Room 3, the east room, measured 6.2  $\times$  4m internally. Once again, ploughing had removed all traces of flooring.

The other two structural elements of building 1 were also represented by a total of three rooms, added to the north and east of rooms 1-3. The walls of these additions were less well constructed than those described above, having only shallow

foundations and being composed of smaller, rougher pieces of limestone. In addition, the junctions between the walls of rooms 1-3 and rooms 4-6 were all found to be butt joints, suggesting later additions.

Room 4 formed a corridor running along the north sides of rooms 1-3. It measured 2.5  $\times$  15.3m internally, narrowing at its west end to 1.9m. Its northern, external wall was 0.55m wide, rather roughly constructed of limestone without mortar, on a single foundation course. It was buttressed on its north, external face, by a single buttress, c.0.8  $\times$  0.8m, situated 10m from the north-west corner of building 1. Much of the north and west walls of room 4 had been removed by ploughing in the medieval period, as had all traces of flooring inside the room.

The third element of the building comprised an extension measuring 11  $\times$  4.8m at the east end of building 1, divided into two rooms. The external walls of this extension were much thicker than those in the rest of the building, varying from 0.75 to 0.9m wide, and were constructed of small stones forming a tightly packed core. Because of the slope on which building 1 was situated, the floor inside this extension had also been built up to the level of that in the rest of the building, partly with clay and gravel, and partly with pitched limestone, the latter being in a strip alongside the east wall. The east face of the south-east corner was additionally supported by a buttress measuring 0.6  $\times$  0.8m.

Inside the extension, the north room, room 5, measured 4.4m square. Very little survived as it lay in the line of a medieval plough furrow and no internal features were noted. The south side of the room was bounded by a wall footing 0.5m wide, of closely packed pitched limestone.

To the south of this partition wall was situated room 6, measuring 5.4m square. As with the other rooms in Building 1 no trace remained of the floor in room 6. A section across the floor, however, revealed how the floor of the room had been made up to the levels in adjacent rooms.

A layer of brownish yellow clay (Munsell 10YR 6.6) similar to the natural subsoil, varying in thickness from 100 to 250mm, had been spread inside the room, reinforced at its thickest point against the east wall by an underlying layer of pitched limestone. A thin layer of gravel on top of the clay represented the remains of a mortar floor.

The destruction rubble overlying Building 1, though much spread and lessened by continuous ploughing of the site, yielded quantities of *tegulae* and *imbrices*, indicating that the structure had a completely tiled roof. No examples of other specialised tile types were found. One tegula,

recovered from the area overlying room 2, was found to be inscribed; see report on p. 125.

In addition, a small quantity of painted wall plaster was recovered in a very fragmentary condition from destruction levels, suggesting that all the internal walls were so decorated, employing combinations of at least six different colours.

#### *External features associated with Building 1*

A number of features adjacent to and associated with Building 1 were found, and are described below.

##### *The Terrace*

As mentioned above, Building 1 was constructed on a terrace cut into the hill on which the site is situated and later extended by building up its eastern end. To the west of the building, the terrace continued into the hillside for a distance of 5m, forming a level area which was surfaced with rough limestone flags. The west end of the terrace was bounded by a bank c.0.6m high, at the bottom of which ran a gully, 96. This gully, 0.5m wide and c.0.25m deep, a shallow U in section, served to prevent any accumulation of water on the terrace. The gully was probably connected to ditch 57/58 to the north. A black organic soil deposit 0.3-0.4m thick covered the terrace, containing pottery with a date range covering the whole period of occupation of the site.

##### *The East Yard*

Against the east wall of Building 1 was found an area surfaced with packed limestone rubble, measuring 8m in length and varying between 1 and 4m wide. Set into this cobbled surface at its widest point was a keyhole shaped depression, F6. The western edge of the yard surface butted up against the east wall of Building 1, suggesting the yard to have been laid well into Phase II. The yard surface exhibited only slight general signs of wear, and appeared to have no patching or resurfacing work done on it.

##### *Building 2*

This structure was situated immediately to the north of Building 1 near its western end, and aligned north-south, following the contours of the slope on which the site was situated. Once again, ploughing had removed much of the structural evidence and it was difficult to determine the size of the building, as only part of the west and south walls remained, the latter surviving as a shallow robbed-out foundation trench. From these it seems that Building 2 measured about 13 × 6m, though re-examination of the evidence from the 1975 trial trenches indicates that the building extended north of the excavated area, and was at least 18m long. The surviving section of wall consisted of a single course of limestone walling laid without mortar, 0.65m wide. There was no trace of an east wall,

suggesting that the building was probably an open-fronted barn.

Internally, Building 2 was surfaced with a layer of packed limestone rubble, some of which was pitched. Alongside the surviving section of west wall was found a stone structure 0.9m wide, running parallel with the wall and similarly constructed without mortar and with facing stones only on its east face. This structure may have been the base for a bench, or a trough or manger.

Immediately to the west of the building, against the west wall, was found a concentration of tile, comprising a large quantity of fragments of both tegulae and imbrices. This was thought at first to be material from the collapse of Building 2, given its position and the fact that most of the broken tile edges showed no signs of abrading. However, the presence of fragments of Lezoux and Nene Valley wares amongst the tile point to a late second- to early third-century date for the deposit. This suggests that the tile may be surplus building material, probably from the construction of Building 1. No tile was found in destruction layers overlying Building 2 which may therefore have been thatched.

From pottery contained within the floor make-up, Building 2 appeared to date from the early part of the third century, Phase I. Wear on the floor of the building was evenly spread and not heavy. Beneath the floor was a dark organic layer (Munsell 10YR 3.2) containing mid second- to early third-century pottery.

To the east of Building 2 and north of Building 1, a number of areas of gravel and limestone rubble pointed to the existence of a yard surface, most of which had been removed by ploughing. Finds from the yard surface covered the whole date-range of the site, and too little remained of the surface to show any repairs or resurfacing.

#### *External features*

These consisted principally of a series of ditches concentrated in an area west of the buildings. They were for the most part shallow, aligned along the hill slope, and seemed to be intended to carry any surface water around the buildings. Pottery from all the ditches covered the whole date-range of the site, and there was nowhere any evidence of recutting. One of the smaller ditches, 76/97, contained a hoard of twenty-one bronze coins, with a date-range of 330-49. In addition to these ditches, two other features are described below; 77, a ditch situated to the east of Building 2, and 42, cut into the yard east of Building 1.

##### 73

Ditch in NW corner of site. Aligned NNW-SSE. 1.5m wide, 0.23m deep. Flat-bottomed, sloping

sides. Fill: dark greyish brown clay loam (Munsell 10YR 4.2). Probably joined to 61.

76/97

Gulley east of 73. Aligned N-S, curving SE to join 61 at its junction with 57/58. 0.8m wide, 0.15m deep. Shallow sloping west side, steeper east side. Fill: dark greyish brown clay loam (Munsell 10YR 4.2). Coin hoard found in south part of ditch.

57/58

Ditch to east of 76/97. Aligned N-S. 1.4m wide, 0.15m deep, shallow rounded section. Fill: dark grey clay loam (Munsell 10YR 4.1). Joins with 61 and 96.

61

Ditch south of 76/97. Aligned W-E. 2.6m wide, 0.26m deep, shallow rounded section. Fill: dark grey clay loam (Munsell 10YR 4.1) containing quantities of limestone rubble, tile and *opus signinum*.

44/52

Ditch south of Building 1, aligned N-S, width 0.9m, depth 0.15m. Flat-bottomed, sloping sides. Fill: dark greyish brown clay loam (Munsell 2.5Y 4.2).

42

Keyhole-shaped depression in yard east of Building 1. Diameter 1.6m, max. length 2.8m, max. depth 0.4m. Similar shape to contemporary oven/grain-drier stoke holes. Fill: very dark grey sandy clay loam (Munsell 5Y 3.1) containing charcoal flecks, as well as many small fragments of tile and bone. The pottery in this feature comprised numerous late fourth- to early fifth-century calcite-gritted forms, as well as large amounts of fourth-century Oxford wares, and some Nene Valley, and a combed sherd of Alice Holt ware of the same date. This makes F6 the latest feature excavated on the site, dating it after 350. The function of this feature remains uncertain: despite its shape, the lack of burning on the sides, which were roughly stone-lined, and the lack of quantities of ash in the fill preclude identifying it as an oven.

77

Narrow gulley east of Building 2. Aligned N-S. Width 0.4m, depth 0.1m. Fill: dark brown sandy clay loam (Munsell 10YR 3.3).

96

Gulley cut in terrace west of building 1. Aligned N-S. Width 0.5m, depth 0.25m, shallow U-section. Fill: dark grey clay loam (Munsell 10YR 3.1). Probably joins 76/77 to north.

## DISCUSSION

### *History*

There seems little doubt that the buildings

excavated at Wymbush compose a small farmstead (see reconstruction drawing, fig. 28), engaged in farming an area of land on the west bank of Loughton Brook. Unlike many other similarly placed contemporary sites, Wymbush is a purely Roman foundation, with no Belgic antecedents, as there is no trace of first-century finds or features on the site. It seems reasonable therefore to conclude that the establishment of the farmstead resulted from local changes in the pattern of land tenure and use. It is tempting to take this argument one stage further, and suggest that the Wymbush farmstead and lands formed part of the estate connected to the Bancroft villa. Obviously, this hypothesis is not an easy one to test, given the limitations of normal archaeological evidence, so that one can only look for possibly connected events in the histories of the two sites, and see how they relate.

Occupation at Wymbush commenced in the Antonine period, about 160. By this time Bancroft had acquired its first stone house, and the estate, by analogy with other sites in lowland Britain, was probably in a comfortable financial situation. Most other villas which had beginnings in native farmsteads had by this time been rebuilt in stone, and some were undergoing additions. At Bancroft, even the fire of c.170 appears to have had little long-term effect on the stability of the estate, as the reconstructions following it were on an equal—if not grander—scale to what had gone before. Both sites pass into the third century with various additions being made, an indication that their respective financial situations were sound.

In the mid third century this picture changed. Bancroft continues in occupation into the fourth century, though a break of 40 years in the coin sequence from 280-320 suggests a period of abandonment. At Wymbush, however, both pottery and coin assemblages suggest abandonment in the late third century, as pottery of this date was the latest found in the destruction rubble overlying building 1. One might infer from this that as a result of the political and financial instability of the late third century, farming at Wymbush as a subdivision of a larger estate ceases, perhaps owing to either excessive rents, or a failure to relet once a tenancy had expired. Whatever the truth of the matter, Wymbush was not re-occupied although the fortunes of the Bancroft estate improved greatly in the middle years of the fourth century. An occasional human presence can be seen on the site, however, particularly in relation to the coin hoard from 76/97. Perhaps part of the buildings remained in use as a field barn. But this is all speculation: one can equally take the dating evidence from Wymbush in total isolation from Bancroft or any other neighbouring sites. Until more is known about the land tenure arrangements in force in Roman Britain, such speculations are all that can be offered for most sites of this nature.

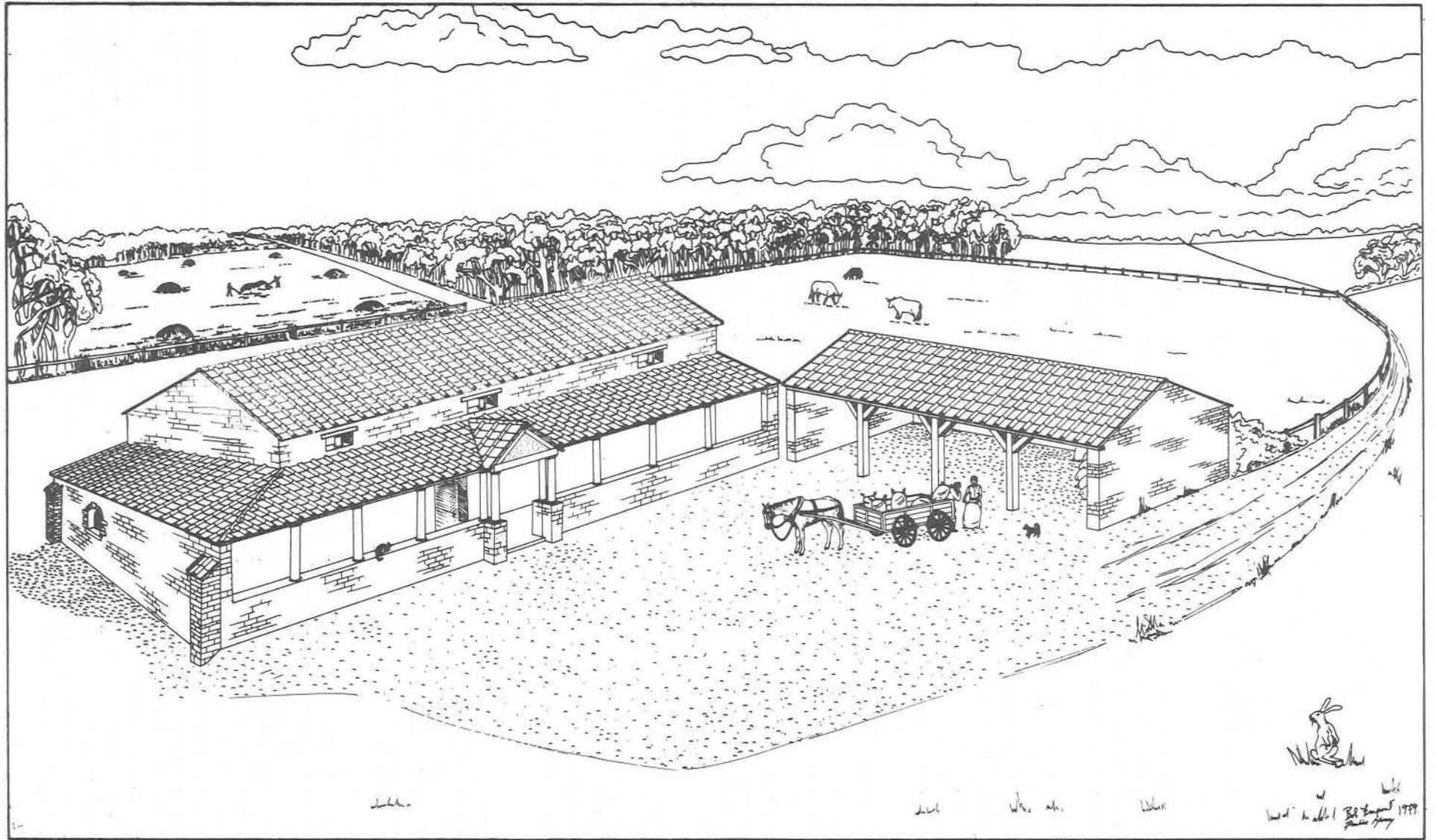


Fig. 28. MK211 Wymbush: Reconstruction of the Farmstead.

### *Structures*

Despite its lack of Belgic antecedents, the house at Wymbush begins in a modest fashion, with a rectangular structure containing a series of rooms, probably inter-connected. Similar beginnings can be seen on many sites, such as Park Street (O'Neil, 2945), Lockleys (Ward Perkins, 2938), and Hambleton (Cocks, 1921) all of which began with a structure almost identical in style to Wymbush. The later additions, the corridor and east-end rooms, are also typical of this type of house, and lead in most cases to the adoption of a winged corridor plan, with all the associated trappings of Roman society—bath suites, hypocaust, etc.

However, at Wymbush this development is abruptly curtailed, and the structure, though solidly constructed and reasonably equipped, is allowed to fall into ruin. This occurrence is not unknown on other lowland villa sites at this time: Brixworth, Northants (Woods, 1972), was apparently abandoned from c.240-300, and Latimer, Bucks. (Branigan, 1971), between 280 and 300, though both were later rebuilt on a larger scale. It is interesting to note that both these sites developed from Belgic farmsteads, and both reached a greater degree of opulence than Wymbush—Latimer especially so—suggested that they remained as the centres for their respective estates throughout the Roman period. This surely adds further weight to the suggestion that Wymbush was a satellite farm attached to the Bancroft estate.

Of Building 2 there is little that can be said. Barns with wholly or partly open sides have been noted on other sites, and are adequately discussed elsewhere (Morris, 1979). The stone structure built against the west wall of this building probably formed the base for a manger, suggesting that Building 2 was a cattle byre.

### *Economy*

Because of the plough damage inflicted on Wymbush since the Roman period, and the apparent absence of features containing domestic refuse in any quantity, the environmental evidence is slight. Of the faunal remains (p.186), cattle and sheep were the predominant domesticated species. The presence of bone from cattle mainly aged between 2-4 years suggests that these animals were kept for milk and hides, rather than just for meat, and heavy muscle attachments suggest that some at least were also used as draught animals. Sheep were also overwintered, and as the grazing habits of cattle and sheep are complementary, it seems reasonable to conclude that they were kept for wool and not just meat. Pigs and horses also appear on the site, albeit in smaller numbers. The picture here seems to be one of an open environment of pasture for cattle and sheep, with some nearby woodland for pigs. This scenario accords well with that at Bancroft, thus broadening

our view of the Roman landscape in the Loughton Brook valley, though one must remember that here, as at Bancroft and other Roman sites in the area, botanical evidence is virtually non-existent, so that activities such as cereal production remain little understood.

The farm at Wymbush was situated close to Watling Street, and therefore had ready access to the local market at Magiovinium, 10km away. Its situation in this respect was almost identical to that of Bancroft, and it is interesting to speculate on the possible links between the two sites, and how this would have affected the marketing arrangements for produce from Wymbush.

## **MK297 WUGHTON**

R. J. Zeepvat

### **INTRODUCTION**

This site, situated at SP 8615 3774 in the parish of Woughton-on-the-Green, about 2km north-west of the village, was first discovered in 1969 by Richard Griffiths (Mynard, 1969, 11).

Later, in 1973, during construction work on the interchange of city grid roads H7 and V7 (Chaffron Way and Saxon Street), Richard Griffiths carried out limited rescue excavation, the results of which suggested a substantial occupation site. Therefore further excavation took place in 1974-5 and 1977, on surviving areas of the site on the embankment of the roundabout, directed by John Barnbrook. Evidence in the form of ditches, pits, hut gulleys and areas of cobbled yard surface indicated occupation of both Belgic and Roman dates.

The high ground, 102m OD, on which the site was situated, is part of the Boulder clay plateau on which much of the centre of Milton Keynes now stands. The site itself is bleak and exposed, with the nearest possible water source 1.5km to the south-east at a stream flowing down into the Ouzel valley.

Of the site's more recent history, little is known as few documents survive relating to the parish of Woughton-on-the-Green. The presence of ridge and furrow in the excavated area confirms that the site has been under cultivation since the medieval period.

### **THE EXCAVATIONS**

The 1973 trial excavations revealed a number of late Iron Age and Roman features on the site, figs. 30-32. These excavations, consisting of four machine-cut trenches, were augmented by further rescue work when topsoil stripping began for the construction of the road, consisting mainly of planning features as they appeared and sampling if possible. Detailed examination of the site was

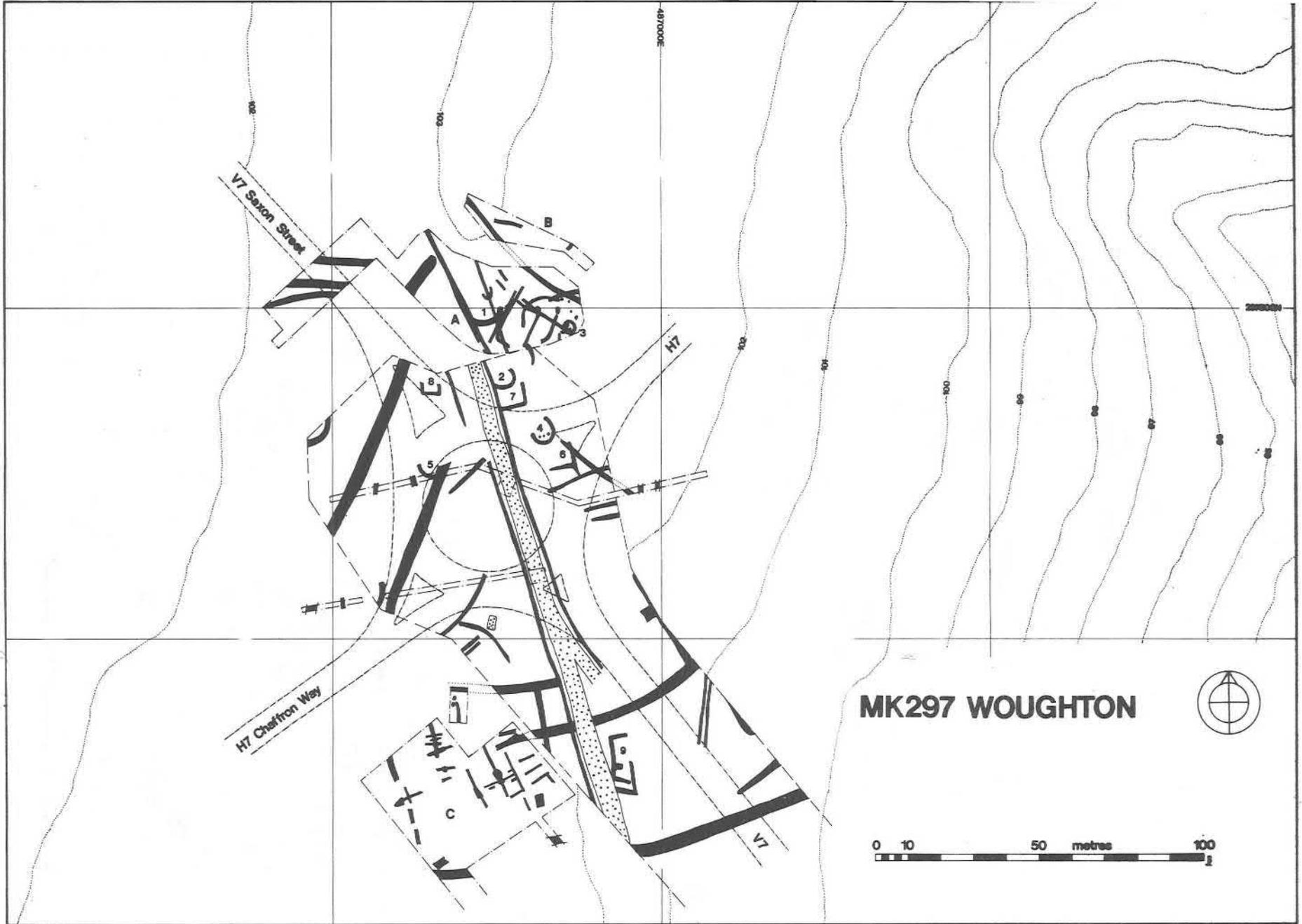


Fig. 29. MK297 Woughton: Site Topography.

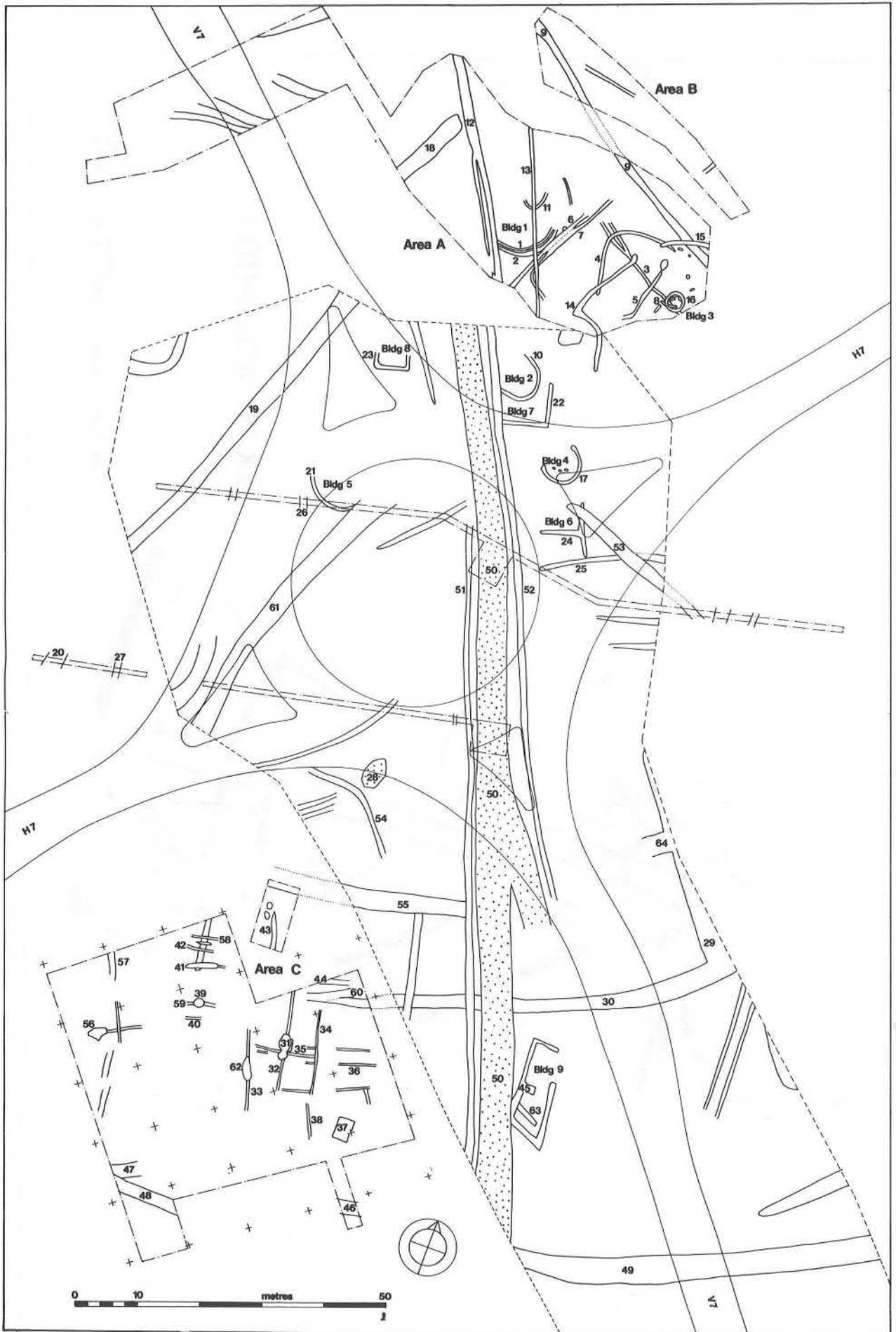


Fig. 30. MK297 Woughton: Recorded Features.

rendered impossible by the speed of construction. However, in the light of what was found it was decided to excavate what remained of the site around the V7/H7 roundabout.

In 1974-75 excavations directed by J. Barnbrook took place on areas to the north and north-east of the roundabout. Occupation evidence from this area was totally of Belgic date, suggesting that the centre of occupation on the site had shifted or contracted in the Roman period.

In 1977, following a magnetometer survey of the areas to the north of the roundabout by the DoE Ancient Monuments Laboratory, an area was opened west of Saxon Street. The area opened in 1975 was also extended northwards. The latter area continued to produce primarily Belgic occupation evidence, whilst the area to the south of the roundabout contained features dating from the first to third centuries AD.

Following completion of the excavations in December 1977, the excavated areas were landscaped during construction of footbridges and linking footpaths around the roundabouts.

## DETAILED DESCRIPTION

The main problem in attempting to prepare the evidence from this site for publication has been tying up the detailed evidence from two separated excavations with that from the intervening area, which was only swiftly recorded during road construction, and where only a few features were sectioned and can be accurately dated. Such problems are apparent from the site plan, fig. 30. However, it has been possible to produce a broad sequence of occupation from the site, and this is summarized below.

### *Phase I: first century (fig. 31)*

A complex of pits, ditches and circular or penannular hut gulleys, confined to the north end of the site, formed part of a Belgic settlement which probably extended eastwards, along the line of H7 Chaffron Way. Many of the structures and associated features belonging to this settlement were quite short-lived, as can be seen from the complicated relationships of some features in Area A. The large ditch, 18-20, may have marked the western limit of the settlement. A small amount of residual material from features in Area C suggests that this area was perhaps under cultivation.

### *Phase II: late first to second century (fig. 31)*

Occupation of the settlement continued during this period, with the introduction of rectangular timber-framed buildings to supplement the native circular type. The complex of shallow gulleys in Area C dating from this period probably represents evidence of cultivation. A number of these gulleys were peculiar in that they had been cut by pits, apparently contemporary. One large ditch, 30,

dating from this period may have formed the southern boundary of the settlement.

### *Phase III: third to fourth century (fig. 32)*

Few features were identified as belonging to this period and it seems probable that occupation ceased on the site about the late second to early third century, though a group of gulleys in the south of the site has been identified as a building. The major feature belonging to this period was a cobbled trackway running north-south across the site, flanked by drainage ditches.

### *Post-Roman features*

There is no evidence of any post-Roman occupation of the site. Evidence of medieval ridge and furrow was found throughout, aligned north-south in Area C and the central area, and north-east/south-west in Areas A and B. Many of the furrows contained residual Roman pottery, and in the absence of detailed excavations in the central part of the site, it has been difficult to separate the furrows from the complex of earlier ditches.

## THE EVIDENCE

### *Phase I*

The earliest structural evidence recovered for this period consisted of the two parallel curving gulleys, features 1 and 2. These appeared to represent the wall-footing trench and eavesdrip gully of a circular timber structure about 10m in diameter, Building 1. No internal features were recorded within the area of the structure.

The other demonstrably early feature belonging to this period is a gully, which was cut by gulleys 4, 5 and 14, as well as the circular gully, Building 3. It contained several concentrations of stone, and may be interpreted as a palisade trench.

As has been mentioned above, many of these Phase I features were apparently short-lived, and the first evidence of this is the abandonment of Building 1, and the cutting of gulleys 4-8, ditch 9, and gully 11. Gulleys 5 and 7, both aligned north-east to south-west, curve towards each other at their south-western ends. Both contained traces of stone packing for posts, and may therefore have formed a fenced enclosure about 15m square. Within this area was gully 4, a narrow, shallow feature of indeterminate function which was aligned north-south, but turned sharply eastwards at the point where it cut gully 3.

Gully 6, a shallow gully similar to 7, parallel with and immediately to the north of the latter, was taken by the excavator to be a drainage gully.

To the north-east of the above feature was found feature 9, a ditch about 1.5m in width, aligned north-west to south-east, continuing into Area B.

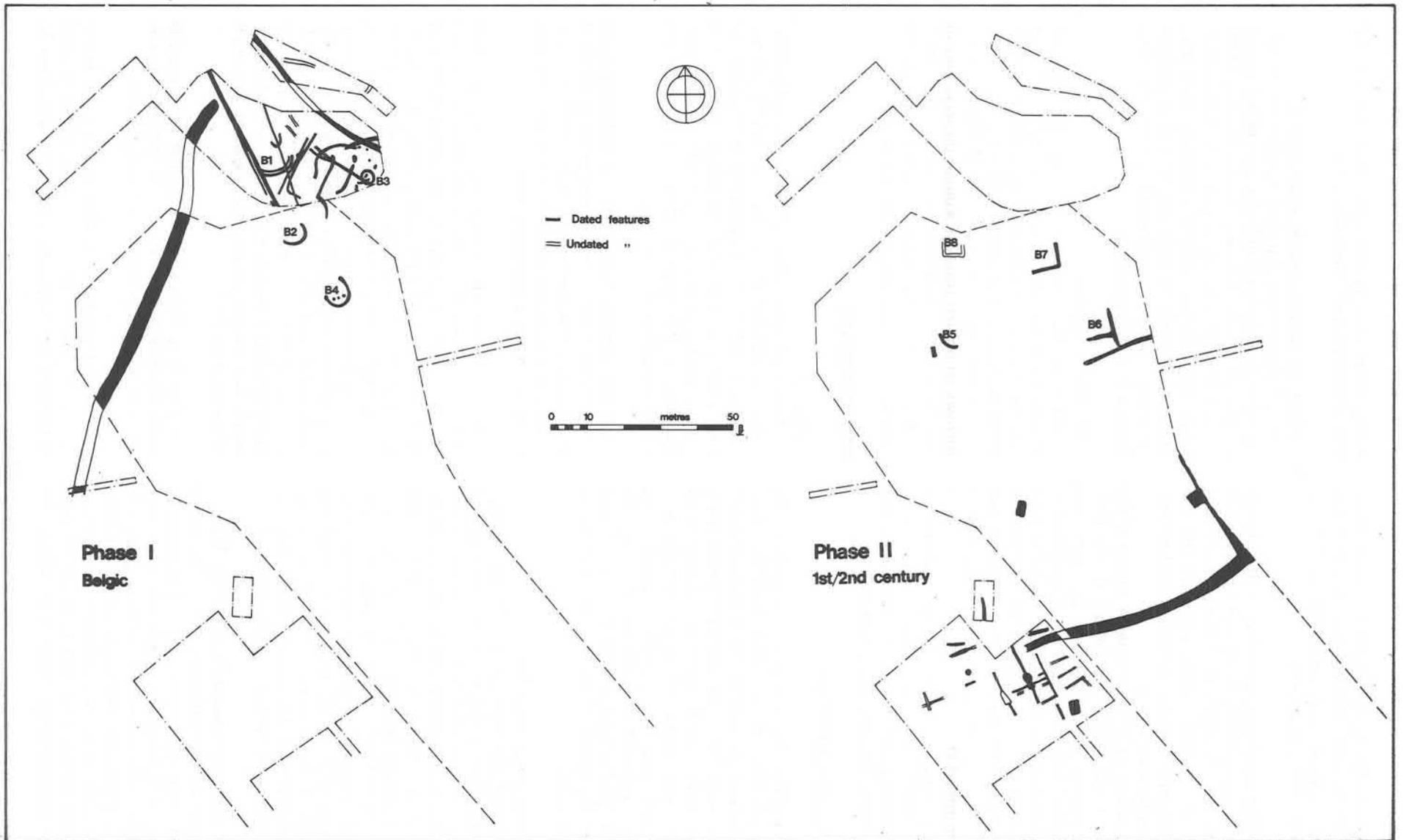


Fig. 31. MK297 Woughton: Planned Phases I and II.

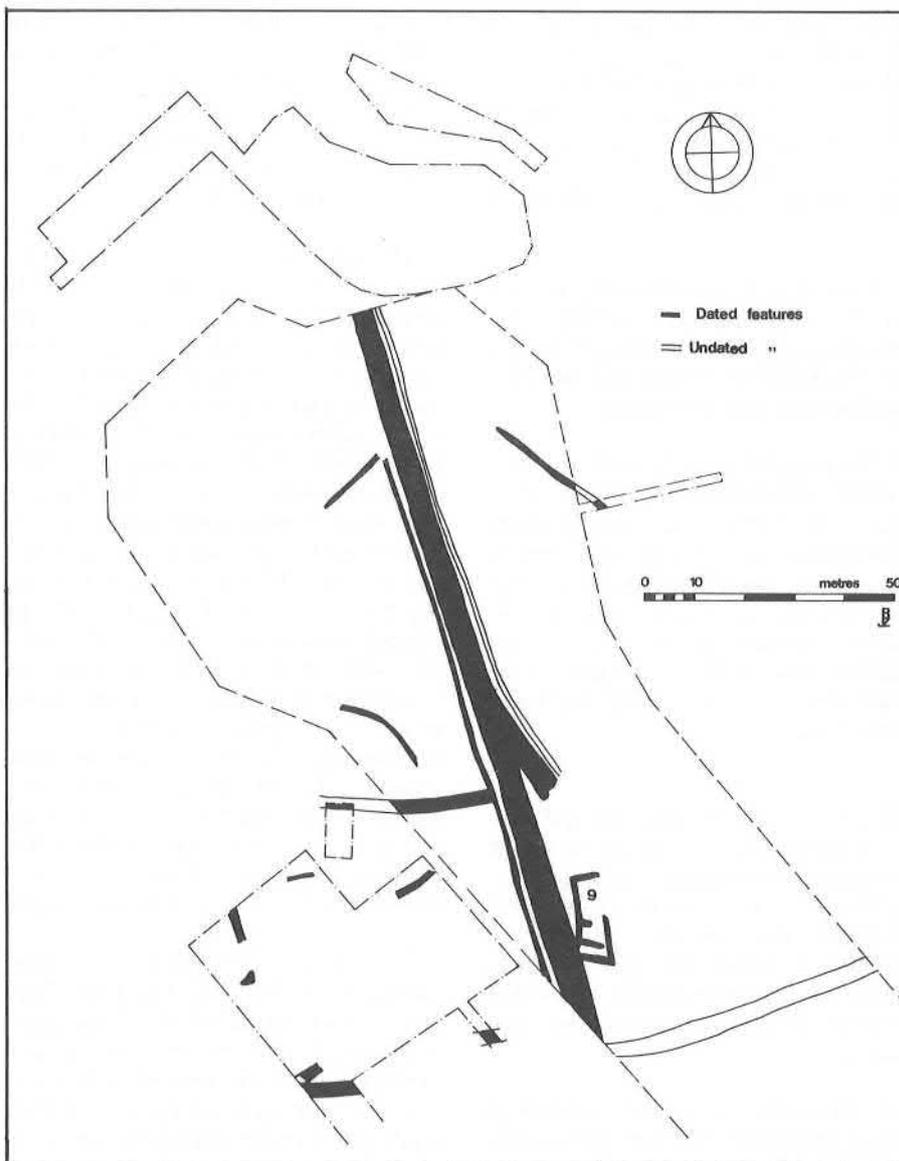


Fig. 32. MK297 Woughton: Plan of Phase III.

Few features were found north-east of this ditch, which may have formed part of the boundary of the settlement.

A further period of alterations to the settlement can be seen in the appearance of gulleys 12-15, and circular gully 16, Building 3, all of which cut earlier features. Gully 12, in part consisting of two parallel gulleys, ran in a north-south direction across the western part of Area A, cutting across the site of Building 1. Evidence of recutting was noted in the eastern part of the gully.

Parallel to, and about 7m to the east of 12, was Gully 13, a straight narrow gully which cut across the site, passing through features 1, 2, 6, 7 and 11.

To the east of 13, in the southern part of Area A, was Gully 14. This deep gully contained

concentrations of stones, probably post-packing material. It was aligned north-east to south-west, with a sharp turn southwards at its western end. It was separated at its eastern end from the end of Gully 15, on the same alignment, by a gap of 4m, perhaps an entrance to a palisaded enclosure set in the two ditches.

Within the area of this enclosure was found feature 16, a circular gully enclosing an area some 2.2m in diameter. The fill of this gully consisted of a dark organic soil rich in bone and pottery fragments. Small concentrations of large stones may represent post-packing within the gully. Despite its small size, one is led to the conclusion that feature 16 represented a building, Building 3, probably a workshop or storage shed.

Among the Belgic features identified during

initial observation work on the site were two circular gulleys, features 10 and 17, defining Buildings 2 and 4. The former, a rounded V-section gully 1m wide, partly enclosed an area 6m in diameter. The fill of the gully was a dark organic silt, patches of which covered the enclosed area as well. The gully was cut by feature 52, see Phase III below.

To the south of Building 2 was Building 4. This was represented by a penannular gully, 17, enclosing an area 5m in diameter. Three post holes were noted within the building. It was not possible at the time to examine the structure further.

To the west of the features described above were found features 18-20, which seem to form part of the same feature: a substantial ditch about 2.5m wide, aligned north-east to south-west, running from a point close to gully 12 and unassociated with other contemporary features. This ditch, which had a shallow, rounded section some 750mm in depth, was interpreted by the excavator as an enclosure ditch, although its position and alignment cast doubt upon this idea.

#### *Phase II*

Occupation of the site during this period was represented on site by Buildings 5-8, all of which were subject to only brief examination owing to the circumstances of their discovery. Of these, Building 5 alone represented the circular native-type structure seen in Phase I. This building, situated to the west of the main area of occupation, consisted of a small gully forming an arc of a circle approximately 9m in diameter.

The other three structures on the site related to this phase were rectangular timber structures, probably based on a sill-beam construction, which became common at about this time, often replacing circular structures and marking the assimilation of Roman building techniques by the native population.

Of these rectangular structures the first, Building 6, was situated to the south of Building 4. It was represented by a T-shaped arrangement of beam slots, filled with dark organic soil, F24. Immediately to the south of this on a similar alignment was F25, a ditch about 1m wide, running east-west.

The second rectangular structure, Building 7, was situated to the north of Building 6, between Building 2 and 4. It consisted of two gulleys, one east-west, the other north-south, resembling beam slots, meeting at a right angle, forming the south-eastern corner of a building. The west side of the structure was cut by F52 and apparently sealed by F50. A possible third rectangular structure, Building 8, was noted to the west of Building 7, but it produced no dating evidence.

The only other feature that could be associated with occupation during this period, F28, was situated some 50m south-west of Building 6. This consisted of an area of cobbling laid with Bunter pebbles, some of which showed signs of burning. It was not possible, however, to link this with any other feature or sign of occupation.

The other Phase II features were all grouped in Area C, to the south of the site, and consisted of a series of shallow gulleys and ditches aligned either north-east to south-west, or north-west to south-east, forming a regular latticework (disturbed by medieval ploughing) over Area C. The frequency of these gulleys was difficult to determine owing to their fragmentary survival, but the north-west to south-east features were situated at intervals of 5-7m, while those at right angles were 4-5m apart. All were rounded in section, and 200-300mm in depth, varying in width from 0.8-1.1m. Cut into several of these gulleys, e.g. F32 and F33, primarily those ssigned north-east to south-east, were large irregular pits. One of these, F31, measured 4.4 × 2.5m and was 0.68m in depth. It contained a similar range of pottery to the gully it cut, F32, and must therefore be presumed to be similar in date. The gulleys appear to have been part of a system of cultivation, probably produced by ploughing and cross-ploughing. It is of interest to note that the medieval ridge and furrow in this part of the site follows a similar north-west to south-east alignment.

The only other feature of note that can be assigned to Phase II was F30. This was a broad ditch, about 2m in width, aligned east-west near the south end of the site. It was also found in Area C, though here narrowed to a width of 1m. It was sealed by F50 and cut by F51. The function of this ditch and its relationship to the cultivation features described above are unclear.

#### *Phase III*

Little evidence was found of this period, occupation of the site having finally ceased about the late second or early third century. One group of gulleys in the south of the site was tentatively identified by the excavator, Richard Griffiths, as the footing trenches of a building, Building 9, measuring approximately 14 × 4m internally, separated into three rooms 7m, 2m and 1.5m in length. However, similar 'structures' at Windmill Hill MK96 (see above) were subsequently reinterpreted as medieval plough furrows and later cross-ploughing. Since these features were not excavated, Richard Griffith's interpretation must remain speculative.

The major feature attributed to this period is the trackway, F50, with its flanking ditches F51 and F52. It ran almost north-south across the site, being identified over a length of 150m, measuring 6m in width. A junction was identified close to the middle

of the site, the subsidiary track coming in from the south-east and being traced for a distance of 12m from the junction. It was recorded as having a surface of limestone, tegula fragments and Bunter pebbles, the surface having been relaid or repaired at one point at least.

Flanking this feature for most of its length were two broad, shallow ditches, both about 1.5m in width, F51 and F52. The former, like F50, produced a range of pottery dating from the second to the fourth century AD, though no material was recovered from F52. Both these ditches, like the trackway, cut across all other features in the central area of the site.

Despite the excavator's ready identification of this group of features as a late Romano-British trackway, the writer feels bound to express his doubts, as there are a number of problems with this interpretation. Firstly, on aerial photographs taken in 1973 whilst the central area was being stripped for the road construction, a lighter, stoney area does appear, but clearly as a medieval headland. Secondly, excavations in Area A on the projected line of the 'trackway' failed to establish the presence of either it or its flanking ditches, though it is tempting to line up F52 with F12, despite the latter's definite Belgic date. Finally, looking at the trackway in terms of other sites in the area, it is not on any sensible route between known Roman sites. Much of the material from it, including the tegula and pottery sherds, could be residual material. Having thus stated the available evidence, the writer would prefer to reserve judgement, but is inclined to see features 50-52 as a product of medieval ploughing.

The other features dated to this period fall into no recognizable pattern, and little useful comment can be made about them. They consist in the main of a series of disjointed ditches and gulleys, concentrated around Area C. One very large ditch, F49, aligned east-west across the south end of the site, appears to be associated, by alignment, with F48 in Area C. F49 was not sectioned, but appears similar to F48, which has produced third- to fourth-century pottery. This combination of ditches probably formed a major land boundary during this final phase.

## DISCUSSION

The picture presented by the site at Woughton is of a small Belgic settlement, based perhaps on an extended family group, farming a somewhat inhospitable tract of Boulder-clay upland throughout the first and second centuries, following which the area continued to be farmed but from a different base, perhaps by a new owner. It is unfortunate that examination of the site has been so limited by the dictates of modern development, as

this has produced a somewhat biased view, based upon two separate areas of detailed excavation producing totally different types of features from different periods. They are linked by an arbitrarily stripped area which has given only a partial indication of the true extent of the site. It is quite probable that the settlement was situated in a ditched enclosure, similar to that at Wakerley, Northants (Jackson and Ambrose, 1978); this could explain some of the larger ditches on the site.

It is unfortunate also that Woughton has produced only a small quantity of faunal remains, though it is encouraging to note that the relative proportions of cattle, sheep and pigs represented seems to conform with that from other sites in the area. Of cereal cultivation we regrettably know nothing, though, given the limited nature of the excavations, this should not be taken to mean that animal husbandry alone was practised by the occupants of the site.

Turning to the structural remains at Woughton, one point to note is the change from circular 'native' structures to rectangular timber buildings—probably of sill-beam construction—in the post-conquest period. Though this is often taken to indicate Romanization of a site—and may well be the case here—it must be remembered that rectangular huts of pre-conquest date are well attested in lowland Britain (Rodwell, 1978)).

One final point about the Woughton site is that it adds further weight to the body of evidence that farming in pre-conquest Britain was not confined to lighter valley soils, but was carried out on the heaviest of clay soils, even in locations which, until very recently, were not considered hospitable.

## MK301 STANTONBURY

R. J. Zeepvat

### INTRODUCTION

The site at Stantonbury was situated about 1km north of Linford Wood, on the west side of Great Linford parish at SP 8443 4123. It was first discovered during topsoil stripping for the construction of tennis courts for the nearby schools at Stantonbury Campus. No finds had previously been recorded from this area, which had been unploughed since about 1970. Construction on the site was deferred while a small rescue excavation was carried out by the Unit, revealing two stone structures; one circular, containing at its centre a domestic oven, the other a large rectilinear structure, possibly a villa. On conclusion of the excavation the site was backfilled.

The writer is indebted to Josh Schweiso and Val Shelton Bunn for their clear and informative record of the 1975 excavation.

Stantonbury (fig. 33) is situated on a gentle west-facing slope about 80m north-east of Stanton Brook, at a height of 85m OD. Geologically, the immediate area of the site is underlain by outcrops of Cornbrash and sands and gravels of the later Kellaways beds, whilst the high ground to the east is covered by a capping of Boulder clay. Topsoil on the site varied in depth from 20-30mm and was very clayey, though being on a slope the area was well drained.

Stanton Brook, to the west of the site, marks the western boundary of the parish of Great Linford. The field name for the area of the site, Rowelowe Furlong (Rough Hill Furlong), is recorded on the estate map of Great Linford, 1641 (Buckinghamshire Archaeological Society). This name conveys only a hint of any early local knowledge of the site. It does, however, indicate that the field was ploughed during the medieval period and this was confirmed by ridge and furrow damage found on site during excavations.

During the period following discovery and initial excavations, much discussion has taken place concerning the future of the site. It remains within the grounds of the Campus who view it as a potential educational resource. The tennis courts intended for the site have been relocated, and the area is at present free of any threat of development. In 1980, following the continued interest shown by the Campus in the site, a project was initiated jointly between the Campus and the Archaeology Unit to excavate, conserve and landscape the site, using finances and labour from the Campus, with the Unit providing supervision, equipment and the necessary expertise. This project centred on a short summer training excavation involving Fourth- and Fifth-year Campus students. The writer is extremely grateful to the staff and students at Stantonbury Campus for their help and enthusiasm. The following report states our knowledge of the site as gained from the 1975 excavations and the three further seasons, comprising a two-week excavation in 1980, six weeks in 1981, and a final four weeks in 1982. In particular, the writer acknowledges the help of the 'professional' excavators in the last two seasons.

## THE EXCAVATION

In 1975, two stone-built structures were uncovered on the site (fig. 34). The smaller of these, Building 1, was a circular structure containing a domestic oven at its centre. This building was almost completely excavated at that time. About 25m to the north-east an extensive rubble spread marked Building 2, a large rectilinear structure from which relatively superficial examination produced quantities of painted wall plaster, *opus signinum*, and both roof and hypocaust tile, suggesting it to be a villa. Work in 1980 concentrated on a small part

of the north-west corner of this building and identified a small bath suite in that area. Further work in 1981 showed Building 2 to be a small, substantially constructed rectilinear building, with a square, single room extension on its east side. Yard surfaces to the south and east of the building were found to overlie a number of pits, gulleys and post holes. Excavations in 1982 revealed a further two large circular stone structures, Buildings 3 and 4, to the east of Building 2, as well as additional yard surfaces, etc.

Dating evidence for Buildings 1 and 3 suggests that their occupation spanned the second century AD, whilst Building 2 was probably constructed in the late second century and remained in use until after 350 AD. Building 4 appeared to be fourth-century in date.

## DETAILED DESCRIPTION

### *Building 1*

This was a substantial circular structure measuring 7.8m in diameter internally. Its sole surviving structural feature consisted of a circular foundation of tightly-packed pitched limestone, 600mm in width and about 150-200mm in depth, cut into the natural clayey subsoil. No trace of any overlying wall remained, and there were no indications in the foundation course as to the materials used for the wall. Inside the building the only indication of a floor was the presence of a thin layer of reddish-brown clayey soil covering the whole internal area.

Cut into the floor in the centre of the building was found a keyhole-shaped oven, 600mm in diameter and 1.5m in length. The broad end of this feature was situated at the exact centre of Building 1, with the stokehole facing eastwards. The sides of the oven were lined with limestone, all of which was heavily burnt. East of the mouth of the stokehole was a small stoking pit, 600 × 900mm. Both the stoking pit and oven were filled with a series of ash and charcoal layers. On removal of these layers the floor of the oven was found to be cut below the base of the stonework lining the sides.

This feature was initially interpreted by the excavator as a smithing hearth, on the basis of some fragments of iron in one of the charcoal layers (Green and Mynard, 1976, 44). On examination this would not appear to be the correct interpretation, as flotation of charcoal samples has produced only fragments of wood charcoal and one snail shell. There was no slag from the rest of Building 1, nor any of the features normally associated with smithing, such as a water tank or anvil base. The hearth would also be too low for a smith to use it comfortably. A more likely interpretation seems to be that it was a domestic oven, positioned so that it would vent successfully through a central smoke

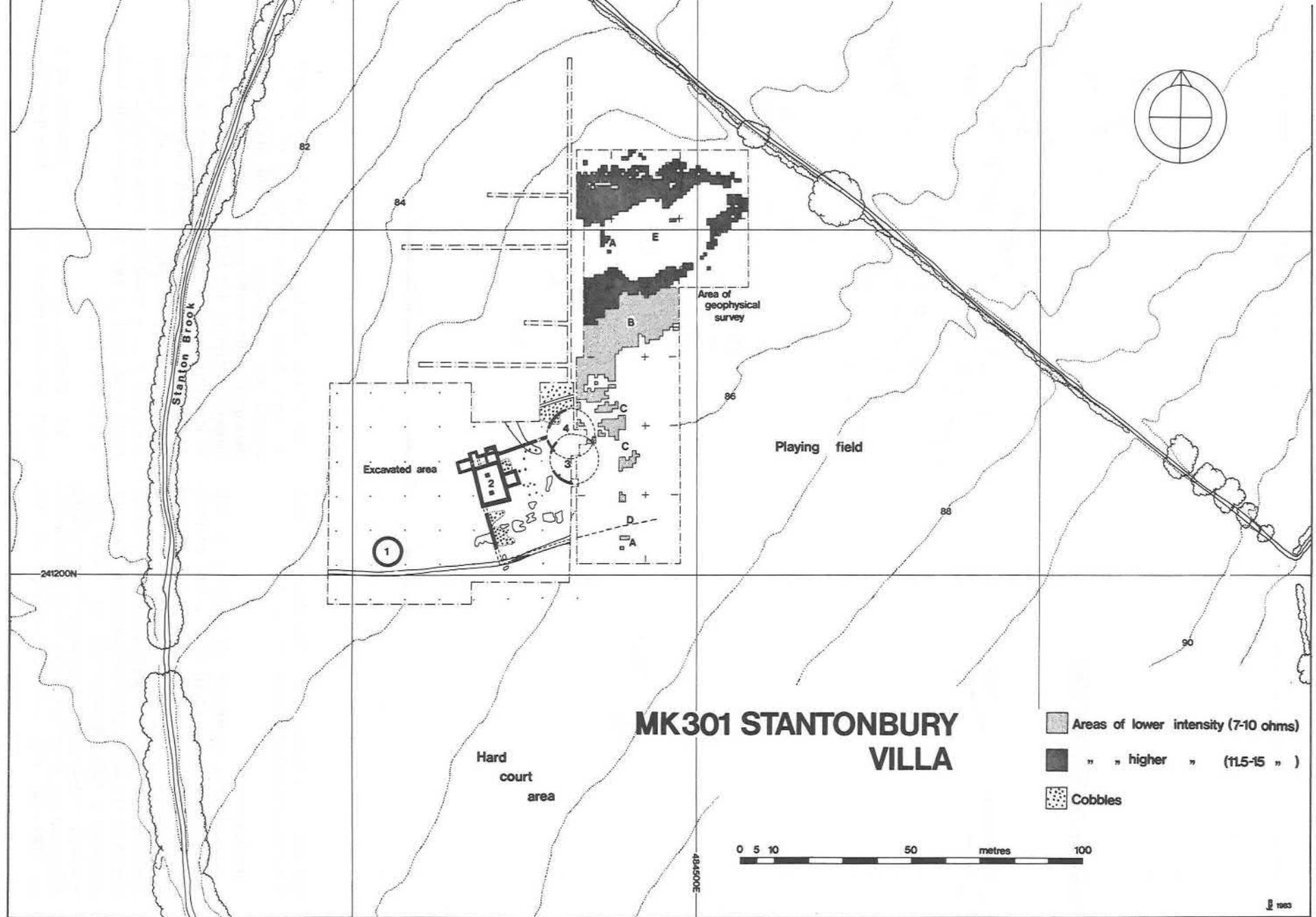


Fig. 33. MK301 Stantonbury: Location of Excavation and Resistivity Survey.

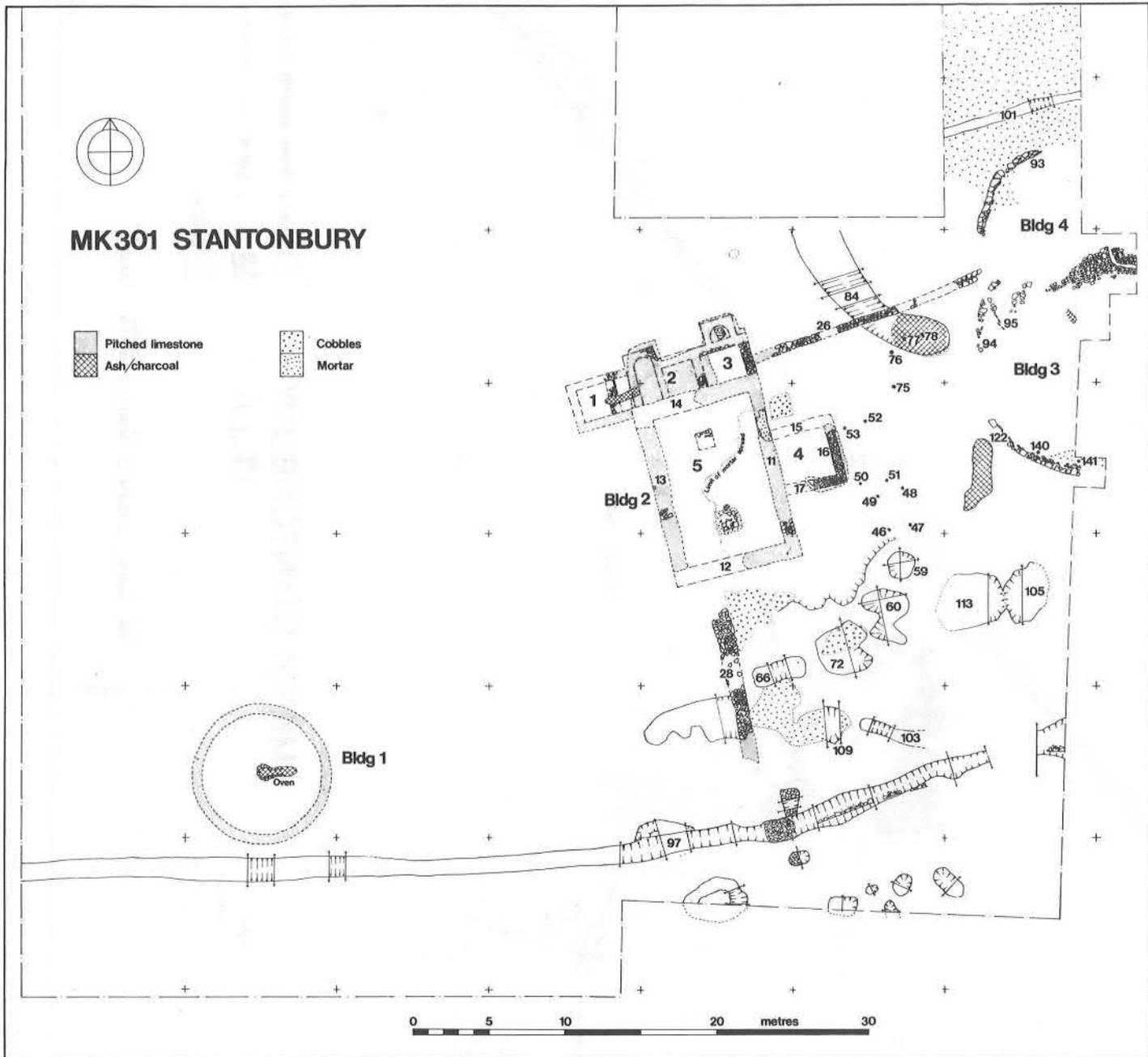


Fig. 34. MK301 Stantonbury: Excavated Features.

aperture in the roof. Finds from Building 1 date from the early to late second century AD.

**Building 2**

Situated 25m north-east of Building 1, this structure first appeared in 1975 as an extensive limestone rubble spread, containing quantities of both roof and hypocaust tile, fragments of *opus signinum* and painted wall plaster, all of which suggested the presence of a substantial dwelling, probably a villa. Because of the limited time available, work was concentrated on determining the extent and layout of the building. Excavations in 1980 and 1981 were concentrated on this

structure, with total excavation as the ultimate goal. A single stone structure measuring 16 × 11.5m overall was uncovered. This had been heavily damaged by stone robbing, ploughing, and the site-stripping activities that led to its discovery in 1975, so that little more than the foundations survived. These were, however, sufficiently intact to show that the structure consisted of three main elements: a central core, a small bath suite attached to its north end, and a virtually square single-room extension to the east.

The central core of Building 2 consisted of a simple rectangle measuring 6.5 × 10m internally,

aligned north-south (room 5). The walls of this structure were massive, consisting of well-cut limestone ashlar blocks with a mortared rubble core, 800mm wide in total, set on a slightly wider pitched limestone footing 150-200mm in depth, laid in a trench in the clay subsoil. In addition, placed on the north-south axis of room 5, 1.6m from walls 12 and 14, were the bases of two substantial piers, each 1.1 × 1.1m, constructed of mortared limestone. The northern pier, 57, had been almost completely destroyed, but enough remained of its counterpart to show the constructional methods used. A foundation pit about 1.5 × 1.5m had first been cut into the clay subsoil to a depth of 250mm and into this the pier had been built, the remainder of the pit being subsequently filled with mortar and limestone fragments. Cut into the clay subsoil and the north side of the foundation pit of pier 56 was a roughly circular pit, 750 × 800mm in diameter and 200mm deep, filled with ash, 55.

Dating material for the foundation trenches of room 5 suggest a construction date some time in the late second century AD. The later history of this room is, however, less easy to resolve. The subsoil within room 5 was covered by a layer of dark grey-brown clayey soil, 39, with 50% limestone rubble fragments, to a depth of about 100mm. This context also produced late second-century pottery. Covering this layer, and the footings of pier 56, was a spread of yellow lime mortar, 38, which produced fourth-century sherds and the jet pendant, fig. 46 and p. 145 below, and a very worn *follis* of the House of Valentinian, 364-78 (Coin no. 15). This mortar covered the south-west quarter of the interior to a depth of up to 150mm. Its surface was mostly covered by a thin spread of ash, and some of the mortar itself was discoloured by burning. This ash layer contained sherds of a late fourth-century shelly fabric, as well as quantities of slag, suggesting that after occupation had ceased, room 5 fulfilled a secondary industrial function.

Room 4, measuring 3 × 3.5m internally, was located to the east of room 5, its walls butting onto wall 11. It was constructed less massively than room 5, with mortared limestone walls 600mm thick on a slightly broader packed rubble footing. A mortarium sherd from the footings of wall 16, dated to AD 180-240, and pottery sealed beneath the dark grey-brown clay loam through which the walls had been cut, suggested an early third-century construction date for this extension. A silver antoninianus of Macrinus, 217-18 (Coin no. 19), also came from this context.

One interesting point to note about room 4 is that its northern and southern walls were aligned with the piers in room 5. No trace of flooring was found in room 4, the remaining destruction material in the room overlying the clay loam mentioned above,

which was similar to that covering the surrounding 'yard' areas to the east of Building 2.

To the north of room 4, in the angle formed by walls 11 and 15, was found a patch of worn limestone cobbling about 1.6m square, its surface level with the top of the first course of stonework above the footings of wall 11, and slightly raised above the aforementioned clay loam layer, which covered most of the area to the east of the building. This patch of cobbling probably marks the entrance to the building from the enclosed yard area, described below.

The bath suite, consisting of rooms 2 and 3, was butted onto the north end of room 5. It measured 8.5 × 4m overall, with a stoke room, room 1, 3.5 × 4m overall, attached to its west end. This room was built on pitched limestone footings 600mm in width, with a clay floor in which was cut a stoke hole, leading into the caldarium. This stoke hole, 600mm wide and 200mm deep, showed signs of extensive use, the sides and floor being baked hard and discoloured to a depth of 20-30mm. To the east of room 1 was room 2, the caldarium/tepidarium. No walls of this room survived, the whole area being founded on a mortared pitched limestone raft measuring 2.5 × 5.5m, with an extension 1.6 × 2.5m from its north side, near the north-west corner. From the quantities of tile recovered from this area, it seems that this foundation raft supported a pillared hypocaust as well as the surrounding walls. Allowing for 600mm walls, the area enclosed by this structure would have been 3.9 × 1.9m, with a further 0.7 × 1.4m in the extension, which could have contained a semi-circular hot plunge bath 1.4m in diameter. This area may have been further partitioned into a caldarium measuring about 1.4 × 1.9m and a tepidarium 1.9 × 2m. These dimensions, whilst certainly very small, compare favourably with those of the western bath suite at Bancroft (see above) and with that class of 'Utility Plan' bath suites identified in Hampshire by Johnson (1978). The dividing wall between these two rooms would have been carried on the hypocaust pillars.

The bulk of tile recovered from this room (see tile report, p. 118) has a shelly fabric suggesting a fourth-century construction date for the baths.

To the east of room 2 was room 3, the frigidarium. This measured 2.7 × 1.9m internally, and was built onto the clay subsoil, though a further area of mortared pitched stone footing 2.4m square carried its north wall, and a semicircular cold plunge bath with an estimated diameter of 1.6m. The central part of the floor of this plunge bath survived to a height of about 200mm above its footing raft. Its construction consisted of a 'sandwich' of mortar, tile and *opus signinum*, being built up as follows:

- a) Above the footings a 100mm layer of lime mortar.
- b) Above this, a layer of shelly sub-floor tiles.
- c) Next, a 50mm layer of *opus signinum*, in the top of which were visible the bedding lines of *pila*-type tiles, forming the floor of the bath, at an estimated height of 25cm above the natural subsoil layer within the frigidarium proper.

Despite the lack of evidence for a floor within room 3, this suggests the presence of a floor, perhaps of *opus signinum*, which had been destroyed by subsequent robbing and ploughing.

#### *Building 3*

Situated 15m north-east of Building 2, Building 3 was represented by several disjointed sections of limestone walling, forming arcs of a circular structure approximately 15m in diameter. Part of this structure remained unexcavated, as it continued beyond the area available for excavation. The surviving sections of wall, 94 and 122, were about 600mm wide, formed of coursed limestone slabs laid without mortar. Against the inside face of the wall were found two stone-packed post holes, 140 and 141, each about 250mm in diameter. These may have formed part of a ring of post settings spaced around the structure, but evidence for any others did not survive because of plough damage.

Inside the building, the only trace of a possible floor surface was noted against wall 122, where there were traces of a fine-packed gravelly surface in the area of post hole 141. This was laid directly on the clay subsoil, and its absence elsewhere in the building can be attributed to ridge and furrow ploughing.

Dating evidence from the structural remains of Building 3 was almost non-existent, though pottery from rubble associated with wall 94 suggests a second-century date for the structure, thereby associating it rather with Building 1 than Building 2.

#### *Building 4*

Overlying the north segment of Building 3 was a second circular stone structure, with a diameter of about 14.5m. This too appeared on the ground as several disjointed areas of walling, 93 and 95, cut by medieval ridge and furrow.

These walls were also about 600mm in width, constructed of limestone slab coursing, whilst the whole structure had a pronounced batter inwards, and a line of stone slabs set upright followed the inner, unfaced, side of the wall. At the point where this structure met the wall of Building 3, it cut the latter. As with Building 3, much of the interior had been cut by plough damage, but rough areas of flint and limestone cobbling adjacent to wall 95 may represent the surviving internal floor. Once again, no datable material was recovered from the

structure of Building 4, though its apparent association with the heavily cobbled yard surface to the north suggests that it was in use in the fourth century.

#### *The Yards*

Outside the building, much of the surviving evidence was within an area south and east of Building 2 defined by two stone boundary walls and a ditch. The first of these, 26, started from the east end of the bath suite, ran eastwards for a distance of at least 32m, and consisted of alternating courses of pitched stone and slabs, 500mm in width. The second, 28, starting 2m from the south-west corner of the main structure, measured 1.2m in width, and was traced southwards for a distance of 8.5m. It was also constructed of dry limestone coursing.

The ditch, 97, following an east-west alignment, was traced across much of the south end of the site, apparently forming the southern boundary of the occupied area. In cross-section the ditch was a shallow V, with a slightly rounded bottom. In sections cut adjacent to Building 1, it measured 1.5m in width, and 500mm deep, gradually narrowing and shallowing eastwards to peter out 5m from the eastern boundary of the excavation.

Ditch 97 was apparently first dug in the early second century, about the same time as the construction of Building 1, probably fulfilling the dual functions of drainage and boundary ditch. That the latter was its principal function is indicated by the fact that Building 2, as well as its associated boundary walls, follows the same alignment as the ditch. Furthermore, traces of limestone walling in the fill of the ditch east of its projected junction with wall 28 indicate that when the yard area east of Building 2 was enclosed, probably some time in the fourth century, the line of the ditch, by then partly silted up, was still a recognized boundary. That part of the ditch where the corner of this boundary wall would have stood had been filled with packed limestone rubble, probably to support the wall. The upper fill of the ditch to the west of this junction contained large amounts of limestone rubble, representing either intentional filling of the ditch on destruction of the wall, or an accumulation of destruction material following abandonment of the site.

Within the area enclosed by these structures were a number of pits, post holes and a ditch, most of which have been dated to the second century, roughly contemporary with the construction of Building 2. The one exception to this group was a shallow V-sectioned ditch, 84, aligned north-west to south-east across the north-east corner of the site. This was about 2m in width, and had a maximum depth of 500mm, decreasing towards its southern end. Its primary silt contained several first-century sherds, including Caldecote ware, though higher

levels produced finds contemporary with the features described below. The upper fill of the south end of feature 84 was an ash deposit dated to the second century. The ditch was also cut by wall 26, which had subsided into the ditch fill. A number of stone-packed post holes, 75-78, were found cut into and to the south of 84, but these produced no dating evidence, and formed no recognizable structural pattern.

Two further groups of stone-packed post holes were found to the east of room 4. The first of these groups, 46-49, formed a rough rectangle measuring 1.5 × 2.5m. The post holes were each about 300mm in diameter, with an average depth of 250mm into the clay subsoil. The second group, 50-53, was situated to the north of these, forming a rectangle 4 × 1.6m aligned with and 700mm from wall 16. These were also about 300mm in diameter, with an average depth of 200mm.

To the south of Building 2 were a number of amorphous shallow depressions cut into the clay subsoil, 59, 60, 66, 72, 103, 105, 109, 113, all of which were dated to the mid-second century. These features had apparently been left to silt up naturally, after which any remaining depressions or damp patches had been surfaced with limestone rubble or pitching, forming a rough yard surface. Throughout the occupation of the building a dark grey-brown loam layer up to 250mm thick appears to have built up in the area east of Building 3, containing occupation debris spanning the period from the second to fourth centuries AD.

To the north of Building 4 an extensive area of yard surface laid in limestone rubble and flint pebbles was uncovered. It began against the wall of Building 4 and extended northwards for at least 10m. Quantities of fourth-century sherds, including a fragment of a large storage jar, were found embedded in its surface. The yard was cut by a ditch, 101, aligned approximately east-west. This ditch was 900mm wide, 400mm deep, with almost vertical sides and a flat bottom. Its fill included quantities of shelly roof tile, Fabric 1. The full extent of both the yard and the ditch were not discovered, owing to the limited area of the excavation.

In 1975, at the same time as the main site was being stripped, a similar-sized area to the south was cleared, also for a hard-court play area. Observation of this work produced evidence of a number of ditches and gulleys, aligned mainly east-west or north-south. These features were planned and a small amount of excavation carried out before construction commenced on the site. This area was originally recorded separately from the main site and is designated MK306. Finds, most of which were collected from the surfaces of the features, are principally of fourth-century date, with a small

amount of residual second-century material. The relationship of these ditches and gulleys to the buildings is not clear, there being an intervening gap of about 70m, though they are probably connected with the later phase of occupation of the villa.

## DISCUSSION

Since its discovery, Stantonbury has presented many problems of interpretation, both within itself and in the wider context of its relationships with other Roman sites in the Milton Keynes area. The former problems centre upon the appearance and function, or functions, of Building 2, and its relationship to the rest of the site.

As can be seen from both plan and description, Building 2 is a most unusual structure. It consists of two distinct elements: the main structure, rooms 4 and 5 and the bath suite, rooms 1-3. Ignoring the latter for the moment, as it is self-contained and recognizable, what is the function of the main part of Building 2? Although first thought, before excavation, to be a small Romanized farmhouse, similar to Wymbush, the results of the excavation seem to suggest otherwise. The structure at Stantonbury is smaller and less complex than Wymbush, yet much more solidly constructed. In addition, the presence of the two large pier bases in room 5—a feature to my knowledge unparalleled in Roman Britain—must also be explained.

It seems reasonable to suggest, from the 1m wide footings forming the core of Building 2, that this part of the structure consisted of two storeys. If this is correct, the pier bases would have probably carried stone pillars supporting the upper floor, perhaps by arched vaulting. This strength of construction seems to be unnecessarily strong for a normal timber floor of only 6.5m span; the house at Bancroft, for example, had a span of 8.5m with no intermediate support, and the 6.5m span at Wymbush was similarly carried without additional support. One possible reason for this robust construction may be found in the mortar layer covering part of the floor in room 5; this was not a solid, laid mortar surface, but rather a deposited spread of mortar, which may represent the remains of a mortar upper floor, similar to that at Lockleys (Ward-Perkins, 1938).

Taking the above explanations of the various architectural features, is it now possible to identify the function of Building 2? The most likely explanation is that it was a tower granary: similar, though smaller, examples have been excavated at Gorhambury (information from David Neal) and Silchester, while a much larger one was found at Cromhall (Morris, 1979). The concrete upper floor, whilst elaborate, would ensure that the grain stored within was free of vermin, whilst the ground floor would have served for other agricultural functions.

The presence of the bath suite on the north end of Building 2 is not as peculiar as it may seem. Examination of several villa sites, of which Gorhambury is again an example, has revealed the presence of two bath suites, one attached to the main house, the other usually elsewhere in the complex of farm buildings. At Bancroft the second bath suite is built onto the rear of the main building, accessible through room 1, see p. 71. In most cases this second suite is a third- or fourth-century addition—as at Stantonbury—and has been interpreted as bathing facilities for the farm workers, provided by an enlightened owner. This would explain the small size of the bath suite, which could be quickly and cheaply run, the bathers presumably spending in it the minimum time necessary for their ablutions.

From the excavations at Stantonbury it was apparent at a fairly early stage of the project that we were dealing with a small part of a far more

extensive site. Whilst the southern and western boundaries of the main area of occupation were reasonably well defined, there was ample evidence that both features and structures continued beneath the playing field to the east and north-west. The nature of this unexcavated part of the site can only be guessed at present, though we hope to arrange for the area to be geophysically surveyed in the near future. However, the presence of an elaborate tower granary and bath suite, together with a walled farmyard area and a number of circular buildings (for a discussion of Romano-British circular stone structures see Williams, 1976, 112-14) suggests that we are dealing with a complex of farm buildings at the centre of a villa estate, presumably linked with a house similar to that at Bancroft. This would certainly fill a gap in the Roman landscape in this area, since the parish of Great Linford, in which Stantonbury is situated, has so far produced surprisingly little evidence of Roman occupation.

## REPORTS ON CONSTRUCTION MATERIALS

Throughout the finds reports the following abbreviations have been used where possible:

Cent.	century	m	metres
Th.	thickness	mm	millimetres
D.	diameter	uns.	unstratified
Ht.	height	W.	width
L.	length	g	grams
fr.	fragment		

From the bronze objects onwards the following format has been adopted for the description of finds: illustration number, description, MK site number/provenance/object number of the find in the site Level III Archive.

### BUILDING MATERIALS AND TECHNIQUES

R. J. Zeepvat

#### INTRODUCTION

The most common building materials used in the Roman period in the Milton Keynes area were wood, limestone and tile. The latter is reported on in detail below (pp.118-25) and was mainly restricted to roofing and specialised functions connected with bath suite and hypocaust construction; wood and limestone formed the main structural components, in varying degrees, of all the buildings excavated. The following study attempts to examine the sources of these materials, and their various uses in building construction.

#### WOOD

At our present state of knowledge, little can be said about the types of timber used locally for building construction because organic materials are poorly preserved in the clay subsoils of the area. As far as structural timbers in the larger buildings are concerned, it seems reasonable to suggest that oak was the main timber used, just as it was during the later medieval period in the Milton Keynes area. Whether oak also formed the principal structural component of the smaller native-type timber buildings at MK64 Wood Corner and MK297 Woughton is not as certain. For smaller structural timbers, as used in wattling for example, evidence is similarly lacking from Roman sites, though wattle surviving in the Saxon well at Pennyland, Milton Keynes, was composed mainly of blackthorn (information from the excavator, R. J. Williams). Looking further afield, analysis of wood remains

from Farmoor, Oxon. (Lambrick and Robinson, 1979), suggests that hazel, willow and coppiced oak were also used where available.

Structural evidence of timber buildings on Milton Keynes sites, like organic evidence, is also very slight. Perhaps the most common type of structure on native sites was the circular timber-framed building, ranging in size from 7m to 14m, examples of which have been found at MK64 Wood Corner and MK297 Woughton. Like their Belgic antecedents, the only evidence of these buildings comes in the form of a circular or penannular drip gully, suggesting that the structure consisted of a timber frame, infilled with wattle and daub, resting on a sill set in no more than a shallow trench cut in the topsoil. Postholes are not normally evident, either at the circumference or near the centre of the building. This type of structure continues in use in the area into the early third century, e.g. Building 8, MK64 Wood Corner. This latter site is the only one to have produced daub in any significant quantities.

Rectangular timber structures also seem to leave little evidence of their presence, probably because of the employment of similar constructional techniques to the circular buildings. Rectilinear arrangements of drip gullies at MK297 Woughton suggest the use of sill-beam timber framing, with little or no footing trench. A variation of this structural type was found at MK64 Wood Corner, Buildings 1 and 9, where beam slots cut into the subsoil were found with stone post-pads at intervals along the bottom of the trench, suggesting that the weight of the structures was taken on the vertical posts of the framing, rather than a sill beam.

Unfortunately, little can be said of the uses of timber in stone structures of Roman date. At MK105 Bancroft, quantities of charcoal overlying Wall 8, Room 6, were interpreted by the excavator as the sill beam of a half-timbered wall remaining *in situ* after the conflagration which destroyed the Phase II house. Indeed, the walls of Rooms 4-7 are narrow and could have formed the base for a timber superstructure, but evidence for this is slight. Similarly, Building 5 at MK105 Bancroft may have been timber-framed, as shown on the reconstruction drawing, Fig. 23, though there is no clear evidence for this.

Use of timber in the roofs of the larger stone buildings must have been considerable. The weight

of a Roman tiled roof, at about 60kg per square metre, is similar to that of a roof laid in plain tiles, which requires rafters at about 400-450mm intervals. However, Rook (1979, 295-98) suggests that the tiles were laid on roof boarding, and a modern textbook (Barry, 1969, 114) states that 'Italian tiles', the modern equivalent of tegulae and imbrices, should be laid on roof boarding, with 75-25mm battens running down the roof forming channels in which the 'unders' (*tegulae*) are laid, these being subsequently being covered by 'overs' (*imbrices*).

It is perhaps interesting to note the roof span involved in these structures. MK105 Bancroft's is by far the largest, the main building measuring 8.5m; MK211 Wymbush Building 1 and MK301 Stantonbury Building 2 are each about 6.5m across. The type of truss used in these roofs must unfortunately remain open to speculation.

## STONE

The stone used for structural work on Roman sites in Milton Keynes is almost entirely limestone. Though its source has not been identified petrologically, it is most likely to be Blisworth limestone, which outcrops along both sides of the Ouse between Cosgrove and Little Linford, as well as in the lower reaches of the Loughton Brook and Stanton Brook valleys. No Roman quarry sites have yet been identified, though quarrying has taken place sporadically throughout this area since Roman times. Blisworth limestone is very variable in quality, some being greyish, crystalline and very hard, without a definite fracture, whilst some is a golden yellow colour, with varying amounts of fossil shell inclusions, soft and easily split.

It is perhaps because of this variable quality that little monumental stone, window mouldings, etc. has been found on sites in the area. Most of the stone structures excavated so far have been within 1km of a possible source of stone, presumably making it abundant and cheap to use. This situation seems to have prevailed in the north of the city until the appearance of brick, sometime in the seventeenth century. Few stone structures have been found in the south of Milton Keynes; Magiovinium, for instance, seems to have consisted mainly of timber structures, at least in the suburbs.

As far as the structural use of stone is concerned, there seems little correlation between footing depths, wall widths and estimated wall heights. Building 2 at MK301 Stantonbury, assumed from its 1m thick walls to be two storeys in height, has only 150mm deep pitched stone footings, whilst MK211 Wymbush, with 600mm wide walls presumably rising to a single storey, had footings cut 700mm deep into the clay subsoil, constructed of packed limestone rubble.

It seems clear from this that one must not look at a wall in isolation to determine its former height, but must take the building as a whole into consideration, and then see if one's ideas hold up—figuratively speaking!—on the structural evidence.

Footings seem to be laid in only two ways, both of which appear to take into account cheapness of construction by the use of small stones and rubble. The most common type is the pitched limestone footing, where small flat pieces of limestone are packed end-on into a shallow foundation trench, running across the line of the wall. This type of stone can be found in quantity in certain areas when ploughing and frost have shattered buried outcrops of limestone, making it cheap and readily available. This type of footing has been noted on both boundary and building walls at MK105 Bancroft and MK301 Stantonbury, and the foundation raft underlying the MK301 Stantonbury bath suite is similarly constructed, though with mortar bonding and levelling to support the hypocaust.

The second footing type is similar to the first, except that in place of pitched limestone the footing trench is packed with limestone rubble, tightly rammed. This method was noted at MK211 Wymbush and MK301 Stantonbury Building 2, Room 4. With both pitched and rubble footing, there is often a levelling course of clay or mortar separating the footings from the wall proper.

Walling too varies in character, as one might expect on a number of sites built by different people at different times. As on Roman sites elsewhere, the general technique is to use large, trimmed facing stones with an infill of smaller stones either with or without mortar. In general, the earlier walls, such as at Bancroft, Rooms 4-7, late first to early second century, and at Wymbush, late second century, are more carefully built, with neatly squared facing stones and only small amounts of mortar, whereas later structures such as the bath suites at MK301 Stantonbury and MK105 Bancroft have walls consisting almost of mass concrete with only small, roughly trimmed facing stones. However, this distinction should not be taken too literally: surviving walls of Building 2 at MK301 Stantonbury have a largely concrete centre, yet are late second to early third century in date.

A number of interesting variations in wall construction involving different stone sizes and placing have been noted in the various excavation reports. One technique, noted in Wall 26 at MK301 Stantonbury and Wall 9 at MK105 Bancroft, is the use of alternate courses of flat and pitched stone. The reason for this type of construction is unclear. Another interesting form of walling can be seen at MK301 Stantonbury, Building 4, where the walls consist of large flat slabs spanning nearly the whole

width of the wall, roughly mortared together, with a pronounced inward batter.

Stone is of course also used extensively for yard surfaces as well as walling. Here again, limestone rubble is the most commonly used stone, presumably either quarry waste or field pickings from areas with Blisworth limestone or cornbrash subsoils, often mixed with a small quantity of Bunter pebbles from the boulder clay upland areas.

Imported stone as a structural component is very rare in Milton Keynes, probably because of the abundance of limestone. All examples so far discovered have come from MK105 Bancroft. A small amount of Pentelic marble from that site indicates its use either for decorative panelling or as part of a statue, and tufa from the southern bath suite probably formed a component of the vaulted roof. It should be noted, however, that small outcrops of tufa exist near Cosgrove, Castlethorpe and Haversham on the north bank of the Ouse, so this material may in fact be local.

#### THE MOSAICS OF THE BANCROFT VILLA (MK105)

D. J. Smith

I am indebted to the Milton Keynes Archaeology Unit for inviting me to report on the mosaic pavements and in particular to Pauline Marney and John Barnbrook for providing information on them. I regret that I myself did not see the actual mosaics. All remain *in situ* and are now buried. They form an exceptionally important group and study of them leads to most interesting, though possibly controversial, conclusions.

All were recorded *in situ* by Mr David Neal, who most kindly lent me copies of the drawings and descriptions of them in advance of their publication in the catalogue of his paintings (Neal, 1981). Although I have taken due account of his observations, and am generally in agreement with his comments, the conclusions here are my own.

The mosaics are described in order according to the numbering of the rooms. The description of each is followed by a commentary on features of chronological significance. The report ends with a consideration of stylistic criteria which suggest possible attributions, and the implications of these.

#### ROOM 1 (Figs. 19 and 35, Pl. 15)

For Room 1 see p. 68. It measured  $9.80 \times 8.19\text{m}$  and was paved throughout in tesserae ranging from  $30 \times 30 \times 20\text{mm}$  to  $20 \times 20 \times 10\text{mm}$  which tended to be less coarse and irregular than those in the mosaic of Room 12, the corridor (see below). The pavement (Neal, 1981, No. 6) was executed in grey/white tesserae (limestone) with the pattern

picked out in red tesserae (tile). It is reported to have been bedded in *opus signinum*.

Had the pattern occupied a simple rectangle it would have measured  $7.0 \times 8.1\text{m}$ , leaving a plain surround varying in width on each side; but  $4.9\text{m}$  from its northern side it was reduced by  $400\text{mm}$  on both the east and west sides. It consisted only of large intersecting circles and semicircles with outlines two tesserae wide, averaging  $950\text{mm}$  in overall diameter but irregular and obviously set out by eye. The circles generally had at the centre a small poised square, slightly concave, of twelve or sixteen tesserae. The pattern was bounded by two bands, the inner being two tesserae wide and (with an interval of six grey/white tesserae), the outer four tesserae wide. At the points of reduction the outer band, having turned a right-angle inwards, continued almost on the line of the inner band, while the latter abutted against a circle on both sides of the pattern.

Within the pattern, asymmetrically, was a plain rectangle  $3.1 \times 2.5\text{m}$  bounded by a red band two tesserae wide, and in this was a rectangular flagged hearth. On the north and west sides of this rectangle the pattern of intersecting circles was exactly one circle wide, while the north-west and south-east corners of the rectangle coincided with the centres of the circles and the other two corners with intersections of circles. Evidently, therefore, the rectangle was an original part of the pattern and presupposes either the existence of the hearth or the intention to locate the latter within it.

At Great Casterton, Leics., formerly Rutland (Corder, 1951, 15, Pl. 1b), a corridor about  $23.77 \times 3.64\text{m}$  was paved throughout with tesserae averaging about 10 to 30mm. Down its centre ran a row of intersecting circles and semicircles with outlines one tessera wide, the circles tangent to two bands one tessera wide and  $900\text{mm}$  apart. At the centre of each circle was a small poised square of four tesserae. The pattern was picked out in tesserae of red (tile) while the rest of the pavement was of grey-buff tesserae (local limestone). The date of this pavement was not earlier than c.350-65 and possibly as late as c.370-80 (Smith, 1954, 35 and 37). The similarity of the pattern to that of Room 1 and the execution of both pavements in tesserae of approximately the same size must suggest a similar dating at Bancroft.

#### ROOM 2 (Figs. 19 and 36, Pls. 17 and 18)

For Room 2 see p. 70. This room measured  $8.1 \times 4.1\text{m}$ . It was paved with a rectangle of red (tile) tesserae measuring  $3.4 \times 6.6\text{m}$  surrounded by grey/white (limestone). (Not in Neal, 1981.) The tesserae averaged  $30 \times 30 \times 20\text{mm}$  and were slightly less coarse than those of the corridor mosaic, but somewhat coarser and less regular than

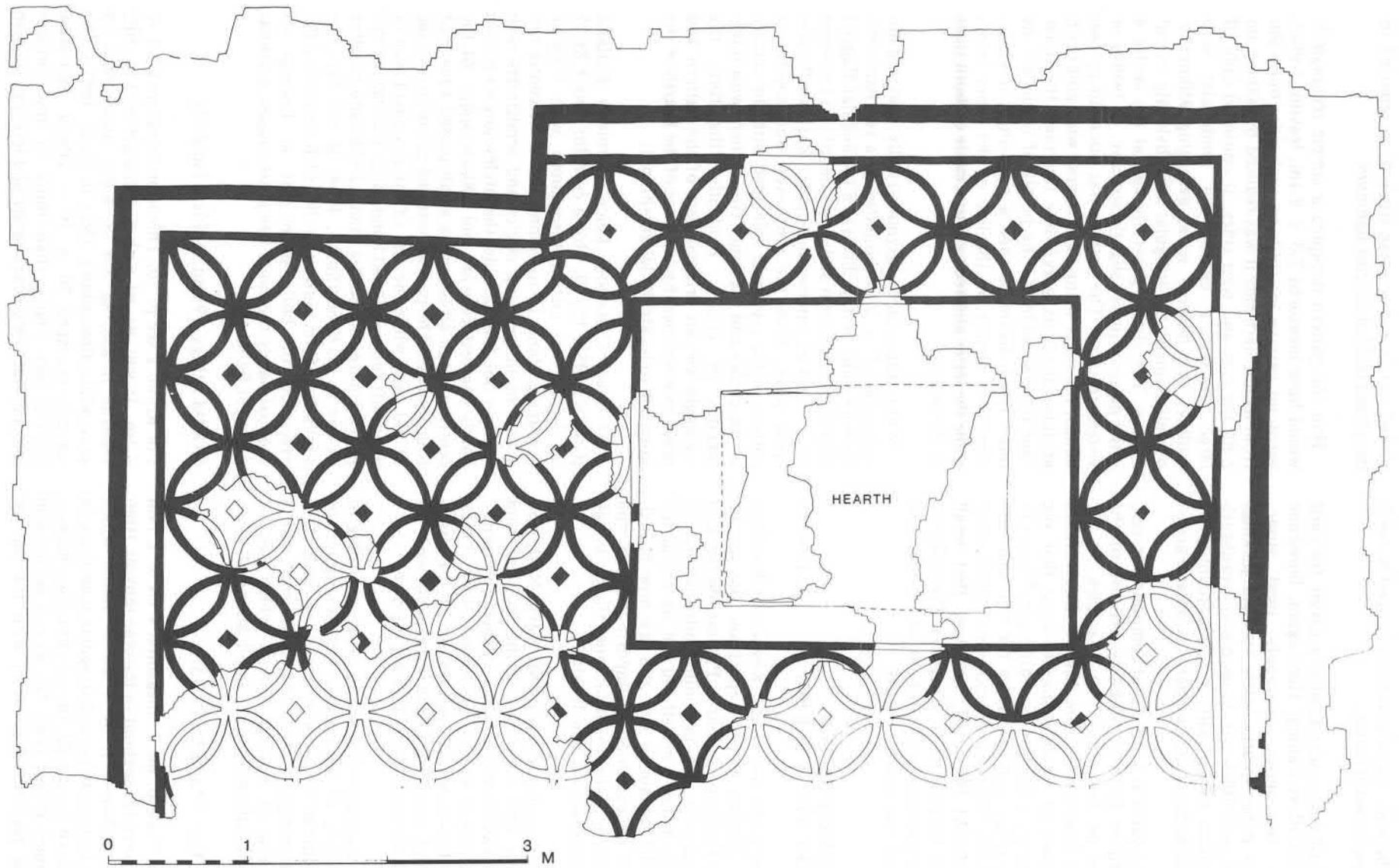


Fig. 35. MK105 Bancroft Villa: Mosaic Pavement in Room 1 (drawn by David S. Neal: Crown Copyright).

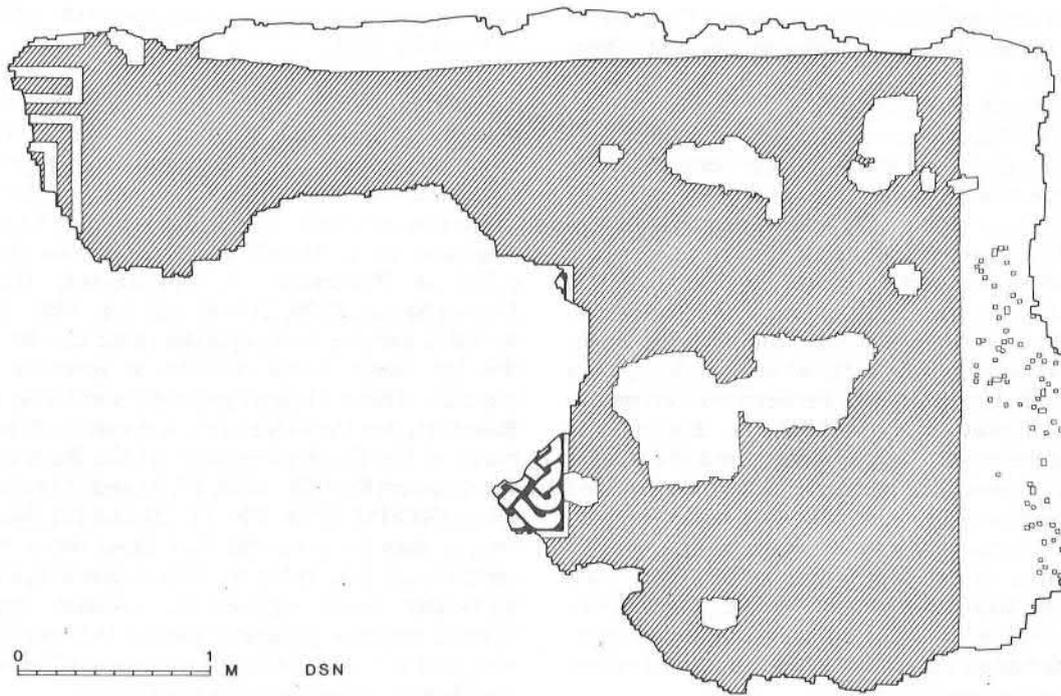


Fig. 36. MK105 Bancroft Villa: Mosaic Pavement in Room 2 (drawn by David S. Neal: Crown Copyright).

those in Room 1. (Information from John Barnbrook.)

In the eastern half of the red rectangle, and running across it opposite the doorway leading into Room 1, was a border 1.3m wide of two parallel and linked swastika-meanders in grey/white bands two tesserae wide and separated by double rows of red tesserae.

In the western half of the red rectangle had been a rectangular panel 1.4 × ?1.7m of small tesserae, parallel with and central between the north and south walls of the room and 2.6m from the west wall. 'Of the surviving corners . . . only the north-western remained in any quantity and it is on this that the following description is based. A border of grey/white (limestone), three tesserae wide, separated the finer mosaic from the red pavement. Within this a border of blue (limestone) composed of a single row of tesserae enclose a wide band, c.250mm, of three-strand guilloche in grey/white, blue and red (tile) tesserae. The guilloche bordered a smaller central rectangle outlined by a band of grey/white, three tesserae wide', of which a corner survived when first excavated, but had been lost before the pavement was drawn. 'The rest of this panel was lost, the *opus signinum* bedding of the central area having been used as a hearth.' (Information from the excavator.) Normally a swastika-meander is executed in grey/blue on a white ground; but an example of the pattern in red on a white ground—the reverse of that in Room 2—

is dated at Lullingstone, Kent, to c.330-60 (Meates, 1979, 24, 81 and pl. facing 78) and, beyond observing that a decorated red tessellated pavement could almost certainly date only from the fourth century, no further comment on this particular floor seems possible.

#### ROOM 8 (Fig. 19, Pls. 16, 19 and 20)

For Room 8 see p. 70. This room measured 8.50 × 6.0m and its mosaic (Neal, 1981, No. 8) probably, though exceptionally, extended almost from wall to wall: the plain surround averaged only 100mm or four rows of tesserae in width. Except for its outer border of swastika-meander (see below) it was very well made with notably regular and closely set tesserae averaging 10 × 10 × 10mm. In fact, Neal assigns this pavement to the highest grade in his scale of standards of craftsmanship.

From the little that actually survived at the west end of the room the design can with reasonable certainty be described as having comprised fifteen octagonal panels (5 × 3) each formed and all surrounded by simple guilloche interbraided at junctions, with borders of bold wave-pattern, three-strand guilloche, and swastika-meander. The guilloche was of red, buff, white, and blue, on a blue ground. Part of only two panels remained. That in the south-west angle contained a poised quatrefoil, set in a buff, linear circle surrounded by a circle of inward-pointing spaced stepped triangles in grey/blue on a white ground, then a laurel wreath

on a dark red ground, then a circle of outward-pointing spaced stepped triangles in blue and white, and finally a circle of right-angled-Z pattern in stripes of red, buff, and white, on a blue ground. The leaves of laurel were of 'white and very pale grey', the colours evidently having been carefully chosen, the white outline of each leaf being partly doubled on one side or the other and extending at least half-way down from its tip. The remains of the next panel to the north sufficed to show that this contained only a conventionalized flower, with red-tipped petals outlined in blue, encircled by three-strand guilloche in red, buff, white, and blue, on a blue ground. The difference between the two panels suggests alternation throughout the design. The triangular interspace between them and the border of guilloche contained an isosceles triangle outlined in buff with a white surround two tesserae wide, sub-divided into four smaller isosceles triangles of which three were blue, each with two sides contiguous with the outline, while the fourth, inverted, was white. The smaller triangular interspace in the angle contained simply an inscribed red triangle on a white ground.

Surrounding the outer guilloche were two rows of grey/white tesserae. Then came the border, of wave-pattern, executed in blue with the waves rising from a double row of tesserae and spiralling into a solid circle. Then came two more rows of grey/white tesserae before the three-strand guilloche, which was executed like that already described. The outermost border was of swastika-meander, in double rows of red tesserae on a grey/white ground, with the axial swastika replaced by a rectangular panel outlined with a single row of red tesserae and containing a chessboard of eight squares (2 × 4) alternately red and white. Presumably there was a similar axial panel on the other three sides. Neal considered this border to be inferior to the standard of the rest of the pavement, but its skilful design at the surviving angles deserves credit.

The design of contiguous octagonal panels each outlined and all surrounded by a continuous guilloche is of appreciable interest. Such designs in Britain are normally of nine panels (3 × 3) and characteristic of a 'western tradition', represented by mosaics from Leicester to Dorchester (*Durnovaria*), the link being possibly the Fosse Way, in the period c.150-200 (Smith, 1984, 362-63, Tav. 1). No other example of any period has hitherto been recorded in eastern England, while only one is known, in Room 10 of Building 1 in Colliton Park, Dorchester (*Durnovaria*), which is certainly of later date, i.e. early fourth century; and although the octagonal-panel design there bears no significant resemblance to that of Bancroft it may be noted that it was surrounded by a spaced swastika-meander in red on white in which alternate swastikas were replaced by chessboard-like patterns

of small red and white squares (RCHM, 1970, 553, 555 and Pl. 220).

Another peculiarity of this mosaic is the laurel wreath, for in Britain this is a relatively rare motif. On a small scale, as at Bancroft, it is represented elsewhere only by 'Part of a wreath, of red with a triple row of leaves half white and half blue', in a fragment of a crudely executed mosaic dated to c.350 at Winterton, S. Humberside (formerly Lincs.; Smith, 1976, 264-66 and Fig. 136). There is no valid parallel here; and the same can be said of the few other laurel wreaths in Romano-British mosaics. These, though generally similar to that of Bancroft, are the large-scale wreaths with bilateral barbs of the Orpheus mosaics of the Barton Farm, Cirencester (RCHM, 1976, Pl. 1) and Woodchester, Glos. (RCHM, 1976, Pls. 17, 20 and 21). Nevertheless, it may be observed that these other mosaics certainly all date from the fourth century, that this particular motif enjoyed its greatest vogue in Roman mosaics generally during this period, and also that it is especially characteristic of mosaics in the Mediterranean lands of the Empire.

The comments on the swastika-meander in Room 2 also apply to that surrounding this mosaic.

#### ROOM 9 (Fig. 19, Pls. 1 (frontispiece) and 21)

For Room 9 see p. 70. This room measured 2.95 × 2.5m, the mosaic 2.16 × 1.87m (Neal, 1981, No. 7). The long axis of the mosaic was, however, slightly south of that of the room. The tesserae averaged 14 × 14 × 14mm, in contrast to the red (tile) tesserae forming a plain surround which averaged 25 × 25 × 25mm. The mosaic comprised a square panel outlined with two rows of blue tesserae, a band of pattern to east and west separated from the panel by two rows of grey/white tesserae, all surrounded by two more rows of blue tesserae, a three-strand guilloche in red, buff, white, and blue, on a blue ground, then another two rows of grey/white tesserae, and finally five rows of blue tesserae.

The square panel was of the type in which four L-shaped compartments, each here outlined with two rows of blue tesserae and containing an L-shaped strip of simple guilloche in red, buff, white, and blue, are set in diagonally opposed pairs in a field of pairs of lozenges, triangles, and poised squares, with a small square central compartment. Unfortunately, the central compartment here had been destroyed, but sufficient remained of the rest to show that the lozenges contained alternately a red lozenge outlined in blue and a blue lozenge outlined in red, the triangles alternately a solid red triangle and a solid blue triangle, and the poised square(s) a serrated cross of poised white tesserae forming an 'hourglass' pattern of four triangles, two in red opposed and two in blue opposed.

The bands of pattern to east and west consisted of a row of tangent right-angled-Zs on a blue ground, each composed of a white, buff, red, and blue stripe, with two red and two white tesserae forming a small quartered square ensconced in the upper angle of each Z.

The pattern of the square panel is a variety of one which apparently originated in southern Italy in the second century (Smith, 1975, 273-74, n. 24). Such patterns are also known in Britain in the second, third and fourth centuries (cf. Neal, 1981, No. 7). There is a close parallel in a certainly fourth-century mosaic of Stonesfield, Oxon. (VCH, 1939, Pl. XXIV, A and, on the dating, Smith, 1984, 366-68), while the poised square containing a serrated cross and blue and red hourglass pattern is paralleled in two other pavements of Stonesfield (VCH, 1939, Pl. XXIV, B and C) and also in contemporary mosaics at Withington (RCHM, 1976, Pl. 16) and Woodchester (RCHM, 1976, Pls. 17, 19 and 23); see also Panel B in the corridor, below. The lozenge containing solid lozenges of blue outlined with red and vice versa—some tending towards ellipses—are paralleled in probably late mosaics at Mill Hill, Castor, Northants. (Smith, 1969, Pl. 3.24), Great Staughton, Cambs. (formerly Hunts.; *idem*, Pl. 3.25), and Roxby, S. Humberside (formerly Lincs.), as was discovered when this mosaic was re-excavated in 1972 by Mr C. Knowles.

On the other hand the bands of right-angled-Zs on opposite sides of this panel can be compared, though the comparison is not exact, only with a band in the mosaic of Kingscote, Glos., for which a fourth-century date seems most probable (Kingscote Archaeological Association, 1978, 11, and 22-23; Neal, 1981, No. 63; Smith, 1984, 370).

#### ROOM 12: THE CORRIDOR (Figs. 19 and 37, Pls. 22, 23 and 24)

For Room 12 see p. 71. Disregarding the slight widening towards the entrance on the east side, the corridor measured 2.4 × 24.4m. Its pavement of grey/white tesserae incorporated three separate panels of pattern, here described from south to north as Panels A, B, C. The tesserae of Panel B averaged 25 × 25 × 25mm but those throughout the rest of the corridor were slightly larger, averaging 35 × 30 × 20mm.

##### *Panel A* (Figs. 19 and 37, Pl. 22)

Panel A (Neal, 1981, No. 5A) lay almost equidistant from either end of the southern part of the corridor, 500mm from its west wall, and measured 10.5 × 1.3m overall. It was tripartite, with the outline, the divisions, and the patterns all picked out in double rows of red (tile) tesserae. The central part measured in length internally 2.45m but was reduced in internal width to 830mm by an open rectangle on its west side opposite the entrance to

Room 8. It contained three large tangent circles intersected by semicircles and quarter-circles, the circles each with a central poised square of six blue tesserae. The other two parts both contained a running-pelta pattern of open peltae.

The comments on the pattern of Room 1 apply equally to that of the central part of this panel and can undoubtedly be extended to include the other two parts.

##### *Panel B* (Figs. 19 and 37, Pl. 23)

This panel (Neal, 1981, No. 5B) was 2.3m sq. It comprised an all-over swastika-meander enclosing five small squares arranged as a quincunx, surrounded by a grey/white band two tesserae wide, then a band of red outward-pointing stepped triangles three tesserae high and separated by single grey/white tesserae in a grey/white band five tesserae wide.

The bands of the meander were in red, two tesserae wide, and separated by grey/white bands of the same width. The small enclosed squares had twelve blue tesserae to a side. That in the centre contained on a pure white ground an inscribed saltire of four ellipses, each with a red centre and blue outline. The others each contained an inscribed serrated saltire of pure white tesserae dividing them into hourglass patterns of four triangles, two of red opposed and two of blue opposed.

At first sight it might seem imprudent to regard so simple and not uncommon a pattern as significant; but here there are two points well worth noting. The first is that the pattern is paralleled exactly, except that the meander is in blue, in two of the panels in the pavement of Corridor 2 at Woodchester (RCHM, 1976, Pl. 23) while there was a not dissimilar pattern in one of the mosaics at Stonesfield (VCH, 1939, Pl. XXIX, B) and the squares each containing an inscribed serrated cross and hourglass pattern in red and blue are paralleled in swastika-meander borders of the mosaics of Rooms 1 and 12 at Woodchester (RCHM, 1976, Pls. 17, 19 and 22). There were also oblong 'hourglass' motifs of opposed red and opposed blue triangles in the swastika-meander border of the mosaic in Room 18 (*ibid.*, Pl. 22) and of a panel at Stonesfield (VCH, 1939, Pl. XXIV, D), and also in all-over patterns of spaced swastika-meander at Withington (RCHM, 1976, Pl. 16) where it is interesting to note that this motif was copied by mosaicists of the Durnovarian School at one end of their panel depicting Neptune. These parallels indicate a date in the fourth century for Panel B; and this is supported by the second point, which is that the surrounding red bands, and even more the execution of the swastika-meander in red, are also paralleled in mosaics dated to the fourth century, e.g. at Lullingstone (see above, Room 2) and Winterton, S. Humberside

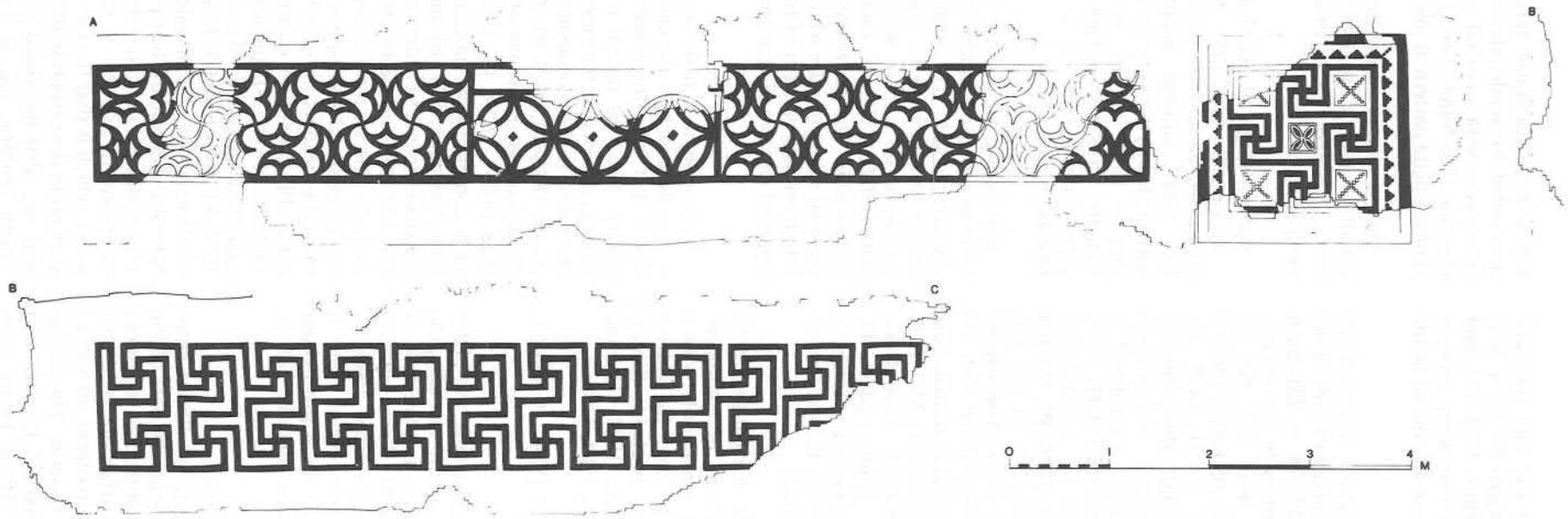


Fig. 37. MK105 Bancroft Villa: Mosaic Pavement in Room 12 (drawn by David S. Neal; Crown Copyright).

(surrounded by red and blue bands, dated to c.350: Smith, 1976, 258, Mosaic B).

*Panel C* (Figs. 19 and 37, Pl. 24)

This panel (Neal, 1981, No. 5C) lay almost equidistant between Panel B and the north end of the corridor and 0.5m from the west wall. It measured 9.0 × 1.4m and comprised simply two parallel and linked swastika-meanders in red bands two tesserae wide, separated by grey/white bands three tesserae wide. In other words, except for the extra width of the grey/white bands, this pattern was identical with that in the eastern half of Room 2 but with the colours reversed. The tesserae were bedded in buff-coloured concrete at least 50mm thick.

The comments on the execution of the swastika-meander in Room 2 and that of Panel B in the corridor, and the chronological implication, apply also to this panel.

## CONCLUSIONS

### *Attribution*

The comments on the pavements have already suggested that all must date from the fourth century, and something must now be said on the subject of attribution. The patterns of Room 1 and the central part of Panel A in the corridor have been related to that of the corridor at Great Casterton. In fact, such patterns form a distinctive element in the repertory of the school of mosaicists putatively centred at *Durobrivae*, Water Newton, Cambs. (formerly Hunts.) in the third quarter of the fourth century (Smith, 1954, 35-39; Smith, 1969, 107-9, omitting Harpole; Smith, 1976, 254-56, mosaic D). This town lay c.65km north-east of Bancroft. The distribution of villas with mosaics of this and other patterns attributable to the 'Durobrivan' School extends through the East Midlands for some 100 miles (160km) southwards from Winterton (Smith, 1984, Tav. II) where a fragment of one (a lozenge-pattern) has been dated to c.350+ (Smith, 1976, 254-56, Mosaic D; Neal, 1981, No. 86), and Bancroft is now the southernmost site in the distribution. Although not hitherto paralleled in the identifiable repertory of this school, the swastika-meander pattern in white on red in Room 2 and in red on white surrounding the mosaic in Room 8 and in Panel C in the corridor, and the running-pelta pattern in red of Panel A in the corridor, must now be attributed to it.

On the other hand, as already noted, the complete Panel B in the corridor is exactly paralleled twice at Woodchester, Glos., and has an analogy at Stonesfield, Oxon., while its squares of hourglass pattern are paralleled in swastika-meanders at Withington as well as, again, at Woodchester and Stonesfield.

Furthermore, allowing for loss, the general

pattern of the square lozenge-pattern in the mosaic of Room 9 also appears to have been closely paralleled at Stonesfield (VCH, 1939, Pl. XXIX, A) while the bichrome solid lozenges within the lozenges of the pattern at Bancroft are paralleled in panels of related pattern at, again, Woodchester. These mosaics of Stonesfield, Withington, and Woodchester are attributable to a school almost certainly centred in Cirencester (*Corinium*) which must now be called the 'Corinian Orpheus School' to distinguish it from another apparently Corinian but later school (Smith, 1984, 366-68, Tav. II; cf. Smith, 1965, 105-11; Smith, 1969, 97-102); and it is evidently to this school that Panel A in the corridor and the mosaic of Room 9 at Bancroft are attributable. It may be noted that by Akeman Street the distance from Stonesfield to Bancroft is equivalent to that from Bancroft to *Durobrivae*. There is, admittedly, a feature of the mosaic of Room 9 which has hitherto not appeared in any other mosaic attributed to the Corinian Orpheus School. This is the band of right-angled-Zs on opposite sides of the lozenge-pattern; and the mosaic of Kingscote (see above) which affords the only analogy for these bands is certainly not attributable to that school. There, the association of a portrait of Venus with a panel depicting marine creatures recalls the repertory of yet another school, the Durnovarian, which appears to have originated in Dorchester (*Durnovaria*), Dorset (Smith, 1965, 99-105; Smith, 1984, 369-72, Tav. II). This school now appears to have extended its primary sphere of activity into Corinian territory from c.350 and occasionally to have copied patterns and motifs from mosaics already existing there (Smith, 1984, 370-72, Tav. II). It seems conceivable, therefore, that the mosaic of Kingscote is attributable to the Durnovarian school and that its band of right-angled-Zs is another instance of copying, though as far as present evidence goes this pattern was employed by mosaicists of the Corinian Orpheus School only at Bancroft. It is noteworthy that the pattern at Kingscote, as well as being slightly different from that at Bancroft, was also inferior in execution.

There remains the pavement of Room 8. It may be recalled that this mosaic was exceptional in extending almost from wall to wall, and also that there was a difference in standard of craftsmanship between the octagonal-panel design bounded by the three-strand guilloche and the surrounding border of swastika-meander in red on a grey/white background. In other words, and bearing in mind the swastika-meanders in red elsewhere in the villa which there is now reason to attribute to the 'Durobrivan' School, it seems probable that the design bounded by the three-strand guilloche originally had the usual plain surround and that this was replaced by the swastika-meander by 'Durobrivan' mosaicists. As for the octagonal-panel design itself it seems only possible to suggest

that, like the bands of right-angled-Zs in the mosaic of the adjoining Room 9, it is one not hitherto known to have been employed by mosaicists of the Corinthian School. Here it may not be irrelevant to recall that octagonal-panel designs of the period c.150-200, which constitute evidence for a second-century 'western tradition' in Romano-British mosaics (see above, p. 00), are well represented in Corinium (Smith, 1975, 281-85; Smith, 1973, 218, Pl. XXXIII, b; Neal, 1981, No. 37): and it is quite possible that more than one of these survived into the early fourth century and that the design was copied, with the introduction of laurel wreaths to bring it 'up to date', by mosaicists of the Corinthian School. There is evidence for mosaics which survived for a century and more, e.g. at Verulamium (Wheeler and Wheeler, 1936, 147, Pl. XLII, Mosaic 10, over 100 years), at Jerash (Crowfoot, 1931, 27: over 180 years), at Fishbourne (Cunliffe, 1971, I, 96-97: Room N12, c.200 years), and on Thasos (Garlan, 1965, 580: c.400 years!). The pattern of the mosaic at Fishbourne was copied in a later mosaic there (Cunliffe, 1971, I, 167).

#### *General*

For a medium-sized winged-corridor villa this was exceptionally well endowed with mosaics (cf. Smith, 1969, 71-72); and that of Room 8 would have been a credit to a larger house. It is also noteworthy that in addition to most of the principal rooms (though interestingly not the two forming wings) even the corridor was provided with the rare embellishment of a 'doormat' as well as two 'runners'. One or two 'runners' in a corridor are not uncommon, but the writer can recall only two instances of a 'doormat' with 'runners' on either side of it. One is that in the corridor at Brading, I.O.W. (Price and Price, 1881, Pl. 7 and VCH, 1900, I, 313, Fig. 21). The other is that of a corridor in a house in Aldwark, York (report by York Archaeological Trust, in preparation). In other words, the number of mosaics alone indicates a higher level of prosperity, or at least of investment in property, than one would normally expect to find in a villa of this size. Furthermore, if the dating and attributions are valid, these have interesting implications for the economic history of this villa. For the period of the Corinthian School seems possibly to have fallen in the first two decades of the fourth century and that of the Durobrivan School in the third quarter of the century (for the suggested dating of the schools see Smith, 1984, 373-74). The mosaics therefore point to two periods of investment, the second about two generations later than the first, the implications being either that prosperity continued for at least more than the first half of the fourth century or that there were two 'peaks' of prosperity during that period.

It must be emphasized that these conclusions are tentative; but the evidence appears to indicate that the mosaic of Room 8 (though not its swastika-

meander border), that of Room 9, and Panel B in the corridor date from the early fourth century and are attributable to the Corinthian Orpheus School, while the mosaics of Rooms 1 and 2, the swastika-meander border of that of Room 8, and Panels A and C in the corridor date from the third quarter of the fourth century and are attributable to the Durobrivan School.

#### **PAINTED WALL PLASTER**

##### **MK64 WOOD CORNER**

R. E. Tyrrell

All of the wall plaster from this site was found in the fill of the hut gully, Building 8. There were thirty-nine fragments altogether, representing a total area of 0.0288m<sup>2</sup>. The colours represented were white, pink, maroon, olive green, yellow, red and buff.

The plaster was very coarse and pebbly in make-up with rounded and angular inclusions of all sorts. The colours were present in a variety of combinations, but the fragments were so small and abraded that it was difficult to identify specific designs.

##### **MK105 BANCROFT**

R. E. Tyrrell

The excavations at Bancroft produced 6.66m<sup>2</sup> of painted wall plaster. This represents about 0.4% of an estimated total wall and ceiling area of 1683m<sup>2</sup>. Robbing and ploughing etc. of the site after its abandonment resulted in the layers in which the plaster was found being very disturbed. It is not even certain that plaster found in a room actually came from that room. The surviving plaster tended to be in small abraded fragments, very few of which joined. In only two of the rooms is there more than a square metre of plaster surviving, room 18/19 and room 8. It must also be borne in mind that further excavation may well produce more plaster.

Despite these limitations it is probable that most of the rooms in the main building had painted walls and ceilings.

The plaster itself is of a fairly even quality and in some cases it was possible to see that at least two coats had been laid on the wall before the finishing coat. The painting seems to have been done in the fresco technique in pink, maroon, red, orange, yellow, buff, white, light and dark green, light and dark blue, slate/blue grey and black.

In room 13/14 and room 8 a few fragments indicate repainting in a different colour, and in room 18/19 and room 8 replastering had been undertaken before the new colour scheme was applied.

Perhaps the most interesting fragment came from

room 8 and was pink and maroon divided by a white stripe and has graffiti scratched on it. The letters AVE VI . . . , which Mark Hassall translates as 'Hail Vi(ctor)' or 'Hail Vi(talis)' appear just below the white stripe on the maroon. Because of the graffiti it is possible to say that the pink area is the upper zone and it is tempting to suggest that the wall had a maroon dado.

With the exception of room 18/19 and room 8 not enough of the painted plaster survived to make any suggestions about the decor of the rooms. From room 8 there are a number of subtly shaded fragments in pinks and maroons and also in dark to light blues on a red ground which may suggest a pictorial design. One largish fragment has maroon and white areas divided by black and white stripes. Pale blue and yellow wavy lines are painted on the white ground. Also there are several examples of blackish maroon lines and lattices on a light green ground.

The colour scheme in the small bath suite, room 18/19, seems to have been a curious mottled grey over white, with orange and yellow bands and irregular curves. There are some larger corner pieces which may represent window mouldings. Some fragments are curved inward and may be from the splay of a window above the apsidal bath or an arch over it. No examples of this colour scheme occur in any of the other rooms.

There are also a few enigmatic fragments with green wavy lines, boldly painted, on a white ground, separated from a pink zone by a maroon stripe. It is tempting to suggest that these represented part of an aquatic scene since they come from the larger bath suite, rooms 15-17, but the fragments are too small in size and few in number to definitely identify.

#### MK109 LITTLE WOOLSTONE R. E. Tyrrell

Just over 0.2m<sup>2</sup> of painted wall plaster was found in various sections of a ditch, F9, F10, F11 and F13, and an adjacent pit, F7. The pottery found with the plaster is dated to the fourth cent. There were no structures excavated on the site which would have been plastered and painted, so it must have come from elsewhere, perhaps as hard-core.

The consistency of the plaster is slightly finer and whiter than the plaster from Bancroft villa, and the tone of the colours is different. It appears to be painted in the fresco technique, in a number of muted colours. Unfortunately the fragments are very badly abraded, and in some cases the colours only survive as small flecks on the surface of the plaster. However, whilst sufficient pieces remain to indicate a wide variety of different coloured bands and stripes, none suggest figurative designs.

Amongst the better preserved examples is a group of pieces in rust, white and dark maroon, on a yellow background instead of the more usual white. The design of stripes and angles may be part of an architectural perspective.

#### MK211 WYMBUSH R. J. Zeepvat

Several hundred small fragments of painted plaster were recovered from the site, principally from destruction layers overlying Building I. The total wall area represented by these fragments was 2.1m<sup>2</sup>, about 0.4% of the estimated plastered wall and ceiling area in the building.

The predominant colour was white, comprising over half the plaster recovered. Other colours, noted in order of frequency, were red/pink, buff, light green, yellow, dark green, and slate/blue-grey. As well as plain fragments, a few pieces showed traces of line decoration, either red on a white background, yellow on a red background, or black on either green, buff, red or white backgrounds. There was no trace on any of the fragments of re-decoration, replastering or surface repairs.

From this evidence it seems that the interior decoration of Building I consisted of a red dado, perhaps with some simple straight-line patterns in yellow. Above this was a series of rectangular panels, probably in green, buff and grey, lined with black on a white background. The ceiling may have been white, with simple line decoration.

#### ARCHITECTURAL MASONRY AND SCULPTURE C. T. P. Woodfield

##### INTRODUCTION

The Roman sites in Milton Keynes have not yet been any more bountiful in their supply of architectural or sculptural stonework than most other lowland sites, despite the proximity of workable stone in the oolites of North Buckinghamshire and neighbouring Northamptonshire. This might be because of the poor or erratic quality of the nearer freestone sources but, as elsewhere, must in large measure be attributable to the ubiquitous lime burning of subsequent ages which, for instance, has so thoroughly disposed of the architectural masonry of towns like Verulamium.

To date, there are only two pieces of stonework to be included under this heading, one from MK96 Windmill Hill and the other from MK105 Bancroft. Both are in a similar poorly-cemented, fine-grained, silty and slightly fossiliferous limestone of local origin, probably from the Upper Lias or Lower Jurassic of the Great Ouse and related valley outcrops. That architectural and sculptural work should be fashioned in this material is somewhat

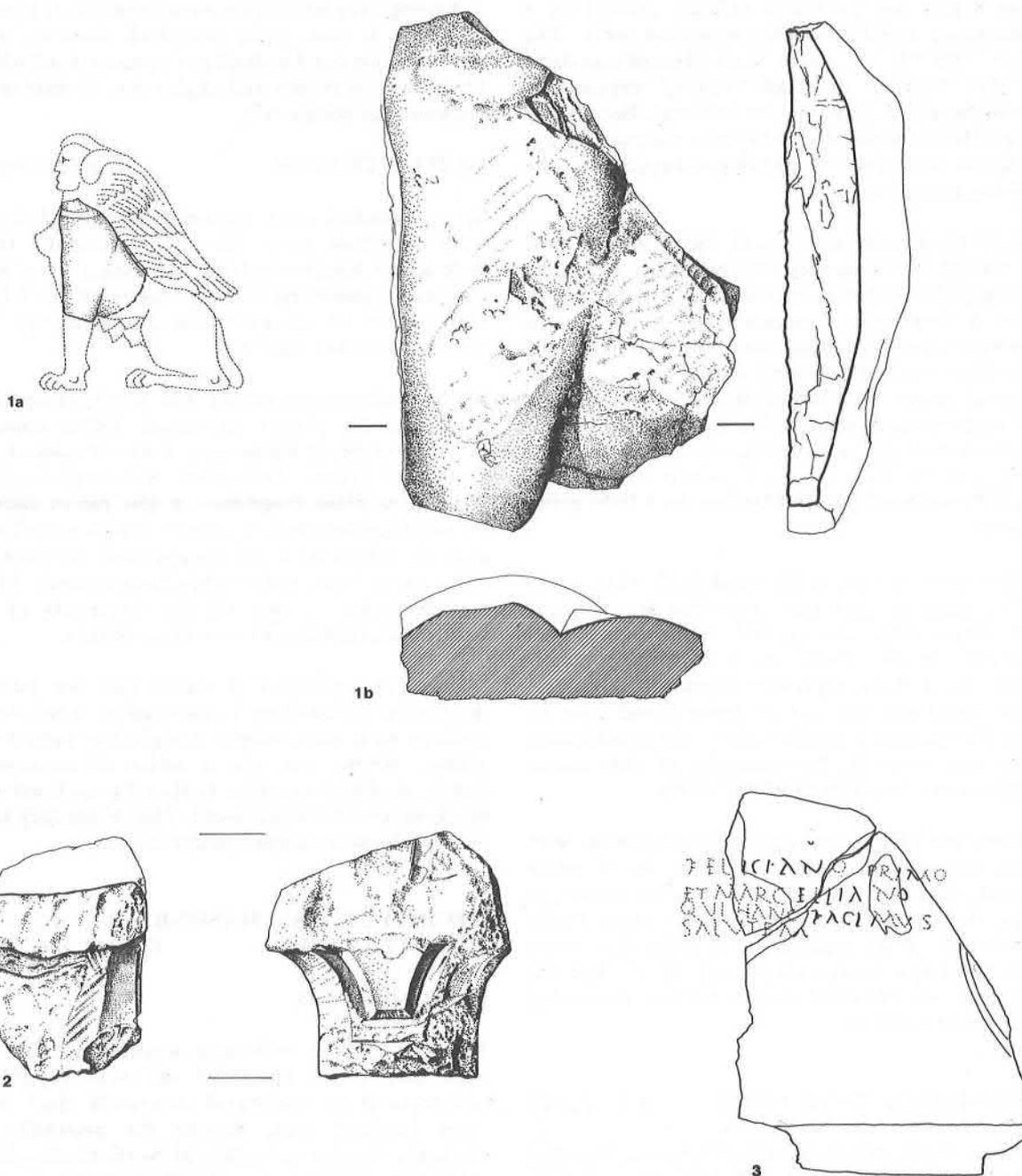


Fig. 38. Architectural Masonry and Sculpture 1 and 2, Inscribed Tile 3 (scale 1:4).

surprising, considering there is evidence for a well-developed market in such elements in the Roman period based on the altogether superior limestones of the Bath area and the Lincolnshire limestones of mid and north Northamptonshire (Blagg, 1977), the products of which penetrated this area (Woodfield, P., 1978). It might thus be postulated that much minor sculpture and embellishments for private buildings may have always originated locally wherever a tolerable freestone occurred, and that its working to a standard often termed provincial required no specialist skills.

MK96 WINDMILL HILL (Fig. 38, 1)

During topsoil stripping in advance of development a large sculptured fragment of stone was recovered.

The stone is a light buff-coloured, fine even-grained calcareous sandstone of a type well known in the locality and is presumably of local origin. The stone measures 620 x 420mm and has been worked on bed; the rear face is fairly level and unworked and has split from its parent body at its bedding plane. This splitting may well have happened after

the stone was worked, probably at the time of its destruction. The carved top face shows no distinct tooling so may be weathered, and subsequent to loss has suffered from incidental damage and abrasions.

What is represented by the carving is not precisely established although it seems clear that it is part of an animal carved in mezzo-relief.

A number of features need to be taken into account in its interpretation. The main vertical element or limb has, toward its top as drawn, a slightly raised cordon or collar. The other limb or body has, along its upper margin, a series of softly-indented 'thumb-marks' and, towards its junction with the vertical element, a deeper-cut V-joint.

Various possibilities for interpretation are suggested. If it were the forearm and torso of an *amorini* the collar remains unexplainable and the clear cut between the torso and arm on the upper margin is improbable. If it were the neck and head of a horse there is no indication of the eye, the cheek is ill-formed and there is no sign of a cheek-piece meeting the head strap. If it were the legs of a human being in profile right, the buttocks are undeveloped and the thighs are of improbably unequal thickness. The sculpture is rather large for it to be a representation of Diana's hound sitting left as on the Screen of Gods from London (Hill, Millett and Blagg, 1980) or in action as at Bath (Toynbee, 1964), and again the deep-cut angle between the two elements is difficult to explain. The most satisfactory explanation is that the sculpture represents a provincial form of a sphinx in profile left, the 'thumbed' margin representing the root of a wing and the cordon a collar around its neck.

A lion or sphinx is in fact a probable beast to be found in a representation of this scale and, as sacred animals to the chthonic deities, would be entirely appropriate to a funeral monument outside the town of Magiovinium. The use of poor quality stone suggests that it is local provincial work, so the representation may well be a degree inaccurate and misleading for any interpretation.

Thanks are due to Professor Jocelyn M. C. Toynbee, Mr T. F. C. Blagg and Mr D. Neal for discussing and commenting upon the interpretation. The Institute of Geological Sciences kindly considered the stone in their laboratory and made the identification.

MK105 BANCROFT (Fig. 38, 2)

A small stone approximately 150 × 140 × 95mm was found, damaged and discoloured by fire on all faces above an irregular horizontal line. The underside and rear are unworked; the heads of arches on either side are similarly broken. There is

thus no jointed face to assist in understanding the stone's original disposition.

On the worked face there are wide, shallow-cut grooves in the form of a short horizontal element with diverging grooves rising from its ends, one clearly terminating just beyond the break line. The field enclosed by the grooves is very slightly concave, perhaps accidentally. Below the horizontal member the stone is recessed, leaving the surface reading as a horizontal bar. On the outer side of, and parallel to, the divergent grooves the stone has been chamfered back to form the springing of two narrow arches, the soffit being very roughly dressed with a mason's point. The arch on the right-hand side is more crudely cut than that on the left, and is not identical in shape. Except within the arches, the worked surfaces have been well rubbed down smooth. The accuracy of the cutting of the grooves is however not good.

The original purpose or location of the stone is not at all clear and the following interpretation is of necessity speculative. Even its date must be regarded as unproven, for although of Roman character and found on a Roman site with almost no later material present, the chamfered cusp-like arches are more characteristic of medieval work.

One interpretation is that the stone might have originally been part of a Roman tombstone, the carving representing in a crude way the capital of a column flanking a recessed centre panel under an arched niche. This explanation would embrace the horizontal bar member, the termination of the divergent grooves, and the lack of precise symmetry of the arches, the radii of the arches reflecting the shape of the capitals rather than the niche itself. One such example of elementary capitals of this sort appears on the tombstone of Aurelia Aureliana from Gallows Hill, Carlisle (Hodgson, 1832, 101-8 and Pl. XV). Tombstones, however, are rare finds on civilian sites, and those from lowland Britain have generally come from urban contexts. An alternative suggestion is that the Bancroft stone is the battered remnant of a roof finial of a type not at present recognized, presenting a double arch of the town gate type. The comparative crudeness of the carving suggests that the object may well have been intended to be seen from a distance. To date, stone finials have not been identified in East Midland villas, but they are well known in the South-West (Blagg, 1977) where some have similar shallow carving, for example Silchester and Caerleon, and also in the North. There is no inherent reason why such features should not appear elsewhere where limestone outcrops. Against this explanation is the size, for if the Bancroft stone does represent a double arch, it would be substantially larger than other known stone finials.

Neither explanation offered here is entirely

satisfactory, and it should be noted that there would doubtless be other uses, from *lararia* to funeral furniture, to which a local amateur craftsman with a modicum of talent could with ease work the local stone.

## STONE ROOFING MATERIALS R. J. Zeepvat

### MK105 BANCROFT VILLA

A quantity of stone roofing slates were recovered, amounting to a total weight of 93.22kg. Much of this material was concentrated in the area of Room 12, suggesting that its use was confined to roofing the corridor and porch. Two distinct geological types of stone were present, each formed into diamond-shaped slates measuring 160-180mm a side, with a nail hole punched in one end. Thickness varied about a mean of 15mm, and weight varied from 1.5-2kg. The two types of slate were submitted for identification to Professor Shotton, Emeritus Professor of Geology, Birmingham University, by Stephen Green and the following comments are based on his report.

Most of the stone roofing material (63%) from Bancroft was identified as a type of volcanic ash, probably originating from the Charnwood Forest area of Leicestershire. Whilst most examples exhibit a strong imposed cleavage and the greenish tinge characteristic of volcanic ashes, there are faint suggestions of fossil inclusion, badly preserved if present, which would suggest a provenance of West Shropshire or Wales for the slates. However, a *Charnian* provenance fits most of the slates, and the hint of fossil inclusion is indecisive. It would also seem strange for the slates to have been imported from the Welsh Marches—a distance of about 160km. On present evidence it seems reasonable to suggest that this roofing material was imported from Charnwood Forest, some 100km north of Bancroft.

The second type of roofing slate found at Bancroft has been identified as a Middle Jurassic fissile, sandy calcareous limestone. Some of the samples are reddened, but this is superficial—perhaps caused by burning—and does not relate to their provenance. The slate is therefore considered to be either from Collyweston, Northants or Stonesfield, Oxon. The only problem about the first provenance is a lack of fossil shell in the samples, unusual for Collyweston, though Professor Shotton believes this to be the most likely source for the stone. Both provenances are about 65km from Bancroft.

Further samples from the site were later examined by Dr F. M. Broadhurst, Dept of Geology, Manchester University, who passed them to Dr F. Dimes and Dr M. Owens of the Institute of

Geological Studies, The Geological Museum. These authorities confirmed Professor Shotton's identification and further suggested that the Charnwood Slates were from Swithland, Leicestershire.

## TILES

R. J. Zeepvat

### INTRODUCTION

Tile has until recently received only scant attention from the excavators of many Romano-British sites, perhaps owing to its coarseness, apparent uniformity, and occasionally embarrassing profusion. Many excavations with which the writer was involved in the early seventies tended to discard tile, treating it in much the same way as stone and other building materials. Happily, this state of affairs has improved much in the last few years, with the publication of articles by A. D. McWhirr and D. J. Viner (1978) and G. Brodribb (1979), and a collection of papers edited by McWhirr in BAR (McWhirr, 1979), all of which have shown that a great deal of information can be gleaned from the proper study of tile. The examination of tile from sites in Milton Keynes has therefore been undertaken following this lead, and the aim of this article is to set down our present state of knowledge of Roman brick and tile in the Milton Keynes area.

In dealing with tile in Milton Keynes, we have been fortunate in that, from the inception of the Unit, the policy followed on Romano-British sites has been to keep all tile. This has created an assemblage of 1786kg of various types of tile, which forms the basis of this study. Most of this has been directly studied by the writer, though tile from MK105 Bancroft excavations of 1973-76 was processed and discarded during the excavations owing to a lack of storage space.

Processing has, where possible, been on the lines set out by Dr C. J. Young (McWhirr, 1979, 401-3). Tile has been washed, marked and bagged on site, though most of the sorting and quantifying has taken place at a later date. The writer is indebted to Valerie Bunn and Pauline Marney for help with the identification of fabrics and to Nigel Wilson who assisted with the sorting of the tile. In future these latter tasks will hopefully be carried out on site as Dr Young suggests.

Tile has been recovered in varying quantities, from all the major Romano-British sites in Milton Keynes. On some of these, such as MK105 Bancroft, MK211 Wymbush and MK301 Stantonbury, the sheer volume of tile points to its use as a primary roofing material. On other sites, for example MK64 Wood Corner and MK297 Woughton, the small quantities of unusually small, abraded fragments suggest secondary use of tile in association with other durable building materials as

hardcore. In the latter situation, tile is perhaps of more use in terms of the information it may give about the site it came from, rather than the site at which it was found.

Even on sites where tile is present in quantity, much of the tile assemblages recovered have consisted of smallish fragments, resulting from apparently extensive robbing and in some cases, intensive ploughing. Because of this, identification of tile types and sizes, as well as the study of the various markings present has been made very difficult. Nevertheless, some progress has been made in all of these directions, as can be seen from the following study.

## FABRIC TYPES

Six fabric types have so far been recognized from the Milton Keynes tile assemblage, though further examination tends to suggest that two of these could be regarded as one, as the dividing line between them is very difficult to draw. The following descriptions are based on examination with the naked eye, aided by low-power binocular microscope ( $\times 20$  mag.). As yet, no thin-sectioning or other scientific methods of examination have been used.

### *Fabric 1*

This fabric, perhaps the most commonly found in the Milton Keynes area, is distinguished principally by the presence of large quantities of crushed fossil-shell tempering. The shell platelets vary in size, usually between 0.55mm and 5mm. They do not tend to form a laminated strata in the tile, which would obviously weaken the fabric, but provide a good solid bond. The fabric is fairly free of other inclusions, though occasionally it contains small angular lumps of a soft matt black substance, which is not iron as it is not attracted by a magnet, pieces of white calcite, presumably limestone, hard off-white pebbles that are not calcite since they do not react with hydrochloric acid, and evidence of the occasional piece of fired-out straw. The fabric fires red-orange to pink to the palest of buffs. It is soft and can be scratched with a finger nail, but is not powdery. The worn fracture is rounded but uneven.

The use of this fabric does not seem to have been limited to any specific tile type, which, with the abundance of the fabric, suggests tile production on a large scale. Generally, fabric 1 tile first appears in mid to late third-century contexts, though some was found at Wood Corner in a late second to early third-century feature, F3. From its third-century appearance, fabric 1 tile continues to appear in quantity throughout the fourth century when, with fabric 4, it provides the bulk of tile used in local buildings.

From the overwhelming quantity of fabric 1

found in Milton Keynes, one is forced to conclude that it must have been made locally. It bears a marked resemblance to the fabric used in calcite-gritted wares, Milton Keynes Roman pottery fabric group 1, which was produced in kilns at Harrold, Beds. (Kennett, 1972, 92) throughout most of the Roman occupation, and thus may come from the same site, though tile kilns have yet to be identified there. Wherever their source, tile in fabric 1 seems to have enjoyed a wide distribution. Apparently identical tile fabrics have been noted in London, where they have been labelled 'South-east Midlands Calcite-Gritted' by the Museum of London.

### *Fabric 2*

The main characteristic of this fabric was the presence of fine sand tempering, of fairly uniform size, less than 0.1mm, spread evenly throughout the body of the tile. Occasionally, larger white, pink or grey quartz grits up to 10mm in size are visible. Other inclusions are not uncommon, especially small angular or rounded hard black ironstone grits and hard non-calcite white pebbles. The fabric usually fires a deep orange with a red or grey core, and is hard and dense with a jagged worn fracture. Some examples of tegulae and imbrices in this fabric carry colour coats of white, maroon, brown or black. Fabric 2 appears to have been used in the manufacture of all tile types, and has generally been dated to the second cent., though the point at which production ceased has yet to be determined. The place of manufacture is also as yet unknown.

### *Fabric 3*

This fabric is very similar to Fabric 2, except that it contains only a small quantity of sand. The body of fabric 3 is faintly micaceous, and fine orange with a grey, red or buff core. Some examples also have a buff surface, occasionally with a dark orange-brown slip. It is hard and dense, with a jagged fracture. As with fabric 2, fabric 3 is not limited to any specific tile type, and seems to date from the second century.

One of the main problems in studying the tile assemblage has been the difficulty in distinguishing between fabrics 2 and 3, as the principal distinction, the amount of sand in the body of the tile, seems infinitely variable. How little is 'a small quantity'? The problem is one which can only really be resolved by extensive microscopic examination, so whilst maintaining the separate fabric distributions, the writer is at pains to point out that in fact these fabrics may be one and the same, differentiated only by production variables in terms of content and firing temperatures.

### *Fabric 4*

In comparison with the fabrics already described, fabric 4 appears very rarely in the tile assemblage. Like fabric 3, it contains a small quantity of sand, but its major distinguishing features are the colour,

which is cream/off-white/pink, and the appearance of numerous red ironstone inclusions, which can vary in size from flecks to large angular lumps measuring 10-20mm. It also contains small soft white calcite inclusions. The fabric varies in hardness and density from tile to tile, though most are fairly soft. The fracture is well rounded. It appears to be limited in use to tegulae and imbrices.

Because of its relative scarcity, it has only been recorded at MK105 Bancroft, MK297 Woughton and MK64 Wood Corner, in small amounts in each case. Little can be said of its period of production or place of manufacture, though the ironstone inclusions suggest that it may have come from Northamptonshire.

#### *Fabric 5*

The main distinguishing feature of this fabric is the inclusion of large grey lumps of grog, often 10mm in size, and occasionally pieces of soft white calcite. It contains little sand. The body fires pink, or more commonly a reddish-orange, with a dark grey core in which the lighter grey grog can clearly be seen. The surface is occasionally covered with a dark orange-brown slip. The fabric is hard, with a rounded, uneven fracture. It bears a striking similarity to the soft pink grogged pottery fabric, pottery fabric number 2 (publication in preparation), and may be a product of the same kilns. Thin section identification of the pottery carried out by Roberta Tomber at Southampton University suggests that it could be made from clay deposits on the river terraces in the Ouzel Valley.

In its use, fabric 5 appears to be limited to the manufacture of tegulae and imbrices, though very small amounts of box flue and sub-floor tiles have also been recorded in this fabric at MK64 Wood Corner. Like the pottery in this fabric, the tiles appear only in late third- to fourth-century contexts, and it is tempting to suggest on the above evidence that fabric 5 tile was produced as a sideline by local potters to meet the demand created by the wave of structural improvements taking place throughout lowland Britain at this time, as evidenced by the Phase IV expansion at MK105 Bancroft, and the construction of the bath suite at MK301 Stantonbury.

#### *Fabric 6*

The rarest fabric found at present in the Milton Keynes area, only being recorded at the time of writing from a single tile fragment found at Caldecotte. This fabric fires a reddish-brown colour, and is distinguished by its softness and friability, the surface having a 'corky' feel to it. It contained nodules of ironstone, in varying sizes, and fragments of a flakey white substance that does not react with hydrochloric acid. The tile fragment, part of a combed box-flue tile, was found in a context dated to the mid to late second century.

Until further examples are available, little more can be said about this fabric.

## TILE TYPES

### *Roof tile*

#### *Tegulae*

Of the vast quantity of tegulae fragments, which form the bulk of the tile assemblage, a few complete or almost complete examples have survived, sufficient to supply dimensions for tegulae in Fabrics 1, 2/3 and 5, which are given in Table 1 below. See Fig. 39, 1 for an illustration explaining the measurements.

Table 1: Dimensions of Tegulae (mm).

<i>Measurement</i>	<i>Fab. 1</i>	<i>Fab. 2/3</i>	<i>Fab. 5</i>
Base width (A)	260	—	270
Top width (B)	310	310	310
Length (C)	410	—	350
Flange depth (D)	50	46	45
Body depth (E)	25	18	20
Base rebate (F)	45	—	45
Top rebate (G)	25	30	20
Flange thickness (H)	20	20	18
Weight (kg)	5.0	c.4.0	3.8

As the above measurements show, Roman tile manufacturers seems to have adopted, within limits, a 'standard' tegula which facilitated the repair of roofs and the use, if necessary, of more than one source of supply. The bases of all these tegulae were slightly bowed from front to back, presumably to aid run off of rainwater.

One interesting point of variation between tegulae of different fabrics can be seen in the rebating techniques used. On Fabric 1 tegulae, both top and bottom rebates appear to have been cut at an early stage in the manufacturing process, as they are invariably blocked on the inner face by 'swarf' from the smoothing of the tile, a task apparently undertaken by hand or with a wet brush. Surfaces are smooth, and show no trace of a sharp-edged implement, whilst finger grooves are often found in the angle between face and flange. Tegulae in fabrics 2 and 3, by contrast, have knife-trimmed rebates, though here again either hand or brush smoothing has been used on the upper faces. Similarly, Fabric 5 tegulae have hand/brush-smoothed faces and flanges, and rebates are knife-cut, but the bottom rebates on one complete example from MK105 Bancroft are only cut halfway through the thickness of the flanges, to a depth of 7mm, the remaining flange being chamfered to meet the face of the tile at its lower end.

The question of fastenings used to keep tegulae in place poses some problems. Tegulae of fabrics 2/3 and 5 have been found at MK105 Bancroft with nail holes, either drilled in a finished tile (fabric 5) or

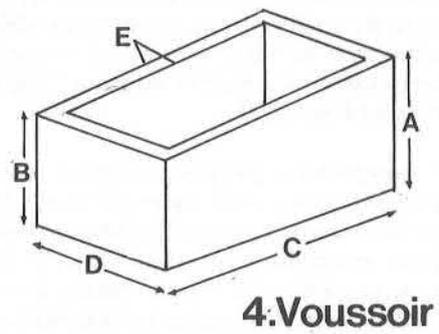
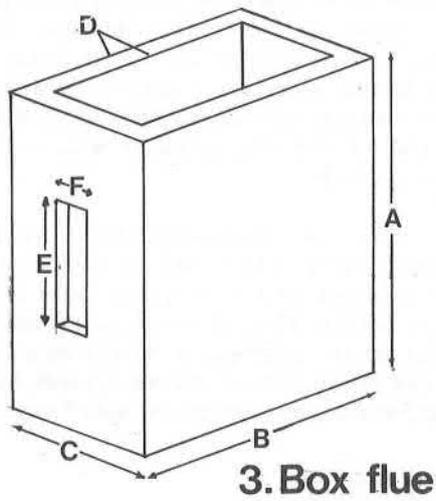
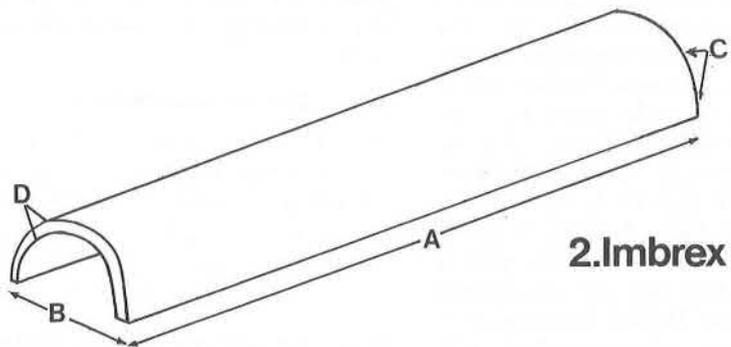
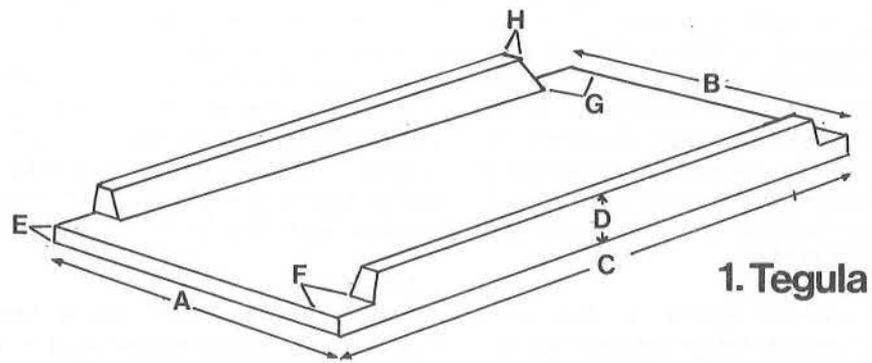


Fig. 39. Tile types and dimensions.

pressed in a still-plastic tegula (fabric 2). In each case, the hole has been about 6mm in diameter (though whether round or square section nails were used is not known) and within 30mm of the top edge of the tile. In contrast, fabric 1 tegulae are seldom found with nail holes and, where these are present, they are invariably drilled or chipped after firing, a difficult operation considering the nature of the fabric. Generally, the accepted practice in roof construction seems to have been to fasten only bottom courses of tegulae, and perhaps occasional higher courses, relying in the main on the weight of the tiles and the interlocking between tegulae and imbrices to keep them in place.

In addition to features related to their constructional use, the tile assemblage has been studied for 'makers' marks'—signatures, tally, marks, or graffiti. Of the former, perhaps the most common on tegulae consist of concentric circles, either single or double, made with fingertips or a stick on the face of the tile. These seem to be most common on fabric 3 tegulae, perhaps because of their smooth texture—marking sandy tiles with fingertips cannot be very pleasant! Whilst most tegulae in this fabric are finger-marked, many examples from the tile-filled ditch, context 64, at MK211 Wymbush were marked with a sharpened stick. This assemblage also produced a tile, also fabric 3, with an X marked with a stick on the face. A fabric 2 tegula from Wymbush was found to be marked with a deeply-cut V, perhaps part of an equilateral triangle, on the back. From MK105 Bancroft was recovered a further variation, a fingermarked circle bisected by a line down the length of the tegula. Most of these markings seem to be limited to fabrics 2 and 3, fabric 1 tegulae being devoid of any markings. However, tally marks, as found at Beauport Park and elsewhere, do not seem to occur on tile in this area. Evidence of graffiti on tegulae, too, is rare; to date only one example, from MK211 Wymbush, has been noted, consisting of a four-line cursive inscription on the face of a fabric 2 tile (see p. 125 below and Fig. 38, 3).

Makers' stamps have provoked a great deal of interest in recent years, and these too have been searched for without success in the Milton Keynes area. Only two examples have so far come to light, both from the possible villa site at Stanton Low, in the Ouse valley. The first stamp is, unusually, on the flange of the tegulae concerned, in the same position in each case, suggesting that it was incorporated into the mould. Also unusually, the stamp, which reads AVIENV(S), is in positive relief (Anon, 1959, 38). The second stamp, also on the flange, consists of a St Andrew's cross within a frame deeply impressed. Information from the excavator, Mrs M. U. Jones, confirms that these stamps are found on fabric 1 tile.

Finally, we must turn to the 'accidental'

markings found on tegulae. These most commonly take the form of animal paw or hoof marks, made in the tiles whilst laid out to dry. Most of those noted in the assemblage are dog's paw prints, varying in size from terrier to alsatian, though the type of dog cannot be identified. One tegula fragment from Wood Corner carries a small fingerprint, indicating that a woman or child had lifted it out of the mould in a plastic state. Finds like this and animal prints are taken to suggest that tile-making was very much a family occupation, undertaken on a seasonal basis in conjunction with farming (McWhirr, 1979, 201-9).

#### Imbrices

The survival rate of this type of tile is lower than that of tegulae, perhaps because of its shape and the relative thinness of its walls. Nevertheless, a number of partial examples and one complete, fabric 2, have been recovered from MK105 Bancroft, suggesting the following mean dimensions which seem to be common for all fabrics: see Fig. 39, 2 for an illustration of this type of tile.

Table 2: Dimensions of Imbrices.

Length (A)	= 350mm
Width, upper end (B)	= 130mm
Width, lower end (C)	= 165mm
Thickness (D)	= 12-16mm
Weight (kg) Fabric 1:	2.5
	Fabrics 2/3: 2.2

As yet, no sufficiently large fragments of fabrics 4 or 5 have been recorded, but it is thought that imbrices in these fabrics will be of similar dimensions to those listed above.

By contrast with tegulae, imbrices seem to lack the profusion of markings, official and unofficial, which appear on the former tile type. The only marking consistently found on imbrices in the Milton Keynes assemblage consists of a wavy line pattern running around the outside of the lower, wide, end of the tile, executed with a 3-, 5- or 6-pronged comb.

This type of decoration has been found elsewhere, where it was used to make the mortar adhere between two overlapping imbrices (Neal, 1974-76, 1-131). This, however, is not the case on our tiles, as the combing is on the outside of the *wider* end of the imbrex and must, I feel, be seen as pure decoration, as it occurs on tile of most fabrics.

#### *Hypocaust Tile*

##### Box Flue and Voussoir

Because of their intricate shape, and their incorporation into the walls of stone structures, these types of tile seem seldom to survive the destruction of the buildings containing them in a complete condition. No complete box-flue or

voussoir tiles have yet been found in the Milton Keynes area, so the following dimensions are calculated from a number of incomplete examples; see Fig. 39, 3 and 4 for an explanation of the measurements.

Table 3: Dimensions of Box Flue and Voussoir tiles (mm).

<i>Box Flue</i>		<i>Voussoir</i>	
Height	(A) = 320	Outer Height	(A) = 120
Width	(B) = 180	Inner Height	(B) = 100
Depth	(C) = 110	Width	(C) = 210
Thickness	(C) = 13-16	Depth	(D) = 110
Slot Height	(E) = 80	Thickness	(E) = 13-16
Width	(F) = 40		
Weight (kg)	= 6.2	Weight (kg)	= 2.44

Manufacture of both box-flue and voussoir was apparently confined to kilns using fabrics 1 and 3: of the tile from Bancroft, 44% was made in the latter fabric, and 42% in the former. Examination of box-flue samples from Bancroft suggests that box flue tiles were made by the methods recently tested by Morgan (McWhirr, 1979, 395-97), with the difference that the sanded sheet of clay was wrapped round a rectangular former and lap-jointed at a corner, and not in the centre of a side. This would perhaps make it easier to trim off surplus clay, and would retain a uniform side thickness. Side apertures were invariably cut with a knife after removal from the former. Morgan concludes that the voussoir tiles 'seem to be made differently', though there seems no reason why they could not have been formed 'en bloc' in the same way as a box-flue, and then cut to shape whilst on the former, perhaps with a suitable template to attain the correct taper. Most of the edges on samples examined were fairly straight, with rounded corners, as would be caused by handling of the still-plastic tile.

The keying patterns found on box-flue and voussoir have long been taken as the most interesting aspect of these tile types. Of the two methods of forming such patterns, roller stamping and combing, the latter is predominant in Milton Keynes. Only one small sherd of roller-stamped tile has so far been recorded, at Woughton, in a mid to late second century pit.

Combing occurs on all flue tile of all fabrics, being executed with combs ranging in size from four to ten points, made of wood or bone. The occurrence of these patterns, and their relationship to the fabric of the tile, has been noted in the two major groups from MK105 Bancroft and MK301 Stantonbury, to determine whether any patterns can be assigned to specific production centres, where they might represent either the workshop trademark or the signature of the maker. The MK105 Bancroft tile, whilst producing several clearly differentiated varieties of pattern, showed that these patterns could each be found on several fabrics, thus discounting the above theory.

At MK301 Stantonbury the question proved impossible to resolve, as all the flue tile appeared to be heavily combed at random, producing no definable patterns. The most common patterns, at least at MK105 Bancroft, were the 'Union Jack' and the 'Double Cross', which appeared on tile of all fabrics, both box flue and voussoir. It is tempting to suggest from the difference in combing between the two sites that the tiles were produced to order, rather than from stock, where patterns would surely be a little more consistent.

#### *Structural tile Pilae*

This type of tile, generally associated with the construction of floor supports in hypocaust systems, was found in large numbers at MK105 Bancroft, where the hypocaust pillars still remain *in situ* in Rooms 15, 16 and 18, and also at MK301 Stantonbury, where it was also used in the bath suite. It also appears at MK105 Bancroft to have been used for other structural purposes: the three flues linking the hypocaust chambers beneath Rooms 15 and 16 were probably formed by arches constructed of pilae; the flue leading from Room 3 to Room 14 may have been similarly constructed.

Irrespective of fabric type, the size of *pilae* in the Milton Keynes area seems to have been standardized at 190 × 190mm, with a thickness of 30mm. Weights vary slightly according to the fabric used, averaging about 2kg. To date no stamps or graffiti have been found on these tiles; decoration, if any, was limited to single finger-made lines marking the two diagonals on the upper face. One variation of this was to mark one diagonal with a wavy, rather than straight, line, using a stick or similar blunt instrument. Another was to mark the diagonals with three parallel lines, made with closed fingers. *Pila* tiles were made primarily in fabrics 1 and 5, though smaller amounts of fabric 3 *pilae* have also been noted. This opinion may, however, be altered if the pilae still *in situ* at MK105 Bancroft became available for study, as the current sample, about 39kg, represents only 19 complete tiles.

#### *Sub-floor Tile*

Evidence for this tile type again comes predominantly from MK105 Bancroft, mainly in the form of small fragments, though the largest surviving fragment of a sub-floor tile was found at MK301 Stantonbury beneath the floor of the cold plunge bath, and in terms of weight forms nearly 25% of the collection. Sub-floor tiles generally are used in conjunction with *pilae*, and thus appear in similar contexts, though normally as small fragments, as their great size and weight usually causes them to be broken during stone and tile robbing operations.

The predominant tile fabrics used for sub-floor tile appear to have been 1 and 5, with much smaller

quantities of fabrics 2 and 3. This might suggest that most, if not all, sub-floor tile was made locally, which seems reasonable, given the problems and expense of transporting such heavy tiles to the building site.

Sizes of sub-floor tile were not apparently as standardized as other tile types, being more related to the floor layout which they were intended to support. For reasons already discussed, measurement of surviving examples has not been feasible, but observations of the position of hypocaust pillars in Rooms 16 and 18 at Bancroft suggest two sizes of sub-floor tile, about 600 × 600mm in the former, and 400 × 400mm in the latter. Thickness was apparently standardized at 50mm. The larger tiles weighed about 30kg, and the smaller about 15kg. The tile found at Stantonbury, which was used as support for a cold plunge bath floor, measured 570 × 570mm, probably the size used in the rest of the MK301 Stantonbury bath suite, and not dissimilar to that in Room 16 at MK105 Bancroft. This tailoring of size again suggests that some, if not all, tile types were made to order.

As with *pilae*, decoration on sub-floor tiles was apparently limited to finger-marked diagonals on the upper surface of the tile. No stamps or graffiti were noted.

#### *Miscellaneous tiles*

It has become apparent from studies of material from Roman sites both in this country and abroad that the Romans were well aware of the versatility of pre-formed structural components, and exploited the use of brick and tile to the best of their technical ability. At Ashstead (Lowther, 1930, 1-17), Lowther records a tile 'chimney pot' (perhaps a roof finial) and semicircular and quadrant section tiles for forming pillars. Part of the aqueduct supplying the *colonia* at Lincoln (Whitwell, 1970, 32) consists of earthenware pipes, similar to modern terracotta drain pipes. The use of brick in constructing herringbone-pattern floors (*opus spicatum*) is widely attested in the Roman Empire; one local example of this is at the villa at Piddington, Northants (information from the excavator, Mr R. M. Friendship-Taylor).

As yet, few specialized types of tile or brick have been noted from the Milton Keynes area. At MK105 Bancroft, tile was used for flooring the cold plunge baths in Rooms 17, 19 and 20, where it remains *in situ* in the latter two rooms. Examination of plans and photographs of these rooms suggests this material to be similar to *pila* tile, but measuring about 250 × 250 × 30mm, made in fabric 2 or 3, with a pattern on the upper face consisting of a diagonal straight line intersecting a diagonal wavy line, both made with three closed fingertips. These tiles also appear similar to the larger types of *pila* tile, illustrated by Huber (1956, 38-40), used to

spread the load of sub-floor tiles more evenly on the *pilae* supporting them.

Another use of tile, one which is often overlooked, is in the construction of mosaic flooring, where red tesserae are invariably made of a fine tile fabric, similar to fabrics 2 and 3 in our series. The mosaics at MK105 Bancroft are no exception to this rule, red being one of the major colours. Examination of a random sample of loose red tesserae from this site shows them to have been cut from slabs of tile 18-20mm thick, made of fabrics 2, 3 and 5. Whilst one school of thought suggests that the mosaicists were supplied with slabs of tile, which were cut into tesserae using a hammer and chisel, the variety of fabrics present in the MK105 Bancroft mosaics, and their similarity in thickness to tegulae, leads the writer to the conclusion that at MK105 Bancroft, surplus tegulae were used for the manufacture of tesserae. This phenomenon has also been noted at Piddington, Northants (information from Mrs C. Woodfield).

A tantalizing glimpse of yet another specialized use of tile comes from the possible villa site at Stanton Low, excavated by Margaret Jones in 1957. Among the finds from the site were fragments of tile and sawn oolithic limestone, which were identified as 'armchair' tiles. This tile type, first identified by Sir George MacDonald at Newstead (MacDonald, 1931, 277), consisted of solid wedge-shaped blocks with projecting lugs at the narrow end and rectangular notches cut in the wide end. These were used for vaulting, which was constructed as solid ribs alternating with spaces, in which ducts were formed by a pair of flat tiles seated in the niches of the voussoirs (McWhirry, 1979, 288-89). This type of vaulting has been recorded at a number of military sites, including Carriden, Housesteads and Hadrian's Wall, as well as Leicester, York, and Helpstone (near Peterborough), where they appear in military contexts (Anon, 1959, 119). Stanton Low would therefore seem to be the first recorded instance of this type of voussoir being used in a civilian context.

It is worth noting in comparison with the bath suites at MK105 Bancroft and MK301 Stantonbury that Stanton Low appears in part to be much earlier in date than the former sites and that this may account for some of the apparent structural idiosyncrasies.

Finally, one must not overlook the fact that tiles designed for one specific function could be used equally well to perform others. At MK105 Bancroft, two examples of this have been recorded. In Room 18, the caldarium of the western bath suite, the inside face of the apsidal west end was lined with a continuous row of vertical box flue tiles, the bottom of which were set in mortar on a step in the masonry of the wall, thus rendering them

useless as hot air ducts. The only reasonable explanation for this can be that they acted in a similar fashion to a cavity wall, retaining heat and preventing condensation on the most exposed wall of the caldarium. Secondly, in Room 10, a drain was found leading southwards from the early plunge bath in the south-east corner of the room, through wall 21. This drain was formed of imbrices, laid together to form a cylinder.

AN INSCRIBED TILE FROM  
MK211 WYMBUSH M. R. C. Hassall

Part of a tegula was found in the destruction level overlying the remains of the building (Fig. 38, 3). The tegula has a greatest surviving width of 225mm, length 170mm and thickness 30mm, and is of orange-brown sandy fabric with a few large calcite inclusions. A graffito has been cut before firing on the upper surface in four lines parallel to the flanges and running towards the lower end of the tile (indicated by finger marking forming an incomplete 'signature'). The text reads:

... ICIAN[.]P[.]IM[  
.....]ELLIA[.]O  
.....]FACIMVS  
.....]M

This can be partially restored as:

... ]ICIAN[O]P[R]IM[O]  
ET.....]ELLIA[N]O  
QVI HANC] FACIMVS  
SALVTE]M

'Good health to ... icianus, Primus and ... ellianus we who make this (tile).'

In line 1 *Felicianus* is statistically the most likely restoration of the first name, since, according to Kajanto (1965), it occurs 140 times in the *Corpus Inscriptionum Latinarum* (*CIL*) and is much more common than, for example, Sulpicianus (26 times in *CIL*), Senicianus (20), and Minicianus (12); but note that Senicianus was particularly frequent in Celtic provinces.

In line 2 Marcellianus (15 times in *CIL*), Vitellianus (13), and Gemellianus (7) are all possible. For a similar sentiment expressed on a tile see *Ephemeris Epigraphica* VII, 1139 (= *RCHM*, 1962, 114, inscription 24): Pol[l]io col[l]egio felic[i]t[er], 'Pollio to the guild, good luck!'

## REPORTS ON OTHER FINDS

### COINS

The following reports discuss the evidence from sites where coins were found in sufficient quantity for a statement to be worthwhile.

Throughout the excavation texts, coins, where used as dating evidence, have been referred to by their site list number. The detailed list of coins from each site (in microfiche section at end of volume) has been compiled by R. J. Zeepvat and is in part based on earlier lists provided by specialists, which became incomplete due to further finds. Original coin identification was undertaken by C. E. King (MK96 Windmill Hill, MK100 Sherwood Drive, MK105 Bancroft), R. Reece (MK211 Wymbush) and C. T. P. Woodfield (MK64 Wood Corner), to whom we are indebted. (*Ed.*)

#### MK64 WOOD CORNER

R. J. Zeepvat

The group of sixty-six coins from this site, spanning the period c. 110-380, largely consists of unstratified finds from an intensive metal detector survey following the excavation, which produced only fifteen coins, nearly all of which were also unstratified.

As might be expected, the results of the detector survey have not lengthened the date spread first indicated by the excavated coins. However, the group is now seen to contain several radiates—none were noted in excavation—as well as a much greater number of fourth-century *folles*.

The date range of the coins corresponds to the pattern established on other sites in the area. The presence of three worn second-century coins accords with the suggested commencement of occupation in the latter part of that century.

The bulk of the coins from Wood Corner date from 330-60, peaking in the middle decade of this period, suggesting that the site flourished past the middle of the fourth century, when coin numbers tended to fall off dramatically. However, beyond two 'Gloria Romanorum' small bronzes of 364-78 there is nothing to suggest that occupation extended abnormally late in the Roman period.

#### MK96 WINDMILL HILL

C. E. King

Twelve Roman bronze coins were found at Windmill Hill. All were minted between 260 and

388 and all but one of the legible pieces fall in the years 317-60. Four coins, an unusually high number, belong to the period 317-30, a time span from which relatively few finds have been recovered from British sites in comparison with the years 330-46 and 364-78 (see Ravetz, 1964, 291). This may, however, simply be a result of the small sample size and not have any real significance, although the number of these pieces recovered from Milton Keynes generally, also unusually high, is worth noting in this context.

Five of the coins were ancient imitations, three of which were minted between 330 and 341, a decade which was characterized by the large scale production of imitations (Boon, 1974, 95, 115 and 127). It is possible to reconstruct the distribution pattern for the fourth century, when the coins were mintmarked, and not surprisingly the western mints, Trier (three coins and one imitation) and Lyons (one coin) are predominant, since this is the normal pattern for site finds and hoards for this period.

#### MK100 SHERWOOD DRIVE

C. E. King

Two coins date from the second century, a *dupondius* of Trajan and a *sestertius* of Marcus Aurelius, and there is a third-century *denarius* of Caracalla or Geta and an *antoninianus* of Divus Claudius (Gothicus), all of which seem genuine. Of the remaining coins, one is totally illegible, two seem to be fourth-century imitations and the others are late third-century imitations, with the exception of a possibly genuine piece of Tetricus I (see No. 5 in the microfiche list). There are six imitations of Tetricus I and two of Tetricus II, while the most interesting coin is one of Carausius which has a definitely barbarous reverse type but a good-quality obverse. This piece has been double-struck over an *antoninianus* of Gallienus which originally had a VICTORIA AVG(G) reverse.

The coins as a group are badly corroded and most are quite worn. Unfortunately many are only fragments which has made precise identification difficult. The imitations are clearly distinguishable from genuine pieces on the basis of their poor fabric and manufacture and aberrant size, as they range from 6mm to 17mm in diameter. The diameter for regular issues in this period is c.22mm. Mints for these coins are unidentifiable, nor could they be assigned a RIC catalogue number. Thirteen of the twenty (65%) were probably produced in the years

c.260-80, with four preceding and three following these years.

MK105 BANCROFT ROMAN VILLA C. E. King

The coins recovered from Bancroft Roman villa consist of two hundred and seven Roman coins, one Celtic and a small hoard of seventy-six bronzes of the 330s, which has been published separately (King, 1981, 40-49). The forty-two additional coins found in 1977-78 have not significantly altered the chronological or mint distribution pattern noted in 1976, and 68% of the coins fall in the years 315-78 (see Tables 1-2 below).

Table 1: Chronological Distribution.

Period	Genuine		Imitations	
	No.	%	No.	%
50 BC-AD 260	4	1.9	—	—
260-285	5	2.4	14	6.7
285-305	—	—	—	—
305-330	22	10.6	—	—
330-346	55	26.4	36	17.3
348-360	4	1.9	8	3.8
364-378	18	8.6	—	—
378-388	—	—	—	—
388-402	10	4.8	—	—
4th c. Illegible	16	7.7	6	2.9
3rd-4th c. Illeg.	4	1.9	6	2.9
Total	138	66.2	70	33.6

Table 2: Fourth-century Chronological Distribution.

Period	Genuine		Imitations	
	No.	%	No.	%
300-315	1	0.4	—	—
315-320	5	2.4	—	—
320-325	9	4.3	—	—
325-330	7	3.4	—	—
330-335	30	14.4	19	9.1
335-341	15	7.2	13	6.2
341-346	10	4.8	4	1.9
348-360	4	1.9	8	3.8
364-378	18	8.6	—	—
378-388	—	—	—	—
388-402	10	4.8	—	—

Table 3: Fourth-century Mint Distribution, Genuine.

Date	LON		AMD		TR		LUG		ARLES		ROME		AQ		SIS		THESS		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
313-318					1	0.5													
318-320	1	0.5			1	0.5													
320-325	3	1.4			2	0.9					1	0.5			2	0.9			
325-330					5	2.4			3	1.4									
330-335					12	5.8	3	1.4	3	1.4								2	0.9
335-341					10	4.8	1	0.5	2	0.9									
341-346					5	2.4	3	1.4											
348-360			1	0.5															
364-378							4	2.0	4	2.0			1	0.5	1	0.5			
Totals	4	2.0	1	0.5	36	17.3	11	5.3	12	5.8	1	0.5	1	0.5	3	1.4			
TOTAL 71 (34.1%)																			

The number of coins datable to 317-330 (twenty-two: 10.6%) is disproportionately high in comparison with other British sites, but this could be explained by the fact that at least ten of the coins were recovered from Building 6 and could represent a small hoard. These are nos. 24, 26, 30-32, 34-36, 40, 42 and 45 in the coin list. There were some later coins also found in a nearby ditch but it is less likely that they formed part of a single deposit since three date to 330-41, one to 364-78 and one to 388-402.

The level of coin-loss reached its peak in the period 330-46, reaching twenty-six coins (12.5%), and the figure is even higher if one takes the hoard coins into account. By contrast, the number of radiates found, genuine and barbarous, is low (nine coins: 1.3%) compared with the average for the British sites (see for example Casey, 1974, 37 and Reece, 1972, 96). There is no obvious explanation for the chronological variation in coin loss from different locations since we do not know whether it can be ascribed to differences in kind between sites (i.e. military, civil, urban, rural, temple, etc.) or the extent to which coinage supply and use varied from region to region (Reece, 1974, 64). Many more sites from all parts of the world need to be published in detail and compared before any meaningful pattern will emerge. It is worth noting that coins minted c.348-60 are comparatively rare on British sites and, as at Milton Keynes, the imitations often outnumber genuine pieces.

Just under 34% of the coins were contemporary imitations and nearly half of these copy coins of 330-41. The other two periods from which imitations are common are 260-85 and 348-60, the normal pattern for British sites (Boon, 1974, 95). 15% of the coins were illegible; if they could be read they might alter the distribution but, given the large sample, probably not significantly.

The fourth-century genuine coins with legible mintmarks represent 34% of the total; half can be attributed to Trier, 15% to Lyons, and 17% to Arles (Table 3). The imitations with mintmarks

bear either the Trier (4.8%) or Lyons (2.4%) mark (Table 4).

Table 4: Imitation Fourth-century Mintmarks.

Date	TR		LUG	
	No.	%	No.	%
330-335	4	2.0	5	2.4
335-341	6	2.9	—	—
Total	10	4.8	5	2.4

#### Conclusions

The pattern of coin loss at Bancroft Roman villa is similar in many respects to that of other British sites. The largest number of coins recovered fall in the years 260-402, which is only to be expected since issues of the later third and fourth centuries tended to be large. Within this period some decades when coin loss appears to have been small (348-60, 378-88) are characteristic of British sites but the relative scarcity of coins from 260-85 and 364-78 is unusual, as is the comparative abundance of pieces from 315-30. The mint distribution underlines the role of the Western mints in supplying Britain with coin while the number of imitations suggests a shortage of coin which resulted in their being copied.

#### MK211 WYMBUSH

R. Reece

The hoard from this site establishes that one phase of activity can be dated around 348. With this in mind the only coins which have any dating value that can be separated from this fixed point are those struck before 250 or after 350. Thus the coins of Antoninus Pius, Commodus, and Julia Paula are unlikely to belong to a general scatter dropped on the site in the middle of the fourth century and, obviously, the coins struck after 350 must belong to some late activity. It is probably unlikely that all the radiate coins dating to around 270 were dropped in the middle of the fourth century, but this is a perfectly good possibility, in strict logic, and they *need* give no indications of a third-century occupation.

On a slightly less strict note, the coins could be taken to show activity around the beginning of the third century, continuing to some time after 270. The absence of coins dated between 222 and 268 is not significant because such coins are comparatively rare on all British sites. The absence of coins from 280-330 is a little more important because these issues of Carausius and Allectus, and the early House of Constantine, are fairly common finds. There may therefore be a gap in occupation between say 280 and 335. There is good evidence of activity from c.330-c.360; after that the coins can say little.

The hoard consisted of twenty-two coins; there were one each of Constantine I and Theodora, two

each of Constantine II and the House of Constantine, and fourteen of Constans. All were probably struck between 330 and 348. They are all listed as regular coins, but they are at the limit of size and weight normally expected of regular coins and, on a strict judgement, are probably below that limit. Thus they could all equally well be classed as good copies. Having made this point, and in the absence of any other agreed criterion of regularity, there is little point in any detailed discussion. The absence of pieces with the Fallen Horseman reverse, common after 350, gives a fairly secure date for the hoard before about 353.

#### MK301 STANTONBURY

R. J. Zeepvat

This group of thirty coins, many of which are badly worn and corroded, cover a date range of c.65-380, longer than any other site yet excavated in Milton Keynes (the Celtic coin from Bancroft excepted).

The presence of worn coins of Nero, Vespasian and Domitian confirms that occupation at Stantonbury began in the late first to early second century. It is interesting to note that this is the largest group of first-century coins so far recovered from any rural site in Milton Keynes.

The lack of coins covering the first two decades of the fourth century at Stantonbury is a common yet unexplained feature of sites in the area. A more serious gap in the coin sequence is the absence of some of the most common types of  $\text{AE } 3$ . It is tempting to suggest that this indicates a period of abandonment of the site, but here again the ceramic evidence is at odds with the numismatic, and the construction of the bath suite adjacent to Building 2 suggests prosperity rather than collapse. The presence of six coins of the House of Valentinian, 364-78, suggests that occupation continued to the end of the fourth century.

#### BRONZE OBJECTS

Only the more complete and recognizable objects have been included. (*Ed.*)

#### BROOCHES P. T. Marney and D. F. Mackreth

D. F. Mackreth wrote the reports on nos. 11, 13 and 17 and has kindly commented and advised on the remaining reports which were written by P. Marney.

#### Colchester Types (Fig. 40)

1. Complete, L.54mm, except for a broken pin and badly corroded side-wings. The bow is oval in section, decorated with a central shallow groove which bears a chevron pattern in low relief. The pattern is worn and it is difficult to detect whether it was produced with a stamp or by rouletting. There is a cross-groove

- at the foot of the bow, an unusual feature on this type of brooch. The catch-plate is ornamentally pierced with two squares, close to the bow. The spring has six turns, with an external chord held in place with a small neat front fastening hook.
- This type of brooch is generally dated from the early 1st cent. AD up to the Boudiccan revolt. The small head hook may indicate that the example is an evolved specimen (Hawkes and Hull, 1947, 309).
- MK105/Room 5, Building 1, which overlies Ditch A, (dated mid-late 1st cent.), from which this brooch may originally have come/BR 103.
2. In a very worn condition but complete apart from the catch-plate, L.62mm. The upper section of the bow is D-shaped, tapering to a round. No decoration is visible on the bow, though the side-wings may once have borne widely spaced ribbing which corrosion has largely removed. The catch-plate was ornamentally pierced with one large and one small circle and decorated with a rocker arm design. The spring has eight turns, with an external chord held by a front-facing hook. In antiquity a thick bronze rod has been fed through the coils of the spring. This is probably an attempt to repair a broken spring, coupled with a coil being bent down to hook under a wing. Such repairs were common, and the break in this case may be hidden by a wing.  
Dates from the early 1st cent. AD to the Boudiccan revolt.  
MK100/Ditch D2/Ae 16.
  3. A badly corroded brooch which has lost its catch-plate, part of the pin and all trace of decoration. The bow is D-shaped in section, L.59mm. The spring has eight turns with an external chord and small neat front-facing head hook.  
Dates from the early 1st cent. AD to the Boudiccan revolt.  
MK96/Uns.
  4. The bow only, L.50mm; the spring, pin and catch-plate are missing. The bow is oval in section and undecorated, with regular fluting on the side-wings. The large head hook has been carefully formed and indented with a transverse groove.  
Dates from the early 1st cent. AD to the Boudiccan revolt.  
MK96/ found in a cremation burial, associated with a pot of 'Belgic' type, fabric 46B.
  5. A heavily corroded brooch, L.60mm, with a broken catch-plate; the pin and half of the spring are missing (see no. 6 below). No decoration is visible. The bow is oval in section. In antiquity the thinner sheet bronze of the catch-plate appears to have broken away, so to ensure further usefulness of the brooch the lower part of the bow has been twisted back to form a crude catch-plate.  
Dates from the early 1st cent. AD to the Boudiccan revolt.  
MK100/ from fill of pit 1: the accompanying pottery is thought to belong to the first half of the first cent. AD/BR 4.
  6. The pin and the spring, L.43mm. The spring of eight turns has been repaired in antiquity by the insertion of a length of bronze wire into the coils. The broken end of the spring would then have been hooked under the wing of the brooch, as in no. 2 above. The bow of no. 5, although found in a different context, appears to have joined with this brooch.  
MK100/ from fill of Ditch D2/Br 26.
  7. The bow of a small brooch, L.26mm. The spring and pin are missing. The bow is a stout D in section, decorated with a slightly raised plain rib. The wings, though badly worn, show signs of high relief decoration consisting of rows of beading separated by vertical lines. The catch-plate had one round perforation.  
This brooch belongs to a sub-group of the Colchester type (Hawkes and Hull, 1947, 310), comprising exceptionally small examples which appear relatively late in the lifetime of the type as a whole.  
MK105/uns./Br 43.
- Colchester Derivatives (Figs. 40 and 41)*
8. The head and side-wings only. The bow is humped, resembling a 'Dolphin' brooch, and, despite corrosion, traces of the two holes in the rearward facing plate are visible. These would have held the spring; the upper lug retained the chord and the lower the axial bar. The side-wings are large and semi-cylindrical with double lines engraved at the end of each arm (Hawkes and Hull, 1947, 311).  
Date: 2nd half of 1st cent. AD.  
MK105/uns./none.
  9. The head, wings and spring only. The rearward facing plate on the head is still intact (see no. 8); the hook is skeuomorphic. The coils on either side of the lugs have corroded to show clearly the chord and axial bar. The side-wings are semicylindrical and undecorated (Hawkes and Hull, 1947, 311).  
Date: 2nd half of 1st cent. AD.  
MK301/uns./none.
  10. A complete 'Dolphin' brooch with a humped-up bow which is a flattened ribbed D in section and tapers, L.64mm. It has a solid catch-plate and semi-cylindrical moulded wings, slightly curved to seat the spring. Decoration on the bow consists of a raised rib cut lightly with a chevron design. The separate spring has eleven turns with the chord and axial bar passing through two piercings in a central rearward-facing plate behind the head. Part of this plate has split near the lower piercing to give the impression that the spring is held by an upper and lower hook.  
At Camulodunum, this type was in use before the end of Period IV, AD 49-61, and D. F. Mackreth believes this example may date from c.AD 40-50.  
MK105/ from fill of Ditch J, associated with both hand- and wheel-thrown 'Belgic' pottery/Br 39.
  11. The spring, now lost, was once held to the body of the brooch by means of two holes in a crest on the head of the bow: an axis bar passed through the lower and the coils of the spring, the chord running through the upper. The wings and bow are plain, the latter having a rounded front and almost flat sides

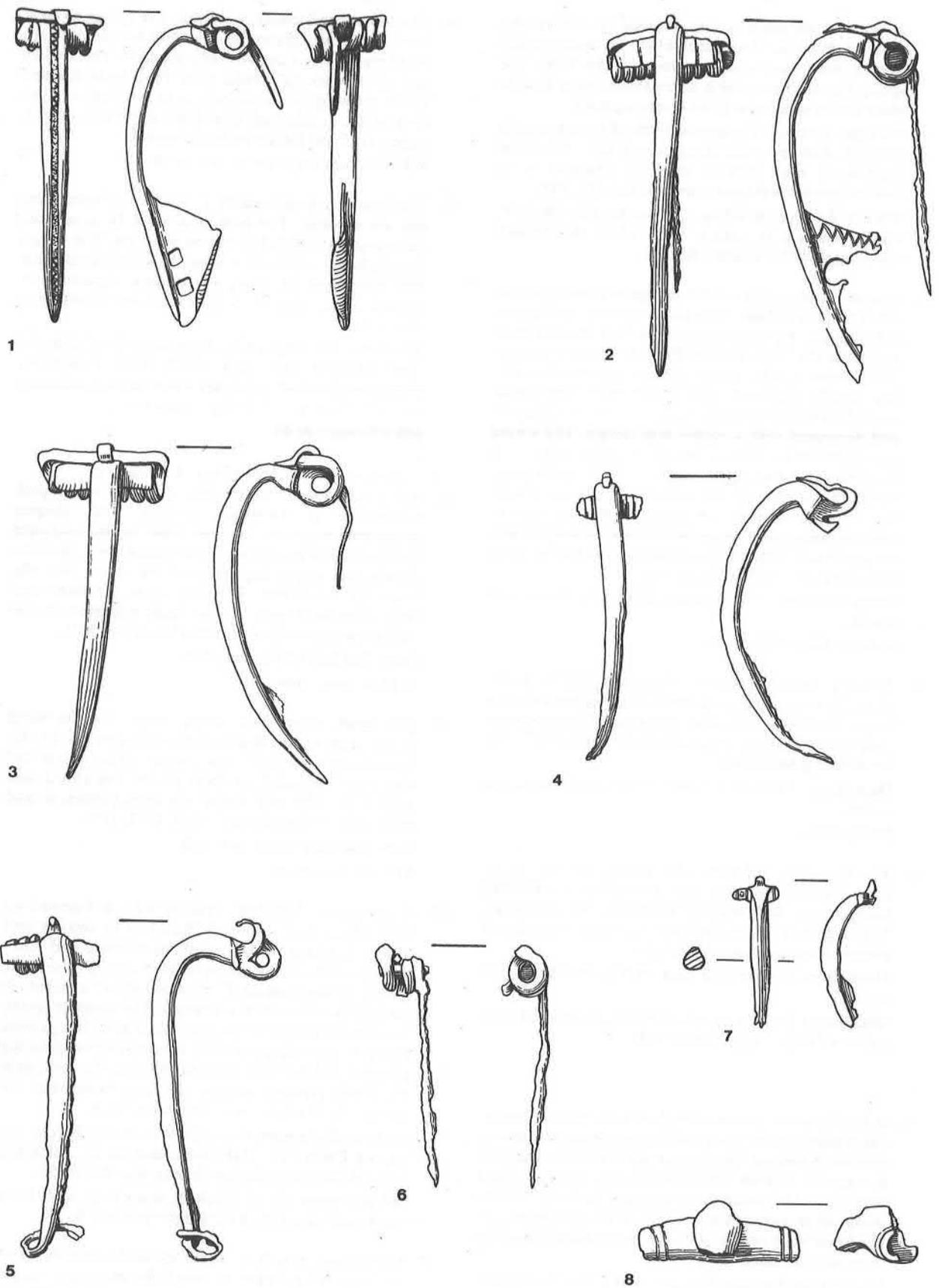


Fig. 40. Bronze Brooches 1-8 (scale 1:1).

no. 28), but it is impossible to be certain. After this moulding the upper end narrows to a thin-sectioned shank which is the start of the spring.

The general dating of Nauheim derivatives is up to the end of the first century or rather, near the end. Precise dating is difficult, though this example *may* be pre-Conquest.

MK105/Destruction over main building/BR23.

#### *Hod Hill Type* (Fig. 41)

15. This is a good example, L.31mm, of a 'Hod Hill' brooch, Class A. The upper section of the bow is thin and fairly flat with edges that are almost parallel. It is decorated with longitudinal ridges containing a raised panel decorated with a medial wavy line of pointille design. Below this is a cross moulding, below which a flat, plain foot tapers to a terminal moulded knob. The catch-plate is solid and triangular. The head is flat, with broken forward-folded hinge casings, within which traces of the iron axis bar are still visible. This example does not appear to have been tinned or silvered.

Dated to the Claudio-Neronian period (40-70).

MK105/uns./Br 57.

#### *Hod Hill Variant* (Fig. 41)

16. An example of one of the two main variants of the Hod Hill type of brooch in which the two-part design has been done away with. The brooch is extremely small and thin, L.32mm; the bow is flat with a slight taper; towards the foot it twists and was hammered out to form the catch-plate. The pin is missing, but would have been hinged on an axis bar housed by the rolled-over head of the brooch. The simplicity of this design suggests parallels with the basic strip iron brooches well established in the pre-Conquest period. Dated to the Claudio-Neronian period (40-70).  
MK297/from Pit 31, a residual find.

#### *Plate* (Fig. 41)

17. The spring was mounted on a single pierced lug. The plate is circular and has the remains of six equally-spaced rounded projections around the periphery. On the plate is a raised central boss with a recessed top containing remains of millefiore panels probably arranged in a chequer. The border of the cell has a series of cross-cuts. Around the boss is a flute which has an outer border also with cross-cuts.
- The design of this brooch suggests a continental origin with the use of cross-cuts on the borders of the two major zones, what appears to be lathe-turning marks on the back and front and the use of rounded projecting bosses; moreover the use of millefiore has not yet proved to be a British trait. However, a note of caution is needed: one British design, which shows so little variation that it is almost certainly the product of one manufacturer (Wedlake, 1958, 230, fig. 53.50; Pitt Rivers, 1892, 105, pl. CLXXV.7), is to be found with pins hinged and sprung, the latter in both main modes. There are other examples in Britain, but it does not seem to occur on definitely continental types. The brooch belongs to a small group in Britain none of which is dated, and all others recorded by the writer have hinged pins. None seems to occur in the standard continental sources.

However, the use of millefiore is most common in the 2nd cent.

Outer circle, excluding the studs, D.22mm.

MK105/1982/uns./49.

#### *Penannular* (Fig. 41)

18. Penannular brooch, D.26-28mm with terminals bent back closely over themselves and lightly tooled. The ring is round in section with cross-cuts next to each terminal. The pin is plain with the head wrapped loosely around the hoop.

Fowler's Type D.1, which she dates 1st-3rd cent. (Fowler, 1960, 151).

MK100/upper layers of Ditch D2/Ae 17.

### OTHER BRONZE OBJECTS

R. J. Zeepvat

#### *Bracelets* (Fig. 42)

19. Child's bracelet. Flat-sectioned ribbon-strip type (Cunliffe, 1968, 204) with perforated terminals decorated with transverse incised lines on outer surface. Probably 4th cent.; a similar bracelet, though without pierced terminals, is known at Gadebridge (Neal, 1974, 158, fig. 60, 153).  
MK301/Destruction over Building 2/BR 31.
20. Child's bracelet. Curved strip with slightly notched outer edge, and plain rounded terminals. Late 2nd to early 3rd cent. though a similar example from Richborough has been dated to the 4th cent. (Bushe-Fox, 1949, pl. XLIX, 13).  
MK301/Fill of boundary ditch, F97/94.
21. Bracelet, ribbon-strip type, with lightly-incised decoration on outer face, consisting of groups of transverse lines, zig-zags, and crosses.  
MK105/uns./BR 20.
22. Bracelet, three fragments, rectangular section, curved strip with notched decoration on outer edge (see no. 20).  
MK45/Ditch section A/C V4/Ae 13.
23. Bracelet fragment, with decoration consisting of groups of four or five incised transverse lines separated by equal lengths of plain metal. Similar examples, with differing numbers of incised lines, have been recorded at Gadebridge (Neal, 1974, 139, fig. 60, 159), Cirencester (British Museum, 1966, Acc. No. 1929 7-15-10), and Shakenoak (Brodrigg *et al.*, 1968-73, Vol. 5, 111, fig. 54, 192). Both this example and the latter date from the 4th cent. No. 24 below and an unstratified fragment of a bracelet from MK105 have similar decoration.  
MK109/Fill of pit F11/1.
24. Child's bracelet, fragment, decoration similar to no. 23, but more regularly executed.  
MK211/uns./1.
25. Bracelet fragment. Roughly rectangular section, decorated on outer face with broadly-spaced diagonal incised lines, see also no. 27 below.  
MK105/Destruction, Building 1/BR 19.

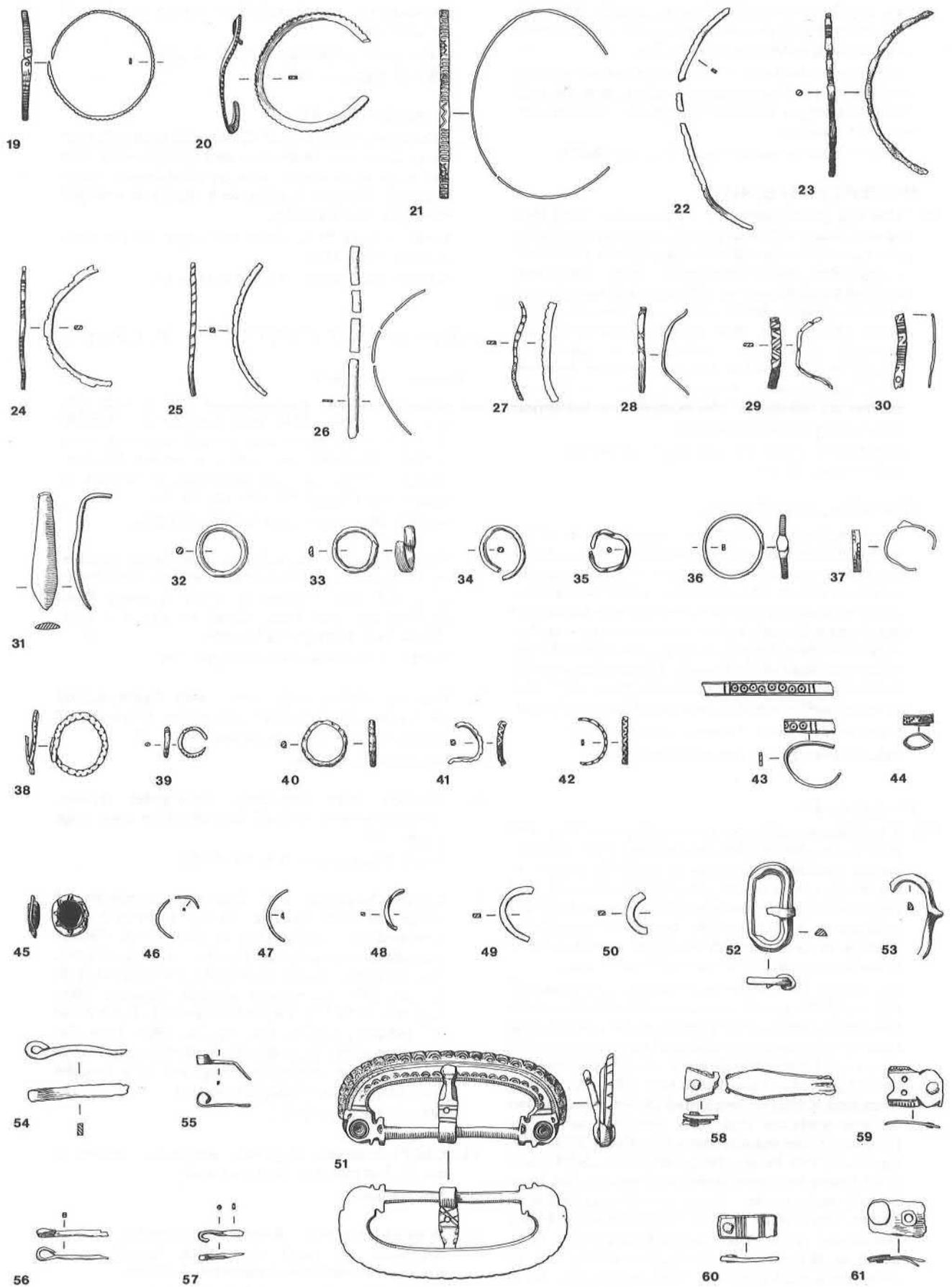


Fig. 42. Bronze Objects 19-61 (scale 1:2).

26. Bracelet, four fragments. Rectangular section strip, undecorated.  
MK64/uns./Br 5.
27. Bracelet fragment. Decoration similar to that on no. 25, but with transverse rather than diagonal lines.  
MK297/uns./Ae 2.
28. Bracelet fragment. Decoration consisting of irregularly-spaced incised crosses on outer face.  
MK105/uns./Br 15.
29. Bracelet fragment, ribbon-strip type, decorated with incised chevrons surrounding chip-carved notches along each side; cf. Richborough (Bushe-Fox, 1928, pl. XXII, 62).  
MK301/uns./Br 39.
30. Bracelet fragment, ribbon-strip type, with pierced terminal and decoration consisting of incised transverse lines and chip-carved edges.  
MK45/Ditch section T9/8.
31. Bracelet terminal, cast, snake-head type, undecorated. For a more elaborate example, see Gadebridge (Neal, 1974, 139, fig. 60, 158).  
MK64/uns./MD 8.
- Rings* (Fig. 42)  
Whilst the bulk of examples illustrated here are items of jewellery, it is possible that some of the undecorated rings may have fulfilled other functions, such as harness or belt fittings, or as suspension rings on tools or vessels.
32. Ring, closed, circular section, undecorated. D.14mm.  
MK105/uns./BR 128.
33. Ring, semicircular section, broken (or cut?). D.13mm.  
MK301/uns./BR 2.
34. Ring, circular section, cut. D.14mm approx.  
MK105/uns./BR 86.
35. Ring open, crudely made of twisted square-section wire. D.13mm.  
MK45/uns./Ae 12.
36. Ring, square section, with overlapping flattened spatulate terminals. Notched decoration for 10mm either side of terminals. D.21mm.  
MK105/Destruction, Building 1, Room 13/BR 124.
37. Ring, three fragments, with lightly-stamped groups of square impressions alternately on outer face. Traces of a decorative protuberance at one point. D.14mm.  
MK105/uns./BR 87.
38. Ring, expanding type, decorated with roughly-spaced notches along both edges of one face. D.17mm.  
MK105/uns./BR 31.
39. Ring, penannular with crude incised transverse line decoration in two zones, and pointed terminals. Probably a child's ring. D.9mm.  
MK301/uns./BR 19.
40. Ring, closed, semicircular section, with notched decoration on both faces of outside edge. Cf. Gadebridge (Neal, 1974, 138, fig. 60, 142), 4th cent. D.13mm. See also nos. 41 and 42 below.  
MK211/Destruction over terrace area/100.
41. Ring fragment, square section, decoration of alternating notches on outside face. See also nos. 40, 42.  
MK105/uns./BR 78.
42. Ring fragment, similar to no. 41. D.15mm.  
MK105/Destruction, Building 1/BR 58.
43. Ring, flat rectangular section, cut and distorted. Decorated on outside face with a single row of inscribed ring-and-dot markings between two parallel lines, reminiscent of the decorative motifs commonly found on bone artefacts (see below, p. 000). D.17mm, 4th cent.  
MK105/West wall of garden area/BR 110.
44. Ring fragment. Flat rectangular-section strip decorated with small randomly-punched holes in outer face, bounded by parallel grooves.  
MK105/uns./BR45.
45. Ring setting, flat disc, chip-carved, around corrugated band enclosing enamel setting. D.15mm.  
MK301/uns./BR21.
46. Ring, two fragments, plain circular section wire, D.13mm.  
MK45/Fill of Ditch T9/Ae 2.
47. Ring fragment, plain semicircular-section wire.  
MK45/Fill of Ditch T5/Ae 2.
48. Ring fragment, twisted square-section wire, similar to no. 35. 4th cent.  
MK301/Rubble overlying feature F121/102.
- 49/50. Ring fragments, cast, curved rectangular section. D. of 49 is 13mm and of 50 10mm.  
MK301/Gully F103/89, MK301/Ditch F97/137.

#### *Buckles* (Fig. 42)

51. Buckle, Hawkes and Dunning type IIIA (Hawkes and Dunning, 1961, 59). Worn. Decorated with chip-carved notches and two rows of punched semicircles around the loop, which terminates in stylized animal heads facing across the hinge bar. The eyes are deeply engraved, and may have been inlaid with enamel or niello. Residual ears and open mouths are represented by punched decoration. The tongue is waisted, and slightly curved at the tip, with four transverse grooves and a perforation on the rectangular panel at the back, and two transverse grooves towards the tip. The reverse of the tongue has rough transverse and diagonal grooves around the perforation.  
Date: late 4th to 5th cent.

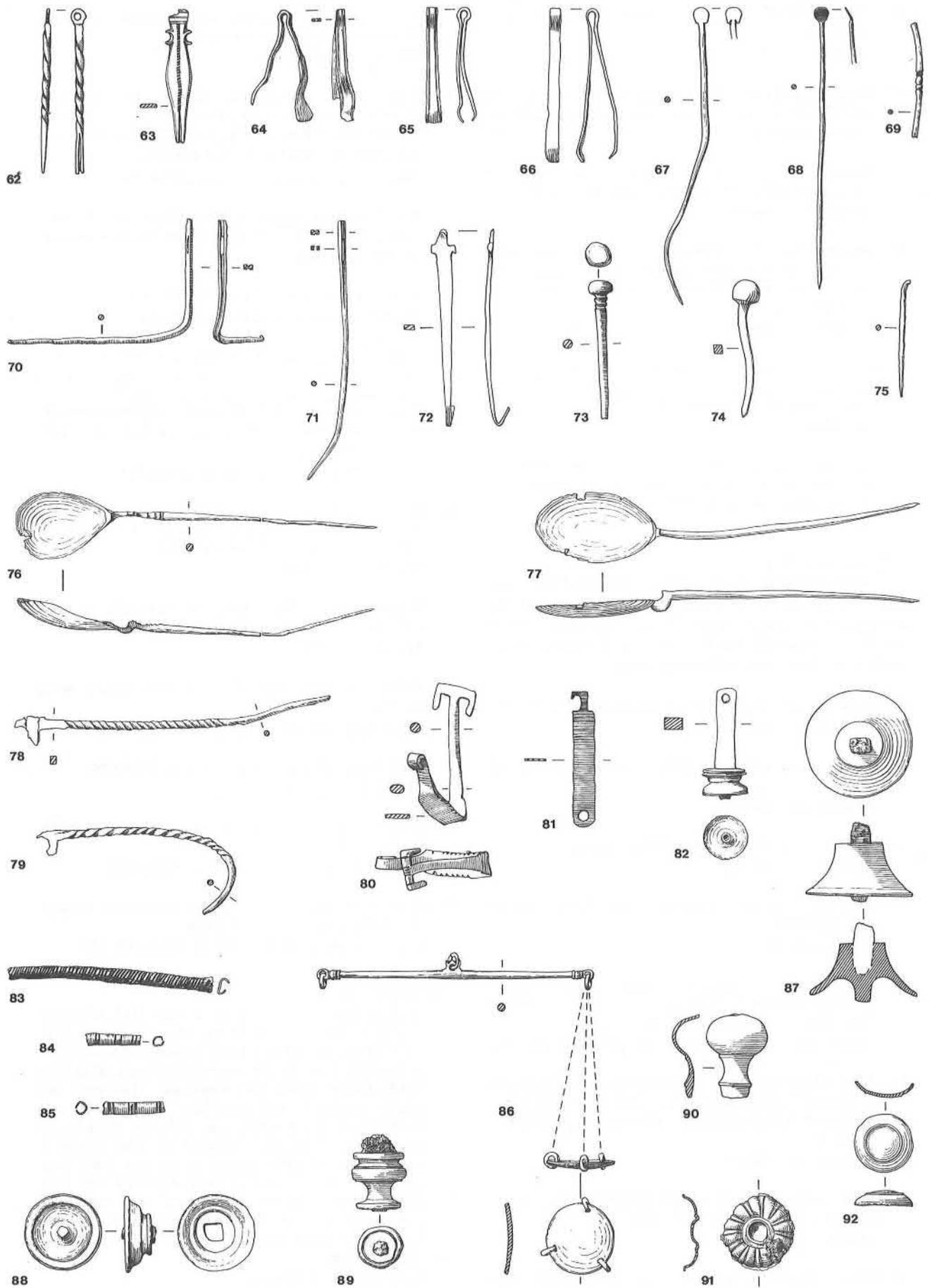


Fig. 43. Bronze Objects 62-92 (scale 1:2).

This buckle was originally reported as being of Germanic military origin (Webster and Cherry, 1977, fig. 71).

MK105/Destruction, Building 1/BR 5.

52. Buckle, undecorated, with chamfered sides and a plain tongue of bent rectangular-section strip.  
MK105/uns./MD 63.

53. Buckle fragment, possibly of post-Roman type. Centre of loop formed into point, with recess for tongue. Similar examples are known from Caerleon (Wheeler and Wheeler, 1928, pl. XXXII, no. 6) and Fishbourne (Cunliffe, 1971, 110, 113, fig. 44, 91).  
MK301/uns./BR 26.

54. Tongue of buckle/penannular brooch, broken tip. Undecorated. L.35mm.  
Caldecotte Lake/uns./MD 7.

55. Tongue of buckle/penannular brooch. Broken tip. Undecorated. L.27mm.  
MK105/Destruction, Building 1/BR 38.

56. Tongue of buckle/penannular brooch. Plain square section rod, flattened and bent round for hinge bar. 4th cent.  
MK105/Floor surface, Building 6/BR 114.

57. Tongue of buckle/penannular brooch? Square-section rod, flattened towards tip.  
MK105/uns./Br 7.

#### Strap Ends (Fig. 42)

58. Strap end. 'Coffin'-shaped, with chamfered edges and traces of decoration at its narrower, broken end. Single rivet fastening still *in situ*, with remains of backing plate.  
MK211/uns./64.

59. Strap end (broken). Roughly circular-shaped terminal with rivet still *in situ*. Parallel-sided body with notched edges and holes for two further fixings.  
MK105/uns./MD 3.

60. Strap end/fitting. Rectangular plate with chamfered edges and incised transverse line decoration. Single rivet fixing still *in situ*. Crude workmanship.  
MK351/uns./4.

61. Strap end? Two very thin, roughly rectangular plates held together by two rivets, one of which remains in position. Very crude workmanship. 1st cent.  
MK98/Fill of Ditch F19/Ae 1.

#### Toilet Articles (Fig. 43)

The following articles generally fall into two distinct groups. The first, consisting of nail cleaners, tweezers and ear scoops, were usually purchased and kept as a set, held together on a bronze ring, as in an example from Gadebridge (Neal, 1974, 140, fig. 62, 184). The other group, consisting of razor, unguent spoon (ligula) and spatula, are invariably found separately. Also included in this category are such items as mirrors,

though no recognizable examples of these have been found in Milton Keynes.

62. Nail cleaner. Twisted square-section shaft tapered at one end, flattened and pierced for suspension at the other.  
L.61mm. 4th cent.  
MK105/Upper layer of ditch/BR 30.

63. Nail cleaner. Tapered strip, with two crescent-shaped 'ears' near top end. Chamfered sides, punched decoration down side. A similar article has been noted at Richborough (Bushe-Fox, 1949, pl. XXXVI, 125). L.50mm.  
MK105/uns./MD 71.

64. Tweezers. Decorated with two parallel grooves round outside face. Cf. Gadebridge (Neal, 1974, 140, fig. 62, 181). L.42mm.  
MK351/uns./3.

65. Tweezers. Two parallel grooves round outside face. See also no. 64. L.43mm.  
MK105/uns./BR 69.

66. Tweezers. Undecorated. 4th cent? L.57mm.  
MK109/Fill of Ditch F58/19.

67. Ligula. Undecorated. 4th cent. L.115mm.  
MK301/Surface of yard adjacent to Building 4/140.

68. Ligula. Undecorated. 4th cent. L.105mm.  
MK301/Destruction north of Wall 26/63.

69. Fragment of decorated rod. Part of shaft of a ligula, stylus or a spatula.  
MK64/uns./BR 1.

#### Needles and Pins (Fig. 43)

These two categories, though grouped together here for convenience, consist of objects intended for totally different purposes. The needles illustrated are similar to modern examples, though larger, and probably intended therefore for leather-work or darning. The pins, however, have large, and in some cases decorative heads, making them similar to bone pins, which were used for decoration and garment fastening.

- 70/ Needles, grooves above and below eye. Cf. one  
71. example from Gadebridge (Neal, 1974, fig. 64, 230).  
L.115mm and 100mm.  
MK301/South of Building 3/uns./118.  
MK301/Destruction north of Wall 26, 4th cent./26.

72. Tapered strip, roughly cruciform head. Pin or awl?  
L.80mm.  
MK64/uns./MD 9.

73. Pin. Spherical head, with three grooves and two cordons. Cf. examples from Gadebridge (Neal, 1974, 145, fig. 64, 217-24) and Verulamium (Frere, 1972, 122, fig. 34, 60 dated to 130-40).  
MK105/uns./BR 85.

74. Pin. Spherical head, square-section shaft, sharply pointed. Cf. examples from Gadebridge (Neal, 1974, 143, 145, fig. 64, 214-16).
75. Pin. Head missing, circular-section shaft.  
MK45/Fill of Ditch T9/Ae 3.

#### *Spoons (Fig. 43)*

76. Spoon. Egg-shaped bowl, cranked handle with notched decoration at bowl end, otherwise plain and tapering. L.135mm.  
KM105/uns./BR 13.
77. Spoon. Oval bowl, cranked undecorated handle. Late 2nd-early 3rd cent. L.145mm.  
MK64/Fill of Gully F15/BR 6.
78. Spoon handle. Decorated by anti-clockwise twisting.  
MK105/uns./BR 104.
79. Spoon handle. Decorated by clockwise twisting. 4th cent.  
MK105/From wall of walled garden/BR 16.

#### *Locks and Keys (Fig. 43: see also Ironwork, nos. 313-15 and Fig. 55)*

80. Lift key. Bent. Circular section shaft, flattened handles rolled over to form suspension eye. Handle has chip-carved decoration along both edges. L.93mm.  
MK105/uns./BR 33.
81. Lift key. Plain undecorated strip, with perforation for suspension.  
MK105/uns./BR 84.
82. Lock-pin. Iron pin, rectangular section, pierced, ending in waisted bronze knob with saucer-shaped depression with central raised hollow core. L.41mm. Similar Objects, though made completely from bronze, are recorded from Shakenoak (Brodrigg *et al.*, 1968-73, fol. 4, 91, fig. 31, 53) and Verulamium (Frere, 1972, 130, fig. 39, 117 and 118). 4th cent.  
MK301/Fill of Pit F143/142.

#### *Writing Equipment (Fig. 43)*

Finds in this category appear in bronze and iron and comprise styli, stylus cases, and seal boxes. An iron stylus appears below, no. 290 and Fig. 53, and the stylus cases are described here; there are no examples of seal boxes.

83. Stylus case, fragment, decorated with closely-spaced diagonal incised lines; cf. examples from Fishbourne (Cunliffe, 1971, 119, fig. 49, 133 and 134).  
MK301/uns./BR 25.
- 84/85. Stylus case fragments, possibly from the same case. Decorated with pairs of transverse incised lines.  
MK105/Destruction, Building 1/BR 122 and BR 131.

#### *Scales (Fig. 43)*

The following objects together form part of a small hand-held balance, used for measuring

quantities of drugs or precious metals. Larger weighing equipment does not appear in this collection, though the Caldecotte area in particular has produced an interesting collection of lead weights (see nos. 206-11 and Fig. 47 below).

86. Scale pan and balance, moulded balance arm with a ring at either end for suspension of pans and a centre ring for suspension of the whole. L.105mm. Scale pan consists of a slightly concave disc, D.25mm, with three suspension rings equidistant around its circumference.  
MK105/Destruction, Building 13/BR 34 and BR 62.

#### *Pommels and Bosses (Fig. 43)*

In dealing with this category, it is extremely difficult to be definite about either functions or dates, as almost all the objects illustrated are unstratified, and each could fulfil a variety of functions. Nevertheless, some have datable Roman parallels and all were found on Roman sites, and so are offered here as a group.

87. Knob or pommel. Bell-shaped, with central protrusion within the sunken end, and remains of squared iron shank. Cf. examples from Fishbourne (Cunliffe, 1971, 115, fig. 46, 118) and Shakenoak (Brodrigg *et al.*, 1968-73, 2, 115, fig. 50, 124).  
MK64/uns./MD 25.
88. Knob or pommel, with remains of squared iron tang.  
MK211/uns./143.
90. Knob or pommel, waisted body with hollow spherical head. Axis pierced for tapering tang. Cf. Verulamium (Frere, 1972, 126, fig. 38, 107) though possibly post-Roman.  
MK64/uns./MD 5.
91. Boss, with depressed centre end surrounding incised flower-petal pattern. Remains of hard plaster/mortar infill adhering to rear. D.280mm.  
MK211/Destruction, Building 1/85.
92. Boss, with raised concentric ring decoration. Traces of iron staining on rear face. Cf. Shakenoak (Brodrigg *et al.*, 1968-73, 1, 87, fig. 29, 19).  
MK64/uns./MD 20.

#### *Studs and Rivets (Fig. 44)*

93. Stud, D.40mm, dished section with remains of tapered fixing in centre of back. Decorated with two concentric circles set with panels of blue and white 'chequerboard' millefiori. Traces of similar millefiori, perhaps in network of lozenges, in central part of stud. Some traces also of red millefiori in outer band. (For similar examples, see British Museum, 1966, pl. 21, 5 and 6; Brodrigg *et al.*, 1968-73, 1, fig. 29, 12; and Bushe-Fox, 1926, pl. 13, 10.)  
MK45/Fill of Ditch A/C/AE 13.
94. Stud, engraved compass-drawn flower design with 'gear-tooth' pattern border. D.13mm, 4th cent.  
MK105/Upper layer of Ditch/BR26.

95. Stud, undecorated. D.23mm.  
MK45/uns./Ae 9.
96. Stud, raised upper edge and centre, the latter containing brass or enamel. Rear fastening consists of pin hammered over washer. D15mm, 4th cent.  
MK301/Upper fill of depression F109/90.
97. Stud, dowel-headed. D.7mm.  
MK105/uns./BR 54.
98. Rivet. Crudely made, complete with backing washer and remains of bronze sheet through which it passed.  
MK105/uns./BR 100.
99. Rivet. Bent tapered strip. L.15mm. Cf. Gadebridge (Neal, 1974, 149, fig. 66, 282).  
MK105/Destruction, Building 1, Room 12/BR 112.
- 100/ Tacks. 100, L.7mm, is a very small example. 101, 101. L.12mm, with a flat head, is very similar to a modern carpet tack. Late 4th cent.  
MK301/Destruction, Building 2, Room 5/13 and 21.
- Clasps and Fittings* (Fig. 44)
102. Clasp hinge. Plain rectangular plate, two rivet holes.  
MK45/uns./Ae 6.
103. Fitting. Domed central section, with two opposing arms ending in circular tabs, one missing, with rivet through. From jewellery or decorative box?  
MK105/uns./BR 4.
104. Dress clasp. Trapezoidal loop and tapered hooked pin with central section decorated with cast schematic rosette. L.31mm. Late 4th cent.  
MK96/Clay layer over wall of flue/3.
105. Mount with split knob terminals, centred axial ridge and moulded leaf decoration. Two spikes, bent, for attachment, see the similar but plainer examples from Verulamium, mid to late 2nd cent. (Frere, 1972, 120, fig. 33, 42).  
MK105/uns./MD 73.
106. Fitting. Plate with rounded ends, knob terminals and waisted centre, with single square hole. Undecorated.  
MK105/uns./MD 72.
107. Fitting. Plate, broken, with central hole at one end and tapering symmetrical sides.  
MK105/Destruction, Building 1/BR 65.
109. Fitting? Strip, two parallel corrugations along its length, ends curled as if part of hinges.  
MK105/uns./BR 14.
109. Fitting? Curled strip, with three embossed knobs on outer surface.  
MK105/uns./MD 58(ii).
- Miscellaneous Objects* (Fig. 44)
110. Foot or handle. D.20mm, tapering in centre to 14mm. Concentric incised decoration near inner and outer ends. L.55mm, probably from large vessel or cauldron.  
MK64/uns./MD 4.
111. Foot, for a small wooden vessel such as a tankard. Cf. Richborough (Cunliffe, 1968, 104, pl. XLVII, 210).  
KM105/Destruction, Building 1/BR 115.
112. Terminal of ligula? Shaft with concentric ring decoration and small spatulate terminal. Cf. Gadebridge (Neal, 1974, 143, fig. 63, 204).  
MK301/uns./103.
113. Terminal of toilet article? Rectangular strip shaft, two edges rounded, ended in circular perforated loop. Could also be item of medical equipment.  
MK105/uns./BR 12.
114. Uncertain. Cast object, similar in shape to brooch, but lacking clasp fittings. Bulbous waisted terminal, with incised diagonal line decoration on outer face of bow.  
KM45/Fill of Ditch T9/Ae 5.
115. Uncertain. Rod with concentric ring decoration, flattened to square terminal punctured by single iron rivet. Lower part of strap fitting? Cf. Verulamium (Frere, 1972, 120 and fig. 33, 49).  
MK105/uns./BR 73.
116. Uncertain. Strip, L.120mm, W.10mm, slightly curved. A flattened loop of wire, L.12mm is attached near one end, whilst at the same time the other end of the strip is coarsely serrated.  
MK301/uns./129.
117. Uncertain. Roughly-cut strip, W.5-7mm. Remains of hollow rivet at one end, other end tapered, with rough incised lattice pattern on one side.  
MK105/Destruction, Building 1, Room 19/BR 127.
118. Ferrule. Sheet folded in a blunt cone, with overlapping edges and no visible means of fastening.  
MK45/Fill of Ditch T9/Ae 8.
- Miscellaneous Fragments* (Figs. 44 and 45)
119. Tapered bronze strip, slightly curved. Chamfered sides, groove up long axis. Incised decoration on broad end (head). Bracelet terminal?  
MK105/uns./MD 43.
120. Strip, crudely chamfered edges, one end rounded off. Incised transverse line decoration near other end, and traces of suspension or fixing hole. Toilet article?  
MK351/uns./91.
121. Strip. Terminal decorated with two adjacent incised double concentric ring-and-dot markings. Diagonal notching on edges, and beginnings of central groove. Bracelet terminal?  
MK105/uns./MD 57.
122. Strap-like fitting, ending in disc containing remains

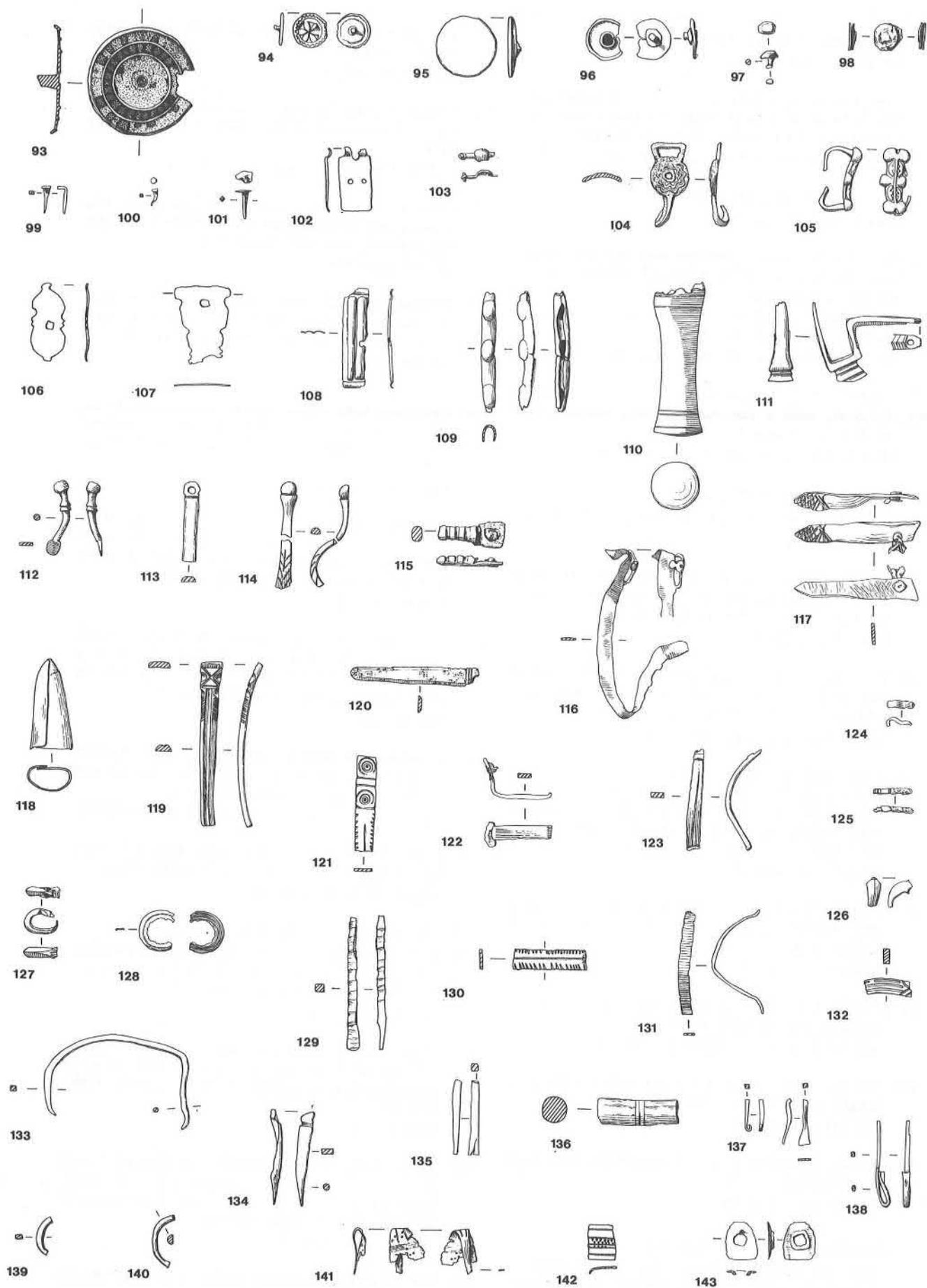


Fig. 44. Bronze Objects 93-143 (scale 1:2).

- of iron rivet. Broken end shows signs of similar ending.  
MK105/Destruction, Building 1/BR 118.
123. Strip. Central incised groove and traces of moulded decoration at both (broken) ends. Uncertain.  
MK105/Destruction, Building 1/BR 9.
124. Strip. Small fragment, hooked at one end. Tongue of penannular brooch/buckle?  
MK105/Destruction, Building 1/BR 25.
125. Rod. Traces of cast decoration. Function unknown.  
MK105/uns./BR 22.
126. Cast fragment. Curved, part of a fibula?  
MK105/uns./BR 11.
127. Cast fragment. Triangular section. Function unknown.  
MK105/uns./BR 91.
128. Circular fitting (broken). Concentric ridge decoration on both sides. The centre edge is broken. Part of a ferrule, or setting from a ring? D.15mm.  
MK105/uns./BR 109.
129. Rod, square section, flattened at one end, hammered on each side. Function unknown.  
MK105/uns./BR 10.
130. Strip, broken both ends, central incised groove, with oblique notches along top edges. Function unknown.  
MK105/Destruction, Building 1/BR 42.
131. Strip, undecorated. 4th cent.  
MK109/Fill of Pit F11/3.
132. Strip, traces of cast decoration.  
MK301/uns./BR 3.
133. Rod, square section, tapered both ends. L.105mm.  
MK105/uns./BR 132.
134. Cast fragment, tapering from rectangular to round section. Notch near broad end.  
MK45/Fill of Ditch T9/15.
135. Rod, square section, split at one end, broken at other.  
MK105/uns./BR 56.
136. Bar. D.10mm with faint concentric rings at midpoint.  
MK105/Destruction, Building 1/BR 48.
137. Strip, square section (two fragments) flattened at both ends, one of which is curled. L.30mm (reconstructed).  
MK105/Destruction, Building 1/BR 63.
138. Strip, square section, bent double and slightly flattened at one end.  
MK105/uns./BR 37
139. Curved rod, ring fragment? 4th cent.  
MK301/Destruction, Building 2, Room 4/6.
140. Curved rod, ring fragment?  
MK45/Fill of Ditch T9/5.
141. Sheet, tapered and folded, with incised and punched decoration.  
MK64/uns./BR 4.
142. Sheet, with incised and punched decoration.  
MK45/Fill of Ditch T4/13.
143. Fitting, roughly circular sheet, punched up around central hole. Backplate for riveted fitting?  
MK301/uns./BR 13.
144. Sheet. Moulded sheet, with remains of tinning at one point. 4th cent.  
MK105/Upper fill of Ditch E/BR 21.

## WORKED BONE

R. J. Zeepvat

### PINS

The classification used for the following examples is based, where possible, on that formulated by Nina Crummy (1979).

145. Finely carved Type 2 with two grooves below the head. Shaft D.3mm.  
MK301/uns./B 2.
146. Roughly carved Type 3, slight waist below head. Shaft D.3.5mm.  
MK45/uns./B 1.
147. Well-finished Type 3, spherical head. Shaft D.2.5-3.5mm.  
MK105/uns./B 21.
148. Roughly-carved Type 3, spherical head. Shaft short and stubby, with ridge 23mm from head. Shaft D.4mm. Unfinished example?  
MK105/Destruction, Building 1, Room 16/B 32.
149. Type 3, flattened spherical head. Shaft D.4mm.  
MK109/Fill of posthole in F11. 4th cent?/B 10.
150. Type 3, roughly biconical head. Shaft D.3mm.  
MK105/uns./B 23.
151. Type 5, single below conical head. Shaft D.3-4mm.  
MK105/Fill of ditch?/B13
152. Type 5 variant, consisting of conical head encircled by three grooves, producing a stepped effect. Shaft D.3-5mm.  
MK105/uns./B 5
153. Roughly-carved pin with crude conical head. Shaft D.3mm.  
MK105/uns./B 33.

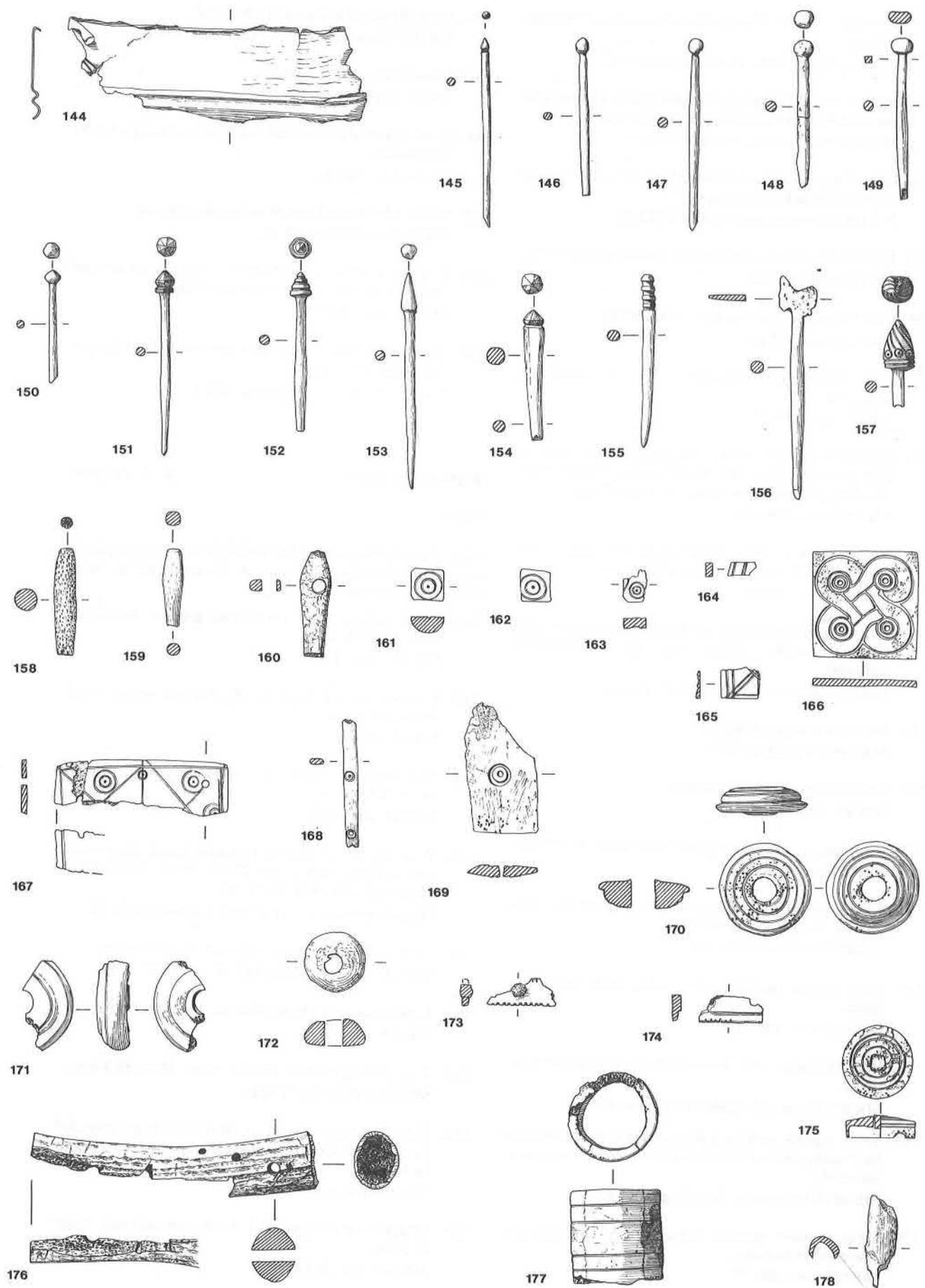


Fig. 45. Bronze Sheet 144, Bone Objects 145-178 (scale 1:2).

154. Pin with tapered shaft and conical head above a single groove.  
MK301/Surface of yard area south of Building 2/15.
155. Pin with short, thick shaft and rounded head, below which are four broad concentric grooves.  
MK301/uns./B 1.
156. Axe-head pin. Similar examples have been noted in Kettering Museum and the Guildhall Museum, London.  
MK105/uns./B 19.
157. Finely-carved pin with large conical head, decorated with two narrow concentric grooves at its base, above which is a band of ring-and-dot carvings, surmounted by spiral grooves.  
MK105/Gully south of Building 2/B 27.
158. Head of pin/awl. Tapered, and waisted slightly near head.  
MK105/Fill of Ditch B/B 10.
159. Head of pin/awl. Similar to above, but smaller.  
MK105/uns./B 25.
160. Head of a needle. Roughly lozenge-shaped, with circular eye.  
MK105/Destruction of Building 1, Room 1/B3.

#### INLAYS/DECORATIVE PANELS (Fig. 45)

- 161/162. Square decorative inlays, each about 10mm square, with double ring-and-dot decoration. Both calcined.  
MK105/Destruction, Building 1/B4 and B5.
163. Fragment of inlay with double ring-and-dot decoration. Calcined, similar to nos. 161 and 162.  
MK301/Destruction, Building 2/2.
- 164/165. Fragments of inlay with incised linear decoration.  
MK105/Destruction, Building 1/B1 and B2.
166. Square decorative plaque, with four double ring-and-dot marks surrounded by curvilinear incised decoration. Four fastening holes; part of a belt? 4th cent.  
MK109/Fill of Pit F11/2.
167. Part of decorative plaque. Single and double ring-and-dot marks, and incised linear decoration.  
MK105/Destruction, Building 1/B6.
168. Rib, decorated with widely-spaced single ring-and-dot marks, one of which is pierced. Both ends broken.  
MK105/uns./B 7.
169. Flat curved strip of bone, broken at one end, with one single ring-and-dot mark.  
MK301/Destruction layer north of Wall 26/72.

#### SPINDLE WHORLS (Figs. 45 and 46)

This class of object can be made from a variety of materials; other examples have been noted in shale and pottery, the latter carved from pot sherds, usually Samian, Nene Valley, or Oxford wares. Spindle whorls were probably also made out of wood; surprisingly, no great weight is required to allow them to function efficiently, 20-30g being sufficient.

170. Spindle whorl, lathe-turned, with incised concentric ring decoration.  
MK105/Fill of Ditch B/B 9.
171. Fragment of spindle whorl, similar to no. 171.  
MK109/Fill of Ditch F9/6.
172. Spindle whorl, roughly-carved 'bun' shape.  
MK351/uns./91.

#### MISCELLANEOUS OBJECTS

- 173/174. Fragments of central rib of bone comb, each with notched decoration along edge, and traces of iron rivets passing through the centre of the rib.  
MK105/Destruction, Building 1/B 16 and B 17.
175. Boss or lid of dice box? Slightly domed top, with concentric ring decoration around central square. Two parallel rings around outside face. D.26mm.  
MK45/uns./B 2.
176. Fragment of red deer antler, ends sawn (one chamfered), pierced with holes in a spiral pattern at about 12mm intervals, offset by about 5-6mm. L.105mm. Function unknown.  
MK64/uns/WB 1.
177. Ferrule, lathe-turned, decorated with four parallel incised grooves. Part of handle for tool or weapon?  
MK105/uns./B 20.
178. Fragment of long bone, roughly whittled to a point at one end. Awl?  
MK105/uns./B 8.
179. Fragment of long bone, whittled to a point at one end. Stylus/scriber?  
MK105/uns./B 24.
180. Round-sectioned, tapering and slightly curved bone, with a tenon at its broad end. Rake tine?  
MK105/uns./B 14.
181. Tapered carved bone similar to no. 183.  
MK45/uns./B 3.
182. Whittled rod of bone, circular cross-section. Rough-out for pin?  
MK105/Fill of Ditch F/B 12.
183. Similar to no. 182.  
MK297/Fill of Gully, F43/WB 1.

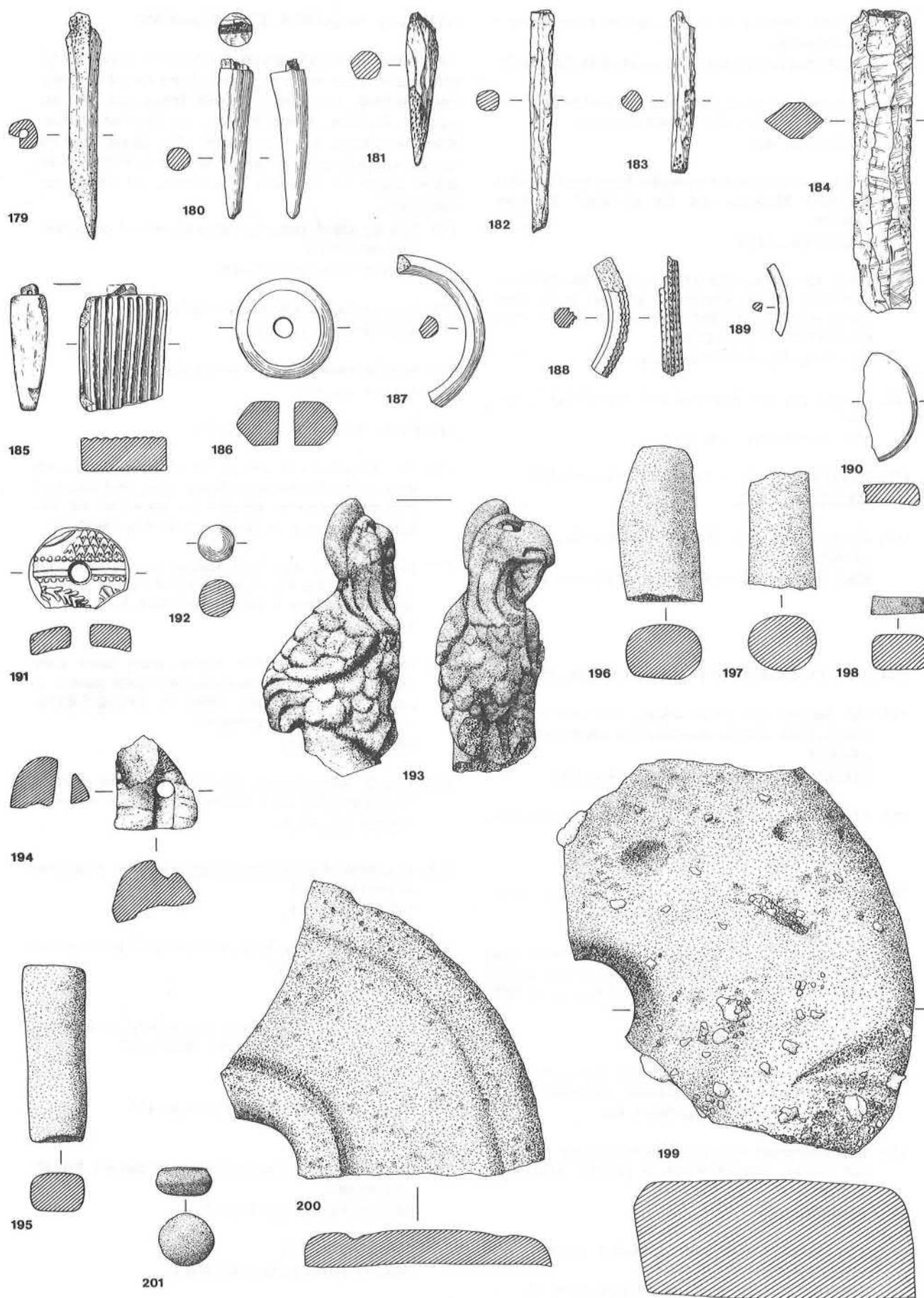


Fig. 46. Objects of Bone 179-184, Jet 185, Shale 186-189, Fired Clay 190-192, Worked Stone 195-198, 201 and Sculptural Fragments 193-194. (Scale 1:2). Querns 199-200 (scale 1:4).

184. Fragment of long bone, roughly whittled to lozenge cross-section, roughout for knife handle?  
MK105/uns./B 22.

**JET (Fig. 46)**

M. Henig

185. Jet pendant with pierced lug; it is rectangular in plan and the upper surface has longitudinal corrugations. The pendant tapers to a thin edge now much abraded. There is a close parallel from Cologne (Hagen, 1937, pl. 41, no. M2 and pl. 26, fig. 2), and similar pendants, differently decorated, are known from Wroxeter (Bushe-Fox, 1913, 30-32, no. 27, pl. XI, fig. 1) and Richborough (Bushe-Fox, 1949, 128, pl. XXXV, III). Jet was valued for its supposed magical 'virtues' (RCHM, 1962), and Pliny the Elder writes of it being employed for 'divination by the use of axes'. Our pendant which can be described as 'axe-shaped' may be associated with this remark (Henig, 1984, 185).

Jet outcrops near Whitby in Yorkshire, and was evidently worked in York. It was exported widely, as far as the Rhineland (Hagan, 1937) and southern Britain (Lawson, 1975). The *floruit* of the industry was the later third and fourth centuries AD.

MK301/F38 Mortar level, Building 2/14.

**SHALE (Fig. 46)**

R. J. Zeepvat

186. Spindle whorl, flat upper and lower faces and side tapering to central ridge. D.37.5mm.  
MK105/Upper fill of Ditch B/S 8.
187. Bracelet, incomplete. Undecorated rounded outer face, bevelled inner face.  
MK297/Make-up of F50/Sh. 1.
188. Bracelet, bevelled inner face, outer edge stepped, with notched decoration.  
MK105/uns./S 3.
189. Bracelet (part), D-section, undecorated outer face.  
MK105/uns./S 15.

**FIRED CLAY (Fig. 46)**

R. J. Zeepvat

190. Spindle whorl, incomplete, carved from base of Nene Valley colour-coated vessel.  
MK96/uns./40.
191. Spindle whorl carved from body sherd of decorated type 29 samian bowl.  
MK105/uns./P 31.
192. Marble of baked clay.  
MK105/uns./1.

**WORKED STONE**

R. J. Zeepvat

All of the stone objects from our excavations were submitted to Dr M. Owen and Dr F. G. Dimes of the Institute of Geological Sciences, the Geological

Museum, for identification of the stone, and their comments, where applicable, are incorporated into the following descriptions.

**SCULPTURE (Fig. 46 and Pl. 25)**

193. Sculpture in the round of a cockerel in Carrara marble. Broken around its feet and left side, suggesting it was part of a larger group, possibly associated with the god Mercury. This object has been previously published (Green, M. J., 1974). Ht.105mm.  
MK105/Destruction, Building 1/S 10.
194. Fragment of sculpture in marble. Curved, with a groove ending in a hole. Possibly Pentelic marble from Greece.  
MK105/Destruction, Building 1/S 26.

**WHETSTONES (Fig. 46)**

This class of object is often found on Roman rural sites. However, as many examples are unstratified, and as whetstones from both Roman and Medieval contexts differ little in appearance, those described below are taken only from datable contexts.

195. Whetstone, rounded rectangular section. Fine-grained sandstone.  
MK105/Destruction rubble, Building 1/S 25.
197. Whetstone, oval section. Fine-grained sandstone.  
MK301/Dark soil and rubble layer over natural inside Building 2/22.
198. Section of whetstone, squarish with rounded corners, in fine-grained sandstone.  
MK301/Destruction rubble north of Wall 26/43.

**QUERNS (Fig. 46)**

A large number of quern fragments have been found on Roman sites in Milton Keynes. The majority of these appear to have come from rotary querns, but as many are unstratified it would be dangerous to assume that all are of Roman date. Only two examples have proved to be complete segments of querns, and these are illustrated and described below. Of the rest, little can be said beyond listing the type of stone present, and thereby suggesting the origins of querns used in this area.

Two types of stone seem to predominate: Old Red Sandstone, from the Herefordshire/Gwent border, and Millstone Grit, from the Pennines.

199. Segment of quern (c.20%) in Millstone Grit. Concentric grooves on upper face near edge and central hole. D.c.460mm, Th. 80mm.  
MK105/uns./S 9.
199. Segment of quern (c.20%) in Old Red Sandstone. D.480mm, Th.80mm.  
MK105/uns./S 9

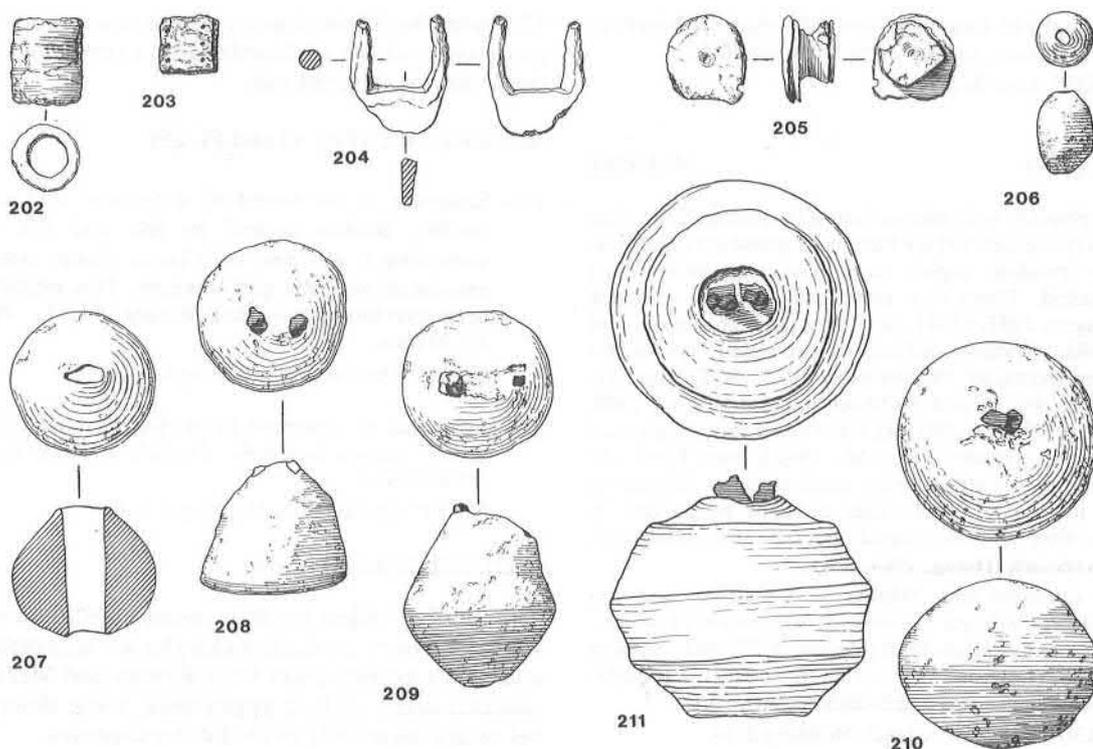


Fig. 47. Lead Objects 202-211 (scale 1:2).

200. Segment of quern (c.20%) in Millstone Grit. Concentric grooves on upper face near edge and central hole. D.c.460mm, Th.25mm.

MK211/South wall of Room 4, Building 1/110.

Of these, no. 199 is certainly an upper stone. From its thickness, no. 200 may be a lower stone, though its coarseness makes the identification of wear patterns difficult. From their size, both examples were hand driven.

#### OTHER OBJECTS (Fig. 46)

201. Stone counter. Bun-shaped, with flat base.  
MK96/uns./45/2.

#### LEAD R. J. Williams and R. J. Zeepvat

In Milton Keynes, as on most Roman sites in Britain, the bulk of lead found on excavations has taken the form of scrap, either amorphous melted lumps or as clippings from lead sheet. This is not surprising, as lead was used extensively in Roman building for both waterproofing and water supply installations and, as in more modern structures, was one of the first materials to be removed on abandonment. However, a few lead objects have been found, and these are described below.

#### MISCELLANEOUS OBJECTS (Fig. 47)

202. Ferrule, interior D.11mm, made of a strip of thin lead sheet wrapped two or three times round shaft

and hammered to shape.  
MK105/uns./L 49.

203. Dice, c.10mm cube, with face values punched roughly as dots on each side, adding up to 7 on opposing faces. 4th cent.  
MK105/Floor of Building 6/L 7.

204. U-shaped, upright bars of roughly circular section (broken at ends) flattened out at base. Function unknown.  
MK109/Fill of Ditch, F11/11.

205. Rivet. Shaft D.12mm. Fastening materials, Th.6mm.  
MK307/Fill of F1/L 1.

#### LEAD WEIGHTS (Fig. 47)

These are perhaps the most commonly found lead objects, all except nos. 210 and 211 coming as metal detector finds from Roman sites in the Caldecotte area. From the means of suspension employed it seems reasonable to identify nos. 206 and 207 as fishing weights, and the rest as steelyard weights.

206. Fishing weight, elongated sphere, with hole through long axis.  
MK351/uns./19.

207. Fishing weight, globular, with central fixing hole. D.375mm.  
MK354/uns./20.

208. Steelyard weight, roughly dome-shaped. Remains of iron suspension loop. D.40mm.  
MK354/uns./11.
209. Steelyard weight. Roughly biconical. Remains of iron suspension loop. D.40mm.  
MK351/uns./15.
210. Steelyard weight. Globular. Remains of iron suspension loop. D.55mm.  
MK360/uns./39.
211. Steelyard weight. Faceted globular shape, remains of iron suspension loop. D.70mm.  
MK64/uns./L 3.

Table 1: Comparative Mass of Lead Weights

Object No.	Weight (g)	Weight Roman Librae 1	Weight Roman Librae 2	Weight Celtic Librae	Probable Intended Weight
206	22.20	0.82 Uncia	0.81 Uncia	0.86 Uncia	1 Uncia
207	210.23	7.75 Unciae	7.70 Unciae	8.10 Unciae	8 Unciae
208	261.24	9.63 Unciae	9.58 Unciae	10.14 Unciae	10 Unciae
209	314.09	11.58 Unciae	11.52 Unciae	1.01 Librae	1 Libra
210	645.40	1.98 Librae	1.97 Librae	2.08 Librae	2 Librae
211	1324.82	4.07 Librae	4.05 Librae	4.29 Librae	4 Librae

Equivalent weights (Frere, 1972). Roman: *uncia* 1, 27.12g; *uncia* 2, 27.27g; *libra* 1, 325.43g; *libra* 2, 327.24g. Celtic: *uncia*, 25.76g; *libra* 309.1g.

As can be seen from the above table, nos. 206-9 correspond more closely with Celtic weights, and nos. 210-11 more with the Roman, but which system the weights were actually made for must remain undecided. The weights are unlikely to have suffered any loss by corrosion. One may note that the confusion between Roman and Celtic weights must have provided ample opportunity for cheating!

## GLASS

J. Price

This report is an edited version of the full reports on the glass from each site by Jennifer Price, which are held in the Unit's archive. (Ed.)

## MK45 HOLNE CHASE

Thirty-two fragments of Roman blown glass were found, representing seven vessels. Two of these were bluish green, four were colourless, and one was polychrome.

The most remarkable piece was the blown polychrome mosaic cylindrical bowl or cup, which is apparently without any close parallels, though the form suggests that it was made in the later second or early third century AD. The colourless fragment with facet cutting also comes from a good quality second- or third-century bowl, and there are two pieces from rather bubbly fourth-century bowls, as well as two pieces from late Roman bottles or flasks. In addition, three pieces came from a square or rectangular container, probably a bottle, dating from the first or second century AD.

## MK64 WOOD CORNER

Sixteen fragments of Roman glass were found, three of which were from window panes. Most of the vessel glass was bluish-green, though there were three colourless fragments; an opaque green bead was also found.

## MK96 WINDMILL HILL

Two glass objects were found, one being a very melted fragment of bluish-green glass, perhaps from a fourth-century vessel, and the other a small dark blue circular bead (Guido, 1978, Group 6).

## MK100 SHERWOOD DRIVE

Twenty-six Roman glass fragments were found, of which nineteen were bluish-green or greenish, five were colourless, one was yellowish-green and one was pale green. The vessels included six fragments of prismatic or cylindrical bottles of the first to second centuries, a fragment from a mould-blown barrel-jug or 'Frontinus' bottle, of the third to fourth centuries (Harden *et al.*, 1968, 63, pl. No. 79), and fragments from several small bowls and cups, mostly of the second to fourth centuries, including a piece from a cut and abraded bowl. There were also five pieces from cylinder-blown window panes of the third and fourth centuries.

## MK105 BANCROFT

Six hundred and ninety-four fragments of Roman glass were found during the excavations undertaken in 1973-78, of which four hundred and fourteen were window glass and the remainder were fragments of vessels or objects.

Of the window glass, all except four fragments were of the late Roman cylinder-blown type, double

glossy, usually either bluish-green or pale greenish and yellow-green in colour, though twenty-seven colourless fragments were also recognized. Only four small fragments of the cast, matt-glossy, bluish-green window glass made in the first to second centuries were found (see Harden, 1974, for a recent consideration of Romano-British window glass).

It is interesting that the vessel glass fragments range in date of production from the middle of the first to the end of the fourth century, though most of the pieces were probably made in the fourth century. Presumably the small and rather worn dark green fragment from a cast and ground vessel, and the fragment of bluish-green long-necked jug with spiral trails were broken long before the villa was constructed and should be interpreted as rubbish survival, and it seems likely that this also applies to the eighteen fragments of prismatic and cylindrical bottles which would not have been manufactured after the late second century.

The fourth-century fragments come from a limited range of vessel types, mostly a variety of cups and bowls. As might be expected in a late Roman assemblage of this kind, poor quality greenish colourless fragments predominate though it is perhaps surprising that there are more colourless than yellowish, yellow-green or bluish-green fragments. Most of the late Roman glassware at this site was made of average to poor quality, rather bubbly, glass, though a few pieces of very fine colourless tableware with abraded and engraved figures and geometric designs, nos. 214, 216 and 217, were found.

Three of the four beads found are certainly late Roman types, though no. 257 may perhaps be a survival from the pre-Roman Iron Age (Guido, 1978, 63-64). It is interesting that this bead is attached to a bronze suspension loop, which suggests that it may have been worn as a pendant or as a 'charm' on a bracelet.

#### MK211 WYMBUSH

Three fragments of Roman vessel glass were found.

#### MK301 STANTONBURY

One hundred and eighty-six fragments of Roman glass were found during the excavations at this site in 1975. One hundred and eighteen of these were window glass and the remainder from vessels or objects.

All of the window glass fragments were from yellowish-green late Roman cylinder-blown panes, and where the edges survived they were all fire-rounded and thickened, in contrast to the cracked-off and grazed edges noted at Bancroft. Some of the fragments had pincer tool marks on the edges

and upper surfaces, presumably as a result of manipulating the glass sheets in order to flatten them out (see Harden, 1961, 41-42, for a description and illustration of this process).

The glass vessel assemblage was entirely fourth-century in date, with the exception of six fragments of bluish-green prismatic, probably square, bottles, and one bluish-green bottle handle fragment. These vessels are unlikely to have been in production after the end of the second century and it therefore seems likely that the fragments represent either the survival of earlier material used at or near the site, or the deliberate collection of the fragments from elsewhere for re-use at the site for some secondary purposes; see nos. 253 and 254 below for the re-use of square bottle fragments as mosaic tesserae.

Very little fine tableware was found at Stantonbury; one piece from a cup or bowl with applied coloured-blob decoration survived, and there were two small fragments from mould-blown vessels with faint close-set diagonal ribs, and three fragments from indented vessels, probably cups or beakers, but otherwise only abraded line decoration was noted. Only eighteen of the fourth-century vessel fragments had sufficient diagnostic features for the vessel type to be indicated, and of these thirteen came from cups and bowls and five from jugs and flasks. In this assemblage there were sixteen fragments of greenish colourless glass, fifteen fragments of yellowish-green vessel glass, eleven fragments of colourless glass, six fragments of light green glass and four fragments of bluish-green glass, and nearly all of them were of very bubbly, poor-quality glass.

There were also eight fragments which had been distorted by heat, as well as nine small globules of yellowish-green glass which had completely melted, with dirt and ashes embedded into their outside surfaces.

#### CATALOGUE

Owing to limitations of space, only the more interesting pieces have been described below.

##### *Bowls and Drinking Cups*

##### Polychrome (Fig. 48 and Pl. 26)

212. Twenty-four fragments, mostly joining into three pieces, from rim, body and base of small cylindrical bowl or cup. Polychrome mosaic: square-sectioned rods of translucent purple and opaque turquoise blue, yellow, red and white, arranged in lozenges. Thickened, fire-rounded rim, slightly inturned with outside surface flattened diagonally, vertical side curving into tubular pushed-in base ring and small concave base with central 'kick'. Pontil mark at centre of base. Surfaces weathered, opaque red more decayed than other colours.

Present Ht: (rim fr.) 36mm, (base fr.) 15mm; D.60mm; base ring D.45mm; Th.0.75-6.00mm.

Cylindrical bowls or cups with fire rounded rims and tubular base rings were produced in the later second and early third century, and are commonly found at sites in Britain and elsewhere in the north-western provinces (Isings, 1957, Form 85). These vessels are almost always colourless and undecorated, though a few are known with engraved or painted decoration and some undecorated bluish-green examples have been noted: no other specimen made in polychrome mosaic glass is known to me.

Cast polychrome mosaic vessels with ground and polished surfaces were luxury wares, made in some quantity in the early Empire, and mostly going out of production by or soon after the middle of the first century AD. They occur on Roman-British sites in Claudian and Neronian contexts but are quite unusual thereafter (Harden and Price, 1971, 320-22).

By contrast, blown polychrome mosaic vessels are very much rarer and are not always closely datable, though one or two pieces have been found in second or third-century contexts. Only three other fragments have been noted in Britain, all of which came from small tubular pushed-in base rings of vessels with mottled patterns rather like the base of the Holne Chase cup, though pontil marks were not noted on these pieces. Two pieces from one vessel found in plough-soil at Fishbourne had a wine-coloured ground with opaque green, yellow, light blue and white streaks and a base diameter of 38mm (Harden and Price, 1971, 324-26, nos. 6-7, fig. 137 and pl. XXV), and the third, from a deposit dated AD 280-90 at Verulamium, had an emerald-green ground with short rods in opaque yellow and patches of opaque red and a base diameter of c.72mm (Charlesworth, 1972, 212 and fig. 79, 63).

Two small brown juglets with mottled mosaic patterns came from late third-century contexts in Cologne (Fremersdorf, 1958, 51 and pls. 110-11), but no other blown vessels with the geometric patterns visible in the Holne Chase cup have been recorded, though exactly similar patterns in the colours are known in fragments of cast vessels, as at Lakenheath Warren, Suffolk (Fitzwilliam, 1978, no. 45), and Frocester Court Roman Villa, Glos. (Price, 1979, 40, no. 1 and pl. VI b).

MK45 A/A T9.

213. Small fragment, body of deep bowl or cup. Pale greenish colourless with dark blue unmarvered blob applied to outside surface. Dimensions 17 × 19mm; Th. 0.7-1.0mm.

Comparatively few fourth-century vessels with applied coloured blobs have been found at Romano-British sites, though they are extremely common in the middle and lower Rhineland, especially in late Roman burials, and presumably were made at one or more centres in that area (Fremersdorf, 1962). A rim and body fragment of yellowish-green with dark blue blobs was found at Porchester, and three other fragments with coloured blobs were also found during those excavations (Harden, 1975, 37, no. 10c-d and fig. 198), and a small colourless fragment with a dark blue oval blob was found at Frocester

Court Roman Villa, Glos. (Price, 1979, 40, no. 3). MK301/Destruction, Building 2/GL 128.

#### Monochrome (Figs. 48 and 49)

##### *Figured Cutting* (Fig. 48)

214. Small body fragment from conical beaker, colourless. Narrow straight-sided body, tapering inwards and thickening towards base. Shallow unpolished facet cuts, depicting part of human arm (?) and small part of another feature, perhaps human body (?). Max. D.18 × 16mm; Th. 1.0-1.5mm.

This beaker was of very fine quality and probably produced and decorated at Cologne, or at another centre in the middle or lower Rhineland in the early to mid fourth century (see Fremersdorf, 1967, pl. 234-70). Too little of the vessel survives for any discussion of the figured scene to be possible, but the cutting has perhaps more in common with the unpolished facets which make up the figures of the conical beaker with biblical scenes found at Cologne (Harden *et al.*, 1968, 76, no. 99) than with the much shallower and apparently more carelessly executed harvest or Bacchic scenes, facet-cut and abraded on the beaker from Frocester Court Roman Villa (Price, 1979, 41, fig. 16, 4 and pl. XI).

MK105/uns./GL 24.

##### *Facet and Linear Cutting* (Fig. 48)

215. Fragment, lower body of bowl. Colourless. Dull, pitted on outside surface, especially in facet cuts; two small strain cracks. Small part of convex curved side with a band of three rows of oval facet cuts in quincunx, closely set so the centre row forms into hexagons. Dimensions 38 × 47mm. Th.2.5-3.5mm.

The fragment comes from near the base of a convex curved bowl, though the precise form cannot be identified, as a variety of hemispherical and shallow bowls were decorated with zones of close-set oval facets, often interspersed with bands of fine horizontal lines, during the late 2nd and 3rd cent. AD. Several pieces are known from sites in Britain; hemispherical bowls have come from a pit dated c.AD 155-65 at Park Street, Towcester (Price, 1980, 63-64, fig. 14, 1) and Birrens (Charlesworth, 1959, 44, fig. 3, 5), and there is a shallow bowl from grave group XCIX in no. 2 cemetery at Ospringe, Kent, which is dated c.AD 140-90 (Whiting, 1931, 34-35, no. 340, pl. XXXII). However, the closest parallel for the cutting on the Holne Chase fragment appears on a shallow bowl found at Nida-Hedderheim (Welker, 1978).

MK45/CA S 3045.

216. Fragment, rim and upper body, shallow segmental bowl. Greenish colourless, slightly inturned rim edge cracked-off and ground smooth. Two fine horizontal wheel-cut lines below rim, fine wheel-cut horizontal lozenge frieze on upper body. Max. dimensions 24 × 27mm.

This fragment comes from a very high-quality bowl probably made in the early to mid fourth century. Several forms, including shallow and hemispherical bowls, conical beakers and globular flasks were sometimes decorated with fine engraved designs at this time, and the Bancroft fragment probably

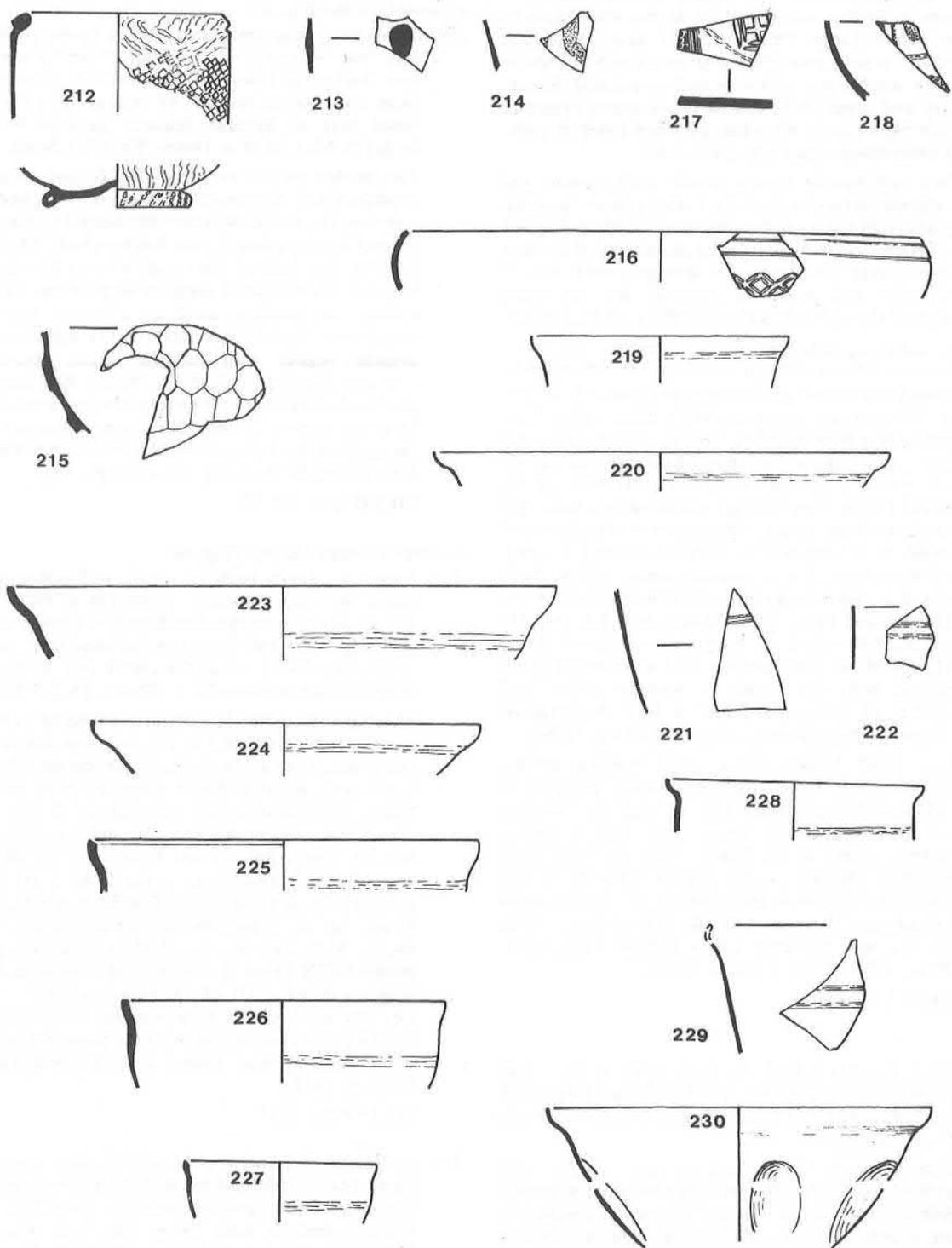


Fig. 48. Glass Vessels 212-230 (scale 1:2).

belongs to the series of vessels in which a lozenge frieze formed by pairs of fine wheel-cut lines was used as a border for more elaborate designs on the body and base. Similar friezes may be seen on the globular flask with funnel mouth from Amiens, on which they enclose a figured design incorporating winged cupids. Another occurs near the base of a shallow segmental bowl, also from Amiens, on which it encloses a fine wheel-cut chequer pattern (Painter, 1971, 41ff., figs. 1 and 5). It is very probable that these vessels were made and decorated at a glassmaking centre in the lower Rhineland, perhaps at Cologne. See no. 217, below, for another vessel, a colourless bowl, with rather similar wheel-cut lozenge decoration.

MK105/uns./GL 88.

217. Small body fragment, probably from segmental bowl. Colourless, very shallow, almost flat profile, decorated with finely-worked short wheel cuts in lozenge patterns. Max. dimensions 15 × 8mm.

This vessel may have been similar in form to no. 216, but it was made from colourless rather than greenish colourless glass. It belongs to a group of conical beakers and hemispherical and segmental bowls with fine linear and facet-cut geometric patterns and pagan and biblical scenes, which are found in 4th-cent. contexts. The existing fragment is too small to establish the original design, but both the motifs—(a) part of a lozenge-shaped frame, composed of two fine wheel cuts which enclose two larger wheel cuts intersecting to form a cross and (b) three fine wheel cuts which form a border to an area of closely-spaced intersecting wheel cuts—are incorporated into the design on a conical beaker from Köln-Worringen (Fremersdorf, 1967, 175-76 and pls. 236-39), and similar design elements can be seen on two bowls from Amiens (Painter, 1971, 47-48 and figs. 3 and 5).

MK105/Destruction, Building 1/GL 486.

218. Small fragment, convex curved bowl (?). Greenish colourless, decorated with horizontal band of abraded lines and part of a facet-cut and abraded design above and below. Probably 4th cent. Max. dimensions 23 × 21mm; Th. 1.5-2mm.

MK100/Ditch D2/GL 6.

*Linear abrasion* (Fig. 48)

Colourless

219. Fragment of rim and upper body, hemispherical bowl. Slightly outbent rim, edge cracked off and smoothed, upper body convex. Band of faint abraded lines below rim. D.100mm.

These bowls appeared in the third century and continued in production during the fourth century. They were made in light green and yellow-green as well as colourless bubbly glass, and are often found on sites in Northern France and the Rhineland, as well as Britain (Isings, 1957, Form 96).

MK105/Destruction, Building 1/GL 487.

220. Rim fragment, shallow bowl. Inside surface affected by heat. Outbent curved rim, edge cracked-off and smoothed. Broad horizontal band of abraded lines below rim. D.160mm approx.

Shallow segmental bowls with outplayed rims are found on sites in the Rhineland, Northern France and Britain in 4th-cent. contexts (Isings, 1957, Form 116), and were also produced in light green and yellow-green as well as colourless bubbly glass. A fragment similar to no. 220 was found at Shakenoak (Harden in Brodrigg *et al.*, 1968-73, 102, no. 209 and fig. 52). Bowls of this form were sometimes decorated on the outside surface with hunting, mythological or biblical scenes in freehand engraving: a fine bowl with hunting scene was found at Wint Hill, Somerset (Harden, 1960, 47-51 and figs. 1-2 and 4-7).

It is interesting to note that the rims of this vessel and no. 219 have been carefully smoothed, as rims on 4th-cent. glassware were often cracked off and left unworked.

MK105/Destruction, Building 1/GL 9.

221. Curved body fragment, band of horizontal abraded lines below (missing) rim, from hemispherical cup or bowl. Bubbly. Probably 4th-cent. vessel. D.39 × 21mm.

MK211/Destruction, Building 1/128.

222. Small body fragment, probably from cylindrical or conical beaker. Two horizontal bands of abraded lines. Max. D.20 × 15mm.

MK105/Destruction, Building 1/GL 488.

*Light Green* (Fig. 48)

223. Fragment, rim and upper body, hemispherical or segmental bowl. Thick-walled; as no. 220. Slightly everted curving rim, edge cracked-off horizontally, surface smooth but not ground. Convex curving upper body, faint band of abraded lines below rim. Present Ht. 23mm, D.160mm; Th. 2-2.5mm.

MK301/Destruction, Building 2/GL 126.

224. Rim fragment, segmental or truncated conical bowl. As no. 220. Bubbly. Thin walls, everted curving rim edge cracked-off but not smoothed, straight side tapering inwards. Band of abraded lines below rim. D.c.120mm; Present Ht.15mm; Th. 1mm.

MK105/uns./GL 134.

225. Rim fragment from bowl. As nos. 219-20. Bubbly. Thick-walled. Slightly everted curving rim, edge cracked-off but not smoothed. Faint horizontal band of abraded lines on upper body. D.120mm; Present Ht.16mm; Th. 3mm.

MK105/uns./GL 148.

226. Rim fragment, small hemispherical bowl. As no. 219. Bubbly. Slightly curved, nearly vertical rim, edge cracked-off but not smoothed; convex curved side. Band of abraded lines on body. D.c.100mm; Present Ht.26mm; Th.0.5-2mm.

MK105/uns./GL 153.

227. Fragment, rim and upper body, small hemispherical cup. As no. 219. Curving rim, edge cracked-off with inward bevel but not ground smooth, convex curving upper body. Faint band of abraded lines

below rim. Present Ht.18mm; D.58mm; Th. 1.1.5mm.

MK301/uns./GL 61.

Yellow-Green (Fig. 48)

228. Small fragment, rim and upper body, deep or hemispherical bowl or cup. As no. 219. Everted, strongly curved rim, edge cracked-off and ground smooth. Upper body cylindrical. Band of abraded lines on upper body. Present Ht.17mm; D.c.80mm; Th.1.5mm.

MK301/uns./GL 10.

229. Fragment, probably from conical beaker, curved outbent rim (edge missing); two horizontal bands or abraded lines. Ht.34mm.

Conical beakers occur quite frequently in the western Empire in 4th-cent. contexts (Isings, 1957, Form 106c). A nearly complete example was found at Wint Hill (Harden, 1960, 51-52 and figs. 8 and 9), and others are known from the middle and lower Rhineland, Northern France, Belgium and Holland.

MK105/Destruction, Building 1/GL 482.

Linear Abrasion and Indents (Fig. 48)

230. Fragment of rim and body, conical bowl (reconstructed from three body fragments with oval indents in sides). Yellow-green. Outbent curved rim, edge cracked-off and smoothed, upper body conical. Band of abraded lines below rim. Dc.119mm.

Shallow conical bowls with indented sides were common on fourth-cent. sites in Britain, Northern France and the Rhineland (Isings, 1957, Form 117). There is a very similar example from Hucclecote (Clifford, 1933, 334, fig. 10) and the form also occurs in Anglo-Saxon contexts as a late Roman survival.

MK105/Destruction, Building 1/GL 8, GL 492, GL 493 and GL 494.

Applied Trails (Fig. 49)

231. Fourteen fragments, some joining, of rim and body of beaker(?). Greenish-yellow; no weathering; no bubbles, slightly outbent rim, edge fire-rounded, convex curved body with horizontal trails, zigzag trails and vertical pinched trails. Th. 0.5-2mm.

It is by no means certain that all these fragments belong to the same vessel, but the similarity of colour, quality of glass and nature of the decorative trails provide considerable support for this suggestion. The form of the vessel is not known, but perhaps the closest parallel may be the footed claw beaker from Mucking, Essex, dating from the early 5th cent., which has similar unmarvered horizontal zigzag and vertical pinched trails (Evison, 1974), as well as other features not found on the Bancroft fragments. However, the Bancroft rim fragment is fire-rounded, in contrast to the curving cracked-off rim on the Mucking beaker. Two pale greenish fragments of very similar glass with horizontal trails and vertical pinched trails were found at Frocester Court (Price, 1979, 42-43, Nos. 22-23).

MK105/uns./GL 121, GL 125, GL 133, GL 172.

232. Fragment of small annular loop and trail; yellow-green. Part of ribbon handle, with rounded ridge at each edge, which has been bent over and pinched to form a ring. Max. W.11mm.

This fragment may come from a handle, but it could also be part of a decorative trail, now separated from the vessel to which it was attached. Loops are quite a common feature at the top of handles on 3rd- and 4th-cent. vessels and examples have been recorded from York (Harden, 1962, 140-41, fig. 58), Colchester (British Museum, 1922, 103-4, fig. 123g), Bayford (British Museum, 1958, 44 and pl. XI:8) and Ospringe (Whiting *et al.*, 1931, 68-69 and pl. XLII, 503). However, decorative looped trails of this type were also applied to vessels during this period, as on the handles of a complex snake-thread vessel from Cologne (Fremersdorf, 1959, 56-58 and pls. 70-71) and on the early 5th-cent. claw beaker from Mucking (Evison, 1974).

MK105/Destruction, Building 1/GL 484.

233. Small body fragment with two applied parallel trails, perhaps from a cylindrical or conical beaker. Yellowish-green. Max. dimensions 15 x 16mm.

MK105/Destruction, Building 1/GL 485.

Undecorated (Fig. 49)

234. Small fragment, rim of bowl or cup. Pale yellowish-green. Everted rim, edge fire-rounded and thickened. Present Ht.6mm; Dc.100mm; Th.1-1.5mm.

Cracked-off rims, sometimes smoothed and ground but quite regularly left rough and uneven occur far more frequently on 4th-cent. cups and bowls than any other method of rim finish (for example, see nos. 219-20 and 223-30 above).

The fire-rounded rim, by contrast, is rarely found in early 4th-cent. assemblages, but appears more frequently in the later 4th and 5th cents. Four late Roman vessel fragments with fire-rounded rims were found in the destruction levels at MK105 Bancroft (nos. 235-38 below) and similar pieces occurred at Gadebridge Park, Hemel Hempstead (Neal, 1974, 206-7, fig. 92, t and u), and a group of glass vessels from a late 4th-/early 5th-cent. pit deposit at Burgh Castle, Suffolk contained several cups and bowls with fire-rounded rims (Harden, 1983).

MK301/Destruction, Building 2/GL 75.

235. Rim fragment, cup or bowl. Yellow-green. Rim outplayed, edge rounded and bent inwards. D.100mm.

MK105/Destruction, Building 1/GL 14.

236. Fragment of rim, cup or jar. Rim outplayed, edge rounded, body tapers inwards. D.81mm.

MK105/Destruction, Building 1/GL 14.

237. Fragment of rim, cup or beaker. Rim outplayed, edge rounded, with cylindrical upper body. D.68mm.

This probably comes from a cylindrical cup or beaker similar to ones found at Burgh Castle

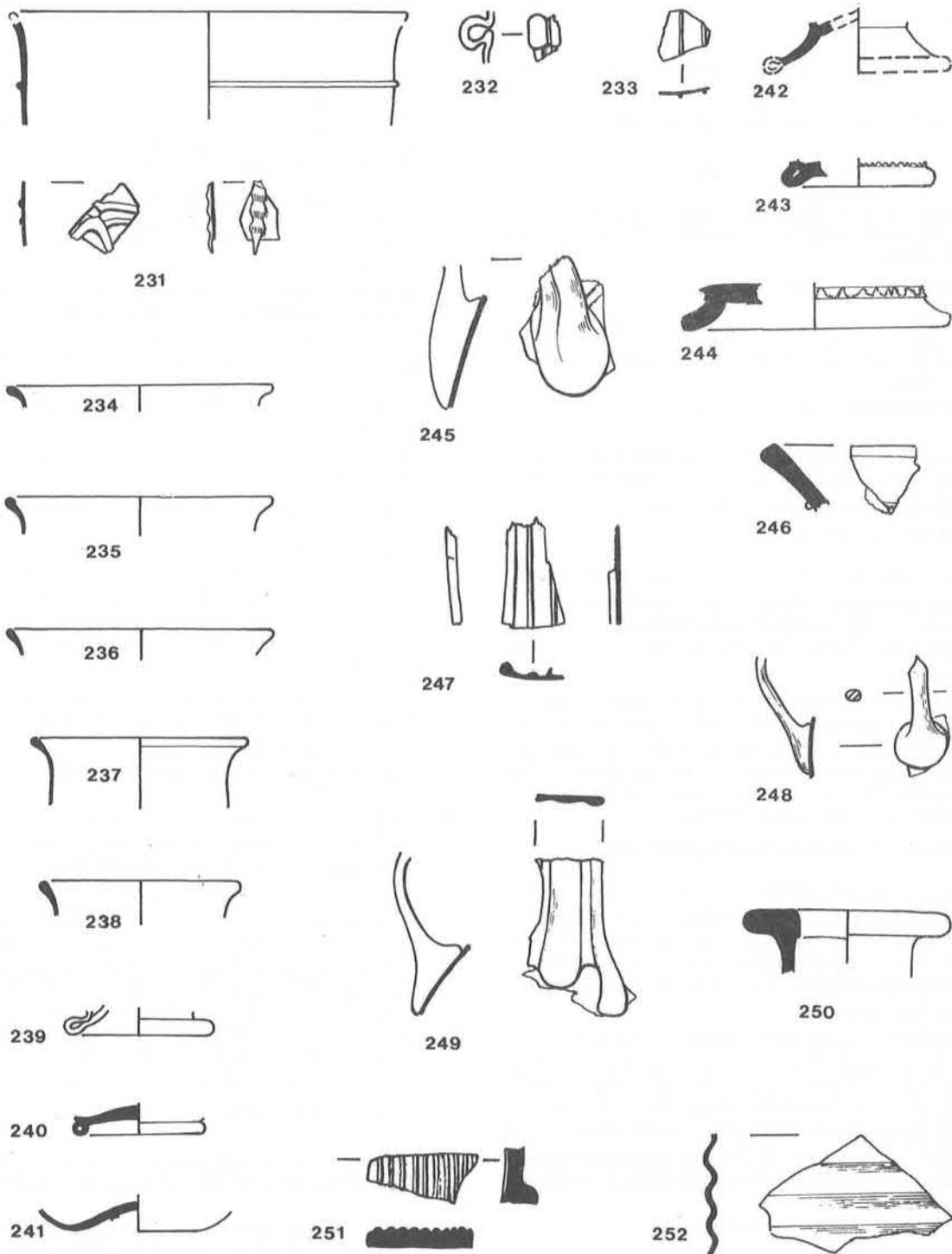


Fig. 49. Glass Vessels 231-252 (scale 1:2).

(Harden, 1983, fig. 37, 85-89) in a pit dating from the late 4th or early 5th cent. Stemmed beakers also occur in post-Roman contexts, but usually have horizontal trails below the rim (Harden, 1956, 139 and 158, and fig. 251 and pl. XVIa).

MK105/Destruction, Building 1/GL 2.

238. Fragment, rim of cup. Outplayed rim with rounded edge. D.62mm.

MK105/Destruction, Building 1/GL 15.

*Bases, probably of Bowls and Drinking Cups (Fig. 49)*

239. Fragment of tubular base ring and domed base, from footed cup(?). Colourless. D.50mm; Present Ht.10mm.

MK105/uns./GL 19.

240. Fragment, small tubular pushed-in base ring and concave base with pontil mark. Greenish colourless. D.42mm.

MK100/Gully 5, Building 1/GL 27.

241. Fragment, curving lower body and concave base with pontil mark, probably from bowl. Pale green. Bubbly. D.40mm; Present Ht.7mm.

MK105/uns./GL 135.

242. Fragment of high foot, perhaps from beaker. Yellowish-green. Bubbly, with weathering streaks. Part of outplayed pushed-in tubular base ring with high base (centre and edge of foot both missing). D.c.58mm.

This form of foot occurs on several late Roman vessels, especially fourth-century jugs and drinking vessels (Isings, 1957, Forms 109, 111 and 124). Where the centre of the base survives there is often a scar left by the pontil iron used to hold the vessel while the rim was being finished.

MK105/Destruction, Building 1/GL 489.

243. Small fragment of base ring, perhaps from cup or bowl. Blue-green. Dull, with many usage scratches. Part of a solid, pushed-in base ring. The body of the vessel has been broken off, and the edge above the base ring grozed to fit the base for some secondary use. D.47mm.

Too little remains to be certain of the form of the original vessel, but it probably came from a cup, small bowl or dish (Isings, 1957, for example Forms 34, 35, 37, 41-45, 69, 75, 85 and 104). The colour of the glass indicates that it was made in the 1st to 3rd cents. Broken glass vessels were often converted to other uses on sites in Roman Britain; base rings in particular were re-used.

MK105/Destruction, Building 1/GL 3.

244. Fragment, pad base ring and base, perhaps from bowl. Bluish-green. Foot shaped by applying a pad of glass to the base of the vessel and bending down and tooling the edge. 'Post' technique scars on the base edge. Present Ht.15mm; D.70mm.

After breakage the base ring has been re-used as a small dish. Broken body edge neatly grozed.

Base rings of this kind were formed on many large

open bowls and plates, and it is not possible to identify the vessel type, or to suggest a close date for its manufacture, but it was probably produced in the 1st to 3rd cents. The re-use of base fragments has also been noted in connection with no. 243.

MK105/uns./GL 16.

*Jugs and Bottles (Fig. 49)*

245. Part of curved body, slight evidence for ribbed decoration; part of lower attachment of 'chain' (?) handle applied to body; from jug. Colourless. Dimensions (body) 36 x 30mm.

It is very probable that this fragment has come from a second to third century jug with a globular or piriform body, probably with a 'chain' handle formed by applying two rods of glass to the body and rim and then pinching them together at intervals. A bluish-green jug with curved trails on the piriform body pinched together to form a diamond pattern, found at Colchester early in the nineteenth century during the building of the hospital (Harden *et al.*, 1968, 84, no. 111), and a colourless jug with an undecorated globular body displayed in the museum at St Albans both have 'chain' handles of this kind.

MK211/Terrace, west of Building 1/122.

246. Rim fragment from bottle or flask with conical mouth. Greenish. Surface affected by heat, multi-coloured iridescence, bubbly with strain cracks. Outplayed mouth with broad squared rim, edge rounded in flame; fine horizontal trail below rim. Present Ht.c.20mm.

Very little of the vessel survives and the identification is not certain; alternatively, it might come from the base of a vessel.

MK105/Destruction, Building 1/GL 13.

247. Fragment of broad angular handle from bottle. Greenish colourless. From ribbon handle with prominent vertical ribs. Present Ht.33mm.

The form of the handle is similar to those found on bluish-green square and cylindrical bottles (see no. 251), and probably comes from a colourless cylindrical bottle. These were first manufactured in the late second century, continuing into the third and fourth centuries as well. Examples are known from several sites in Britain, as at Hauxton, Cambs. (Harden, 1957), as well as from Northern France and the Rhineland (Isings, 1957, Forms 126, 127).

MK105/Destruction, Building 1/GL 490.

248. Fragment, body with attached curved rod handle; light green. Present Ht.c.41mm; Th. (body) 1mm.

Small curved rod handles are found on the small globular-bodied flasks with concave bases which sometimes occur in later fourth-century contexts in Roman Britain. Three were found in late fourth- to early fifth-century burials at Lankhills, Winchester, and in the detailed publication of this cemetery (Harden, 1979, 217-18) Harden points out that only one example of this form has so far been recognized outside Britain.

MK301/uns./GL 12.

249. Fragment of curved handle and body from jug. Yellow-green. Bubbly. Very little weathering. Part of a three-tongued lower attachment of a ribbon handle with a rounded ridge at each edge; on curved body. Ht.c.57mm.

MK105/Destruction, Building 1/GL 480.

This form of handle is commonly found on spherical and ovoid-bodied jugs, especially in third- and fourth-century contexts (for example, Isings, 1957, Forms 120, 121 and 129).

#### Containers (Fig. 49)

250. Fragment, rim and neck of bottle. Strong bluish-green. Present Ht.22mm; rim D.66mm; Th.4mm.  
MK211/uns./GL 4

251. Fragment of handle from square or cylindrical bottle. Blue-green. Dull with usage scratches. From the lower attachment of a broad straight ribbon handle with close-set vertical ribbing. Max. D.18 × 31mm.

MK105/uns./GL 7.

Nos. 250-51 come from square or cylindrical bottles which were in common use as containers in most parts of the Roman Empire, during the the later first and second centuries (Isings, 1957, Forms 50-51).

252. Fragment, cylindrical body, four horizontal corrugations, from 'Frontinus' bottle; mould-blown. Pale green. Present Ht.37mm. Body D.c.120mm; Th.1.5mm.

MK100/Ditch D2/GL 6.

This comes from a type of one- or two-handled bottle, mould-blown with corrugations on the upper and lower body commonly known as Frontinus bottles, because this name or an abbreviation sometimes occurs in raised letters on the base. They were produced in the late 3rd and 4th century, probably at centres in northern Gaul, and are widely distributed in the Rhineland and Britain as well (Isings, 1957, Forms 89 and 128).

#### Miscellaneous Objects (Fig. 50)

##### Tesserae

253. Tessera, blue-green. Made from base of square bottle, part of one raised concentric circle visible. One surface very heavily scratched. Dims. 8 × 11mm; Th.7mm.

MK105/Destruction, Building 1/GL 4.

254. Tessera, blue-green. Most probably made from fragment of square bottle; carefully squared-off; one surface very heavily scratched. Dims. 12 × 13mm; Th.7mm.

MK105/Destruction, Building 1/GL 491.

As these tesserae could not be assigned to any particular room by the excavator, it is not possible to say which mosaic they came from. However, taking the quality of the surviving mosaic remains into account, the mosaic in Room 8 is the only one likely to have contained glass tesserae.

#### Gaming Piece

255. About two-thirds of a large plano-convex gaming piece or counter; 'black', probably dark blue. Ht.5mm; D.29mm.

This is a very large specimen of this kind of object, undecorated examples of which occur in great numbers at early military sites in Roman Britain where they were probably used as counters and as gaming pieces. In the later Roman period sets of decorated glass gaming pieces are occasionally found in burials, as at Lankhills, Winchester (Harden, 1979, 251-54, pl. 1b).

MK105/uns./GL 128.

#### Finger Ring

256. About four-fifths of a finger ring; circular sectioned. Pale yellowish colourless. Fine trail of glass bent into ring and flattened on inside surface. Very irregular in thickness. Outside D.24mm; Present Ht.2-3mm.

Finger rings of this kind and of this colour are most unusual in Roman contexts, and this may prove to have been made at a later time. The only parallels known to me were found during recent excavations at Winchester; all of them occurred in post-Roman contexts.

MK301/uns./GL 19.

#### Beads

257. Small dark blue cylindrical bead with opaque white wave; intact. Ht.7mm; D.9mm, with fragment of bronze suspension loop. Guido group 5.

Beads of this type occur in fourth- to third-century BC contexts in the 'Arras' burials at Cowlam (barrow L) and Queen's Barrow, Arras, in Yorkshire, and are found quite frequently in later pre-Roman Iron Age contexts in Britain, as well as in Romano-British and Anglo-Saxon contexts (Guido, 1978, 63-64, 128-33).

MK105/Uns./GL 129.

258. Fragment, bead: yellow-green, with opaque red and yellow. Squarish section with rounded corners and a small central perforation; red zigzag trail and yellow dot, both marvered flush with the surface. Max. D.10 × 9mm.

This bead appears to be a late Roman type, but exact parallels have not been easy to find. A somewhat similar bead has been found in Chelmsford in a fourth-century context (information from P. J. Drury). See also no. 259 below.

MK105/Destruction, Building 1/GL 495.

259. Half globular bead, bluish-green ground with opaque red and opaque white horizontal marvered trails. Ht.8mm; D.15mm.

This is a rather unusual bead, probably of late Roman or early post-Roman date, but without close parallels. A bead with a bluish-green ground and horizontal opaque white trails was found at Krefeld Gellep (Lower Rhineland) in grave 404, which was dated to the period AD 450-525, and terracotta red glass was commonly used in Romano-Frankish Beads. A late fifth- or early sixth-century bead from Alfriston, Sussex (Griffiths and Salzmann, 1914,

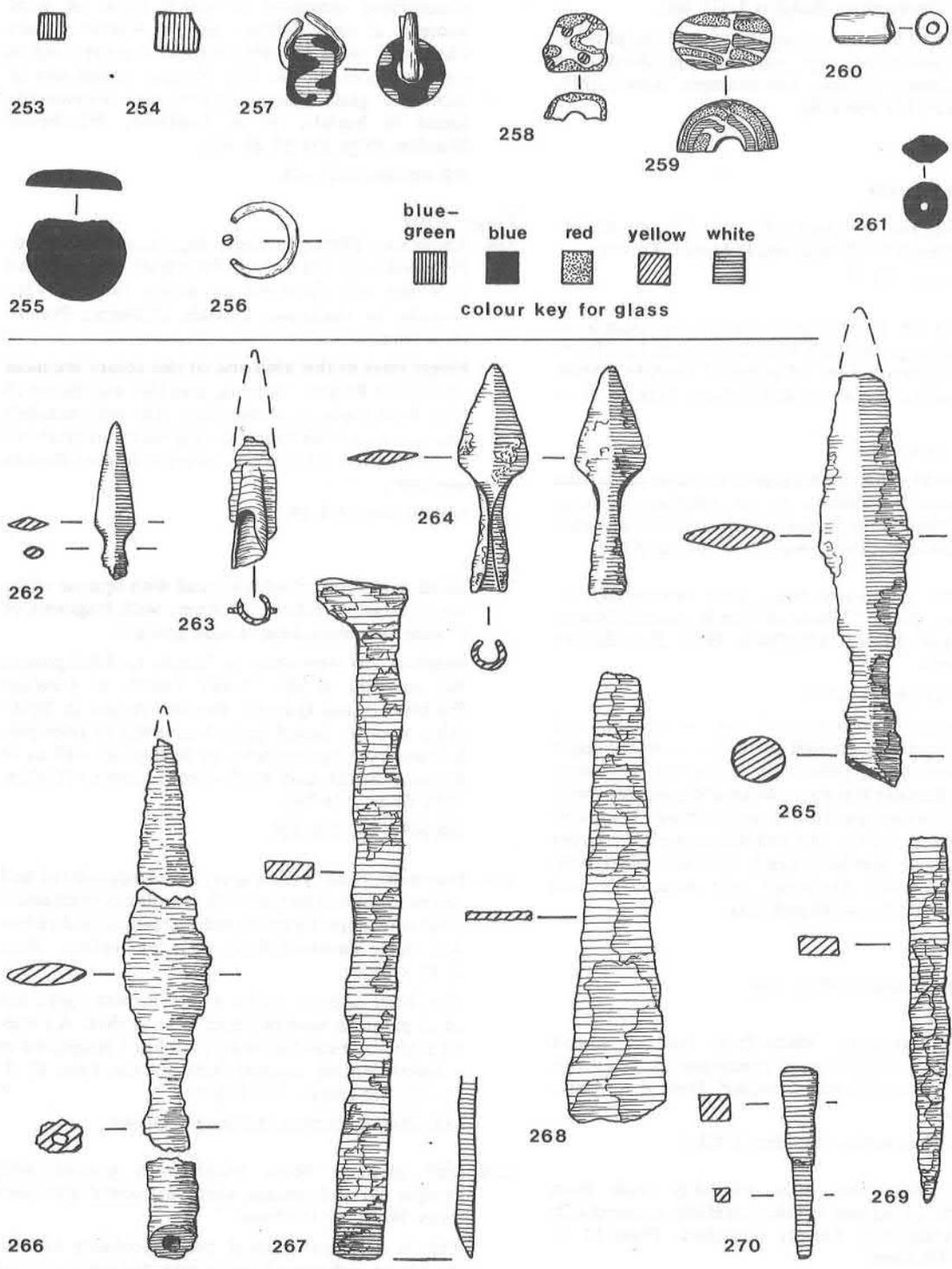


Fig. 50. Miscellaneous Glass Objects 253-256 (scale 1:2), 257-261 (scale 1:1), and Iron Objects 262-270 (scale 1:2).

pl. 1, fig. 9) also had a bluish-green ground, opaque white horizontal trails and opaque terracotta red trails crossing the bead diagonally, so a date in the fifth or perhaps the early sixth century would not be out of place for the Bancroft bead. It is also worth noting that this bead has some similarity with another late glass bead already noted at Bancroft, no. 258 above. (I am grateful to Mrs C. M. Guido for providing the information on which this note is based.)

MK105/uns./GL 126.

260. Small square-sectioned bead, intact. Dark green. L.10mm; Th. 5mm (Guido, 1978, 96, fig. 37, 6-7).  
MK105/Floor of Building 6/GL 46.

261. Small biconical bead, dark blue, intact. Ht.3mm, D.6mm. (Guido, 1978, 97, fig. 37, 12-13).

This is a fairly common form of Roman bead, most examples of which have been found in third- and fourth-century contexts in Britain and elsewhere.

MK105/uns./GL 75.

## IRONWORK

W. Manning, P. Marney  
and R. J. Zeepvat

The ironwork from MK100 Sherwood Drive has already been published (Manning, 1974). The iron bindings and hinges from a wooden chest from MK105 Bancroft previously published (Keepax and Robson, 1978; Manning and Musty, 1977) are described briefly here, see no. 328 below and fig. 58.

Dr Manning also prepared a report on the ironwork from MK96 Windmill Hill and kindly commented on the report on ironwork from MK105 Bancroft villa by P. Marney. R. J. Zeepvat has written up the remaining ironwork and combined the reports on MK96 and MK105 together with his work to produce this report.

Much of the ironwork recovered from the sites in this volume has consisted of fragments of sheet, strip, rod and bar of varying sizes, often heavily corroded, and with no clues as to their original function. In the interests of economy, the ironwork illustrated below consists of only the more complete, recognizable artefacts from each site.

## SPEARS AND ARROW-HEADS (Fig. 50)

It is interesting to note that all the examples listed below came from Stantonbury, though not as a distinct group, having been found at intervals throughout the excavation. All were doubtless used for hunting; there seems no reason to assume a military presence on the site at any time.

262. Arrowhead, small fine leaf-shaped blade with remains of tapered socket. Present L.48mm.  
MK301/Dark soil layer east of Building 2/132.

263. Tapered socket of arrowhead(?). Socket D.c.10mm; present L.40mm including remains of blade.

MK301/uns./I.4.

264. Arrowhead, short, broad leaf-shaped with tapered, open-side socket, second cent. L.70mm.

MK301/Bottom of Ditch F97/93.

265. Spearhead, part of socket and tip of blade missing. Estimated L.150mm. Narrow leaf-shaped blade (Manning Type 1).

MK301/uns./1.

266. Spearhead, estimated L.168mm, with narrow leaf-shaped blade (Manning Type 1). In three pieces, late fourth cent.

MK301/From dense asj layer overlying mortar inside south end of Building 2/1, 21, 22, 29.

## TOOLS (Figs. 50-53)

267. Chisel. L.208mm, second cent.

MK105/Ash layer, Room 5/I.42.

268. Tapered strip, possibly a blade from a paring chisel. L.140mm.

MK105/uns./I.116.

269. Fragment of a rectangular-sectioned bar, with point. Possibly a metal worker's punch or chisel.

MK105/uns./I.118.

270. Small punch, with a square head and slightly rounded stem which tapers to a point. L.58mm. Probably a metal worker's tool comparable to the slightly larger example from Verulamium (Frere, 1972, 164, fig. 60, 5).

MK96/Fill of gully 1/I.41.

271. Spade shoe with square mouth. Although the arms are broken on this example, the deeply-grooved mouth and lower arms suggest this piece to be a Manning Type 11a (Rees, 1979). W.200mm.

MK105/uns./I.176.

272. Ox-goad with spiral socket. Cf. Gadebridge (Neal, 1974, 167, fig. 71, 404). L.38mm.

MK105/Rob. Trench, Building 2/I.38.

273. Ox-goad with spiral socket. L.38mm.

MK211/uns./I.37.

274. Spud, the socket still containing nail used to fix wooden shaft, like the example from Housesteads (Manning, 1976, 30, fig. 19, 84), fourth-cent. L.85mm.

MK105/From walled garden/I.182.

275. Tapering ferrule, with extended tongue at open end having two fastening holes. Pointed end flattened; fastening for shafted implement. Turf cutter? L.308mm (see Manning, 1976, 80, fig. 18, 80).

MK64/uns./I.6.

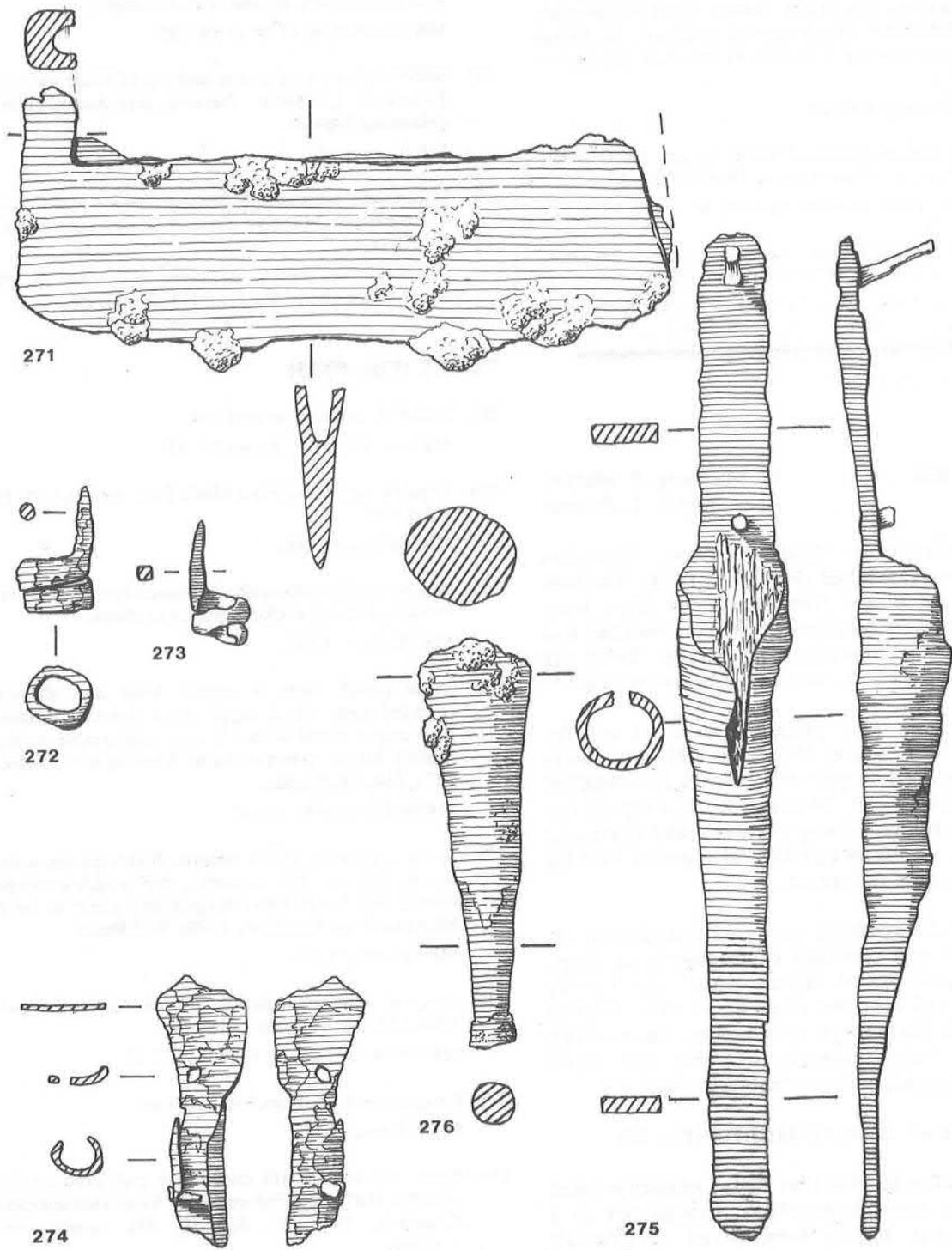


Fig. 51. Iron Objects 271-276 (scale 1:2).

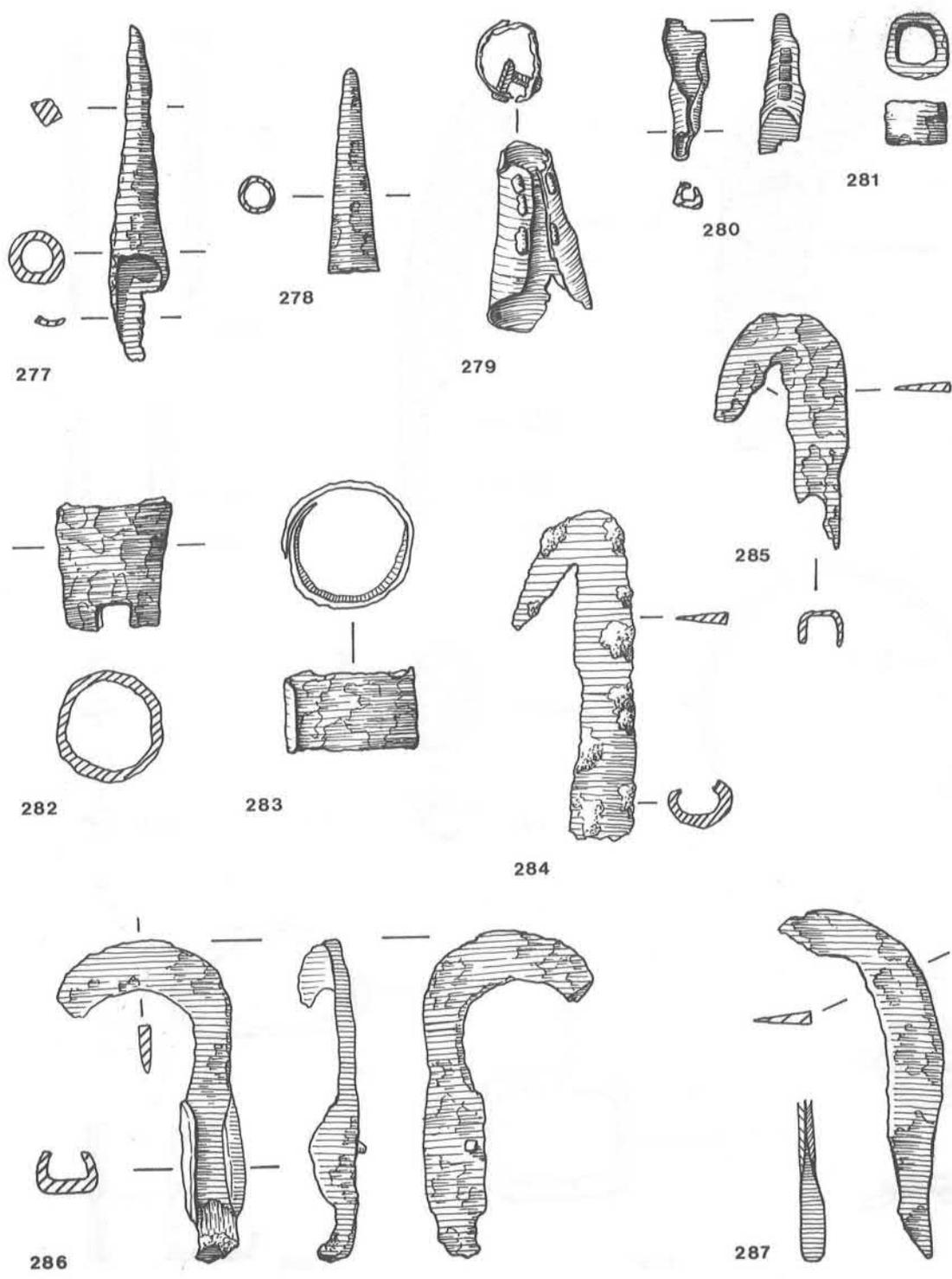


Fig. 52. Iron Objects 277-287 (scale 1:2).

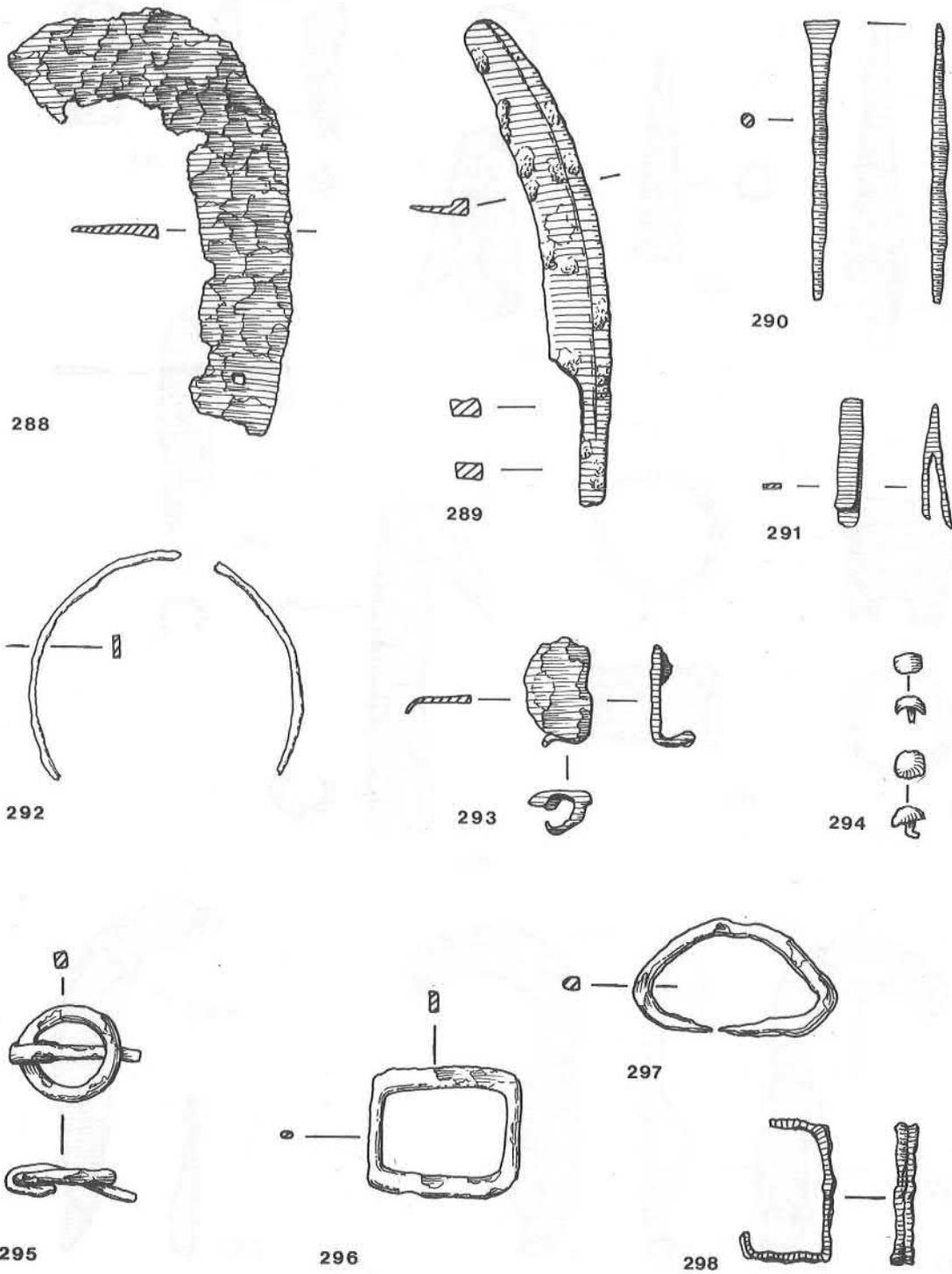


Fig. 53. Iron Objects 288-298 (scale 1:2).

276. Pointed ferrule, incomplete. L.125mm.  
MK64/uns./I.26.
277. Pointed ferrule for spear or staff, L.100mm. Similar examples are published by Manning (1976, 21, fig. 13, 24-28).  
MK64/On natural clay surface. East of F19/I.40.
278. Ferrule, L.62mm. Closed socket with strong solid point.  
MK105/Destruction, Room 1, Building 1/I.167.
279. Tapered socket formed by bent sheet, reducing from 30 to 14mm. Shaft held by five iron nails placed near join in socket.  
MK301/uns./I.3.
280. Part of socketed object, ends bent round shaft Dc.6mm, to form ferrule, on which square stamp marks are visible. Function unknown.  
MK301/uns./I.1.
281. Collar, probably a ferrule from a stick or tool handle. D.20mm, fourth-cent.  
MK96/Occupation layer north of Corn Drier 2/I.39.
282. Ferrule binding, slightly tapered. Narrower end has rectangular 'cuts' at opposing sides—perhaps for pin across like an example from Verulamium (Frere, 1972, 174, fig. 64, 37).  
MK105/uns./I.160.
283. Collar binding, wrapped round shaft. No nail holes. D.40mm.  
MK105/Destruction, Building 1/I.4.
- Pruning Hooks* (Figs. 52 and 53)  
The classification is after Rees (1979).
284. Pruning hook, Rees Type 1, with open socket and hooked blade. Long cutting edge. L.110mm.  
MK105/Wall of Building 2/I.137.
285. Pruning hook, Rees Type 1, with open socket and hooked blade. Short cutting edge. L.72mm.  
MK105/From stone feature adjacent to Building 2/I.165.
286. Pruning hook, socketed. Rees Type 1B, incomplete. L.100mm.  
MK109/Fill of Ditch F10/I.17.
287. Pruning hook. Long tanged curved blade (Rees Type 2B). L.105mm, second cent.  
MK98/Upper fill of F31/I.37.
288. Pruning or reaping hook. Single nail hole for fixing to wooden shaft? (Rees, 1979, figs. 210 and 214). L.130mm.  
MK105/From yard east of Room 11, Building 1/I.174.
289. Pruning knife with an arched back and tang, with ridge on one side of the back of the blade for strengthening; see Gadebridge (Neal, 1974, 171, fig. 73, 450). L.147mm.  
MK105/uns./I.151.
- PERSONAL ITEMS (Fig. 53)
290. Stylus, Manning Class 1 (Manning, 1976, 34, fig. 21, 102). Incomplete. L.85mm.  
MK105/uns./I.21.
291. Tweezers, very badly corroded. L.38mm.  
MK105/uns./I.16.
292. Fragments of bracelet? Curved strip forming circle. D.85mm, fourth cent.  
MK105/Floor of Building 6/I.49.
293. Cleat, probably from boot sole; for similar examples see Shakenoak (Brodrigg *et al.*, 1968-73, 2, 122) and Gadebridge (Neal, 1974, 179, fig. 75, 567-68).  
MK105/uns./I.128.
294. Hobnails, D.9mm. Rounded head, short shank.  
MK301/uns./I.6 and 9.
295. Buckle. Ring, D.29mm, with pin of squarish strip.  
MK64/uns./I.60.
296. Rectangular buckle, no hinge bar, but shows signs of wear where bar would have rested; 45 × 40mm.  
MK105/Destruction, Building 1/I.104.
297. Buckle, or harness fitting(?), consisting of rod bent in D shape, meeting on widest side.  
MK64/uns./I.12.
298. Fragment of buckle? Strip bent in rectangle, 42 × 28mm. One side missing.  
MK301/Destruction, Building 2/I.43.
- KNIVES AND SHEARS (Figs. 54 and 55)
299. Shear blade. L.180mm. The arm is broken at about the point at which the curve of the spring, which will have been narrow, will have begun. The tip of the blade is broken. The general form, and in particular, the thickening at the back of the blade, make it clear that it is from a pair of medium-sized shears and is not a knife. It may be compared with others of this general type from Camulodunum (Hawkes and Hull, 1947, 343, pl. CV, 7), Richborough (Bushe-Fox, 1928, 31, pl. SV, 2) or Silchester.  
MK96/Fill of gully 1/F13.
300. Knife, Manning Type 11a. Blade L.150mm. Tang 80mm.  
MK64/uns./I.8.
301. Knife. The tang ends with a hook and is a continuous straight line with back. The edge shows beginning of curving round to meet back, similar to Gadebridge (Neal, 1974, 167, fig. 72, 406 and 169, fig. 72, 415) and Housesteads (Manning, 1976, 38,

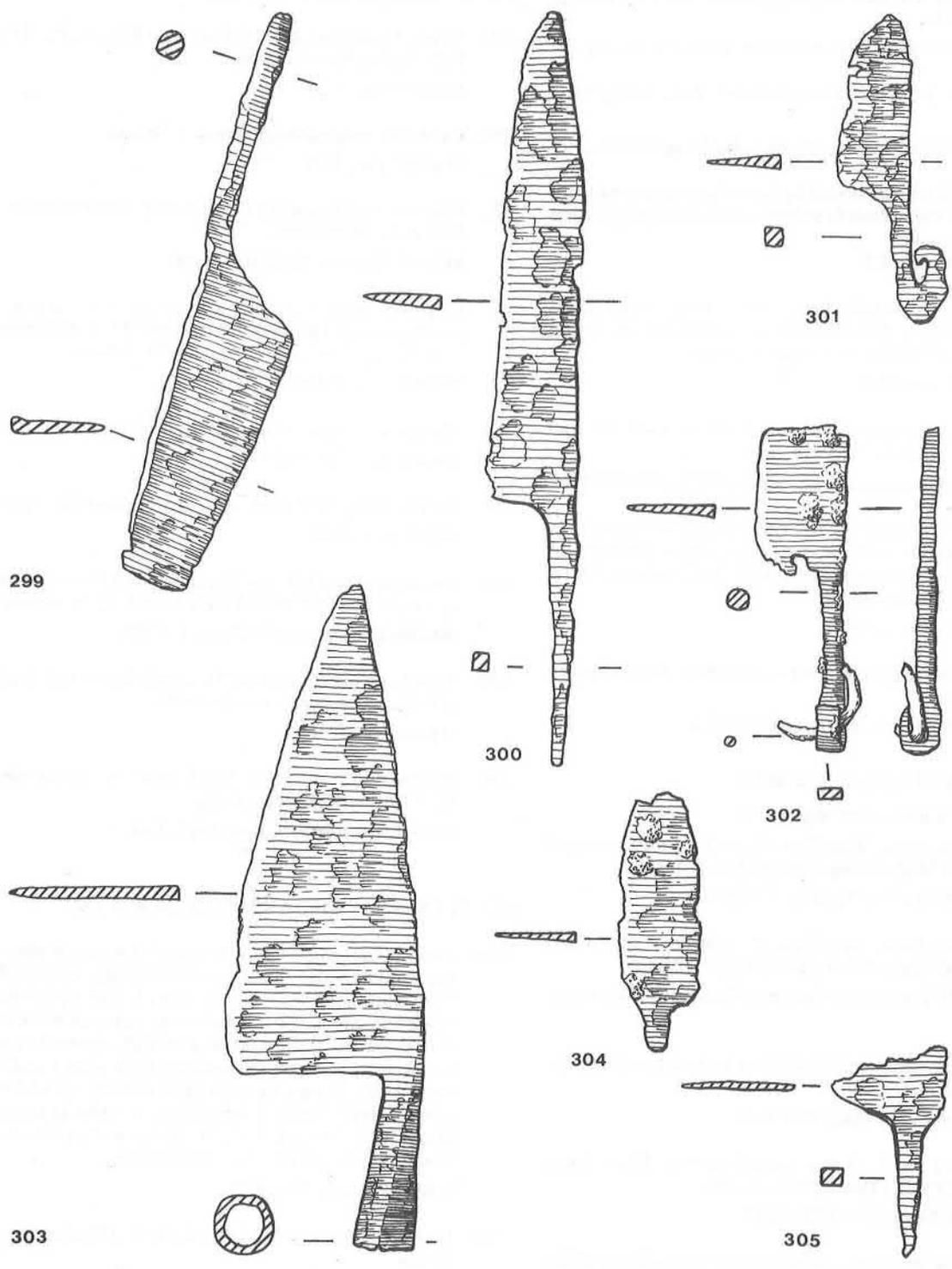


Fig. 54. Iron Objects 299-305 (scale 1:2).

- fig. 22, 127). The hook/spiral on this example twists in opposite direction to those illustrated elsewhere. MK105/uns./I.129.
302. Knife. A narrow, straight blade, with the handle in the form of a rod ending in a loop enclosing the remains of a ring. MK301/Dark soil layer inside Room 4, Building 2/64.
303. Socketed knife or cleaver. The blade is flat and triangular, tapering from 60mm over a length of 150mm. Socket D.12mm. Blade and socket apparently made separately and welded together, like examples from Housesteads (Manning, 1976, 38, fig. 22, 131 and 135). MK301/Rubble north of Wall 26/83.
304. Part of a knife, Manning Type 1 (Manning, 1976, 37) with tang on the mid-line of the blade. MK64/uns./I.37A.
305. Part of a knife. Manning Type 1 (Manning, 1976, 37), with short, squarish pointed tang spreading into broad blade. MK64/uns./I.37B.
306. Knife, Manning Type 11 (Manning, 1976, 37), both blade and tang broken. Surviving L.80mm. MK64/uns./51.
307. Knife with tang. Rectangular stop-ridge before broadening out blade. Possibly medieval. MK105/uns./I.80.
308. Small knife blade. L.83mm. Both the tang and the blade are broken, but it appears to have been an example of a very common type in which the back and edge of the blade are parallel. MK96/Fill of Gully 1/F.13.
309. Blade fragment. Traces of ridge along back of blade. MK105/uns./I.139.
310. Tang and part of knife blade. Manning Type 1? (Manning, 1976, 37). MK105/uns./I.178.
311. Fragment of knife blade. Straight back, curved edge. L.110mm. MK105/Destruction, Building 1/I.105.
312. Knife blade. Single-edged, parallel blade, straight back, curving to point. L.105mm. MK301/uns./120.
313. The paired holes indicate that the bolt had two sets of springs carried on paired splines. L.147mm. MK105/uns./I.145.
314. Stem only, L.104mm. MK105/Ditch F/I.162.
315. Complete example, L.182mm. MK105/Destruction, Building 1/I.177.
- 316/ Pair of drop hinges, forged from bar with a D.15mm socket at one end. Fastening by heavy nails (two in 316 and one in 317). Found in association with a third hinge, which has since been lost. Both 400mm in length, fourth cent. MK301/From dense ash layer overlying mortar later inside Building 11/I.17 and I.46.
- 317.
318. Rectangular plate from drop or loop hinge. Eyelet broken off. Nail holes on either side of eyelet. Plate W.400mm. MK105/uns./I.14.
319. Fragment of wall mounting for drop hinge? Flattened bar ending in ring containing remains of D.12mm pin. MK301/Rubble to west of Building 11/I.31.
- 320/ Water pipe collars, used for joining wooden pipes carrying fresh water. D. of both examples 100mm. For other examples see Manning (1976, 40, fig. 24, 151-52). MK105/Destruction, Building 1/I.109 and I.171.
- 321.
322. Part of tripod candlestick? Badly eroded; socket for candle gone. MK105/Destruction, Building 1/I.98.
323. Part of a swivel, as used on lamp hangers; for a complete example see Gadebridge (Neal, 1974, 159, fig. 69, 346). L.143mm. MK105/uns./I.3.
324. Long ring-headed pin, meat skewer(?) with curved end, L.225mm. MK105/uns./I.73.
325. Similar to no. 324, L.205mm. MK105/uns./I.73.
326. Handle, strip, twisted at one end, broken at other. Ladle handle? L.204mm. MK105/uns./I.133.
327. Vessel handle? Unusual form. The hook on this handle could be used to hang vessel over a fire. Possibly post-Roman. MK105/uns./134.
328. Fittings for wooden chest (see Fig. 58 for a reconstruction of the chest), consisting of hinges and straps for lid, corner bindings, and nails holding base to sides. The chest measured 450 × 370mm deep × 340mm high and was made of oak, with

#### DOMESTIC OBJECTS AND FITTINGS (Figs. 55-57)

A selection of keys for barb-spring padlocks, showing the characteristic square operating end, and strip stems with rolled ends.

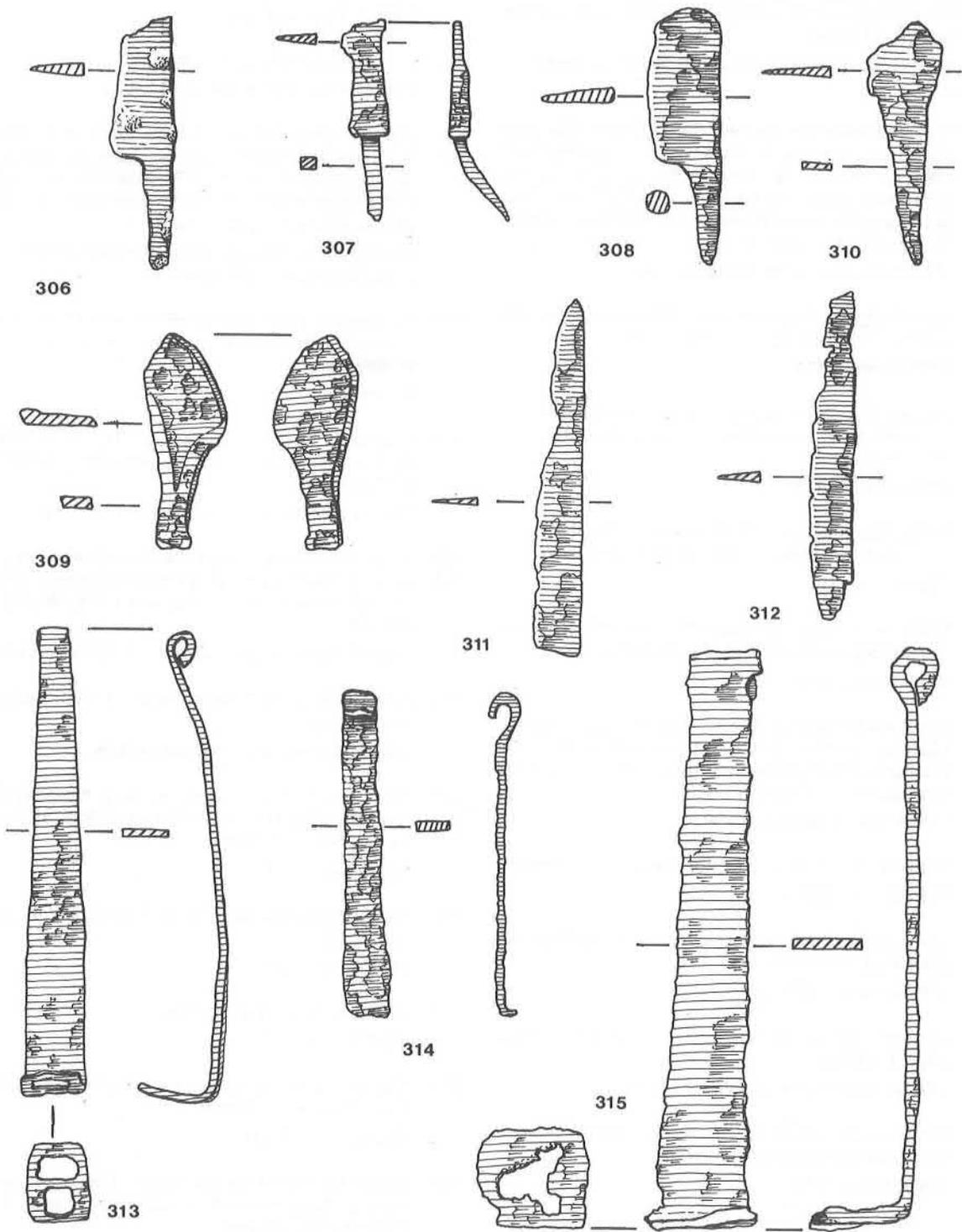


Fig. 55. Iron Objects 305-315 (scale 1:2).

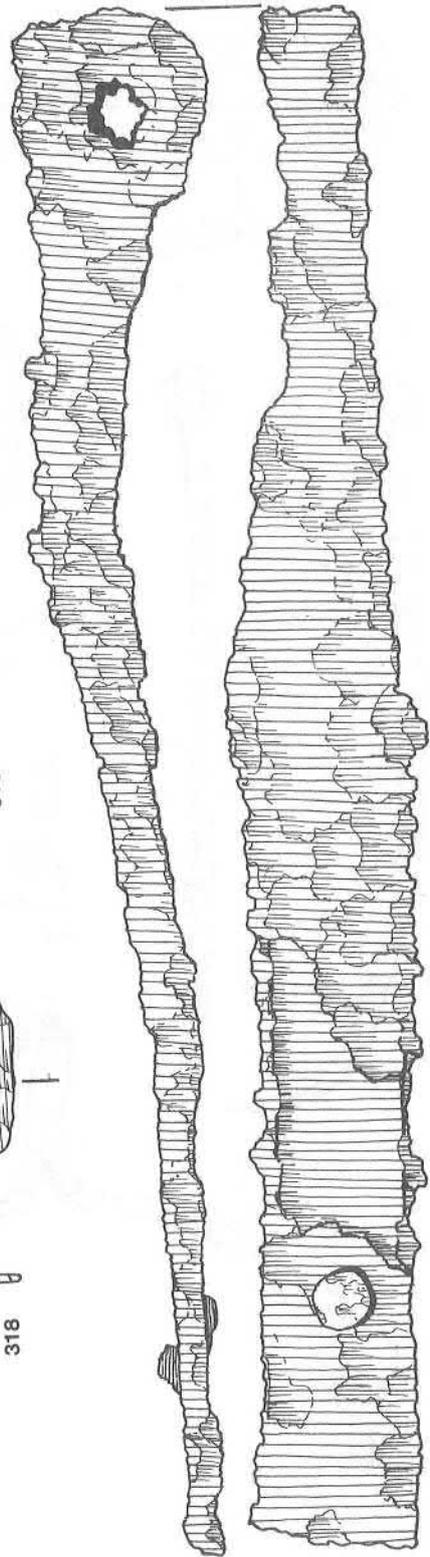
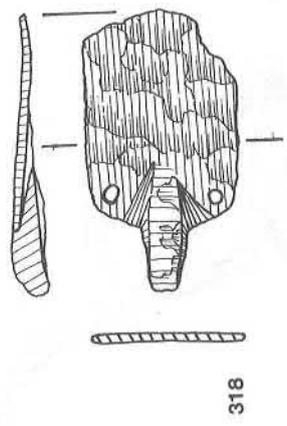
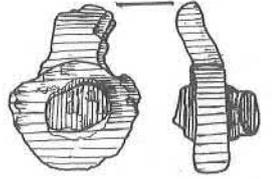
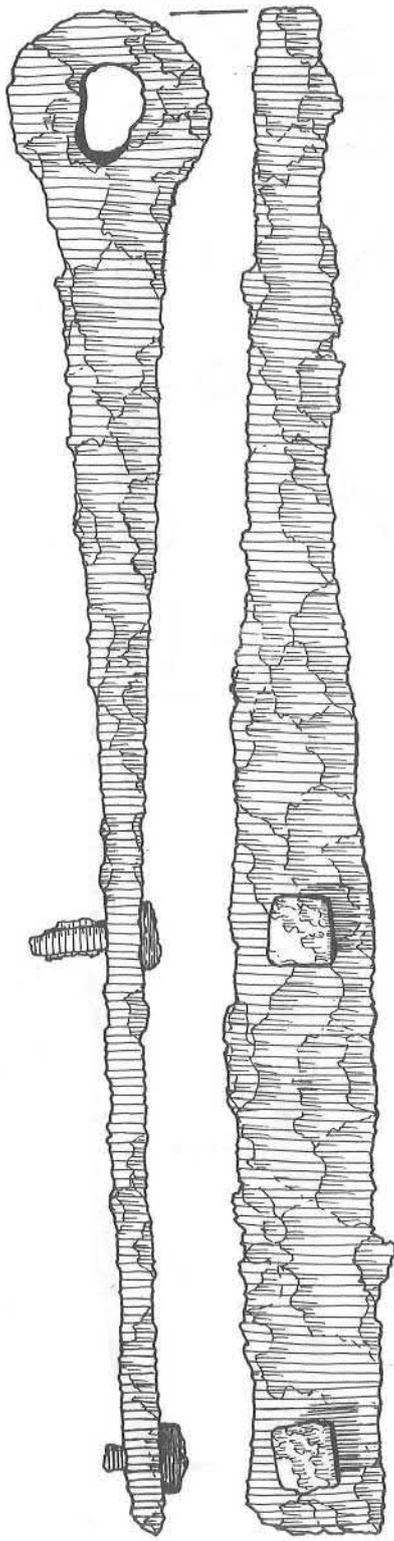


Fig. 56. Iron Objects 316-319 (scale 1:2).

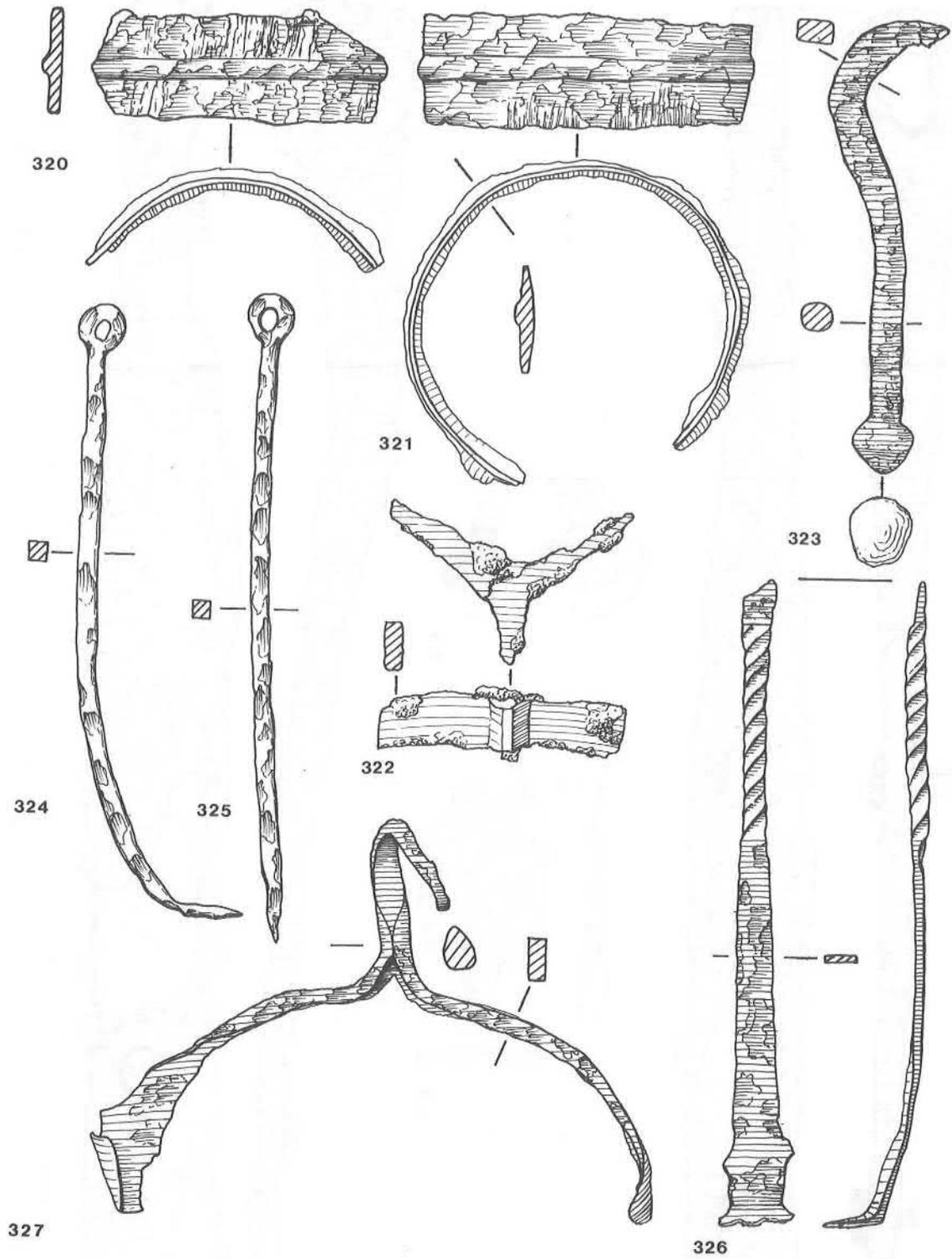


Fig. 57. Iron Objects 320-327 (scale 1:2).

## MK105 BANCROFT

Reconstruction of chest found  
in Ditch B (Phase I)

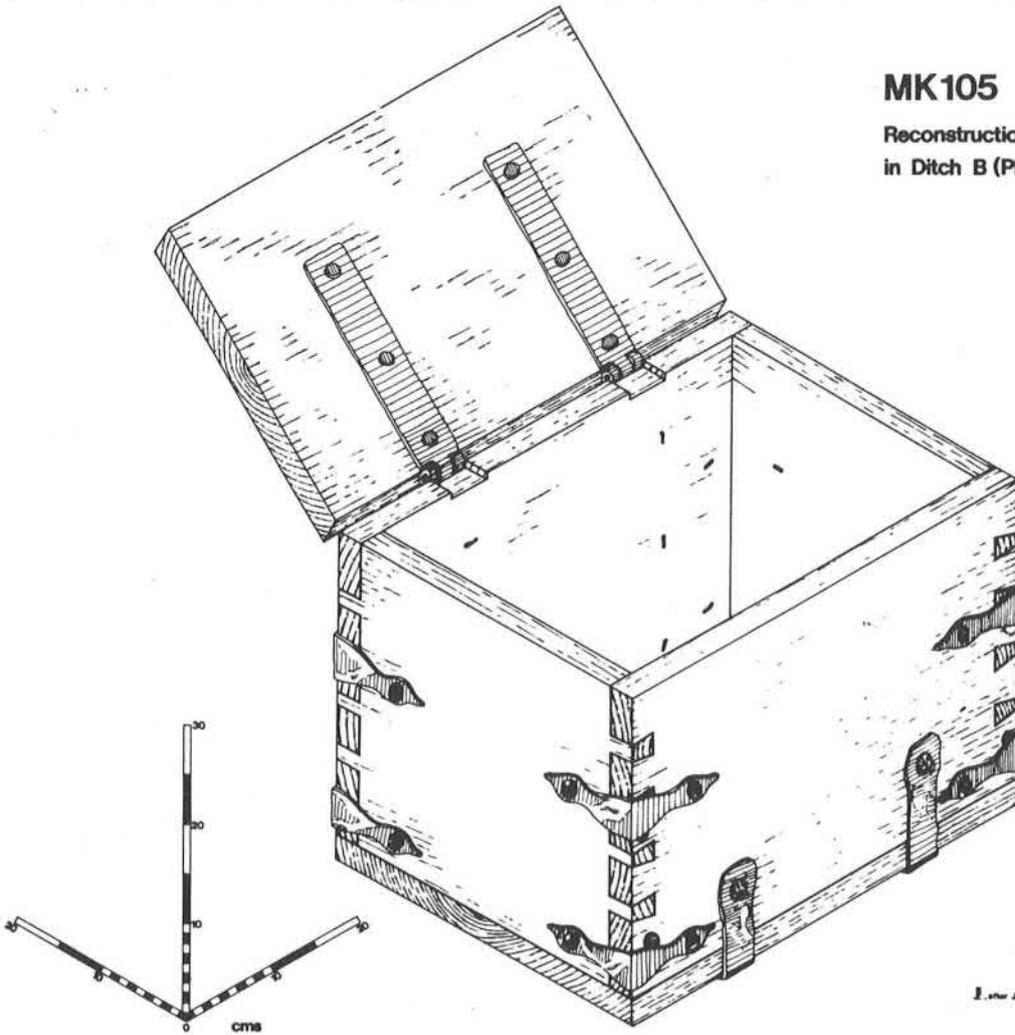


Fig. 58. Reconstruction of Wooden Chest, 328, from Bancroft Villa.

dovetailed corners, traces of which survived on the bindings. First/second cent. A detailed account of this object has previously been published (Manning and Musty, 1977).

MK105/From fill of Ditch B/I.186.

### CART FITTINGS, ETC. (Figs. 59 and 60)

329. Cart fittings. U-shaped bar, flattened at ends which were probably fastened to frame of vehicle. One fastening, consisting of nail, bent at one end, still in position. L.150mm.

MK64/uns./I.22.

330. Cart pin? rod. L.140mm with ring D.44mm at one end.

MK64/uns./I.23.

331. Cart fitting? Curved rod with large rectangular loop 30 x 26mm at one end. Fourth cent.

MK64/Black soil spread over Phase IV yard/I.55.

332. Chain with four oval links, over which a flat ring, internal D.370mm, was slipped.

MK105/uns./I.146 and I.147.

333. Part of small linked chain.

MK105/uns./I.12.

A selection of rings. These are very common finds and could fulfil a variety of functions on harnesses, carts, or in conjunction with ring-headed pins (see below) as wall fastenings.

334. D.40mm. MK45/uns.

335. D.24mm. MK105/Destruction/I.95.

336. D.27mm. MK105/uns./I.124.

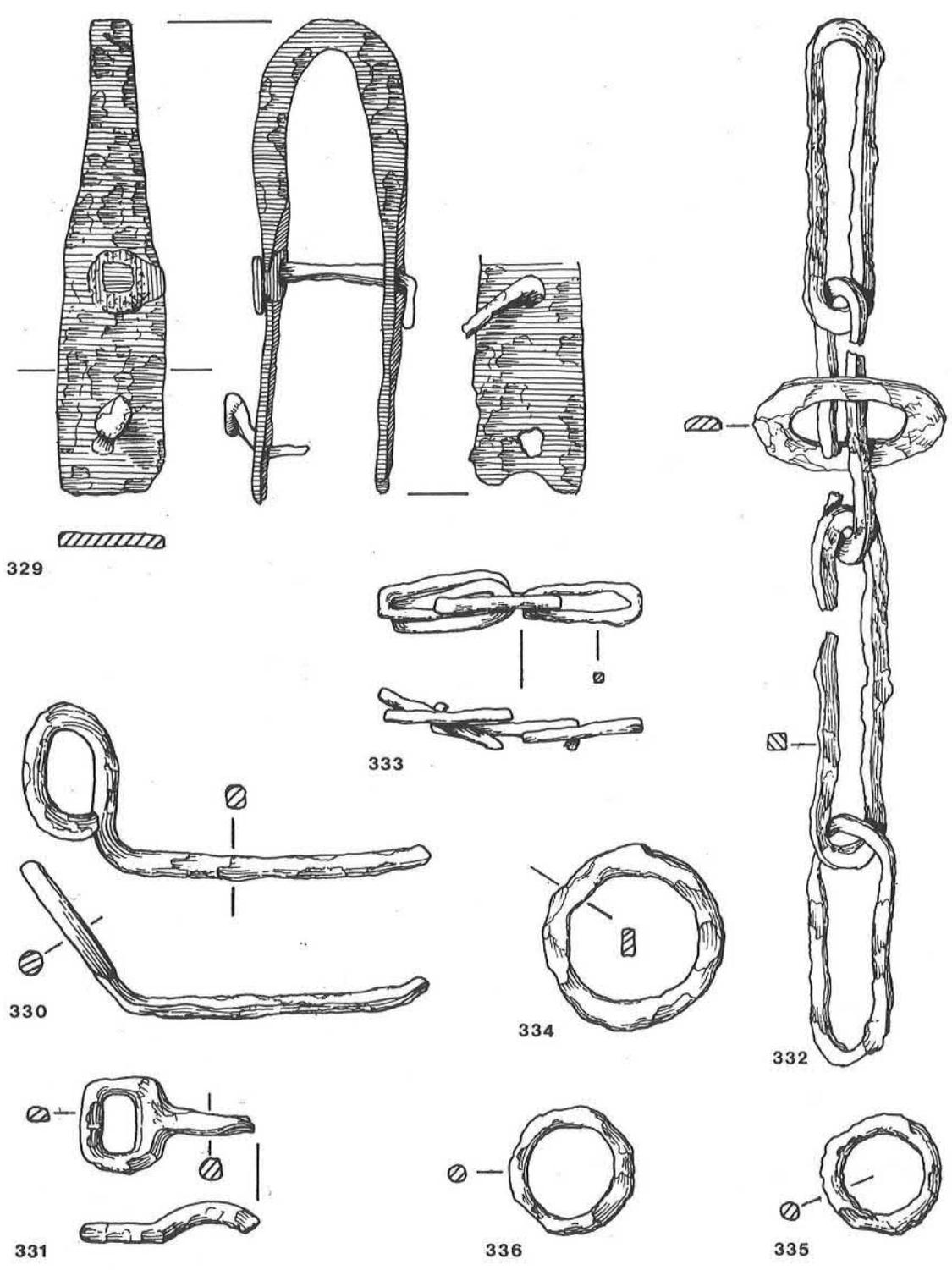


Fig. 59. Iron Objects 329-336 (scale 1:2).

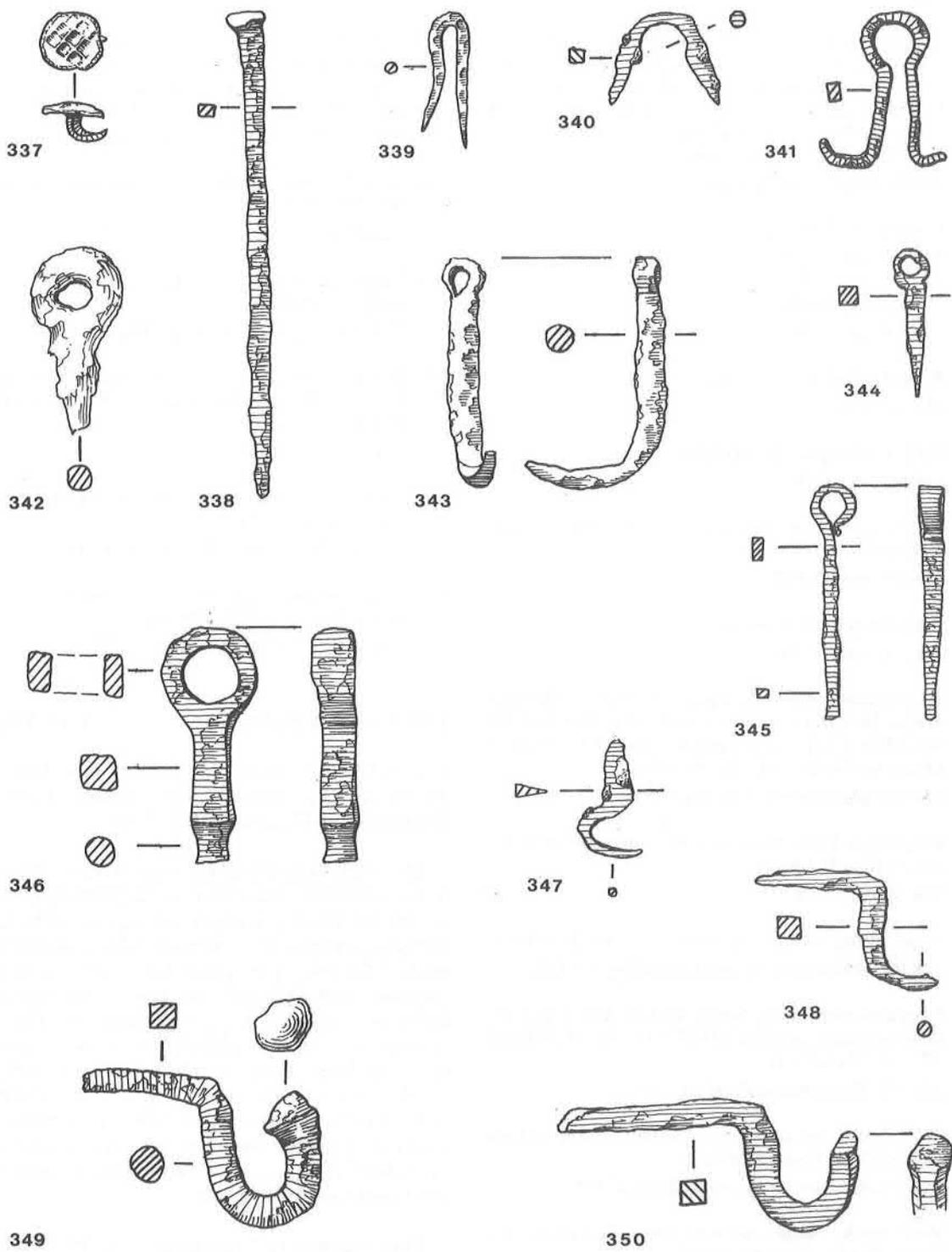


Fig. 60. Iron Objects 337-350 (scale 1:2).

## STUDS, STAPLES, PINS AND HOOKS (Fig. 60)

337. Stud, head D.20mm, shank L.c.20mm. Traces of raised square lattice pattern on head.  
MK301/uns./I.2.
338. T-staple with a small, damaged head. L.152mm. The point is probably broken. A common type which has a wide range of sizes and a variety of functions. Some of the larger examples are known to have held box-flue tiles in place, but others may have been no more than nails.  
MK96/Fill of Gully 1/F.13.
339. U-staple. L.43mm.  
MK105/uns./I.159.
340. U-staple. L.30mm.  
MK105/uns./I.141.
341. Ring-headed staple. L.50mm.  
MK301/uns./I.121.
342. Ring-headed pin. Hole D.9mm.  
MK64/uns./I.13.
343. Ring-headed pin. Thick shaft, very small eyelet. L.95mm.  
MK301/uns./I.122.
344. Ring-headed pin, L.45mm.  
MK105/uns./I.156.
345. Ring-headed pin, rectangular section, rolled-over eyelet. May have been made from a timber-lock lift key. (For a note on the possible use of this type of object see Neal, 1974, 178, no. 546).  
MK105/Destruction, Building 1/I.94.
346. Ring-headed pin. Possibly part of handle of implement? Ring D.18mm.  
MK105/uns./I.9.
347. Small hook, looking very much like modern latch.  
MK105/Stoke-hole, Room 3, Building 1/I.181.
348. U-shaped wall hook. Simple spiked wall hooks are quite common, see Neal (1974, 175, fig. 74, 510 and 177, fig. 75, 522-23).  
MK105/Destruction, Building 1/99.
349. Wall hook, circular-section shaft, square section tapered tang. Late second cent.  
MK301/Interior surface of Building 4/131.
350. Wall hook. Square-section tang, circular-section hook, slightly expanded at end.  
MK45/uns./IW.5.

## MISCELLANEA (Fig. 61)

351. Linked object, consisting of two rods, L.48mm and 58mm with linked loops at one end, the other end also being looped, each loop containing a ring

D.20mm. Similar in shape to a curb bit from Verulamium (Frere, 1972, 171, fig. 62, 23) but much smaller, being only L.100mm compared to 170mm. Function unknown.

MK301/From rubble layer north of Wall 26/75.

352. Linked object, consisting of two pieces similar to ring-headed pins, each with ferrule at opposite end ring. Total L.65mm, internal ferrule D.8mm. Function unknown, see no. 351 above.  
MK211/Destruction over Building 1/11.
353. Rod, L.45mm with ferrule D.10mm at one end, see nos. 351-52 above.  
MK64/uns./
354. Large split spiked-loop, has remnants of 'rings' in loop. L.125mm.  
MK105/Interior of Building 4/I.163.
355. Hook, circular in section with flattened end, possibly broadening into a triangular-sectioned blade.  
MK105/uns./I.84.
356. Two narrow strips riveted together, which then fork. Function unknown.  
MK105/Destruction, Building 1/I.112.
357. Strip, tapered at either end and bent at right angles. Large dog or cleat? L.80mm.  
MK211/Fill of ditch, context 61/75.

## LEATHER (Fig. 62)

J. H. Thornton

The following report, written by the late J. H. Thornton, is Ancient Monument Laboratory Report no. 3447, dated 4 July 1981.

The item submitted for report (no. 358) is the bottom unit of a Roman shoe, right foot, consisting of insole, lasting margins of upper with bracing thongs, various intermediate filling sections and part of the sole. The 'pack' has been heavily nailed together and although no nails now remain the holes are very clear, particularly on the insole surface. On the sole surface the depressions caused by the nail heads are more or less circular but on the insole they are irregular, their shape depending presumably on how the nail points were turned over when they struck the iron last during the nailing operation. (For a discussion of Roman shoe nailing see Thornton, 1973, 3-6.)

There appear to have been some 60-70 nails but the number is not precise as it is not always clear whether a hole has been made by a nail or by deterioration. The pattern of the nailing appears to be (a) a peripheral row, (b) three? longitudinal rows in the forepart becoming two at the start of the waist and one down the waist itself, (c) a rather indefinite scatter at the heel seat. Although

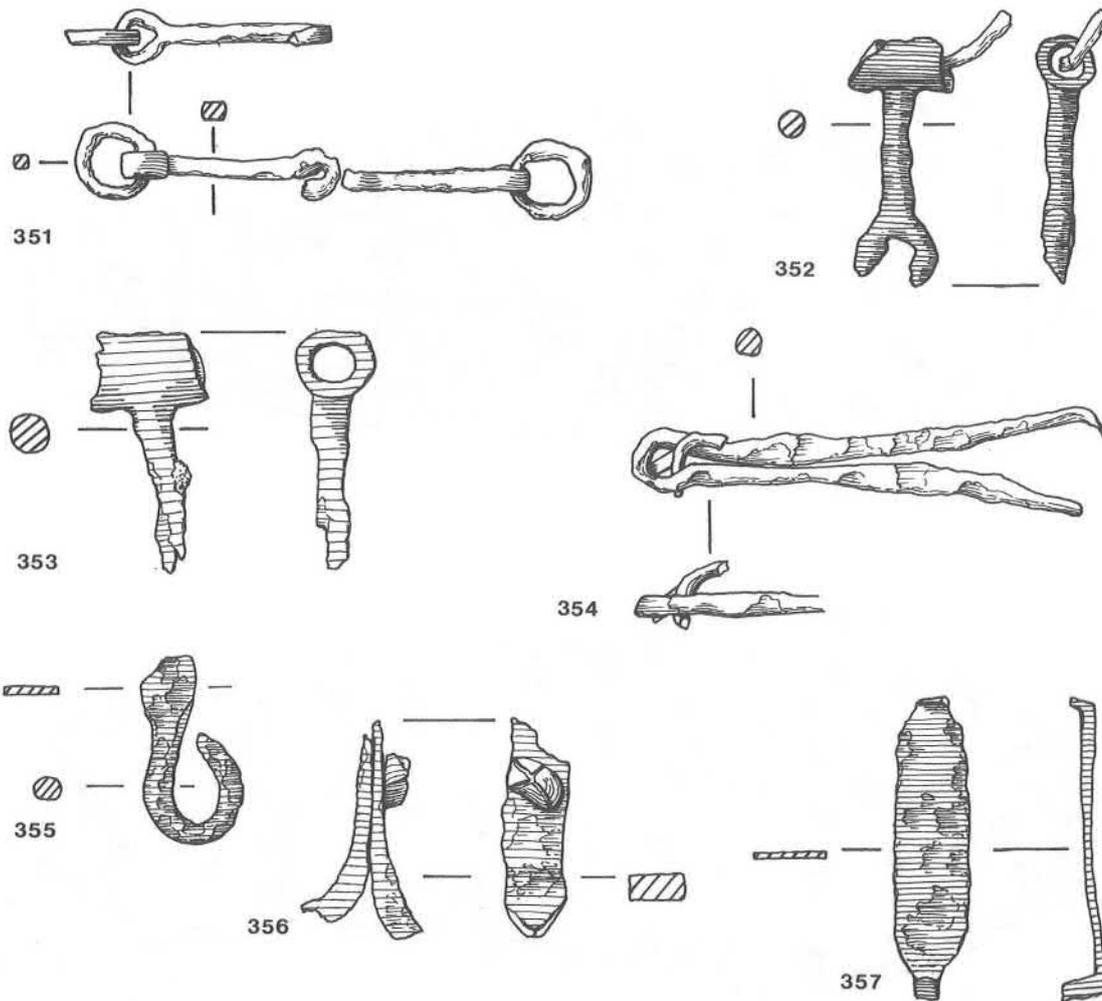


Fig. 61. Iron Objects 351-357 (scale 1:2).

attempts have been made to classify Roman shoe nailing patterns by some workers (Groenman-Van Waateringe, 1967 and Jones and Rhodes, 1980, 105-7), the present specimen has not been related to them as it is felt that the evidence is too scanty.

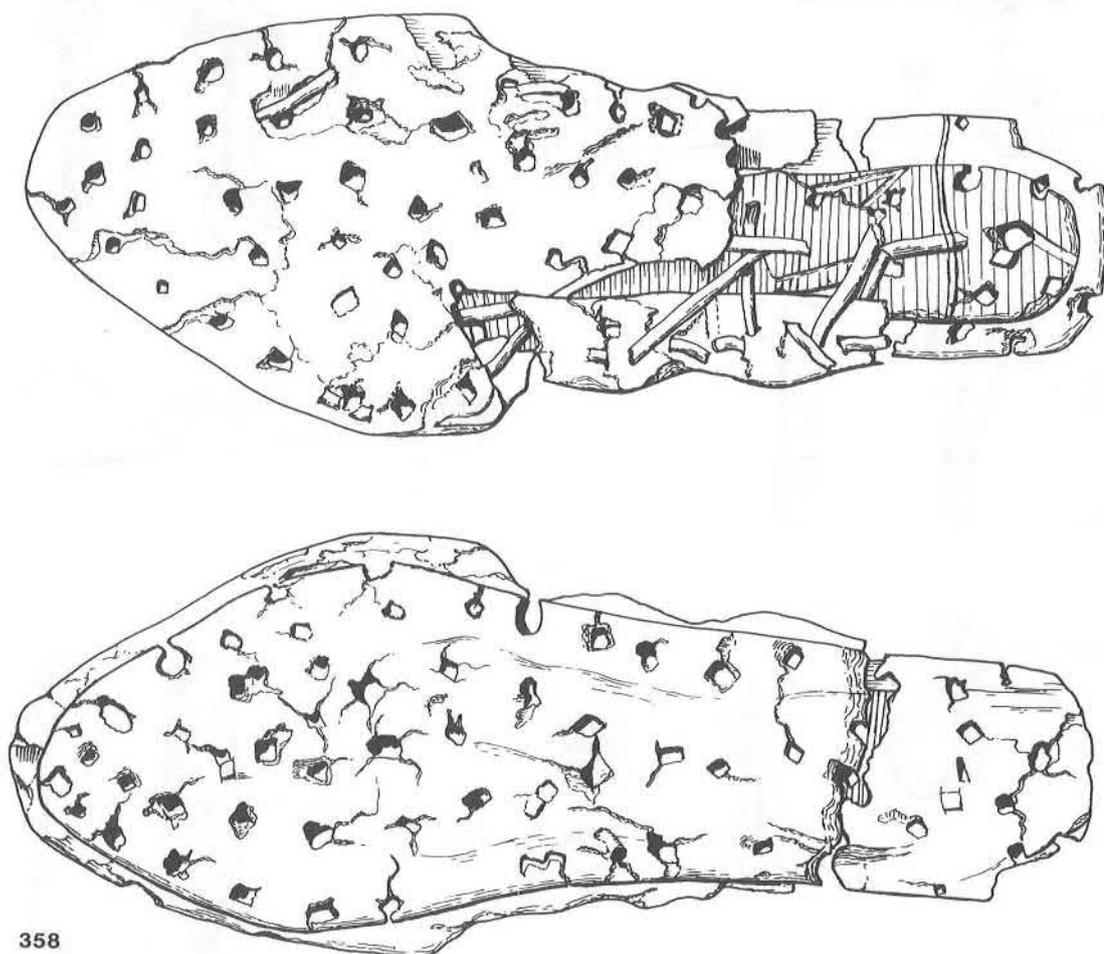
Insole: almost complete although the heel seat end has become detached in burial. It has what appears at first sight to be an unusually long heel-ball measurement, c.200mm, compared with the ball-toe measurement of c.85mm, i.e. a ratio of 2.35:1. This is common for Roman footwear but not for modern shoes where the ratio becomes less depending on how pointed the shoe is. The heel-ball measurement of a foot or last is not precise. In general terms it may be defined as the distance between the transverse tangent touching the back of the foot or the last and another transverse line passing through the most horizontally outstanding point of the big toe joint, both transverse lines being perpendicular to the longitudinal axis of the foot or last. Some foot-fitters prefer this measurement to the more usual toe to heel one.

It is interesting to note that the present writer's foot fits almost exactly over this Roman insole, suggesting that the original unit had an open-toe sandalized upper and was not a closed shoe; in a sandal the end of the foot toe and the insole foot more or less correspond whereas in a closed shoe there has to be a toe extension on the insole to allow for comfort in walking and also fashion.

Lc.280mm, W.(forepart) 95mm, W.(waist) 65mm, W.(seat) 63mm.

Upper Lasting Margins: these are visible on the left side (when the unit is turned upside down) from inside joint to seat and c.15mm wide; a detached fragment c.70 x 20mm, may be the corresponding margin from the right side. Criss-cross thonging has been used to brace the margins across the insole during the lasting operation.

Fillings: between the margins there are fillings, or middle sections, secured to the insole by longitudinal thonging. They are only visible at the



358

Fig. 62. Leather Shoe, 358 (scale 1:2).

rear waist and seat, the remains of the sole covering them at the forepart.

Sole: very deteriorated and what is left, mainly in the forepart, may be partly a lamina, the grain side having worn away. It is larger than the insole, which is normal both for early and modern shoes. The nail holes with some head depressions have been described above.

Perhaps the most unusual feature of this otherwise typical Roman shoe bottom unit is its large size compared with most excavated specimens. Without taking into account shrinkage in burial of perhaps 10% (Jones and Rhodes, 1980, 101-2), the present length of 280mm corresponds to size 8 (adults) on the present English shoe size scale.

The English shoe size scale begins at  $4\frac{1}{3}$  in. for size 1 (children) and then increases by  $\frac{1}{3}$  in. for each size to size 13 (children) at  $8\frac{1}{3}$  in. It then starts again at  $8\frac{3}{8}$  in. for size 1 (adults) and continues

upwards as far as required. An easy fixed point to remember is size 5 (adults) = 10 in.

If the original shoe was of closed upper type then the foot it was intended to cover would be size 7 or  $7\frac{1}{2}$ ; if the sandalized type with an open toe, then, as already indicated above, the foot would have been the same size as the insole.

The general shape of the insole is similar to those found at Hardknott (Charlesworth and Thornton, 1973, fig. 3d) and Billingsgate (Jones and Rhodes, 1980).

MK343, Section 1/Layer 1/L.1.

#### IRON SLAG

S. Fells

Most Roman sites that have been excavated in Milton Keynes have produced random samples of iron slag.

The only site where iron slag has been found in quantity and in fairly large pieces, suggesting that it was smelted nearby, is MK127 Bradwell Middle School. This is the only slag that we have submitted for specialist report. Samples were sent to Stephanie Fells of the Department of Metallurgy and Materials, Aston University, who has written the following report. (*Ed.*)

#### MK127 BRADWELL MIDDLE SCHOOL

Two large lumps of slag and several small fragments, mainly of baked and reddened sandy silt, have been investigated.

One of the slag lumps is plano-convex, c. 12cm in diameter and 7cm deep. The upper surface has a slight depression in it, whilst the more irregular, sub-conical, oxide-coated lower surface contains embedded charcoal and a few baked flint fragments. On freshly-fractured surfaces, the slag is vesicular, greenish-grey in colour and coarsely crystalline. A polished section shows 60% euhedral fayalite ( $2\text{FeO}\cdot\text{SiO}_2$ ) in a partly devitrified glassy matrix. Approximately 5% of iron oxides are also present, occurring either as tiny, sometimes angular dendrites within the matrix or as large, dense patches of globules and rounded dendrites. Etching with a saturated solution of stannous chloride in a 1:9 mixture of hydrochloric acid and methanol showed the oxide to be mainly magnetic.

The morphology, mineralogical composition and texture of this slag lump suggests it is an almost complete forging hearth bottom. The dense patches of magnetic dendrites may be hammer-scale incorporated into the slag. Apart from these patches, surprisingly little iron oxide is present, possibly indicating that the original smelting process was relatively efficient, with high iron yields. Several inclusions of ironstone were observed, consisting of 20% poorly-sorted quartz sand and subordinate feldspar in a matrix of iron oxide. These inclusions are magnetic and may represent partially reduced smelting furnace charge which had adhered to the bloom and been incorporated into the hearth bottom on forging. The quartz content of the ironstone seems rather high for its use as an ore in the Roman period but the size of the fragments (5-10mm across) makes it unlikely that they were added during forging to flux the slag in the bloom.

The other slag lump appears to be a segment from a roughly circular plano-convex body perhaps 200mm in diameter. The curved surface is coated with a mixture of iron oxides, quartz and sand, partially burnt red. A slice through the lump reveals it to be an agglomeration of charcoal and pockets of friable non-magnetic iron oxides with patches and veins of dark grey slag. A larger mass of grey-green slag occurs near the base; in polished section this exhibited a variety of textures, some areas

showing evidence of partial remelting and recrystallization, whilst in other areas the rounded and cracked nature of the fayalites and the granulated matrix indicate severe mechanical working. Again some magnetite is present. From the mineralogical textures and the appearance in hand specimen this fragment is also part of a hearth bottom, though the larger size and much smaller proportion of true slag suggests that the hearth may have been used for some other process, possibly further smithing operations.

Amongst the small fragments examined was a piece of slag whose mineralogical composition and texture is more typical of smelting slags; it had presumably been removed from the hearth shortly after being hammered from the bloom.

KeveX analysis of the polished sections show mainly Fe and Si with minor amounts of Ca, K and Al. The two hearth bottoms also show traces of Mg and Na. All of these elements, in the quantities observed, could have been derived from the ore and charcoal and there is no reason to postulate the use of flux in either the smelting or forging processes.

Most of the smaller pieces of ironworking debris found in the ditch were fragments of fired sandy silt, many slagged on one surface to a depth of 5-10mm. Since they were not found *in situ* it is impossible to tell whether they represent the lining of a hearth or are simply baked and slagged soil or subsoil, the hearth having been merely a hollow in the ground.

The material examined provides evidence for a small-scale forging/smithing operation. No true smelting slag was discovered and it is likely that smelting took place elsewhere, probably nearer the ore source.

Assuming that the ironstone inclusions are representative of the ore, we can speculate about provenance. The nearest major source of iron ore is the Northampton Sand Ironstone, whose closest outcrop lies some 16km to the north-west, around and to the north of Towcester. However, evidence for the early working of this ironstone is not strong. The only reference to Roman working of the Northampton Sand Ironstone is by Judd (1875) who states that there is evidence for extensive exploitation in Roman times, but does not elaborate. If used, the blooms produced may have been distributed to local centres for finishing and the fact that the Bradwell site lies near Watling Street may be significant. The Northampton Sand Ironstone becomes more sandy towards its margins (Taylor, 1949) and at outcrop is so deeply weathered that details of the original oolitic structure are lost. It is therefore consistent with the fragments observed within the hearth bottom. The lithology of these ironstone inclusions is also similar

to some horizons within the Variable Beds of the Towcester district. These overlie the Northampton Sand Ironstone and may have been mistaken for it in places. The Woburn Sands, which are often stained and locally cemented by iron oxides (Horton, Shepherd-Thorn and Thurrell, 1974)

outcrops some 11km to the south-south-east around Great and Little Brickhill. However the high quartz sand content of these particular ironstones is not matched by the inclusions in the forging slag and it is unlikely that the Woburn Sands were a valuable ore source.

CONCORDANCE OF SITES AND CATALOGUE NOS.

BRONZE OBJECTS

	Brooches	Bracelets	Rings	Buckles	Strap Ends	Nail Cleaners	Tweezers	Ligulae	Needles and Pins	Spoons	Lift Keys	Lock Pin	Styli	Scales	Pommels & Bosses	Studs & Rivets	Clasps & Fittings	Feet or Handles	Misc. Objects
MK45 HOLNE CHASE		22 30	35 46 47					114	75							93 95	102		118 140 142 134
MK64 WOOD CORNER		26 31						69	72	77					87 88 90 92			110	141
MK96 WINDMILL HILL	3 4																104		
MK98 WOUGHTON	16	27			61														
MK100 SHERWOOD DRIVE	2 5 6 18																		
MK105 BANCROFT VILLA	1 7 8 10 15	21 25 28	32 34 37 38 41 42 43 44	51 52 55 56 57	59	62 63	65		73 113	76 78 79	80 81		84 85	86		94 97 98 99	103 105 106 107 108 109	111	115 117 119 121 122 123 124 125 126 127 128 129 130







IRONWORK

179

		Spears/Arrowheads	Chisels	Punch	Spade Shoe	Ox Goads	Spud	Ferrules	Pruning Hooks	Styli	Tweezers	Bracelet	Cleat	Hobnails	Buckles	Shears	Knives	Keys	Hinges	Water Pipe Collars	Candlestick	Lamp Holder	Ring Headed Pins	Handles	Wooden Chest Fittings	Cart Fittings/Harness	Studs, Staples, Hooks	Misc. Objects	
MK45	HOLNE CHASE																									334	350		
MK64	WOOD CORNER							276 277							297		300 304 305 306						342				329 330 331		353
MK96	WINDMILL HILL			270				281								299												338	
MK98	WOUGHTON								287																				
MK100	SHERWOOD DRIVE																												
MK105	BANCROFT VILLA		267 268		271	272	274	278 282 283	284 285 288 289	290	291	292	293		296		301 307 309 310 311	313 314 315	318	320 321	322	324 325 344 345 346	326 327	328	332 333 335 336		339 340 347 348		
MK109	LITTLE WOOLSTONE								286																	355		354 356	
MK211	WYMBUSH					273																						352 357	
MK301	STANTONBURY	262 263 264 265 266						279 280						294	298		302 303 312		316 317 319			343					337 341 349		351

## REPORTS ON ENVIRONMENTAL SAMPLES

### ANIMAL BONES

Reports on the animal bones found on the sites excavated by the Unit were prepared by Doreen Field and the late Betty Westley. A number of general conclusions can be stated, and will not be repeated in the reports on individual sites.

The preponderance of cattle and sheep over pigs, and the paucity of deer (seen at all sites), suggest an open terrain of pasture and arable land, with an abundant water supply and little woodland. Horses were rare, as everywhere in Roman Britain, but their presence, even in small numbers, is consistent with open country. They were evidently kept principally for use.

The age range of the animals shows that both cattle and sheep were over-wintered, sometimes more than once. Skilful husbandry is indicated, and a productive agriculture with either extensive meadowland or surpluses of grain over and above local human needs.

The rarity of large skull bones suggests that animals were slaughtered by poleaxing, with crushing of the crania and frontal parts. There is no evidence for sagittal splitting of the backbone, though this was the preferred method of butchery in ancient as in modern times. This may be because the material is too broken up for the evidence to survive. Nearly all the bones had been chopped and split into very small fragments, and the scarcity of

Table 1: Percentages of species on each site.

	<i>MK64</i>	<i>MK96</i>	<i>MK105</i>	<i>MK109</i>	<i>MK211</i>	<i>MK297</i>	<i>MK301</i>
Cattle	46	/	36.9	31.7	42.3	40.9	43.0
Sheep	36.5	/	34.0	52.9	42.3	36.0	42.0
Pig	12.1	/	22.2	15.2	11.5	21.3	13.5
Horse	4.8	/	6.6	/	3.8	1.6	/
Dog	/	—	/	/	/	/	/
Deer	/	—	/	/	—	/	/
Cat	/	—	—	—	—	—	/
Domestic Fowl	/	—	/	/	/	—	—
Wild Bird	/	—	/	—	/	/	/
Hare	—	—	/	—	—	—	/
Weasel	—	—	/	—	—	—	—
Badger	—	—	/	—	/	—	—
Hedgehog	—	—	/	/	—	—	/
Frog	—	/	—	—	—	—	/
Fox	—	—	—	—	—	/	—
Rat	—	—	—	—	/	—	—
Mole	—	—	—	—	—	—	/

Note: / indicates that the species was found on site in insufficient quantity for estimation of percentage.

intact long bones made it difficult to arrive at conclusions about the size of the animals, and was an obstacle to minimum-number calculations. This comminution of the bones was much greater than would have been needed for cooking or even for glue-making. Table 1 shows the percentage of species from each site, based on the estimated minimum number of animals. (*Ed.*)

MK64 WOOD CORNER Doreen Field

All the bones were examined. Their condition was variable, some well preserved, some gnawed and bearing butchery marks, others with pitted or brittle surfaces, a few very burnt; most of the bones were broken. The usual domestic species were represented, cattle being the most abundant, with small quantities of horse, sheep, pig and deer. Other animals present were dog (two jaw fragments), cat (incomplete humerus) and chicken (three fragments of tarso-metatarsus, one with spur).

There appears to be little change in the ratio of animals kept during the different phases of occupation. A small amount of bone came from the earliest phase; the second period shows a slight increase; the third to fourth cent. features and yard surface were the most prolific.

The majority of the material was identified, and, where possible, the complete or partially complete bones were measured; their dimensions are given in Table 2 below. Unfortunately the shortage of complete long bones precludes any firm estimation of animal size.

#### *Size of animals*

A few bones were small with epiphyses unfused and missing, pointing to the presence of young animals, while others were extremely robust, and some, although fragmentary, were comparable in size to modern animals. A number of bones displayed strong muscular attachments implying that they came from working animals.

Out of the thirteen 1st phalanges found, only two could be related to one animal. The length of the 1st phalanges ranged between 38mm and 66mm, seven 2nd phalanges between 34mm and 43mm, and four 3rd phalanges between 57mm and 80mm.

Of the twelve horncores recovered only four could be matched as pairs; they measured 101mm to 201mm in circumference at the point of attachment to the skull, and between 78mm and 170mm in length. The surface of some cores was very smooth, others ridged, which may denote more than one breed. Several had slight indentations running across the core, perhaps indicating the use of harness.

Table 2: Measurements of Long Bones (mm).

Animal	Bone	Prox. Width	Dist. Width	Length	
(a) From the Yard Surface					
Ox	1st Phalanges	23	22	56	
		26	25	56	
		25	24	64	
		30	30	66	
		split lengthways			51
	2nd Phalanges	20	18	34	
		31	27	40	
		25	21	35	
		28	21	40	
		35	27	43	
	3rd Phalange	mid-bone	29		80
			—	47	162
	Metacarpal	65	—	149	
		51	—	57	
		—	49	127	
		—	66	101	
		50	—	104	
	Metatarsal	41	—	113	
		44	—	172	
		—	106	170	
—		52	—		
Humerus	—	97	—		
Tibia	—	—	130		
Femur	—	—	115		
Calcaneum	—	—	59		
Astragalus	—	—	66		
	—	—	68		
	—	—	195		
Horse	Metatarsal	49	—	144	
		27	—	—	
	Radius	17	—	63	
		—	23	75	
	Tibia	—	28	126	
		—	29	—	
	Calcaneum	—	—	54	
		—	—	61	
	Astragalus	—	—	23	
	Metacarpal	21	—	73	
		21	—	54	
	Metatarsal	—	28	—	
17		—	60		
14		—	61		
Ox	Horncores	18	—	47	
		201		170	
		130	(tip missing)	110	
		155		—	
		175		159	

## (b) From Features

Ox	1st Phalange	25	23	57
		27 half bone	—	—
	2nd Phalange	28	25	38
	3rd Phalange	18 mid-bone	—	57
		21 mid-bone	—	60
		26 mid-bone	—	64
	Metacarpal	64	75	188
		—	62	—
	Metatarsal	28	31	153
		51	—	138
	—	60	—	
	Femur	—	78	165
	Humerus	84	73	252
	Tibia	—	56	—
		—	59	—
	Astragalus	—	—	67
Horse	Metacarpal	47	49	225
	Radius	72	—	292
Sheep	Metatarsal	17	—	104
	Tibia	—	21	63
		—	22	74
		—	25	—
	Radius	29	—	—
	Calcaneum	—	—	52
		—	—	59
Pig	Radius	37	—	—
Ox	Horncores	<i>Circumference at Skull</i>		<i>Length</i>
				97
				78
				90
				148
				126
				107
				103
153				

Skull fragments were found in all phases. A small proportion belonged to the base and parietal area, but most came from the frontal and other thin sections of the skull. It was impossible to assess the number of heads. An upper part of a skull came from the yard surface (context B87); attached to this was a right horncore measuring 175mm around the base and 159mm long. The left horncore and a section of skull was missing. Fragments of left and right maxillae, eye orbital and nasal bones were also found in this context so one assumes these were from one animal.

Sheep, pig, and horse remains confirm the presence of young and old animals. A few fragments from sheep and pig were robust enough to have come from male animals.

Several phalanges bore traces of arthritic degeneration, but there is little evidence of abnormality in other bones. Mandibles with teeth and without teeth, and loose teeth, show little sign of decay or malformation, the majority of teeth being well worn. From context B42 and B87 a small section of ox maxilla has irregular pitting along the alveolar margins which may note some disease, but could be a normal condition in some bovid species (Baker and Brothwell, 1981, 192-93 and fig. 1).

*Ageing*

The age attained by some animals has been assessed from the state of eruption and wear of teeth, and the epiphysial fusion of long bones (Table 3).

Table 3: Age attainment derived from the state of eruption and wear of teeth and epiphysial fusion of long bones.

## (a) Features

	-1 yr	1-2 yrs	2-3 yrs	3-4 yrs	4+ yrs
<i>Dentition</i>					
Ox	4	5	10	5	5
Sheep	6	7	3	3	2
Pig	1	1	3	—	—
<i>Long bones</i>					
Ox	1	8 (inc. 3 phalanges)	7	2	4
Sheep	1	1	6	—	—
Pig	2	2	—	—	—
Horse	—	2	1	—	—

## (b) Yard Surface

<i>Dentition</i>					
Ox	10	10	13	7	8
Sheep	12	11	2	5	5
Pig	3	3	5	—	—
Horse	—	1	2	—	5
<i>Long bones</i>					
Ox	3	29 (inc. 17 phalanges)	14	11	2
Sheep	4	3	6	3	—
Pig	2	4	—	—	—
Horse	—	2	2	1	—

Data was obtained from Silver, 1969. Where Silver has given alternative data the earliest has been used.

The ageable cattle teeth and jaws show that 14 animals were under one year, 15 were two years old, 23 three years, 12 four years and 8 over four years.

Of the ageable bones 4 were under one year, 37 were two years old, 21 three years, 13 four years and 3 were over four years.

Sheep teeth and jaws indicate that 17 died or were killed in their first year, 18 survived into their second year, 5 their third year, 8 reached their fourth and 7 their fifth year. There were 5 left and 3 right mandibles all differing in size, testifying remains from at least eight animals. The long bones indicate an age range of a few months up to four years, with the peak coming in the third year.

Horse and pig remains were meagre, comprising a few loose teeth and bone fragments. The horse remains can be assigned to an age of four years, and pig to three years.

Other species present were: cat (one fragment of humerus); chicken (three fragments of tarso/metatarsus, one bearing a spur); dog (two left mandibles, one containing a first and second molar from a collie-sized animal, and the other devoid of teeth, from a terrier-sized animal).

Roe deer is represented by a few fragments of bone only, and red deer by four fragments of antler of which one had been worked (see cat. no. 176 and Fig. 45 above).

#### *Minimum number of animals*

In estimating the minimum number of animals of each species (Chaplin, 1971, 69-75), vertebrae and ribs were disregarded. The remaining skeletal material was sorted into species and skeletal order and the following assessments made (Table 4).

Table 4: Minimum Numbers of Animals.

	Ox	Horse	Sheep	Pig
<i>Features</i>				
late 2nd, early 3rd cent.	3	—	2	1
3rd cent.	3	—	2	1
4th cent.	5	1	3	1
<i>Stockyard</i>				
4th cent.	8	1	8	2
<i>Total</i>	19	2	15	5

Remains of horse and pig are meagre (non-existent in the early phases in the case of horse), and the numbers for these animals should be used with caution.

#### *Conclusions*

There is a similarity in the natural environment and frequency of faunal remains recovered from this site and those from the settlement at Quinton, Northamptonshire (Friendship-Taylor, 1979, 169-76), particularly when comparing the dimensions of cattle metapodials, phalanges and tarsal bones.

During the long period of occupation the economy and use of land appears to have remained constant. There was no evidence of industry, there

being no worked bone or horncore from sheep and cattle. Any leather processing must have been carried out elsewhere, otherwise there would have been a high proportion of skulls and foot bones present in the cattle remains.

There is no conclusive evidence, but the size of the bones could mean that stock was well-housed, and may even indicate selective breeding for milk, meat or hides. This points to a farming community skilled in husbandry, probably supplying other groups in the vicinity, and becoming increasingly prosperous in the later phases of the Roman occupation.

#### MK96 WINDMILL HILL

Betty Westley

Osteological material from this site consists of only 180 identified fragments, a small number in comparison with other sites. The fauna is of cattle, sheep, pig, dog and frog. The numbers of fragments of each species and the percentage of the whole that they represent are shown in the table below.

Table 5: Percentages of Species at Windmill Hill.

<i>Species</i>	<i>No. of frags.</i>	<i>% of total</i>
Cattle	98	54
Sheep	48	27
Pig	10	6
Horse	11	6
Dog	12	7
Frog	1	—

These statistics have not been shown in Table 1 which is based on estimated minimum numbers of animals.

The chopped-up bones of food animals (cattle, sheep and pig) form 87% of the whole collection and must represent the remains of meals. The total number of fragments is too small for any useful statistical calculations, or even for the 'minimum numbers' of species to be worked out, for in addition to the smallness of the collection, the material is also very fragmentary for the most part. For this reason, too, it was not possible to arrive at the numbers of the different bones present, a reckoning of which can sometimes show any preferences for certain cuts of meat.

A general glance, however, seems to show a good deal of the heavier parts of the carcase, in the case of cattle, such as pelvic and vertebral fragments, and rather fewer limb fragments than might have been expected.

#### *Age and Sex*

There are few indications of age except that some pieces show the granular surfaces of unfused epiphyses, meaning that, although not juvenile, the

beasts are not fully adult, and it seems safe to suppose that they were in general slaughtered in their second year. This applies to all the three domesticates. There is no sign of very young (first-year) animals. As far as the material allows one to judge, all three domesticates are of a fairly uniform size, which can be expected from such a site, except that the cattle look rather larger than is common to Romano-British sites. There are two complete cattle metacarpals (the only complete limb-bones in the collection), and these are strikingly large and stout (see below, measurements). It would seem they belong to two different bulls.

No evidence of the sex can be seen in either cattle, sheep or pigs. There are no skull parts of sheep and no horncore evidence, so we do not know if they are the slender, horned prehistoric type. The remains look as if they were somewhat larger animals than the early horned type, but this must be doubtful in view of the small number of the remains and the fragmentary nature of them.

#### *Butchery and Pathology*

Nowhere is there any evidence of disease or injury. Many fragments bear knife marks but there is no indication of butchery methods.

#### *Measurements*

As mentioned above, there are but two complete limb bones and these are metacarpals of cattle, which measure 201mm and 217mm respectively. The latter is also a very stout, wide bone. The metacarpals and metatarsals often survive whole, partly because they are very dense and heavy and must be difficult to chop and also probably because they contain less of the marrow and gelatine that was presumably sought after by means of all the elaborate chopping that was resorted to. The two metacarpals are certainly much longer than the average length for a Celtic Ox from my lists, which is 175mm.

#### *Discussion*

As a whole, the collection is similar in type to those from other sites of Roman Britain, except that the farm animals seem rather larger, but the material is too slight to give more than a possible hint of this.

The proportion of the domesticates in relation to each other are quite normal, with cattle exceeding sheep, which exceed pig. Horse fragments (6%) are a little more numerous than usual but in so small a collection, no significance should be read into this. The horse remains are mostly teeth and pieces of mandible.

It is unusual that there should be no trace at all of wildlife, indicating a busy (and perhaps enclosed) farming environment.

This material was excavated over a period of several years and this report is an amalgamation of former reports.

The total number of fragments identified was 3844, distributed among the species shown in Table 6 below, together with the numbers present of each species and the percentages of the whole that they represent.

The counting of fragments is determined, to some degree, by one's own judgement. I have counted complete items, such as a human cremation, as one, and also such things as remains of a young lamb, crushed. Apart from this kind of item, all fragments appear separately in the count, even when they are pieces of a single bone that has been broken.

Table 6: Percentages of species at Bancroft Villa.

<i>Species</i>	<i>No. of Frag.</i>	<i>% of total</i>
Man	36	1
Hare	25	½
Dog	106	3
Fox	8	—
Horse	90	2
Red Deer	70	1½
Pig	714	18
Cattle	1478	39
Sheep	1098	30
Domestic Fowl	199	5
Wild Bird	20	—
<i>Total</i>	<i>3844</i>	

Also present were single fragments of weasel, domestic cat, badger, hedgehog, frog, fish, and remnants of oyster shells.

Almost the entire collection is of fragments and complete bones are very few indeed. The material represents, almost wholly, food remains from pits and trenches. In such a collection it is difficult to arrive at any estimation of the relative numbers of animals present. There are two commonly used methods, both applied here, but I feel that there is too large a margin of error for useful results. The first method is a comparison by means of the simple counting of fragments, as in Table 6, and the working out of comparative percentages. The second is the 'minimum numbers' method. Both are applied only to the food animals, in the hope of estimating the sizes of flocks and herds and perhaps arriving at population sizes. In a collection consisting almost entirely of well-chopped bones it is difficult to estimate minimum numbers, and here, indeed, it has been impossible in some areas, but more hopeful where fragments are larger (Table 7).

Table 7: 'Minimum numbers' of animals, Bancroft Villa.

Cattle	266
Sheep	245
Pig	160
Horse	48

For an explanation of the method, see Chaplin (1971, 69-75).

The three food animals appear in an approximate ratio of 3 (cattle) : 3 (sheep) : 2 (pig).

#### *Numbers of each type of bone present*

Here again, fragmentation causes great difficulty. It is not possible to make a count. There are only 17 complete cattle limb bones present and none of sheep or pig, and sizeable fragments are remarkably few. The limb bones mentioned are all 'cannon' bones, i.e. lower leg bones, and these are the most dense bones of the quadruped body since they have to bear the whole weight of the animal. Their survival does not mean that they represent the most commonly used meat. They survive whole possibly because they are the most difficult to chop.

The general impression given is that all parts of the body are represented excepting the skull. There are no large skull fragments, though quite a number of mandibles with the teeth present.

There is one exception to the generality of fragments, which is a burial of what was once presumably a whole ox. The backbone remains, with 5 cervicals including the atlas and axis. This presumably represents uncooked meat, perhaps the result of disease or accident.

#### *Age and Sex*

The food animals, judging from teeth and bone epiphyses, were all slaughtered in their second year, probably towards the end of it. There are just a few examples of lambs and piglets a few weeks old but these are rare. There is no evidence of young calves. Occasional cattle fragments look stouter than others and may represent an old bull. The material allows no deductions as to sex; all animal sizes and fragments seem quite uniform.

The sheep are of a horned type, small and slender. Horn cores are fragmentary; there are none whole. Some of these remains may be of goat; there is no means of telling.

The pigs appear to be of some small domestic breed, also slaughtered in their second year. This material is even more nebulous than the sheep and cattle, consisting chiefly of parts of mandibles and teeth. It may be that pig bones do not survive well. It is unusual to find limb parts of any size in a collection.

#### *Butchery and Pathology*

From the bones, the collection appears to be

from healthy stock. There is no evidence of bone malformation or tooth decay, except the occasional occurrence of deformity in the first phalanges of the foot (the cloven hoof).

Methods of butchery are not very clear, though there are numerous knife and saw marks at random. Sheep and pig bones bear knife marks as well as cattle, but horse fragments, and the complete metacarpal in the list on Table 8, do not.

#### *Measurements*

Only the cattle, and one horse, yielded complete limb bones. These are given in Table 8. They are all metatarsals or metacarpals. The sizes of these bones fall into a range of measurements of complete bones kept by me for some years for Roman Britain, but they tend towards the larger extreme, suggesting, perhaps, that flocks and herds were improving through new breeding methods or importation.

Table 8: Overall lengths of complete bones, Bancroft.

<i>Bone</i>	<i>Cattle</i>	<i>Horse</i>
Metatarsal	225	
	221	
	212	
	191	
	184	
	224	
	190	
	215	
	222	
	Metacarpal	169
	180	
	212	
	189	
	174	
	174	
	230	
	194	

(Lengths in mm)

#### *Discussion*

The fauna is well in accordance with that found on a typical Romano-British villa site, the bone material coming mainly from food animals with traces of wild species and human skeletons. The percentages of the food animals are not unusual. Sometimes cattle predominate and sometimes sheep, depending, probably, on the pasture available. Here, cattle exceed sheep, and both exceed pig, in a rough ratio of 4:3:2 by a count of fragments, though 3:3:2 by the 'minimum numbers' method (with slightly more cattle). But it is doubtful if either of these methods provide reliable figures in this particular instance.

The 2% of horse remains is typical of such sites and of Roman Britain as a whole. The one complete

limb-bone of horse in this collection represents an animal of about 13 hands, quite small. (Donkey, which one might expect at least occasionally in the south, I have only once found, one animal from Verulamium.)

More dog remains might have been expected; there is trace of only partial skeletons and uniform type, about spaniel-size, with no sign of any variations, except for 3 fragments of a huge dog.

Reverting to the food animals, it is quite impressive to examine the degree of chopping of all the bones. It is done often with great skill and is practically an invariable custom in all prehistoric and Roman site material. The chopping is done very much smaller than a butcher would do today and so far as I know the reason for this practice has never been explained. It must take time and also requires great skill; for instance it is common to find even the small long-bones of the foot chopped sagittally with great accuracy. Bones do not have to be so treated to make good broth.

There are comparatively few wild species present. It is unusual to find no roe deer and there is little evidence of red deer, apart from antler fragments, of which one is roughly worked for use as some implement. One limb bone has knife marks and is chopped up, and so was presumably a joint for consumption, the result of hunting, but there is no other evidence of the chase. It is usual to find more evidence of fox, and we have single fragments only of weasel, badger and hedgehog, though a fair number of hares.

The bird bones bear out the overwhelming testimony of a domestic fauna (only 20 fragments of wild birds to 199 of domestic fowl). The wild birds are mostly unidentifiable by me, but some are long-legged waders, something like a curlew or a sandpiper. The domestic fowl are quite plentiful and point to poultry-keeping as an established custom. They are a good deal smaller than most modern breeds. Several cockspurs are present, probably indicating cock-fighting as a sport.

The collection as a whole shows a fairly urban type of environment, probably a flourishing community. It resembles the osteological material from other sites of the period. The bones are too fragmentary to trace evidence of stock improvement or change of variety, though it appears that the size of cattle was here rather greater, on average, than some other cattle of the period.

MK109 LITTLE WOOLSTONE Betty Westley

The material consists of eight boxes of broken bones. It is very substantially different in appearance from the previously examined material

from MK301 Stantonbury (see below) in that it consists of entire bones which have apparently been broken apart by the stresses of burial and excavation, but have *not* been chopped into small fragments as was the case with all the bones from Stantonbury and other local sites. It seems plain that the inhabitants of Little Woolstone had no use for bone fragments in quantity, at least so far as this deposit of bones shows.

I have recently found another explanation for the massive amounts of fine-chopped bones that we come across in very many Iron Age and Romano-British sites. The reason is usually supposed to be the manufacture of broth or glue. But in the past, as now, crushed bones were much used on the soil for their phosphate value and gardeners used them in particular for vines, e.g. at Hampton Court and Chatsworth. The difficulty was to crush the material sufficiently. If this could not be done, very little phosphate could be released, and that very slowly. Bones were therefore collected and stored in layers of wood ash in barrels to which water was added, and the mixture was left to ferment. This was reputed to make the mixture easily crushable with a spade, producing a kind of 'bone meal'. A large quantity of bones is needed to start the process. I know of no reference to this in the ancient literature, but one wonders if the producers of the large quantities of chopped bone that we find were trying to fertilize vines (Hills, 1980). It is impossible to chop or crush bones by manual means.

Almost all of the Little Woolstone material is from domestic animals and so presumably is food remains. The fauna consists of horse, cattle, sheep, pig, dog, red deer, hedgehog, domestic fowl, and one possible fragment of roe deer. There is no sign of man, which is a little unusual, for there is generally some trace such as a cremation, infant burial, or the odd human bone on a rubbish heap (difficult to interpret). The totals of fragments are given in the accompanying tables.

Table 9 shows the number and percentage of bones by species, and Table 10 the 'minimum number' in the given groups. I do not, however, consider that reliable calculations of populations can be made from these figures because of the unknown chronological factors involved.

It must be remembered that the figures in Table 9 refer to fragments and not to whole bones; but in the case of this site the fragments are mostly of a good size, the general appearance being of bones that have broken into three or four pieces, rather than into thirty or forty in the way mentioned above.

Table 9: Percentages of Fragments by Species, Little Woolstone.

Cattle	Sheep	Pig	Horse	Dog	Red Deer	Roe Deer	Hedgehog	Dom. Fowl
444	220	36	22	8	9	1	2	2
60%	30%	5%	3%	—	—	—	—	—

Total: 744 fragments.

Table 10: 'Minimum numbers' of animals at Little Woolstone.

Cattle	Sheep	Pig
27	45	13
32%	53%	15%

Total: 85 animals.

### Types of Bone

All parts of the body are evidenced in the sheep and cattle, while the pigs, less numerous, yield mostly the odd tooth or jaw fragment. Although the sheep and cattle exhibit a good many knife and saw marks, they are irregular. There are no marks on the deer bones or the horse bones to indicate that the animals were consumed. It should be noted that all the bones in this collection are (comparatively) complete and many pieces can be joined together. Another less-than-usual feature is the presence of two large cattle skulls (partial) from the upper fill of Ditch 10. These are similar and give us a very good idea of the size and shape of the oxen. Both consist of the cranium and frontal, with horncores. Although smaller than an average modern animal, they do not strike me as particularly small, as do prehistoric cattle. A complete mandible, also from the upper fill of Ditch 10 but not associated with the above-mentioned frontals, is very little smaller than a modern example that I have, obtained from a butcher. Yet the limbs of the ancient animals give the impression of being fairly short and the picture is of a beast with short legs and quite a large head. I do not know of any complete example of a prehistoric or Romano-British cattle skeleton.

### Sex and Age of Domesticates

The general age of the beasts is two years, and they were probably butchered towards the end of their second year. There are a few examples of lambs and calves killed in their first summer but they amount only to a small fraction of the total. Many bones bear knife marks or the marks of sawing.

There is no sign of disease or deformity. But several near-complete limb bones of a single individual ox come from Pit 11, so it was presumably buried whole, and one wonders why.

### Other Points

The collection is not typical in that there is no content, to speak of, of chopped-up bones. The fauna is typical, being chiefly of the domestic food animals, with little wildlife, which is exemplified

only by a single hedgehog, a single (doubtful) roe deer and some fragments of red deer antler. This does not seem to indicate a very rural environment, where one might have expected to find fox, hare, rodents and a variety of wild birds. There is a trace of domestic fowl but it does not seem that poultry-keeping figured at all largely.

The few horse bones represent only 3% of the total fragments and this percentage, or something very near it, is a steady one for all Romano-British sites. I do not think an entire horse burial has ever been found in a settlement such as this and it is difficult to account for the few odd bones, from various individuals, that one finds scattered over a site. They never bear marks of gnawing, in my experience, and one wonders how they got there and why other animals did not, apparently, feed on them.

The sheep are of the usual small, horned type, but they are not consistently small; there are a few larger individuals among them. It is always possible that a few goats might be present though there is nothing to indicate this except a difference of size among the herd. Nor are there any large fragments of horncores, only the smallest traces, and no sheep skulls, so the heads were probably removed before the carcasses were jointed and eaten.

Length measurements of complete bones are shown in Table 11 below. There are few, because although the collection is a good one, in clean condition and not too broken up for study, the ends of bones are usually rather battered and eroded and seldom complete enough for a fair appraisal.

Table 11: Overall lengths of complete bones, Little Woolstone (mm).

Species	Humerus	Radius	Metatarsal	Tibia
Horse	1:272 (25)			
Cattle		1:315 (23)	1:225 (23)	1:347 (35)

MK211 WYMBUSH

Doreen Field

### General Layers

The animal bone presented for analysis came from numerous contexts, each containing a small amount of bone. A few of the contexts produced small quantities of remains from one animal only, but conditions do not suggest any having votive or ritual significance. The total weight of bone examined was 14.9kg of which 80% was identified. Table 12 below gives the 'minimum number' of animals represented by the material from the site. These can only be a small fraction of animals present during the occupation of the site. In

estimating the minimum numbers (see Chaplin, 1971, 69-75), ribs and vertebrae were discarded, and the remaining skeletal material was sorted into species and skeletal order and assessed.

Table 12: Minimum number of animals, Wymbush.

<i>Animal</i>	<i>General Layers</i>	<i>Features</i>	<i>Total</i>
Ox	4	7	11
Horse	1(1 bone, 2 teeth)	1	1
Sheep	4	7	11
Pig	1	2	3

The majority of the bones were in a fragmentary state; a few bore traces of burning and many had been gnawed and were split or chopped, and, whilst specific features have separate reports, the general condition of the bones is constant throughout. There was no evidence of further use as tools.

The main animals represented are ox, horse and sheep, plus small quantities of pig and deer, also a canine of a dog and a rat's femur. Bird remains consist of three fragments of a crow-sized bird and a small piece of goose/swan humerus. Dimensions of complete bones, or those measurable proportions, are given in Table 13. Of the 25 measured, 10 are first or second phalanges of ox. Unfortunately there is a shortage of complete long bones upon which an estimate of size can be based.

### *Size of Animals*

There were no complete ox skulls or horncores. The bone fragments, which come mostly from the frontal and other thin areas of the skull, can be attributed to at least three animals, some bearing traces of horn, others none. The horncore fragments are from short- and longer-horned animals. The difference in size and conformation points to more than one breed present.

The long bones come from large, medium and small animals. Some of the ox bones display heavy muscle attachments implying their use as working animals; horses may also have been a necessary part of the economy, presumably for traction or riding. The horse metacarpal from ditch 76 is the only specimen which shows serious malformation, with a bony proliferation probably due to arthritis deforming the proximal end; the remainder of the limb is quite normal.

The smallness of some of the bones and lack of epiphyses point to the presence of very young animals, possibly being only a few weeks old at death, whilst other remains indicate mature, robust animals. Table 14 indicates, from the epiphysal fusion of the long bones, the age attained by some of the animals. The paucity of material precludes any useful data from which conclusions may be drawn.

Table 13: Overall dimensions of bones, Wymbush (mm).

<i>Reference</i>	<i>Animal</i>	<i>Bone</i>	<i>Length</i>	<i>Prox. Eph. W.</i>	<i>Dist. Eph. W.</i>	<i>Midshaft W.</i>
211/11	Sheep	Radius	—	27	—	—
211/34	Ox	1st Phalange	60	26	25	23
211/37	Pig	1st Phalange	36	12	9	10
211/42	Ox	1st Phalange	54	24	23	23
211/42	Ox	2nd Phalange	36	24	20	22
211/42	Ox	2nd Phalange	34	25	20	21
211/42	Ox	2nd Phalange	32	22	18	18
211/42	Ox	Astragalus	60	—	—	42
211/42	Ox	Astragalus	55	—	—	36
211/42	Ox	Tibia	—	—	61	—
211/42	Ox	Humerus	—	—	72	—
211/42	Ox	Metacarpal	168*	52	47	30
211/42	Horse	Metacarpal	—	—	46	—
211/44	Ox	Humerus	—	52	—	—
211/44	Horse	L. Radius	—	—	70	—
211/44	Horse	R. Radius	—	—	70	—
211/56	Ox	2nd Phalange	38	31	24	27
211/57	Ox	2nd Phalange	36	27	21	20
211/61	Ox	1st Phalange	61	33	30	29
211/64	Ox	1st Phalange	65	32	32	30
211/66	Ox	Metacarpal	193	65	65	38
211/66	Ox	Metatarsal	187	59	—	34
211/66	Ox	Humerus	—	—	84	—
211/66	Ox	Radius	—	66	—	—
211/66	Ox	2nd Phalange	40	33	25	28
211/76	Horse	Metacarpal	230	66	51	34

\*Distal eph. broken off, missing.

### Ageing of Animals

Some caution is necessary in assessing age because once the epiphyses are fused, and teeth have come into full wear, an age assigned can only be a minimum one, i.e. 2 years or over.

The ageable cattle teeth and jaws show that 8 came from animals under one year, 12 were two years old, 17 three years and 6 four years and over. Of the 26 ageable bones none were under two years, 16 were over two years, 7 aged three years and 3 over four years.

Sheep teeth and jaws indicate that some died or were killed in their first year. A few survived to the third or fourth year, but the peak of slaughtering comes in the second year. Bone remains come within the range of six months to two years.

Pig is represented by 6 teeth (2 under two years and 4 under three years) and 3 bones (1 each from the first, second and third years).

Horse remains can be assigned to an age of four years or more. These remains comprised 2 loose teeth and 5 long bones.

All of the teeth found were well-worn.

Data for ageing was obtained from Silver (1969). Where he has given alternative tables, the earliest data have been used. Note: for simplicity, the term 'sheep' has been used instead of 'sheep/goat'.

Table 14: Age attainment derived from the state of eruption and wear of teeth and epiphysial fusion of long bones.

Animal	-1 yr	1-2 yrs	2-3 yrs	3-4 yrs	4+ yrs
(a) Dentition (M = Jaw with one or more teeth)					
Ox	M + 7	12	M + 16	MMM + 2	M
Sheep	9	MM + 13	M + 3	MM + 4	—
Pig	—	M + 1	M + 3	—	—
Horse	—	—	2	—	—
(b) Long Bone					
Ox	—	*16	7	2	1
Sheep	3	3	—	—	—
Pig	1	1	1	—	—
Horse	—	2	—	3	—

\*This total includes 4 1st and 6 2nd phalanges.

### Conclusions

Any conclusions drawn from the material on this site must be very tentative, since the sample was small. The remains seem to be consistent with a small farming group which appears to have kept cattle in preference to other animals. The predominance of cattle suggests the open terrain that is needed for raising cattle, and the fact that they were kept over several winters shows the ability to grow enough food for summer and winter feeding.

Sheep were also overwintered, and as cattle and sheep are complementary in their feeding habits (i.e. sheep can graze grass that is too short for cows) one can conclude that they were kept for their by-products (e.g. milk, hides and wool) rather than just for food.

Scant remains of pig could denote only small areas of woodland or testify to a degree of forest clearance nearby. Pigs running semi-wild in woodlands would not be competing for food with other domesticated animals, and would provide an extra source of meat. This would also apply to deer.

The presence of horse bones also suggests a fairly open countryside in which a horse could be of use; it could also mean that the community successfully traded their products to nearby settlements.

MK297 WOUGHTON

Betty Westley

This small collection is almost entirely of food refuse. 347 fragments were identified, showing a fauna that consists of cattle, sheep, pig, horse, dog, fox, roe deer and wild birds. The number of fragments of the different species and the percentage each represents of the whole fauna are shown in Table 15 below.

Table 15: Percentage of species by fragments, Woughton.

Species	No. of fragments	% of total
Cattle	200	58
Sheep	95	28
Pig	21	6
Horse	19	6
Dog	8	3
Fox	1	—
Roe Deer	1	—
Wild Bird	2	—
Total	347	

### Numbers of animals present

In a small collection such as this, little attention should be paid to the figures quoted as 'minimum numbers' of each species. However, consistent with the presentation of figures from previous sites above, the statistics are given in Table 16 below.

Table 16: 'Minimum numbers' of animals, Woughton.

Cattle	25
Sheep	22
Pig	13
Horse	1
Total	61

### Types of Bone

All body parts seem to be present, in the domesticates, except for any sizeable aparts of skulls. It is probable that animals were pole-axed and the skulls

thus crushed. There are a few small skull fragments of cattle and sheep but they do not account for the whole of the heads, nor is there much to be found of the pelvic parts, and it would seem that the weighty parts of the carcasses (head and pelvis) remained at the place of slaughter and that the rest, probably cut into joints, was brought to the spot where it was finally excavated.

There are some fragments of sheep horncore and the sheep seem to be small, lightly-built animals, the typical 'prehistoric' type. Goats could well be present in the material, but not definably.

#### *Age and Sex*

Species appear to have been slaughtered in their second year, judging from unfused bone epiphyses, which is the only age evidence. The three food animals, cattle, sheep and pig, seem to be fairly uniform in type and size, so far as one can see from fragments, and there are no unusual animals to be seen nor any evidence as to sex.

#### *Butchery and Pathology*

Many fragments bear knife marks (but not the horse bones—horse was never eaten, though the bones are usually present, in small quantity, in rubbish pits). The knife marks suggest no methodical way of jointing. There is no suggestion of disease anywhere, nor of injury.

#### *Measurements*

There are no complete limb bones of cattle at all. The appearance of the material suggests small animals.

Two complete limb bones of other species measure as follows: sheep metacarpal, 123mm overall length; horse, radius/ulna, 280mm overall length. The sheep bone falls well within the range of such bones in my lists for Roman Britain. The horse radius is a little smaller than two from Silbury ditch (Roman) which are the only examples of complete horse radii seen by me from elsewhere in Roman Britain. The bone would represent an animal of about the size of a medium pony.

#### *Discussion*

This small collection is typically representative of Romano-British settlements and there is nothing remarkable. The comparative totals of the food animals present, whether arrived at by a count of fragments or by the 'minimum numbers' technique, show cattle exceeding sheep, and both considerably exceeding pig. The whole collection is almost entirely food refuse, except for the occurrences of horse and dog, and a trace of the wild (roe deer and fox).

A good deal of the material consists only of teeth and extremities so it is dangerous to speculate on

type or appearance. The pigs, in particular, yield only mandible and tooth fragments.

The fauna is a farmyard one with but two fragments of wild life: fox and roe deer. The deer fragment is part of a metacarpal and so is hardly evidence of hunting. The dog remains are possibly of one individual—teeth and part of a foot, of a rather large animal.

Bird remains are only two fragments, of something about the size of a pigeon. It is a little surprising that there are no domestic fowl, as poultry-keeping and cockfighting were common at the time, if we judge by evidence from similar sites.

MK301 STANTONBURY

Betty Westley

This material occupies seven large boxes and two small ones. It is in good, clean condition and well preserved, but very much fragmented, being mostly food remains that have been well chopped, so much so that identification of actual limb parts is difficult although it is fairly easy to sort out sheep, cattle and pig from each other. The main bulk of the material is a mass of splintered bones of the domestic animals, but there are several other species also represented. The complete fauna is: man, horse, red deer, cattle, sheep, pig, dog, cat, mole, hedgehog, hare, frog and bird (Table 17).

Table 17: Percentages of Species by Weight of Fragments, Stantonbury.

<i>Species</i>	<i>No. of fragments</i>	<i>% by weight</i>
Horse	47	3
Red Deer	4	—
Cattle	720	47
Sheep	673	43
Pig	57	4
Dog	18	1
Cat	1	—
Mole	1	—
Hedgehog	2	—
Hare	2	—
Frog	4	—
Bird	22	1

The total of fragments identified is 1,551. In the whole collection there are only five complete, measurable long bones of the food animals (Table 18 below).

Table 18: Overall length of complete bones, Stantonbury.

<i>Bone</i>	<i>Cattle</i>	<i>Sheep</i>
Metatarsal	221	140
Metacarpal	220	128
	(same individual)	
Metatarsal		130

So far as one can tell, the bones seem to be generally distributed over the site; they come from many locations. There was a particularly large deposit from the destruction levels overlying Building 2.

The minimum number of animals represented by the remains at this site are: cattle 81; sheep 79; pig 25. Owing to the fragmented state of the material, these figures are not to be regarded as having any significance.

#### *Types of Bone*

At first, an attempt was made to identify the food joints most used, to see, for example, whether the population preferred legs to shoulders, etc., but owing to the fragmentary nature of the pieces this plan had to be abandoned. It is fairly clear that all limbs were present, however.

#### *Sex and Age of Domesticates*

In general there is an absence of tooth and skull fragments, but so far as can be seen, the animals have been butchered in their second year, perhaps the autumn, and no trace of disease or deformity can be seen. 'Cannon' bones, the extremities of the fore and hind feet, are among the commonest, being very dense and so tending to survive well). From some sites there is often a proportion of these in poor condition, perhaps with traces of foot-rot, but not here. All the bones look healthy, and of a rather uniform type and size except for traces of a large bull(?) represented by a very large calcaneum and tarsal, and likewise a very large pig (wild boar?) from the rob trench of the walls of Room 3, Building 2, evidenced by some very long incisor teeth but no other trace of the animal.

Of all the cattle, there are only two complete measurable long bones, and of the sheep, three. The measurements are given in Table 18. They fall within the range of my list of Romano-British cattle but are a little above the average, suggesting, perhaps, that they might be of the second to third centuries, when sizes of cattle seem to have increased somewhat, perhaps from superior breeding or importation. The sheep are still of the small horned variety, however, and much smaller than typical modern breeds.

#### *Methods of butchery*

There is no trace of sagittal splitting down the vertebrae, and indeed very little trace of backbones at all. Nor is there any sign of large pelvic fragments or of skulls generally, though a fair percentage of teeth. This suggests that the heavy parts of carcasses were left where they were slaughtered (see above, Woughton, Types of Bone). The extensive chopping characteristic of prehistoric and Romano-British sites is again present.

#### *General Discussion*

This collection is typical of a Romano-British

site except that it is a little surprising to find no trace of domestic fowl, which was well established in Britain even before the Roman conquest. The bird bones are only of small species which I cannot identify. There is little wild fauna and the site seems to have been of a rather urban nature. Roe deer, often common, is absent here, and there are only a few antler fragments of red deer. The dog remains consist only of teeth and very small pieces of limb bones, and tell us only that the animals were quite small. The percentage of horse remains is only 3%, again of teeth and very small pieces. This proportion is constant for almost all Romano-British sites that I have examined. The horse was certainly not a common animal, and ordinary transport was probably by ox cart, with the horse, maybe, used by the military or for the posting stations.

Sheep and cattle numbers are nearly equal, which is usual. Variations must depend on the nature of the pasture. Pig, as always, comes a long way behind.

## HUMAN REMAINS

Betty Westley

### MK96 WINDMILL HILL

During topsoil stripping of this site the lower part of a pottery vessel containing cremated bones was recovered, see p.37 above. The earthscraper had removed part of the vessel and cremation; the following report is on the remaining material. (*Ed.*)

The bone is very well burnt; the furnace must have been extremely efficient and most of the remains are quite carbonized. They weigh about 550g and no fragment is more than about 10mm either way.

#### *Skull*

11 fragments, including a trace of orbit and mandible with mental foramen. There is a faint trace of skull sutures, which look normal and the subject is probably adult.

#### *Long Bones*

12 fragments, all very small. Even though the cremation is well incinerated, these look quite inadequate to represent a whole body and one suspects that some of the remains have disappeared.

#### *Vertebrae*

9 fragments are recognizable, most of which seem to be pieces of the lumbar.

### MK105 BANCROFT VILLA

The dispersed partial remains of two adults were found on the mosaic pavement in Room 1, during the initial excavation of the site in 1973. These have

been previously reported (Green, M. J., 1975(a), 2, 3, 5 and pl. B).

The partial remains of an infant and a child of about 1-2 years, with parts of an adult trunk and pelvis, were found in a shallow grave after topsoil stripping to the west of the walled garden, see p. 65.

The infant is possibly neonatal, or in its first month. The epiphyses of such bones are not joined to the skeleton and here have fallen away and not been recovered, as is usual, so the bones are featureless sticks and there is nothing to be deduced from them. The two femora are present and a distal humerus, and shaft parts of other long bones, difficult to place but belonging to one individual. Most of the backbone is present, the vertebrae as yet unfused, and numerous rib fragments. There are many thin egg-shell fragments of the skull but no trace of the pelvis.

The child remains are only partial. Age, judging from size, may be about 1-2 years but there are no teeth to bear this out, or any other indications of age. There are skull fragments, two complete clavicles and a nearly complete femur. Of the vertebrae and ribs there are about half the proper number, and no trace of the rest of the skeleton, nor any trace of disease or injury.

With the above remains are parts of an adult, the trunk and pelvis (incomplete) parts of ilia and femora, 3 lumbar vertebrae and parts of the sacrum, ribs and femur, but no trace of skull or teeth. It appears to be a fully adult male with slight arthritic 'lipping' of the vertebrae, which would not be present in a young person.

#### MK301 STANTONBURY

Fragments of a human skull recovered from F124, a destruction level outside the east wall of the bath suite attached to Building 2, are the only human remains recognizable as such from the site.

The skull is complete in the cranial parts but there is no sign of jaws or teeth. There is much powdery material that is not recognizable. The largest fragments are of the vault of the skull, i.e. parietal and frontal, and have an area of about 80 × 70mm for the largest. It looks possible to reconstruct the major part of the cranium but proved impossible because the sutures and breaks are too ingrained with dirt. The whole of the interior is filled with earth. The petrous parts of both temporal bones are present and complete, and earholes and mastoid processes are normal. There is no sign of injury or disease. The mastoid processes are small, which indicates a not very muscular physiognomy and might therefore suggest a female

or a youth, but either way adult, since the sutures are sufficiently closed to show maturity.

There is a fragment of the left orbit and maxilla but this shows no indication of sex.

#### Summary

A small adult is suggested, possibly a female or slender youth. No further indication of age, sex or cause of death.

#### CARBONIZED GRAIN

M. Jones

From two sites, MK96 Windmill Hill and MK137 Heelands, samples of carbonized grain were recovered from corn-drying ovens and submitted for report. (*Ed.*)

#### INTRODUCTION AND METHOD

A series of small samples of sediment were handed to the author for analysis by R. Williams. The samples were floated over tap-water, and the float collected in a sieve of 500 microns mesh-aperture. The dried material thus collected was scanned at ×20 magnification, and carbonized material other than charcoal separated and identified as far as possible (Table 1).

#### RESULTS AND INFERENCES

As would seem to be the general case with sediments associated with corn-driers, these sediments have a very high concentration of carbonized cereal fragments, reaching thousands of fragments per litre in the stoke-holes of MK96 Windmill Hill corn-driers 1 and 3.

It is interesting to see that the assemblages are dominated by cereal chaff, the glume bases of spelt wheat in particular, rather than seeds or grain, a situation paralleled in other corn-driers (e.g. Jones, M., 1979). There are various possible explanations for this:

1. Cereal chaff could have been used to kindle the fire (cf. Reynolds, 1981). The concentration of chaff in the stoke-holes may lend support to this possibility.
2. The grains had germinated to such an extent that only the chaff was recognizable in the carbonized state. The presence of a detached plumule may lend support.
3. The fire temperature was such that only chaff survived in a recognizable form. The paucity of weed seeds as well as cereals may lend support.

Two points may be noted about the species present. One *Avena* seed is still enclosed in its floret, which resembles *A. sativa* in form. Culti-

vated oats are known from a number of other Romano-British sites; the other cereals present, spelt wheat and barley, are very common in this period.

The second point of interest is the occurrence of seeds of *Anthemis cotula*, a weed of cultivation on heavy clays and clay loams, corresponding to the predominant soil type around the site.

Table 1: Botanical evidence from corn-driers.

	Mk96 Windmill Hill				MK137 Heelands	
	No. 1 (Stoke Hole)	No. 2 (Main Flue)	(Cross Flue)	No. 3 (Main Flue)	(Stoke Hole)	Primary Silt
Size of sample (ltrs)	0.25*	0.25	0.25	0.25	0.25**	1
<b>Cereal and Grass Seeds</b>						
<i>Hordeum</i> sp. (barley)	3					1
<i>Triticum</i> sp. (wheat)	5		3		13	2
<i>Triticum</i> (hexaploid)					1	14
<i>Triticum Spelta</i>					3	
<i>Avena</i> sp. (oats)	1				5	
cf. <i>A. Sativa</i> (cultivated oat)	1					
<i>Bromus</i> sp. (bronze)	19		1		11	2
<i>Poa</i> sp.	1					
Indeterminate	16				13	
Cereals indet.	5		2	2	10	8
	51	Nil	6	2	56	27
<b>Other Taxa Seeds</b>						
<i>Anthemis Cotula</i> (stinking mayweed)					2	
<i>Chenopodium</i> sp. (goosefoot/fat hen)	1				5	
<i>C. Album</i> (fat hen)					1	
<i>Rumex</i> sp. (dock/sorrel)	3				1	2
Indeterminate	2				1	4
	6	Nil	Nil	Nil	10	6
<b>Other Fragments</b>						
<i>Hordeum</i> internodes	2					
<i>Triticum</i> tough-rachis internodes					1	
<i>Triticum</i> brittle-rachis internodes	4		1		13	3
<i>Triticum Spelta</i> glume bases	72		5		194	103
<i>Triticum/Hordeum</i> fragments					2	
<i>Avena</i> fragments	11		1		18	31
Indet. cereal detached plumule						1
	89	Nil	7	Nil	228	138

\* 15% sorted \*\* 18% sorted

## BIBLIOGRAPHY

- Anon. 1959. 'Roman Britain in 1958', *J. Roman Stud.* **49**, 102-39.
- Anon. 1970. 'Archaeology in Northamptonshire', *Bull. Northamptonshire Fed. Archaeol. Socs* **4**, 2-34.
- Applebaum, S., 1972. 'Roman Britain', in H. P. R. Finberg (ed.), *The Agrarian History of England and Wales* **1.2** (Cambridge) 1-277.
- Baker, J., and Brothwell, D., 1981. *Animal diseases in archaeology* (London).
- Barry, R., 1969. *The construction of buildings* (London).
- Bennet, C. M., 1962. 'Cox Green Roman villa', *Berks Archaeol. J.* **60**, 62-91.
- Blagg, T., 1977. 'Schools of stonemasons in Roman Britain', in Munby, J. and Henig, M. (eds), *Roman life and art in Britain*, Brit. Archaeol. Rep. **41** (Oxford).
- Bonney, D. J., 1979. 'Early boundaries and estates in southern Britain', in P. H. Sawyer, *Medieval settlement* (Oxford) 72-82.
- Boon, G. C., 1950. 'The Roman villa in Kingsweston Park (Lawrence Weston Estate) Glos.', *Trans. Bristol & Glos. Archaeol. Soc.* **69**, 5-58.
- Boon G. C., 1974. 'Counterfeit coins in Britain', in Casey and Reece 1974, 95-171.
- Branigan, K., 1971. *Latimer: A Belgic, Roman, Dark Age and early modern farm* (privately published).
- British Museum, 1922, 1958, 1966. *Guide to the antiquities of Roman Britain* (London), 1st, 2nd, and 3rd editions.
- Brodribb, A. C. C., Hands, A. R. and Walker, D. R., 1968-73. *Excavations at Shakenoak Farm near Wilcote, Oxfordshire*, 5 vols (privately published).
- Brodribb, G., 1979. 'A survey of tile from the Roman bath house at Beauport Park', *Britannia* **10**, 139-57.
- Brothwell, D., 1972. 'Palaeodemography and earlier British population', *World Archaeol.* **4.1**, 75-87.
- Brown, R. M. and Taylor, C. C., 1978. 'Settlement and land use in Northamptonshire', in Cunliffe and Rowley 1978, 77-89.
- Bushe-Fox, J. P., 1913. *Excavations on the site of the Roman town at Wroxeter, Shropshire, in 1912*, Report of the Research Committee of the Society of Antiquaries of London **1** (Oxford).
- Bushe-Fox, J. P., 1926. *First report on the excavations of the Roman fort at Richborough, Kent*, Report of the Research Committee of the Society of Antiquaries of London **6** (Oxford).
- Bushe-Fox, J. P., 1928. *Second report on the excavation of the Roman fort at Richborough, Kent*, Report of the Research Committee of the Society of Antiquaries of London **7** (Oxford).
- Bushe-Fox, J. P., 1949. *Fourth report on the excavations of the Roman fort at Richborough, Kent*, Report of the Research Committee of the Society of Antiquaries **16** (Oxford).
- Casey, J., 1974. 'The interpretation of Romano-British site finds', in Casey and Reece 1974, 37-51.
- Casey, J. (ed.), 1979. *The end of Roman Britain*, Brit. Archaeol. Rep. **71** (Oxford).
- Casey, J. and Reece, R. (eds), 1974. *Coins and the archaeologist*, Brit. Archaeol. Rep. **4** (Oxford).
- Chaplin, R., 1971. *The study of animal bones from archaeological sites* (London).
- Charlesworth, D., 1959. 'Roman glass from northern Britain', *Archaeol. Aeliana* (4th ser.) **37**, 33-58.
- Charlesworth, D., 1972. 'The glass', in Frere 1972, 196-215.
- Charlesworth, D., 1977. 'Roman window glass from Chichester, Sussex', *J. Glass Stud.* **19**, 182.
- Charlesworth, D. and Thornton, J. H., 1973. 'Leather found in Mediobogdum, the Roman fort of Hardknott', *Britannia* **4**, 141-52.
- Clifford, E. M., 1933. 'The Roman villa, Hucclecote, near Gloucester', *Trans. Bristol & Glos. Archaeol. Soc.* **55**, 323-76.
- Clifford, E. M., 1954. 'The Roman villa, Witcombe, Gloucestershire', *Trans. Bristol & Glos. Archaeol. Soc.* **73**, 5-69.
- Cocks, A. H., 1921. 'A Roman-British homestead in the Hambleden Valley, Bucks', *Archaeologia* **71**, 141-98.
- Collingwood, R. G. and Richmond, I., 1969. *The Archaeology of Roman Britain* (London).
- Corder, P., 1951. *The Roman town and villa at Great Casterton, Rutland: first interim report* (Nottingham).
- Corder, P., 1954. *The Roman town and villa at Great Casterton, Rutland: second interim report* (Nottingham).
- Corder, P., 1961. *The Roman town and villa at Great Casterton, Rutland: third report* (Nottingham).
- Crowfoot, J. W., 1931. *Churches at Jerash*, Brit. School of Archaeol. Jerusalem, Suppl. Papers **3** (London).
- Crummy, N., 1979. 'A chronology of Romano-British bone pins', *Britannia* **10**, 157-63.
- Cunliffe, B. (ed.), 1968. *Fifth report on the excavations of the Roman fort at Richborough, Kent*, Report of the Research Committee of the Society of Antiquaries of London **23** (Oxford).
- Cunliffe, B., 1971. *Excavations at Fishbourne 1962-1969*, 2 vols, Report of the Research Committee of the Society of Antiquaries of London **27** (Leeds).
- Cunliffe, B. and Rowley, R. T. (eds), 1978. *Lowland Iron Age communities in Europe*, Brit. Archaeol. Rep. International Ser. **48** (Oxford).
- Davey, N. and Ling, R., 1982. *Wall-painting in Roman Britain*, Britannia Monog. **3** (London).
- Department of the Environment, 1975. *Principles of publication in rescue archaeology*, Report of a working party of the Ancient Monuments Board for England, Committee for Rescue Archaeology (London).
- Dix, B., 1981. 'The Romano-British farmstead at Odell and its setting: some reflections on the Roman landscape of the south-east Midlands', *Landscape Hist.* **3**, 17-26.
- Down, A. and Rule, M., 1971. *Chichester excavations*, **1** (Chichester).
- Evison, V., 1974. 'An Anglo-Saxon glass claw-beaker from Mucking, Essex', *Antiq. J.* **54**, 277-8.
- Fitzwilliam, 1978. *Glass at the Fitzwilliam Museum*. Cambridge.
- Fleming, A. J., 1970. *Roman settlement in the Upper Ouse area* unpublished BA dissertation, University of

- Leicester.
- Fowler, E., 1960. 'The origins and development of the penannular brooch in Europe', *Proc. Prehist. Soc. (N.S.)* 26.
- Fowler, P. J., 1972. 'Fieldwork and excavation in the Butcombe area, North Somerset', *Proc. Univ. Bristol Spelaol. Soc.* 12, 169-94.
- Fowler, P. J., 1975. 'Continuity in the landscape', in P. J. Fowler (ed.), *Recent work in rural archaeology (Bath)* 121-35.
- Fremersdorf, F., 1958. *Römisches Buntglas in Köln*, Die Denkmäler des römischen Köln 4 (Köln).
- Fremersdorf, F., 1959. *Römische Gläser mit Fadenaufilage in Köln*, Die Denkmäler des römischen Köln 5 (Köln).
- Fremersdorf, F., 1962. *Die römischen Gläser mit aufgelegten Nuppen in Köln*, Die Denkmäler des römischen Köln 8, 2 vols (Köln).
- Fremersdorf, F., 1967. *Die römischen Gläser mit Schliff, Bemalung und Goldauflagen aus Köln*, Die Denkmäler des römischen Köln 8, 2 vols (Köln).
- Frere, S. S., 1967. *Britannia* (London).
- Frere, S. S., 1972. *Verulamium excavations 1*, Report of the Research Committee of the Society of Antiquaries of London 28 (London).
- Friendship-Taylor, R. M., 1979. 'The excavations of the Belgic and Romano-British settlement at Quinton, Northamptonshire, site 'B', 1973-7', *J. Northampton Mus. & Art Gallery* 13, 2-176.
- Garlan, Y., 1965. 'Nouvelles mosaïques thasiennes', *Bull. Corresp. Hellénique* 89, 567-83.
- Goodchild, R. and Kirk, J. R., 1954. 'The Romano-Celtic temple of Wood Eaton', *Oxoniensia* 19, 15-37.
- Gowing, C. N., 1964. 'Archaeological notes from the Buckinghamshire County Museum', *Recs. Bucks* 17.4, 301-7.
- Gowing, C. N., 1965. 'Archaeological notes from the Buckinghamshire County Museum', *Recs. Bucks* 17.5, 409-413.
- Green, C., 1957. 'Review of finds 1957', *Wolverton Dist. Archaeol. Soc. Newsletter* 2, 5.
- Green, C., 1960. 'Country roundabout', *Wolverton Dist. Archaeol. Soc. Newsletter* 5, 8-12.
- Green, C., 1965. 'A Romano-Celtic temple at Bourton Grounds, Buckingham', *Recs. Bucks* 17.5, 356-66.
- Green, C., 1970. 'Upper Ouse valley: the Roman scene', *Wolverton Hist. J.* 1, 55-62.
- Green, C. and Draper, J., 1978. 'The Mileoak Roman Villa, Handley, Towcester, Northants: report on the excavations of 1955 and 1956', *Northamptonshire Archaeol.* 13, 28-66.
- Green, H. S. and Mynard, D., 1976. 'Milton Keynes Development Corporation: Annual Report on Archaeology 1975', *CBA 9 Newsletter* 6, 41-59.
- Green, M. J., 1974. 'A marble cockerel from the Bradwell Roman villa, Buckinghamshire', *Britannia* 5, 381-3.
- Green, M. J., 1975(a). *The Bradwell Roman villa: first interim report*, MKDC Occasional Papers in Archaeol. 1 (Milton Keynes).
- Green, M. J., 1975(b). 'Romano-British non-ceramic model objects in south-east Britain', *Archaeol. J.* 132, 54-70.
- Greenfield, E., 1963. 'The Romano-British shrines at Brigstock, Northants', *Antiq. J.* 43, 228-63.
- Griffiths, A. F. and Salzmann, L. F., 1914. 'An Anglo-Saxon cemetery at Alfriston, Sussex', *Sussex Archaeol. Coll.* 56, 16-53.
- Groenman-Van Waateringe, W., 1967. *Romeins lederwerk uit Valkenburg*, Z. H., Nederlandse Oudheden 2 (Groningen).
- Guido, M., 1978. *The glass beads of the prehistoric and Roman periods in Britain and Ireland*, Report of the Research Committee of the Society of Antiquaries of London 35 (London).
- Hagen, W., 1937. 'Kaiserzeitliche Gagatarbetten aus dem rheinischen Germanien', *Bonner Jahrbücher* 142, 77-144.
- Hagerty, R., 1980. *Romano-British traces in North Bucks*, unpublished diploma dissertation, University of Oxford.
- Harden, D. B., 1956. 'Glass vessels in Britain and Ireland, AD 400-1000', in D. B. Harden (ed.), *Dark Age Britain* (London) 132-167.
- Harden, D. B., 1957. 'Four Roman glasses from Hauxton Mill, Cambridge, 1870', in J. Liversidge, 'Roman discoveries from Hauxton', *Proc. Cambridge Antiq. Soc.* 51, 7-17.
- Harden, D. B., 1960. 'The Wint Hill hunting bowl and related glasses', *J. Glass Stud.* 2, 45-81.
- Harden, D. B., 1961. 'Domestic window glass: Roman, Saxon and Medieval', in E. M. Jope (ed.), *Studies in Building History* (London) 39-63.
- Harden, D. B., 1962. 'Glass in Roman York', in RCHM 1962, 136-41.
- Harden, D. B., 1974. 'Window glass from the Romano-British bathhouse at Garden Hill, Hartfield, Sussex', *Antiq. J.* 54, 280-81.
- Harden, D. B., 1975. 'The glass', in B. W. Cunliffe, *Excavations at Portchester Castle I: Roman*, Report of the Research Committee of the Society of Antiquaries of London 32 (London) 368-74.
- Harden, D. B., 1979. 'Glass vessels', in G. Clarke, *Winchester Studies 3: Pre-Roman and Roman Winchester*, Part 2: The Roman Cemetery at Lankhills (Oxford) 209-20.
- Harden, D. B., 1983. 'The glass hoard', in S. Johnson et al., 'Burgh Castle, excavations by Charles Green 1958-61', *East Anglia Archaeol.* 20 1-130.
- Harden, D. B., and Price, J., 1971. 'The glass', in Cunliffe 1971, vol. 2, 317-68.
- Harden, D. B. et al., 1968. *Masterpieces of glass* (London).
- Haslam, J., 1980. 'A Middle Saxon iron smelting site at Ramsbury, Wiltshire', *Medieval Archaeol.* 24, 56-64.
- Hawkes, C. F. C. and Hull, M. R., 1947. *Camulodunum*, Report of the Research Committee of the Society of Antiquaries of London 14 (London).
- Hawkes, S. and Dunning, G., 1961. 'Soldiers and settlers in Britain: fourth to fifth century', *Medieval Archaeol.* 5, 1-70.
- Henig, M., 1984. *Religion in Roman Britain* (London).
- Hill, C., Millett, M. and Blagg, T., 1980. *The Roman riverside wall and monumental arch in London: excavations at Baynard's Castle, Upper Thames St., London 1974-6*, ed. T. Dyson, London & Middx Archaeol. Soc. Special Paper 3 (London).
- Hills, L. D., 1980. *Fertility gardening* (Newton Abbott).
- Hodgson, C., 1832. 'Account of two Roman inscriptions', *Archaeol. Aeliana* 2, 419-20.
- Horton, A., Shepherd-Thorn, E. and Thurrell, K., 1974. *The geology of the New Town of Milton Keynes*, Institute of Geological Sciences Rep. 74/16 (London).
- Huber, W., 1956. 'Hypokausten', *Saalburg Jahrbuch* 15, 38-40.
- Hunter, R. and Mynard, D. C., 1977. 'Excavations at Thorplands, nr Northampton', *Northamptonshire Archaeol.* 12, 97-154.

- Hyde, F. E., 1943. *Wolverton: a short history of its economic and social development* (Wolverton).
- Isings, C., 1957. *Roman glass from dated finds*, *Archaeologica Traiectina* 2 (Groningen).
- Jackson, D. A., 1979. 'Roman iron-working at Bulwick and Gretton', *Northamptonshire Archaeol.* 14, 31-7.
- Jackson, D. A. and Ambrose, T., 1978. 'Excavations at Wakerley, Northants 1972-5', *Britannia* 9, 115-243.
- Johnson, A. E., 1975. 'Excavations at Bourton Grounds, Thornborough, 1972-3', *Recs. Bucks* 20.1, 3-56.
- Jones, D. M. and Rhodes, M., 1980. *Excavations at Billingsgate Buildings 'Triangle', Lower Thames Street, London 1974*, London & Middx Archaeol. Soc. Special Paper 4 (London).
- Jones, M., 1979. 'Plant remains from the dry bulk samples', in Lambrick and Robinson 1979, 103-4.
- Jones, M. E., 1979. 'Climate, nutrition and disease: a hypothesis of Romano-British population', in Casey 1979, 231-51.
- Jones, M. U., 1959. 'Stanton Low Romano-British site', *Wolverton & Dist. Archaeol. Soc. Newsletter* 4, 4.
- Judd, J. W., 1875. *Rutland and parts of Huntingdon, Cambridge etc.*, Memoir of the Geological Survey (London).
- Kajanto, I., 1965. *The Latin Cognomina* (Helsinki).
- Keepax, C. and Robson, M., 1978. 'Conservation and associated examination of a Roman chest: evidence for woodworking techniques', *The Conservator* 2, 35-40.
- Kennett, D., 1972. 'Bedfordshire archaeology 1971-1972', *Bedfordshire Archaeol. J.* 7, 89-97.
- Kenyon, K. M., 1948. *Excavations at the Jewry Wall site, Leicester*, Report of the Research Committee of the Society of Antiquaries of London 15 (Oxford).
- King, C., 1981. 'The Bancroft Roman villa (Milton Keynes) hoard of *folles*, AD 330-341', *Coin Hoards* 6, 40-9.
- Kingscote Archaeol. Assoc., 1978. *Excavations: The Chessals, Kingscote, 1975-77* (privately published).
- Knocker, G. M., 1965. 'Excavations in Collyweston Great Wood, Northamptonshire', *Archaeol. J.* 122, 52-72.
- Lambrick, G. and Robinson, M., 1979. *Iron Age and Roman riverside settlements at Farmoor, Oxfordshire* CBA Research Report 32 (London).
- Lawson, A. J., 1975. 'Shale and jet objects from Silchester', *Archaeologia* 105, 241-75.
- Liversidge, J., 1954. 'The Thornborough barrows', *Recs. Bucks* 16.1, 29-32.
- Lowther, A. W. G., 1930. 'Excavations at Ashstead, Surrey', *Surrey Archaeol. Coll.* 38, 1-17.
- Lowther, A. W. G., 1948. *A study of the patterns on a Roman flue tile and their distribution*, Surrey Archaeol. Soc. Research Paper 1 (Farnham).
- MacDonald, G., 1931. 'The bath house at the fort of Chesters (Cilurnum)', *Archaeol. Aeliana* (4th ser.) 8, 219-304.
- McWhirr, A. D., 1978. 'Cirencester 1973-76: tenth interim report', *Antiq. J.* 58, 61-80.
- McWhirr, A. D. (ed.), 1979. *Roman brick and tile*, Brit. Archaeol. Rep. Internat. Ser. 68 (Oxford).
- McWhirr, A. D., 1981. 'Cirencester mosaics', *Mosaic* 4 (April), 5-7.
- McWhirr, A. D. and Viner, D., 1978. 'The production and distribution of Roman tiles in Britain', *Britannia* 9, 358-77.
- Manning, W. H., 1974. 'Ironwork from Sherwood Drive', in M. Green (ed.), 'Excavations by R. W. Griffiths, at Sherwood Drive, Bletchley, 1972, preliminary report', *Milton Keynes J. Archaeol. & Hist.* 3, 14-22.
- Manning, W. H., 1976. *A catalogue of Romano-British ironwork in the Museum of Antiquities, Newcastle upon Tyne* (Newcastle).
- Manning, W. H., and Musty, J., 1977. 'A wooden chest from the Roman villa at Bradwell, Milton Keynes, Bucks.', *Antiq. J.* 57, 330-2.
- Meates, G. W., 1979. *The Roman villa at Lullingstone, Kent. I: The site*, Kent Archaeol. Soc. Monog. Ser. I (Canterbury).
- Miles, D. (ed.), 1982. *The Romano-British countryside: studies in rural settlement and economy*, Brit. Archaeol. Rep. 103 (Oxford).
- Ministry of Agriculture, Fisheries and Food, 1961. *Agricultural land classification map of England and Wales* (London) Sheet 146.
- Morris, P., 1979. *Roman agricultural buildings*, Brit. Archaeol. Rep. 70 (Oxford).
- Mynard, D., 1967. 'Roman site at Olney', *Wolverton Dist. Archaeol. Soc. Newsletter* 11, 64-6.
- Mynard, D., 1969. 'Archaeological Finds for 1968', *Wolverton Hist. J.* 2, 9-16.
- Mynard, D., 1974. 'Archaeology in North Bucks 1973', *Milton Keynes J. Archaeol. & Hist.* 3, 4-7.
- Neal, D. S., 1974. *The excavation of the Roman villa in Gadebridge Park, Hemel Hempstead 1963-8*, Report of the Research Committee of the Society of Antiquaries of London 31 (London).
- Neal, D. S., 1974-6. 'Northchurch, Boxmoor and Hemel Hempstead Station: the excavation of three Roman buildings in the Bulbourne Valley', *Hertfordshire Archaeol.* 4, 1-136.
- Neal, D. S., 1981. *Roman mosaics in Britain*, Britannia Monog. Ser. 1 (London).
- Niblett, B. R. K., 1974. 'Excavations at Bradwell Abbey Barn, Bucks., 1971', *Recs. Bucks* 19.4, 483-504.
- O'Neil, H. E., 1945. 'The Roman villa at Park Street, nr. St Albans, Herts.: report on the excavations of 1943-5', *Archaeol. J.* 102, 21-110.
- Oswald, A., 1949. 'A re-excavation of the Roman villa at Mansfield Woodhouse, Notts., 1936-39', *Trans. Thoroton Soc. Notts* 53, 1-14.
- Painter, K. S., 1971. 'Six Roman glasses with cut decoration from Amiens', *Brit. Mus. Quart.* 36, 41-50.
- Partridge, C., 1981. *Skeleton Green*, Britannia Monog. Ser. 2 (London).
- Petchey, M., 1979. 'Caldecotte', in D. Mynard (ed.), 'Milton Keynes Development Corporation, Annual Report on Archaeology 1978', *CBA Group 9 Newsletter* 9, 63-7.
- Percival, J., 1976. *The Roman villa* (London).
- Phillips, E. J., 1976. 'A workshop of Roman sculptors at Carlisle', *Britannia* 7, 101-8.
- Pitt-Rivers, A. H. L. F., 1892. *Excavations in Bokerly and Wansdyke, Dorset and Wiltshire, 1888-1891*, Excavations in Cranborne Chase, vol. 3 (privately publ.).
- Price, J. E. P. and F. G. H., 1881. *A description of the remains of Roman buildings at Morton, near Brading, Isle of Wight* (London).
- Price, J., 1979. 'The glass', in H. S. Gracie and F. G. Price, 'Frocester Court Roman villa, second report', *Trans. Bristol & Glos Archaeol. Soc.* 97, 9-64.
- Price, J., 1981. 'The Roman glass', in G. Lambrick, 'Excavations in Park Street, Towcester', *Northamptonshire Archaeol.* 15, 35-118 (63-9).
- Ravetz, A., 1964. 'The fourth-century inflation and Romano-British coin finds 1: pattern of fourth-century coinage on Romano-British sites', *Numismatic Chron.* (7th Ser.) 4, 201-31.

- Reece, R., 1972. 'A short survey of the Roman coins found on fourteen sites in Britain', *Britannia* 3, 269-76.
- Reece, R., 1974. 'Clustering of coin finds in Britain, France and Italy', in Casey and Reece 1974, 64-77.
- Rees, S., 1979. *Agricultural implements in prehistoric and Roman Britain*, 2 vols, Brit. Archaeol. Report 69 (Oxford).
- Reynolds, S. P. J., 1981. 'New approaches to familiar problems', in M. Jones and G. Dimbleby (eds), *The environment of man: the Iron Age to the Anglo-Saxon period*, Brit. Archaeol. Rep. 77 (Oxford).
- Reynolds, P. J. and Langley, I., 1979. 'Romano-British corn-drying oven: an experiment', *Archaeol. J.* 136, 27-42.
- Rivet, A. L. F., 1968. *Town and country in Roman Britain* (London).
- Rivet, A. L. F. (ed.), 1969. *The Roman villa in Britain* (London).
- Roach-Smith, C., 1876. 'On a Roman villa near Maidstone', *Archaeol. Cantiana* 10, 163-72.
- Rodwell, W., 1978. 'Buildings and settlements in South-East Britain in the late Iron Age', in Cunliffe and Rowley 1978, 25-41.
- Rook, T., 1979. 'Tiled roofs', in McWhirr 1979, 295-8.
- RCHM, 1962. *An inventory of the historical monuments in the City of York. 1: Eboracum, Roman York* (London).
- RCHM, 1970. *An inventory of historical monuments in the County of Dorset. 2: South-East*, 2 vols (London).
- RCHM, 1976. *Ancient and historical monuments in the County of Gloucester. 1: Iron Age and Romano-British monuments in the Gloucestershire Cotswolds* (London).
- RCHM, 1980. *Northamptonshire: an archaeological atlas* (London).
- RCHM, 1982. *An inventory of the historical monuments in the County of Northampton. 4: Archaeological sites in south-west Northamptonshire* (London).
- Sandford, A. E., 1974. 'Cotton Valley ring-ditch', in H. S. Green, 'Early Bronze Age burial, territory and population', *Archaeol. J.* 131, 75-139.
- Schnitzer, B. K. et al., 1978. *Glass at the Fitzwilliam Museum* (Cambridge).
- Silver, I. A., 1969. 'The ageing of domestic animals', in D. Brothwell and E. Higgs (eds), *Science in archaeology*, 2nd ed. (London), 283-302.
- Simmons, B. B., 1979. 'The Lincolnshire Car Dyke: navigation or drainage?', *Britannia* 10, 183-96.
- Smith, D. J., 1954. 'The mosaic pavements', in P. Corder (ed.) 1954, 35-9.
- Smith, D. J., 1965. 'Three fourth-century schools of mosaic in Roman Britain', in G. Picard and H. Stern (eds), *La mosaïque gréco-romaine*, (Paris), 95-115.
- Smith, D. J., 1969. 'The mosaic pavements', in Rivet 1969, 71-125.
- Smith, D. J., 1973. 'Mosaics 1971-2', in A. McWhirr, ' Cirencester 1969-1972, ninth interim report', *Antiq. J.* 53, 214-18.
- Smith, D. J., 1975. 'Roman mosaics in Britain before the fourth century', in H. Stern and M. Le Glay (eds), *La mosaïque gréco-romaine 2*, Actes du deuxième colloque internationale pour l'étude de la mosaïque antique 1971 (Paris), 269-89.
- Smith, D. J., 1976. 'The mosaics of Winterton', in I. M. Stead, *Excavations at Winterton Roman villa and other Roman sites in North Lincolnshire 1958-1967* (London), 251-71.
- Smith, D. J., 1984. 'Roman mosaics in Britain: a synthesis', in R. Farioli Campanati (ed.), *Il mosaico antico: atti del III colloquio internazionale sul mosaico antico, Ravenna 1980* (Ravenna), 357-80.
- Smith, J. T., 1978. 'Halls or yards? A problem of villa interpretation', *Britannia* 9, 349-57.
- Storer, W. P., 1863. 'Some notes concerning Olney', *Recs Bucks* 2, 188-98.
- Taylor, C. C., 1975. 'Roman settlement in the Nene Valley: the impact of recent archaeology', in P. J. Fowler (ed.), *Recent work in rural archaeology* (Bath), 107.
- Taylor, C. C., 1982. 'The nature of Romano-British settlement studies—what are the boundaries?', in Miles 1982, 1, 1-16.
- Taylor, J. H., 1949. *Petrology of the Northampton sand formation*, Memoir of the Geolog. Survey (London).
- Thornton, J. H., 1973. 'Excavated shoes to 1600', *Trans. Museum Assistants Group* 12.
- Toynbee, J., 1964. *Art in Britain under the Romans* (Oxford).
- Tull, G. K., 1969. 'Land utilization in the Newport Hundreds at the time of the Domesday survey', *Wolverton Dist. Archaeol. J.* 2, 32.
- Viatore, 1964. *Roman roads in the south east midlands* (London).
- VCH (The Victoria History of the Counties of England), 1900. *A History of Hampshire and the Isle of Wight*, ed. A. H. Doubleday, 1 (Westminster).
- VCH, 1939. *The Victoria History of the County of Oxford*, ed. L. F. Salzman, 1 (London).
- Ward-Perkins, J. B., 1938. 'The Roman villa at Lockleys, Welwyn', *Antiq. J.* 18, 339-76.
- Waugh, H., Mynard, D. C. and Cain, R., 1974. 'Some Iron Age pottery from mid and north Bucks, with a gazetteer of associated sites and finds', *Recs. Bucks* 19.4, 373-419.
- Webster, L. and Cherry, J., 1977. 'Medieval Britain in 1976', *Medieval Archaeol.* 21, 204-62.
- Wedlake, W. J., 1958. *Excavations at Camerton, Somerset* (privately published).
- Welker, E., 1978. 'Eine Facetten Schale aus Nida-Heddernheim', *Germania* 56, 504-10.
- Wheeler, R. E. M. and T. V., 1928. 'The Roman amphitheatre at Caerleon, Monmouthshire', *Archaeologia* 78, 111-218.
- Wheeler, R. E. M. and T. V., 1936. *Verulamium: a Belgic and two Roman cities*, Report of the Research Committee of the Society of Antiquaries of London 11 (Oxford).
- Whiting, W. et al., 1931. *Report on the excavation of a Roman cemetery at Ospringe, Kent* (Oxford).
- Whitwell, J. B., 1970. *Roman Lincolnshire*, History of Lincolnshire 2 (Lincoln).
- Williams, A. M., 1909. 'The Romano-British establishment at Stroud, Petersfield, Hants', *Archaeol. J.* 66, 33-52.
- Williams, J., 1976. 'Excavations on a Roman site at Overstone, near Northampton', *Northamptonshire Arch.* 11, 100-34.
- Wilson, D. R., Wright, R. P. and Hassall, M. W. C., 1974. 'Roman Britain in 1973', *Britannia* 5, 396-480.
- Woodfield, C., 1977. 'A Roman military site at Magiovinium?', *Recs. Bucks* 20.3, 384-99.
- Woodfield, P., 1978. 'Roman architectural masonry from Northamptonshire', *Northamptonshire Arch.* 13, 67-86.
- Woods, P. J., 1972. 'Excavations at Brixworth, Northamptonshire 1965-70. The Romano-British villa, part 1: the Roman coarse pottery and decorated Samian ware', *J. Northampton Mus. & Art Gallery* 8, 3-102.

## MICROFICHE CONTENTS

### *Coin Lists (R. J. Zeepvat)*

MK36 Walton	A1
MK45 Holne Chase	A1
MK64 Wood Corner	A1-3
MK96 Windmill Hill	A3
MK100 Sherwood Drive	A3-4
MK105 Bancroft Villa	A4-12
MK109 Little Woolstone	A12
MK211 Wymbush	A12-13
MK297 Woughton	A14
MK301 Stantonbury	A14-B1
MK351 Simpson	B1
MK354 Caldecotte Lake (South)	B1
MK360 Bancroft 2 (Mausoleum)	B1-2

### *Tile Reports (R. J. Zeepvat)*

MK64 Wood Corner	C1-2
MK105 Bancroft Villa	C3-13
MK211 Wymbush	C13-D4
MK297 Woughton	D4-5
MK301 Stantonbury	D5-8

### *Figures in Microfiche*

Fig. 1. Stylized drawings of recognizable combing patterns on Box Flue tiles from MK105, Bancroft Villa	D9
---	----

### *Tables in Microfiche*

Table 1. MK64 Wood Corner: List of Tiles	C2
Table 2. MK64 Wood Corner: Amounts of Tile by type and fabric	C2
Table 3. MK105 Bancroft Villa: List of Roof Tiles	C7-9
Table 4. MK105 Bancroft Villa: Hypocaust Tiles	C9-11
Table 5. MK105 Bancroft Villa: Correlation of keying patterns/fabrics on Flue Tiles	C12
Table 6. MK105 Bancroft Villa: List of Pilae and Sub-Floor Tiles	C12
Table 7. MK105 Bancroft Villa: List of Stone Roofing Materials	C13
Table 8. MK211 Wymbush: List of Roof Tiles and estimate of total tiles represented	C14
Table 9. MK211 Wymbush: List of Roof Tiles	D2-4
Table 10. MK297 Woughton: List of Tiles	D5
Table 11. MK301 Stantonbury: List of Tiles	D7-8

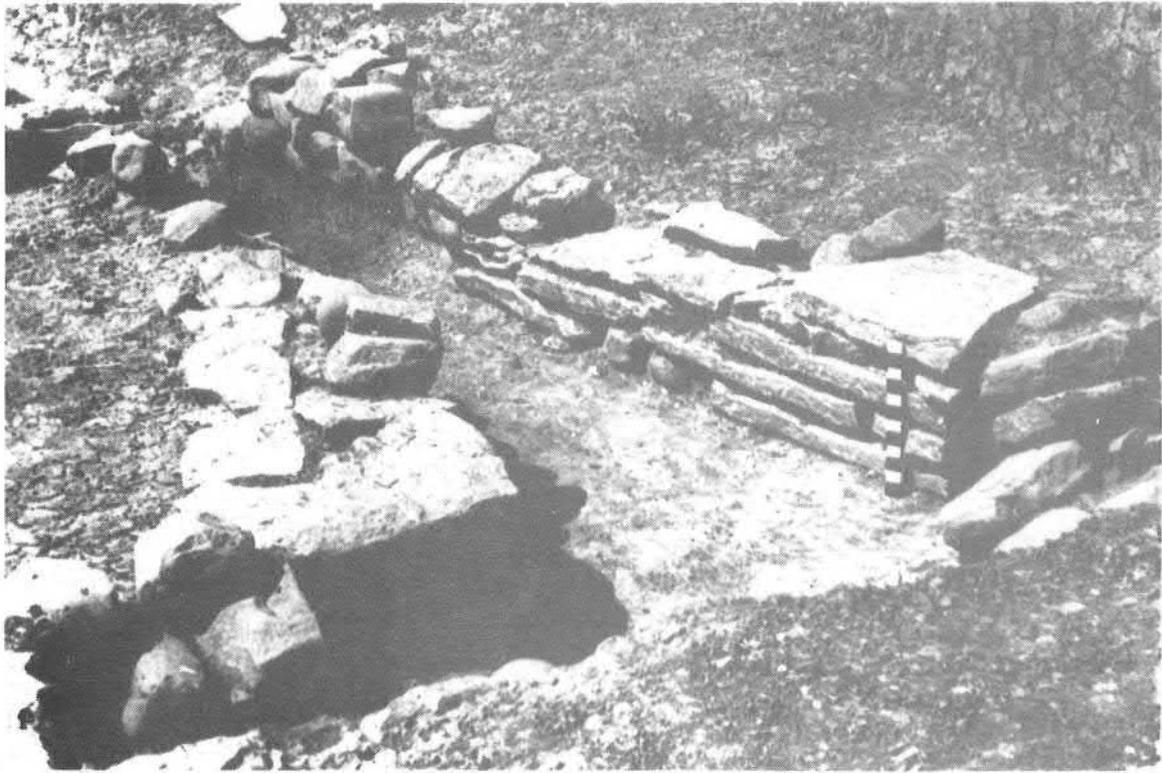


Plate 2: MK96 Windmill Hill: Corn Drier 2 (photo: P. N. Jarvis).

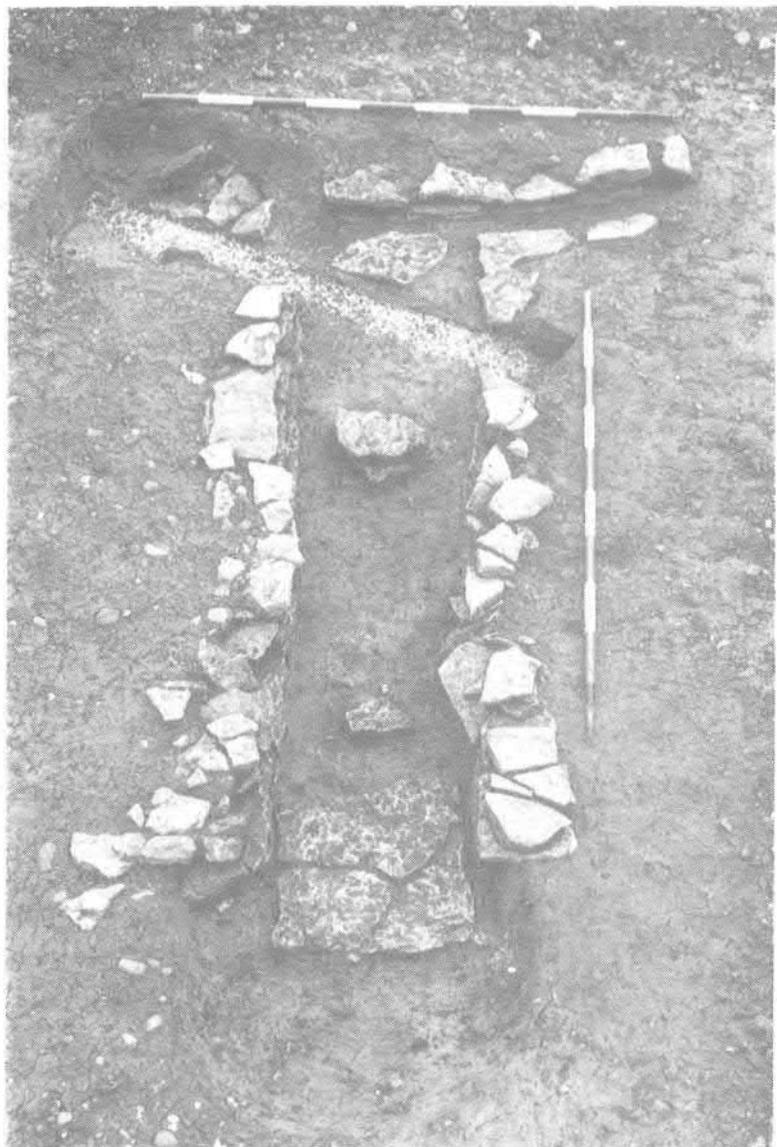


Plate 3: MK137 Heelands: The Corn Drier (photo: MKAU).



Plate 4: MK105 Bancroft Villa: Aerial view (photo: Ken Field).



Plate 5: MK105 Bancroft Villa: General view of Building 1 (photo: MKAU).



Plate 8: MK105 Bancroft Villa: Room 16, the Caldarium, from the south west (photo: MKAU).



Plate 9: MK109 Little Woolstone: View of site from the north east (photo: MKAU).



Plate 6: MK105 Bancroft Villa: General view of Building 6, and sections of adjacent ditches (photo: MKAU).



Plate 7: MK105 Bancroft Villa: Detail of herringbone masonry in Wall 9, Room 3, from the east (photo: MKAU).



Plate 8: MK105 Bancroft Villa: Room 16, the Caldarium, from the south west (photo: MKAU).



Plate 9: MK109 Little Woolstone: View of site from the north east (photo: MKAU).

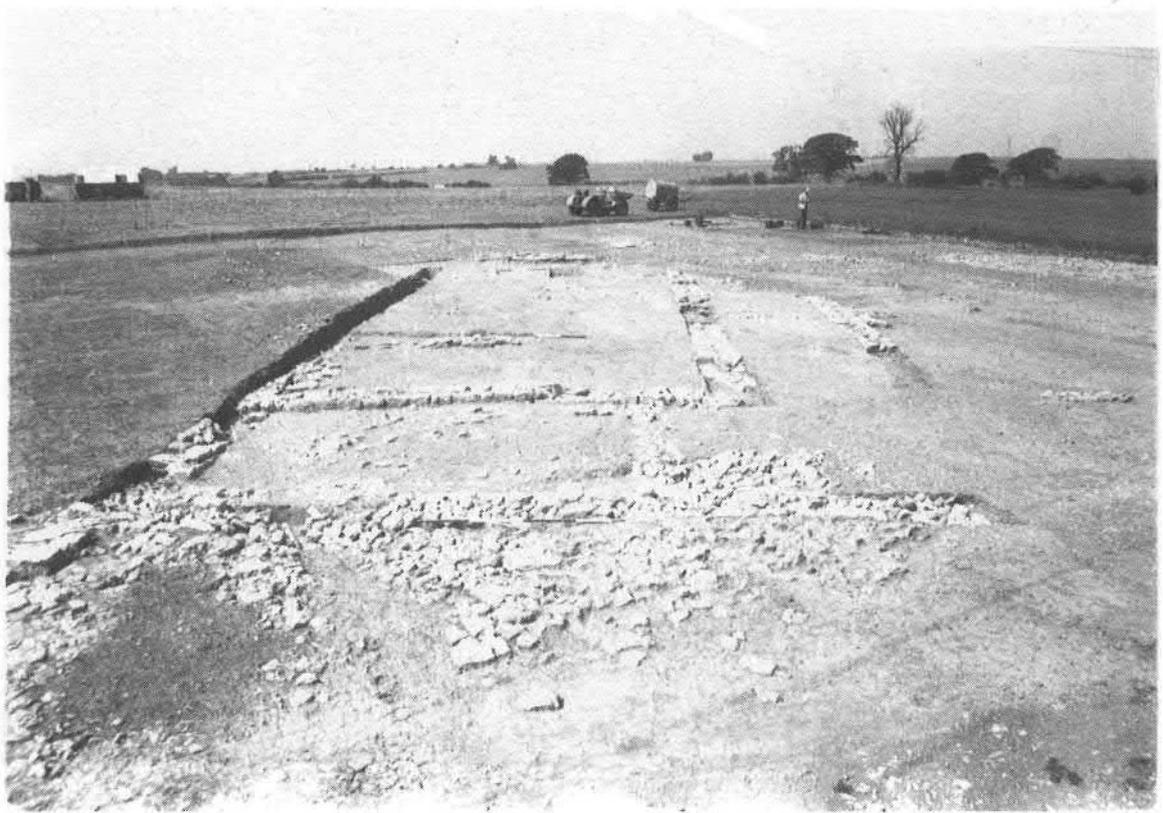


Plate 10: MK211 Wymbush: Building 1 from the east end (photo: MKAU).

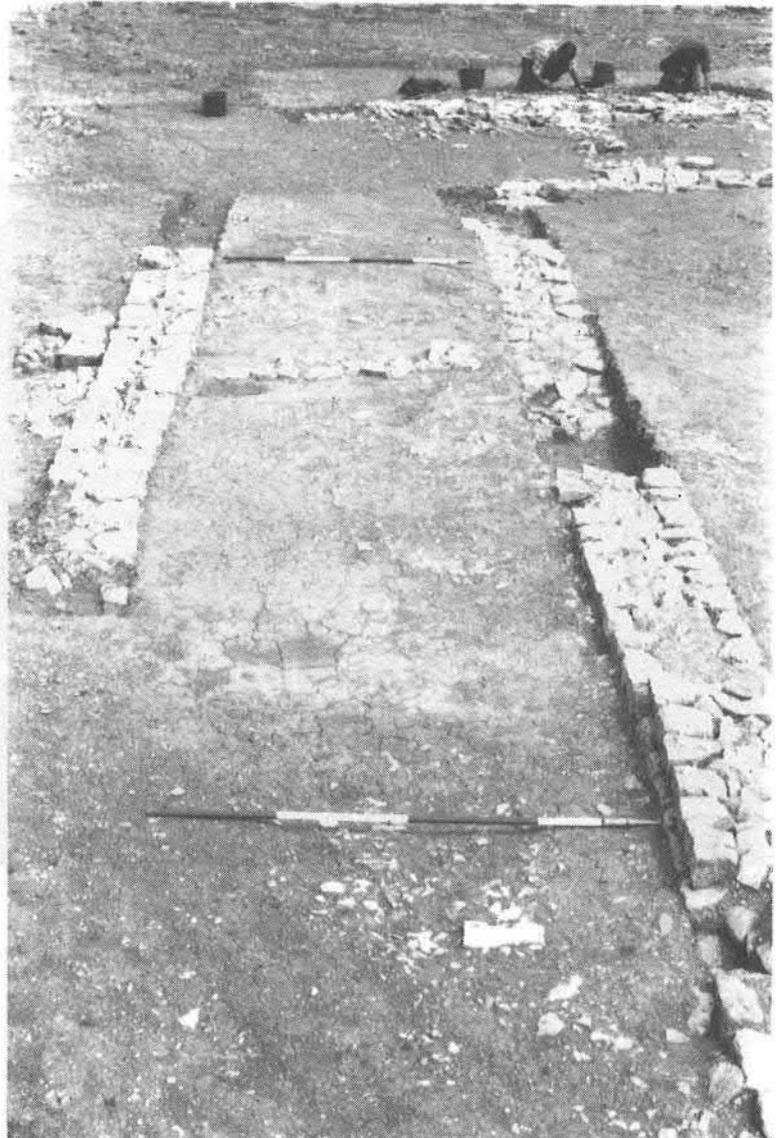


Plate 11: MK211 Wymbush:  
Building 1, the corridor,  
looking east (photo: MKAU).

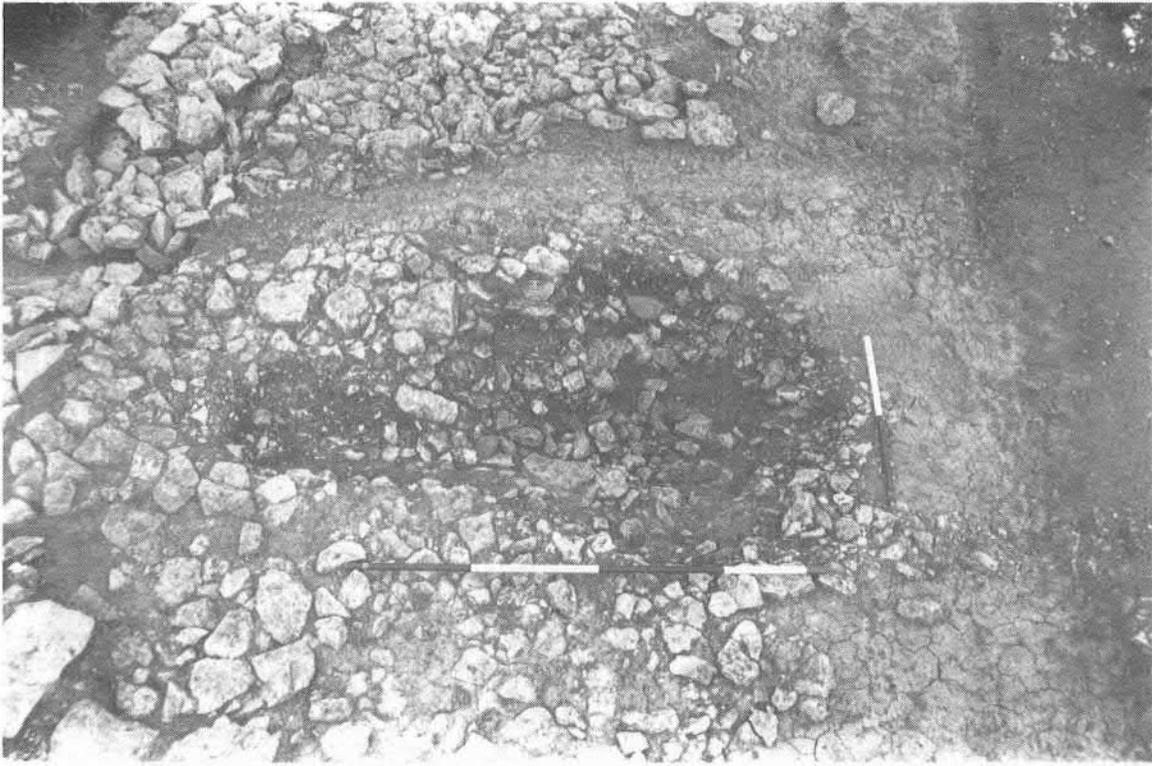


Plate 12: MK211 Wymbush: Feature 42 at east end of Building 1 (photo: MKAU).



Plate 13: MK301 Stantonbury: Building 2 from the north end (photo: MKAU).

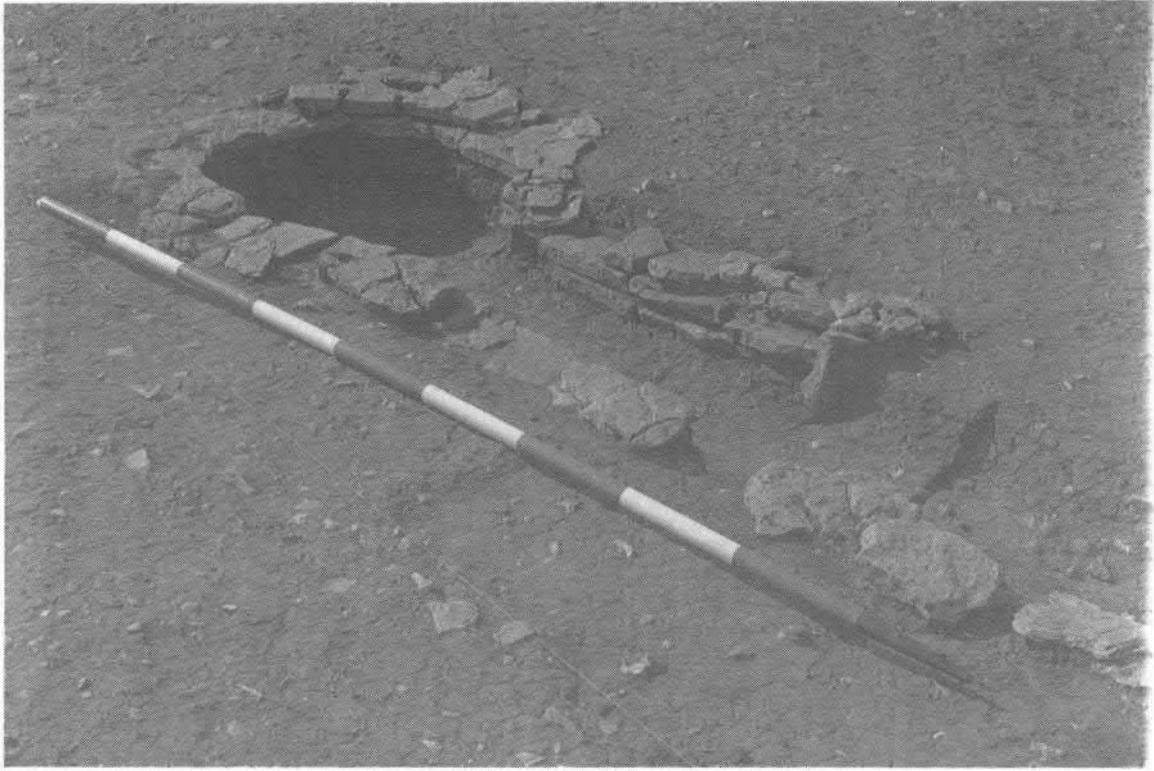


Plate 14: MK301 Stantonbury: Keyhole-shaped oven in Building 1 (photo: MKAU).



Plate 15: MK105 Bancroft Villa: Mosaic pavement in Room 1, from south (photo: MKAU).



Plate 16: MK105 Bancroft Villa: Mosaic pavement in Room 8, drawn by David S. Neal (Crown Copyright).

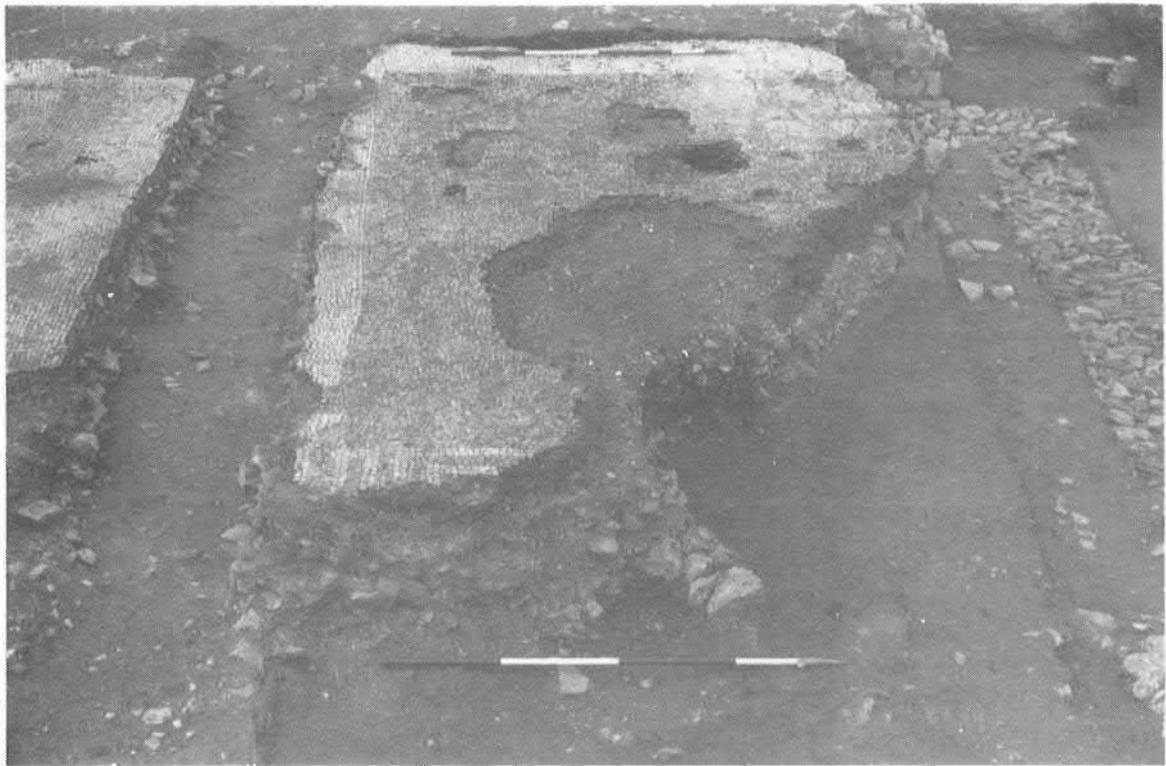


Plate 17: MK105 Bancroft Villa: Mosaic pavement in Room 2, from south west (photo: MKAU).

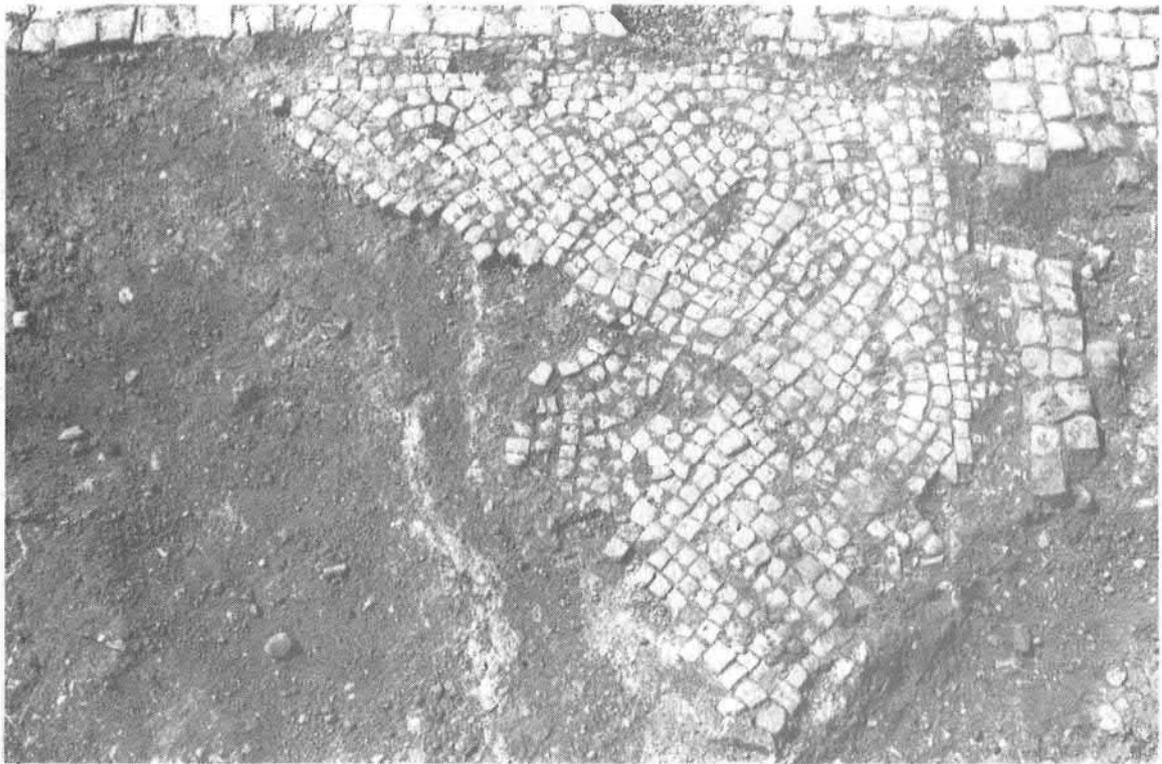


Plate 18: MK105 Bancroft Villa: Mosaic pavement in Room 2. Detail of panel with guilloche border (photo: MKAU).



Plate 19: MK105 Bancroft Villa: Mosaic pavement in Room 8 (photo: MKAU).

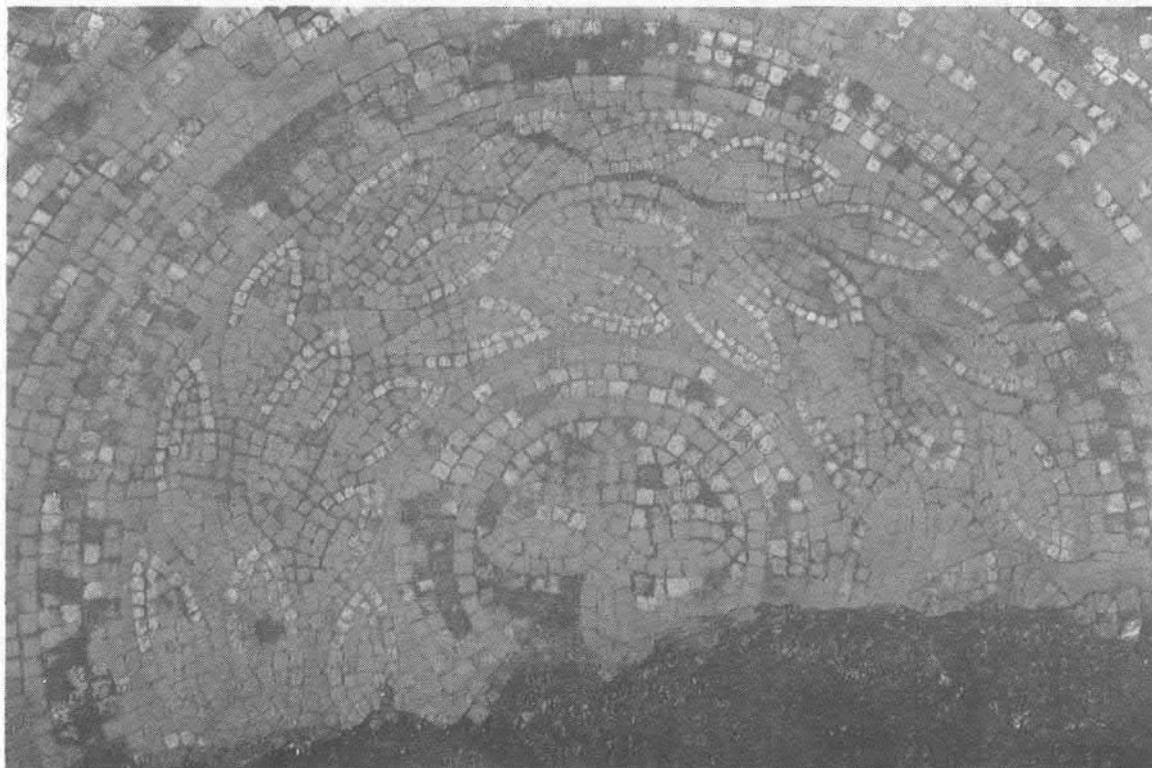


Plate 20: MK105 Bancroft Villa: Mosaic pavement in Room 6, detail of panel with laurel wreath decoration (photo: MKAU).

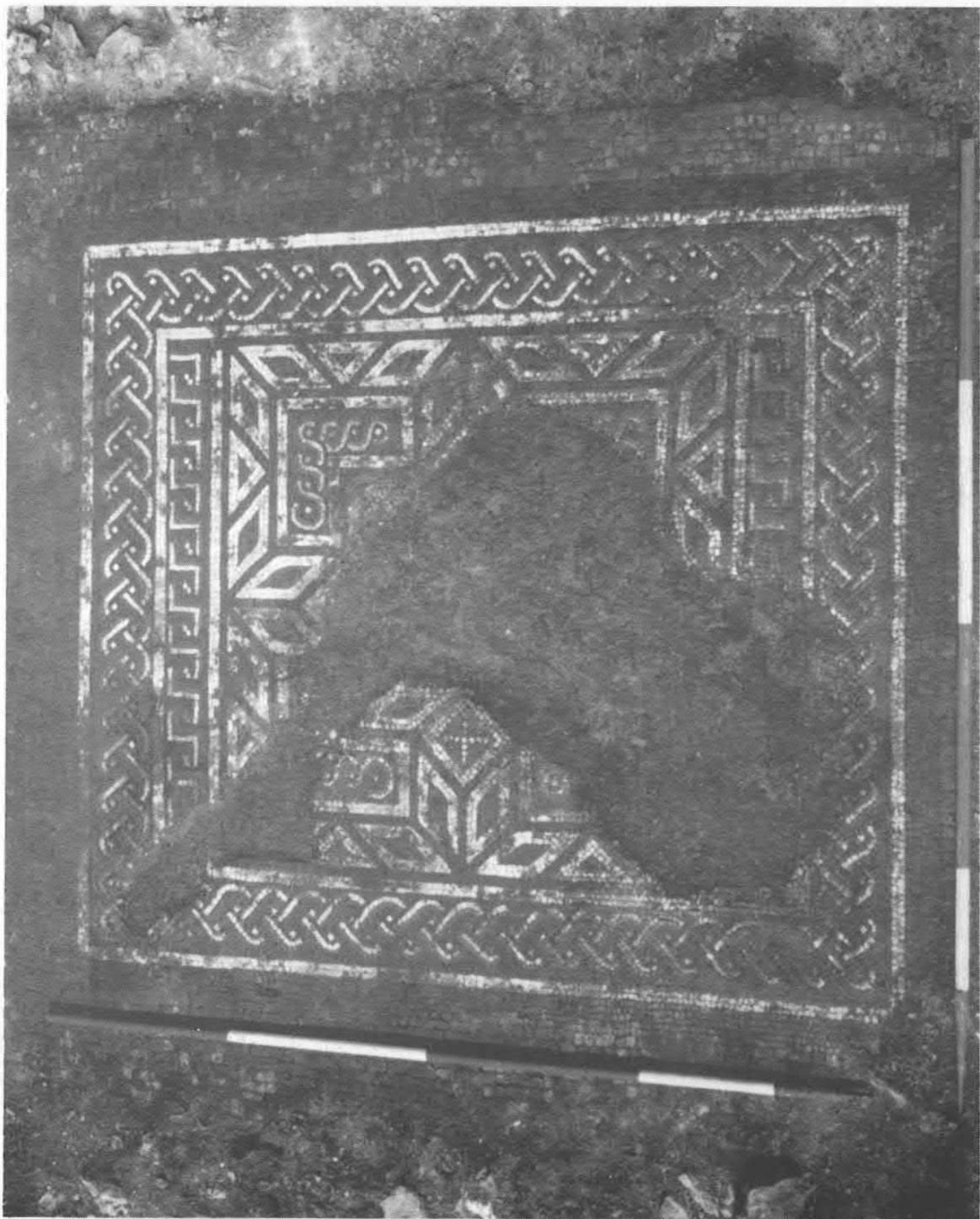


Plate 21: MK105 Bancroft Villa: Mosaic pavement in Room 9, from south (photo: MKAU).



Plate 22: MK105 Bancroft Villa:  
Mosaic pavement in the corridor  
(Room 12), Panel A (photo:  
MKAU).



Plate 23: MK105 Bancroft Villa:  
Mosaic pavement in the corridor  
(Room 12), Panel B (photo:  
MKAU).



Plate 24: MK105 Bancroft Villa:  
Mosaic pavement in the corridor  
(Room 12), Panel C (photo:  
MKAU).

Plate 25: MK105 Bancroft Villa:  
Marble cockerel (photo: MKAU).





Plate 26: MK45 Holne Chase: Sherds of polychrome mosaic glass vessel (scale in cm) (photo: University of Leeds).